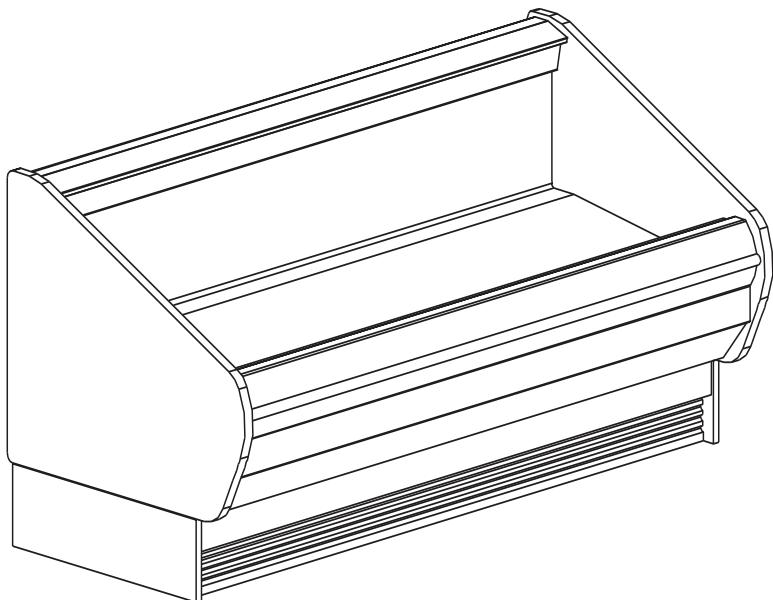


# INSTALLATION & OPERATION HANDBOOK



DELI

CASES  
MODEL OC

ORIGIN<sup>2</sup><sup>™</sup>

## Table of Contents

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# GENERAL INFORMATION

*General product information and support.*

Welcome to the ORIGIN<sup>2</sup> display case family. We're very pleased that you've chosen Hill PHOENIX for your food merchandising needs.

This handbook is targeted to individuals involved in the installation and/or operation of ORIGIN<sup>2</sup> display cases and contains detailed illustrations and information about the product.

By closely following the manual's instructions, you can expect peak performance, attractive fits and finish, and long case life.

We are always interested in your suggestions for improvements in both case design and this handbook.

## Description of Cases

Display cases described in this handbook are part of the Hill PHOENIX ORIGIN<sup>2</sup> design series. This manual covers the Model OC single deck deli/cheese merchandiser.

## Store Conditions

Hill PHOENIX cases are designed to operate in an air conditioned store that can maintain a 75°F (24°C) store temperature and 55% (maximum) relative humidity (CRMA conditions). Case operation will be adversely affected by exposure to excessively high ambient temperatures and/or humidity.

## Refrigeration System Operation

Air-cooled condensing units require ventilation for the efficient performance of condensers. Machine-room temperatures must be a minimum of 65°F in winter and a maximum of 95°F in summer. Minimum condensing temperatures should be no less than 70°F.

## Receiving Cases

Examine fixtures carefully for shipping damage and shortages. For information on shortages, contact the Service Parts Department at 1-800-283-1109.

## Apparent Damage

Claims for obvious damage must be 1) noted on either the freight bill or the express receipt and 2) signed by the carrier's agent; otherwise, the carrier may refuse the claim.

Please feel free to contact us with your suggestions via mail, telephone, or Internet using the information below:

Hill Phoenix  
Marketing Services Department  
1925 Ruffin Mill Rd.  
Colonial Heights, VA 23834  
Tel: 804-526-4455  
Fax: 804-526-7450  
(visit our web site at:  
[www.hillphoenix.com](http://www.hillphoenix.com))

Thank you for choosing Hill PHOENIX, and we wish you the very best in outstanding food merchandising.

## Concealed Damage

If damage becomes apparent after the equipment is unpacked, retain all packing materials and submit a written request to the carrier for inspection within 15 days of receipt of equipment.

## Lost Items

Equipment has been carefully inspected to insure the highest level of quality. Any claim for lost items must be made to Hill PHOENIX within 48 hours of receipt of equipment.

## Technical Support

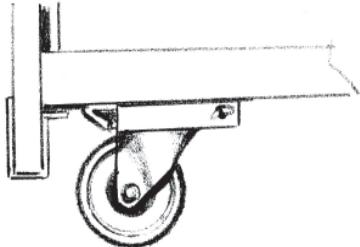
If any technical questions arise regarding display cases, please contact our Customer Service Department in Richmond, VA at 1-804-526-4455. For any questions regarding our refrigeration systems or electrical distribution centers, please contact our Customer Service Department in Conyers, GA at 1-770-388-0706.

## Contacting the Factory

If you need to contact Hill PHOENIX regarding a specific fixture, be certain that you have both the case model number and serial number - this information is on the serial plate located on the lower rear baffle of the case (see next page for details). When you have this information, just dial 1-804-526-4455 and ask for a Service Parts Representative.

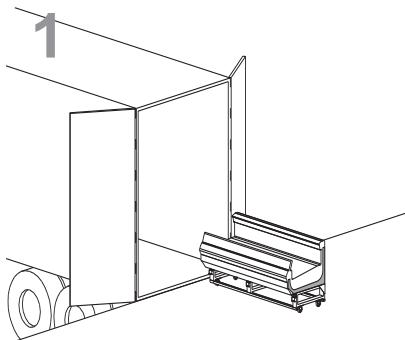
# USING CASTERS

*General use and removal of casters.*

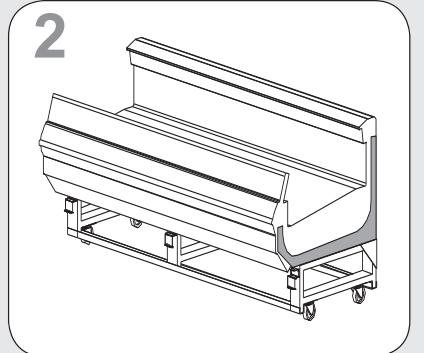


ORIGIN<sup>2</sup> cases are manufactured and shipped to stores with casters installed on the base frame. This helps to ensure that moving the cases is easier for everyone involved in the manufacturing, shipping, and installation process.

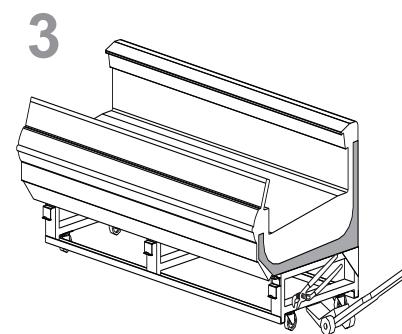
Casters also reduce the chances of the cases being damaged because of the raising and lowering of the cases with a "J" bar when placing them on dollies, skates, or rollers. In most situations, one or two persons can move the case with ease.



If there is a truck-level delivery dock, cases may be rolled directly from the truck to the store floor.



Prior to final installation, casters may remain in place to help move cases to staging areas throughout the store. When you're ready for final line-up, roll the cases to the set position and remove casters.



Removing the casters is easy: simply flatten and hammer out the cotter pins, then lift the case with "J" bar. The casters will fall off.



## CAUTION

If skid boards are required for unloading cases, casters should be removed prior to sliding cases down the skid (see Diagram 3). When unloading is complete, re-install the casters.



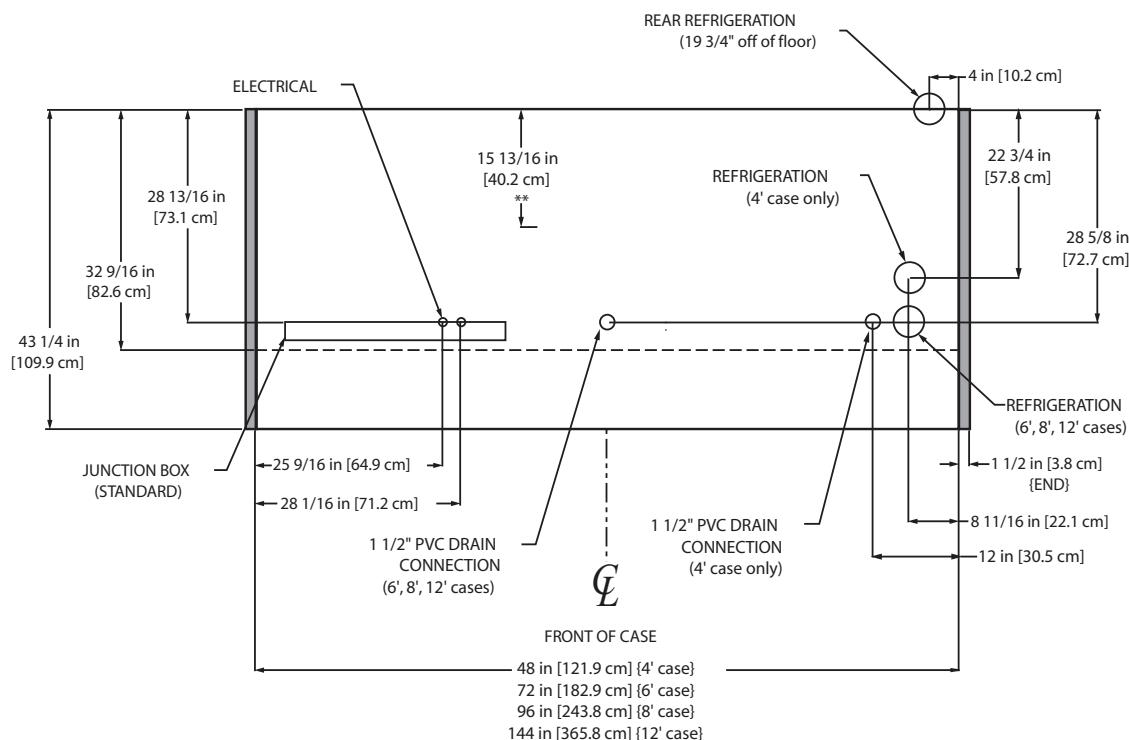
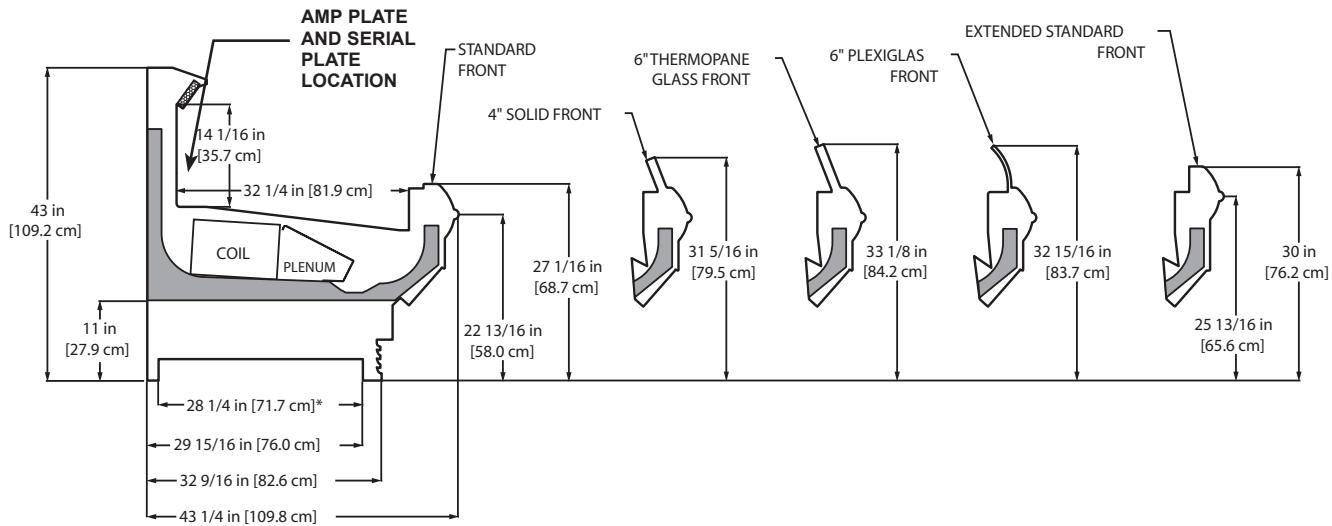
## WARNING

Be certain that hands are out of the way when removing casters. Failure to do so may result in serious injury.

**NOTE: Casters should be discarded when installation is complete.**

# CASE DIMENSIONS

Case dimension illustrations for Model OC.



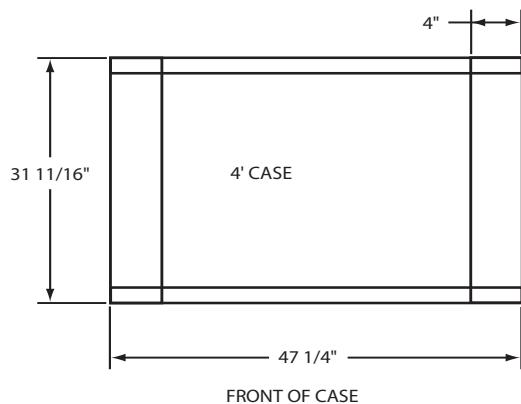
NOTES:

\* STUB-UP AREA

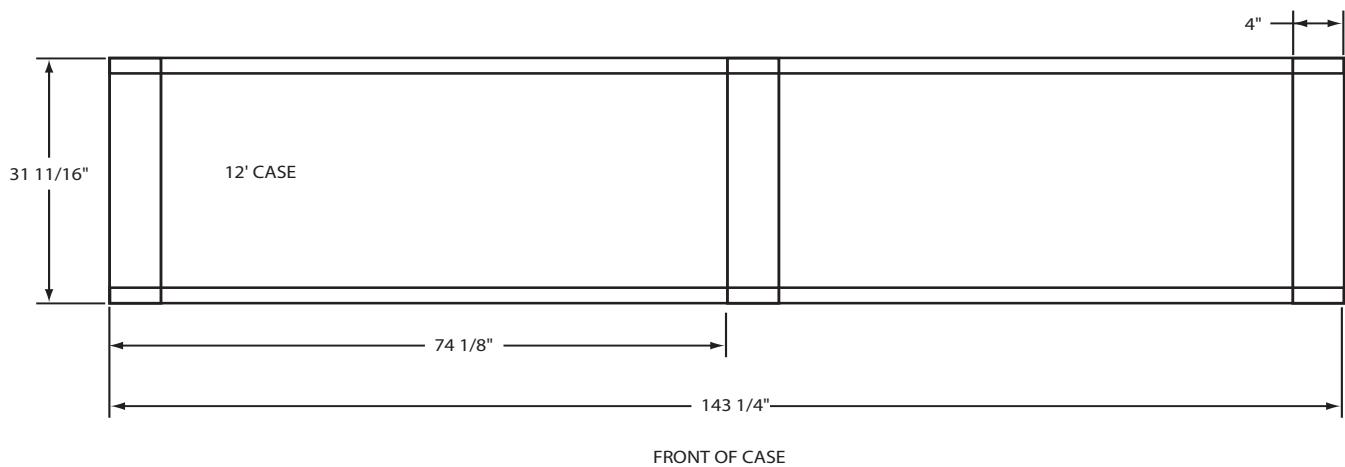
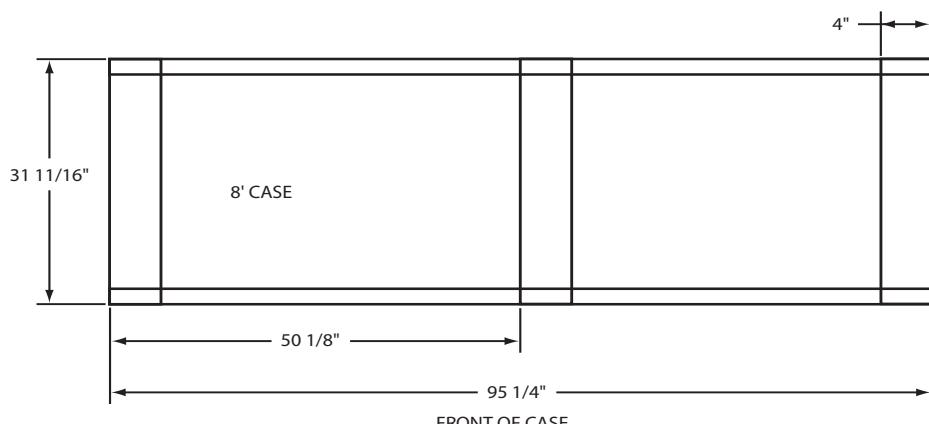
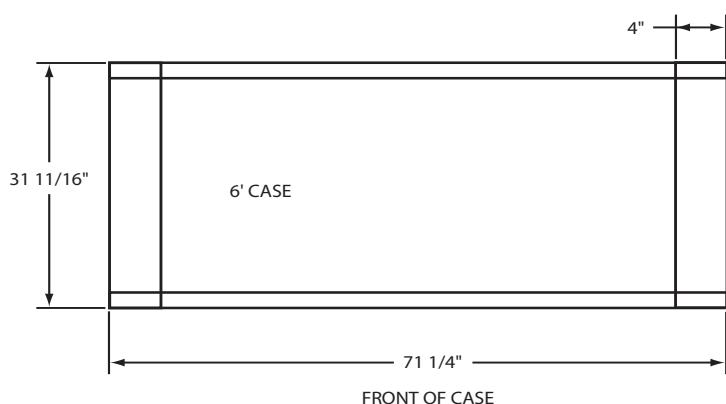
\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAIN

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') - 1/2", SUCTION LINE (8' & 12') - 5/8", LIQUID LINE (ALL LENGTHS) - 3/8"

**(Case Dimension Illustrations, cont'd)**



**BASEHORSE LOCATIONS FOR MODEL OC**



# LINE UP

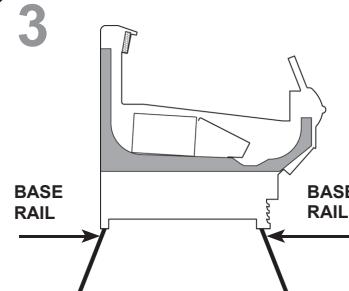
Eleven-step procedure for initial case line-up.



Ask the general contractor if there have been any changes to the building's dimensions since the blueprint you are using was issued. Also, ask the points of reference from which you should take dimensions to locate the cases.

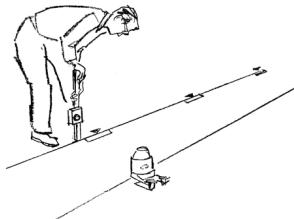


Mark the floor where cases are to be located for the entire lineup.



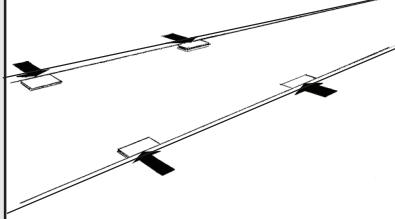
Snap lines where base rails are positioned — *not* the front or back edges of the cases. See case cross section drawings on pages 4 - 5 for rail location dimensions.

4



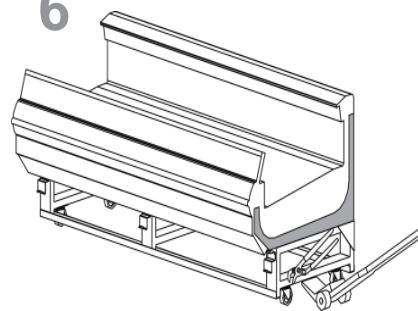
Leveling is necessary to ensure proper case alignment. Locate the highest point on the chalk line as a reference for determining the height of shim-pack levelers. A laser transit is recommended for precision and requires just one person.

5



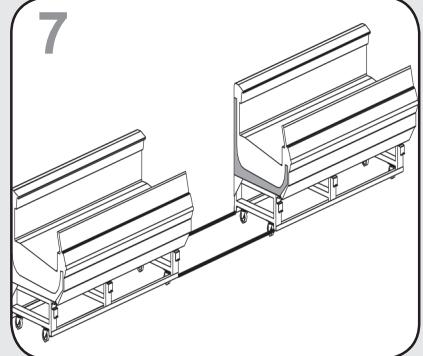
Locate basehorse positions along chalk lines. Spot shim packs at each basehorse location.

6

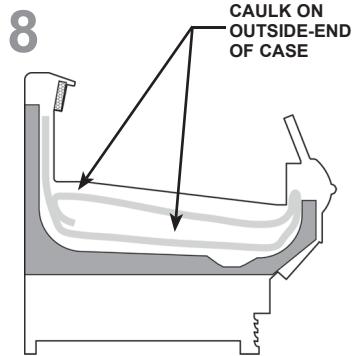


Roll the first case into position. Raise case from the end under cross support using "J" bar. Remove cotter pins and casters. REMEMBER TO KEEP YOUR HANDS AWAY FROM THE BOTTOM OF THE CASE! Level the case on shims.

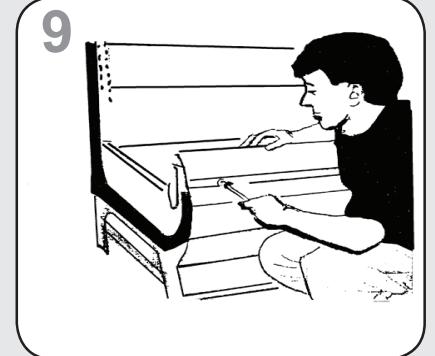
**(Line Up, cont'd)**



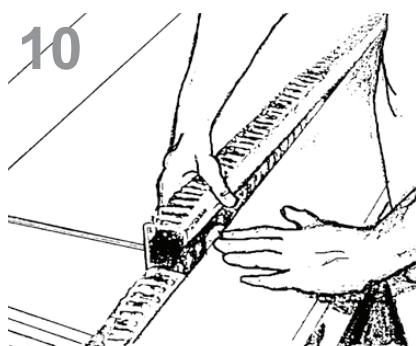
Roll the next case approximately 4'-5' from the adjoining case. Remove casters from the end nearest to the next case. Allow casters to remain on the opposite end to assist in pushing cases together, then remove them.



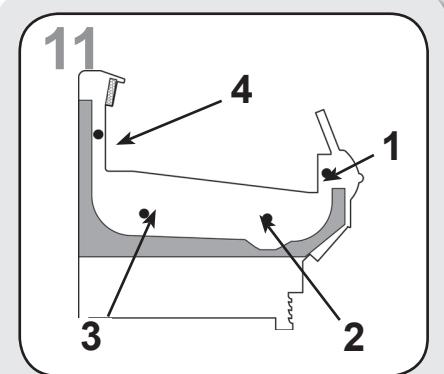
Remove anything from the case that may interfere with case joining (eg. shipping braces). Run a bead of sealant around the entire end before pushing cases tightly together.



Loosen screws on master bumper. Move bumper joint to a position for sliding between adjoining case bumper.



Grill lifts out without fasteners and may be easily removed to gain clear access to case-to-case joining bolts.

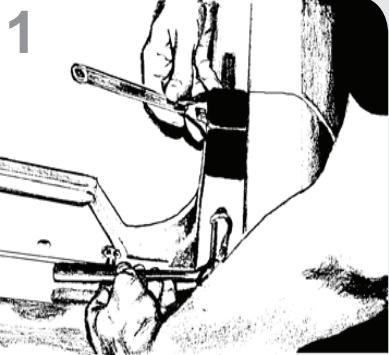


Push cases tightly together and bolt them together through the 4 holes provided. Tighten until all margins are equal. **DO NOT OVER TIGHTEN.**

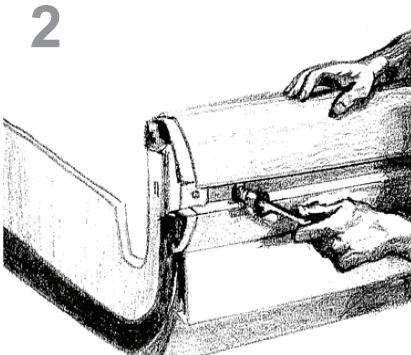
**NOTE: Be sure to ask about our case installation video, available upon request through your local Hill Phoenix Representative.**

# TRIM OUT

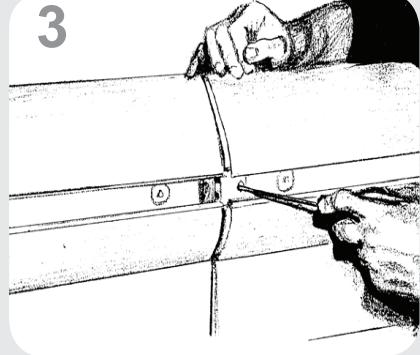
*Twelve-step procedure for trimming out cases.*



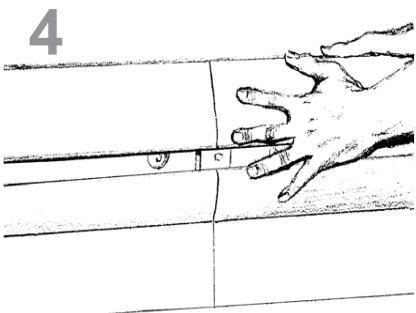
Tighten all joint bolts. Draw up tightly, but do not over tighten.



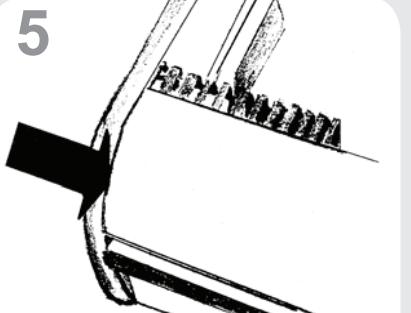
If required, adjust the polymer master bumper joints — be certain to loosen bumper screws first.



Slide bumper joint to the center of the joint between the two cases. Use screw driver in the hole provided.



Slide master bumper left-or-right to close seam as required. The bumper joint will neatly finish any gap that may remain.

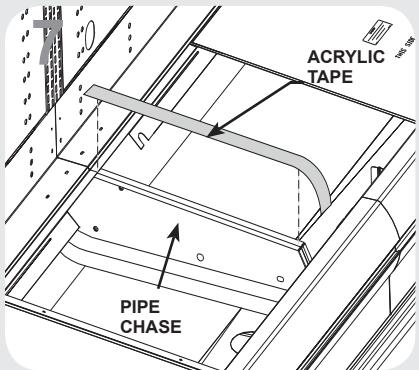


Close seam where bumper joins case end. If the master bumper is moved away from the end to close the case-to-case joint seam, the bumper joint closes the seam that may develop.



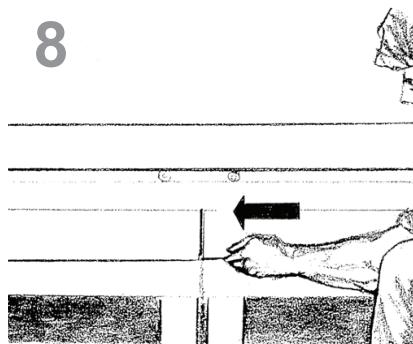
Seal joints along the pipe chase seam with the caulk provided.

(Trim Out, cont'd)

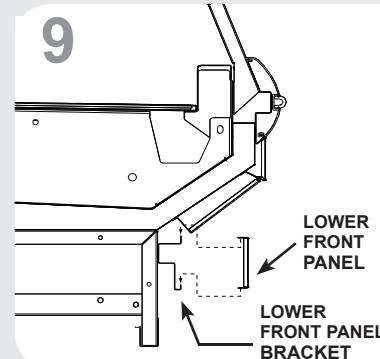


Apply acrylic tape over the pipe chase seam. Tape is found with the "Ship Loose" items and acts as a watershed, preventing water from settling in the case joint.

8

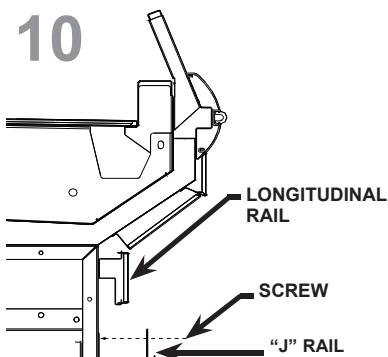


9



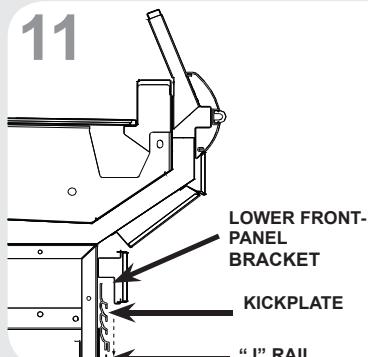
Close joints of color band and front panel. Panels are slotted to allow left-or-right adjustment as required.

Attach the lower front panel — slots and tabs are designed for easy installation without fasteners. The lower front panel is slotted to allow adjustment left-or-right as required.



Attach the "J" rail to the longitudinal rail with the screws provided.

11



Slide the kickplate behind the lower front panel bracket, then down onto the "J" rail.

12



Insert the nose bumper into the master bumper channel. Roll nose bumper into channel along entire lineup (up to 96'). We recommend that the nose bumper be left in the store 24 hours before installing. DO NOT STRETCH THE BUMPER during installation as it will shrink to its original length and leave a gap.

# CASE OPERATION

*Recommended settings for all OC models (4', 6', 8', and 12').*

## Electrical Data

Model	Fans per Case	Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters				
		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts		
		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
OC	4'	2	1.00	60	0.60	40	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20	24	2.88	600	3.33	798
	8'	2	1.00	60	0.60	40	0.25	30	3.85	800	4.44	1065
	12'	3	1.50	90	0.90	60	0.38	46	5.77	1200	6.67	1600

## Defrost Controls

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
OC	2	6-8	40	49	70	47	26	45	40	45

### Medium Temperature Defrost Schedule

No. Per Day Hours

- |   |                       |
|---|-----------------------|
| 1 | 12 midnight           |
| 2 | 12 am - 12 pm         |
| 3 | 6 am - 2 pm - 10 pm   |
| 4 | 12 - 6 am - 12 - 6 pm |

## Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
OC	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

## Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft <sup>1</sup>	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Average Product (°F)	Return Air (°F)	Discharge Air Velocity <sup>2</sup> (FPM)
OC	27"	480	Enh.	17	6-8	26	35	39	305
	31" & 33"	415	Enh.	17	6-8	26	34	35	305

<sup>1</sup> BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

<sup>2</sup> Average discharge air velocity at peak of defrost.

All measurements are taken per CRMA specifications.

# ELECTRICAL HOOK-UP

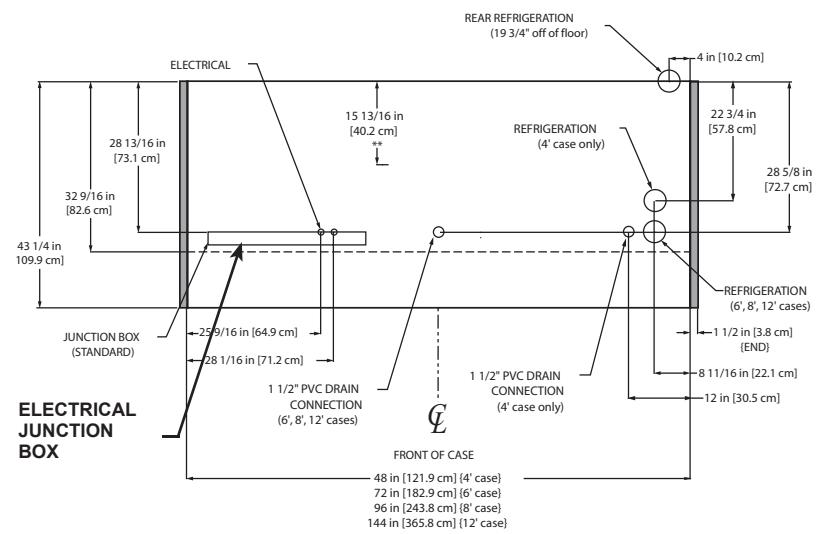
Information on electrical connections.

Electrical hookups are made utilizing the junction box located at the front of the case, bottom left-hand side.

For case-to-case wiring, run "green-field" or another conduit between the junction boxes. When connecting to the junction box, on the bottom left-side of the case, field wiring should exit the box from the right-hand side, furthest away from case wiring. This will allow more room inside for wire connections.

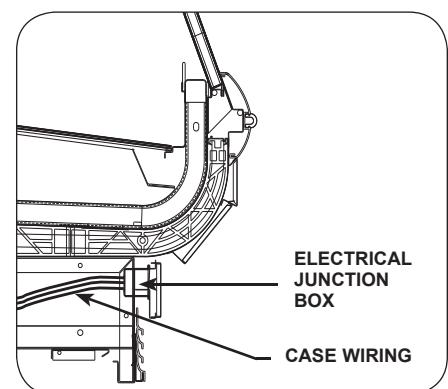
*At the owner's specification, a full length electrical raceway can be added for easier line-up wiring. A sliding electrical tray can also be installed at the factory for easy access to electrical connections. Ask your Sales Representative for more information.*

## LOCATING THE ELECTRICAL JUNCTION BOX



## WIRING NUMBERS AND COLORS

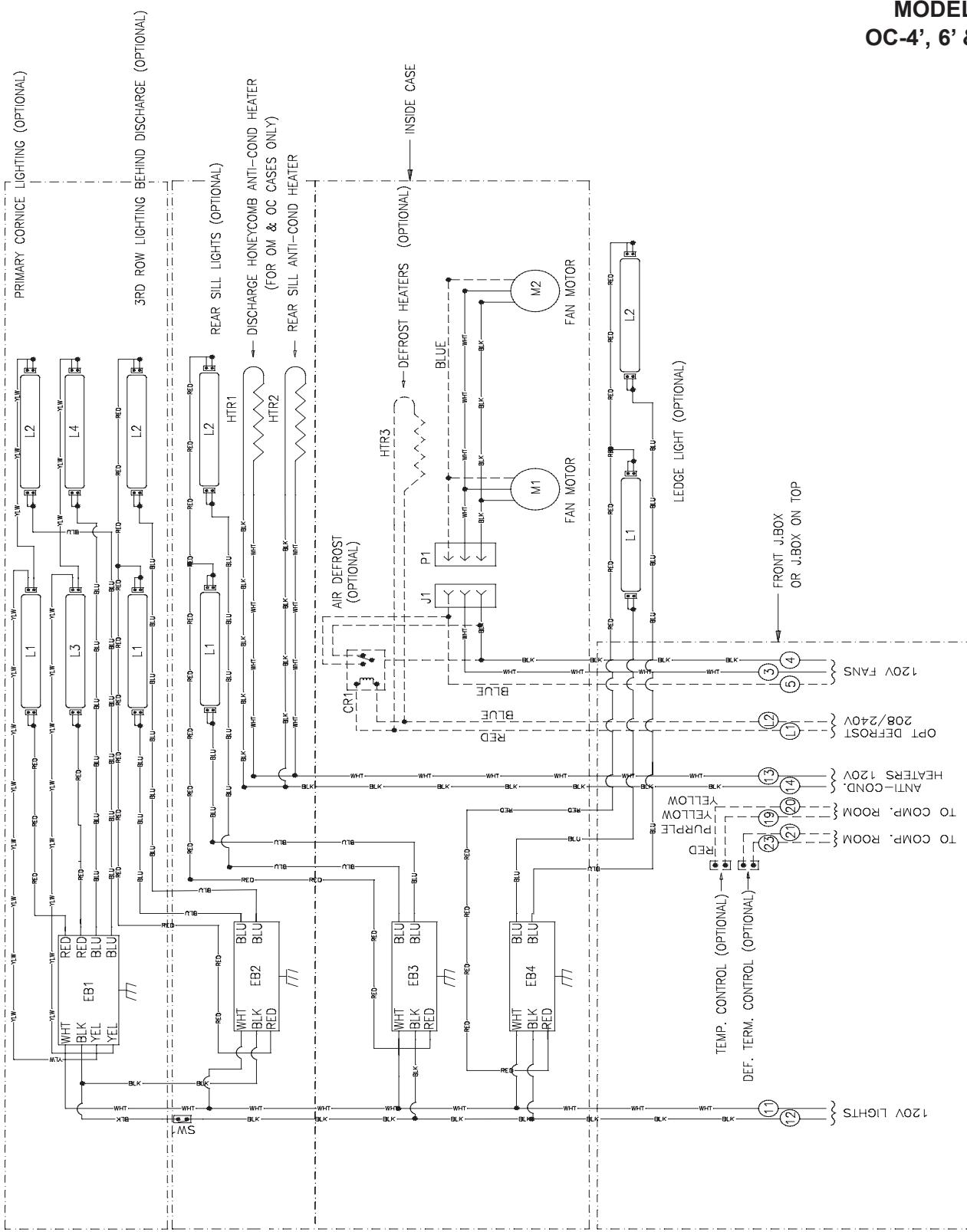
WIRE IDENTIFICATION	BLACK	WHITE	BLUE	RED	YELLOW	PURPLE	ORANGE
DEFROST HEATERS (1-PHASE)	1,2						
DEFROST HEATERS (3-PHASE)	L1		L3	L2			
	14	13					
ANTI-CONDENSATE HEATERS	16	15					
	18	17					
AISLE WARMER	10	9					
DRAIN HEATER	36	37					
PRIMARY FANS	4	3	40				
SECONDARY FANS	6	5					
AMBIENT FANS	8	7					
LIGHTS	12	11					
BELL	60,62						
TEMPERATURE CONTROL				19,20			
DEFROST TERMINATION CONTROL	22				21	23	
DEFROST SAFETY CUT-OUT CONTROL	28				27	29	
LIQUID LINE SOLENOID				30	31		
SUCTION LINE SOLENOID				38	39		
CASE/CONTROLLER POWER	42	41					
TRANSFORMER	24	25					
CAPACITOR	34		35				
RECEPTACLE	32	33					
SYSTEM NEUTRAL (3-PHASE)		N					
POWER CORD (SELF-CONTAINED)	58	57					
SERVICE LIGHT (HI-PRESSURE)	53,54			49,50			
HIGH PRESSURE SWITCH							
DUAL PRESSURE SWITCH	51,52						
CONDENSING UNIT POWER	48	47		44 220V			
CONDENSING UNIT FAN		45	46				



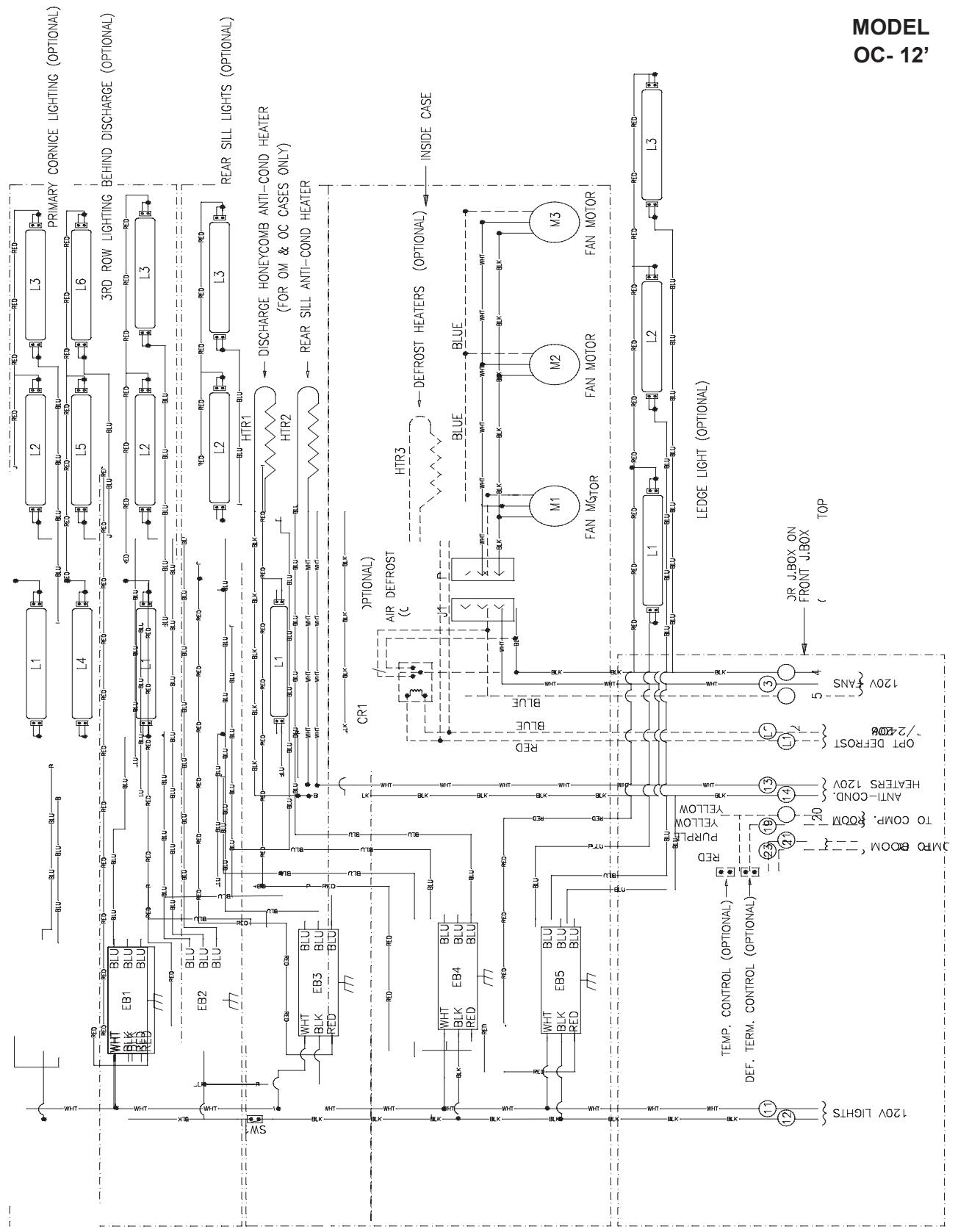
**WIRING-TO-BOTTOM**

## (Electrical Hook-Up, cont'd)

**MODEL  
OC-4', 6' & 8'**



## (Electrical Hook-Up, cont'd)

MODEL  
OC-12'

# REFRIGERATION PIPING

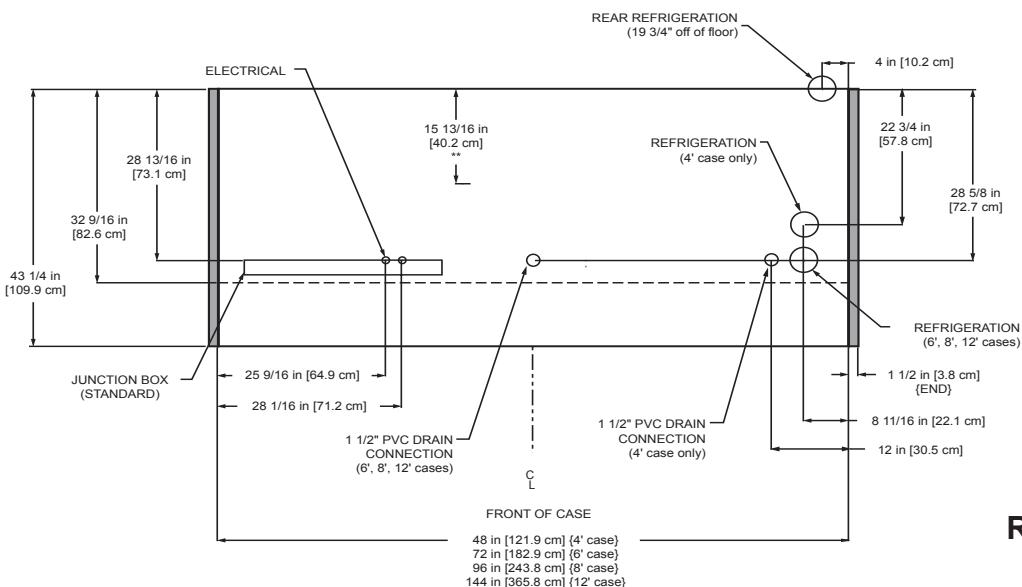
*Coil outlet, case controls location, and other piping tips.*

Refrigeration components and the coil outlet hole are located to provide the best access for installation and maintenance.

As the diagram below indicates, the coil outlet hole is positioned toward the front of the case, on the right-hand side, fully visible in front of the fan plenum.

The expansion valve and other controls are located on the left-hand side of the case and are accessible without lifting the fan plenum. The controls cluster may be reached by lifting *only* the left-hand deck pan, thus minimizing the need to unload refrigerated product.

*At the owner's specification, specially designed piping-hangers can be installed along the front of the case. Located under the return air grill, the hangers suspend case-to-case piping from the drain trough, keeping it out of the way.*



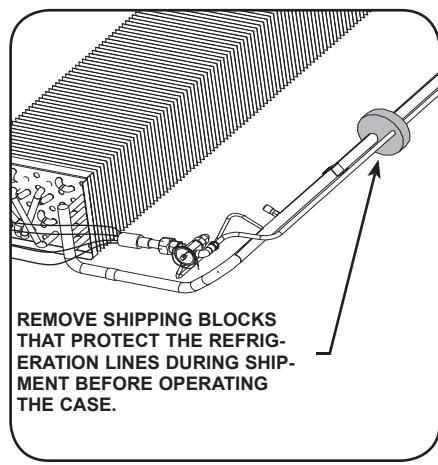
NOTES:

\* STUB-UP AREA

\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAIN

I FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT  
I ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT  
I A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL  
I SUCTION LINE (4' & 6') - 1/2", SUCTION LINE (8' & 12') - 5/8", LIQUID LINE (ALL LENGTHS) - 3/8"

## REMOVE SHIPPING BLOCKS



**NOTE: IF IT BECOMES NECESSARY TO PENETRATE THE CASE TANK (TOP, BOTTOM, FRONT, BACK, OR SIDE), BE CERTAIN IT IS SEALED WITH CANNED-FOAM SEALANT AND WHITE RTV.**

# PLUMBING

*Information on drain connections.*

The drain outlet is located front and center of the cases for convenient access. It is specially molded out of ABS material.

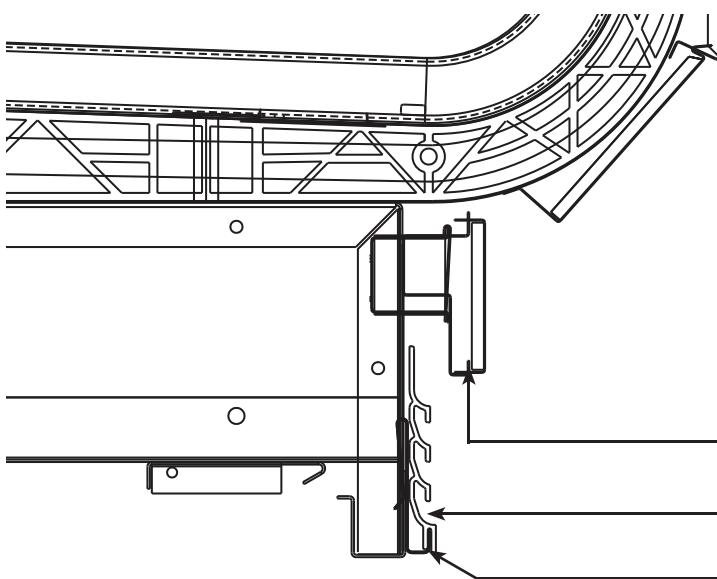
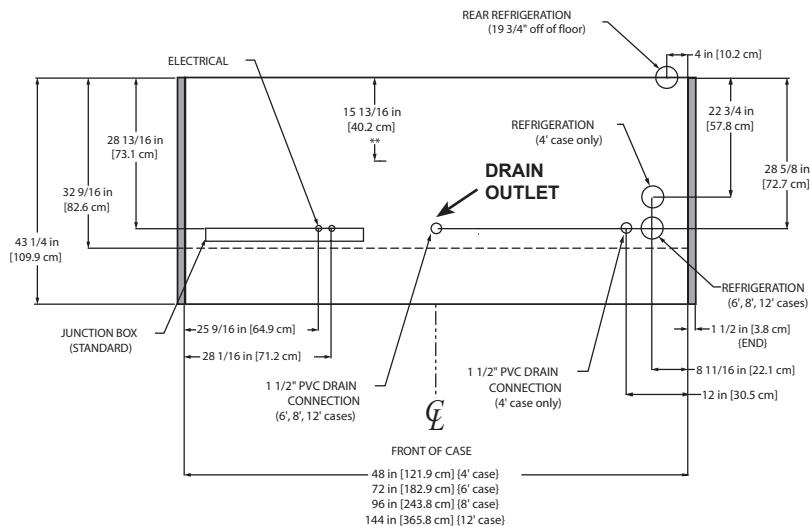
The "P" trap — furnished with the case — is constructed of schedule 40 PVC pipe. Care should be given to assure that all connections are water-tight and sealed with the appropriate PVC or ABS cement.

The outlet is positioned to allow 180° swing of the trap. The lines can be run left-or-right of the tee with the proper pitch to satisfy local drainage requirements.

The kickplate is shipped loose with the case for field installation; therefore, you should have open access to the drain line area.

If the kickplate has been installed, you will find it very easy to remove. See instructions below or the trim out section of this manual on page 11.

## LOCATING THE DRAIN OUTLET



## HOW TO REMOVE KICKPLATE

# DEFROST AND TEMPERATURE CONTROL

## *Defrost data and sensor bulb locations.*

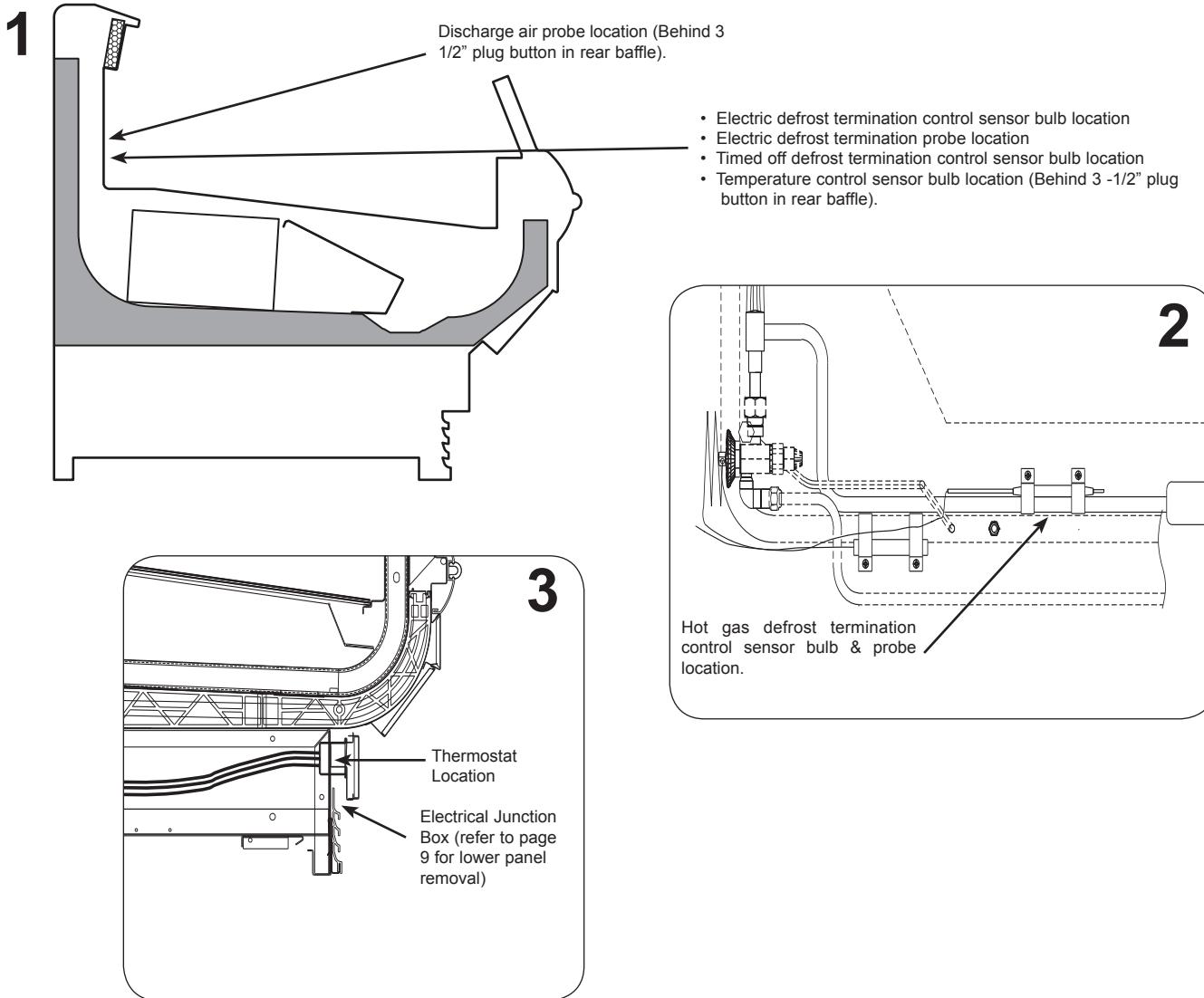
These cases are equipped with either Electric, Hot Gas, or Timed Off defrost per the owner's preference.

The sensor bulb and probe for electric defrost termination, the sensor bulb for timed off defrost termination, and the sensor bulb for temperature control are all located behind the rear baffle (see Diagram 1). The discharge air probe is also located behind a 3 1/2" plug button on the rear baffle (see Diagram 1).

The hot gas defrost-termination sensor bulb and probe are attached to the dump line (see Diagram 2 below), which is located in the front, left-hand side of the case.

The defrost termination control thermostat and the temperature control thermostat are located in the electrical junction box on the front of the case, bottom left-hand side (see Diagram 3).

It is important to consult the control setting guidelines shown on page 10 before setting defrost times. Further adjustments may be required, depending on store conditions.



# AIR FLOW AND PRODUCT LOADING

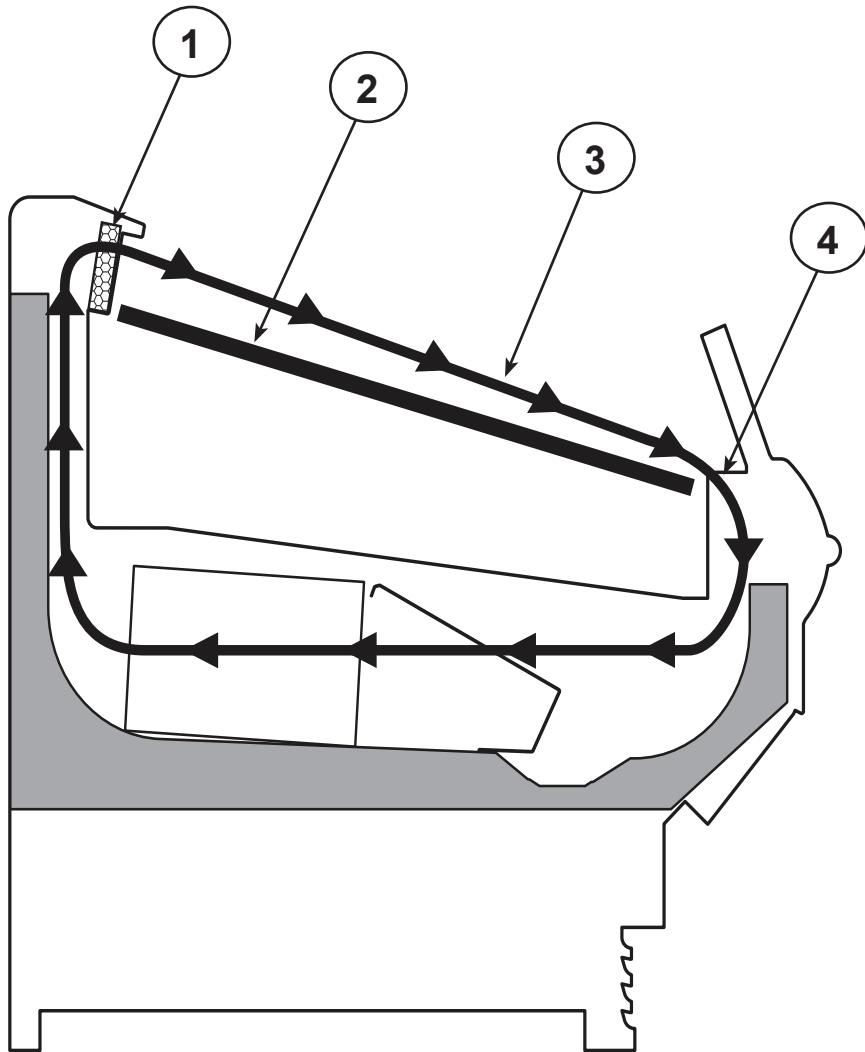
*Air flow and load limits.*

Your cases have been designed to provide space for maximum product capacity within the refrigerated air envelope.

It is important that you **do not** overload the food product display — doing so impinges on the air flow pattern, which will cause malfunction and result in the loss of proper temperature levels, particularly when discharge and return air sections are covered.

Please keep products within the load limit lines shown in the diagram below.

DISCHARGE .....	1
LOAD LIMIT .....	2
AIR FLOW.....	3
RETURN AIR GRILL.....	4



# USE & MAINTENANCE

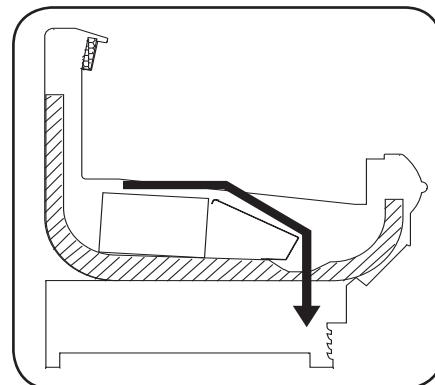
## *Cleaning and fan information.*

Cases are designed to facilitate cleaning, with a wide radius formed on the front and back of the inside bottom that helps accelerate liquid flow and eliminates difficult-to-clean sharp corners.

All surfaces pitch downward to a deep-drawn drain trough that angles toward the front-center of the case where the 1 1/2" waste outlet is located for easy access.

The coil is covered to keep food fluids from entering, but the cover lifts up easily when coil cleaning is desired. The single piece fan plenum lifts up for cleaning, exposing a major portion of the inside bottom of the tank. Make certain fan plenum is properly closed after cleaning to avoid air leaks.

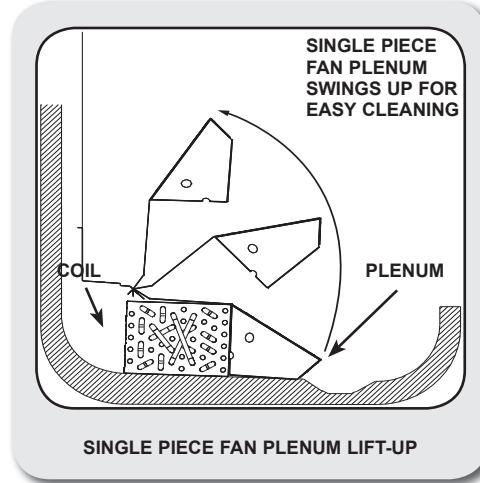
Front return air grills snap out for cleaning; no fasteners are used.



POSITIVE DRAIN  
OFF

## CLEANING PROCEDURES

- A periodic cleaning schedule should be established to maintain proper sanitation, ensure maximum operating efficiency, and avoid the corrosive action of food fluids on metal parts that are left on for long periods of time. We recommend weekly cleaning.
- To avoid shock hazard, be sure all electrical power is turned off before cleaning. In some installations, more than one disconnect switch may have to be turned off to completely de-energize the case.
- Check waste outlet to insure that it is not clogged before starting the cleaning process and avoid introducing water faster than it can be removed by the case drain.
- Avoid spraying cleaning solutions directly on fans or electrical connections.
- Provide a temporary separator between those cases which are being cleaned and those which are not.
- Allow cases to be turned off long enough to clean any frost or ice from coil and flue areas.
- Remove and clean discharge honeycomb. You may need to use spray detergent and a soft, long bristle brush.
- Use mild detergent and warm water. When necessary, water and baking soda solution will help remove case odors. Avoid abrasive scouring powders or pads.
- Remove front panels and clean underneath the case with a broom and a long handled mop. Instructions for removing the front panels can be found on page 9 of this manual.
- Use warm water and a disinfecting cleaning solution when cleaning underneath the cases.



## (Use and Maintenance, cont'd)

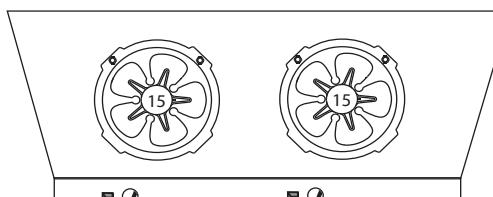
### FANS

The evaporator fans are equipped with either 9-watt fan motors (1550 RPM's) or 12-watt fan motors (1650 RPM's). Both motors have a counter-clockwise rotation when viewed from the shaft end.

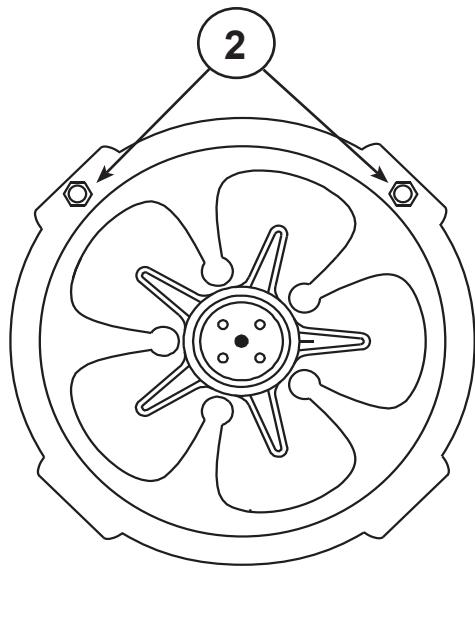
The fan blades are 8" in diameter and are pitched to varying degrees on each model as shown in the chart below. It is important that the blade pitch be maintained as specified. **Do not** attempt a field modification by altering the blades.

Fan motors may be changed using an easy, two-step process that does not involve lifting up the plenum and thereby avoids the necessity of unloading the entire product display to make a change:

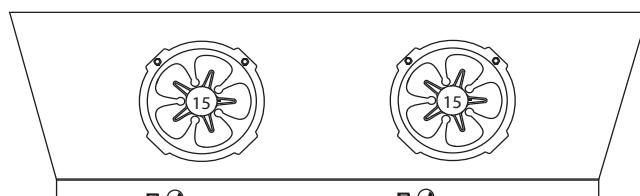
1. Unplug the fan motor, easily accessible outside the plenum (see Diagram 1).
2. Remove two fasteners, then lift out the entire fan basket (see Diagram 2).



**MODEL OC-4'**



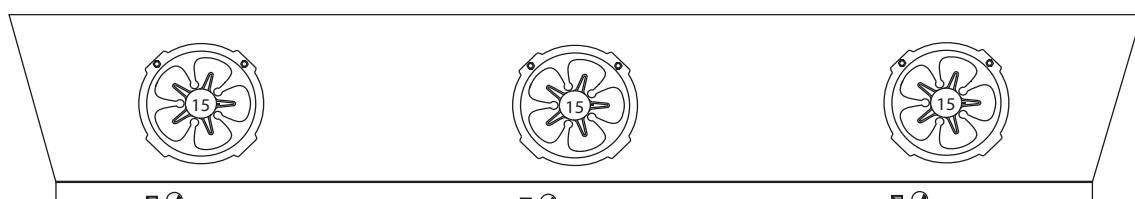
Model	OC			
	4'	6'	8'	12'
No. Fans	2	2	2	3
Blade Pitch	15"	15"	15"	15"



**MODEL OC-6'**



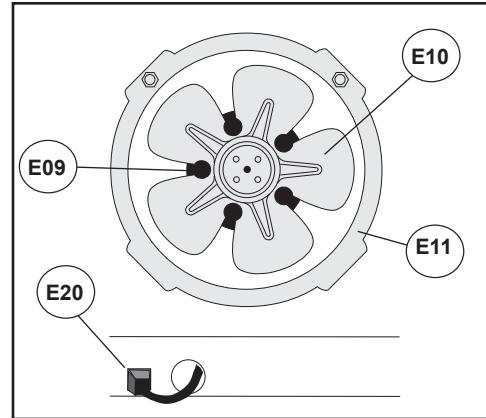
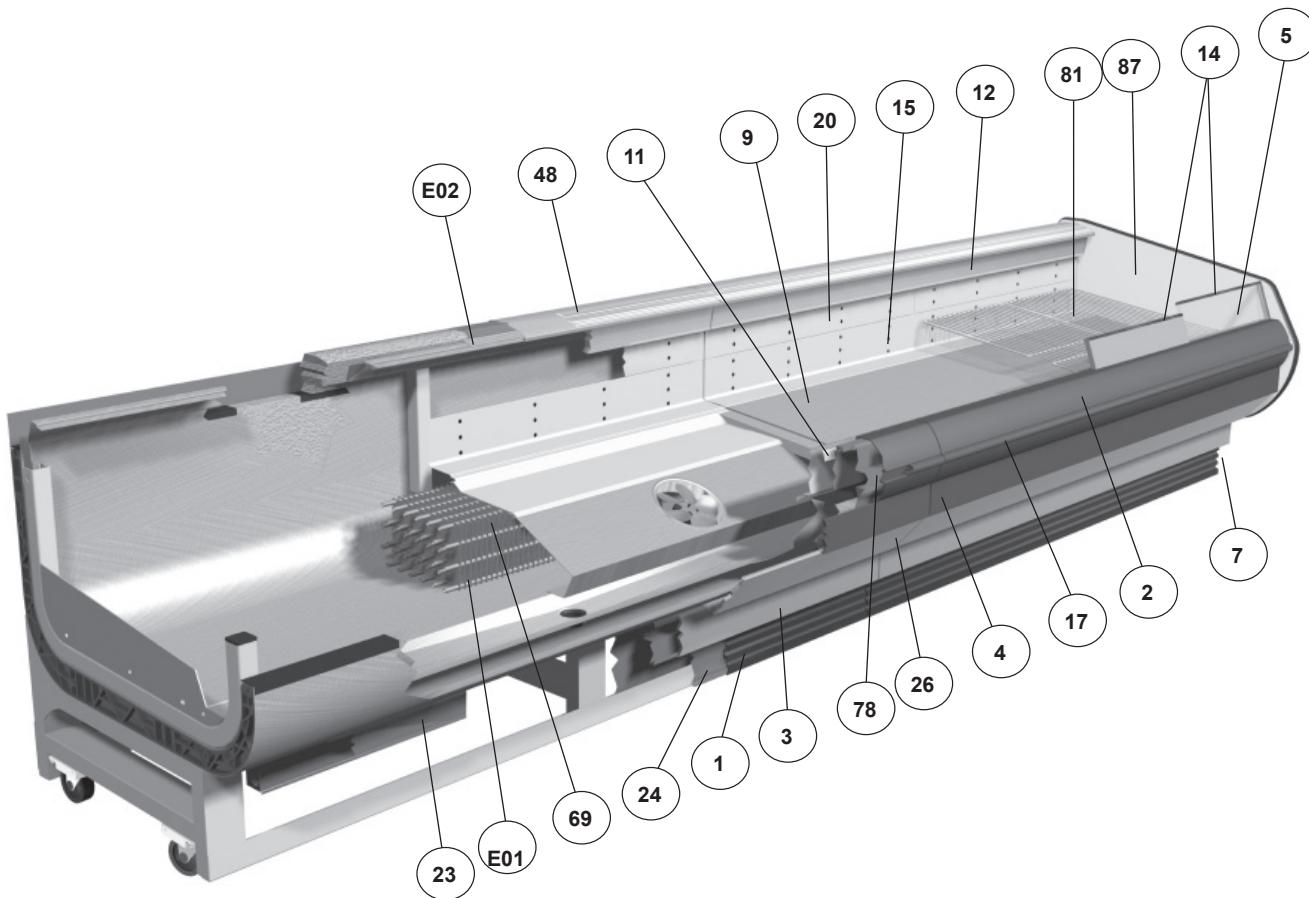
**MODEL OC-8'**



**MODEL OC-12'**

# PARTS ORDERING

*Replacement parts identification.*



**(Parts Ordering, cont'd)**

Match the part number to the illustration on page 20.

- |   |  |
|---|--|
| 1 Kickplate, PVC Extrusion (Storm Grey)                             | 55 Sliding Rear Doors, Superstructure Only (Not Shown)   |
| 2 Master Bumper (Featherstone, Smoke, White, French Vanilla, Black) | 56 Door Frame, Superstructure only (Not Shown)   |
| 3 Lower Front Panel (Painted or Stainless)                          | 69 Coil  |
| 4 Color Band (Painted or Stainless)                                 | 78 Bumper Retainer   |
| 5 Thermopane, Front Sill Glass                                      | 81 Bottom Wire Racks   |
| 9 Deck Pan (Painted, Unpainted, or Stainless)                       | 83 Thermometer, and Bracket (Not Shown)  |
| 11 Front Baffle (Aluminum, Painted, or Stainless)                   | 87 End Assembly (Solid, Square, Full View, Custom Color Identify, Left-or-right hand, Color of Panel, and color of PVC End Trim) |
| 12 Honeycomb (Discharge, 1" x 4" x 48")                             | 88 End Kickplate (Storm Grey)  |
| 14 Glass Cap  | E01 Defrost Heater   |
| 15 Rear Baffle (Painted or Stainless)                               | E02 Anti-Condensate Heater   |
| 17 Nose Bumper (PVC Custom Color)                                   | E09 Fan Motor - STATE HIGH EFFICIENCY OR STANDARD  |
| 20 Lower Rear Baffle (Painted or Stainless)                         | E10 Fan Blade  |
| 23 Electrical Junction Box  | E11 Fan Basket, 8"   |
| 24 "J" Rail, for Kickplate  | E20 Fan Cord-Set (High Efficiency or Standard)   |
| 26 Front Panel (Painted Custom Color)                               |  |
| 48 Rear Sill (Painted or Stainless)                                 |  |
| 50 Lamp Shield  |  |

Procedure for ordering parts.

1. Contact the Service Parts Department.

**Hill PHOENIX**  
 1925 Ruffin Mill Road  
 Colonial Heights, Virginia 23834  
 Tel: 800-283-1109  
 Fax: 804-526-3897

2. Provide the following information about the part you are ordering:

- Model number and serial number\* of the case on which the part is used.
- Length of part, if applicable, I.E. 4', 6', 8', 12'.
- Color of part (if painted) or color of polymer part.
- Whether part is for left-hand or right-hand application.
- Whether shelves are with or without lights.
- Quantity

*\*Serial plate is located on top flue-panel on the right-hand side of the case (See illustrations on pages 4 & 5).*

3. If parts are to be returned for credit, ask the Parts Department to furnish you with a Return Materials Authorization Number.

# NOTES

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## **WARRANTY**

HEREINAFTER REFERRED TO AS MANUFACTURER

FOURTEEN MONTH WARRANTY. MANUFACTURER'S PRODUCT IS WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND MAINTENANCE FOR A PERIOD OF FOURTEEN MONTHS FROM THE DATE OF ORIGINAL SHIPMENT. A NEW OR REBUILT PART TO REPLACE ANY DEFECTIVE PART WILL BE PROVIDED WITHOUT CHARGE, PROVIDED THE DEFECTIVE PART IS RETURNED TO MANUFACTURER. THE REPLACEMENT PART ASSUMES THE UNUSED PORTION OF THE WARRANTY.

This warranty does not include labor or other costs incurred for repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts.

The fourteen month warranty shall not apply:

1. To any unit or any part thereof which has been subject to accident, alteration, negligence, misuse or abuse, operation on improper voltage, or which has not been operated in accordance with the manufacturer's recommendation, or if the serial number of the unit has been altered, defaced, or removed.
2. When the unit, or any part thereof, is damaged by fire, flood, or other act of God.
3. Outside the continental United States.
4. To labor cost for replacement of parts, or for freight, shipping expenses, sales tax or upgrading.
5. When the operation is impaired due to improper installation.
6. When installation and startup forms are not properly complete or returned within two weeks after startup.

THIS PLAN DOES NOT COVER CONSEQUENTIAL DAMAGES. Manufacturer shall not be liable under any circumstances for any consequential damages, including loss of profit, additional labor cost, loss of refrigerant or food products, or injury to personnel or property caused by defective material or parts or for any delay in its performance hereunder due to causes beyond its control. The foregoing shall constitute the sole and exclusive remedy of any purchases and the sole and exclusive liability of Manufacturer in connection with this product.

The Warranties are Expressly in Lieu of All Other Warranties, Express or Implied and All Other Obligations or Liabilities on Our Part. The Obligation to Repair or Replace Parts or Components Judged to be Defective in Material or Workmanship States Our Entire Liability Whether Based on Tort, Contract or Warranty. We Neither Assume Nor Authorize Any Other Person to Assume for Us Any Other Liability in Connection with Our Product.

MAIL CLAIM TO:

Hill PHOENIX  
Display Merchandisers  
1925 Ruffin Mill Road  
Colonial Heights, VA 23834  
804-526-4455

Hill PHOENIX  
Refrigeration Systems &  
Electrical Distribution Centers  
709 Sigman Road  
Conyers, GA 30013  
770-388-0706

## **!WARNING**

### **Maintenance & Case Care**

When cleaning cases the following must be performed PRIOR to cleaning:

To avoid electrical shock, be sure all electric power is turned off before cleaning. In some installations, more than one switch may have to be turned off to completely de-energize the case.

Do not spray cleaning solution or water directly on fan motors or any electrical connections.

All lighting receptacles must be dried off prior to insertion and re-energizing the lighting circuit.

Please refer to the Use and Maintenance section of this installation manual.

