

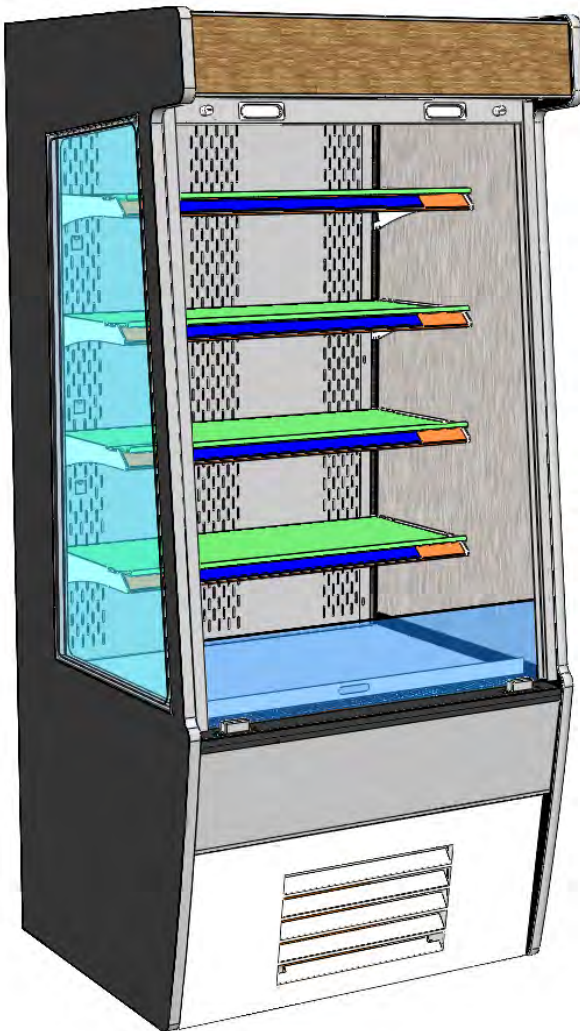


INSTALLATION AND OPERATING MANUAL

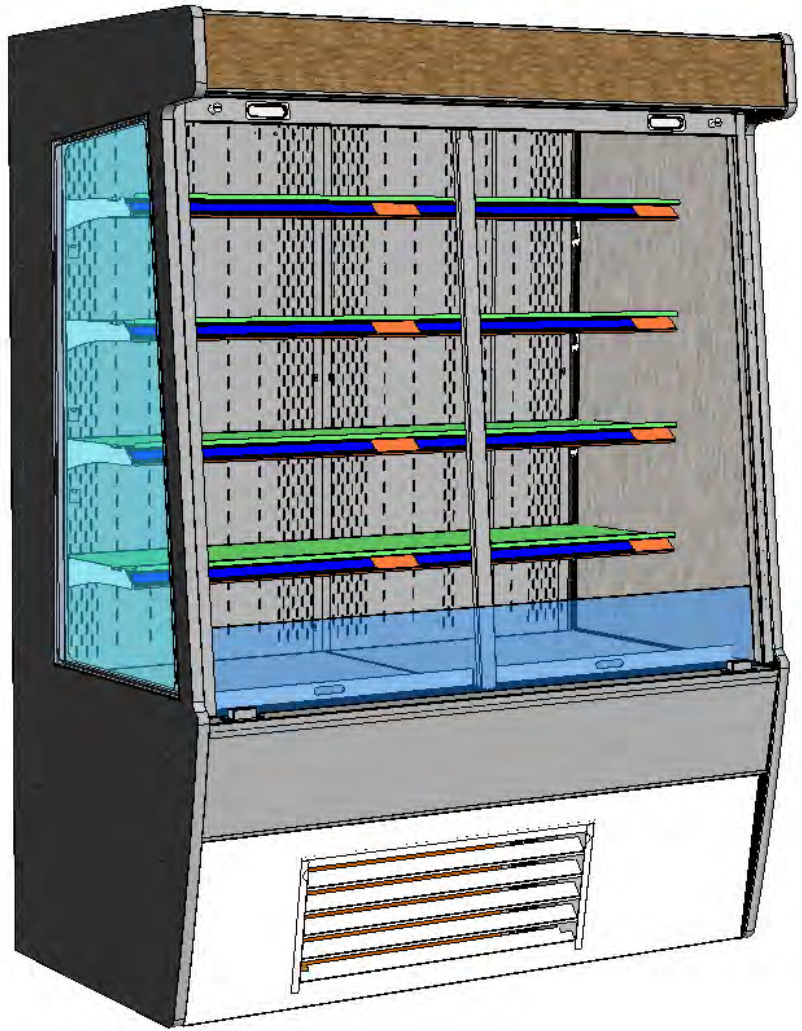
P/N 20-13644

MOBILE REFRIGERATED SELF-SERVICE MERCHANDISER

- > ROLL-DOWN SECURITY DOORS ARE OPTIONAL ON ALL UNITS
- > BREEZE-E WITH ENERGYWISE IS STANDARD ON ALL UNITS
- > REAR PLENUM DOORS ARE OPTIONAL ON ALL UNITS



Model CO37R Shown With Optional Roll-Down
Security Door (Similar Design to Models
CO35R, CO45R and CO47R)



Model CO57R Shown With Optional Roll-Down
Security Door (Similar Design to Models
CO55R, CO65R and CO67R)

MODEL CO35R.....36 1/4"L x 33 1/4"D x 61 1/4"H^		MODEL CO37R.....36 1/4"L x 33 1/4"D x 81"H^
MODEL CO45R.....47 1/4"L x 33 1/4"D x 61 1/4"H^		MODEL CO47R.....47 1/4"L x 33 1/4"D x 81"H^
MODEL CO55R.....59 1/4"L x 33 1/4"D x 61 1/4"H^		MODEL CO57R.....59 1/4"L x 33 1/4"D x 81"H^
MODEL CO65R.....71 1/4"L x 33 1/4"D x 61 1/4"H^		MODEL CO67R.....71 1/4"L x 33 1/4"D x 81"H^

*Includes End Panels. ^With Levelers Extended 1 1/4" From Base Frame



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1.Shipment Condition

- Before and during unloading check all equipment for damage.

2.Damage Discovered During Delivery

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

3.Damage Discovered After Uncrating

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

4.Shortages

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

OVERVIEW

- These Structural Concepts merchandisers are designed to merchandise packaged products at 41 °F (5 °C) or less product temperatures.
- Cases should be installed and operated according to this operating manual's instructions to ensure 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 60% maximum humidity.

- If unsure if your unit is Type I or II, see tag next to serial label. See **SERIAL LABEL LOCATION & INFORMATION LISTED / TECH INFO & SERVICE** section in this manual for sample serial labels.

COMPLIANCE

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

WARNINGS

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

PRECAUTIONS and WIRING DIAGRAMS

- See next page for **PRECAUTIONS** and **WIRING DIAGRAM** information.



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

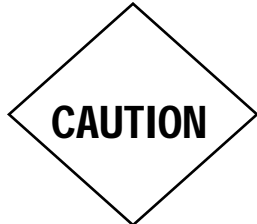
Condenser Pan is Hot!
Disconnect and allow to cool before cleaning or removing from case.

PRECAUTIONS

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

WIRING DIAGRAM

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



CAUTION! LAMP REPLACEMENT GUIDELINES

Fluorescent lamps have been treated to resist breakage and must be replaced with similarly treated lamps.

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

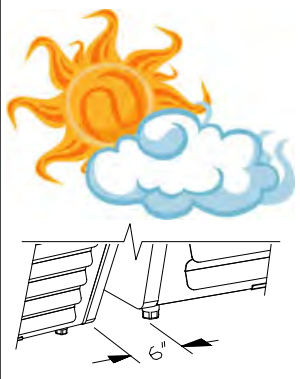
CAUTION! GFCI BREAKER USE REQUIREMENT

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

CAUTION! POWER CORD AND PLUG MAINTENANCE

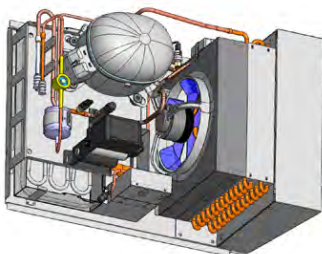
Risk of electric shock. If cord or plug becomes damaged, replace only with cord and plug of same type.

CAUTION



CAUTION! ADVERSE CONDITIONS / SPACING ISSUES

- Performance issues caused by adverse conditions are **NOT** warranted.
- End panels must be tightly joined or kept at least 6-inches away from any structure to prevent condensation.
- Unit must be kept at least 15-feet from exterior doors, overhead HVAC vents or any air curtain disruption to maintain proper temperatures.
- Unit must not be exposed to direct sunlight or any heat source (ovens, fryers, etc.).
- Tile floors, low ceilings or small rooms increase noise level. Whisper Cool compressor blankets or remote units resolve noise level issues.
- For Self-Contained Units: Keep at least 4" front air intake / 4" rear air discharge clearance.



CAUTION! CHECK HOT GAS EVAPORATOR PAN POSITION AND PLUG

Water on flooring can cause extensive damage!

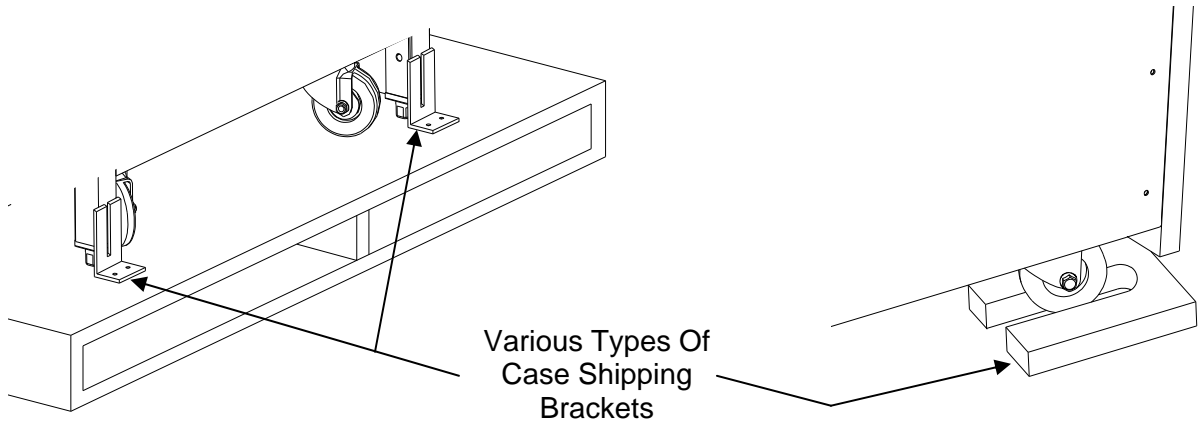
Before powering up unit, check the following:

- Hot gas evap. pan **MUST BE** positioned directly under condensate drain.
- Overflow evap. pan plug **MUST BE** securely plugged into receptacle.

CASE REMOVAL FROM SKID (LEVELERS OR CASTERS)

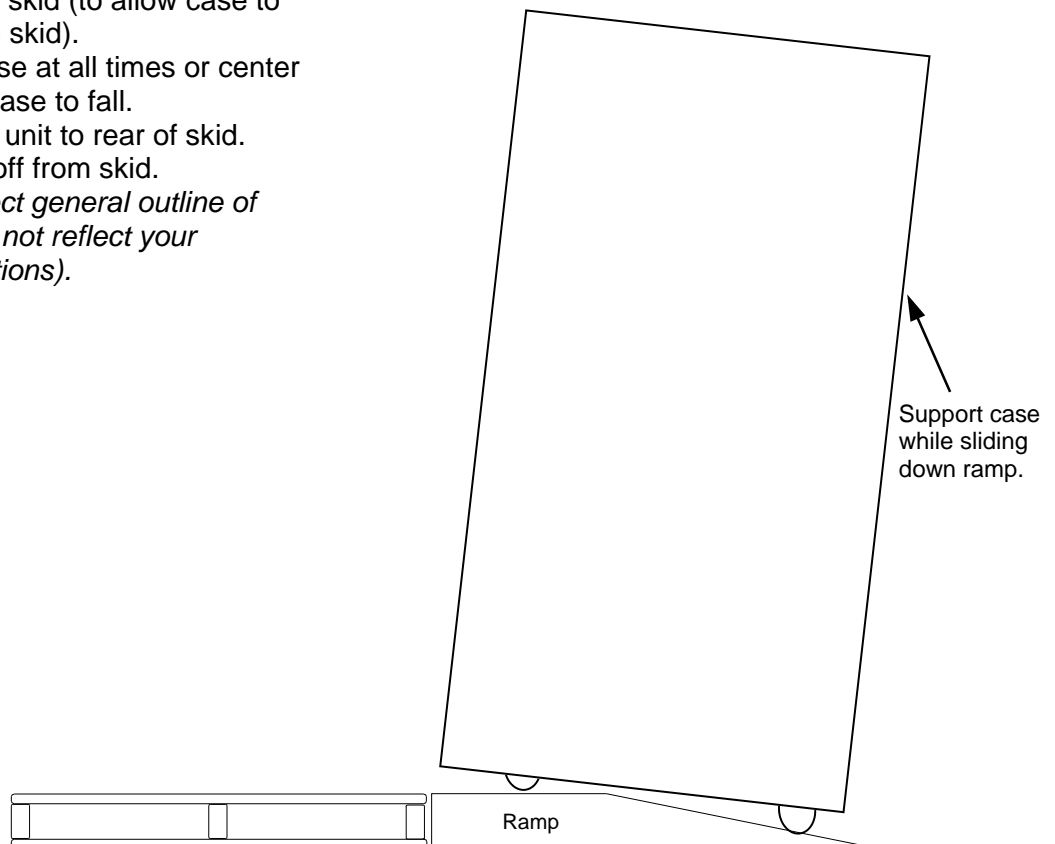
1. Removing Case Shipping Brackets That Are Attached To Skid

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



2. Remove Case (With 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: Illustrations reflect general outline of sample case and may not reflect your particular model or options).



1. Merchandiser Set-Up

- Remove the rear lower grille.
- Ensure that the manufacturer provided hot gas evaporator pan is installed under the condensate drain.
- Ensure that overflow evaporator pan is plugged into the receptacle inside base.
- Reinstall the rear grille after confirming the above.

2. Electrical Set-Up

- **With Power Cord:**
 - **For your safety, equipment is furnished with a properly grounded cord connector. Do not attempt to defeat the grounded connector.**
- Plug cord into certified electrical outlet with ground. See Overview/Warnings sheet for more specifics.
- **Without Power Cord:**

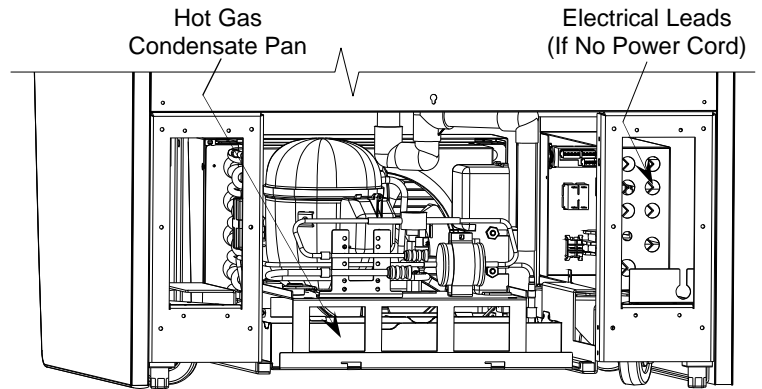
Note: Servicing to be accomplished by a certified electrical contractor.

 - **Electrical Leads**
 - Remove cover from the left lower rear of the unit.
 - Electrical leads connections are provided in the junction box.

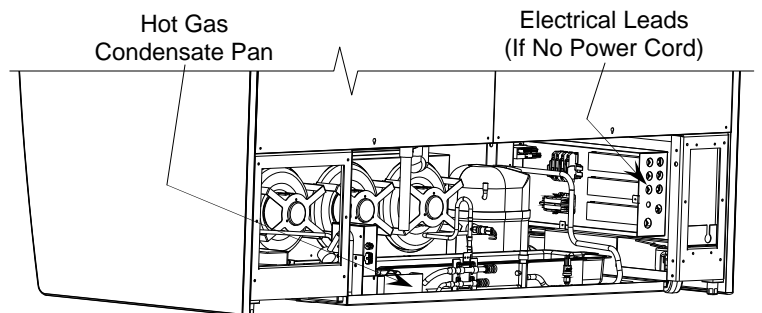
3. Optional Remote Refrigeration System

Note: Servicing units is to be done by refrigeration / electrical contractors only.

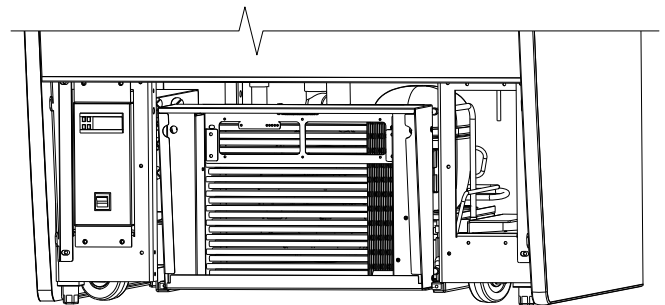
- **Electrical leads**
 - Remove lower rear panel.
 - Electrical lead connections are located in electrical/ballast box.
- **Refrigeration stub-ups**
 - Refrigeration stub-up connections are provided on underside of the tub inside the base of the unit.
 - Remove lower rear and/or front panel.
 - The evaporator stub-up connections are located on the right hand side of the unit.



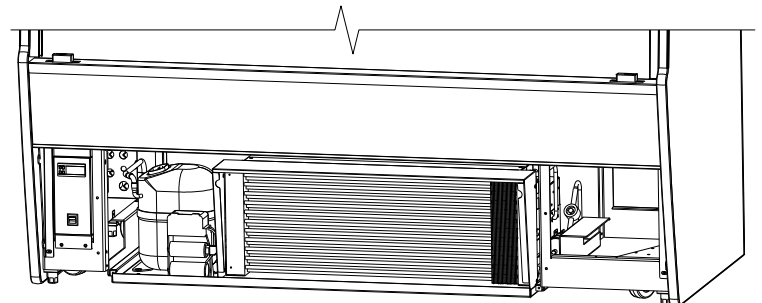
Rear Refrigeration Access After Rear Grille Removed
(Model CO37R Shown Above)



Rear Refrigeration Access After Rear Grille Removed
(Model CO67R Shown Above)



Front Refrigeration Access After Front Grille Removed
(Model CO37R Shown Above)



Front Refrigeration Access After Front Grille Removed
(Model CO67R Shown Above)

MAIN POWER SWITCH - START-UP / TEMPERATURE CONTROLLER / LIGHT SWITCH

1. Main Power Switch - Start-Up

- Remove the front grille simply by lifting up and off (no screw removal required).
- Turn on the main power switch. Main power switch is on the left hand side of unit (accessible after front grille has been removed). Evaporator coil fans, and compressor motor (for units with self contained refrigeration) will energize.
- From the front of the case, raise the deck pans and check to see that the coil fans are all functioning properly. Caution! Rotating fan blades are sharp. Do not place fingers near rotating blades!
- Replace front grille in reverse order it was removed.

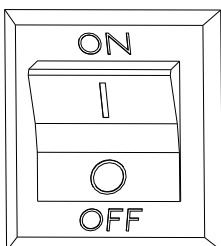
2. Temperature Controller

- The case temperature is set at the factory, (supply air is set for a case temp at 5 °C / 41 °F as as determined by the case size).
- The temperature is controlled by a thermostat.
- See illustration at right for thermostat location.
- If a temperature setting change is required, refer to the **CAREL® TEMPERATURE CONTROLLER INFORMATION** section of this operating manual.

--- Carel Temperature Controller ---



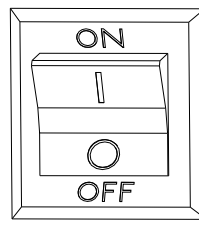
Main Power Switch



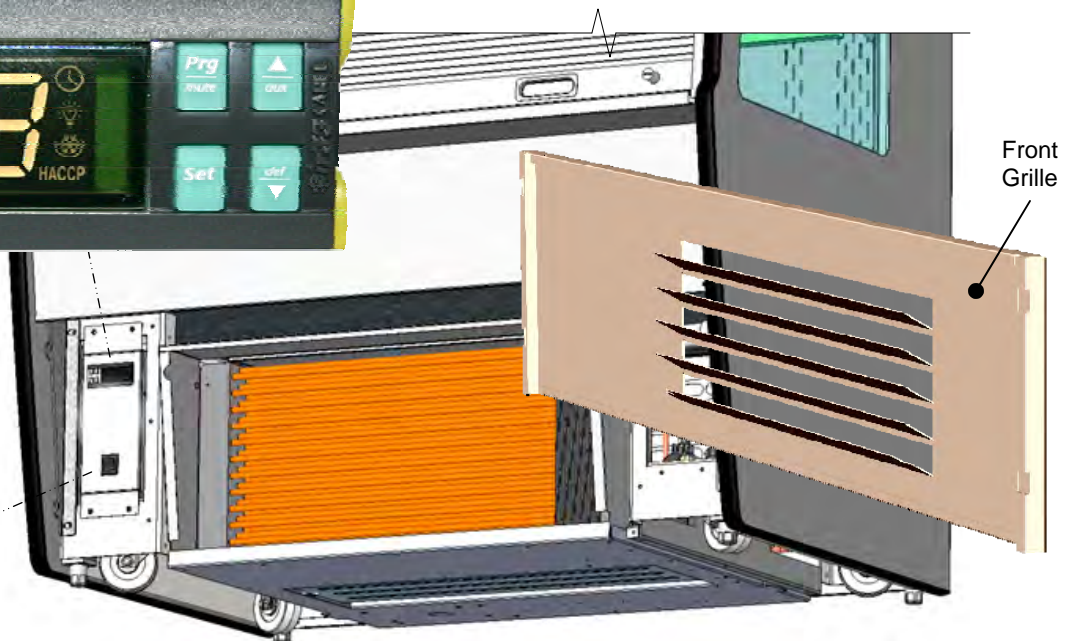
3. Light Switch At Header, Upper-Left

- Whether fluorescent or LED lights are used on case, switch is at header, upper-left (as shown immediately below).
- Turn on light switch.
- All lights should come on at the same time.
- Fluorescent bulbs may require a short warm-up period; initially, new fluorescent bulbs may be slightly dim or flicker.
- Whether fluorescent or LED, if lights do not turn on, check plug connections

Light Switch



--- View of Header, Upper Left (Model CO47R) ---

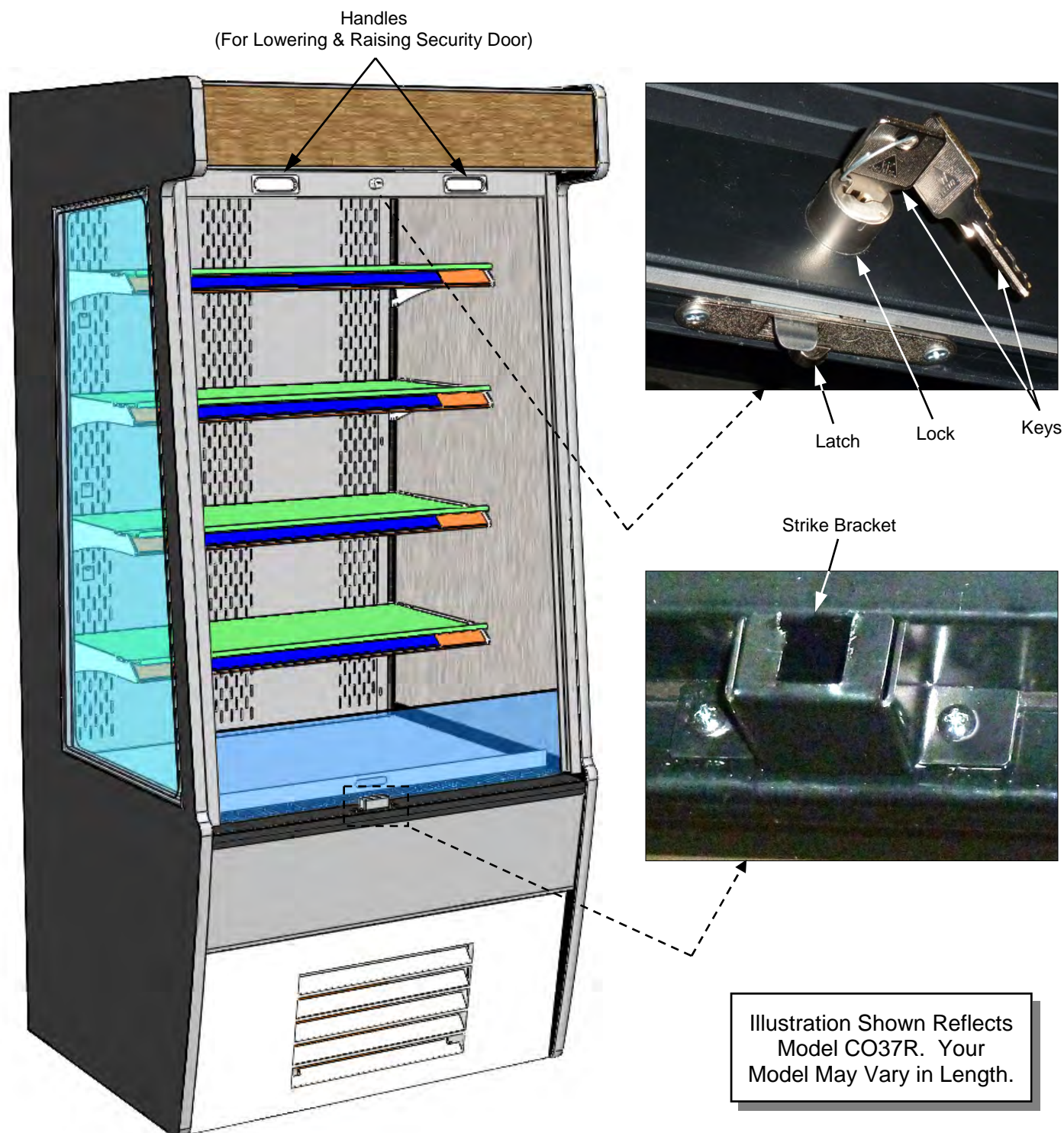


--- Case Front Access After Front Grille Removed (Model CO47R) ---

OPTIONAL ROLL DOWN SECURITY DOOR (SEE NEXT PAGE FOR EXTENDED DOOR)

Roll Down Security Door (Optional): Shown Retracted

- Optional roll down security door has two handles for grasping, lowering and raising.
- After door is lowered, key may be turned clockwise to lock latch into strike bracket.
- Turn counter-clockwise to unlock.
- Keep keys in safe and secure place.

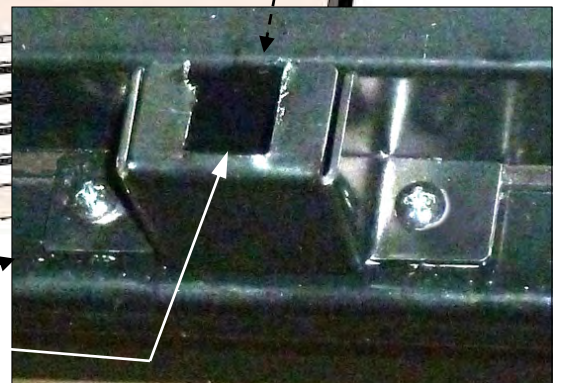
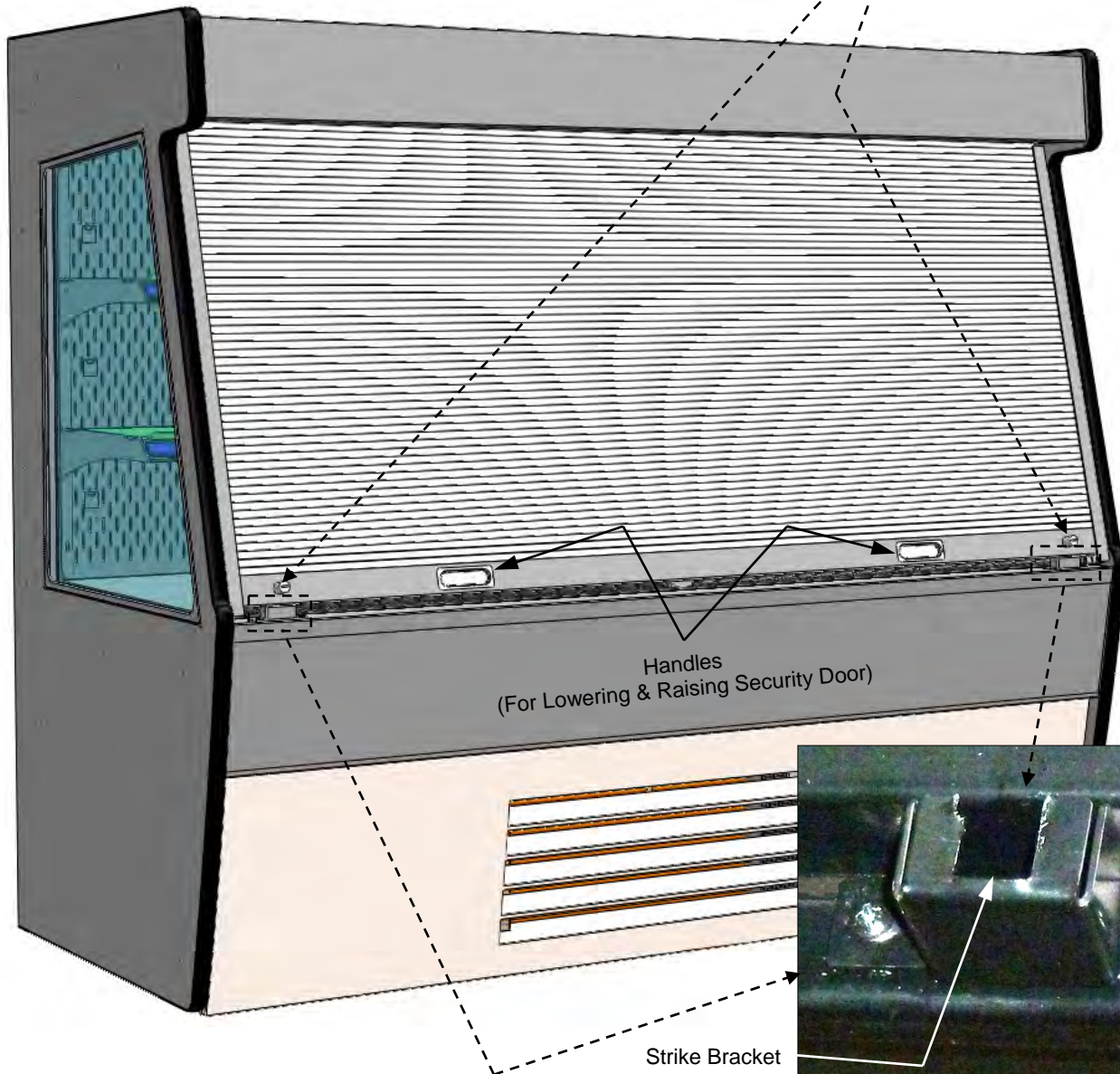
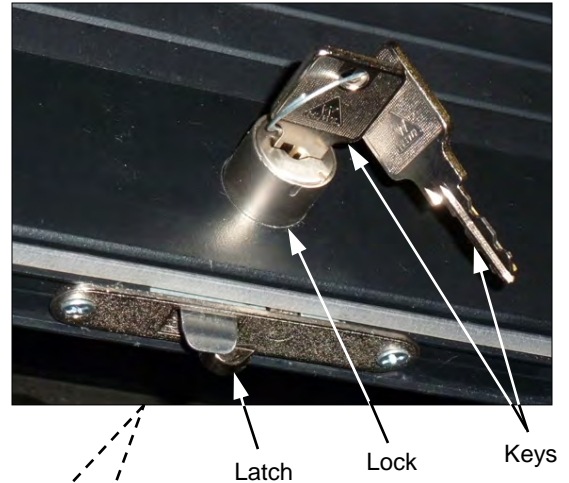


OPTIONAL ROLL DOWN SECURITY DOOR (SEE PREVIOUS PAGE FOR RETRACTED DOOR)

Roll Down Security Door (Optional): Shown Extended

- Optional roll down security door has two handles for grasping, lowering and raising.
- After door is lowered, key may be turned clockwise to lock latch into strike bracket.
- Turn counter-clockwise to unlock.
- Keep keys in safe and secure place.
- See ***STIFFENER (FOR OPTIONAL ROLL DOWN SECURITY DOOR): PURPOSE / REMOVABILITY*** section on next page.

Illustration Shown Reflects Model CO65R.
Your Model May Vary in Length and Height.



STIFFENER (FOR OPTIONAL ROLL DOWN SECURITY DOOR) & STIFFENER BRACKETS

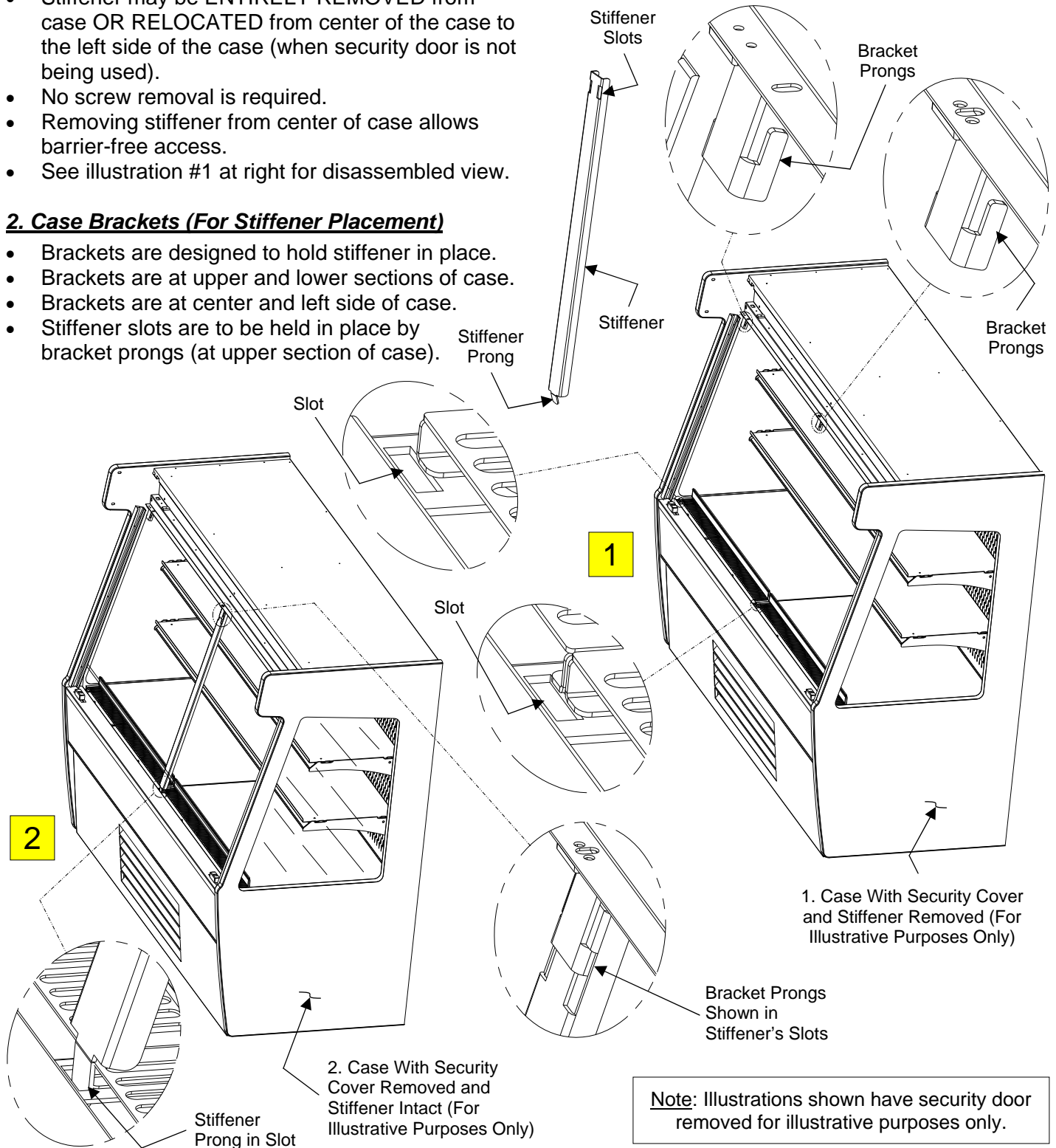
1. Stiffener (For Optional Roll Down Security Door)

- Due to its size and weight, the optional roll down security door has a stiffener provided for support.
- Stiffener may be ENTIRELY REMOVED from case OR RELOCATED from center of the case to the left side of the case (when security door is not being used).
- No screw removal is required.
- Removing stiffener from center of case allows barrier-free access.
- See illustration #1 at right for disassembled view.

2. Case Brackets (For Stiffener Placement)

- Brackets are designed to hold stiffener in place.
- Brackets are at upper and lower sections of case.
- Brackets are at center and left side of case.
- Stiffener slots are to be held in place by bracket prongs (at upper section of case).

- Stiffener prong is to be held in place by bracket slots (at lower section of case).
- See illustration #2, below-left, for view of stiffener at center position of case.



MAINTENANCE FUNDAMENTALS: CAULKING & BOLTING ADJOINED UNITS

Caulking and Bolting Adjoined Units (Sample Model Is Shown below)

Note: Your model's features or options may slightly vary.

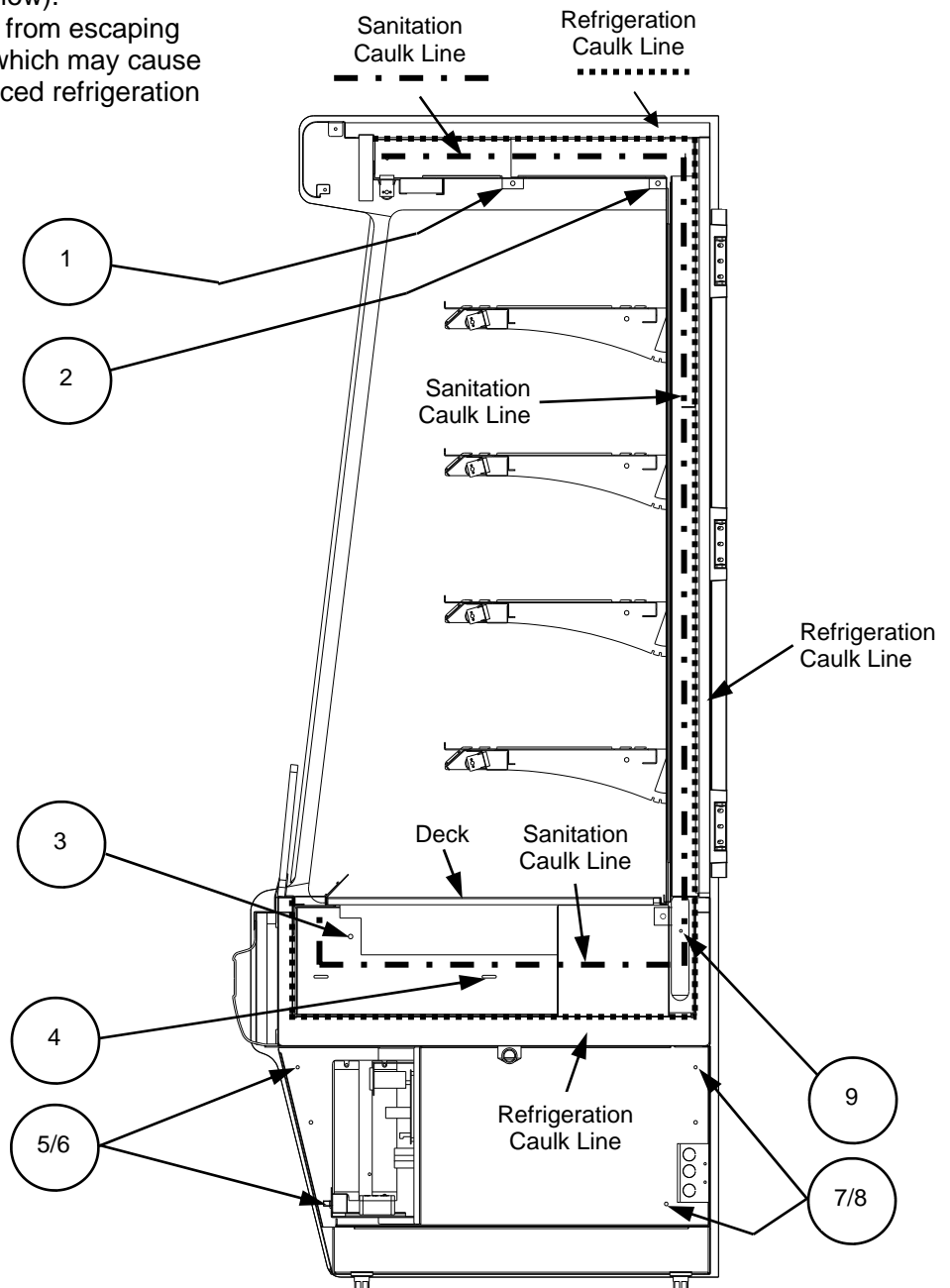
Warranty is voided if improper sealant is used. Lay a generous bead of caulk/sealant as specified below.

- Use Industrial grade butyl caulk on non-visible areas.
- Use industrial grade silicone sealant on visible areas.
- Form Two (2) Caulk/Sealant Lines: Sanitation and Refrigeration (see illustrations below).
- Caulking/sealing tub prevents air from escaping through seams between cases (which may cause condensation problems and reduced refrigeration efficiency).



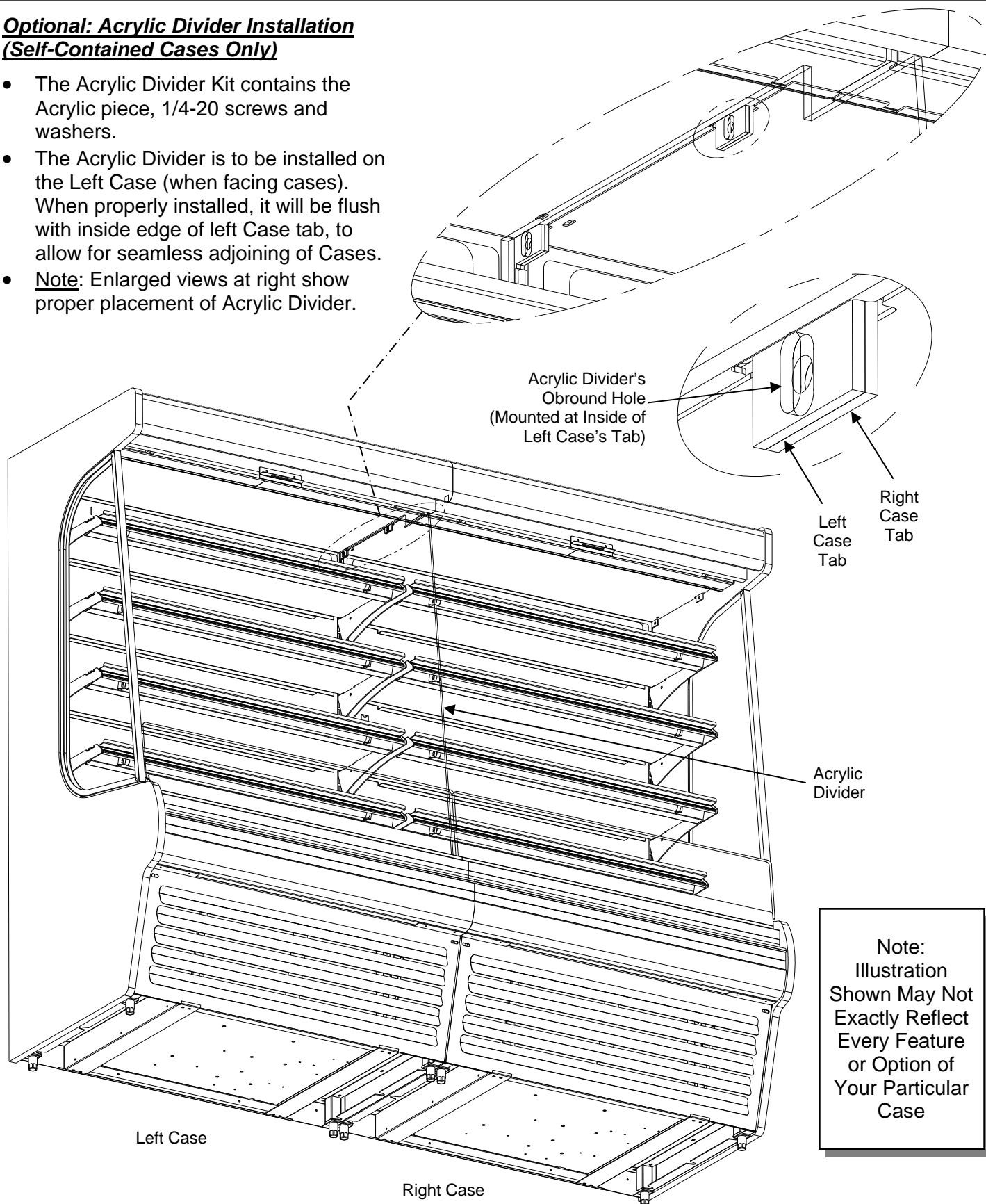
Note:
Illustration Shown May Not
Exactly Reflect Every
Feature or Option of Your
Particular Case

- Caulking/sealing also prevents water from seeping between cases to the floor.
- **Note:** Place thicker bead of caulk around drain.
- Bolt Holes are at 9 locations:
- Use 1/4-20 x 1.00" bolts and accompanying nuts for holes 1-4 and 9.
- Use #8-32 x .37" bolts and accompanying nuts for holes 5-8.
- Remove deck pan assembly to access holes 3, 4, 9.



Optional: Acrylic Divider Installation **(Self-Contained Cases Only)**

- The Acrylic Divider Kit contains the Acrylic piece, 1/4-20 screws and washers.
- The Acrylic Divider is to be installed on the Left Case (when facing cases). When properly installed, it will be flush with inside edge of left Case tab, to allow for seamless adjoining of Cases.
- **Note:** Enlarged views at right show proper placement of Acrylic Divider.



1. Standard T-8 Fluorescent Style Light Fixtures

Removal of lamps:

- Grasp lamp firmly and carefully pull downward and out from socket.
- See photos at mid-right.

Installation of lamp:

- Align pins with slot.
- Insert pins into socket and push upward into place.
- See photos at mid-right.



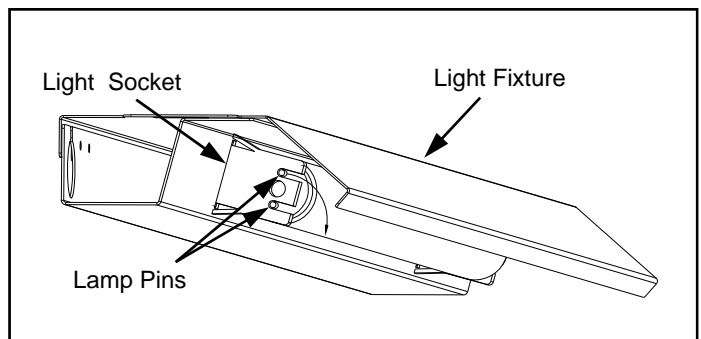
2. LED Style Light Fixtures (Optional)

Removal of lamp:

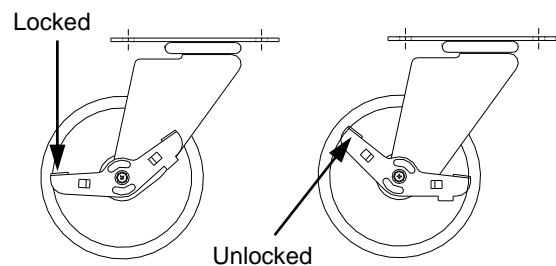
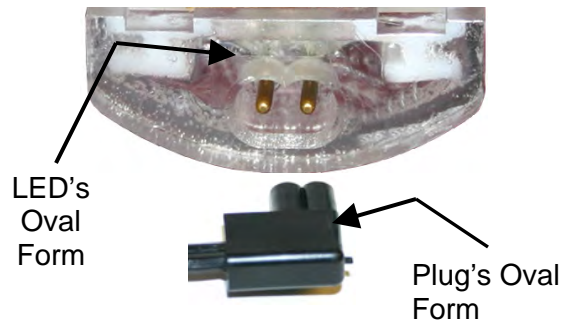
- If case is provided with LED lights, they will rarely require change-out.
- Contact Structural Concepts' Technical Service Department for replacement parts (see the Technical Service section of operating manual).

Replacement of lamp:

- To replace LED Light Fixture, simply disconnect the existing LED light from its brackets and/or self-adhesive tape. Replace.
- Note: LED Light and Plug must be connected in a specific manner or they will not work.
- Make certain flat edge of plug connects to flat edge of LED light.
- See illustrations at lower right.



LED Style Light Fixtures



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

1. Honeycomb Air Diffuser Removal

Honeycomb is located in discharge air duct.

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

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

B. Apply pressure to collapse the honeycomb to allow it to be pulled out of honeycomb retainer.

C. Pry downward and away from honeycomb retainer.

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

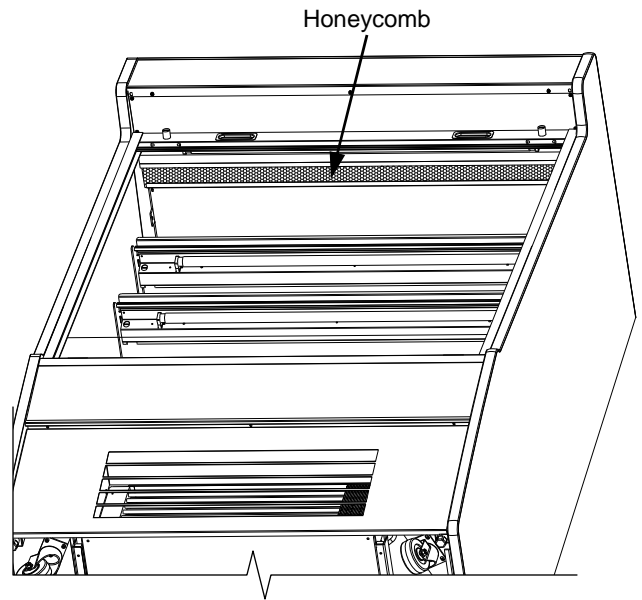
2. Honeycomb Air Diffuser Installation

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

E. Carefully slide honeycomb into place.

F. Adjust honeycomb so that it fits flat against retainer. It must not be wavy or out of position.

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

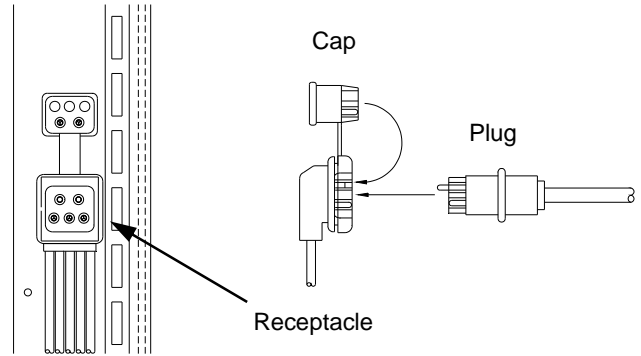


Note: Model features and options may vary.



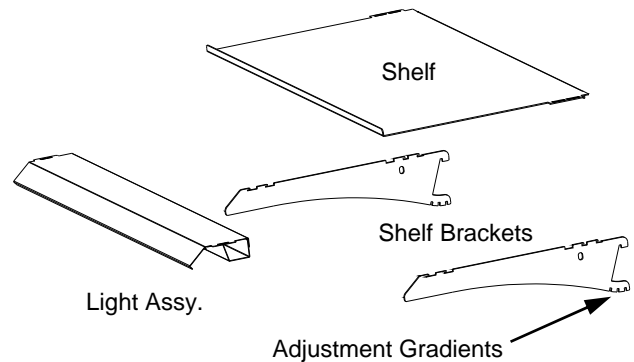
1. Shelf Assembly Removal

- Shelves can be removed for maintenance, cleaning or adjustments
- Slide shelf back about 1/8 inch and rotate front up while lifting shelf assembly.
- For lighted shelving, unplug the light cord.
- Slide light assembly back about 1/8 inch and rotate front up while lifting light assembly.
- Remove brackets. Note it may be necessary to remove the nylon shipping bracket retainer. Pliers will be required to accomplish this task.



2. Adjustable Shelves

- Adjustment of the angle of the shelf can be made, not the position.
- Adjustments to the shelves can be made by pivoting the lower portion of the shelf bracket in the upright.
- The shelves can be adjusted to an angle of: 0, 5, and 10 degrees.



3. Light Fixture

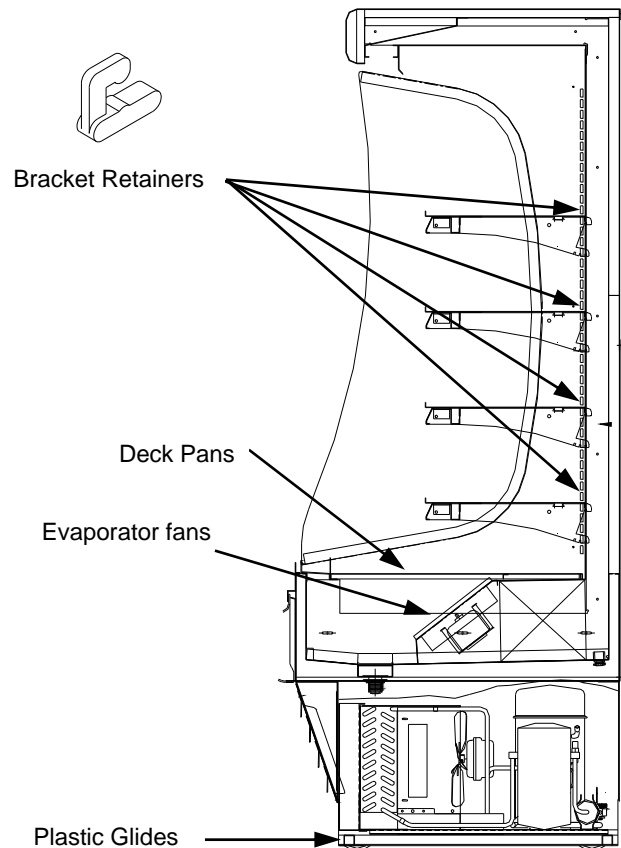
Fixtures are located on the underside of each shelf assembly and at the top inside of case.

Removal of lamp:

- Rotate lamp (1/4 turn) and remove bulb.

Installation of lamp:

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

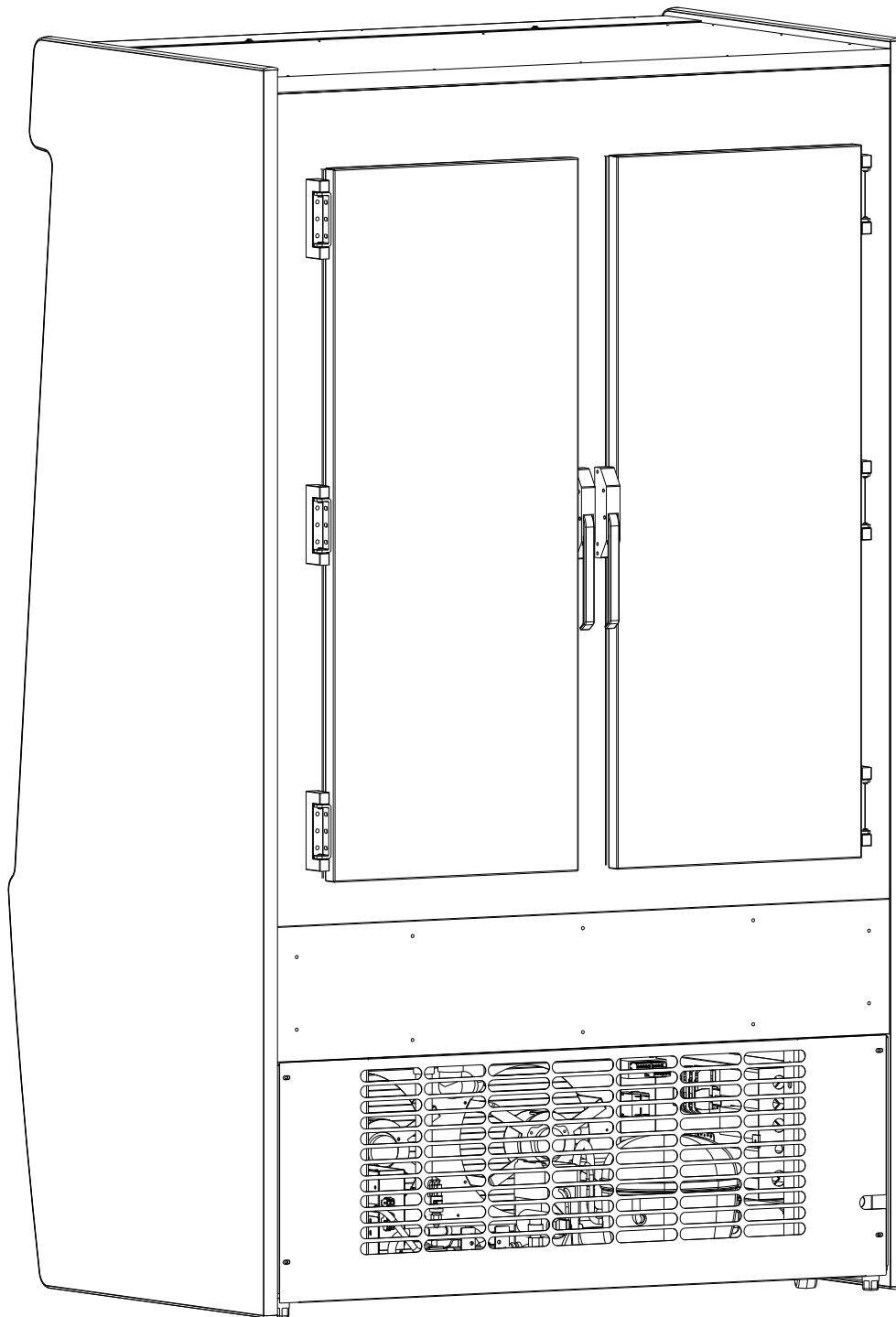


Note:
Illustrations Shown May
Not Exactly Reflect Every
Feature or Option of Your
Particular Case

MAINTENANCE FUNDAMENTALS: REAR DOORS (OPTIONAL)

Rear Doors (Optional)

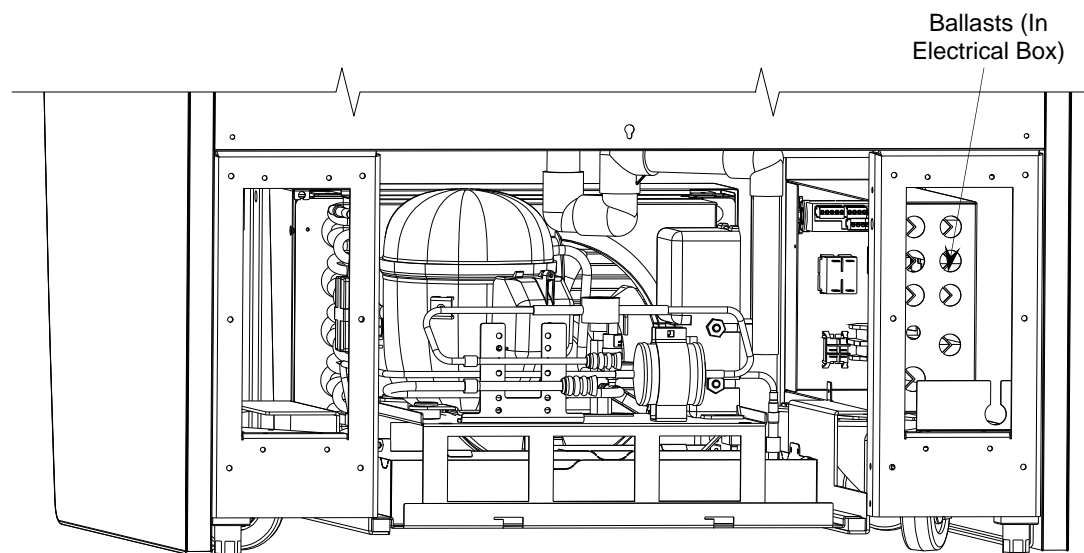
- Rear doors are hinged with handles to allow access to case from rear.
- Handles and strike plates allow doors to securely latch.
- Illustration shown reflects model CO47R. Your rear door size may vary.



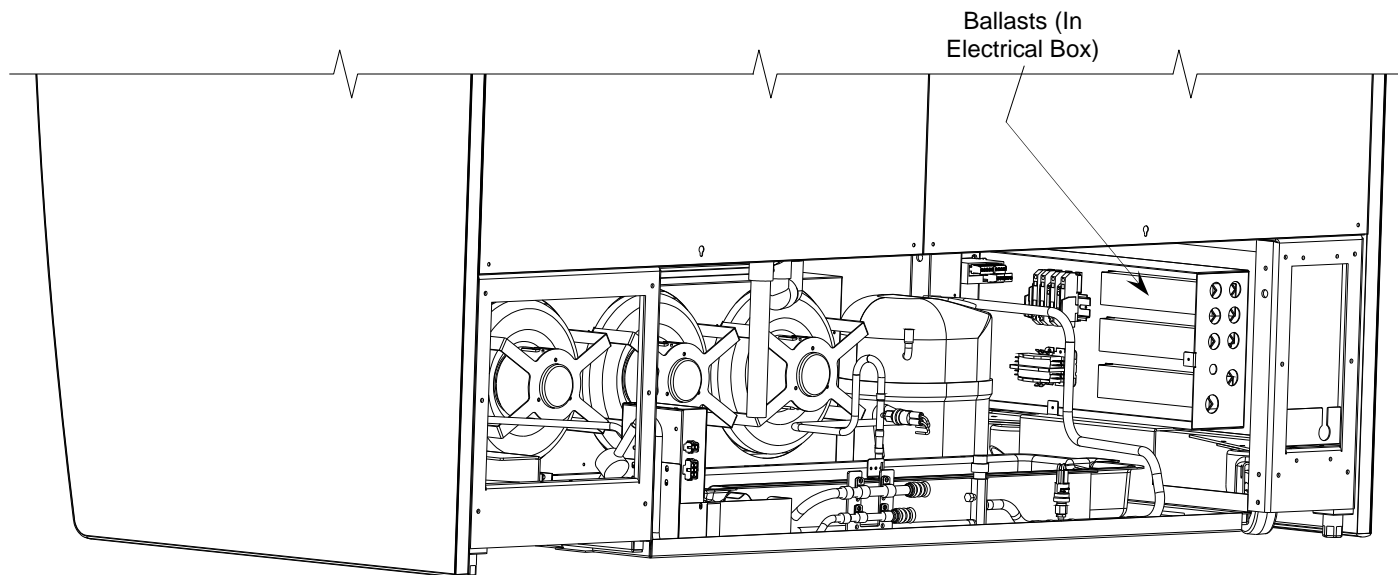
Model CO47R is Shown Above. Your Model May Slightly Vary.

Ballast Access

- ***Assembly or disassembly and servicing is to be accomplished by a licensed electrical contractor.***
- Remove rear grille by lifting up and off.
- Ballast are mounted inside the electrical box.
- Illustrations shown reflect models CO37R and CO67R. Your model may slightly vary.



— Rear View of Model CO37R —
After Rear Grille Removed —

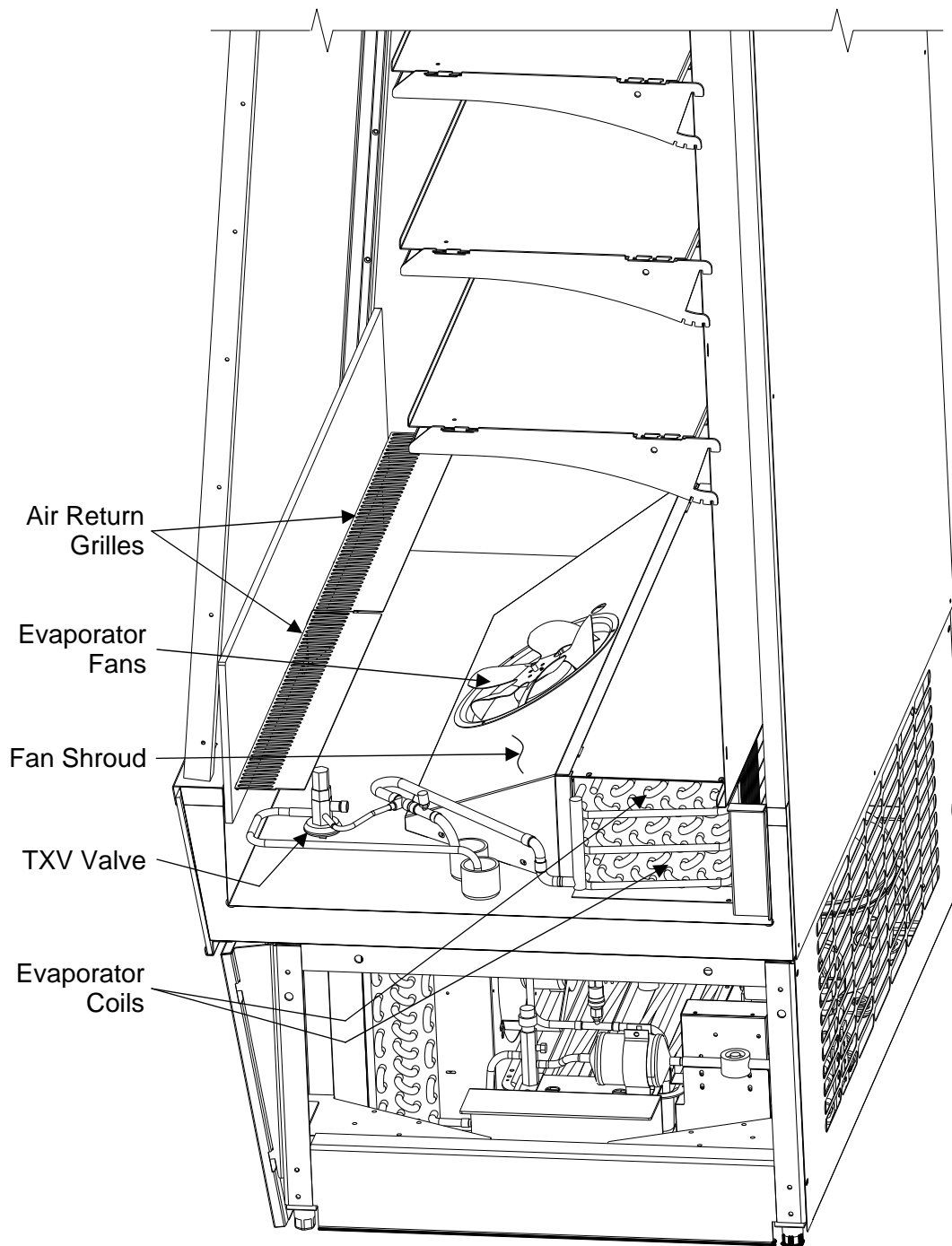


— Rear View of Model CO67R —
After Rear Grille Removed —

EVAPORATOR COIL FANS ACCESS

Evaporator Coil Fans Access

- Remove all product.
- Remove display steps (if any).
- Remove deck pan for coil fans access.
- Caution! Turn off main power before accessing the evaporator coil / deck pan area. Rotating blades can cause severe injury!



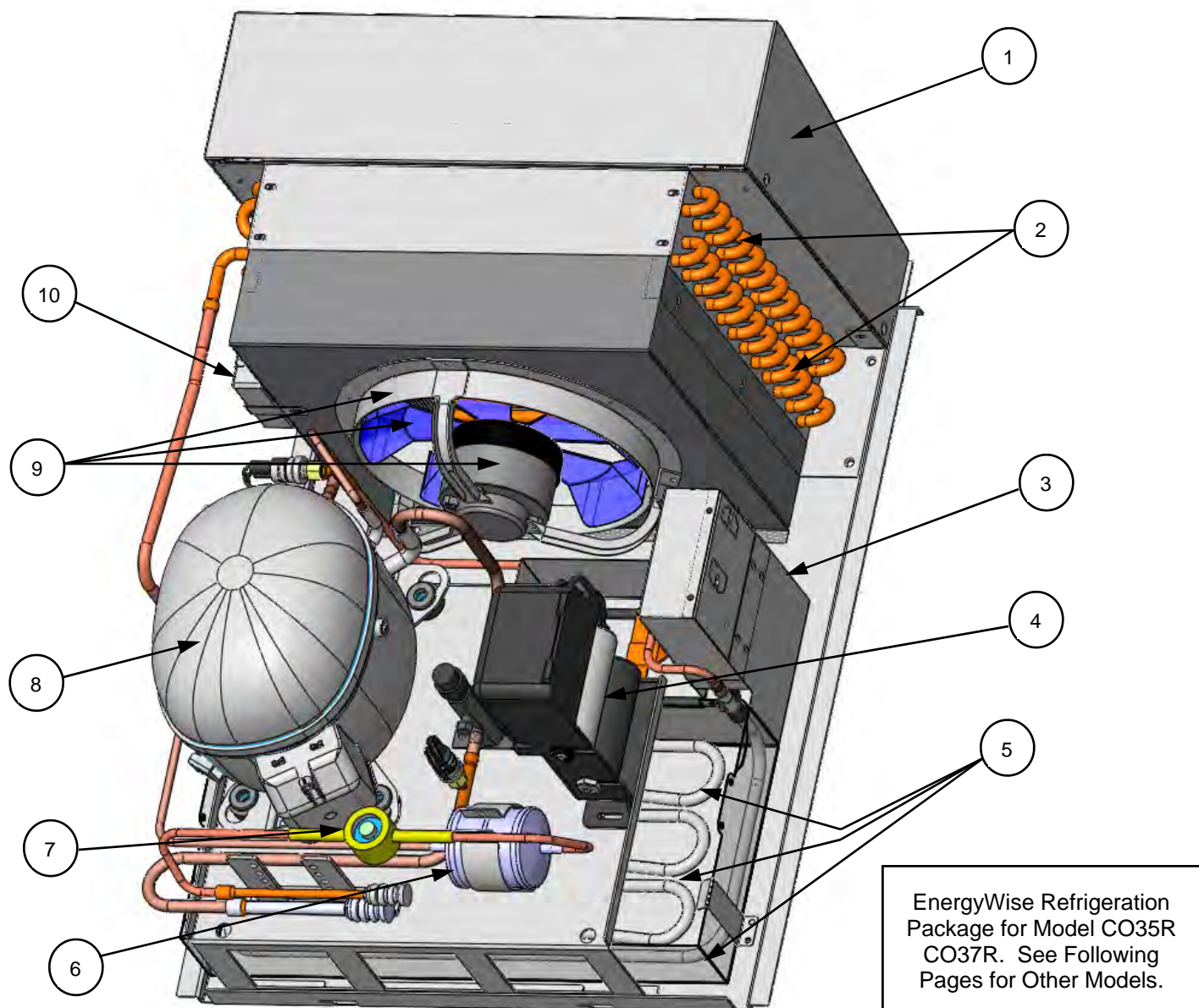
— Model CO47R Shown Above. Your Model May Slightly Vary —

CONDENSER PACKAGE LAYOUT: MODELS CO35R AND CO37R ONLY

Typical Configurations, Continued

- **Note:** Unit shown below is for models CO35R & CO37R only. Your condenser package layout may vary.
- **Caution:** Only certified refrigeration/electrical engineers or contractors are to access condenser unit.
- **Access:** Remove front grille by lifting up and off (no screw removal required). Slide out.

1	Condenser Coil Shroud (Optional: May House Clean Sweep™ Automatic Condenser Coil Cleaner)	6	Filter / Drier
2	Condenser Coil Tubing	7	Sight Glass
3	Electrical Coil Overflow Condensate Pan	8	Refrigeration Pump
4	Embraco® Start Components	9	Fan Motor & Fan Shroud
5	Hot Gas Condensate Pan & Serpentine Rods	10	Automatic Condenser Coil Cleaner Driver

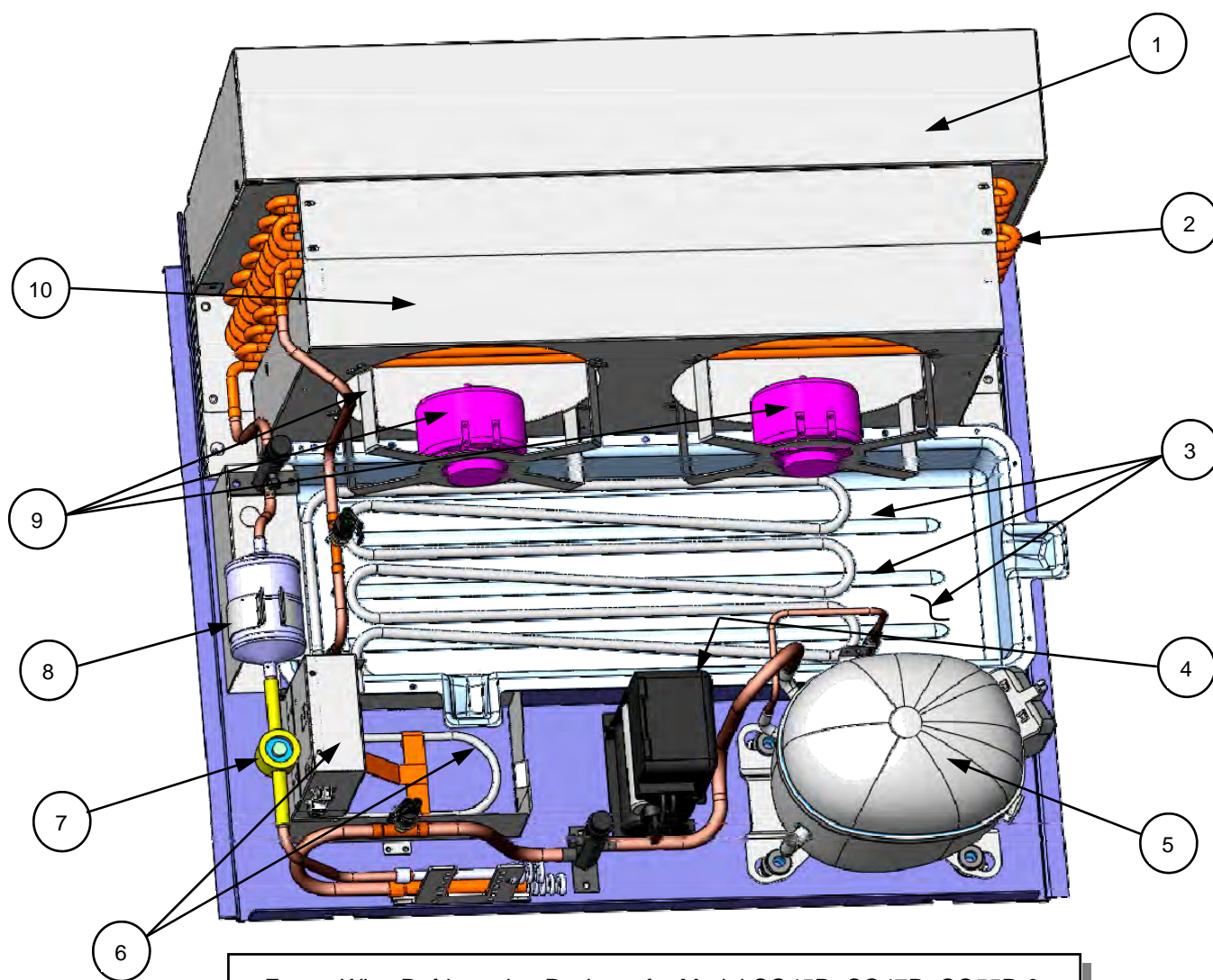


CONDENSER PACKAGE LAYOUT: MODELS CO45R, CO47R, CO55R & CO57R ONLY

Typical Configurations, Continued

- Note: Unit shown below is for Model CO45R, CO47R, CO55R & CO57R only.
- Your condenser package layout may vary.
- Caution: Only certified refrigeration/electrical engineers or contractors are to access condenser unit.
- Access: Remove front grille by lifting up and off (no screw removal required). Slide out.

1	Condenser Coil Shroud (Optional: May House Clean Sweep™ Automatic Condenser Coil Cleaner)	6	Electrical Coil Overflow Condensate Pan
2	Condenser Coil Tubing	7	Sight Glass
3	Hot Gas Condensate Pan & Serpentine Rods	8	Filter / Drier
4	Embraco® Start Components	9	Fan Motors & Fan Shroud
5	Refrigeration Pump	10	Fan Shroud



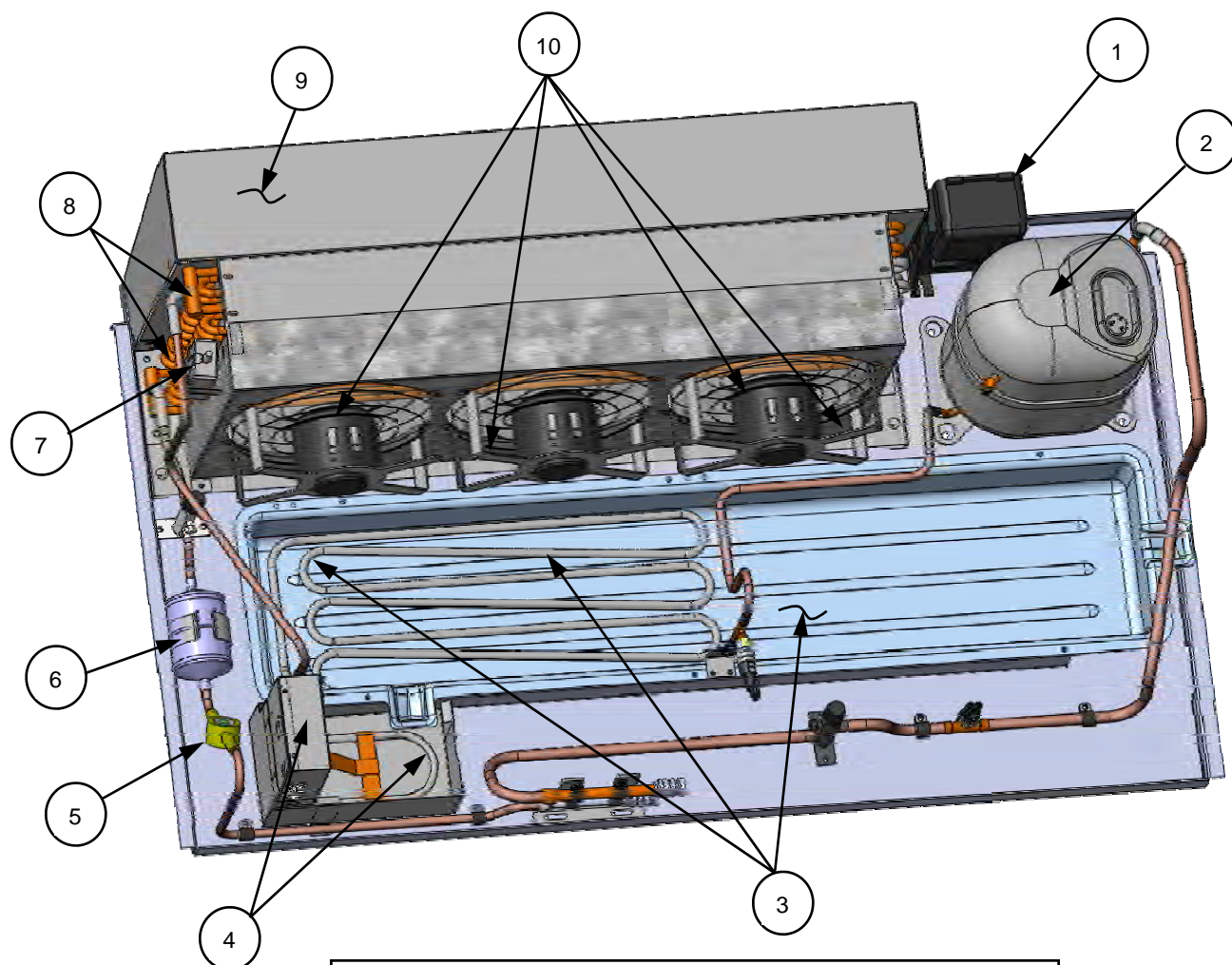
EnergyWise Refrigeration Package for Model CO45R, CO47R, CO55R & CO57R is Shown Above. See Accompanying Sheets for Other Models.

CONDENSER PACKAGE LAYOUT: MODELS CO65R AND CO67R ONLY

Typical Configurations, Continued

- Note: Unit shown below is for Model CO65R and CO67R only. Your model's condenser package layout may vary.
- Caution: Only certified refrigeration/electrical engineers or contractors are to access condenser unit.
- Access: Remove front grille by lifting up and off (no screw removal is required). Slide out.


1	Embraco® Compressor Start Components	6	Filter / Drier
2	Refrigeration Pump	7	Automatic Condenser Coil Cleaner Driver
3	Hot Gas Condensate Pan & Serpentine Rods	8	Condenser Coil Tubing
4	Electrical Coil Overflow Condensate Pan	9	Condenser Coil Shroud (Optional: May House Clean Sweep™ Automatic Condenser Coil Cleaner)
5	Sight Glass	10	Fan Motors & Fan Shroud



EnergyWise Refrigeration Package for Model CO67R Shown.
See Accompanying Sheets for Other Models

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

ENCORE[®] SERIES MODEL HV74RSS SCROLL
SERIAL NO.

SAMPLE ONLY



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

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

BTUH Requirements

Defrost


8-10°F

9,738 BTUH @ 20° F SST

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

Addenda[®] PC5682 txtRemote
txtSerialNumber



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

120 VOLTS 60 HZ SINGLE PHASE 1.84AMP

FOR PARTS OR SERVICE CALL

STRUCTURAL CONCEPTS

AT

1-800-433-9489

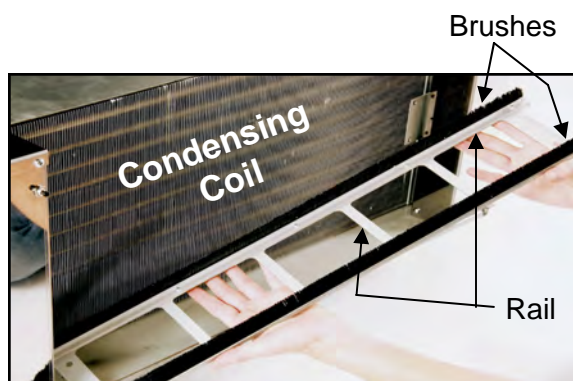
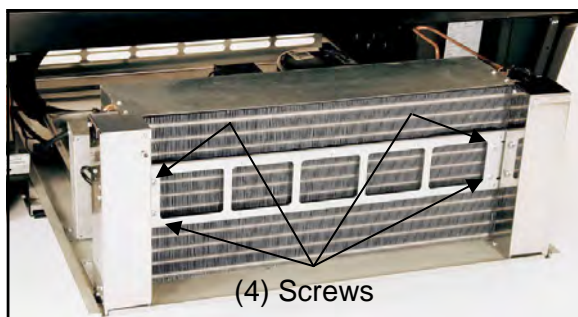
SAMPLE ONLY

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

CLEANING SCHEDULE (PERFORMED BY STORE PERSONNEL & TRAINED SERVICE PROVIDERS)

Cleaning	Daily	Weekly	Monthly	Quarterly	Task
Clean Case Exterior	X				Acrylic must be cleaned with a mild soap and water solution and a soft cloth (<i>Never use a household cleaner on acrylic</i>).
Clean Case Interior	X				Shelves and decks can be cleaned with a warm soap and water solution.
		X			Remove decks. Clean with soap and water.
		X			Vacuum tub under deck. Clean with soap and water. Wipe dry with clean cloth.
		X			Keep drains clean and free of debris which could clog the drain and rob the case of needed refrigeration.
Clean Condensing Coil		X			Clean the condenser coil. Using air pressure if available, or an industrial strength vacuum, clean the dust and dirt that collects on condenser coil. Be careful not to damage the fins on the coil.
Evaporator Fan Shroud Area (Trained Service Providers Only)			X		<u>Evaporator Fan Shroud Area (Under Decking):</u> <i>Caution! Due to rotating fans in area, turn off case and disconnect plug from wall outlet before beginning fan shroud (and surrounding tub area) cleaning!</i> 1) Turn off power. 2) Remove decks from case. 3) Clean fan shroud area (and surrounding tub area) with moist cloth.
Tub & Drain (Trained Service Providers Only)				X	<u>Tub & Drain:</u> <i>Caution! Due to rotating fans in area, turn off case and disconnect plug from wall outlet before beginning tub & drain cleaning!</i> Vacuum tub under decks. Clean with soap and water solution. Wipe dry with clean cloth. Keep drain free of debris to prevent clogging.

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



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

WARNING! TURN OFF CASE BEFORE PERFORMING PREVENTIVE MAINTENANCE!

PREVENTIVE MAINTENANCE	FREQUENCY	INSTRUCTIONS
Case Exterior	Quarterly	<p><u>Compressor Area:</u> <i>Disconnect power from case before cleaning Condenser Coil!</i></p> <ul style="list-style-type: none"> • Slide/Roll out from under case. • Use moist cloth to wipe off dust & debris that collects on various parts.
	Quarterly	<p><u>Hot Gas Evaporator Pan:</u> Use a descaling solution (such as CLR® that will prevent corrosion, lime and rust) to clean pan. Use spray bottle to evenly spread solution throughout. Rinse thoroughly with spray bottle filled with clean water and sponge.</p>
	Quarterly	<p><u>Under Case Cleaning:</u> Once refrigeration package is clear of unit, vacuum under case to remove all dust and dirt that may collect under case.</p>
Case Interior	Quarterly	<p><u>Tub, Coil, Drain, Fan Blades, Motors, Brackets:</u></p> <p><i>Caution! Disconnect power from the case before cleaning the Tub, Coil, Fan, Motor and Drain Area!</i></p> <ul style="list-style-type: none"> • 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 Blades, Motors and Brackets by wiping down with moist cloth.
	Quarterly	<p><u>Honeycomb:</u> See MAINTENANCE FUNDAMENTALS: HONEYCOMB AIR DIFFUSERS section in this manual for cleaning specifics.</p>

TROUBLESHOOTING (TO BE PERFORMED BY STORE PERSONNEL)

CONDITION	TROUBLESHOOTING
Product is Drying Out	Check the relative humidity in the store.
Water Is On The Floor	Call service provider.
Fan Emits Excessive Noise	Call service provider.
Case Lights Are Not Working	Check that light switch is in the <i>on</i> position.
	Check that ALL of the light cords and plugs are properly connected. See MAINTENANCE FUNDAMENTALS: SHELF ASSEMBLY / SHELVES / LIGHT FIXTURE section in this manual for specifics.
	If case lights still do NOT come on, call service provider.
Case is Not Holding Proper Temperature	If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Product must be pre-chilled before placing in case.
	Check that the case is not in the sun or near a heat or air-conditioning vent. See OVERVIEW / CONDITION / COMPLIANCE / WARNINGS / PRECAUTIONS / WIRING section in this manual for specifics.
	If case is located near front doors, temperature fluctuation can hinder unit's ability to maintain temperature.
	Check that condenser coil air filter and condenser coil has been cleaned. See CLEANING SCHEDULE (PERFORMED BY STORE PERSONNEL & TRAINED SERVICE PROVIDERS) section in this manual for specifics.
	Check air return grilles (area at front of decking) for obstructions. DO NOT set product on air grilles as this will prevent proper airflow!
	If case still is not holding proper temperature, call service provider.

CONDITION	TROUBLESHOOTING
Case Not Lining Up	See Installation Section for instructions on properly aligning case (alongside other cases) and adjusting levelers.
Water Is On The Floor	<p>Caution! Water on flooring can cause much damage! Until cause is determined (and repaired), follow these procedures:</p> <ul style="list-style-type: none"> • 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.
	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° Fahrenheit. For Type 2, maximum conditions are to be 60% humidity / 80° Fahrenheit. See serial label (at case rear near main power switch) for condition Type of your case.
	Check that hot gas condenser pan is operating properly.
	Check that overflow condenser pan is properly plugged in or connected.
	<p>Caution! 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, follow these procedures:</p> <ul style="list-style-type: none"> • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drainage. 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.
	<p>Caution! Wicking material (if any on your particular hot gas loop system) may be dirty or worn and need replacement (Hot Gas Evaporator system only).</p> <ul style="list-style-type: none"> • Slide refrigeration system out from under unit. • After refrigeration system has been carefully slid out from under unit, replace wicking material with new. If wicking material is not available, contact Structural Concepts®. See toll-free number at last page of this operating manual.

CONDITION	TROUBLESHOOTING
Fan Emits Excessive Noise	Check that the case is aligned, level and plumb.
	Check evaporator fan for cleanliness.
	Unplug/power off fan motors. Check motor shaft for bearing wear.
	Check that fan motors are securely mounted in brackets.
	Verify that fan blades are securely mounted to fan motor.
	Check that nothing is preventing blade rotation.
	Check that the fan shroud is properly secured.
Fans Are Not Working	Check that the MAIN power switch is on.
	Check that fans are plugged in at the fan shroud.
	Check for foreign material obstructing fan performance.
	Check that fan blades freely rotate within fan shrouds.
	Check that power is going to fans.
	Check that fan wiring is connected on terminal blocks.
Digital Control Display Is Blank	Check that the MAIN power switch is on.
	Check the circuit breaker box for tripped circuits.
System Not Operating	Check that the utility power is on.
	Check that the MAIN power switch is on.
	Check the circuit breaker box for tripped circuits.

CONDITION	TROUBLESHOOTING
Case Lights Are Not Working	Check that light switch is in the <i>on</i> position. Light switch is at case front. Remove front panel (no screw removal required) to access.
	Check that ALL of the light cords and plugs are properly connected. See MAINTENANCE - LIGHT FIXTURES (LED LIGHT FIXTURES) section.
	Service Technicians Only: Check voltage at LED drivers. If voltage is entering but not exiting, LED driver may be faulty.
Control Display Is Flashing	See your case's serial label for your model's specified settings. See SERIAL LABEL LOCATION & INFORMATION LISTED / TECH INFO & SERVICE for label location, etc.
Case Is Not Holding Temperature	If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Unit needs product to be pre-chilled.
	Temperature changes during defrost mode but will return to normal. Fourth LED will indicate defrost cycle in progress.
	Check that case is not in sun or near a heat or air-conditioning vent. See OVERVIEW / CONDITION / COMPLIANCE / WARNINGS / PRECAUTIONS / WIRING section in manual for adverse conditions/spacing issue parameters.
	If case is located near front doors, temperature fluctuation can hinder unit's ability to maintain temperature. See OVERVIEW / CONDITION / COMPLIANCE / WARNINGS / PRECAUTIONS / WIRING section in manual for adverse conditions/spacing issue parameters.
	Check that condenser coil air filter (attached to rear grille) has been cleaned. See GENERAL CLEANING (TO BE PERFORMED BY STORE PERSONNEL) section in operating manual for instructions.
	Check that condenser coil has been cleaned.
	Check air return grilles for obstructions.
	Check sight glass for flashing and/or low charge.
	Check Set Point Temperature; it may be adjusted too high.
Condensing Unit Is Not Operating	Check that the power is turned on.
	Determine if temperature controller settings are properly set. See your case's serial label for your model's specified settings. See SERIAL LABEL LOCATION & INFORMATION LISTED / TECH INFO & SERVICE section in manual for label location, etc.

CAREL

ir33 platform

Integrated Electronic
Microprocessor Controller



Programming The Instrument

To Modify The Setpoint

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

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

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

To Modify Defrost, Differential, Other Parameters

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

Set 2. Confirm by pressing "SET" key.

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

Set 4. Press "SET" to modify this selected parameter.

▲ **def** 5. Increase or decrease the value using
aux **▼** 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 7. Press & hold the "Prg" key for at least 5 seconds
mute to save changes. This action will also mute the
audible alarm (buzzer) & deactivate the alarm relay.

Warning! Save Your Parameter Settings!

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

def **To Activate Manual Defrost**
▼ 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.

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

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

Set 2. Confirm by pressing "SET" key.

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

Set 4. Press "SET" to modify this selected
parameter.

▲ **def** 5. Press ▲ or ▼ to change value to
aux **▼** 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 7. Press & hold "Prg" key for at least 5
mute seconds to save changes. **Note! All values
will automatically convert to new scale. No
conversion is required.**

Prg **▲** **To Reset Any Alarms With Manual**
mute **aux** **Reset**

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

CAREL**ir33 platform**Integrated Electronic
Microprocessor Controller**Summary Table of Operating Parameters**

CODE	PARAMETER	UOM*	TYPE	MINIMUM	MAXIMUM	DEFAULT
/5	Select Celsius (°C) or Fahrenheit (°F)	flag	C	0	1	<p>For Case Specific Defaults See Serial Label Located Near Electrical Access On Your Case.</p> <p>For Additional Technical Information Call Structural Concepts Technical Service Dept. at 1(800) 433.9489</p>
/c1	Calibration of probe 1	°C/°F	C	-20	20	
/c2	Calibration of probe 2	°C/°F	C	-20	20	
St	Temperature set point	°C/°F	F	r2	r1	
rd	Control delta	°C/°F	F	20	0.1	
dl	Interval between defrosts	hours	F	0	250	
dt1	End defrost temperature, evaporator	°C/°F	F	-50	200	
dP1	Maximum defrost duration, evaporator	min	F	1	250	
d6	Display on hold during defrost	-	C	0	2	
dd	Dripping time after defrost	min	F	0	15	
d/1	Display of defrost probe 1	°C/°F	F	-	-	

* Unit Of Measure

STRUCTURAL CONCEPTS CORPORATION TECHNICAL SERVICE
PHONE NUMBER: 1.800.433.9490 or For Your Master Service Agent See
WWW.STRUCTURALCONCEPTS.COM/Contact/Master_Service_Agents.asp

LIMITED WARRANTY

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

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

Warranty; Remedies; Limitations. 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. 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 PURCHASE FOR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, LOST PROFITS, OR OTHER ECONOMIC INJURY DUE TO ANY DEFECT IN THE GOODS OR ANY BREACH OF SCC. SCC SHALL NOT BE LIABLE TO THE PURCHASER IN TORT FOR ANY NEGLIGENT DESIGN OR MANUFACTURE OF THE GOODS, OR FOR THE OMISSION OF ANY WARNING THEREFROM.

SCC shall have no obligation or liability under this warranty for claims arising from any other party's (including Purchaser's) negligence or misuse of the Goods or environmental conditions. This warranty does not apply to any claim or damage arising 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 of Goods. Notwithstanding the foregoing, any warranty with respect to such parts of Goods and any remedies available as a result of a breach thereof shall be subject to all of the procedures, limitations, and exclusions set forth herein.

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

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

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

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

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

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

Miscellaneous. If any provision of this Agreement is found to be invalid or unenforceable under any law, the provision shall be ineffective to that extent and for the duration of the illegality, but the remaining provisions shall be unaffected. Purchaser shall not assign any of its rights nor delegate any of its obligations under this Agreement without prior written 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 assigns.

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

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

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

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

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

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

One Year Limit of Liability. After SCC's one-year parts and labor warranty on the original F.O.B. 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. unit.