

# 3-DECK ISLAND PRODUCE

**C A S E S**

MODELS: O3IP & O3IPB



**INSTALLATION & OPERATION**

# HANDBOOK

**Hill PHOENIX**  
E X C E L L E N C E<sup>®</sup>

A **DOVER**<sup>™</sup> COMPANY



P053096D  
Rev. 9 11/10



Welcome to the **Hill PHOENIX** display case family. We're very pleased you joined us.

This installation and operation handbook has been especially prepared for everyone involved with **Hill PHOENIX** display cases – owners, managers, installers and maintenance personnel.

You'll find this book different than traditional manuals. The most dramatic difference is the use of many more illustrated instructions to make it easier to read and to help you get the most from this innovative new design. When you follow the instructions you should expect remarkable performance, attractive fits and finish, and long case life.

We are interested in your suggestions for improvement both in case design and in this handbook. Please call/write to:

**Hill PHOENIX**  
Marketing Services Department  
1925 Ruffin Mill Rd.  
Colonial Heights, VA 23834  
Tel: 804-526-4455  
Fax: 804-526-7450

We wish you the very best in outstanding food merchandising and a long trouble-free operation.



## LIABILITY NOTICE

### For Cases with Shelf Lighting Systems

Hill PHOENIX does NOT design any of its shelf lighting systems or any of its display cases with shelf lighting systems for direct or indirect exposure to water or other liquids. The use of a misting system or water hose on a display case with a shelf lighting system, resulting in the direct or indirect exposure of the lighting system to water, can lead to a number of serious issues (including, without limitation, electrical failures, fire, electric shock, and mold) in turn resulting in personal injury, death, sickness, and/or serious property damage (including, without limitation, to the display itself, to the location where the display is situated [e.g., store] and to any surrounding property). DO NOT use misting systems, water hoses or other devices that spray liquids in Hill PHOENIX display cases with lighted shelves.

If a misting system or water hose is installed or used on a display case with a shelf lighting system, then Hill PHOENIX shall not be subject to any obligations or liabilities (whether arising out of breach of contract, warranty, tort [including negligence], strict liability or other theories of law) directly or indirectly resulting from, arising out of or related to such installation or use, including, without limitation, any personal injury, death or property damage resulting from an electrical failure, fire, electric shock, or mold.

P079211M, REVO

## R-744 (CO<sub>2</sub>) NOTICE

### For Systems Utilizing R-744 (CO<sub>2</sub>) Refrigerant

For refrigeration units that utilize R-744 (CO<sub>2</sub>), pressure relief and pressure-regulating relief valves may need to be installed based on the system capacity. The valves need to be located such that no stop valve is positioned between the relief valves and the parts or section of the system being protected.

When de-energizing refrigeration units containing R-744 (CO<sub>2</sub>), venting of the R-744 (CO<sub>2</sub>) refrigerant may occur through the pressure regulating relief valves. *These valves are located on the refrigeration system and not on the case model.* If venting does occur, the valve must not be defeated, capped, or altered by any means.

**WARNING:** *Under no circumstances* should any component be replaced or added without consulting Hill PHOENIX Field Service Engineering. Utilizing improper components may result in serious injury to persons or damage to the system.

# TABLE OF CONTENTS

## GENERAL INFORMATION – PAGES 3 - 6

General information, first step recommendations and case dimensional drawings.

## THE USE OF CASTERS – PAGE 7

Cases roll on casters–general use and caster removal.

## LINE-UP – PAGES 8 - 9

A nine step procedure for initial case lineup with illustrations.

## TRIM-OUT – PAGES 10 - 11

An eleven step procedure for trimming out cases with illustrations.

## REFRIGERATION PIPING – PAGE 12

Coil outlet locations, refrigeration components location, and other piping tips with illustrations.

## PLUMBING – PAGE 13

Information on drain connections.

## ELECTRICAL HOOKUP AND WIRING DIAGRAMS – PAGES 14 - 18

Complete information on electrical connections.

## CASE OPERATION – PAGE 19

Recommended settings for all case controls.

## DEFROST AND TEMPERATURE CONTROL – PAGE 20

Defrost data and sensor bulb locations.

## AIRFLOW & PRODUCT LOADING – PAGE 21

Air flow and load limits

## USE AND MAINTENANCE – PAGES 22 - 23

Cleaning, and fan information

## PARTS ORDERING – PAGES 24 - 26

Replacement parts identification



# GENERAL INFORMATION

**DESCRIPTION OF CASES:** Specifically covered in this manual is model O3IP wide island double wraparound 3-deck produce and model O3IP(B) wide island single joint end 3-deck produce.

**STORE CONDITIONS:** *Hill PHOENIX* cases are designed to operate in an air conditioned store with a system that can maintain 75°F (24°C) store temperature and 55 percent (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 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:** A claim for obvious damage must be noted on the freight bill or express receipt and signed by the carriers agent, otherwise the carrier may refuse the claim.

**CONCEALED DAMAGE:** If damage is not apparent until 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.

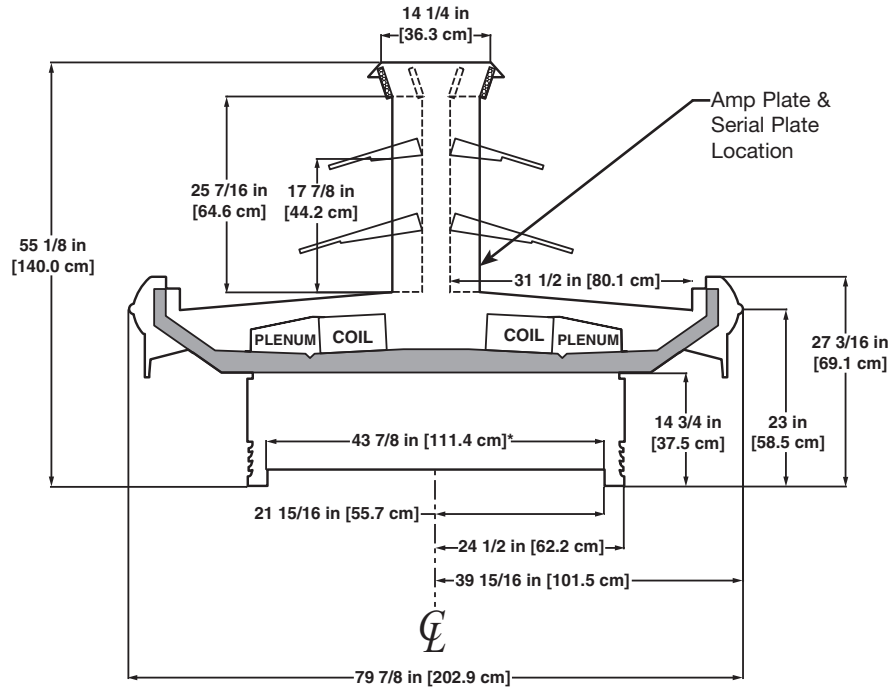
**LOST ITEMS:** This equipment has been carefully inspected to insure the highest level of quality. Any claim for lost items must be made to *Hill PHOENIX* within 48 hours of receipt of equipment.

**TECHNICAL SUPPORT:** If any technical questions arise regarding a refrigerated display case contact our Customer Service Department in Richmond at 1-804-526-4455. For any questions regarding our refrigeration systems or electrical distribution centers contact our Customer Service Department in Conyers at 1-770-285-3200.

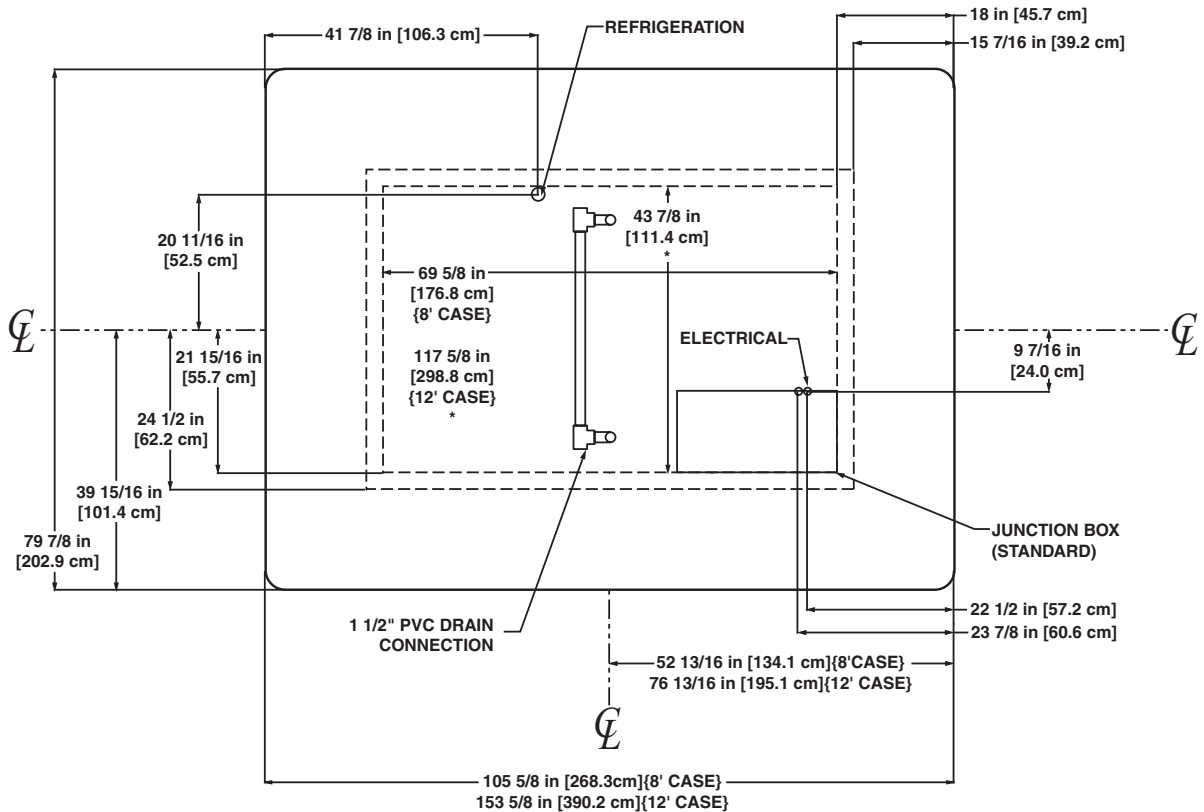
**CONTACTING FACTORY:** Should you need to contact *Hill PHOENIX* regarding a specific fixture, be sure to know the case model number and serial number. This information is on the serial plate located on the rear baffle of the case (see next page for details). Ask for a Service Parts Representative at 1-804-526-4455.

# ORIGIN<sup>2</sup><sub>TM</sub>

# GENERAL INFORMATION



# MODEL O3IP

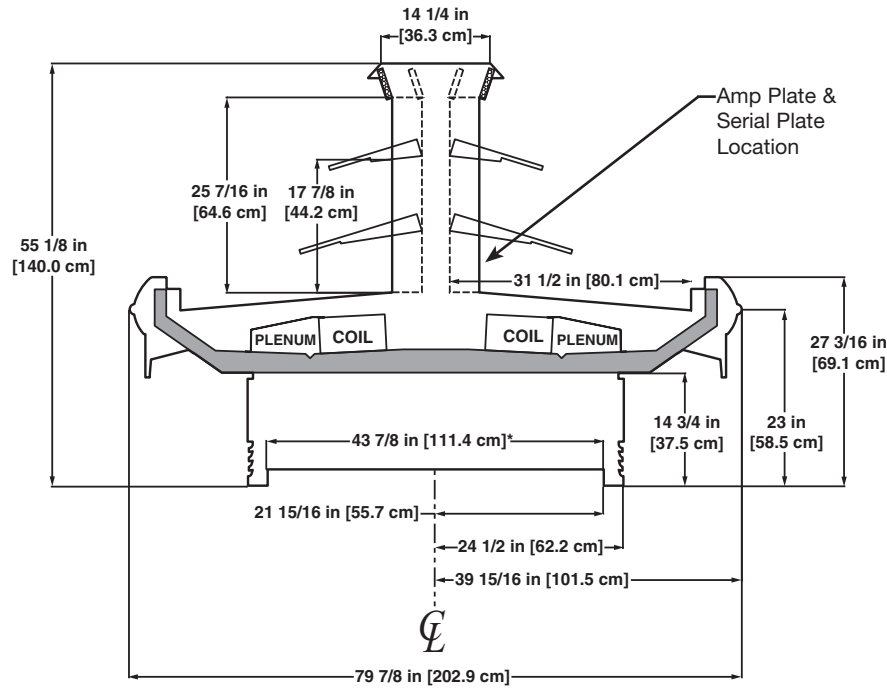


**NOTES:**

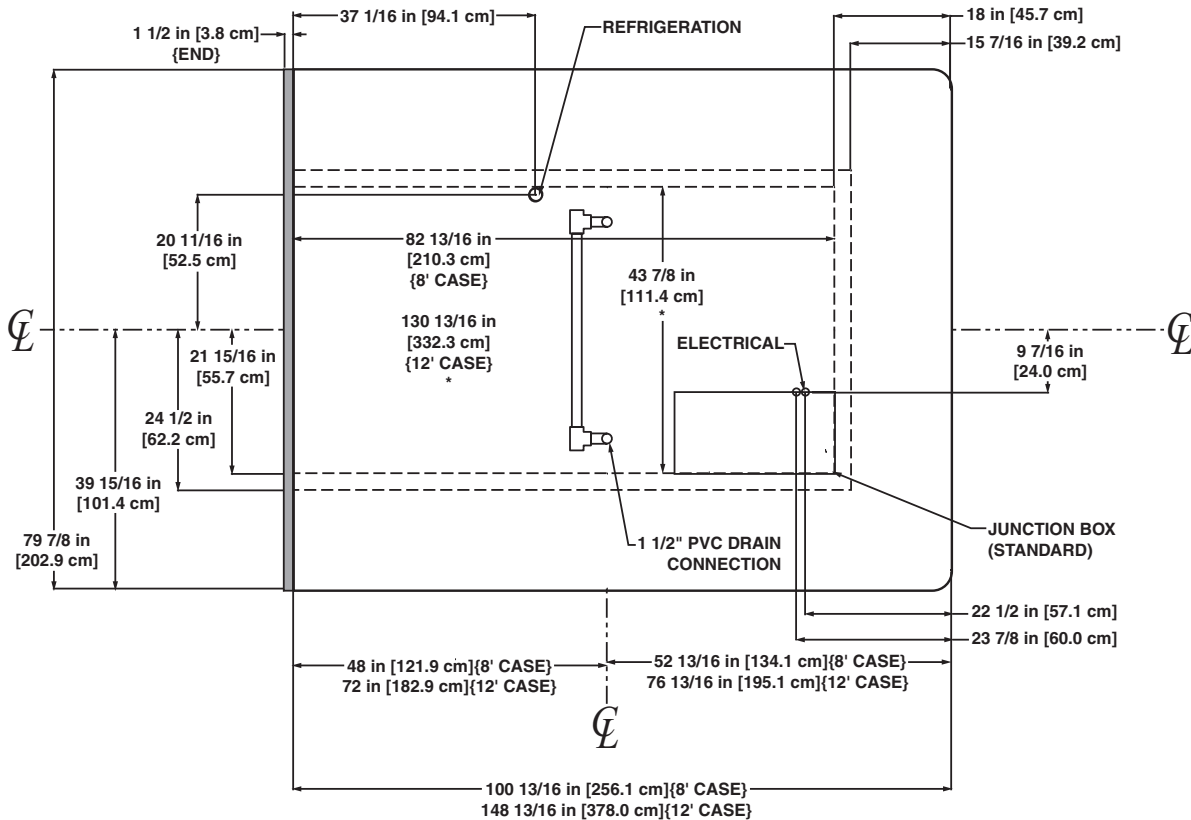
\* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 3/8"
- AVAILABLE SHELF SIZES: 12" & 16"





## MODEL O3IPB

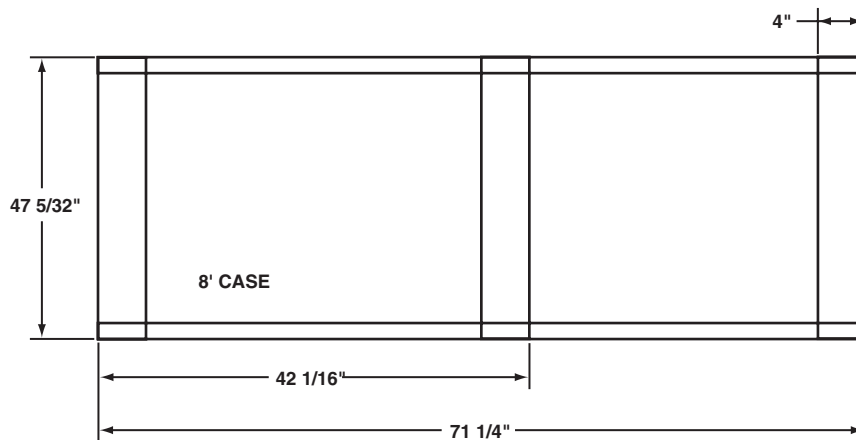


### NOTES:

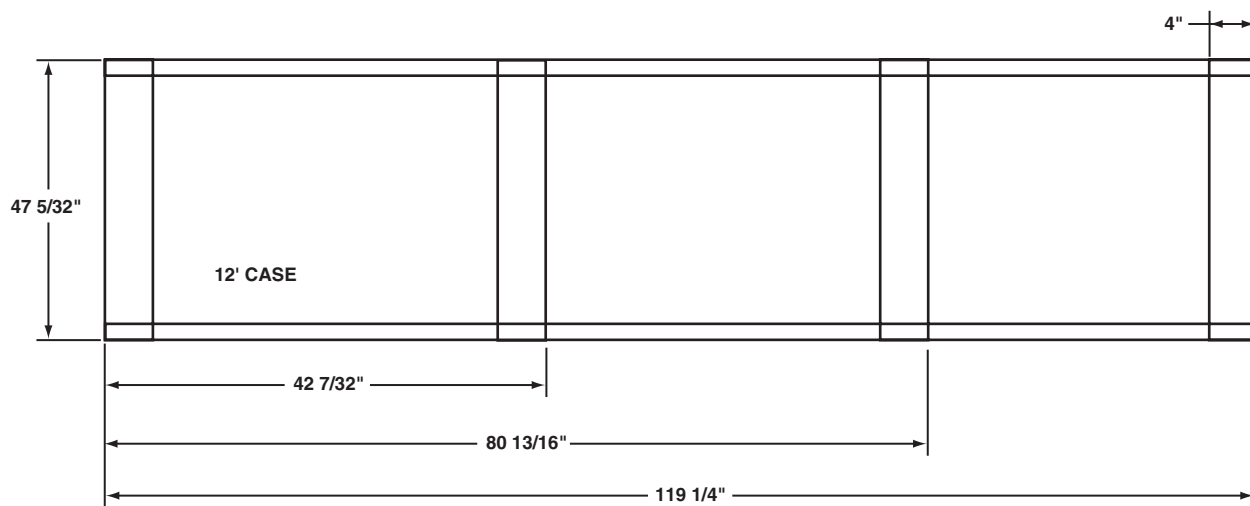
\* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 3/8"
- AVAILABLE SHELF SIZES: 12" & 16"

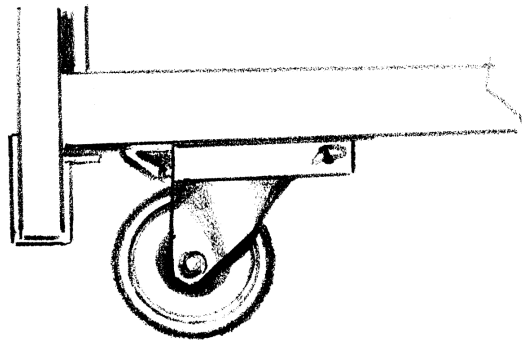
# GENERAL INFORMATION



**BASEHORSE  
LOCATIONS FOR  
MODELS  
O3IP & O3IPB**

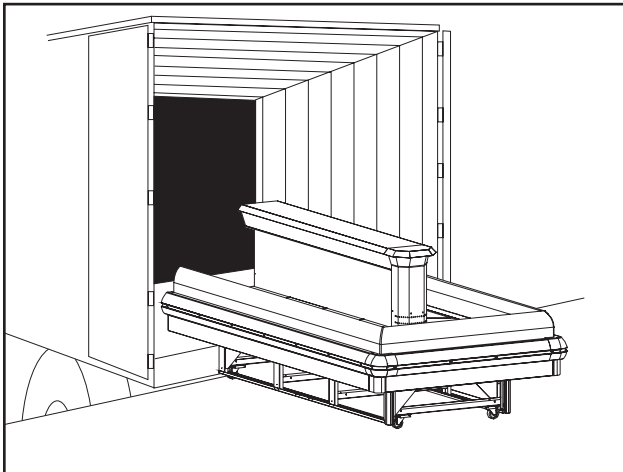


# CASES MOVE ON CASTERS FOR EASIER INSTALLATION

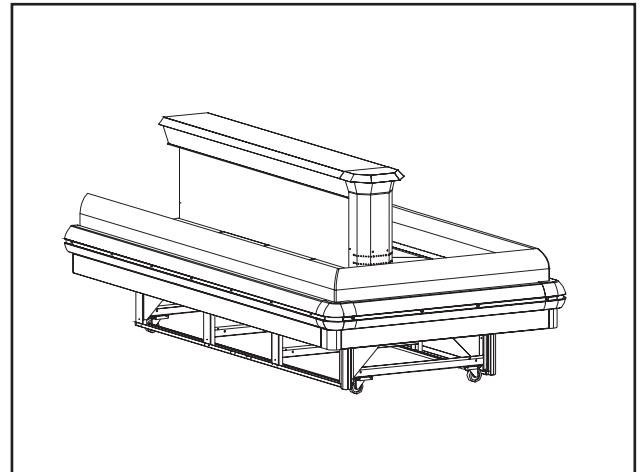


Cases are manufactured and shipped to stores with casters installed on the base frame to make the job of moving cases easier for everyone involved with the manufacturing, shipping and installation process.

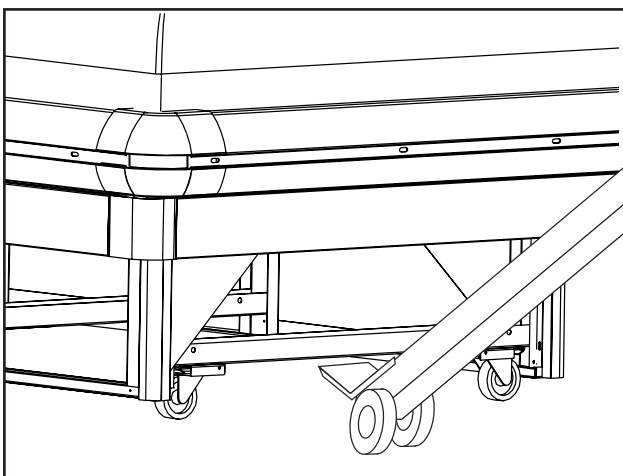
Casters not only speed up the process, but they also reduce the chance of damage from raising and lowering cases with "J" bar to place them on dollies, skates or rollers. In most situations, one or two persons can move the case with ease.



**ROLL OUT OF TRUCK.** When there is a truck - level delivery dock, cases may be rolled directly from the truck to the store floor. [CAUTION] If skid boards are required to unload cases, casters should be removed prior to sliding them down the skid; after which they can be reinstalled on case.

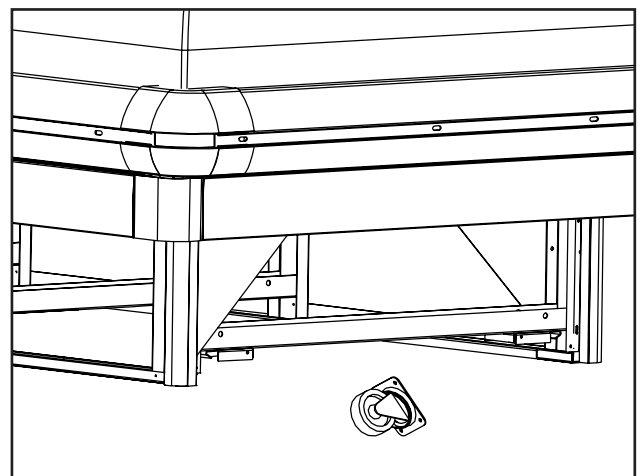


**ROLL TO LINEUP POSITION.** Casters may remain in place to move the cases to staging areas around the store, prior to final installation. When ready for final line-up, roll the case to set position, then remove casters.



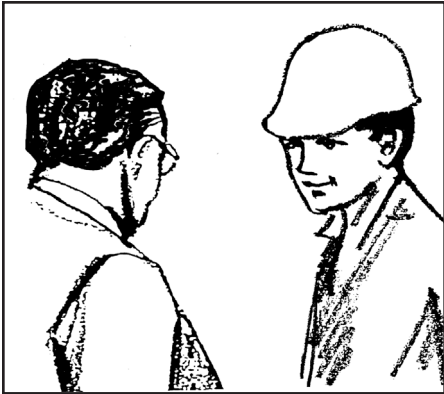
**REMOVE COTTER PIN.** Removing the casters is easy. Simply flatten and hammer out cotter pins then lift the case with "J" bar, and the casters will fall off.

[CAUTION] Make certain hands are out of the way.



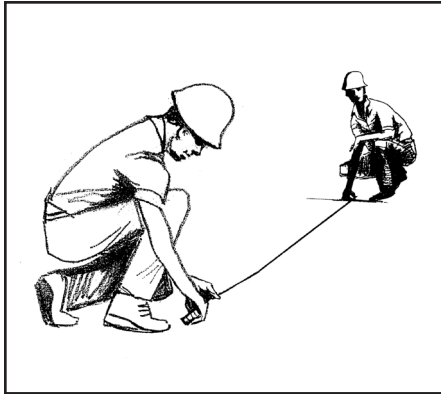
**CASTERS MAY BE DISCARDED.**

# LINE UP



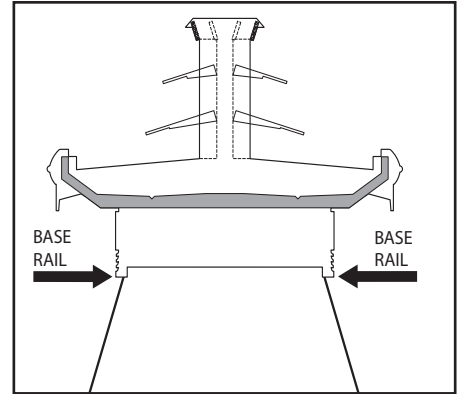
## **Consult With General Contractor**

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



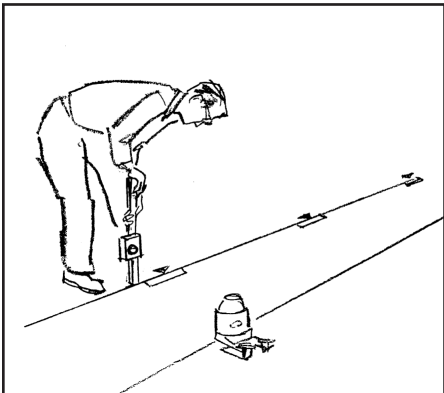
## **Snap Chalk Lines**

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



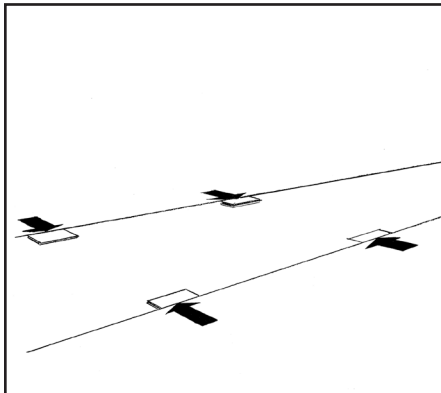
## **Snap Lines On Base Rail Locations**

Snap lines where base rails are positioned, not the front or back edges of the cases. See case cross section drawing, pages 4-6, for rail location dimensions.



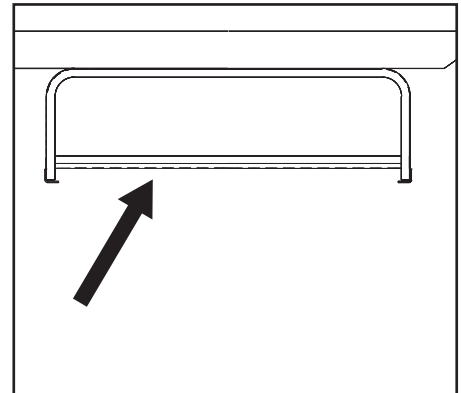
## **Level Floor. Use Laser Transit**

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



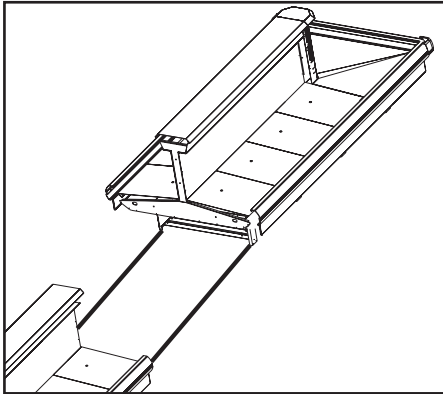
## **Set Shims On Joint Locations**

Locate case joint positions along chalk lines. Spot shim packs at each joint location and at each basehorse between the joints.



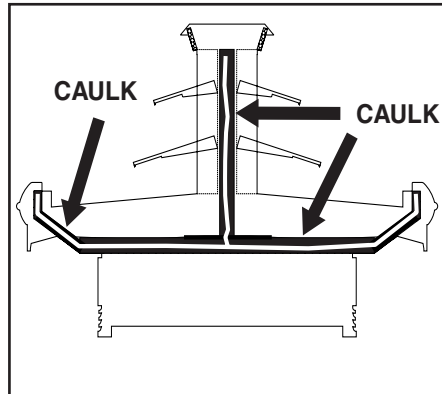
## **Position First Case In Lineup and Level**

Roll first case into position. Raise case from end under cross support using "J" bar. [CAUTION! Keep hands from underneath case] Level case on shims.



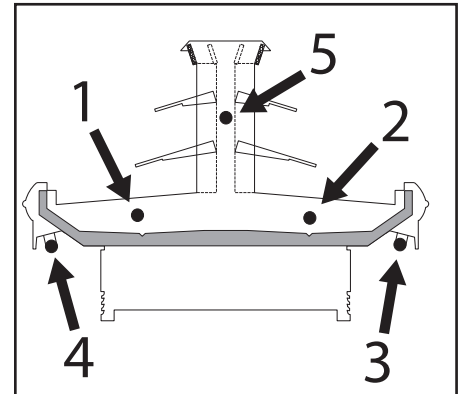
#### **Position Next Case In Line Up**

Line up the base rails of the next case with the chalk lines on the floor.



#### **Remove Accessories From Case. Add Sealant.**

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



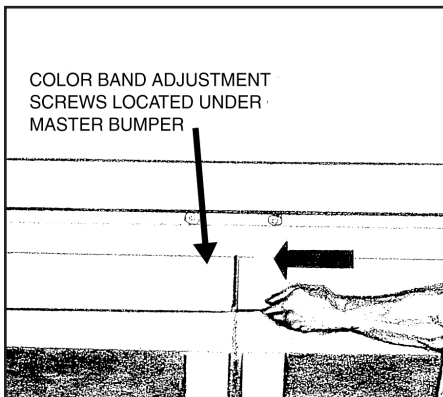
#### **Bolt Cases Together Using Bolt Holes Provided**

Push cases tightly together. Bolt cases together through the five holes provided as shown in the illustration. Tighten until all margins are equal; do not over tighten.

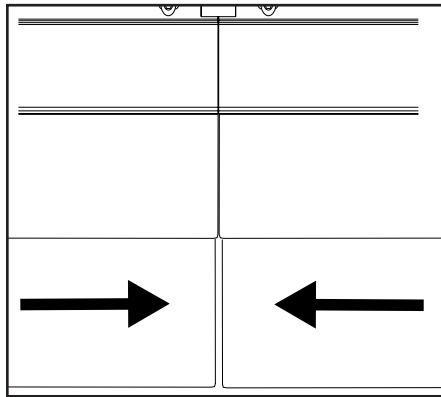
Ask about our case installation video available by request through your local **Hill PHOENIX** Sales or Field Service Representative.

# TRIM OUT

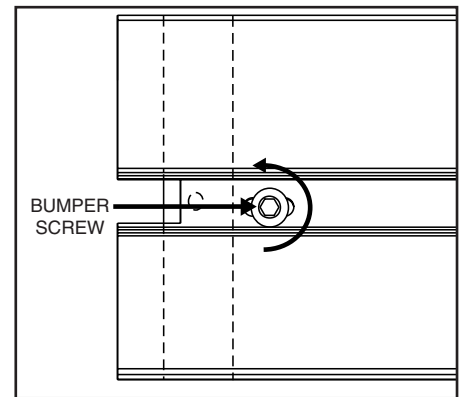
Now that cases have been positioned and leveled, you may proceed to trim-out the case lineup. Trim parts have been designed to be applied easily with only a small number of fasteners required. Most external parts are adjustable to achieve almost invisible, snug-fitting joints and a high level of excellence in fit and finish.



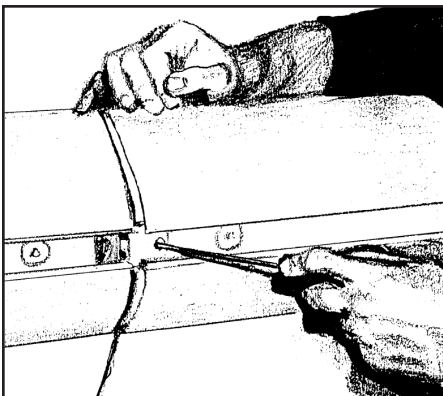
If a gap is present in the color band, the master bumper must be removed to gain access to the adjustment screws. Loosen the screws in the panel, located on top of the color band underneath the master bumper, and adjust left or right as required.



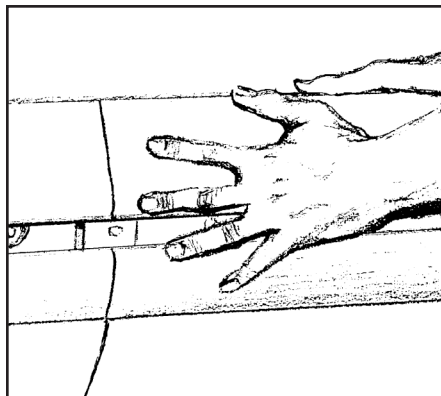
Close joints of lower panel section by sliding the panels together. Panels are designed to allow movement left or right without removing any fasteners.



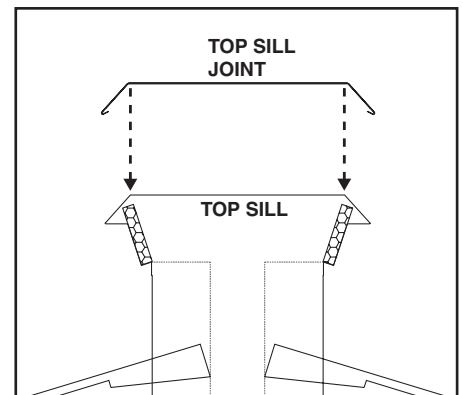
Adjust polymer master bumper joints, if required. First loosen bumper screws located in recessed trough.



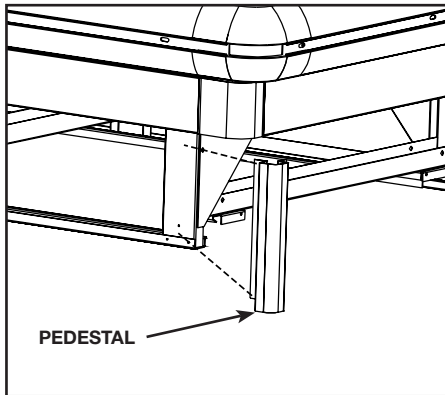
Slide bumper joint to center of joint between the two cases. Use screw driver in hole provided.



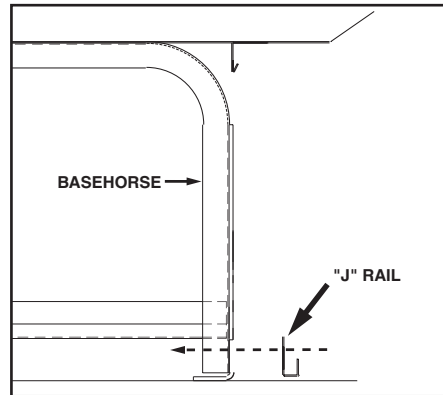
Slide bumper left or right to close seam as required. Bumper joint neatly finishes any gap that may remain.



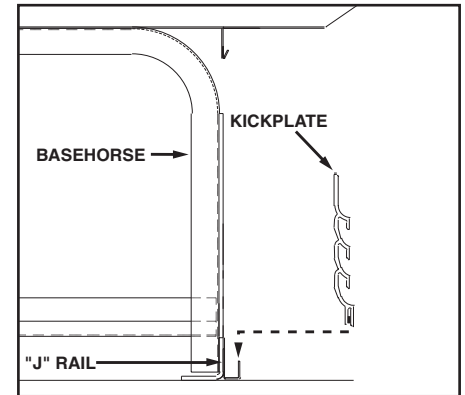
Install top sill joint covers over case-to-case joint seams, as needed. The top sill joint is shipped loose with the case. Secure with fasteners provided.



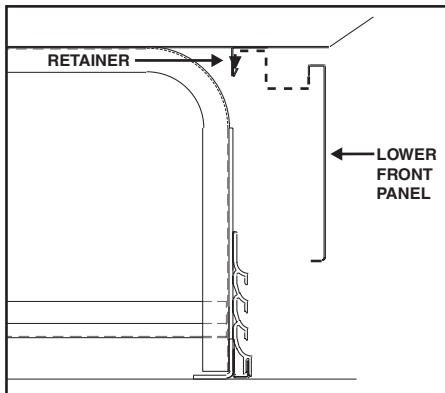
Attach pedestals. Locate the pedestals which are shipped loose with the case. Attach the pedestals to each wrap end of the case with the fasteners provided.



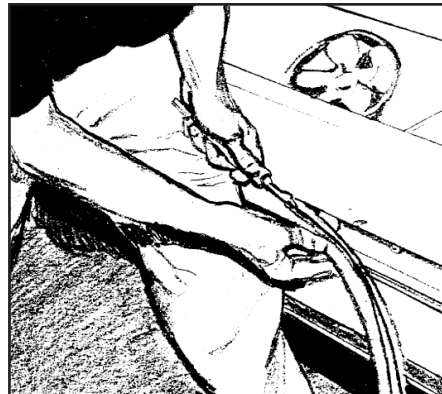
Attach the "J" rail. Locate the "J" rail which is shipped loose with the case. Line up the rail to the basehorses and secure with the screws provided.



Insert kickplate into "J" rail as shown in the illustration above.



To attach lower front panel, place in vertical position and insert into retainer as shown above. Panel may be removed for access to electrical raceway and plumbing.



Insert nose bumper into 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.

**NOTE:** An easy technique for one person is to press against nose bumper with leg as you guide bumper into channel with a screen spline. Insert bottom first.

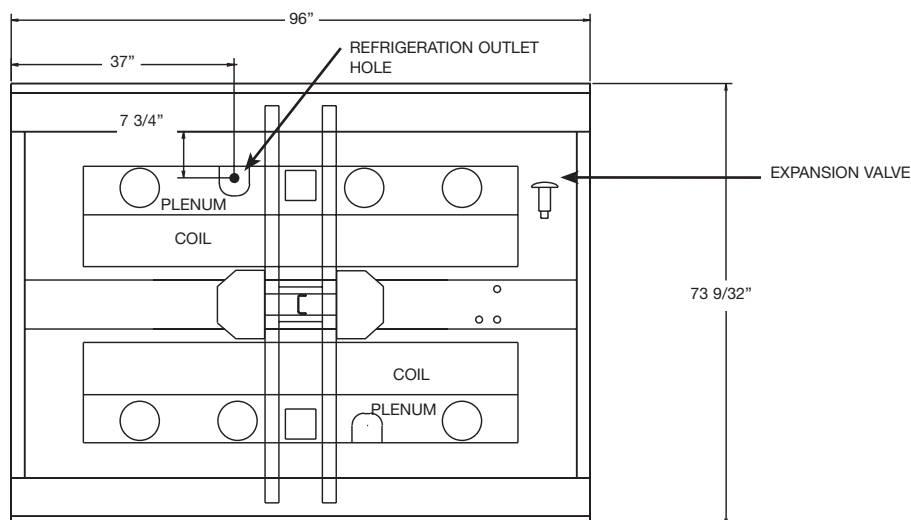
# REFRIGERATION PIPING

Refrigeration components and the refrigeration outlet hole are located to provide the best access for installation and maintenance. As the diagrams below indicate, the refrigeration outlet hole is positioned on the right hand side of one side of the case underneath the fan plenum. Access can be gained through a cover plate located in the fan plenum.

The expansion valve and other controls

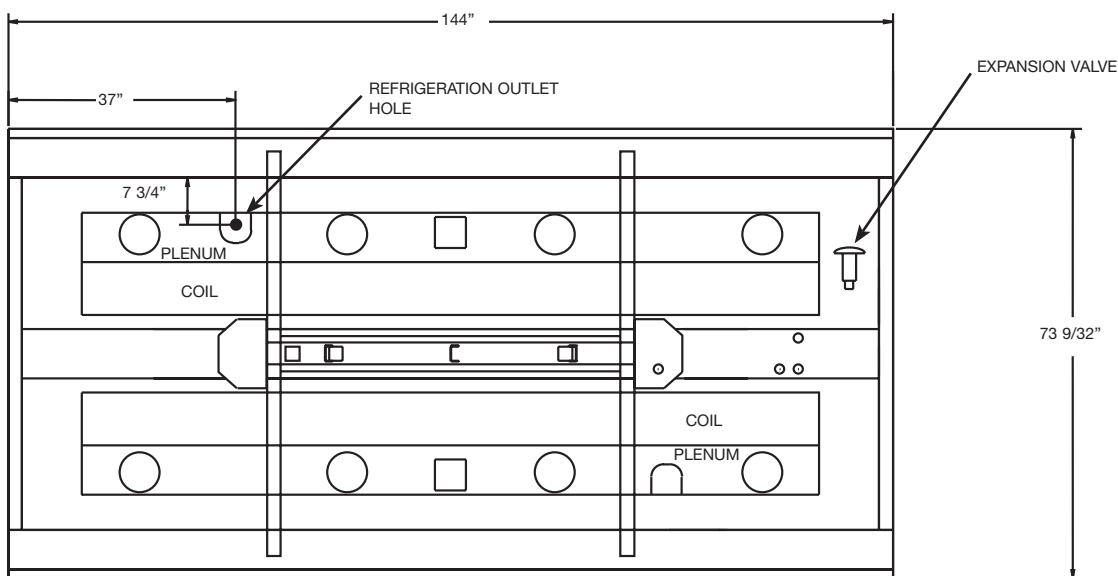
are located on the left-hand side of one side of the case. Look for the refrigeration lines that penetrate the tank underneath the case. The valve and other refrigeration components will be located on this side of the case and are accessible without disassembling the fan plenum. The components may be reached by lifting the left hand end deck pan and the center deck pan.

Be sure to reseal the outlet hole after installation, using a canned foam sealant and white RTV.



Plan View

**MODEL  
O3IP-8' &  
O3IPB-8'**



Plan View

**MODEL  
O3IP-12' &  
O3IPB-12'**

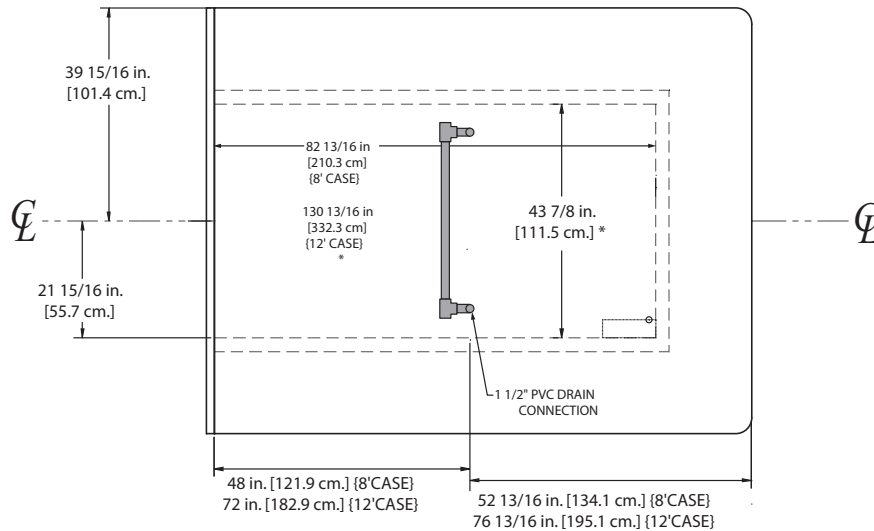


# PLUMBING

The drain outlet is located front and center of both sides for convenient access. The case drain is molded out of ABS material and is attached to a PVC pipe and tee. The "P" trap is constructed of schedule 40 PVC and is 1 1/2" in diameter. The entire drain assembly is attached to the case at the factory. Should any maintenance issues arise, care must be given to make certain that all connections are water tight and sealed with the appropriate PVC or ABS cement.

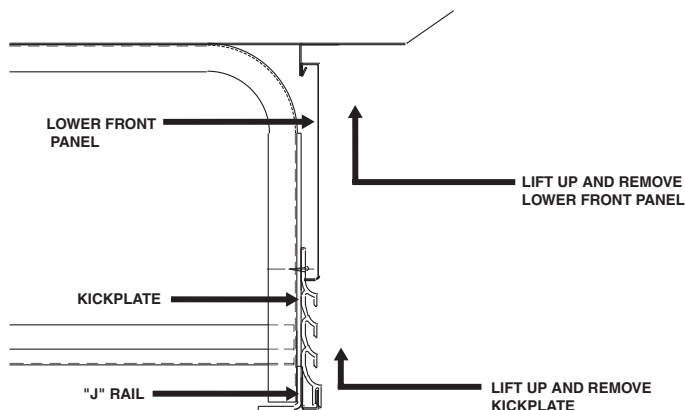
The lower front panel is shipped attached

to the case and the kickplate is shipped loose. Access to the drain area can be easily obtained by removing the lower front panel (and kickplate if it has already been installed). See the diagram below and the Trim Out section of this manual on page 11.



**MODEL  
O3IP & O3IPB**

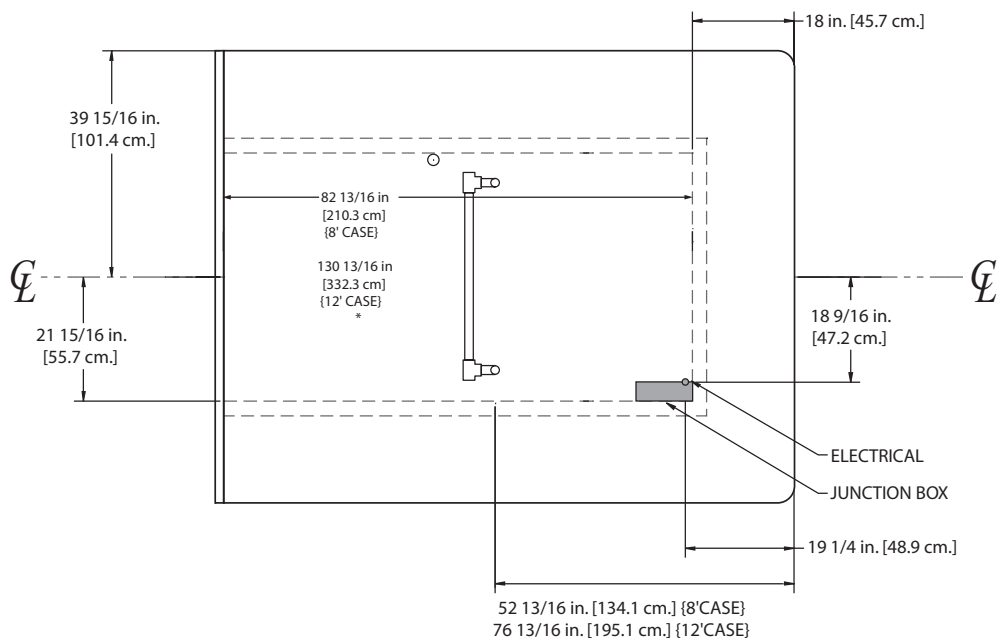
## HOW TO REMOVE LOWER FRONT PANEL AND KICKPLATE



# ELECTRICAL HOOKUP

All electrical hookups are made to a junction box located at the bottom right hand front of one side (on the opposite side from the expansion valve). Field connections can be made through the bottom or rear of the junction box.

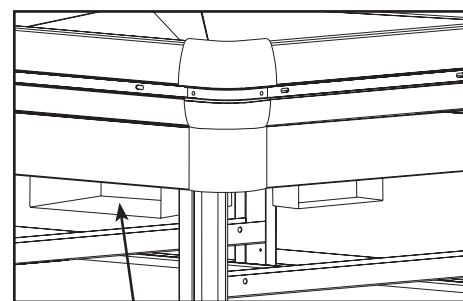
For case-to-case wiring, run “green-field,” or other conduit, between junction boxes. Field wiring should exit box from right side, furthest away from where case wiring enters the box, to allow more room inside the junction box for wire connecting.



**MODEL  
O3IP & O3IPB**

## WIRING NUMBERS AND COLORS

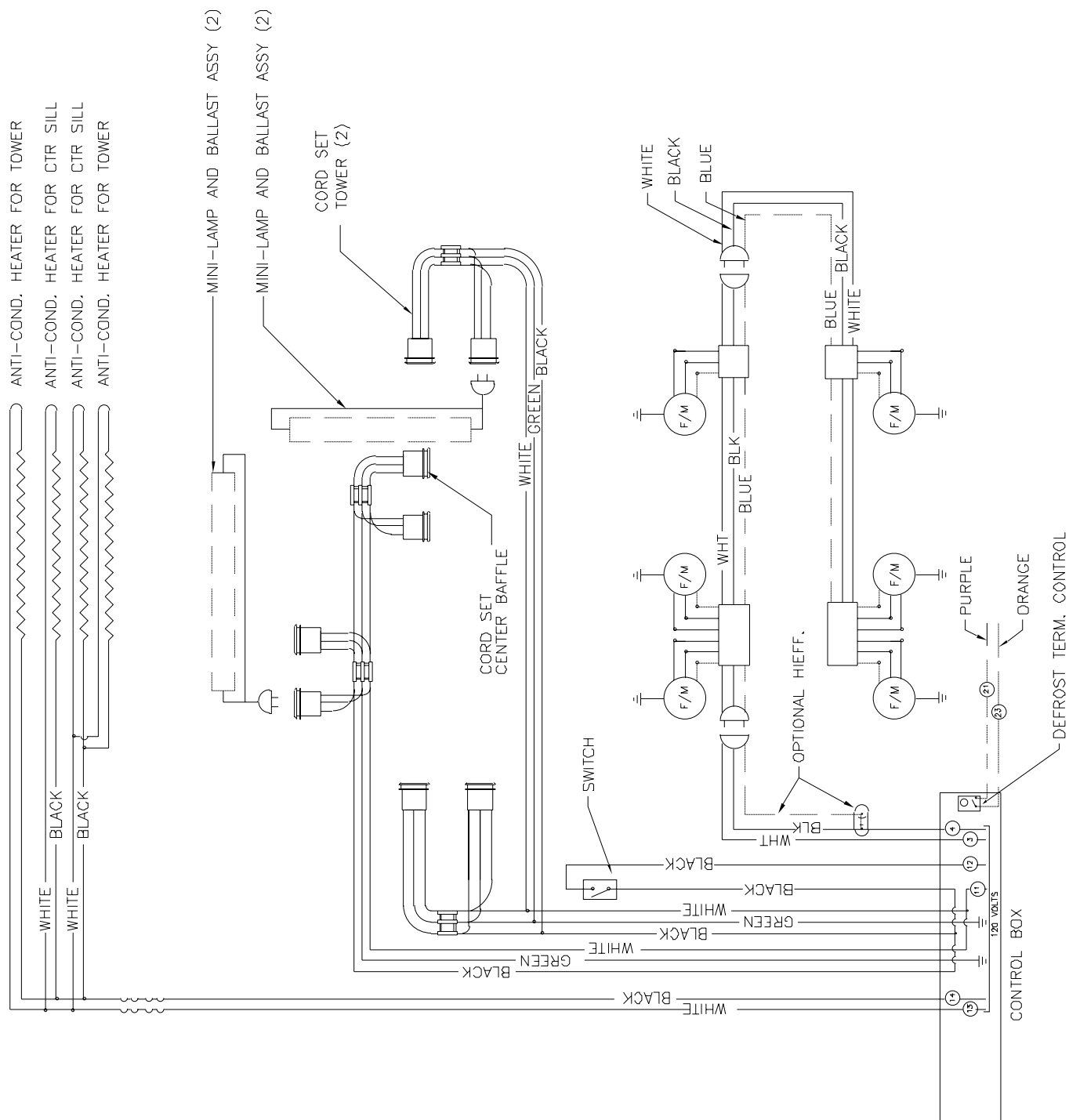
COMPONENT	WIRE NUMBER	COLOR CODING
EVAPORATOR FANS, 120 VOLT	3	WHITE
	4	BLACK
LIGHTS, 120 VOLT	11	WHITE
	12	BLACK
ANTI-CONDENSATE HEATERS, 120 VOLT	13	WHITE
	14	BLACK
TEMPERATURE CONTROL, 120 VOLT	19	YELLOW
	20	YELLOW
DEFROST TERMINATION CONTROL, 120 VOLT	21	PURPLE
	23	ORANGE
EQUIPMENT GROUNDING CONDUCTOR	-	GREEN



ELECTRICAL JUNCTION BOX

# WIRING DIAGRAMS-

MODEL  
03IP-8'

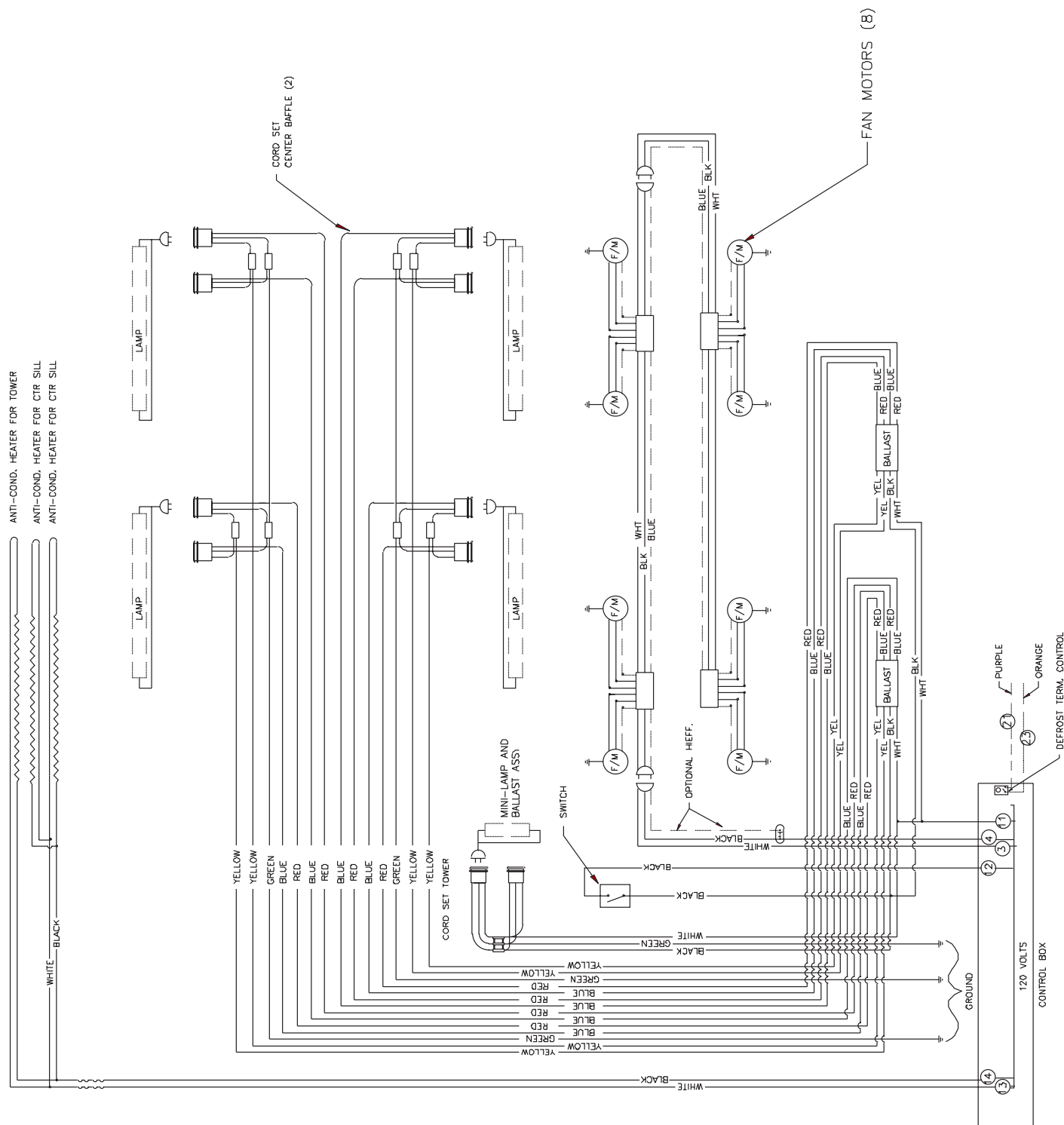


# MODEL 03IPB-8'



# WIRING DIAGRAMS-

MODEL  
03IP-12'



**MODEL  
03IPB-12'**



# CASE OPERATION

## Wide Island Multi-Deck Produce Merchandiser

O3IP - 8' & 12' wide island double wraparound end

O3IPB - 8' & 12' wide island single wraparound end

### Electrical Data

High Efficiency Anti-Condensate Defrost Heaters												
Model		Fans per Case	Standard Fan		Fans		Heaters		Defrost Heaters			
			120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3IP	8'	6	2.04	102	0.90	66	0.82	98	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.08	130	7.22	1502	8.33	2000
O3IPB	8'	6	2.04	102	0.90	66	0.75	90	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.17	140	7.22	1502	8.33	2000

### Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
O3IP	8'	NA <sup>1</sup>	NA	5.71	546
	12'	NA	NA	7.46	779
O3IPB	8'	NA	NA	4.76	514
	12'	NA	NA	6.02	665

<sup>1</sup> Not applicable.

### Guidelines & Control Settings

Model	BTUH/ft <sup>2</sup>	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>3</sup> (FPM)
O3IP/O3IPB	1050 <sup>4</sup>	22	6-8	34	48	160

<sup>2</sup> BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

<sup>3</sup> Average discharge air velocity at peak of defrost.

<sup>4</sup> Add 650 BTUH per wrap end.

### Defrost Controls

Model			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	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)
O3IP/O3IPB	4	6 - 8	30	47	44	38	--- <sup>5</sup>	---	---	---

<sup>5</sup> NOTE: --- not an option on this case model.

#### 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

All measurements are taken per CRMA specifications.

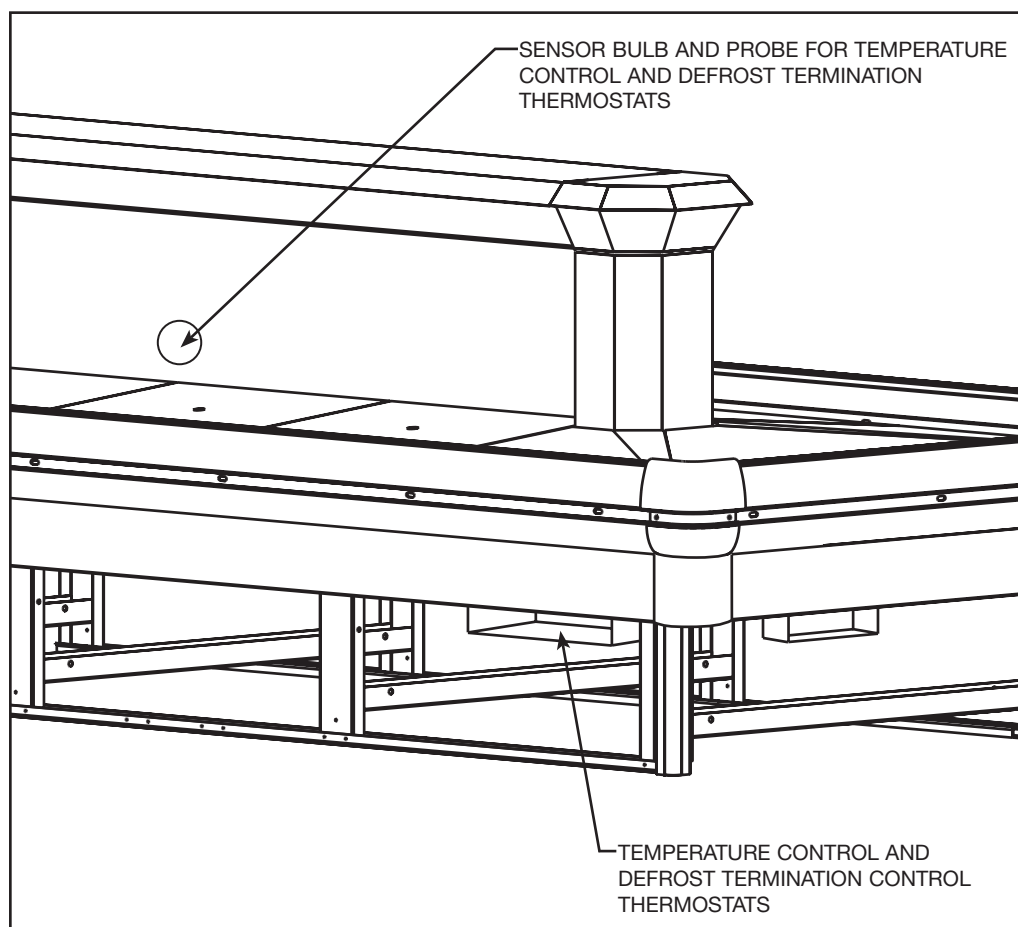
# DEFROST AND TEMP CONTROL

These cases are equipped with Timed-Off defrost. The sensor bulb and probe for timed off defrost termination and the sensor bulb and probe for temperature control are all located behind the rear baffle at the location shown below.

guidelines shown on page 19 before setting defrost times. Further adjustments may be required depending on store conditions

The defrost termination control thermostat and the temperature control thermostat are located in the junction box located on the bottom left side of the case, as shown below. In order to gain access to the thermostats it is necessary to remove the lower front panel and kickplate (for details see the Trim Out section of this manual on page 11.)

It is important to consult the control setting



**MODEL  
O3IP & O3IPB**



# AIR FLOW AND PRODUCT LOADING

Cases have been designed to provide maximum product capacity within the refrigerated air curtain. It is important that you do not overload the food product display so that it blocks the air flow pattern.

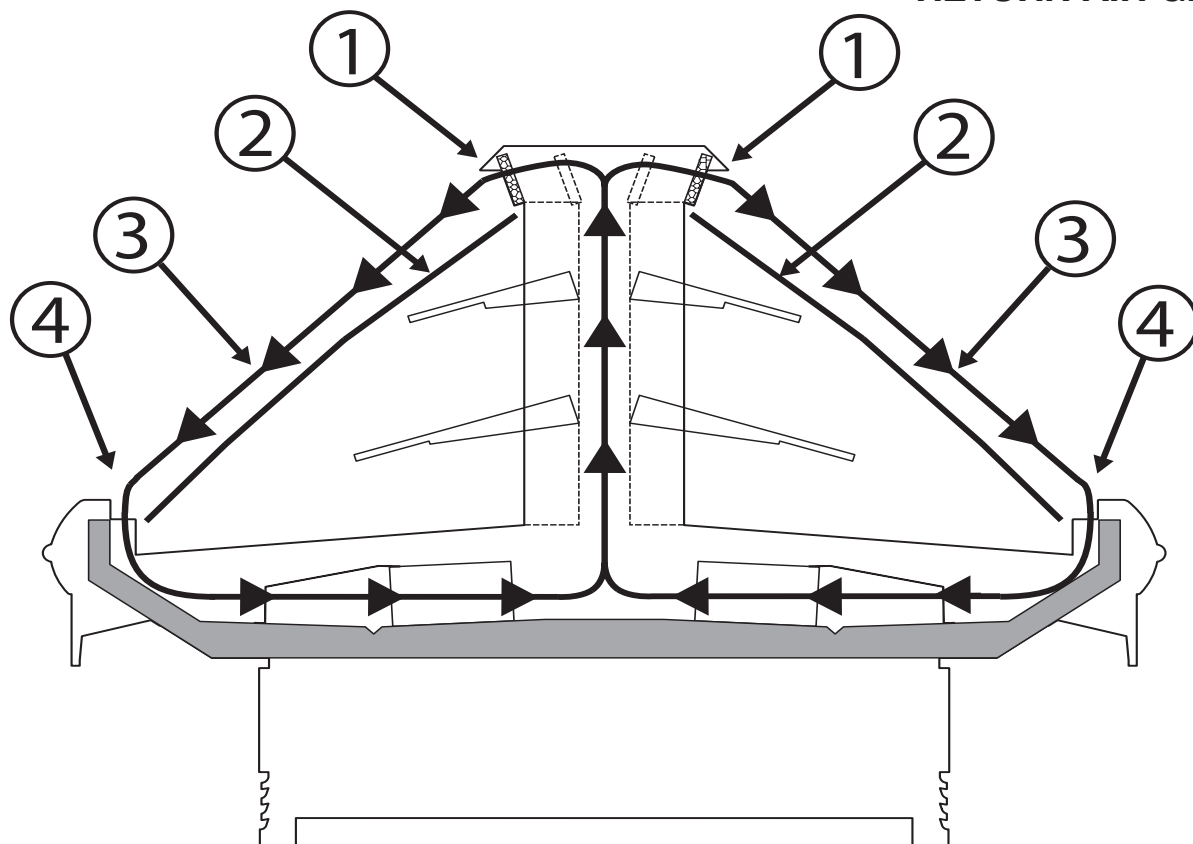
Overloading will cause malfunction and the loss of proper temperature levels, particularly when discharge and return air sections are covered. Please keep products below the load limit lines shown on the diagram below.

**DISCHARGE.....1**

**LOAD LIMIT.....2**

**AIR FLOW.....3**

**RETURN AIR GRILL...4**

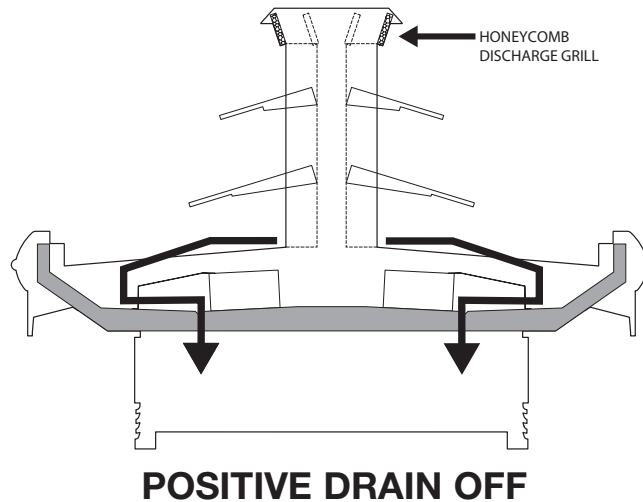


**MODEL  
O3IP & O3IPB**

# USE AND MAINTENANCE

## CASE CLEANING

The case is designed to facilitate cleaning. All surfaces pitch to a drain trough that angles toward the center of each side of the case where the 1 1/2" waste outlet is located. The drain is positioned under the fan plenum and is accessible through a cover plate.



## CLEANING PROCEDURES

- A periodic cleaning schedule should be established to maintain proper sanitation, insure maximum operating efficiency, and avoid the corrosive action of food fluids left on metal parts for long periods of time. We recommend cleaning at least once a week.
- 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 it is not clogged before starting the cleaning and avoid introducing water faster than drip pipe can carry it away.
- Avoid spraying cleaning solutions directly on fans or electrical connections.
- Allow cases to be turned off long enough to clean any frost or ice from coil and flue areas.
- To clean the honeycomb discharge grill (see above) use a soft, long bristle brush and a mild detergent. It may be necessary to use a spray detergent and rinse.
- Use mild detergent and warm water. When necessary, water and baking soda solution will help remove case odors. Avoid abrasive scouring powders or pads.
- For difficult stains that may appear on polymer exterior bumper parts, the following specialty cleaning products are recommended:

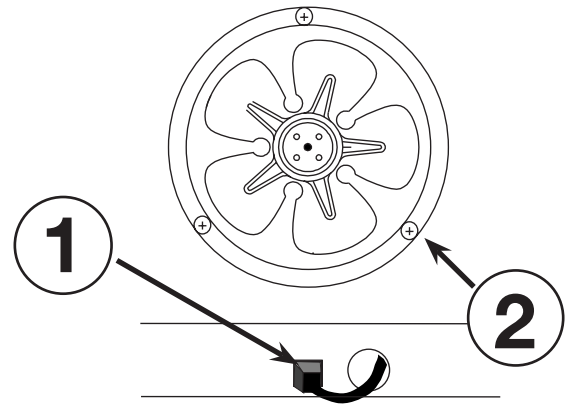
3M brand<sup>®</sup> Stainless Steel Cleaner and Polish  
3M brand<sup>®</sup> Troubleshooter Cleaner  
3M brand<sup>®</sup> Sharpshooter, Extra Strength No Rinse Cleaner  
3M brand<sup>®</sup> Scotch-Brite No. 64 Cleaning and No. 74 Scrubbing Brushes  
Revere<sup>®</sup> aluminum powder for tank liner  
Armor All<sup>®</sup> for polymer parts

## FANS

The evaporator fans are equipped with 5 watt fan motors, 1550 RPM's, counter-clockwise rotation (when viewed from shaft end). The blades are 6" diameter and pitched to varying degrees on each model as shown on 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 with an easy two step process without disassembling the plenum, thereby avoiding the necessity to unload the entire product display to make a change:

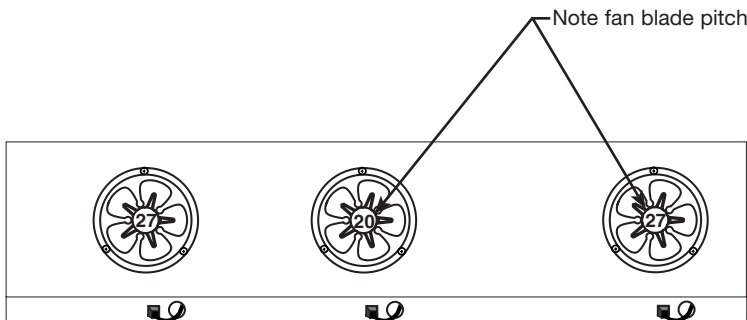
1. Unplug the fan motor, easily accessible outside the plenum.
2. Remove three fasteners, then lift out the entire fan basket.



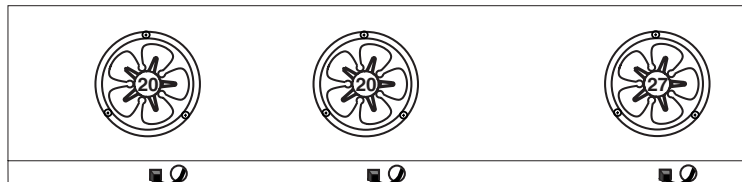
Model	O3IP-8'		O3IP-12'	
No. Fans	2	4	4	4
Blade Pitch	20°	27°	20°	27°

Model	O3IPB-8'		O3IPB-12'	
No. Fans	4	2	6	2
Blade Pitch	20°	27°	20°	27°

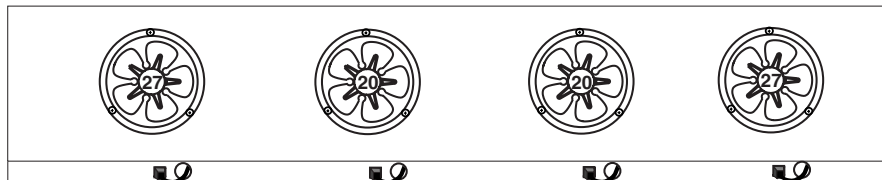
Note: 27° fan blades are always on the wrap end of case.



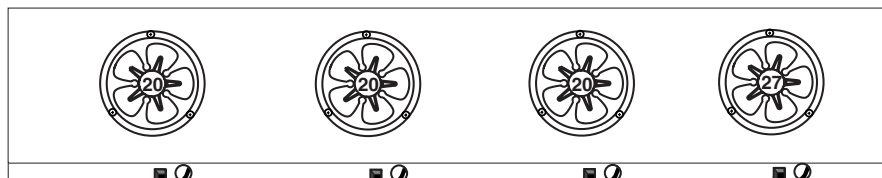
**O3IP-8'**  
2 sets  
per case



**O3IPB-8'**  
2 sets  
per case

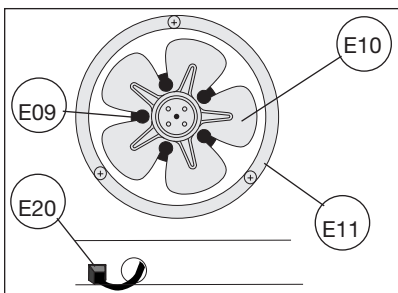
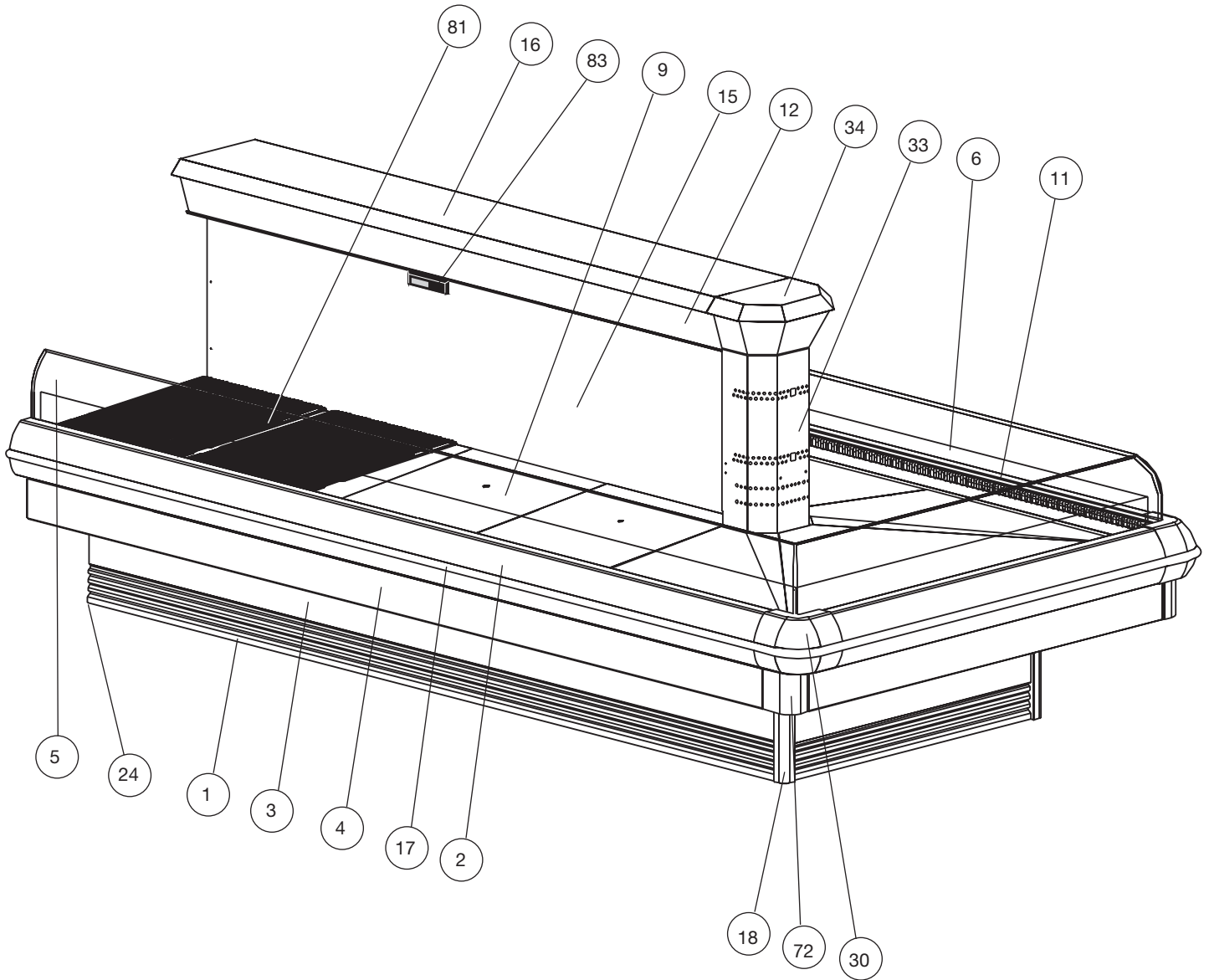


**O3IP-12'**  
2 sets  
per case



**O3IPB-12'**  
2 sets  
per case

# PARTS ORDERING



**MODEL  
O3IP & O3IPB**

## MODEL O3IP & O3IPB

Location Number	Part Descriptions
1	<b>Kickplate</b> , Storm Grey
2	<b>Master Bumper</b> , Featherstone, Smoke, White, French Vanilla, Black
3	<b>Lower Front Panel</b> , Painted
4	<b>Color Band</b> , Painted
5	<b>Front Sill Glass</b> , Plexiglas (Shown) or Thermopane
6	<b>Flue Glass</b>
9	<b>Deck Pan</b> , Painted, Unpainted
11	<b>Front Baffle</b> , Painted
12	<b>Honeycomb</b>
15	<b>Rear Baffle</b>
16	<b>Sill Cap</b> , Center
17	<b>Nose Bumper</b> , Polymer Custom Color
18	<b>Pedestal</b> , Painted
22	<b>Shelves</b> , 12" and 16" (Not Shown)
24	<b>"J" Rail</b> , for Kickplate
30	<b>Corner Bumper</b> , Featherstone, Smoke, White, French Vanilla, Black
33	<b>Tower Baffle</b>
34	<b>Tower Hood</b> , Stainless Steel
69	<b>Coil</b> , (Not Shown)
72	<b>Color Band Corner</b>
81	<b>Wire Rack</b>
83	<b>Thermometer</b> , and Bracket
E02	<b>Anti-Condensate Heater</b>
E03	<b>Thermostats</b> , Temperature and Defrost Termination Control, (Not Shown)
E09	<b>Fan Motor - STATE HIGH EFFICIENCY OR STANDARD</b>
E10	<b>Fan Blade</b>
E11	<b>Fan Basket</b> , 6"
E20	<b>Fan Cord-Set</b> - High Efficiency or Standard

# PARTS ORDERING

## *Procedure*

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 which the part is needed for.
- Length of part, if applicable, I.E. 8', 12'.
- Color of part if painted, or color of polymer part.
- Whether shelves are with or without lights.
- Quantity.

\*Serial plate is located on the left hand side of case on rear baffle.  
(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.



## 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 of 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 Products  
709 Sigman Road  
Conyers, GA 30013  
770-285-3200

## **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.

804-526-4455

**Hill PHOENIX**  
E X C E L L E N C E<sup>®</sup>

1925 Ruffin Mill Road, Colonial Heights, VA 23834

Due to our commitment to continuous improvement all specifications are subject to change without notice.

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