

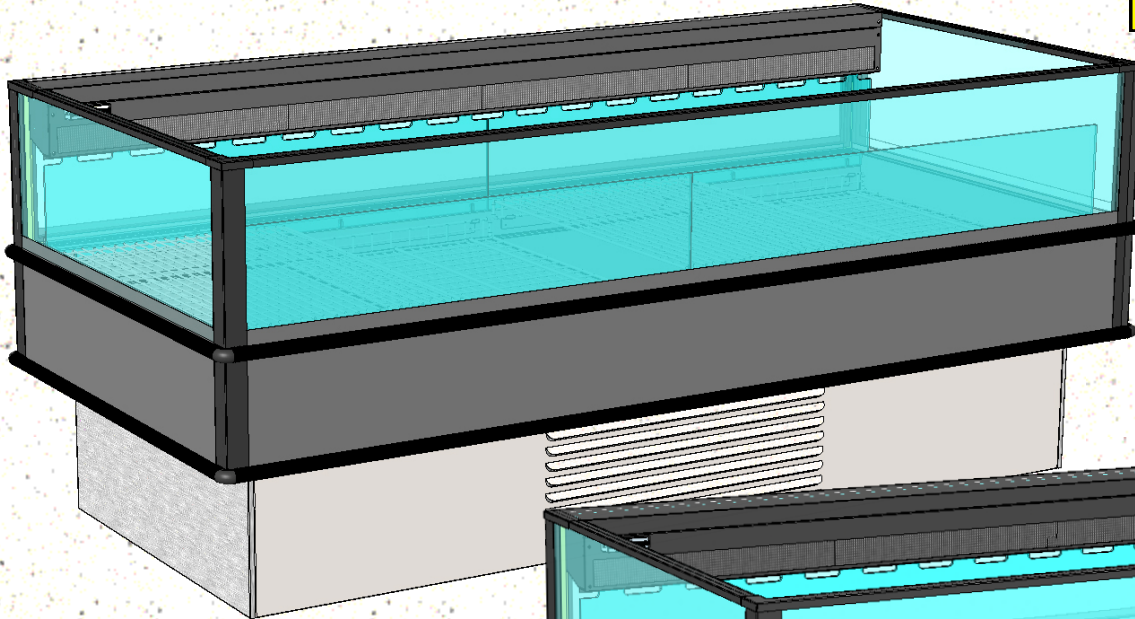


# INSTALLATION & OPERATING MANUAL

SELF-SERVICE MULTI-PURPOSE REFRIGERATED ISLAND DISPLAY CASES

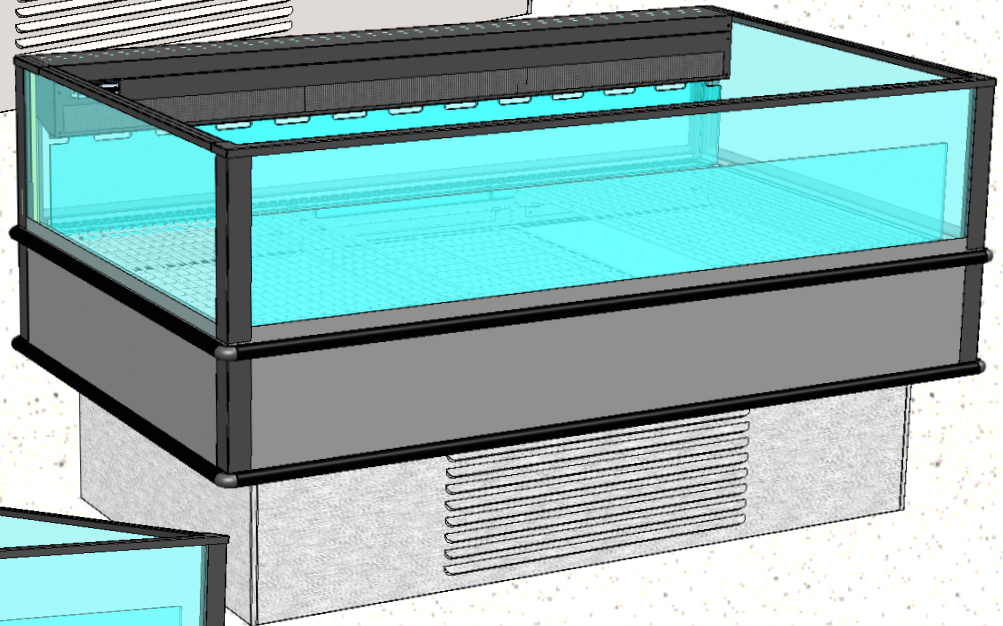
**Important!**  
See Page 7 For 3-Way  
Temperature Switch  
Instructions.

See Page 13 For  
Product And Signage  
Placement Guidelines.

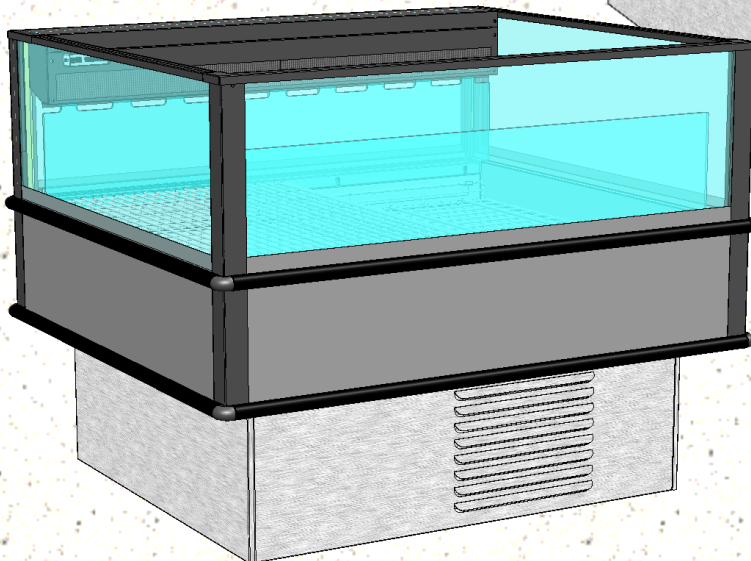


MI48RF

MI46RF



MI44RF



**P/N 21-34184**



888 E. Porter Road · Muskegon, MI 49441  
Phone: 231.798.8888 Fax: 231.798.4960 [www.structuralconcepts.com](http://www.structuralconcepts.com)

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### **This Operating Manual Is Applicable To The Following Models\***

**MI44RF, MI46RF, MI48RF, MI44RF.7448, MI46RF.7448 and MI48RF.7448**

**\*This Operating Manual May Also Be Applicable To Models Not Listed Herein.**

**OVERVIEW**

- These Structural Concepts cases are designed to merchandise product at 3 separate temperature settings:
  1. Refrigerated packaged **PRODUCE/DELI** products at 40 °F (4.5 °C) or less product temperatures.
  2. Refrigerated packaged **RAW MEAT** products at 38 °F (3.3 °C) or less product temperatures.
  3. **FROZEN** packaged products at 0 °F (-18 °C) or less product temperatures.
- These cases should be installed and operated according to the following parameters to insure proper performance.
- See page 7 in operating manual for 3-way switch illustration.

**TYPE I 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.

**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**

**ELECTRICAL  
HAZARD**

**WARNING**

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

**WARNING**

**KEEP  
HANDS  
CLEAR**

**WARNING**

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

**WARNING**

**HOT  
SURFACE**

**WARNING**

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



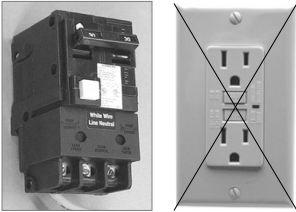
**WARNING: This product can expose you to chemicals, including Urethane (Ethyl Carbamate), which are known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [P65Warnings.ca.gov](http://P65Warnings.ca.gov).**

## 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

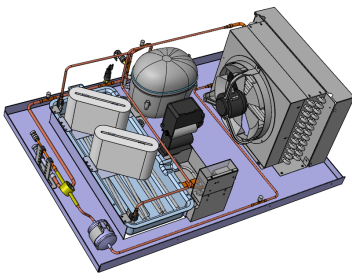
- Each case has its own wiring diagram folded and in its own packet.
- Wiring diagram placement may vary; it may be placed near ballast box, field wiring box, raceway cover, or other related location.



**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.



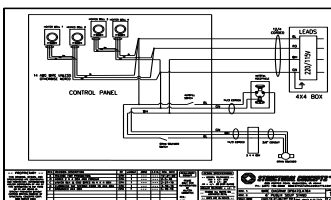
**CAUTION! CHECK CONDENSATE PAN POSITION & PLUG**  
Water on flooring causes damage! Before powering unit, check that:

- 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.



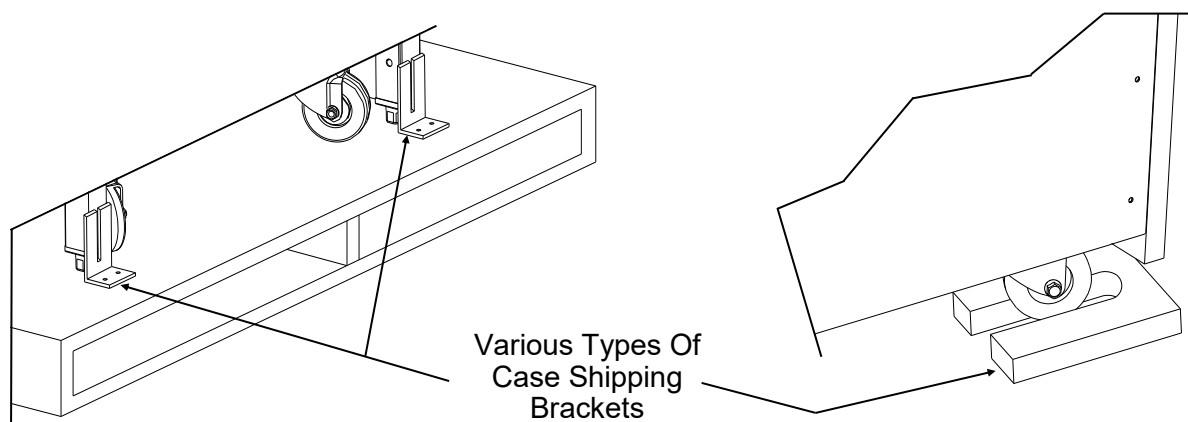
**WIRING DIAGRAM FORMAT & LOCATION**

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

## 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.

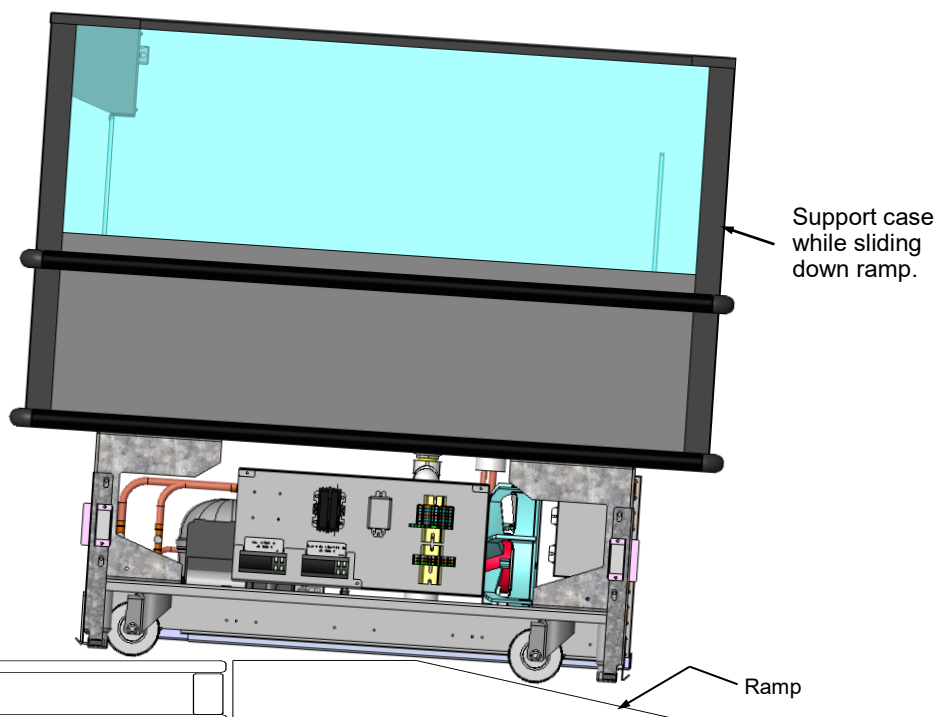


### **2. Remove Case (With Casters) From Skid**

- 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.

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.





## CASTER LOCKING AND EXTERIOR PANEL ATTACHMENT (AFTER REMOVAL FROM SKID)

### 3. Caster Locking / Unlocking Operation

- To lock casters (from the unlocked position), press down on each RAISED caster lever (as shown in illustration below). Casters are now locked.
- To unlock casters (from the locked position), press down on the RAISED caster lever (as shown in illustration below). Casters are now unlocked.
- See sample caster design at right.

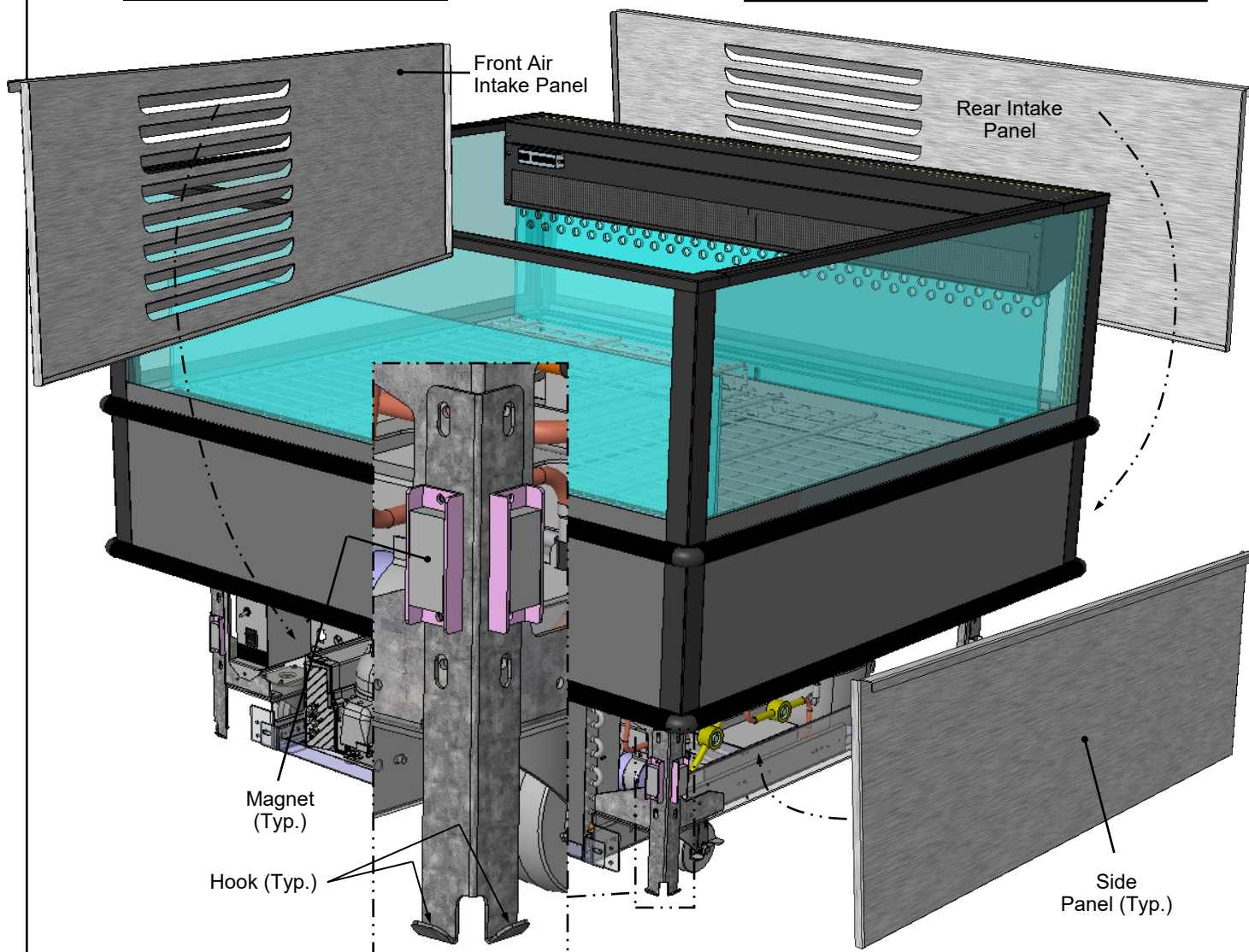
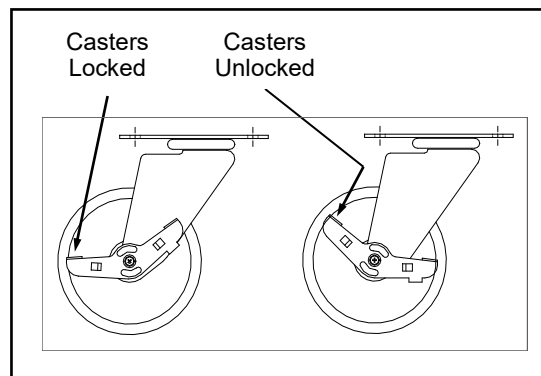
### 4. Exterior Panel Attachments

- Attach to case after case has been removed and properly positioned/located in store.

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.

- All exterior panels may be removed without tools.
- Lift exterior panel up and off tabs.
- Separate lower panel from magnets
- See illustrations below.

--- Sample Caster Design ---



## CASE START-UP VIA MAIN POWER SWITCH / TEMPERATURE CONTROL 3-WAY SWITCH

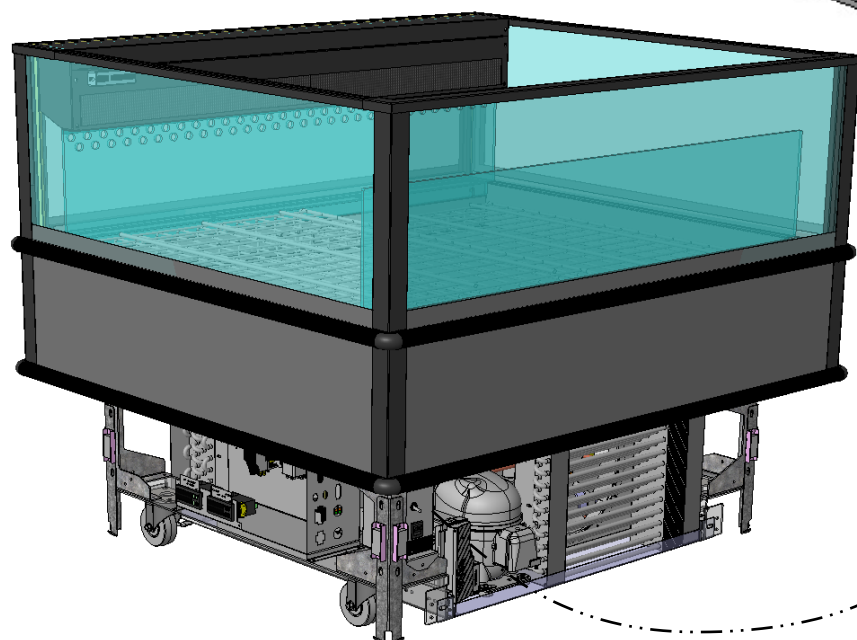
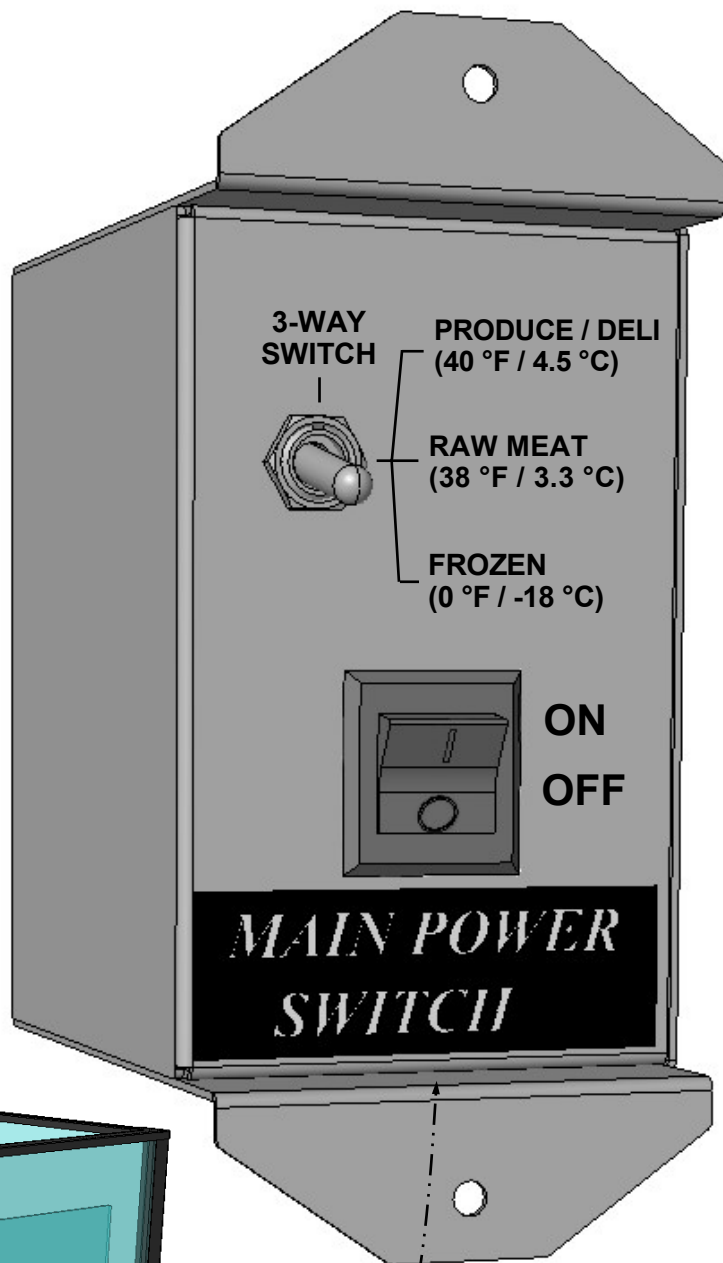
### 1. Display Case Start-Up

- Remove front panel on control side of unit (see illustration below).
- Turn on main power switch.
- Main power switch will start evaporator coil fans, and the compressor motor.

### 2. Temperature Control 3-Way Switch

- Remove front panel on control side of unit to access temperature control switch.
- The 3-way switch allows unit to merchandise product at three (3) separate temperature settings:
  - A. Refrigerated packaged **PRODUCE / DELI** products at 40 °F (4.5 °C) or less product temperatures.
  - B. Refrigerated packaged **RAW MEAT** products at 38 °F (3.3 °C) or less product temperatures.
  - C. **FROZEN** packaged products at 0 °F (-18 °C) or less product temperatures.
- See enlarged view of switchbox at right.

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.



Model MI44RF.7448 (Shown At Left) May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.

## HONEYCOMB AIR DIFFUSER

### Honeycomb Air Diffuser

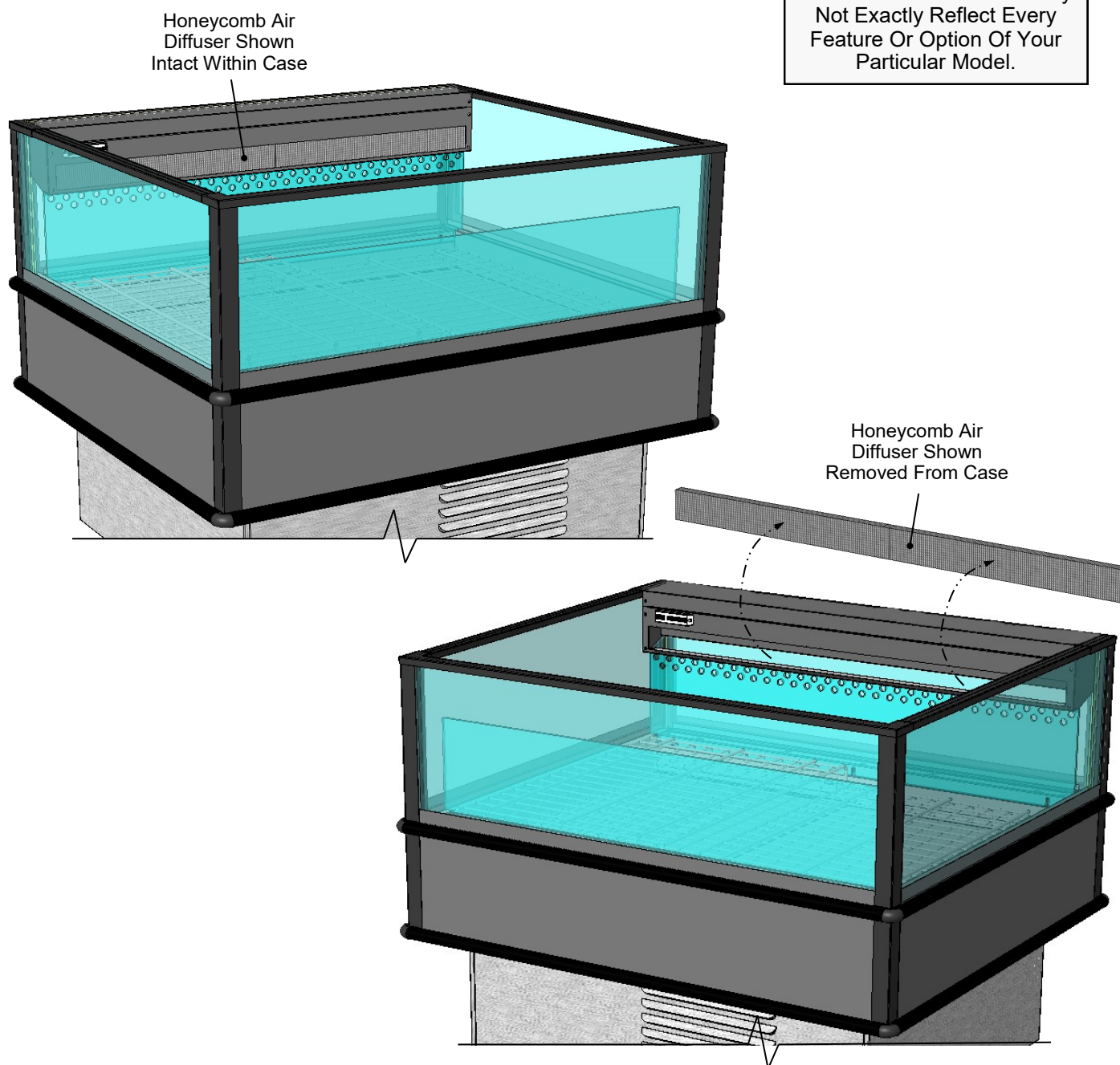
- Honeycomb air diffuser is on all models.
- Honeycomb may be removed for cleaning and/or maintenance.

### 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: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.





## EVAPORATOR SECTION ACCESS: RACK WIRE REMOVAL

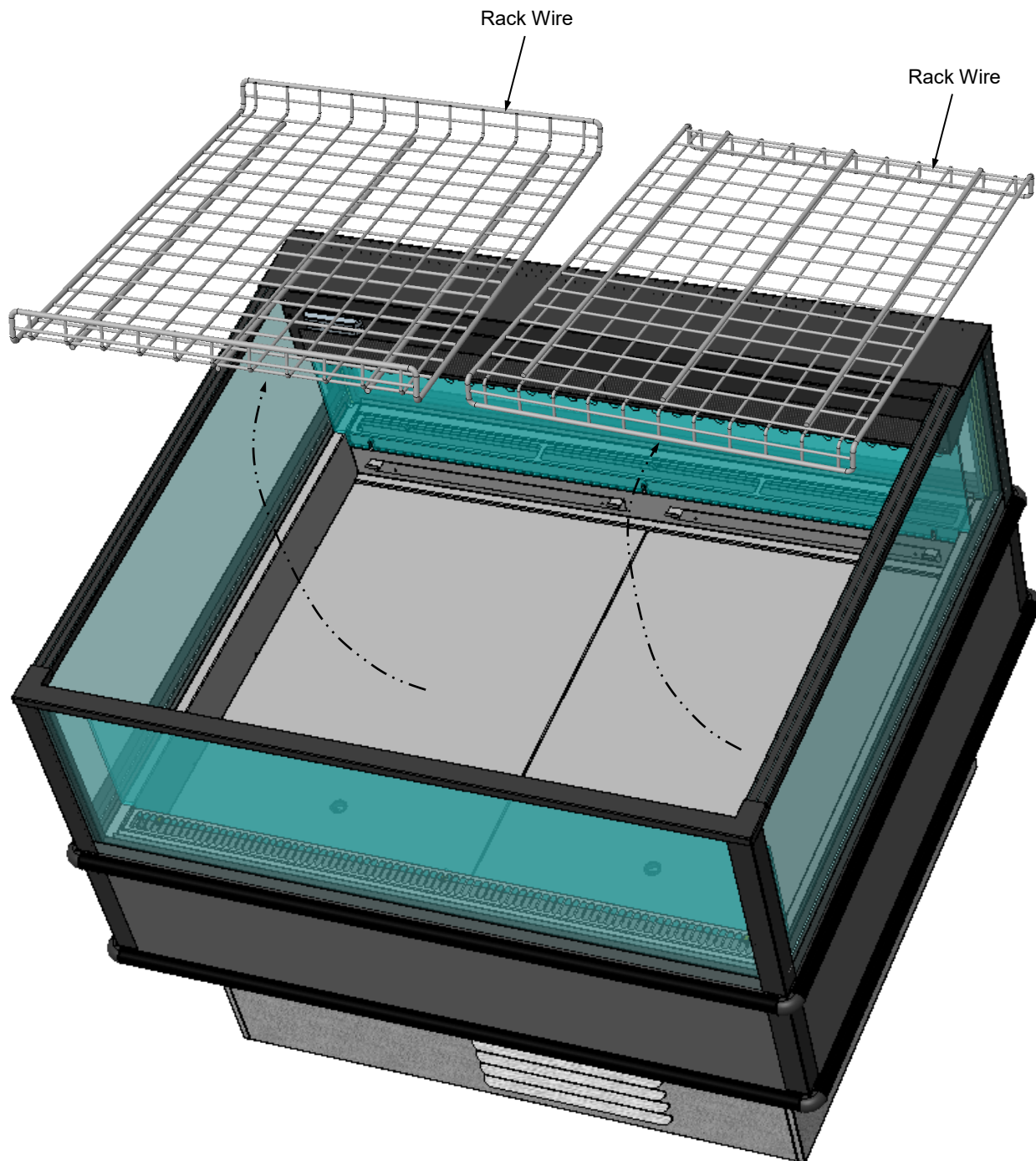
**Caution! Turn Off Power To Unit Before Removing Deck Pans. Rotating Fans Can Cause Severe Injury!**

### Evaporator Section Access

#### 1. Rack Wire Removal

- Rack wire allows product to be raised from deck surface.
- To remove, simply lift rack wire up and out from case. Use caution to avoid scraping glass or acrylic surfaces within merchandiser.
- Place in secure location away from foot traffic.
- See below illustration.

Note: Illustration Shown 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

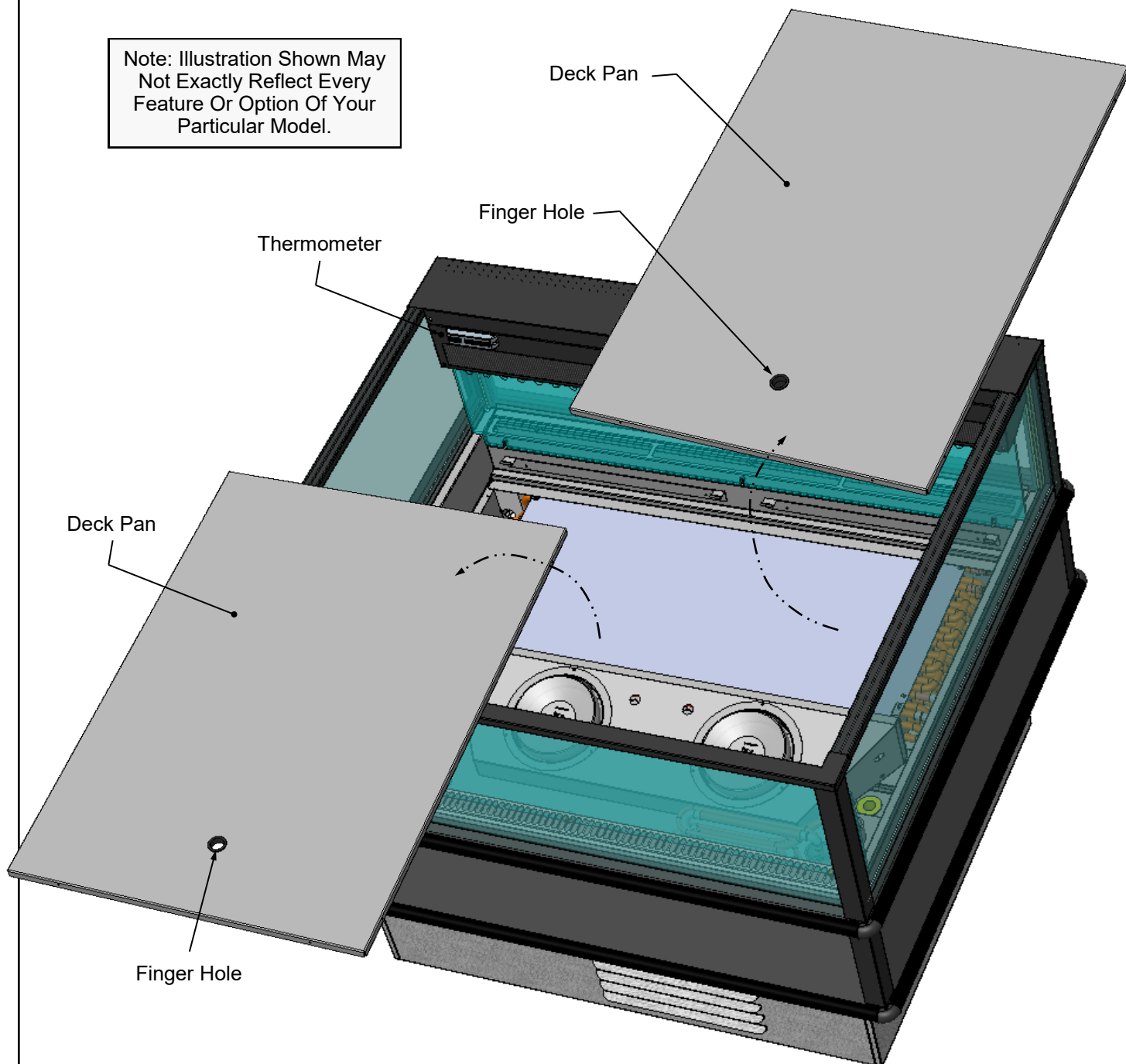
#### 2. Deck Pan Removal

- Deck pans consist of the pan and finger hole inserts.
- To remove, use finger hole to grasp and lift pans UP AND OUT of case.
- See below illustration.

#### 3. 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.

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.



## EVAPORATOR SECTION ACCESS, CONTINUED: EVAPORATOR AREA LAYOUT

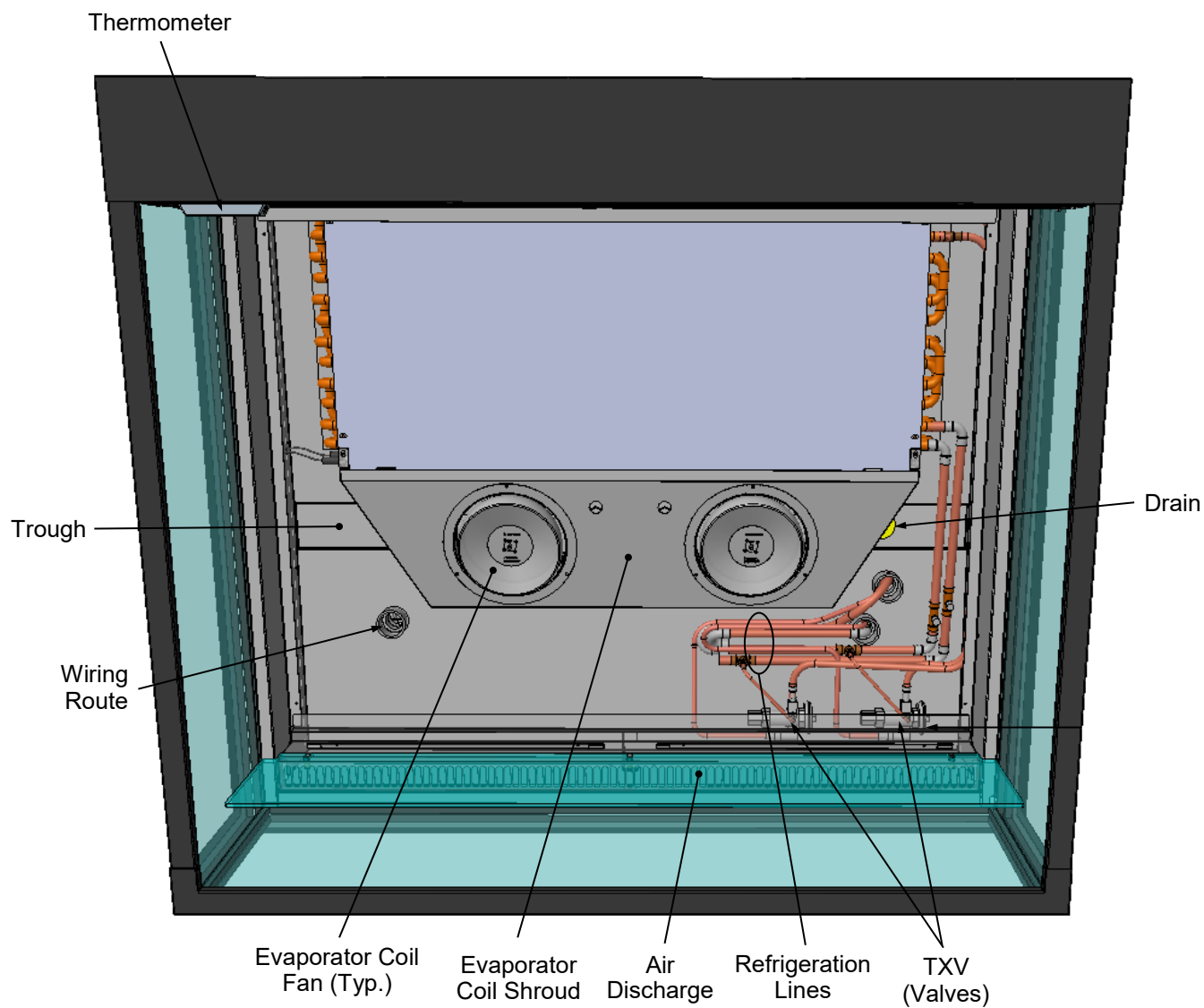
**Caution! Turn Off Power To Unit Before Removing Deck Pans! Rotating Fans Can Cause Severe Injury!**

### Evaporator Section Access, Cont'd

#### 4. Evaporator Section Layout

- After lower deck pans have been removed, you may access TXV, drain, refrigeration lines, trough & 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.

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.



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

### **1. Load Limit (Load Line) Guidelines**

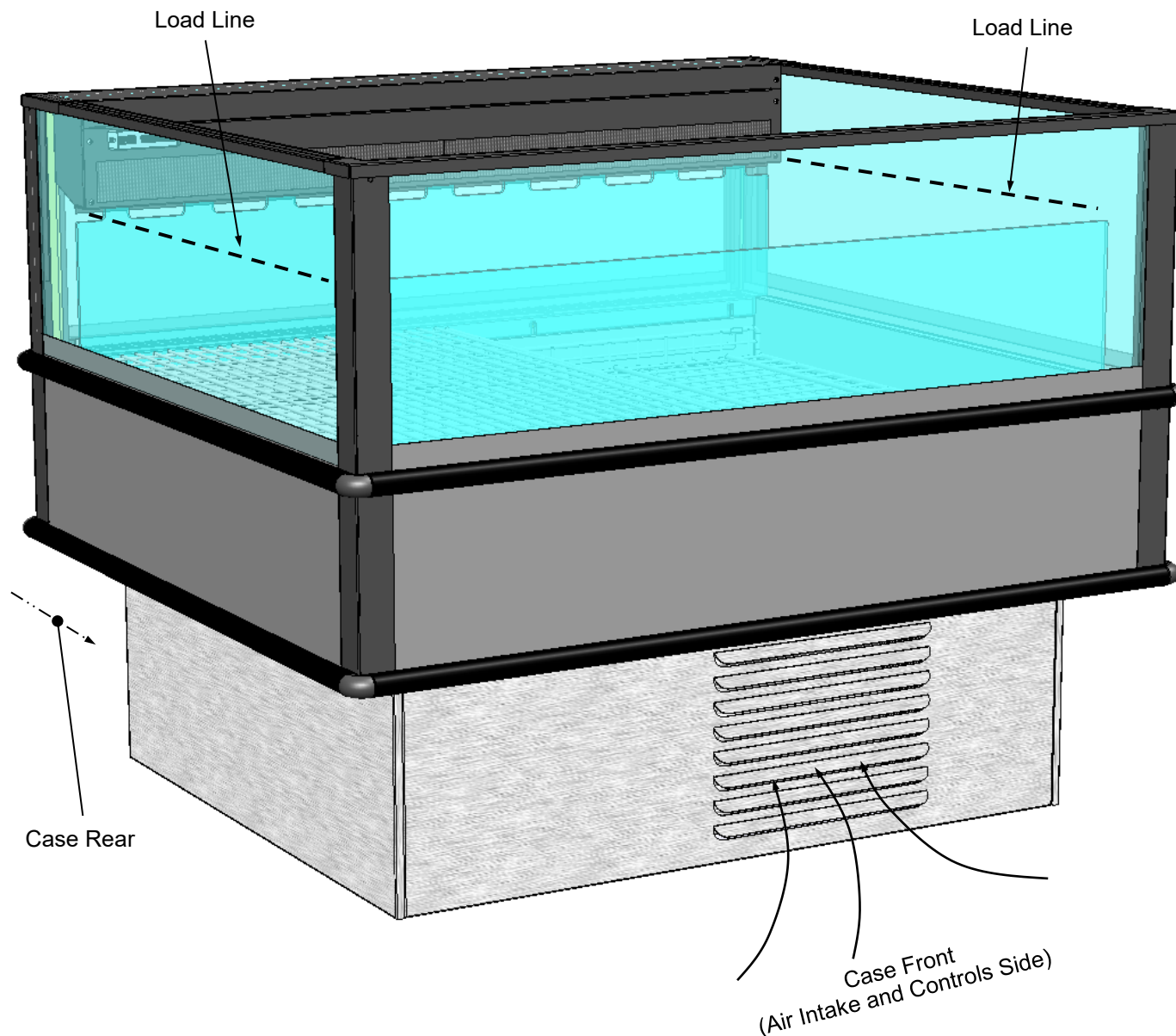
Caution! Stacking food beyond the load line will prevent food from being at proper temperature.

- 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 area.
- See illustration below for load line locations.

### **2. Case Front & Rear Designations**

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

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.

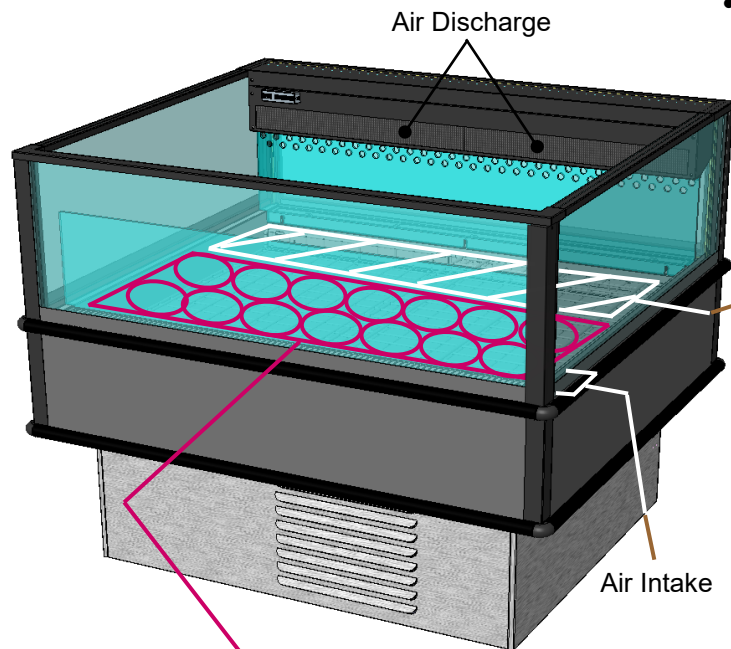




## PRODUCT AND SIGNAGE PLACEMENT GUIDELINES

### 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 path must not be blocked by signage or product will not retain proper temperatures.
- DO NOT block airflow with signage!
- See illustration below-right.

Place High Protein Products Such As Poultry, Sausage and Other Meats Here (Closer To Air Discharge Side of Merchandiser)

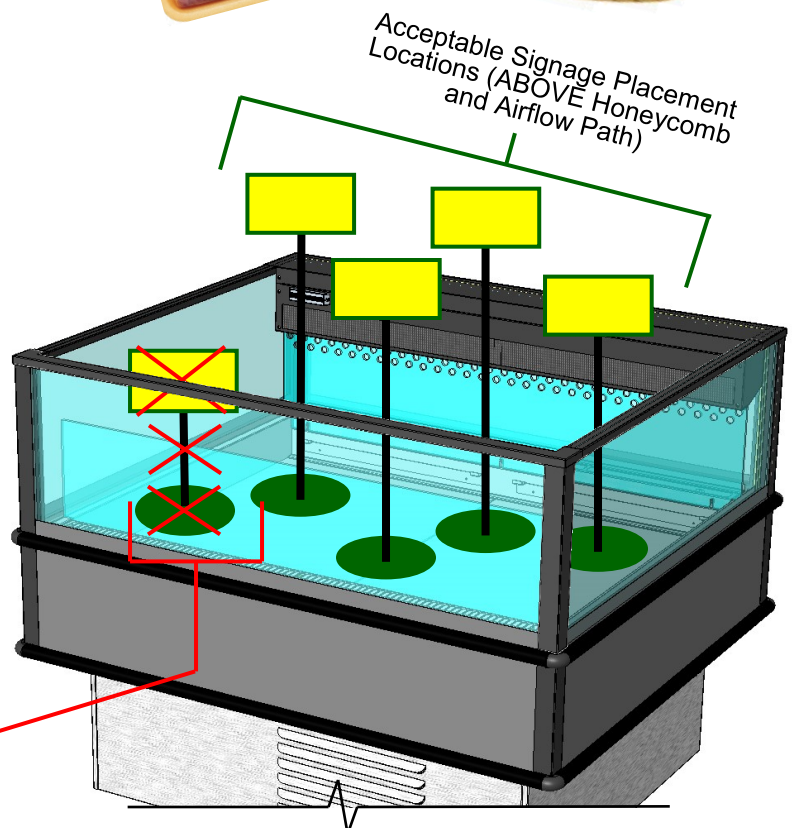


Place Low Protein Products Such As Produce, Sauces and Pastas Here (Closer To Air Return Side Of Merchandiser)



Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.

Unacceptable Signage Placement Location (Blocking Airflow)



## CONDENSER PACKAGE SLIDE-OUT

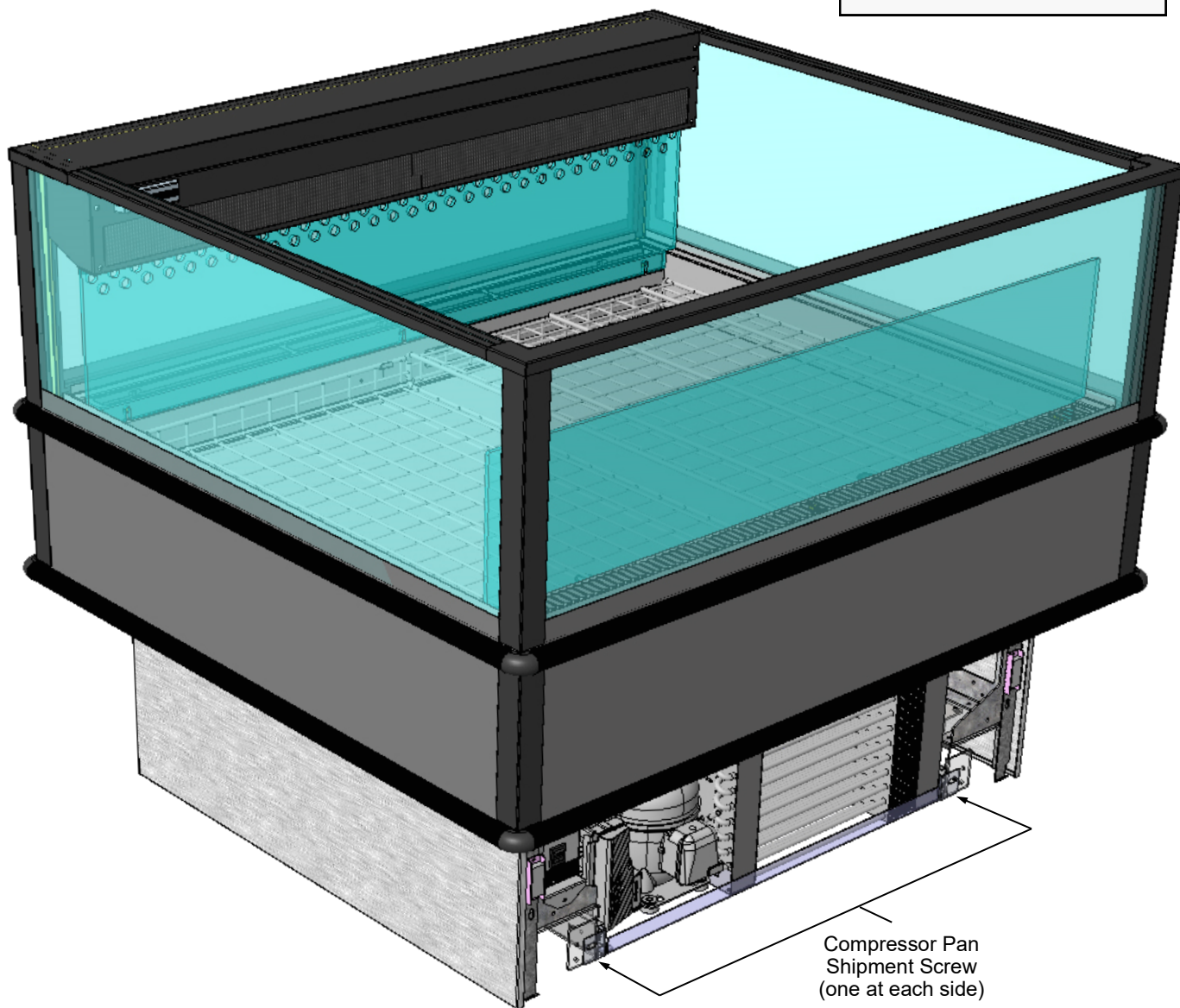
### Condenser Package Slide-Out

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

#### **Pull Out Refrigeration Package**

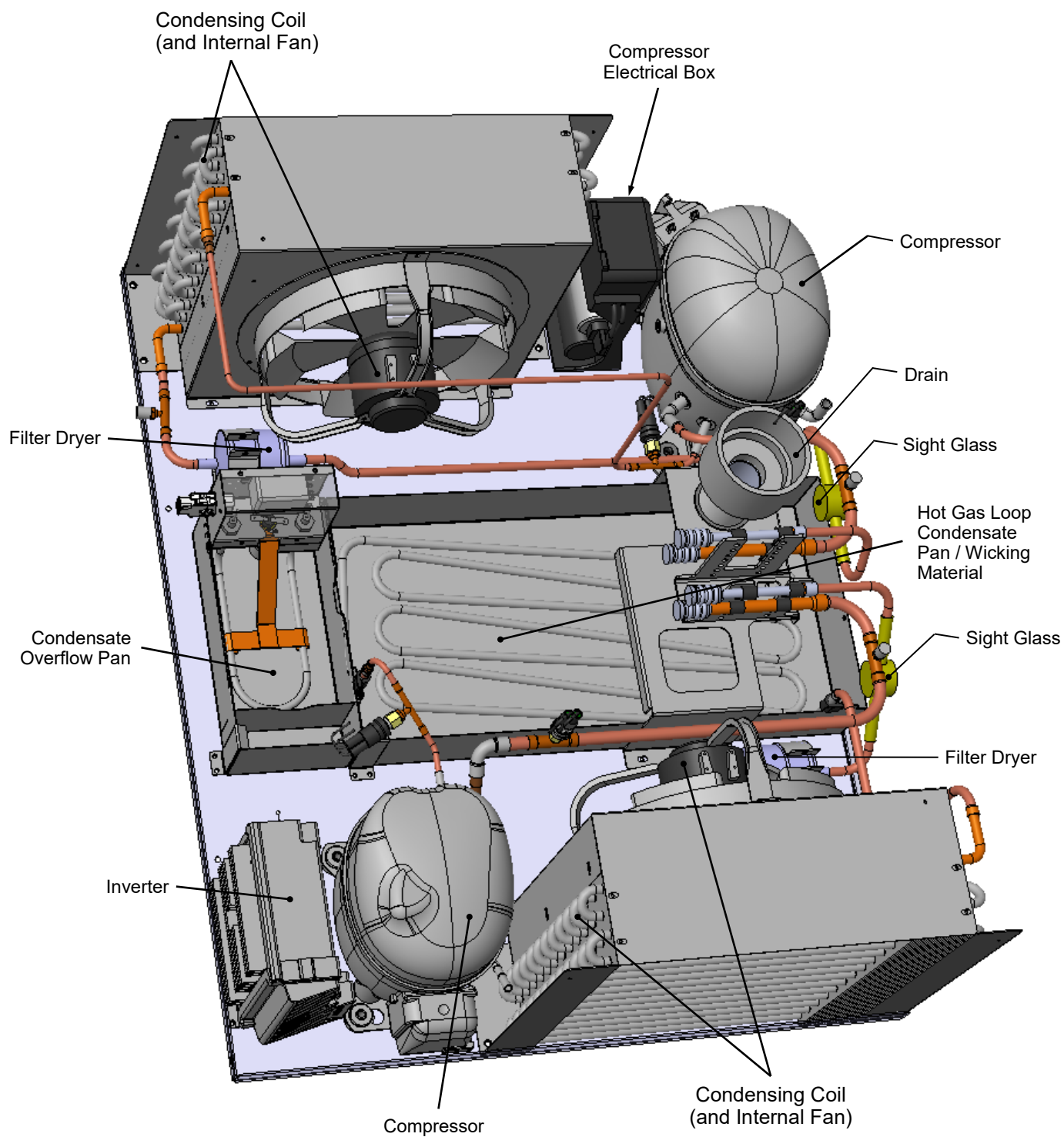
- **Note:** At initial slide-out, it may be necessary to remove compressor pan shipment screws (see illustration below for location).
- Plastic glides are mounted at base to assist in sliding the condenser out for access.
- Slide condenser unit out 12 to 18 inches to access high pressure service connection.
- See the following two (2) pages in this manual for condenser package illustrations.

Note: Illustration Shown May Not Exactly Reflect Every Feature Or Option Of Your Particular Model.



## CONDENSER PACKAGE EXPLODED PICTORIAL - MODEL MI44RF.7448

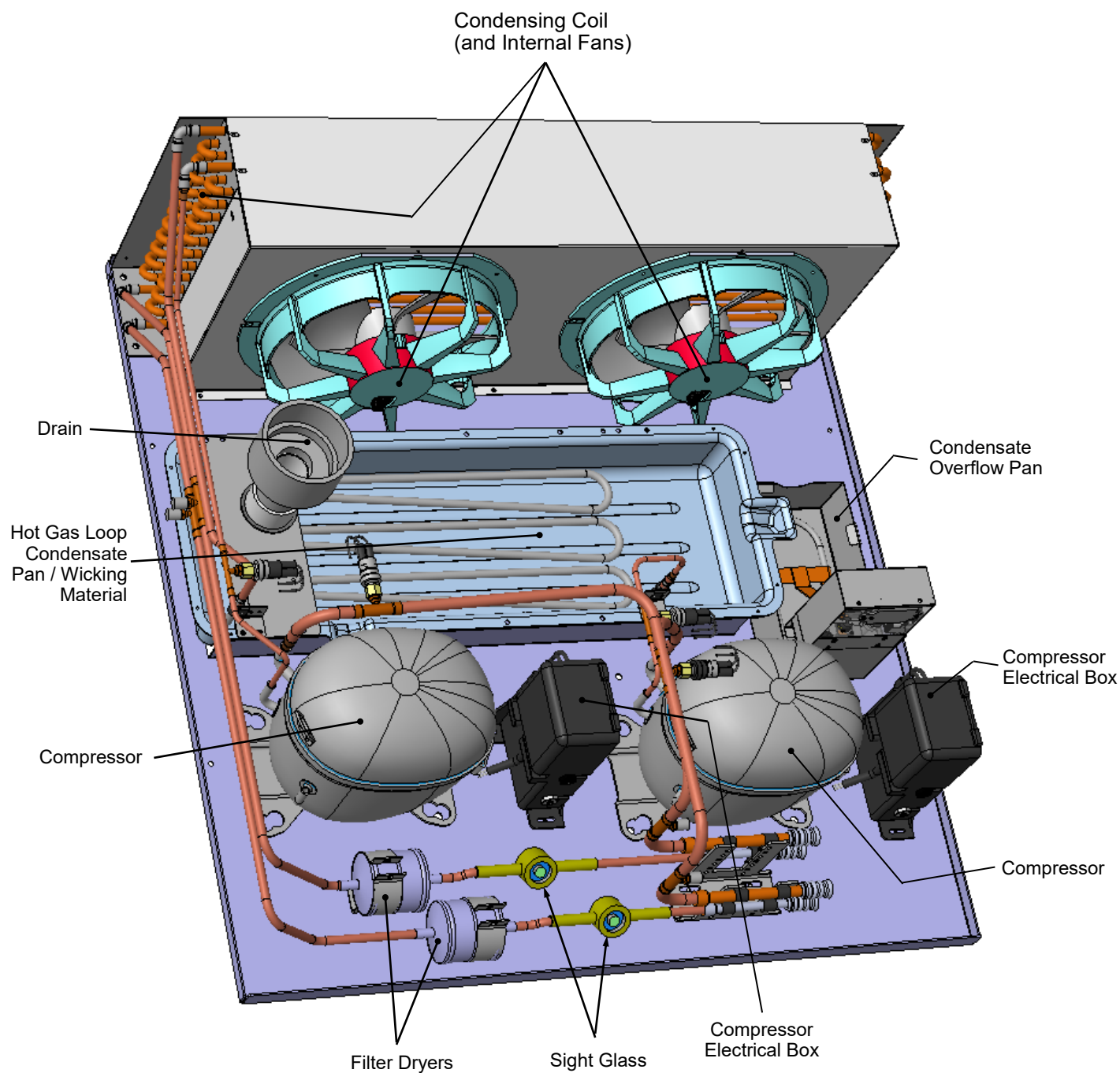
Illustration Below May Not Reflect Every Feature Or Option Of Your Particular Case. See Next Page For Alternate Condenser Package Designs.





## CONDENSER PACKAGE EXPLODED PICTORIAL - MODEL MI46RF.7448 AND MI48RF.7448


Illustration Below May Not Reflect Every Feature Or Option Of Your Particular Case. See Previous Page 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.



**Structural Concepts**  
888 E. Porter Rd · Muskegon, MI 49441

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

3048256  
CONFORMS TO UL STD 471  
CONFORMS TO NSF STD 7  
CERTIFIED TO CAN/CSA  
STD C22.2 NO 120

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

**SAMPLE ONLY**


ELECTRICAL RATING	120/1/60 24A
REFRIGERANT	R404A AMOUNT ?? OZ
DESIGN PRESSURE	HIGH 450 LOW 200
MINIMUM CIRCUIT	30A
MAXIMUM OVERCURRENT	30A

**SAMPLE ONLY**


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

**SAMPLE ONLY**

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



**Structural Concepts**  
888 E. Porter Rd · Muskegon, MI 49441



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

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

120 VOLTS 60 HZ SINGLE PHASE 1.84AMP

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

**SAMPLE ONLY**

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

**CLEANING SCHEDULE (“D” = Daily / “W” = Weekly)**

Area/ Component	D	W	Task
Clean Acrylic	X		<p>Acrylic MUST BE cleaned according to these instructions to prevent acrylic surfaces from becoming cloudy, dull or scratched.</p> <ul style="list-style-type: none"> <li>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).</li> <li>BEFORE cleaning, use air pressure or feather duster to blow or remove all dust and debris.</li> <li>DO NOT use household cleaners (such as ammonia, bleach, Windex® or Formula 409®).</li> <li>DO NOT use powder scouring cleansers (such as Comet® or Ajax®) or other abrasive cleansers on acrylic!</li> <li>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.</li> <li>DO use acrylic cleaning product such as Brilliance®, or Novus® #1 (if you want to purchase cleaners specifically formulated to clean acrylic).</li> <li>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!</li> <li>DO wipe dry with a microfiber cloth, microfiber terry cloth or chamois cloth to dry acrylic surfaces.</li> <li>DO NOT wipe dry with a dry cloth or paper towel!</li> <li>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 remove oxidation (cloudy or dull acrylic surfaces).</li> <li><u>Note:</u> Model MI6R.6620 adjustable acrylic dividers may be removed, submersed in warm, soapy water, rinsed, dried and returned to case.</li> </ul>
Clean Case Interior	X		Decks and rack wires can be wiped down with warm soap and water solution and sponge or clean cloth.
		X	Remove the decks and rack wires 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.

## TROUBLESHOOTING (GENERAL)

CONDITION	TROUBLESHOOTING
<b>Water Is On The Floor</b>	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. 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.
	<b>EVAPORATOR PAN MAY BE MALFUNCTIONING.</b> 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: <ul style="list-style-type: none"> <li>• Use wet-dry vacuum (or mop &amp; bucket) to remove standing water.</li> <li>• Use 'catch pans' for water to drain into. Swap out regularly until case has completely drained.</li> </ul>
	<b>DISRUPTION OF POWER CAN CAUSE WATER TO OVERFLOW PAN AND SEEP ONTO FLOORING CAUSING DAMAGE!</b> Check that power to case is constant. Until power is restored, following these procedures: <ul style="list-style-type: none"> <li>• Use wet-dry vacuum (or mop &amp; bucket) to remove standing water.</li> <li>• Use 'catch pans' for water to drain into. Swap out regularly until evaporation of case is complete (or until power is restored).</li> <li>• When power to case is restored, evaporator pan should function properly and water will no longer overflow onto flooring.</li> </ul>
<b>Fan Emits Excessive Noise</b>	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.
<b>Fans Are Not Working</b>	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.

## TROUBLESHOOTING, GENERAL - CONTINUED

CONDITION	TROUBLESHOOTING
<b>Fans Are Not Working, Continued</b>	Check that power is going to fan
	Check that fan wiring is connected on terminal blocks.
<b>System Is Not Operating</b>	Check that the utility power is on.
	Check the circuit breaker box for tripped circuits.
<b>Case Is Not Holding Temperature</b>	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.
<b>Control Display Is Flashing</b>	Check Temperature Controller section in this manual.
<b>Condensing Unit Is Not Operating (Self-Contained Units Only)</b>	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
<b>Head Pressure Too High</b>	Check that the condensing coil is not dirty or covered.
	Check that condensing fans are working.
	Check that refrigerant is not overcharged.
	Perform sub-cooling check and verify that no contaminants are in system.
	Check that liquid line filter dryer is not plugged.
	Check that close-offs are intact (around condensing coil) and that air is not recirculating.
	Check that store ambient temperature isn't above maximum allowed. See <b>OVERVIEW / TYPE / COMPLIANCE / WARNINGS / PRECAUTIONS / WIRING / PLUGS</b> section in this manual.
<b>Head Pressure Too Low</b>	Check if sight glass is flashing or showing low charge.
	Check that suction pressure isn't too low.
	Check that compressor reed valves aren't bad. Look for high suction/low head pressure. Perform pump-down.

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

CONDITION	TROUBLESHOOTING
<b>Low Suction Pressure</b>	Check if sight glass is flashing or showing low charge.
	Check that expansion valve (TXV) isn't restricted. Check element charge.
	Check that liquid line or filter isn't restricted. Check that refrigeration lines and/or hoses are not kinked on either high or low sides.
	Check that evaporator fan motors are working.
	Check that superheat is between 6 °F to 8 °F.
	Check that there is no air recirculation around evaporator coil.
	Check that evaporator coil is not iced up.
<b>High Suction Pressure</b>	Check for refrigerant overcharge.
	Check that compressor reed valves aren't bad. Look for high suction/low head pressure. Perform pump down.
	Check that the "cooling load" isn't high. Product must be pre-chilled before placing in refrigerated section of case.
	Check that case is at least <u>15-feet</u> from exterior doors, overhead HVAC vents or any air curtain disruption.
	Check that unit is not exposed to direct sunlight via windows or any other heat source (ovens, fryers, etc.).
	Check that superheat adjustment isn't low.
	Check TXV bulb installation <ul style="list-style-type: none"> <li>a. Poor thermal contact.</li> <li>b. Warm location.</li> </ul>

**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	<p><b><u>Condensing Coil:</u></b></p> <ul style="list-style-type: none"> <li>Remove panel to access area by lifting up and off (no screw removal is required; simply lift up and off)</li> <li>Use air pressure or industrial strength vacuum; clean dust and dirt that may collect on the condenser coil.</li> <li><b><i>Caution! Airborne dust can contaminating food!</i></b> Use wet rags to cover area where air pressure is blowing.</li> <li><b><i>Warning! Coil fins are sharp. Handle with care!</i></b></li> <li>Return panel to case.</li> </ul>
	Quarterly	<p><b><u>Condensate Package / Overflow Condensate Pan / Compressor Area:</u></b> <i>Caution! Be certain to disconnect power from case before cleaning condensate package!</i></p> <ul style="list-style-type: none"> <li>Slide/roll compressor package out from under case.</li> <li>Use a scrub-brush and a de-scaling solution such as CLR® (to prevent corrosion, lime and rust). Follow instructions as to proper dilution, safety precautions and scrubbing method.</li> <li>Electric heater coil condensate pans can be removed and cleaned.</li> <li>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.</li> <li>Use moist cloth to wipe off dust &amp; debris that collects on various parts (fans, sight glass, overflow pan, etc.).</li> <li>Slide refrigeration assembly back under case.</li> <li>Replace lower panel via hook/magnet method (no screws required).</li> </ul>
	Quarterly	<p><b><u>Under Case Cleaning:</u></b> Once condenser package is clear of unit, vacuum under case to remove dust and dirt that collects under case.</p>
Case Interior	Quarterly	<p><b><u>Tub, Coil, Drain, Fan Blade, Motor, Bracket:</u></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 blade, motor and bracket by wiping down with moist cloth.</li> </ul>
	Quarterly	<p><b><u>Honeycomb Air Diffusers:</u></b></p> <ul style="list-style-type: none"> <li>Remove honeycomb air diffuser from case.</li> <li>Vacuum.</li> <li>Clean with warm water and soap.</li> <li>Return to case.</li> <li>See <b>HONEYCOMB AIR DIFFUSER - MODEL MI6R.6620, MI6R.7065 ET AL.</b> in manual for removal/replacement illustrations.</li> </ul>

# CAREL

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### Programming The Instrument

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

**Prg**  
**mute**

**Set**

1. Press & hold "Prg" & "SET" keys together for at least five (5) seconds; display will flash "0," representing password prompt.

**▲**  
**aux**

2. Press ▲ until password "22" is reached.

**Set**

3. Press "SET" key to confirm password.

**▲**  
**aux**

**def**  
**▼**

4. Press ▲ or ▼ to reach a category to be modified.

**Set**

5. Press "SET" to modify selected parameter.

**▲**  
**aux**

**def**  
**▼**

6. Increase or decrease the value using the ▲ or ▼ button respectively.

**Set**

7. Press the "SET" key to temporarily save the new value and return to the parameter display.

**Prg**  
**mute**

8. Press & hold the "Prg" key for 5 full seconds to save changes. This will also mute the audible alarm (buzzer) and deactivate the alarm relay.

#### Warning! Save Your Parameter Settings!

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

#### To Activate Manual Defrost

**def**  
**▼**

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

#### To Activate / Deactivate Auxiliary Output

**▲**  
**aux**

Press and hold the "aux" key for 1 second.

**Prg**  
**mute**

**▲**  
**aux**

**Set**

**def**  
**▼**

#### 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).

**▲**  
**aux**

2. Press ▲ until password "22" is reached.

**Set**

3. Confirm by pressing "SET" key.

**▲**  
**aux**

**def**  
**▼**

4. Press ▲ or ▼ until reaching the parameter "/ 5."

**Set**

5. Press "SET" to modify this selected parameter.

**▲**  
**aux**

**def**  
**▼**

6. Press ▲ or ▼ to change value to desired setting: "0" for Celsius (°C) or "1" for Fahrenheit (°F).

**Set**

7. Press "SET" key to temporarily save the new value and return to the display of the parameter.

**Prg**  
**mute**

8. Press & hold "Prg" key for 5 full seconds to save changes. **Note! All values will automatically convert to new scale. No conversion is required.**

#### To Reset Any Alarms With Manual Reset

**Prg**  
**mute**

**▲**  
**aux**

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

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## User Interface - Display

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

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

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

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## Summary Table of Operating Parameters

CODE	PARAMETER	UOM*	TYPE	MINIMUM	MAXIMUM	DEFAULT
/5	Select 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) 433.9490 Ext. 1
/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

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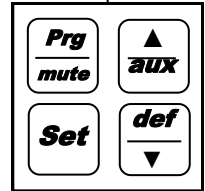
# CAREL

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### Changing "Raw Meat" and "Produce/Deli" Setpoints Using The Thermostat Controller



#### To Increase or Decrease the Value of the "Raw Meat" Temperature Setting:

- Prg/mute** **Set** 1. Press & hold "Prg" & "SET" keys together for 5 seconds; display will flash "0", representing the password prompt.
- ▲/aux** 2. Press ▲ until password "22" is reached.
- Set** 3. Press "SET" key to confirm password.
- ▲/aux** **def** 4. Press ▲ or ▼ to reach the "r4" parameter.
- Set** 5. Press "SET" to access the "r4" parameter.
- def** 6. If you RAISE the "Raw Meat" setpoint, you must LOWER ▼ the "r4" parameter the same number of degrees in which you RAISED the setpoint.  
Example: If you RAISE the "Raw Meat" setpoint from 11 °F to 12 °F, you must use the ▼ button to LOWER the "r4" parameter by 1 °F.
- ▲/aux** 7. If you LOWER the "Raw Meat" setpoint, you must also RAISE ▲ the "r4" parameter the same number of degrees in which you LOWERED the setpoint.  
Example: If you LOWER the "Raw Meat" setpoint from 15 °F to 14 °F, you must use the ▲ button to RAISE the "r4" parameter by 1 °F.
- Set** 8. Press the "SET" key to temporarily save the new value and return to the parameter display.

**Prg/mute**

9. To store the new parameters values, Press and hold "Prg" key for at least 5 seconds. This action will mute the audible alarm (buzzer) and deactivate the alarm relay.

#### To Increase or Decrease the Value of the "Produce/Deli" Temperature Setting:

**Prg/mute**

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

**▲/aux**

2. Press ▲ until password "22" is reached.

**Set**

3. Press "SET" key to confirm password.

**▲/aux**

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

**Set**

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

**▲/aux**

- def** 5. To Increase or decrease temperature from the "Produce/Deli" setting, use the ▲ or ▼ button respectively.

**Set**

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

**Prg/mute**

7. To store the new parameter values, PRESS and HOLD the "Prg" key for at least 5 seconds. This action will mute the audible alarm (buzzer) and deactivate the alarm relay.

#### Warning! You Must Save Your Parameter Settings!

1. 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.
2. If instrument is switched off before pressing the "Prg" key, all modifications to parameters will be lost.

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## STRUCTURAL CONCEPTS TECHNICAL SERVICE CONTACT INFORMATION & LIMITED WARRANTY

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

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

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

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

# 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 from or caused 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 or 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.