READ AND SAVE THESE INSTRUCTIONS

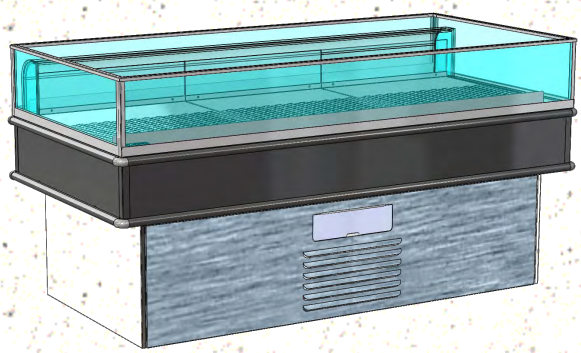
Oasis MOBILE SERIES

INSTALLATION & OPERATING MANUAL

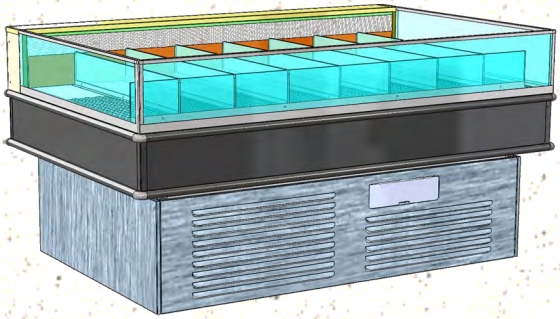
Important!
See Page 13 For Product And Signage Placement Guidelines!

SELF-SERVICE MULTI-PURPOSE REFRIGERATED ISLAND DISPLAY CASES

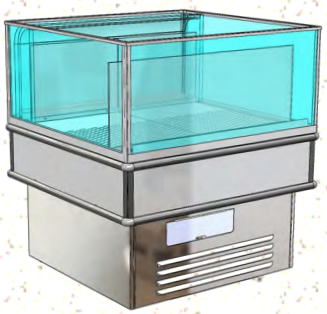
> Note: See Next Page For List of Models To Which This Manual Applies



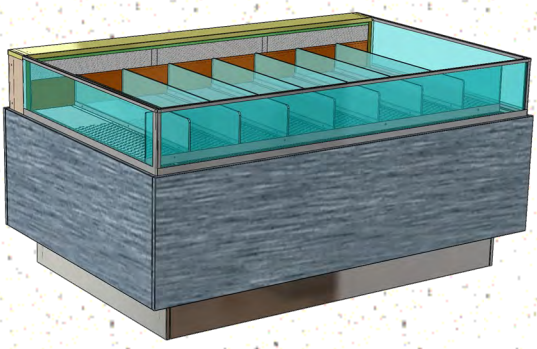
MI36R



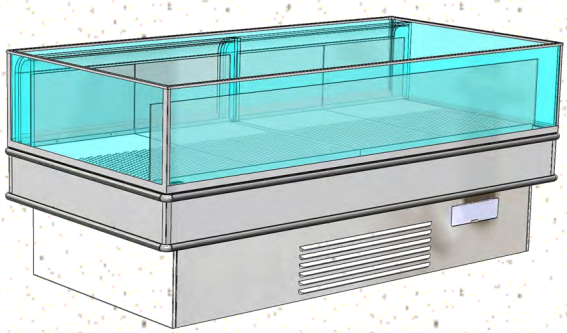
MI6R.6620 / Beverage Case / Honeycomb / Adjustable Dividers



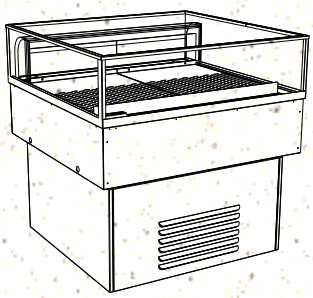
MI3R.6212B / Increased Glass Height



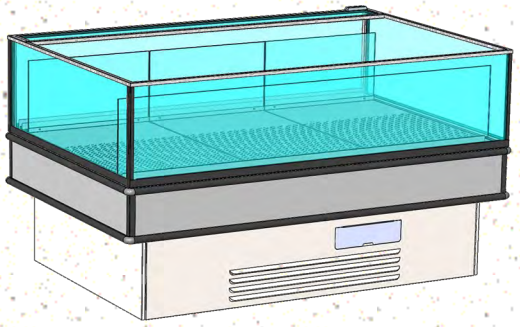
MI6R.7065 / Honeycomb / Adjustable Dividers / Removable Exterior Panels



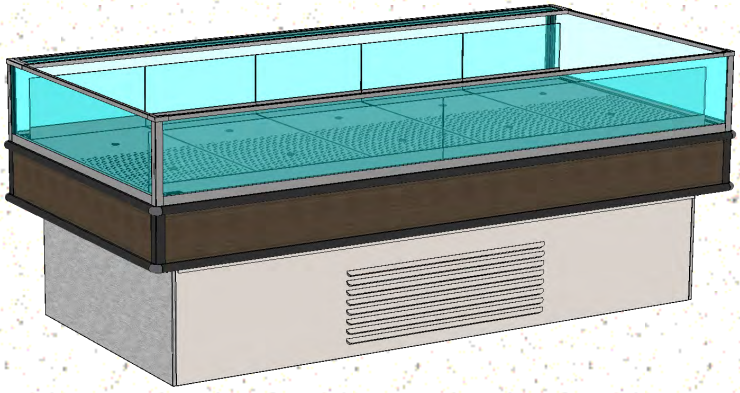
MI8R.6212A / Increased Glass Height



MI3R.5429 / Without Bumpers



MI6R.6212C / Increased Glass Height / Horizontal Glass Over Air Discharge



MI8R / Removable Exterior Panels / No Acrylic Airflow Risers or Dividers

Structural Concepts
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Phone: 231.798.8888 Fax: 231.798.4960 www.structuralconcepts.com

SCC P/N 54423

TABLE OF CONTENTS

This Operating Manual Applies To The Following Models*:
MI3R.5429 MI3R.6212B MI36R MI5R MI6R MI6R.6212C MI6R.6620
MI6R.7065 MI8R MI8R.6212A and MI6R.6620.
*Note: Manual May Also Apply To Additional Models Not Listed Herein.

OVERVIEW

- Unless specified differently, these Structural Concepts merchandisers are designed to merchandise packaged products at 41 °F (5 °C) or less product temperatures.
- ***Note: On certain cases, a switch is provided to allow temperatures to be either 41 °F (for produce and prepackaged product) or 38 °F (for red meat).***
- Model MI6R.6620 (and/or other similar units) is designed to merchandise beverages at 28 °F (2 °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 I vs. TYPE II ENVIRONMENTAL CONDITIONS

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

- Type I display refrigerators are intended for use in an area where environmental conditions are controlled and maintained so that the ambient temperature does not exceed 75 °F (24 °C) and 55% maximum humidity.
- Type II display refrigerators are intended for use in an area where environmental conditions are controlled and maintained so that the ambient temperature does not exceed 80 °F (27 °C) and 55% maximum humidity.
- If unsure if Type I or II, see tag near serial label on case.

COMPLIANCE

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

WARNINGS

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

REFRIGERANT DISCLOSURE STATEMENT

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

COMPLIANCE

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

WARNING

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

WARNING

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

WARNING

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

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

PRECAUTIONS

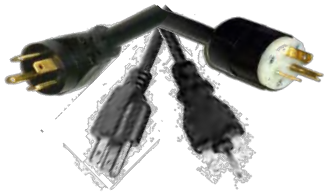
- This sheet contains important precautions to prevent damage to unit or merchandise.
- Please read carefully!
- See previous page for specifics on ***OVERVIEW, TYPE, COMPLIANCE*** and ***WARNINGS***.

WIRING DIAGRAM

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

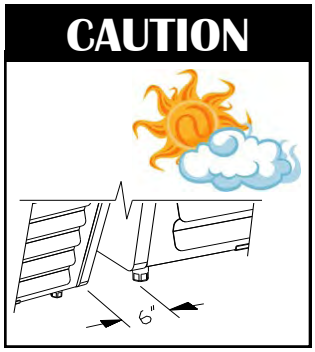
CAUTION! GFCI BREAKER USE REQUIREMENT

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.



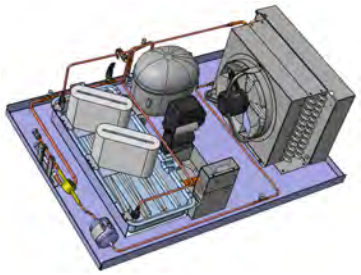
CAUTION! POWER CORD AND PLUG MAINTENANCE

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.**
- **Keep end panels tightly joined or at least 6" away from structures to prevent condensation. Keep rear panel at least 6" from wall/structure.**
- **Unit must be kept at least 15-feet from exterior doors, overhead HVAC vents or any air curtain disruption to maintain proper temperatures.**
- **Unit must not be exposed to direct sunlight or any heat source.**
- **Self-contained unit clearance: 6" min. air intake / 6" min. air discharge.**



CAUTION! CHECK CONDENSATE PAN POSITION & PLUG

Water on flooring causes damage! Before powering unit, check that:

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

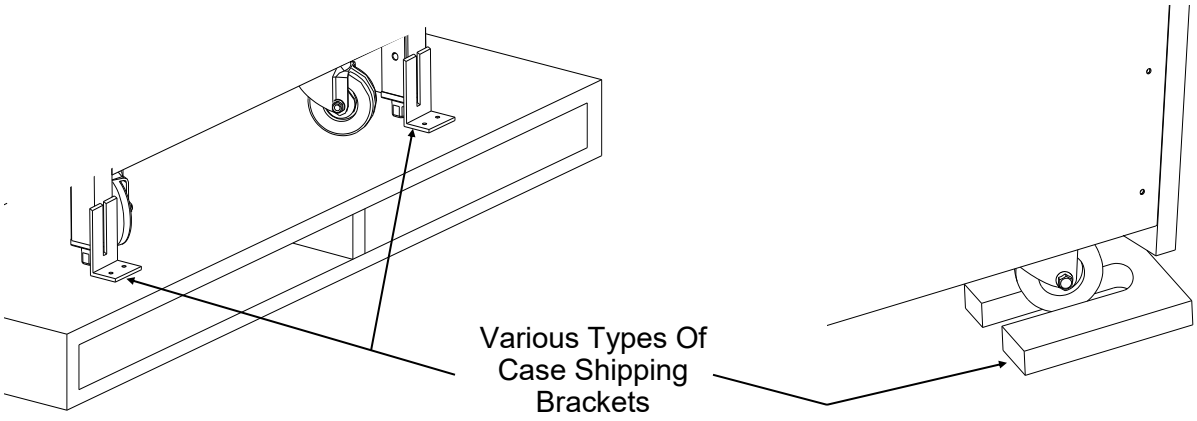
CAUTION!
DO NOT RELY ON THERMOMETERS OR THERMOSTATS FOR ACTUAL PRODUCT (FOOD) TEMPERATURES.

- **Thermometers and thermostats reflect air temperatures ONLY.**
- **They do not reflect ACTUAL food temperatures.**
- **For ACTUAL food temperatures, use a calibrated food thermometer.**

CASE REMOVAL FROM SKID (LOCKING/UNLOCKING CASTERS)

1. Removing Case Shipping Brackets That Are Attached To Skid

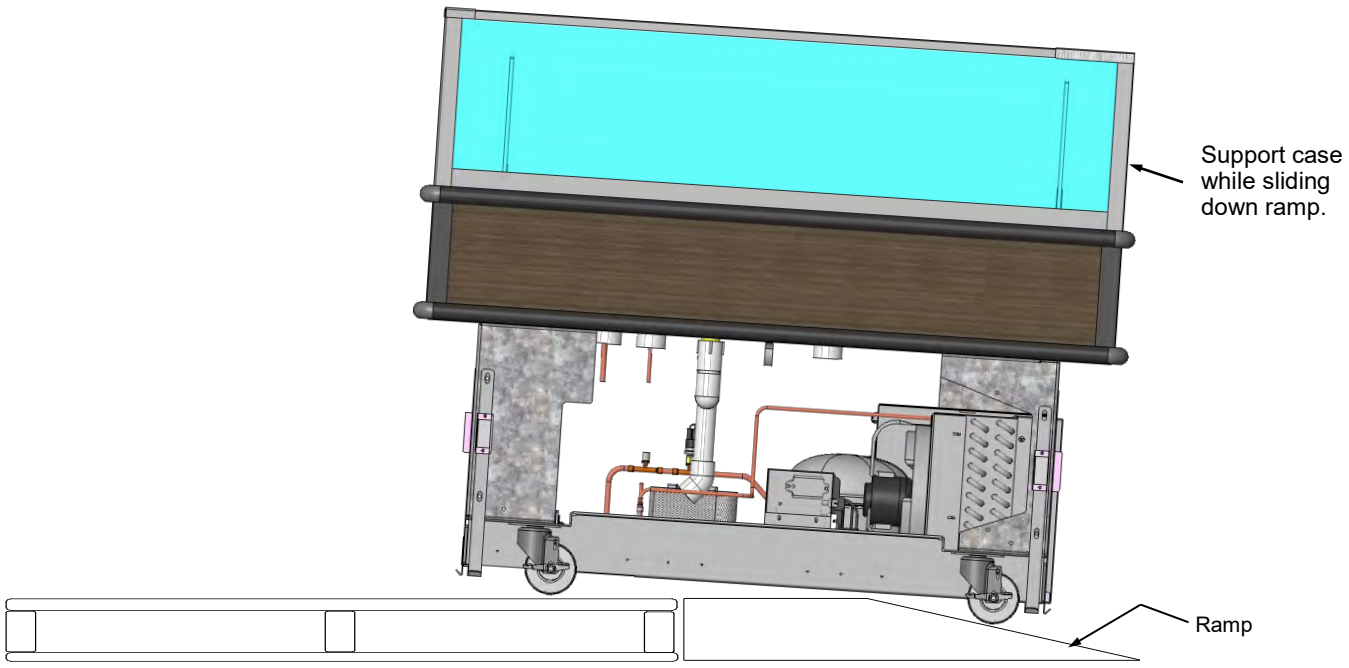
- Remove screws holding shipping brackets to skid.
- Remove shipping brackets from skid.
- See illustrations below. Note: Shipping Brackets will vary in size, shape, material and location depending upon case type and model.



2. Remove Case (With Casters) From Skid

A. Place ramp up against skid (to allow case to smoothly slide off from skid).
B. Maintain support of case at all times or center of gravity may cause case to fall.
C. Unlock Casters. Slide unit to rear of skid. Slide down ramp and off from skid.

Note: See next page for panel attachment instructions.

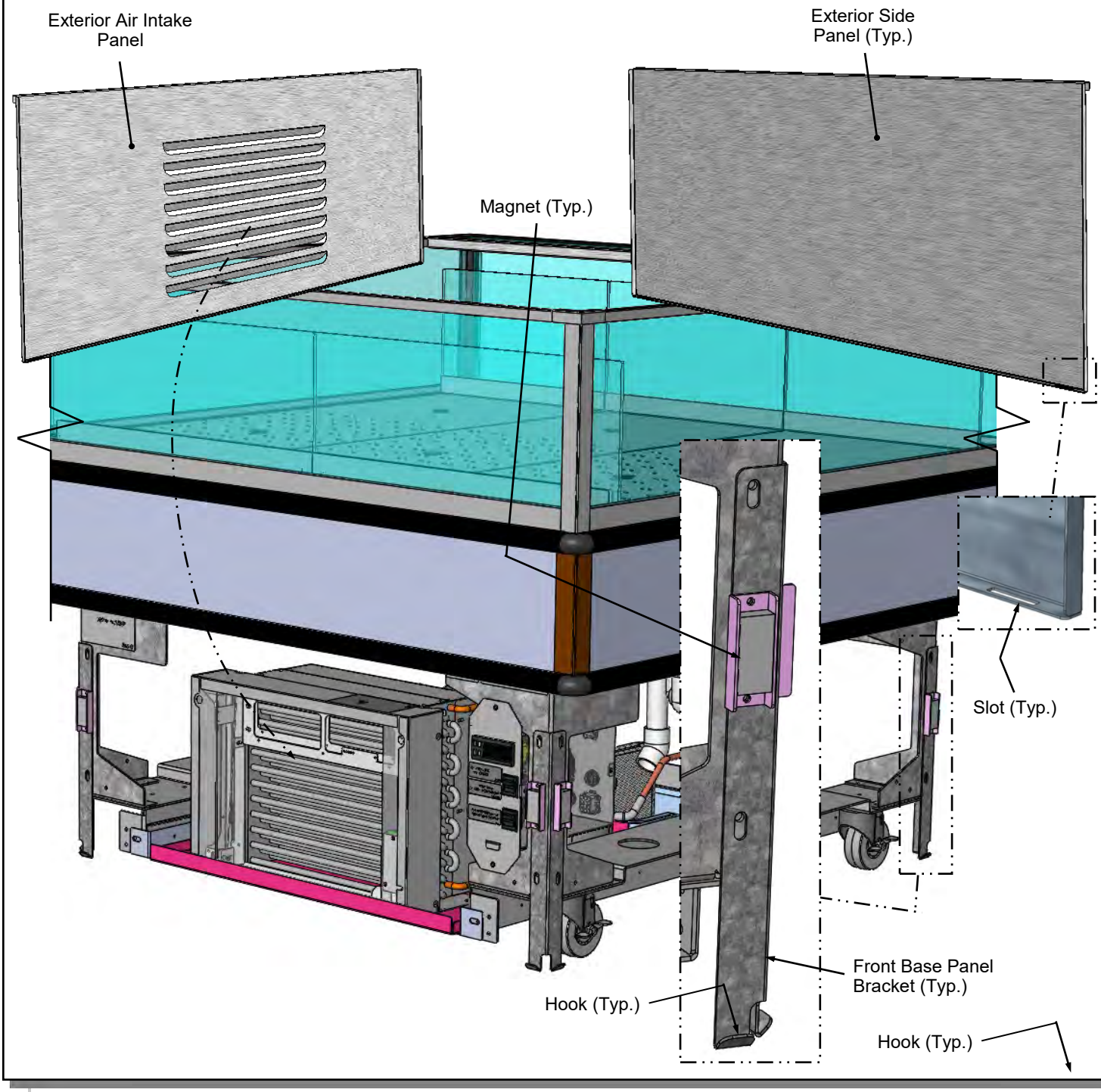


EXTERIOR PANEL ATTACHMENT (AFTER REMOVAL FROM SKID AND PROPERLY POSITIONED)

Exterior Panel Attachment (Both Grille and Solid)

- Attach to case after case has been removed and properly positioned/located in store.
- All four (4) exterior panels may be removed without tools.
- Lift exterior panel up and off tabs.
- Separate lower panel from magnets
- See illustrations below.

Note: Illustrations Shown May Not Reflect Every Feature Or Option Of Your Particular Case.



1. Position and Level Unit

- Position unit. Remove either controls side or opposite side grille to access levelers (see below). Grilles may be simply lifted up and off.
- Level unit by either hand-cranking or using adjustable wrench (see below). Return grilles.

2. Display Case Start-Up

- Lift up controls cover on control side of unit (see illustrations below).
- Turn on main power switch.
- Main power switch will start evaporator coil fans, and the compressor motor.

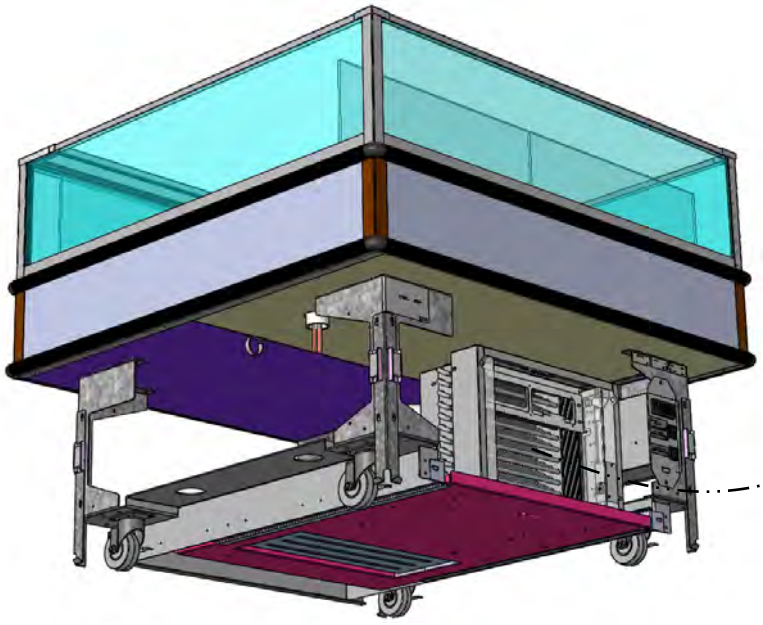
3. Temperature Control Access

- Lift up controls cover on control side of unit.
- See the temperature controller section of this manual for instructions and details on proper temperature controller settings.

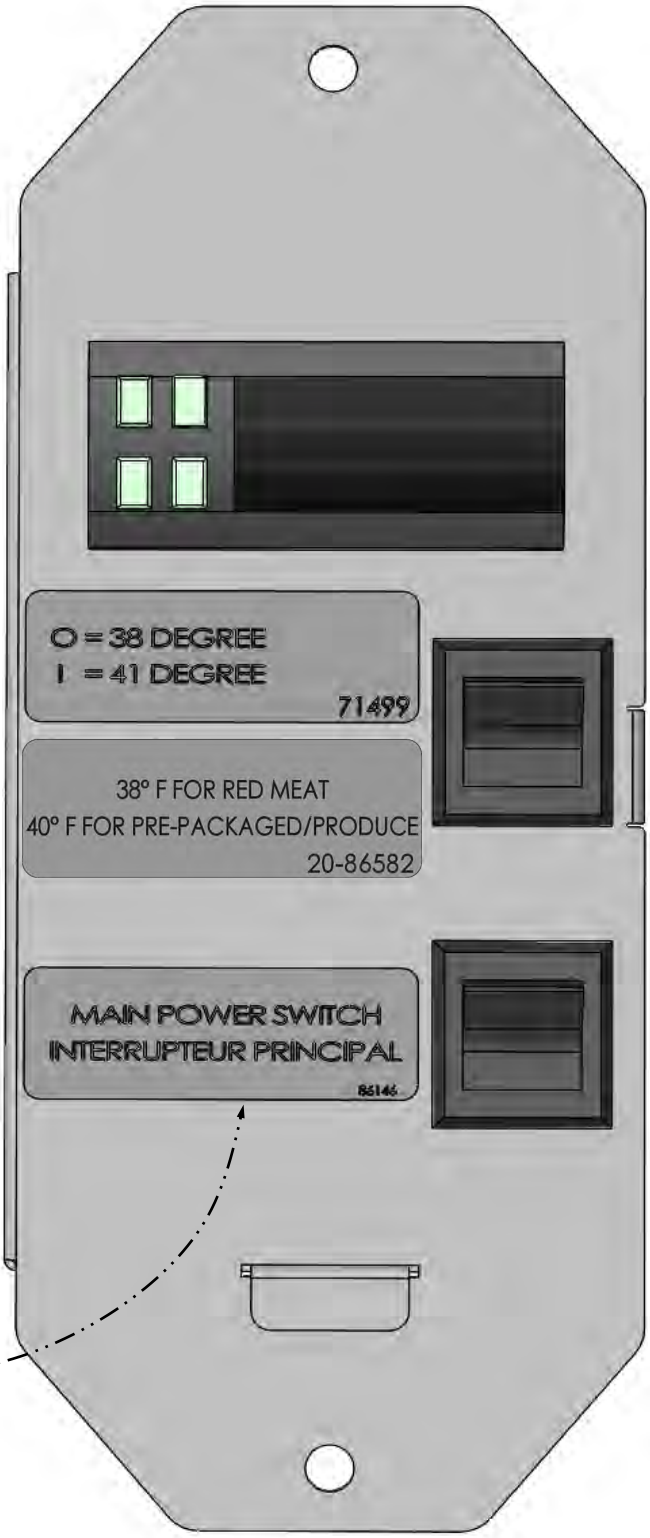
4. 41 °F / 38 °F Temperature Control Switch

- "O" (Open Position Switch Setting): Controller maintains the preset value for "Red Meat."
- "I" (Closed Position Switch Setting): Controller modifies the set point, adding the value of the parameter (r4). For example, when 'r4' = 3 °F (as a preset value), switching to "I" (closed position) will INCREASE the setpoint by 3 °F for "Produce."

- To raise or lower temperature setpoints BEYOND the preset values, see ***CAREL CONTROLLER: Changing "Red Meat" and "Produce" Setpoints Using The Thermostat Controller*** section in manual.



--- Air Intake Side of Case ---



ADJUSTABLE ACRYLIC DIVIDERS / FIXED ACRYLIC DIVIDERS / HORIZONTAL GLASS FIXTURES

1. Adjustable Acrylic Dividers - Not All Models

Certain merchandisers have adjustable dividers.

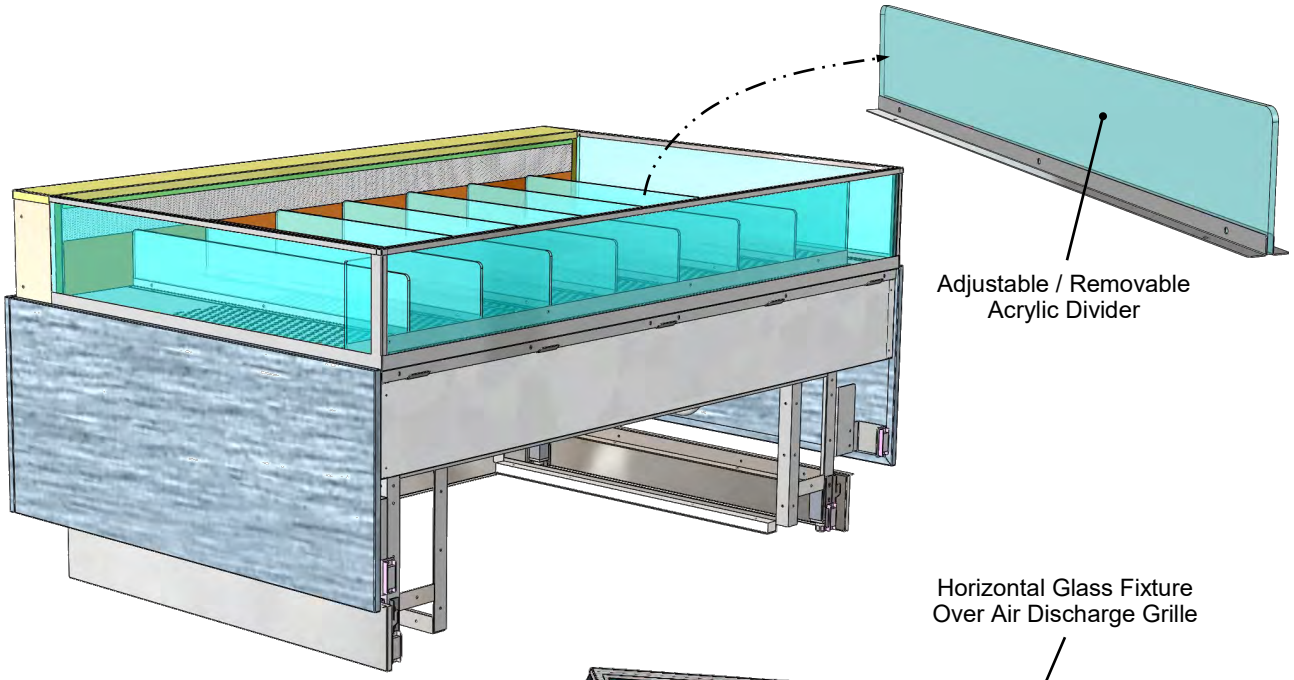
- Dividers are entirely removable and adjustable.
- See illustration below-left.

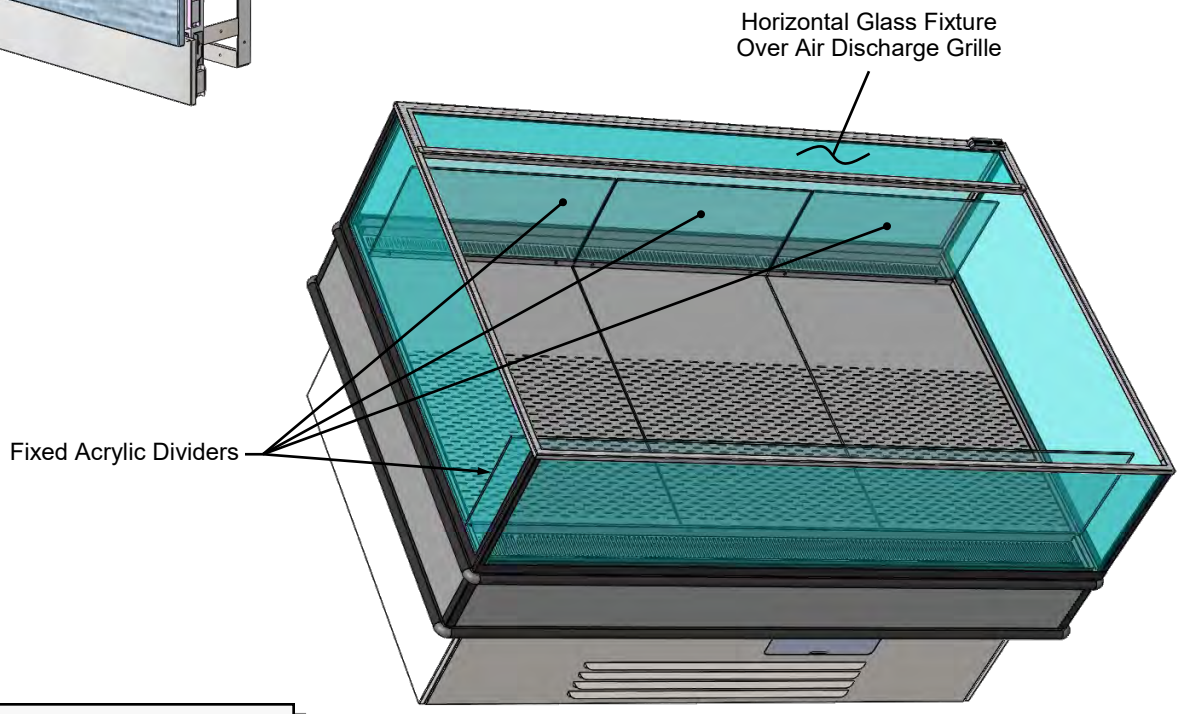
2. Fixed Acrylic Dividers - Not All Models

- Certain merchandisers have fixed dividers.
- Dividers ARE NOT adjustable.
- See illustration below-right.

3. Horizontal Glass Fixtures

- Most merchandisers have horizontal glass fixtures OVER the air discharge grille.
- Glass fixture is NOT removable or adjustable.
- See illustration below-right.





Note: Illustrations Shown May Not Reflect Every Feature Or Option Of Your Particular Case.

HONEYCOMB AIR DIFFUSER - MODEL MI6R.6620, MI6R.7065, ET AL.

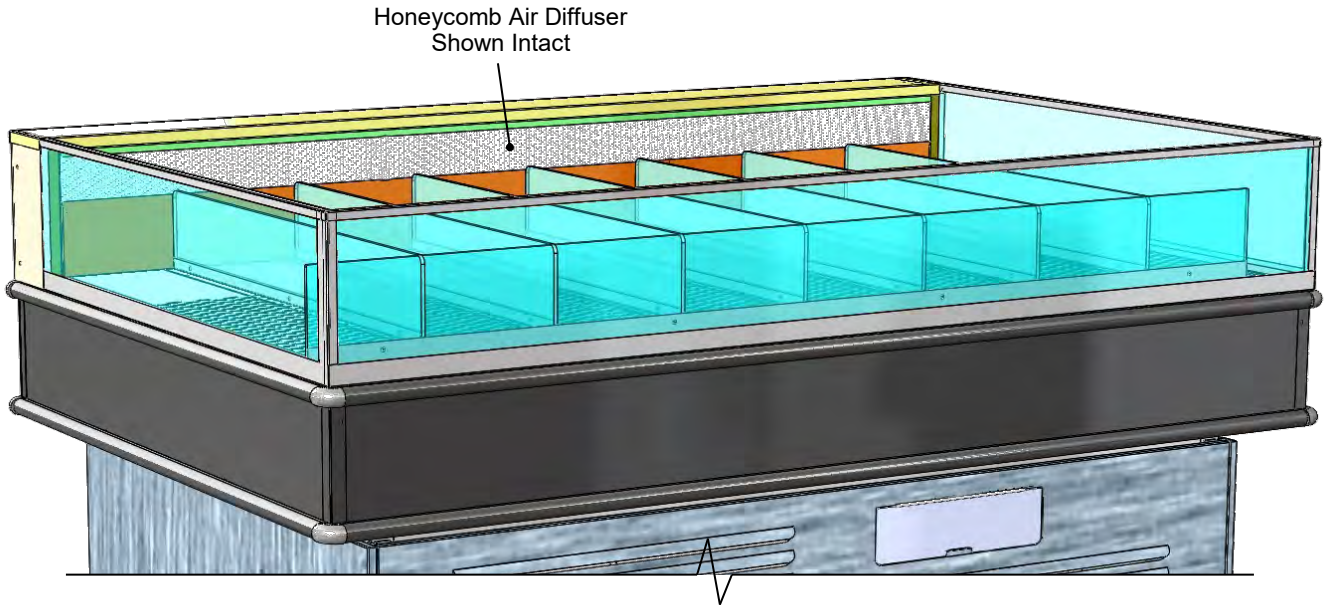
Honeycomb Air Diffuser - Model MI6R.6620, MI6R.7065, Et Al.

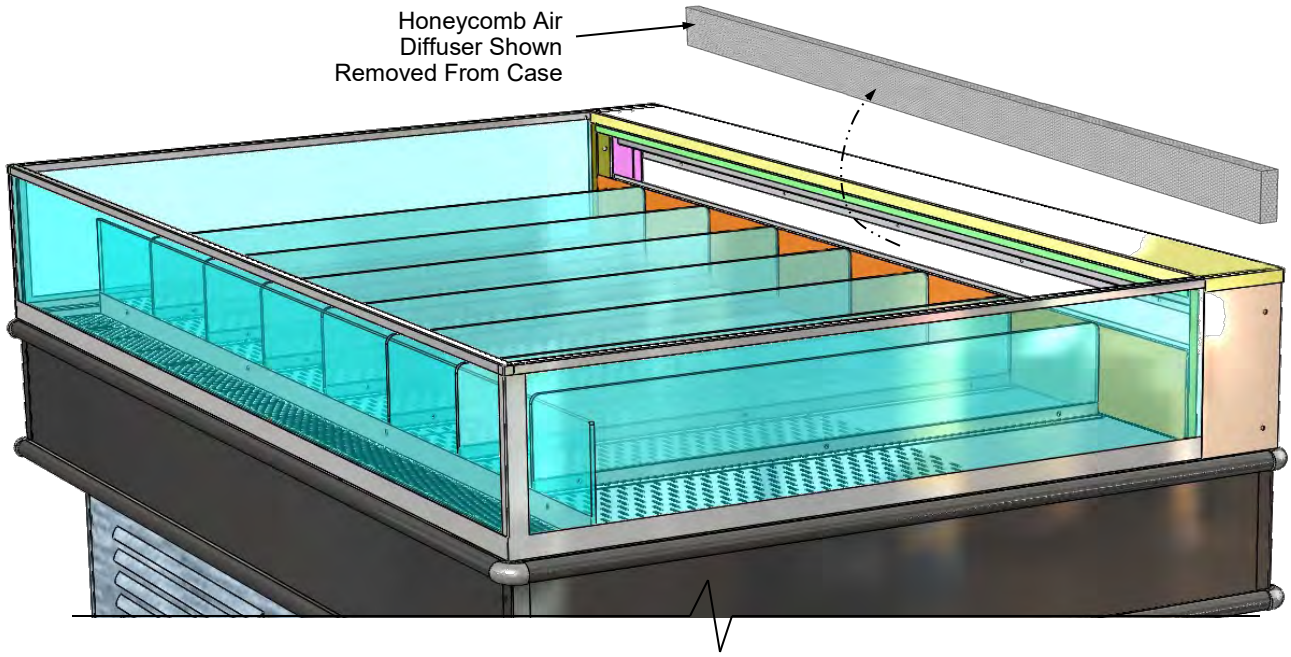
- Honeycomb air diffuser is not on all models.
- Honeycomb can be removed for cleaning and/or maintenance.

Honeycomb Air Diffuser Removal / Replacement

- Honeycomb is located in discharge air duct.
- To remove the honeycomb from the back panel assembly, simply squeeze ("pinch") together and lift out from housing.
- See ***PREVENTIVE MAINTENANCE (TO BE PERFORMED BY TRAINED SERVICE PROVIDERS)*** section in manual for cleaning specifics.
- After cleaning, be certain to replace honeycomb in same position so as not to disrupt airflow.

Note: Illustrations Shown May Not Reflect Every Feature Or Option Of Your Particular Case.





EVAPORATOR SECTION ACCESS: BAFFLED DECK PAN ASSEMBLIES / THERMOMETER

Caution! Turn Off Power To Unit Before Removing Deck Pans! Rotating Fans Can Cause Severe Injury!

Evaporator Section Access

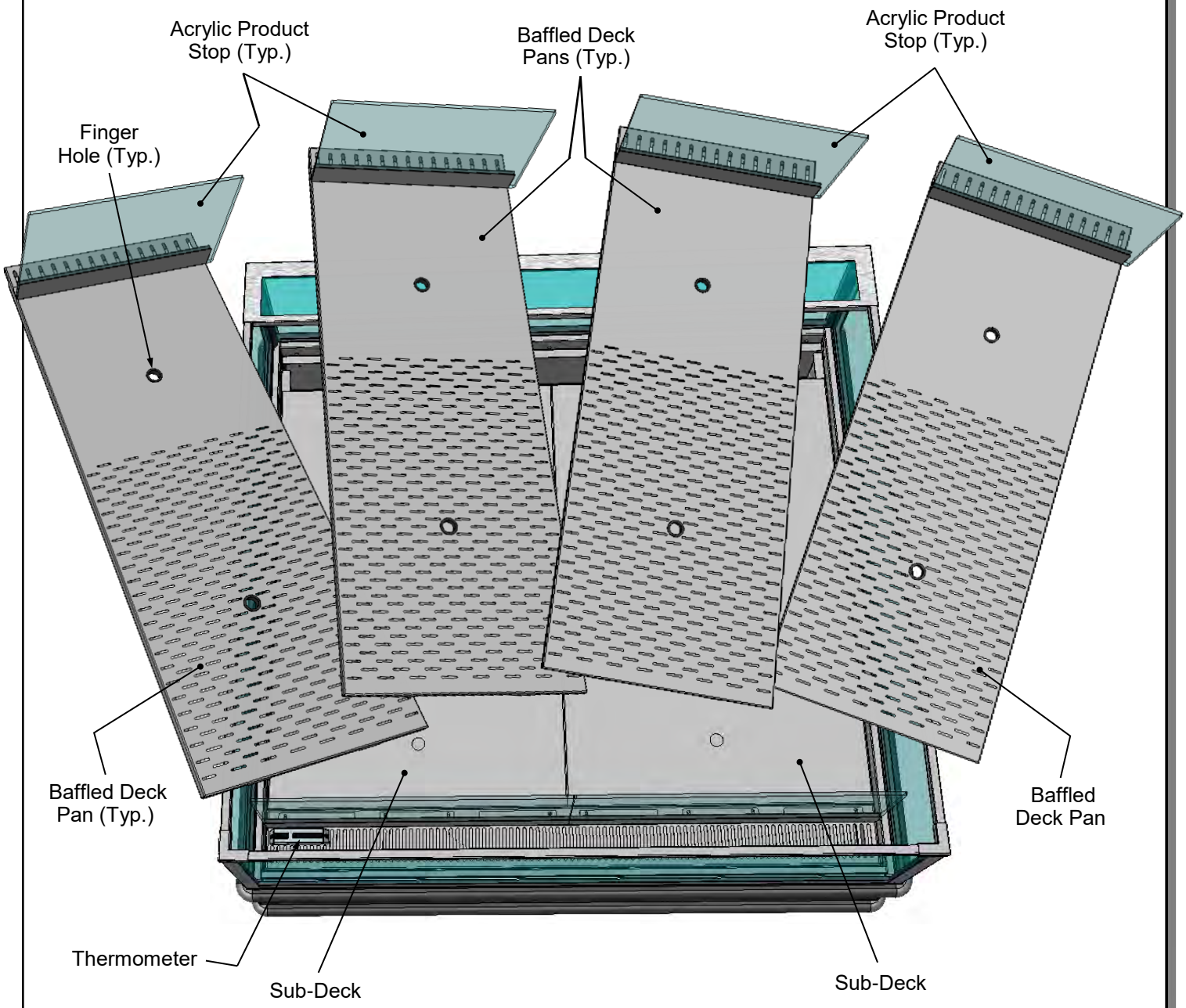
1. Baffled Deck Pan Assemblies Removal

- Baffled deck pan assemblies consist of pan, acrylic product stop and finger hole inserts.
- To remove, lift pans at location nearest thermometer UP AND OVER acrylic product stop.
- Remove remaining baffled deck pan assemblies in like manner.
- See below illustration.

2. Thermometer

- Thermometer is located on air return duct (as illustrated below).
- Thermometer reflects internal air temperature only (not actual food temperature).
- Use probe thermometers to determine actual product temperatures.

Random Model Is Shown Below. It May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.



Caution! Turn Off Power To Unit Before Removing Deck Pans! Rotating Fans Can Cause Severe Injury!

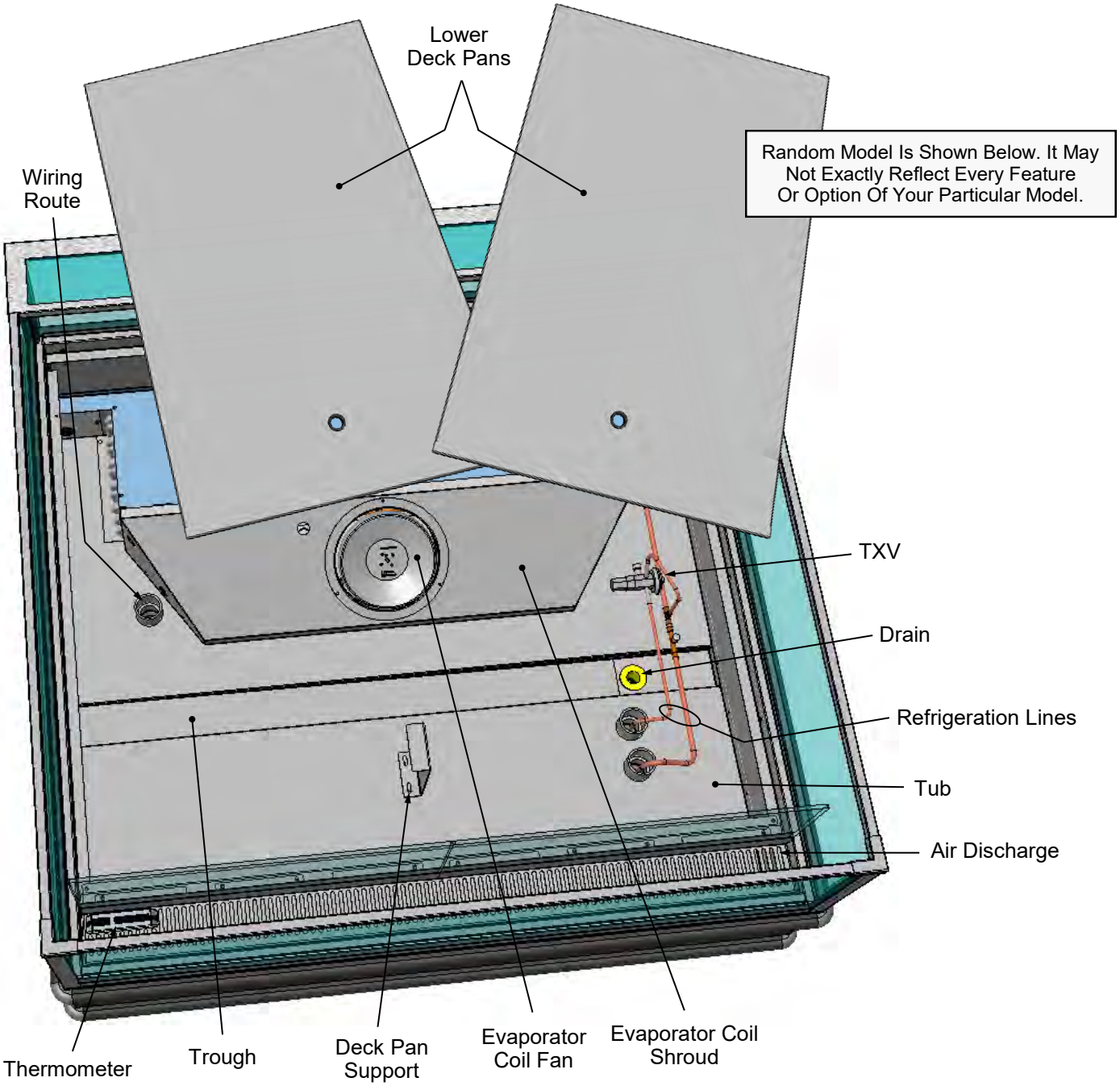
Evaporator Section Access, Cont'd

3. Lower Deck Pan Removal

- After baffled deck pans have been removed, you must remove lower deck pans.
- Finger holes are provided for easy removal.
- Place in location away from foot traffic while cleaning or servicing unit.
- See illustration below.

4. Evaporator Section Components

- After lower deck pans have been removed, you may access TXV, drain, refrigeration lines, trough and drain (as illustrated below).
- Follow cleaning and/or servicing instructions for evaporator section components.
- After cleaning/servicing unit, return components in reverse order they were removed.



LOAD LIMIT (LOAD LINE) GUIDELINES / CASE FRONT & REAR DESIGNATIONS / THERMOMETER

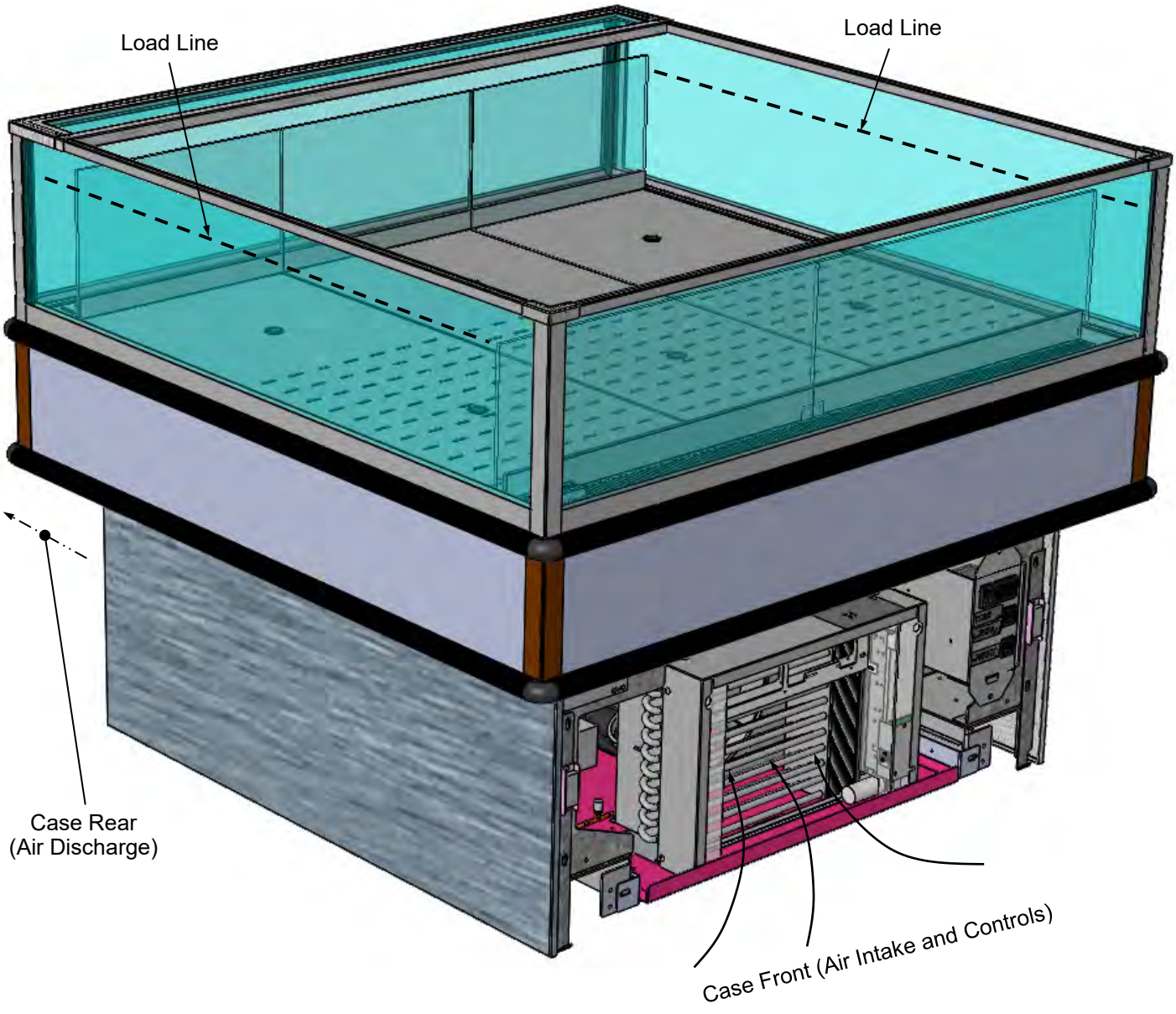
1. Load Limit (Load Line) Guidelines

Caution! Stacking food beyond the load line will prevent food from being at proper temperature.

- Load line is placed at location to allow proper refrigerated airflow to product.
- Load line will be etched in acrylic on both sides of case.
- NEVER set product on air return grille!
- See illustration below for load line locations.

2. Case Front & Rear Designations

- Case front is the controls side and air intake side of case. This is also the side of case that the condensing package is slid out for cleaning and/or servicing.
- Case rear is the air discharge side of case.
- See illustration below.



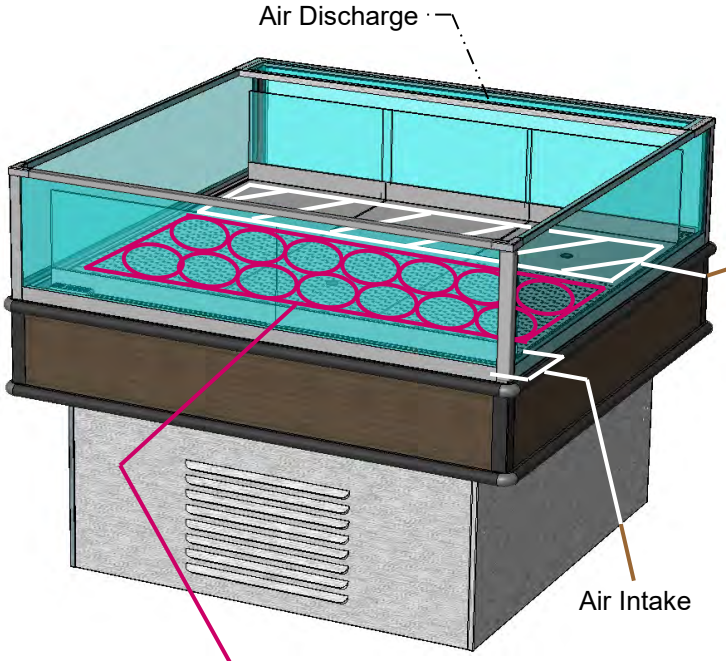
PRODUCT AND SIGNAGE PLACEMENT GUIDELINES

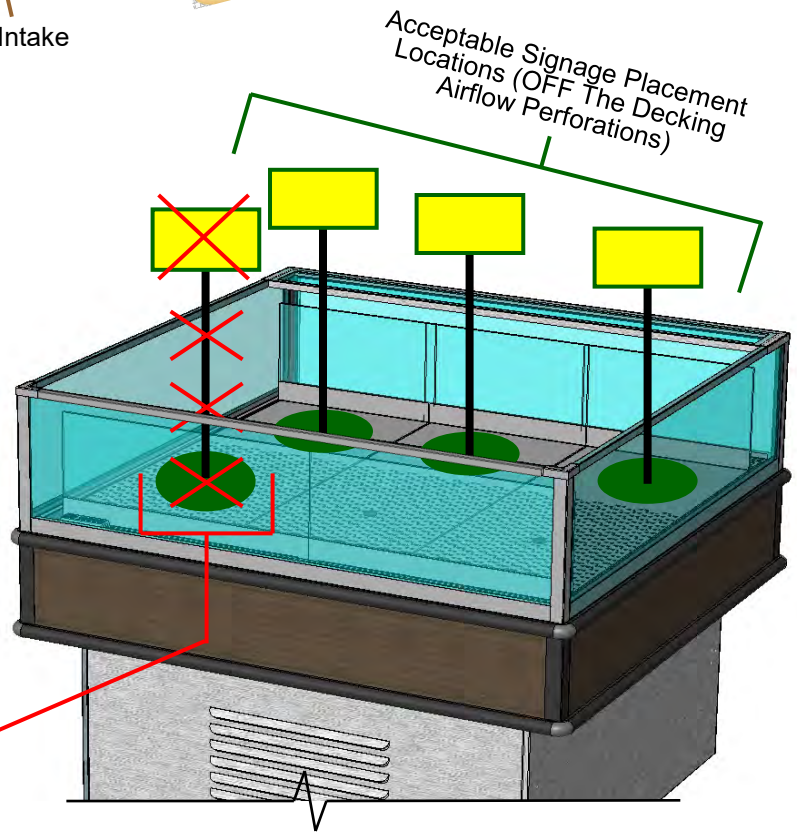
1. Product Placement Guidelines

- Higher protein products require the coolest air temperatures on a case.
- Area of case nearest air discharge remains coolest during regular operation.
- Place high protein products (such as poultry, sausage and other meats) closer to air discharge side of merchandiser.
- Place low protein products (such as produce, sauces and pastas closer to air return side of merchandiser).
- Note: NEVER set product on air return grille!
- See illustration top-left.

2. Signage Placement Guidelines

- Airflow perforations through decking help keep product at proper temperatures.
- DO NOT block airflow perforations on decking!
- See illustration below-right.

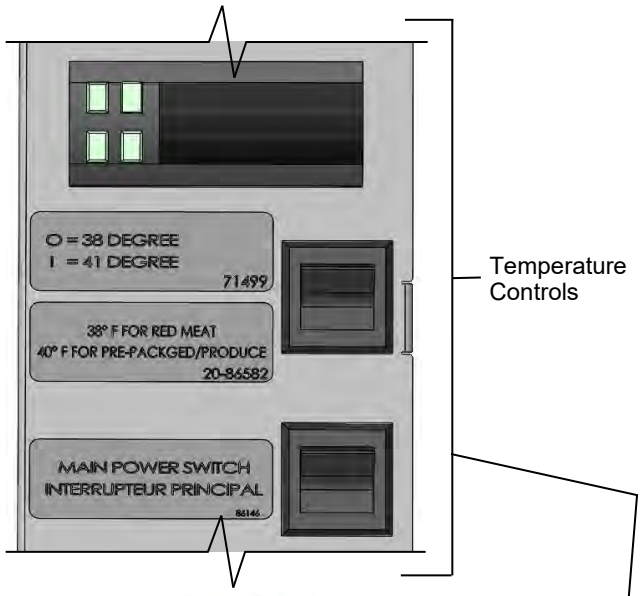




1. Temp. Controller (Self-Contained Units Only)

- Temperature Controller is located behind the temperature controls cover. See illustration at mid-right and lower-right.
- Temperature / Defrost control settings are programmable from this location.
- Case Temperature Set Point is set at the factory, as determined by case size & sensor probe location.
- Temperature is controlled by thermostat.
- If a temperature setting change is required, follow instructions regarding Temperature Control Programming Steps in the technical information section of this operating manual.
- If service is required to the temperature control unit, call Structural Concepts Corporation. Maintenance should be performed by a certified technician.
- The toll-free number is listed in the Technical Service section of this manual.
- See Temperature Controller section in this manual.

NOTE: Thermometers located in the refrigerated compartment are for monitoring warmest air temperature in accordance with NSF Std. 7

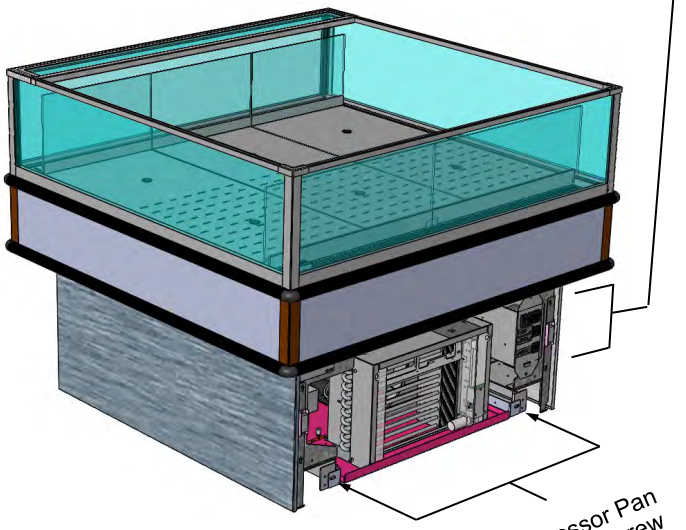


2. Refrigeration Package Access

Note: Servicing to be accomplished by licensed electrical / refrigeration contractor.

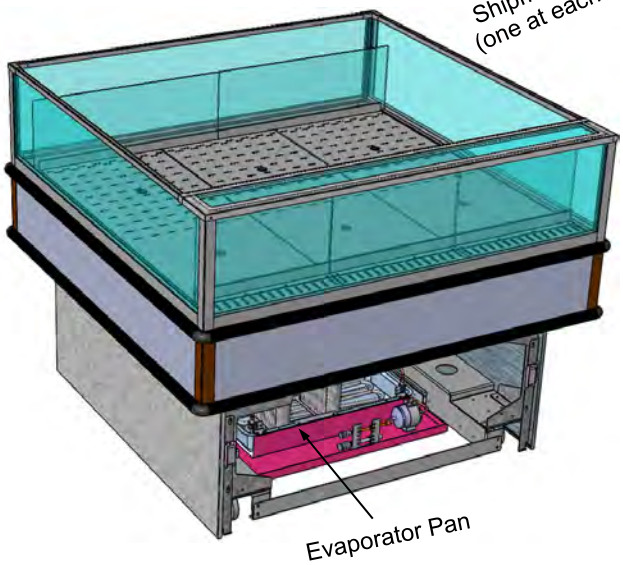
Pull Out Refrigeration Package

- Slide grille (located opposite to temperature controls) up and out. No tools are required.
- Note: At initial slide-out, it may be necessary to remove compressor pan shipment screws (see illustration at right for location).
- *Refrigerant lines are flexible to facilitate rear access maintenance.*
- Plastic glides are mounted at base to assist in sliding the condenser out for access.
- Slide condenser unit out 12 to 18 inches to access high pressure service connection.



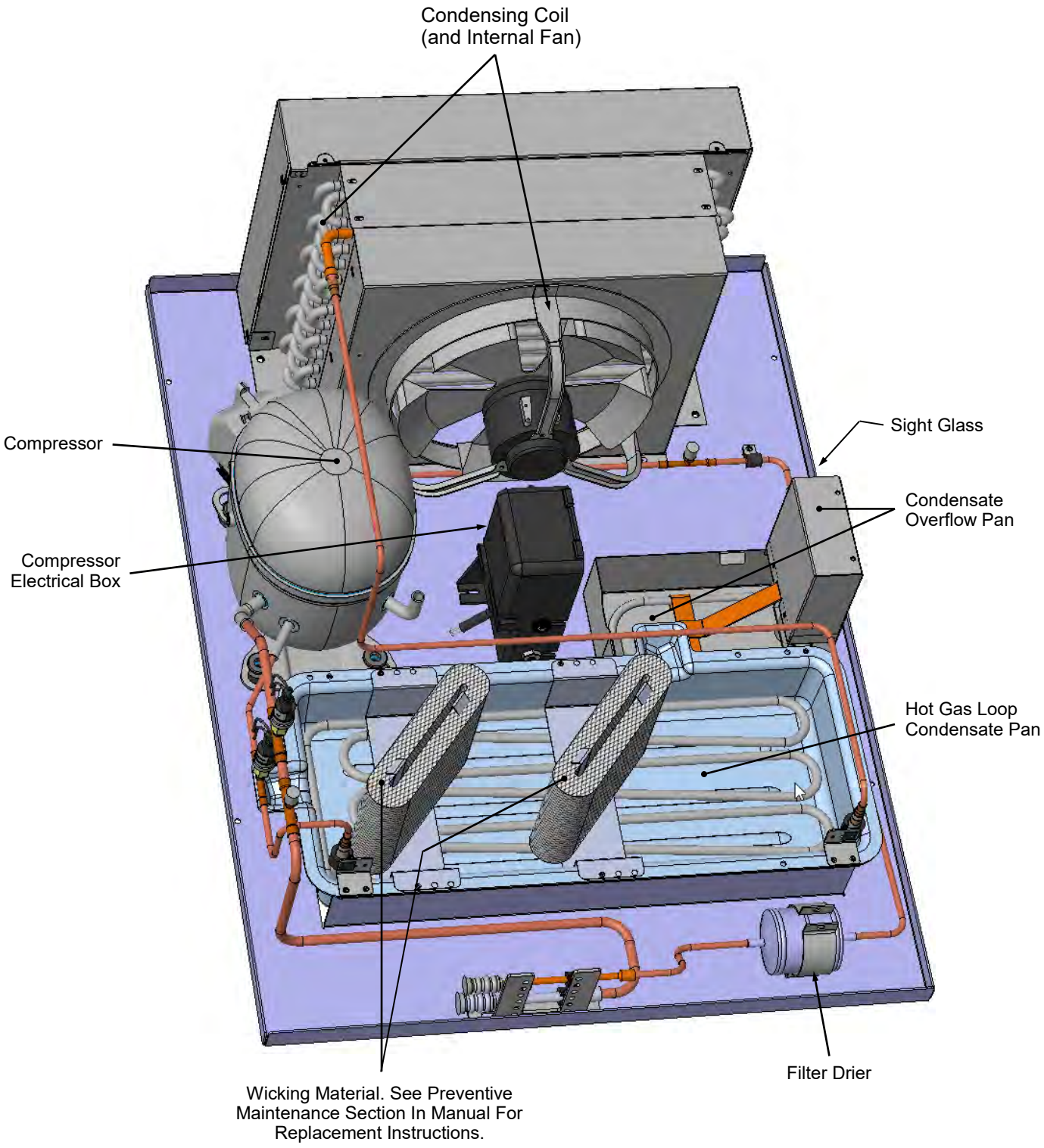
3. Evaporator Pan Access At Case Rear

- ***Turn off main power switch; allow evaporator pan to cool.***
- Evaporator pan is generally accessible by sliding out condenser package from under case (as shown in mid-right illustration).
- However, by removing air intake grille, it is possible to access evaporator pan for cleaning.
- Replace rear intake grille to case when completed.
- See illustration at lower-right.



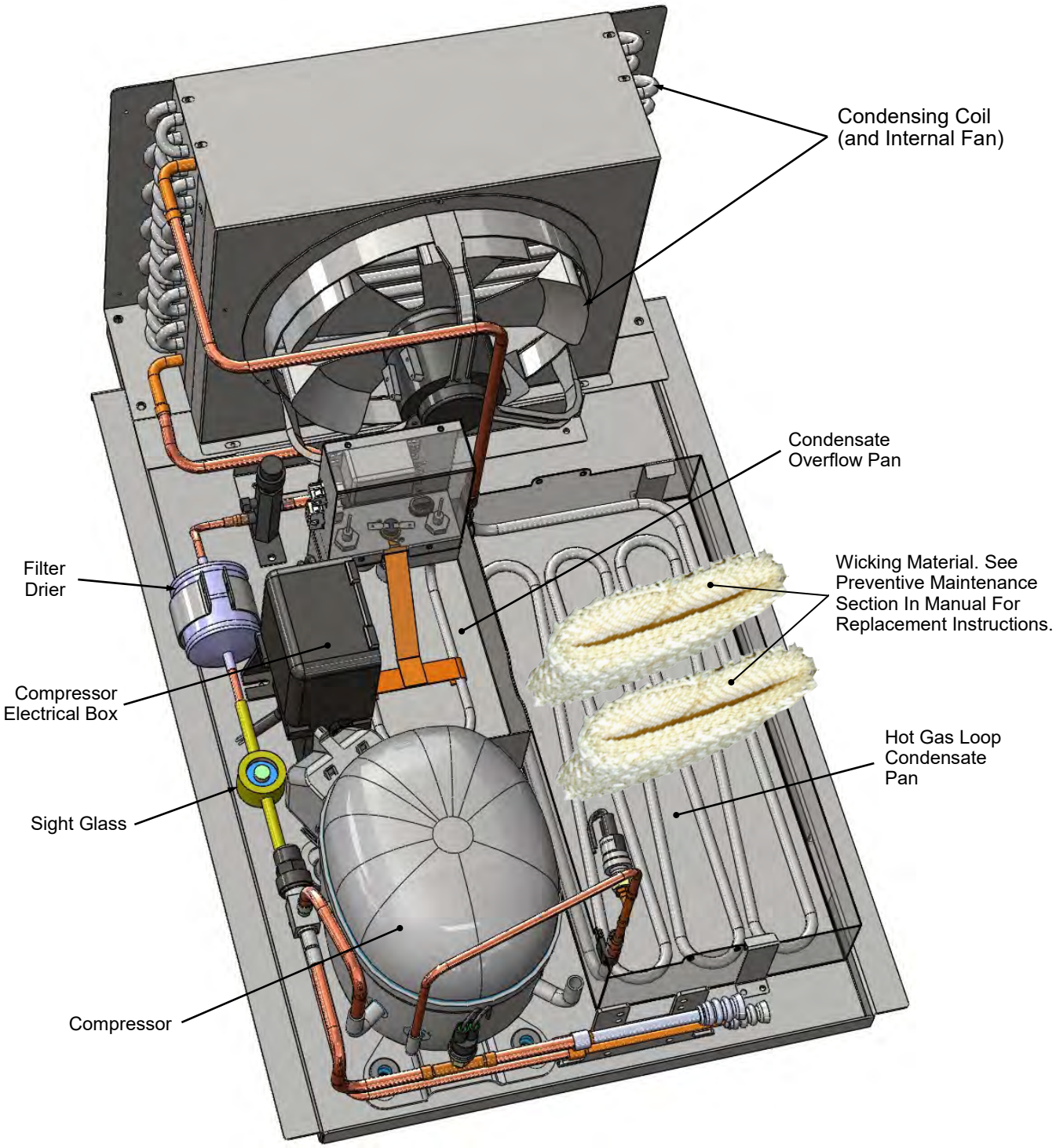
CONDENSER PACKAGE EXPLODED PICTORIAL - WITH SMALL HOT GAS LOOP CONDENSATE UNIT

Illustration Below May Not Reflect Every Feature Or Option Of Your Particular Case.
See Previous Page AND Next Page For Alternate Condenser Package Designs.



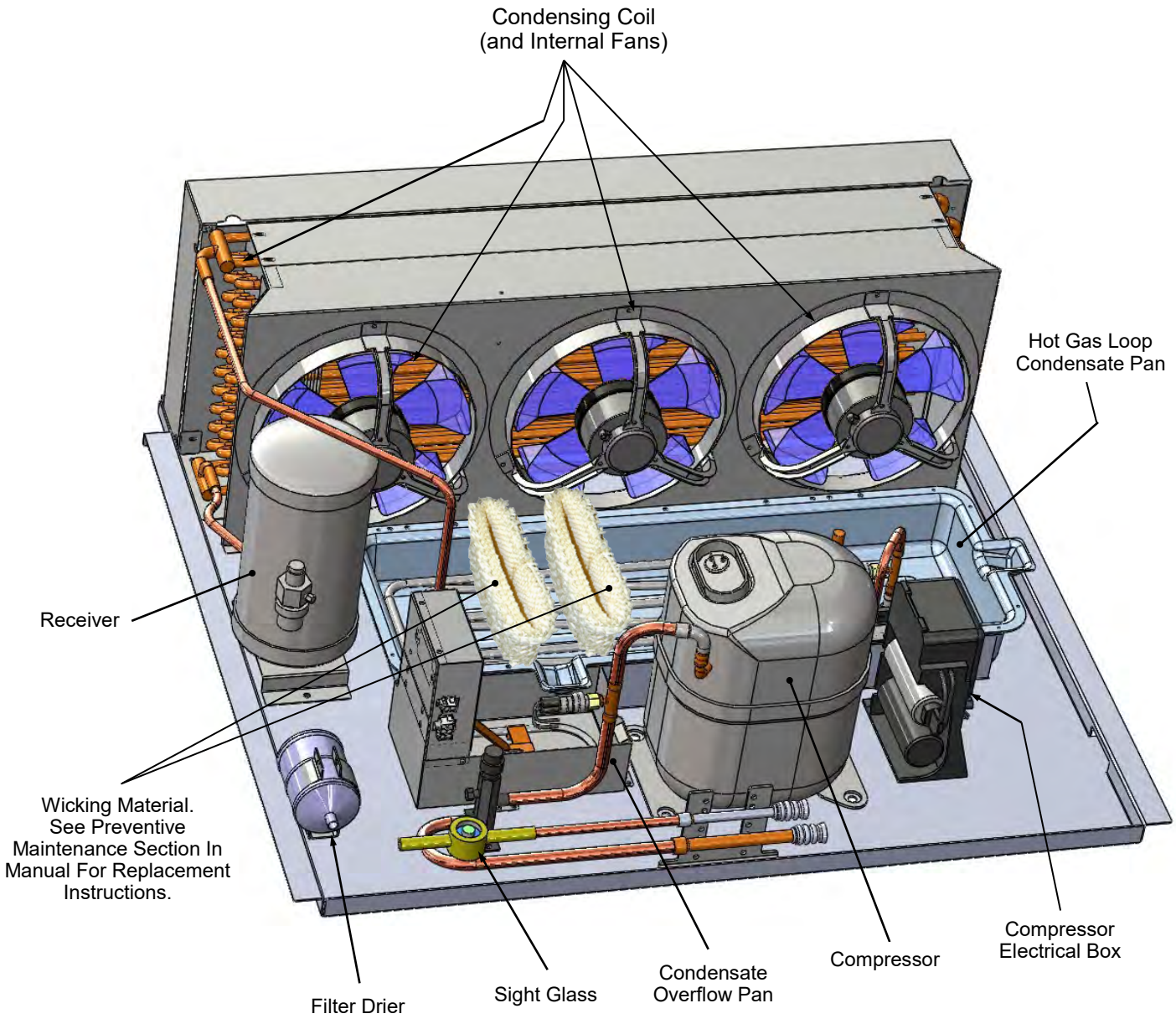
CONDENSER PACKAGE EXPLODED PICTORIAL - WITH SMALL HOT GAS LOOP CONDENSATE UNIT

Illustration Below May Not Reflect Every Feature Or Option Of Your Particular Case.
See Previous Page AND Next Page For Alternate Condenser Package Designs.



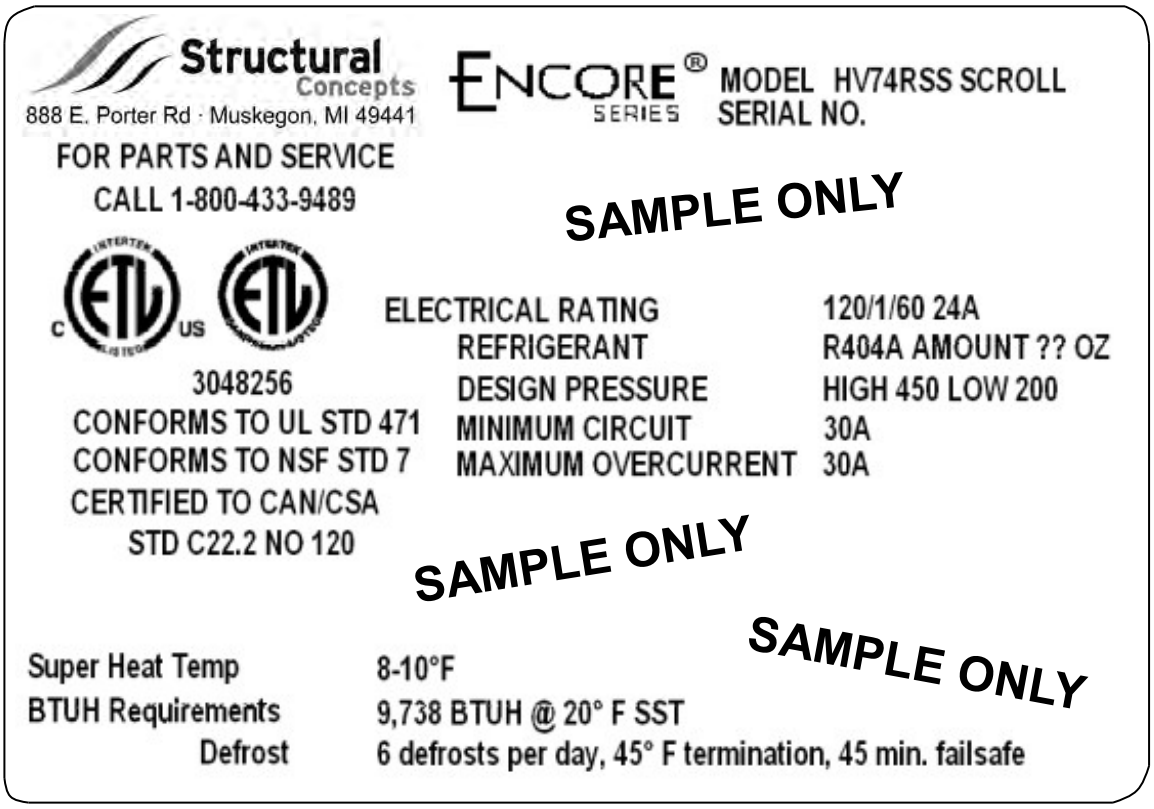
CONDENSER PACKAGE EXPLODED PICTORIAL - WITH LARGE HOT GAS LOOP CONDENSATE UNIT

Model MI8R.6212A Is Illustrated Below. It May Not Reflect Every Feature Or Option Of Your Particular Case. See Previous Pages For Alternate Condenser Package Designs.

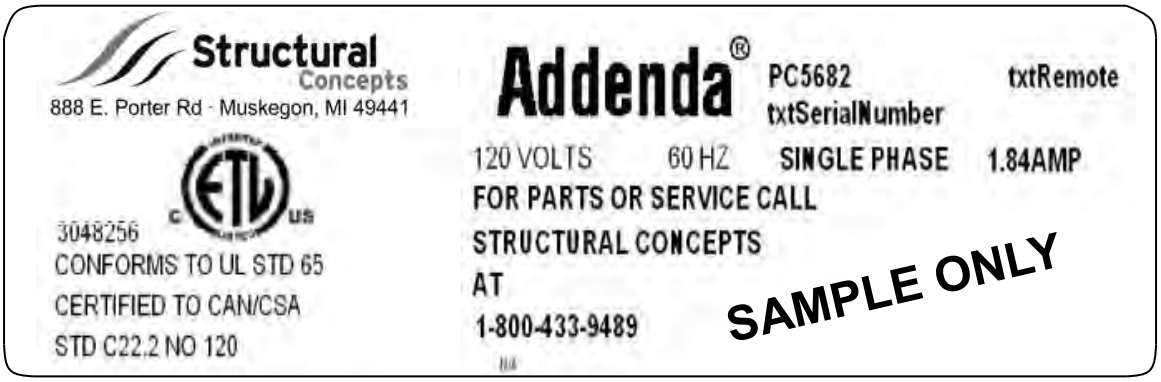


Serial Label Location & Information Listed / Technical Information & Service

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



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



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

CLEANING SCHEDULE ("D" = Daily / "W" = Weekly / "M" = Monthly)

Area/ Component	D	W	M	Task
Clean Acrylic	X			Acrylic MUST BE cleaned according to these instructions to prevent acrylic surfaces from becoming cloudy, dull or scratched. • DO NOT use a dry cloth or paper towel to wipe off dust or debris (this can rub dirt and dust into the acrylic surface). • BEFORE cleaning, use air pressure or feather duster to blow or remove all dust and debris. • DO NOT use household cleaners (such as ammonia, bleach, Windex® or Formula 409®). • DO NOT use powder scouring cleansers (such as Comet® or Ajax®) or other abrasive cleansers on acrylic! • DO use a soft sponge or cloth with a mix of warm (not hot!) water and mild soap solution (such as Palmolive®, Joy®, Dawn®, or Ajax® dishwashing detergents) to wipe down surfaces. • DO use acrylic cleaning product such as Brillianize®, or Novus® #1 (if you want to purchase cleaners specifically formulated to clean acrylic). • DO rinse out the soft sponge or cloth often in the solution while cleaning the acrylic. This keeps the dust and debris from being collected in one area and relocated to another! • DO wipe dry with a microfiber cloth, microfiber terry cloth or chamois cloth to dry acrylic surfaces. • DO NOT wipe dry with a dry cloth or paper towel! • DO use products such as Novus® #2 to remove fine scratches, haziness and abrasions that can form in acrylic. Also, Pittman ALR® may be used to removed oxidation (cloudy or dull acrylic surfaces). • Note: Model MI6R.6620 adjustable acrylic dividers may be removed, submersed in warm, soapy water, rinsed, dried and returned to case.
Clean Case Interior	X			Shelves and decks can be cleaned with a warm soap and water solution.
		X		Remove the decks and 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.
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 the condenser coil. Be careful not to damage the fins on the coil.

PREVENTIVE MAINTENANCE (TO BE PERFORMED BY TRAINED SERVICE PROVIDER)

WARNING! TURN OFF CASE BEFORE PERFORMING PREVENTIVE MAINTENANCE!

Area of Case	FREQ.	INSTRUCTIONS
Case Exterior	**Monthly**	**<u>Condensing Coil</u>:** • Remove panel to access area by lifting up and off (no screw removal is required; simply lift up and off) • Use air pressure or industrial strength vacuum; clean dust and dirt that may collect on the condenser coil. • ***Caution! Airborne dust can contaminating food!*** Use wet rags to cover area where air pressure is blowing. • ***Warning! Coil fins are sharp. Handle with care!*** • Return panel to case.
	Quarterly	**<u>Condensate Package / Overflow Condensate Pan / Compressor Area</u>:** *Caution! Be certain to disconnect power from case before cleaning condensate package!* • Slide/roll compressor package out from under case. • Use a scrub-brush and a de-scaling solution such as CLR® (to prevent corrosion, lime and rust). Follow instructions as to proper dilution, safety precautions and scrubbing method. • Electric heater coil condensate pans can be removed and cleaned. • After thoroughly cleaning pan with scrub-brush and solution, rinse thoroughly with clean water (in spray bottle) and wipe dry with sponge or paper towel. • Use moist cloth to wipe off dust & debris that collects on various parts (fans, sight glass, overflow pan, etc.). • Slide refrigeration assembly back under case. • Replace lower panel via hook/magnet method (no screws required). • Check if wicking material is dirty, worn, tattered or disintegrating. If so, it must be replaced. Contact Structural Concepts for replacement wicking material (toll-free number is listed on the last page of this operating manual).
	Quarterly	**<u>Under Case Cleaning</u>:** Once condenser package is clear of unit, vacuum under case to remove dust and dirt that collects under case.
Case Interior	**Quarterly**	**<u>Tub, Coil, Drain, Fan Blade, Motor, Bracket</u>:** *Disconnect power from the case before cleaning tub, coil, fan, motor and drain area!* • Remove decking, sub-deck and fan shroud. • Use vacuum to clean evaporator coils. • Clean tub, coil and drain with warm water, clean cloth, brush and mild soap solution. • Remove any debris that may clog drain. • Clean fan blade, motor and bracket by wiping down with moist cloth.
	Quarterly	**<u>Honeycomb Air Diffusers</u>:** • Remove honeycomb air diffuser from case. • Vacuum. • Clean with warm water and soap. • Return to case. • See ***HONEYCOMB AIR DIFFUSER - MODEL MI6R.6620, MI6R.7065, ET AL.*** in manual for removal/replacement illustrations.

TROUBLESHOOTING (GENERAL)

CONDITION	TROUBLESHOOTING
Water Is On The Floor	Check that the drain trap is free of debris.
	Check that the drain hose is correctly positioned over evaporator pan (or floor drain, for remote units).
	Check store conditions. To prevent condensation in Type 1 environments, maximum conditions are to be 55% humidity / 75 °F. For Type 2 units, maximum conditions are to be 55% humidity / 80° F. See serial label (at case rear near main power switch) for your case type.
	Check evaporator pan float for proper operation.
	Check that evaporator pan is plugged in.
	WICKING MATERIAL MAY BE DIRTY, WORN, TATTERED OR DISINTEGRATING. • If so, wicking material must be replaced. • Contact Structural Concepts for replacement wicking material (toll-free number is listed on the last page of this operating manual).
	EVAPORATOR PAN AND/OR OVERFLOW EVAPORATOR PAN MAY BE MALFUNCTIONING. If so, water will overflow pan and seep onto flooring causing damage! Until evaporator pan is functioning (or is replaced), the following procedures are recommended: • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drain into. Swap out regularly until case has completely drained.
	DISRUPTION OF POWER CAN CAUSE WATER TO OVERFLOW PAN AND SEEP ONTO FLOORING CAUSING DAMAGE! Check that power to case is constant. Until power is restored, following these procedures: • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drain into. Swap out regularly until evaporation of case is complete (or until power is restored). • When power to case is restored, evaporator pan should function properly and water will no longer overflow onto flooring.
Fan Emits Excessive Noise	Check that the case is aligned, level and plumb.
	Check evaporator fan for cleanliness.
	Unplug fan motor; check motor shaft for excessive bearing wear.
	Check that fan motor is securely mounted in brackets.
	Verify that fan blade is securely mounted to fan motor.
	Check that nothing is preventing blade rotation.
	Check that the fan shroud is properly secured.
Fans Are Not Working	Check that the MAIN power switch (if present) is on.
	Check that fans are plugged in to fan shroud.
	Check for foreign material obstructing fan performance.
	Check that fan blade freely rotates within fan shroud.

CONDITION	TROUBLESHOOTING
Fan Is Not Working, Continued	Check that power is going to fan
	Check that fan wiring is connected on terminal blocks.
System Is Not Operating	Check that the utility power is on.
	Check the circuit breaker box for tripped circuits.
Case Is Not Holding Temperature	If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Product should be pre-chilled before placing in display case.
	Check Temperature Controller section in this manual.
	Check that the case is not in the sun or near a heat or air conditioning vent.
	If case is located near outside doors, temperature fluctuation can hinder unit's ability to maintain temperature.
	Check air grilles for obstructions. Maintain airflow clearance of 6" (minimum) to 12" (recommended) at case front and rear.
	Check sight glass for flashing and/or low charge.
	Check set point Temperature; it may be adjusted too high.
Control Display Is Flashing	Check Temperature Controller section in this manual.
Condensing Unit Is Not Operating (Self-Contained Units Only)	Check Temperature Controller section in this manual.
	Check that the power is turned on.
	Review Temperature Controller's Settings for accuracy.

TROUBLESHOOTING - CONDENSING SYSTEM (BY TRAINED SERVICE PROVIDERS ONLY)

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

TROUBLESHOOTING - EVAPORATOR SYSTEM (BY TRAINED SERVICE PROVIDERS ONLY)

CONDITION	TROUBLESHOOTING
Low Suction Pressure	Check if sight glass is flashing or showing low charge.
	Check that expansion valve (TXV) isn't restricted. Check element charge.
	Check that liquid line or filter isn't restricted. Check that refrigeration lines and/or hoses are not kinked on either high or low sides.
	Check that evaporator fan motors are working.
	Check that superheat is between 6 °F to 8 °F.
	Check that there is no air recirculation around evaporator coil.
	Check that evaporator coil is not iced up.
High Suction Pressure	Check for refrigerant overcharge.
	Check that compressor reed valves aren't bad. Look for high suction/low head pressure. Perform pump down.
	Check that the "cooling load" isn't high. Product must be pre-chilled before placing in refrigerated section of case.
	Check that case is at least 15-feet from exterior doors, overhead HVAC vents or any air curtain disruption.
	Check that unit is not exposed to direct sunlight via windows or any other heat source (ovens, fryers, etc.).
	Check that superheat adjustment isn't low.
	Check TXV bulb installation a. Poor thermal contact. b. Warm location.

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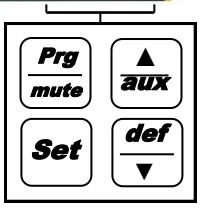
Programming The Instrument



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.

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

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User Interface - Display

ICON	FUNCTION	DESCRIPTION	Normal operation			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	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	
dI	Interval between defrosts	hours	F	0	250	
dt1	End defrost temperature, evaporator	°C/°F	F	-50	200	
dP1	Maximum defrost duration, evaporator	min	F	1	250	
d6	Display on hold during defrost	-	C	0	2	
dd	Dripping time after defrost	min	F	0	15	
d/1	Display of defrost probe 1	°C/°F	F	-	-	

* Unit Of Measure

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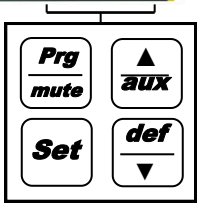
Changing "Red Meat" and "Produce" Setpoints Using The Thermostat Controller



To Increase / Decrease ONLY the Value of the "Red Meat" Temperature Setting:

Set *1. Press and hold the "SET" key for 1 full second (until current setpoint value begins flashing).*

aux def *2. Use arrow keys ▲ ▼ on temperature controller to increase (or decrease) the "Red Meat" temperature setting.*

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

Prg mute Set *4. Press & hold "Prg" & "SET" keys together for 5 seconds; display will flash "0", representing the password prompt.*

Set *5. Quickly press and release the "SET" key again.*

aux def *6. Press ▲ or ▼ to reach the "r4" parameter.*

Set *7. Press "SET" to access the "r4" parameter.*

def *8. If you RAISE the "Red Meat" setpoint, you must LOWER ▼the "r4" parameter the same number of degrees in which you RAISED the setpoint.*

<u>Example</u>: If you RAISE the "Red Meat" setpoint from 11 °F to 12 °F, you must use the ▼ button to LOWER the "r4" parameter by 1 °F.

aux *9. If you LOWER the "Red Meat" setpoint, you must RAISE ▲ the "r4" parameter the same number of degrees in which you LOWERED the setpoint.*

<u>Example</u>: If you LOWER the "Red Meat" setpoint from 15 °F to 14 °F, you must use the ▲ button to RAISE the "r4" parameter by 1 °F.

Set *10. Press the "SET" key to temporarily save the new value and return to the parameter display.*

Prg mute *11. Press & hold "Prg" key for at least 5 seconds to save your changes. This action will mute the audible alarm (buzzer) & deactivate the alarm relay.*

To Increase / Decrease BOTH the "Red Meat" and "Produce" Temperature Settings:

Set *1. Press and hold the "SET" key for 1 full second (until setpoint value begins flashing).*

aux def *2. Use arrow keys to increase (or decrease) both the "Red Meat" and "Produce" temperatures at once.*

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

To Increase / Decrease ONLY the Value of the "Produce" Temperature Setting:

Prg mute Set *1. Press & hold "Prg" and "SET" keys together for 5 seconds; display will flash "0", representing the password prompt.*

2. Quickly press and release the "SET" key. Set

aux def *3. Press ▲ or ▼ to reach "r4" parameter.*

4. Press "SET" to access the "r4" parameter. Set

aux def *5. Increase or decrease the temperature from the "Produce" setting, use the ▲ or ▼ button respectively.*

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

7. Press & hold "Prg" key for at least 5 seconds to save changes and mute the audible alarm (buzzer) and deactivate the alarm relay. Prg mute

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 a button is not pressed within 60 seconds. Should this "timeout" occur, normal operational settings (prior to modifications being made) will resume.
3. If instrument is switched off before pressing the "Prg" key, all modifications to parameters will be lost.

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

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

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

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

LIMITED WARRANTY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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