

REAR LOAD DAIRY

CASES

MODEL: O5DR & O5DRH



INSTALLATION & OPERATION

HANDBOOK

Hill PHOENIX
E X C E L L E N C E[®]

A **DOVER**[™] COMPANY



P056170D

Rev. 13 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
or visit our web site at
www.hillphoenix.com

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



LIABILT Y 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 (CO₂) NOTICE

For Systems Utilizing R-744 (CO₂) Refrigerant

For refrigeration units that utilize R-744 (CO₂), 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 (CO₂), venting of the R-744 (CO₂) 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 castor removal.

LINE-UP – PAGES 8 - 9

A twelve step procedure for initial case lineup with illustrations.

TRIM-OUT – PAGES 10 - 11

A fourteen step procedure for trimming out cases with illustrations.

REFRIGERATION PIPING – PAGE 12

Diagrams show coil outlet and case controls location and other piping tips.

PLUMBING – PAGE 13

Information on drain connections.

ELECTRICAL HOOKUP AND WIRING DIAGRAMS – PAGES 14 - 17

Complete information on electrical connections.

CASE OPERATION – PAGES 18 - 19

Recommended settings for all case controls.

DEFROST AND TEMPERATURE CONTROL – PAGE 20

Defrost data. Sensor bulb locations.

AIR FLOW AND 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.

APPENDIX A - Rear Shelf Filler Installation - PAGE 27

APPENDIX B - Examples of Case Sealed to Cooler Box - PAGE 28

GENERAL INFORMATION

DESCRIPTION OF CASES: Specifically covered in this manual is model O5DR and O5DRH multi-deck rear load dairy.

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.

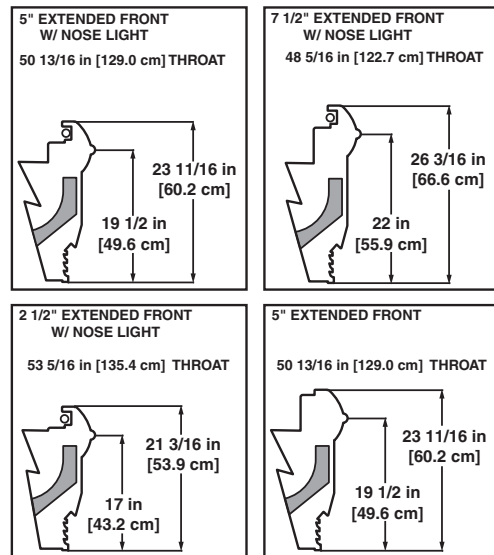
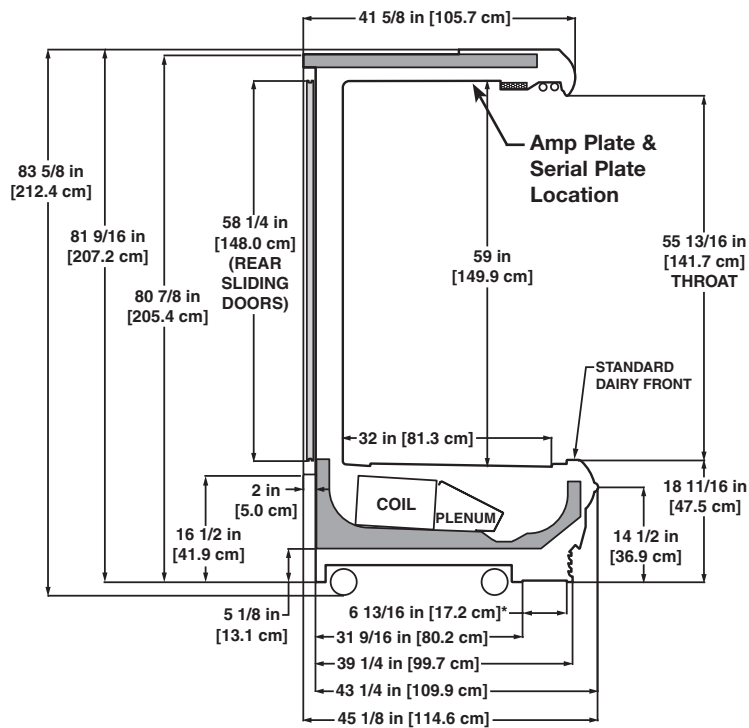
CONCEALED DAMAGE: If damage is not apparent until after the equipment is unpacked, retain all packing materials and submit a written request to the carrier for inspection within 15 days of receipt of equipment.

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.

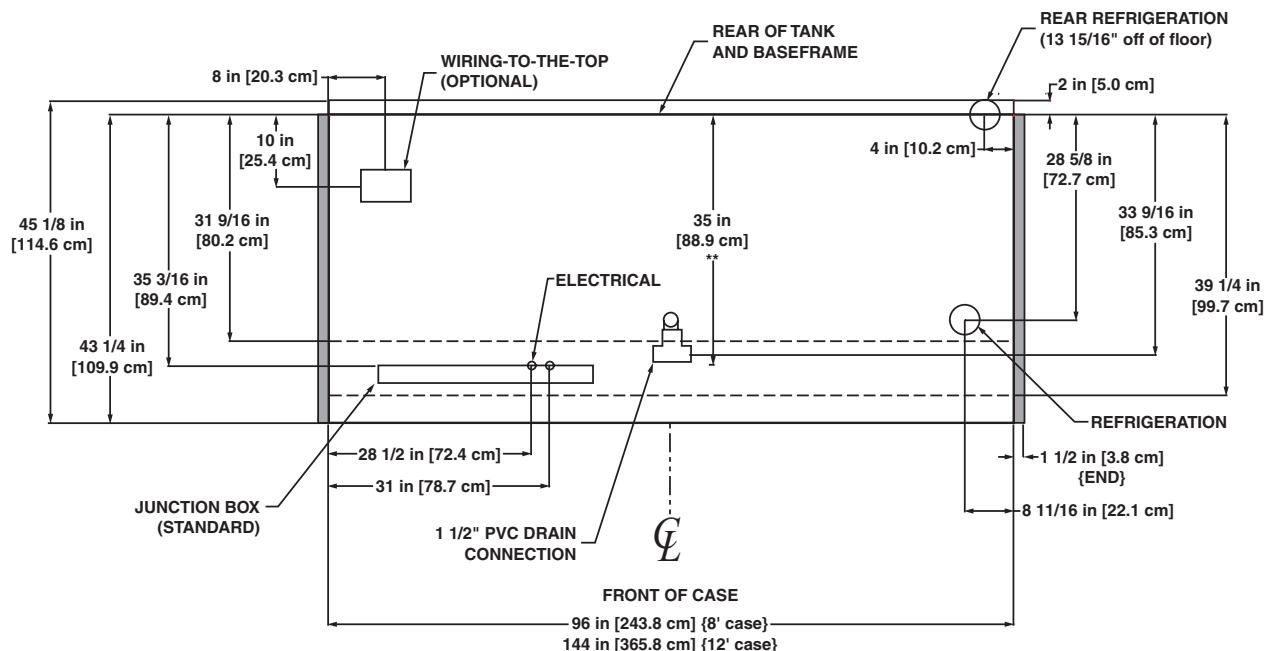
TECHNICAL SUPPORT: If any technical questions arise regarding a refrigerated display case contact our Customer Service Department in Richmond at 1-804-526-4455. For any questions regarding our refrigeration systems or electrical distribution centers contact our Customer Service Department in Conyers 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 top flue panel of the case (see next page for details). Ask for a Service Parts Representative at 1-804-526-4455.

GENERAL INFORMATION

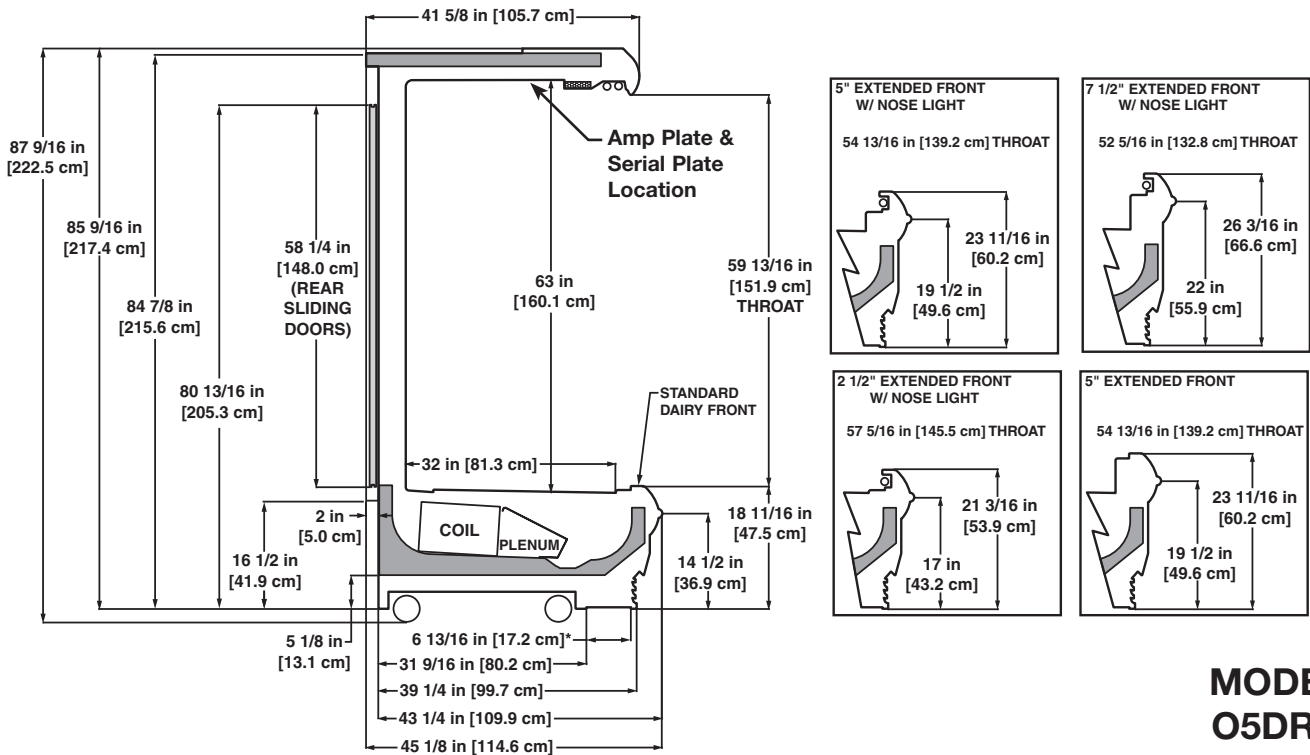


**MODEL
O5DR**

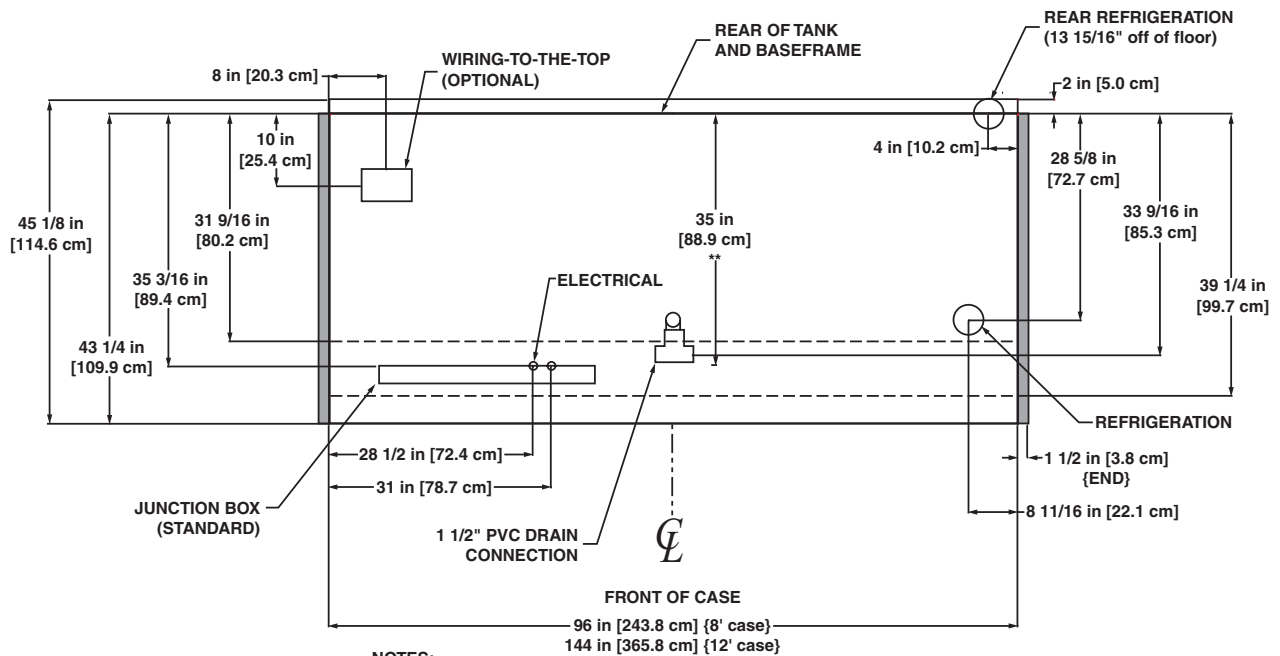


NOTES:

- * STUB-UP AREA
- ** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
 - FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARIES WITH BASEFRAME HEIGHT
 - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
 - WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
 - COOLER OPENING SHOULD BE 82" X CASE LENGTH
 - SUCTION LINE - 7/8", LIQUID LINE - 1/2"
 - AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"



**MODEL
O5DRH**

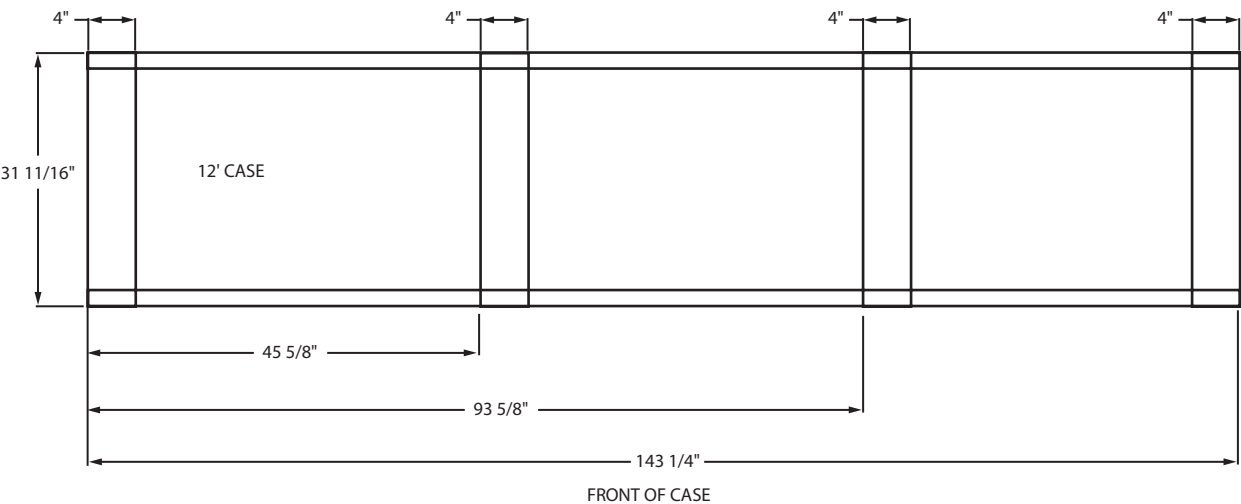
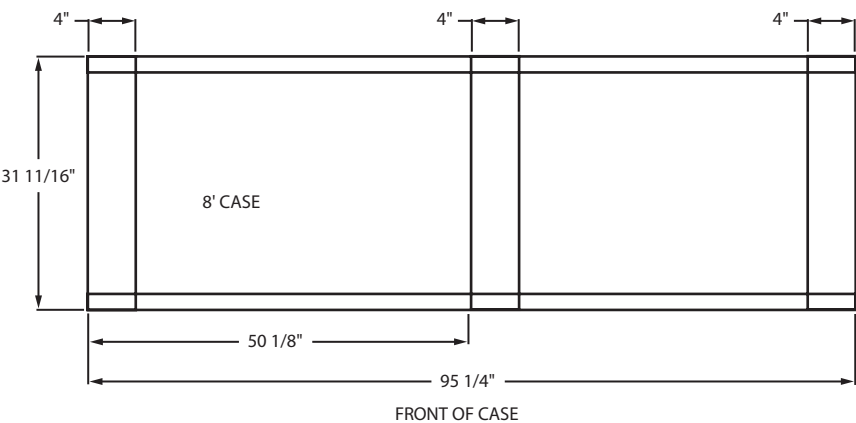


NOTES:

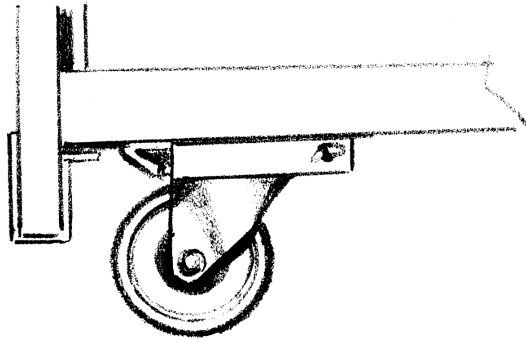
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- COOLER OPENING SHOULD BE 86" X CASE LENGTH
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"

GENERAL INFORMATION

**BASEHORSE
LOCATIONS FOR
MODEL
O5DR & O5DRH**

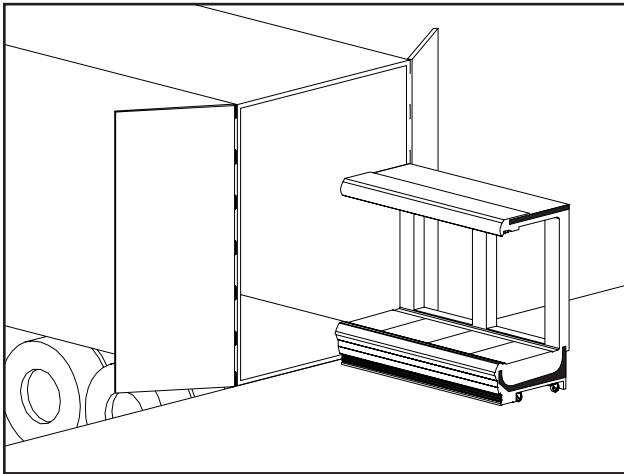


CASES MOVE ON CASTERS FOR EASIER INSTALLATION

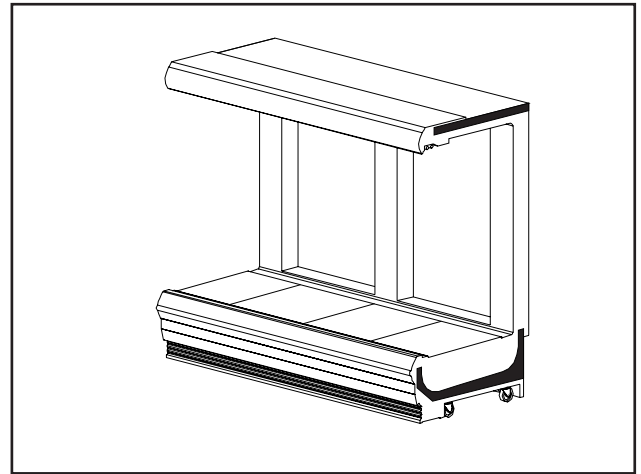


Cases are manufactured and shipped to stores with casters installed on the base frame to make the job of moving cases easier for everyone involved with the manufacturing, shipping and installation process.

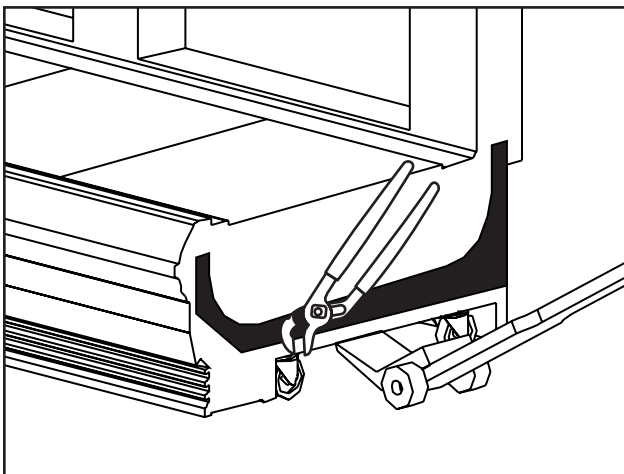
Casters not only speed up the process, but they also reduce the chance of damage from raising and lowering cases with "J" bar to place them on dollies, skates or rollers. In most situations, one or two persons can move the case with ease.



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.

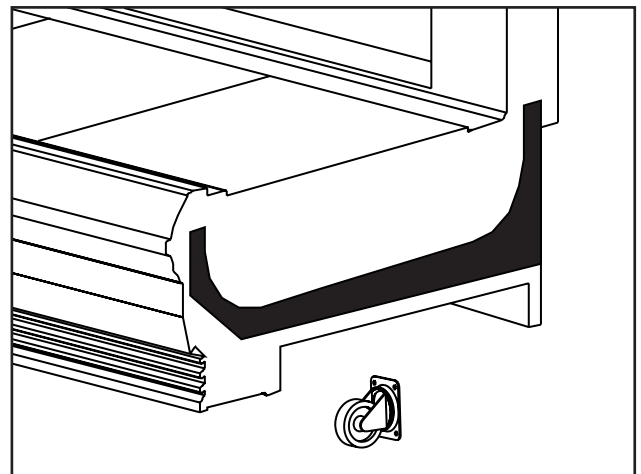


ROLL TO LINEUP POSITION. Casters may remain in place to move the cases to staging areas around the store, prior to final installation. When ready for final line-up, roll the case to set position, then remove casters.



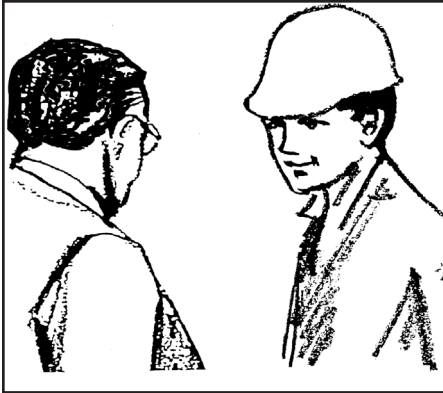
REMOVE COTTER PIN. Removing the casters is easy. Simply flatten and hammer out cotter pins then lift the case with "J" bar, and the casters will fall off.

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



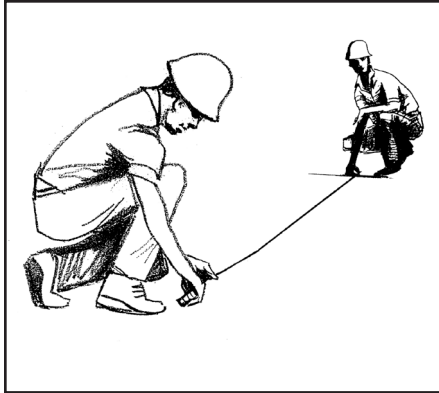
CASTERS MAY BE DISCARDED.

LINE UP



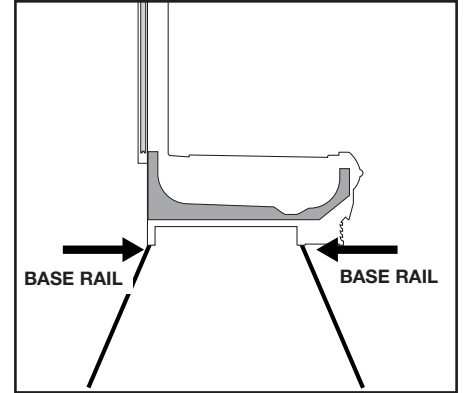
Consult With General Contractor

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.



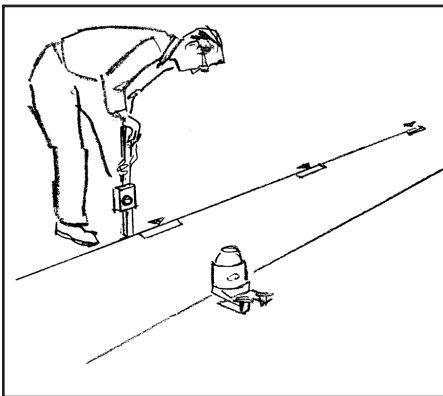
Snap Chalk Lines

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



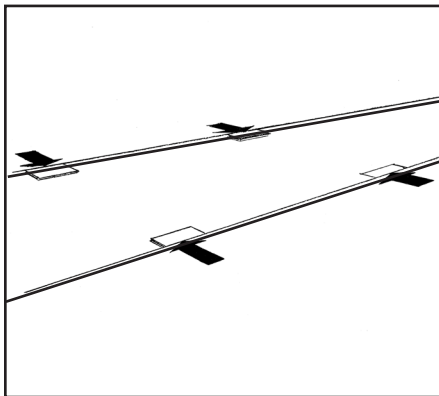
Snap Lines On Base Rail Locations

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.



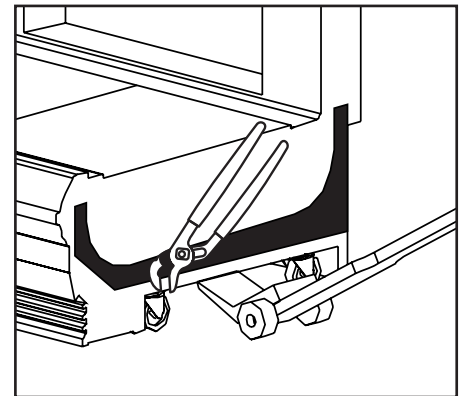
Level Floor. Use Laser Transit

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 Basehorse Locations

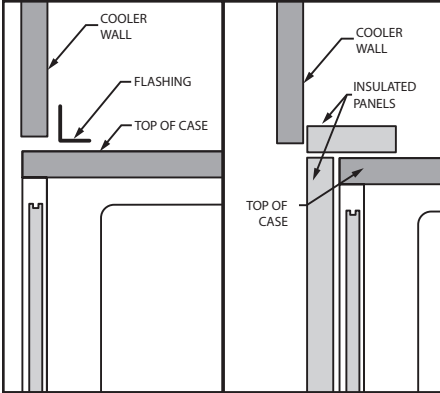
Locate basehorse positions along chalk lines. Spot shim packs at each basehorse location.



Position First Case In Lineup, Remove Casters, Level

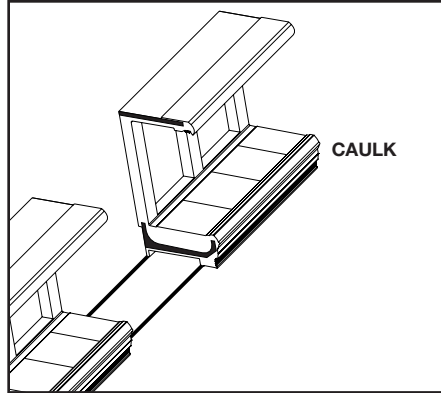
Roll first case into position. Raise case from end under cross support using "J" bar. Remove cotter pins and casters. [CAUTION! Keep hands from under case] Level case on shims.

NOTE: It may be advisable to use a closure method that can flex slightly to accommodate settling of the structure. See Appendix B on page 28 for more details.



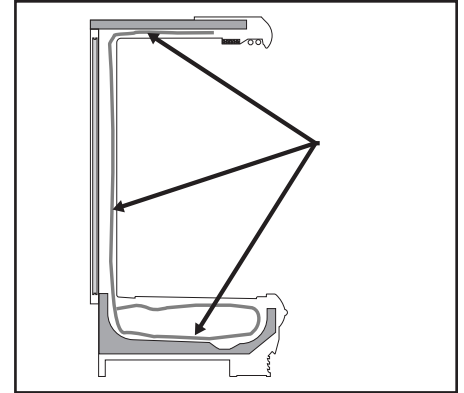
Seal Case to Cooler

The case can be aligned with the cooler wall in a number of ways. No matter how the case aligns to cooler ensure that the gap between the cooler and case is insulated and sealed completely. Remember to seal the case back to the vertical walls of the cooler as well as along the entire top horizontal wall. Flashing for the joint should be supplied by the contractor or cooler manufacturer.



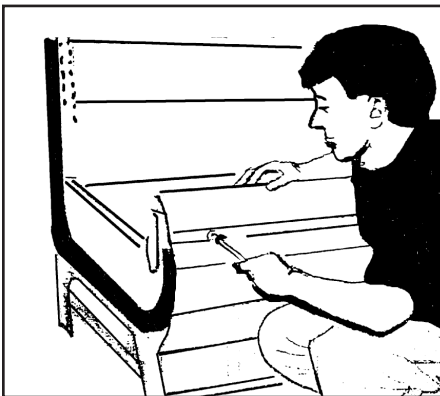
Position Next Case In Line Up

Roll case approximately 6' from adjoining case. Remove casters on the end nearest to the next case. Allow casters to remain on opposite end to assist in pushing cases together - then remove them.



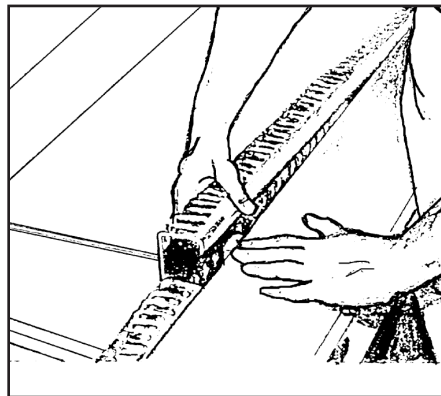
Remove Shipping Accessories From Case. Add Sealant.

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



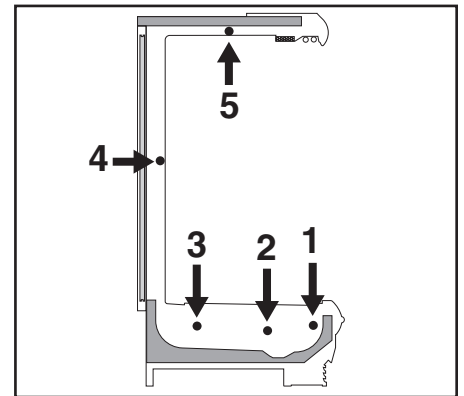
Loosen Bumper And Cornice

Loosen screws on master bumper. Move bumper joint to a position for sliding between adjoining case bumper. Do same for cornice joint. Cornice screws are located on top of the case.



Remove Return Air Grill At Case Joint

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



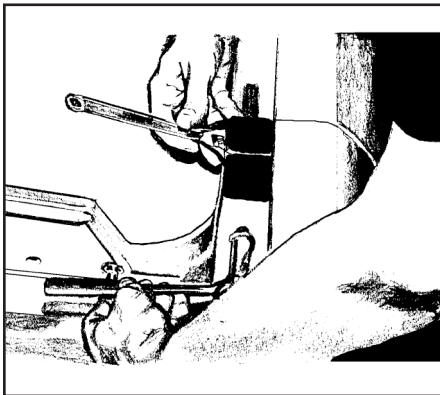
Bolt Cases Together Using Bolt Holes Provided

Push cases tightly together. Bolt cases together through the five holes provided. Tighten until all margins are equal; do not over tighten. If bolt 4 interferes with shelf positioning, it may be removed once cases are set.

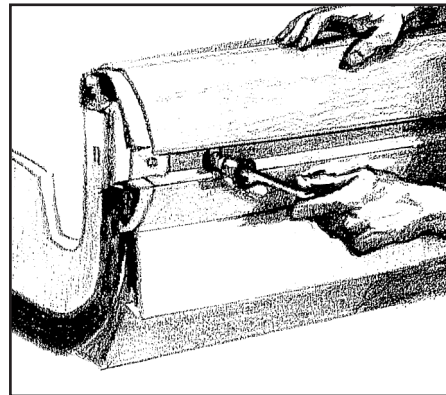
Ask about our case installation video available by request through your local Hill PHOENIX Sales or Field Service Representative.

TRIM OUT

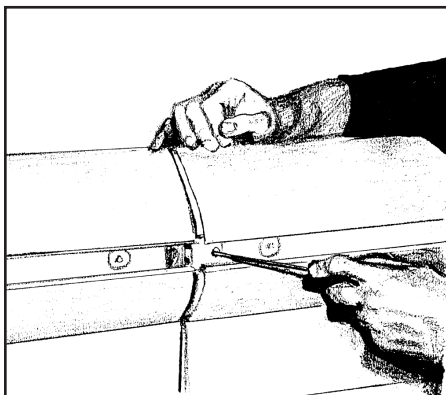
Now that cases have been positioned and leveled, you may proceed to trim-out case lineup. Trim parts have been designed to be applied easily with only a small number of fasteners required. Most external parts are adjustable to achieve almost invisible, snug-fitting joints and a high level of excellence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



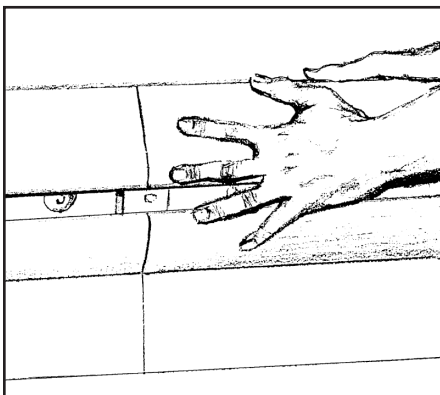
Tighten all joint bolts. Draw up tightly, but do not over tighten.



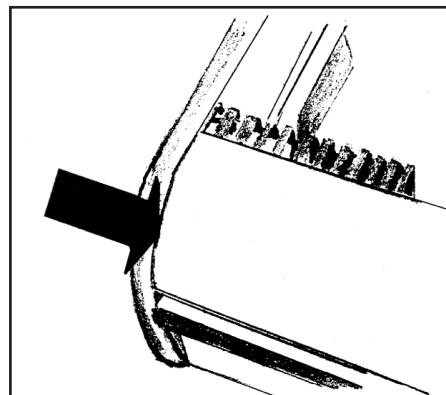
Adjust polymer master bumper joints, if required. First loosen bumper screws.



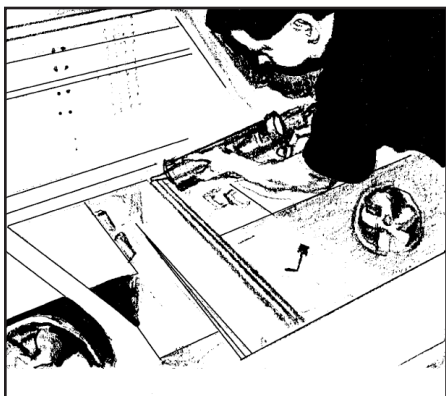
Slide bumper joint to the center of the joint between the two cases. Use screw driver in hole provided.



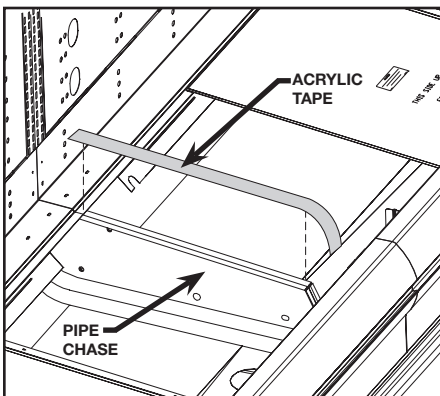
Slide master bumper left or right to close seam as required. Bumper joint neatly finishes any gap that may remain.



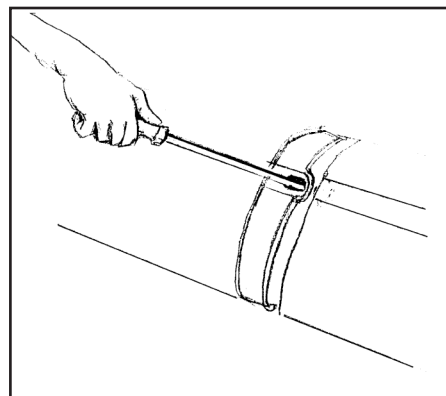
Close seam where bumper joins case end. Bumper joint closes seam that may develop if master bumper is moved away from end to close case-to-case joint seam.



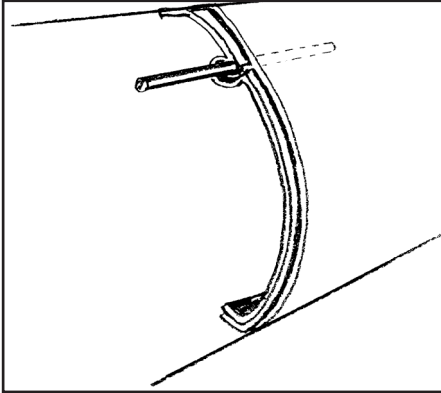
Seal joints along pipe chase seam with the caulk provided.



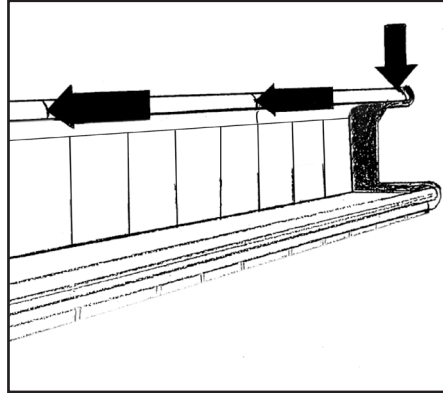
Apply acrylic tape over pipe chase seam. Tape is found with the ship loose items and acts as a watershed preventing water from settling in case joint.



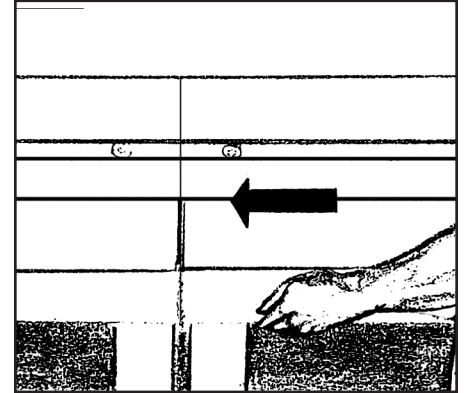
Move the interior cornice joint to the center of the seam between the two cases with a screwdriver.



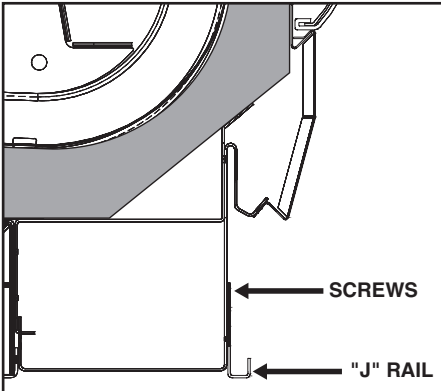
Close cornice joints. Cornice is aluminum extrusion with matching extruded joint band for precision fit. Pin helps to align and hold cornices together.



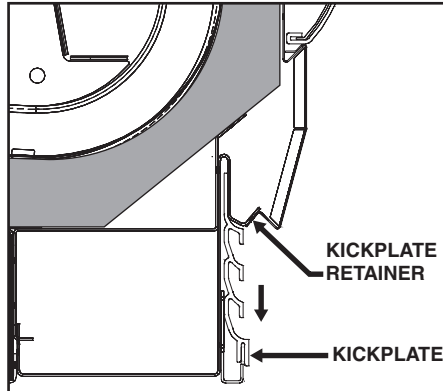
Tighten all cornice joints. Start at one end of lineup, loosen fasteners on top, slide cornices in one direction so that each joint butts tightly together. Tighten fasteners on top. Apply external joint band on extreme end of lineup if gap exists.



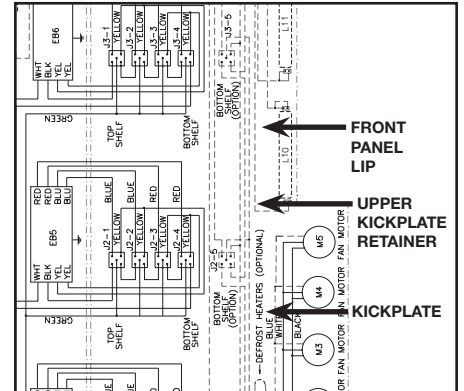
Close joints of front panel – panel is slotted on the bottom to allow left or right adjustment as required.



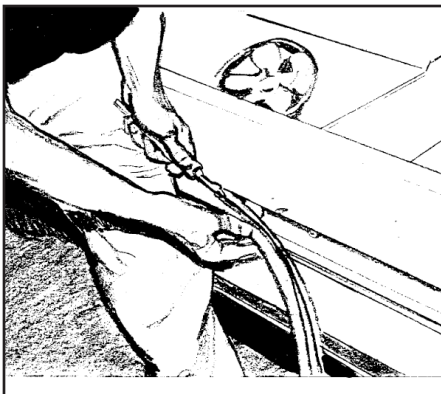
The “J” rail is shipped attached to the case as shown. Loosen screws holding “J” rail to allow it to slide down and fit flush with the floor.



Insert top of kickplate into the kickplate retainer. Slide the kickplate up into the retainer then down onto the “J” rail.



If cases are equipped with contour front panels the upper kickplate retainer is shipped loose in the case. When installing the upper kickplate retainer be sure it is positioned behind the lip on the front panel as shown above.



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 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 forward on the right hand side of the case, fully visible in front of the fan plenum.

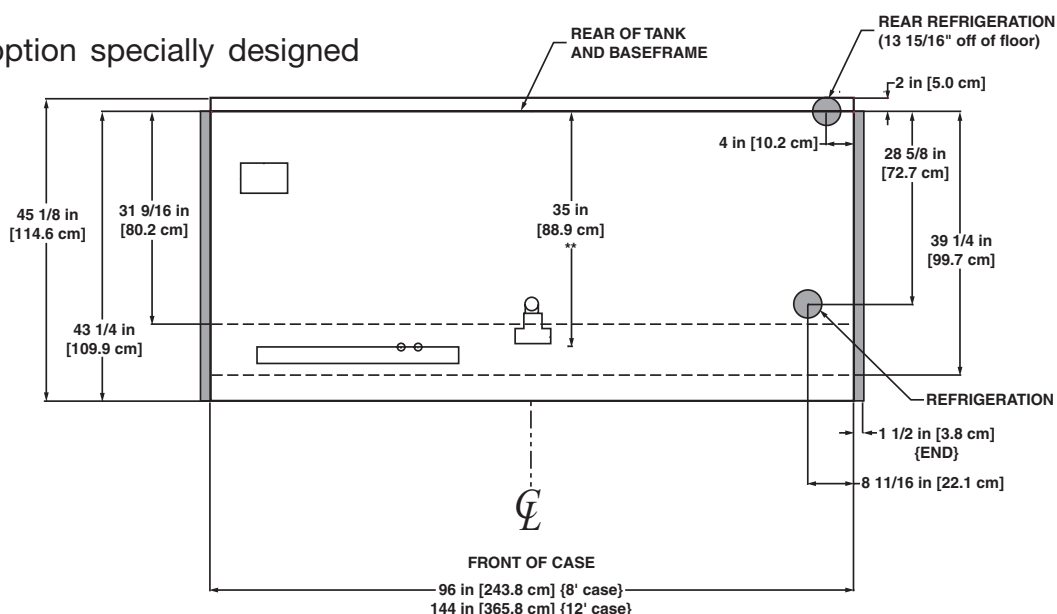
The expansion valve and other controls are located on the left-hand side of the case and are accessible without lifting the fan plenum. The controls cluster may be reached by lifting **only** the left hand deck pan minimizing the need to unload product.

At the owners option specially designed

piping hangers are located along the front of the case, under the return air grill, to suspend case-to-case piping up out of the drain trough and out of the way, see figure below.

If it becomes necessary to penetrate the case bottom for any reason, make certain it is sealed afterward with canned-foam sealant and white RTV.

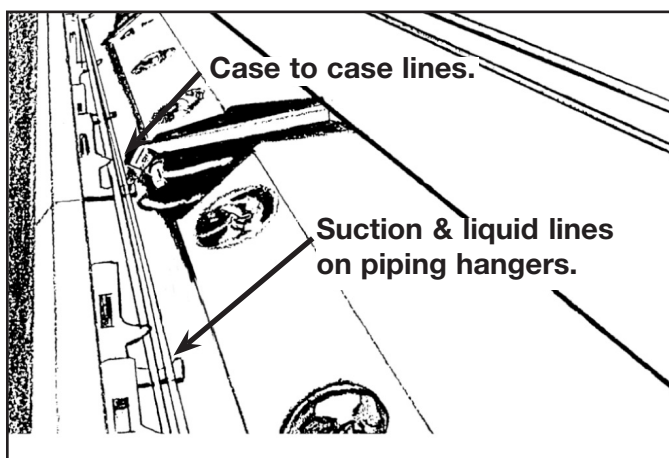
MODEL O5DR & O5DRH



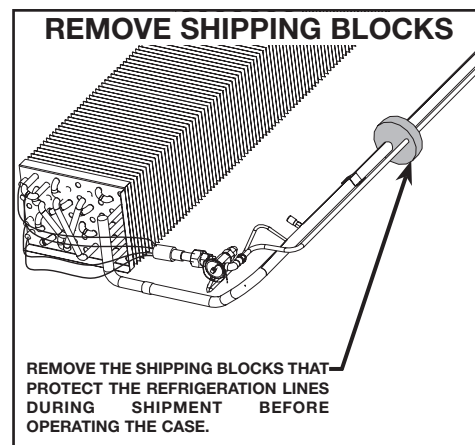
NOTES:

** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

• SUCTION LINE - 7/8", LIQUID LINE - 1/2"



View of the case to case piping hangers along front of case. Lay copper tubes on the hangers and they will hold the piping in place while you braze them together.



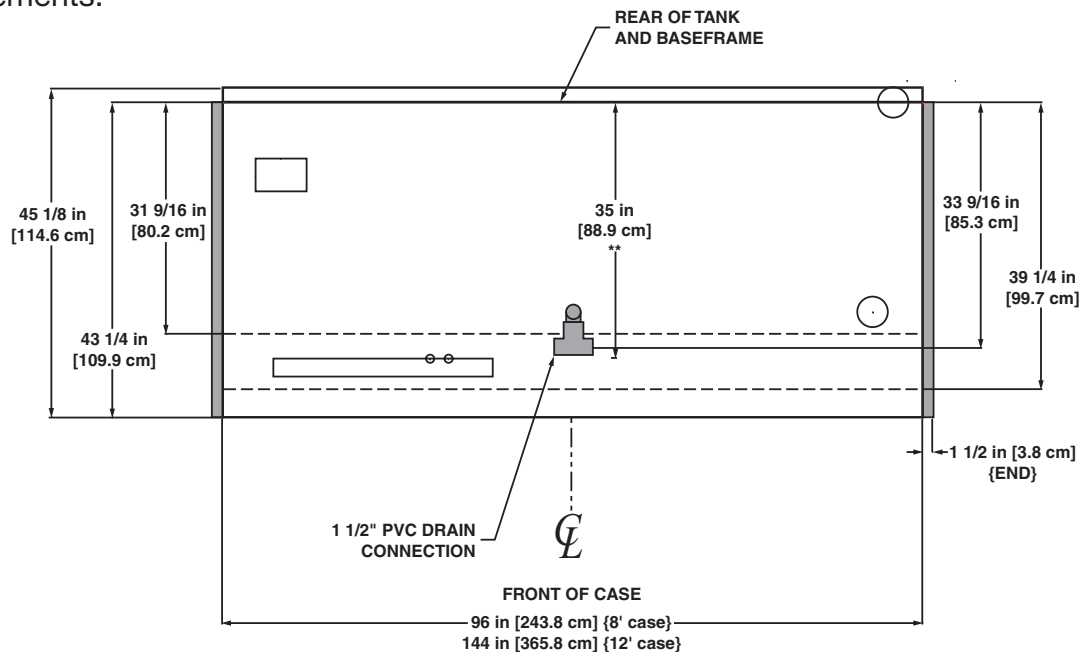
PLUMBING

The drain outlet is located front and center of the cases for convenient access and 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 drain 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.

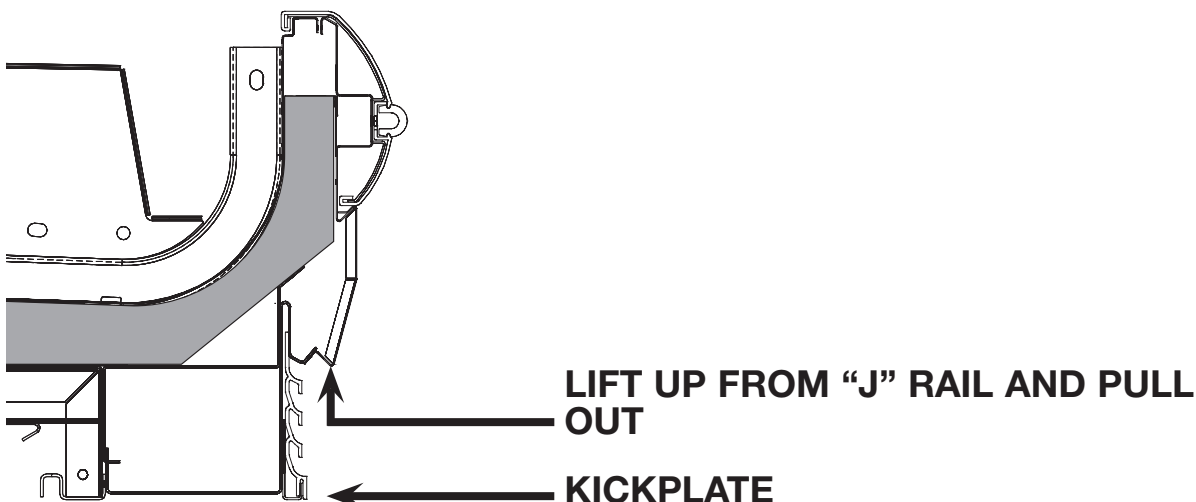


NOTES:

** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

HOW TO REMOVE KICKPLATE

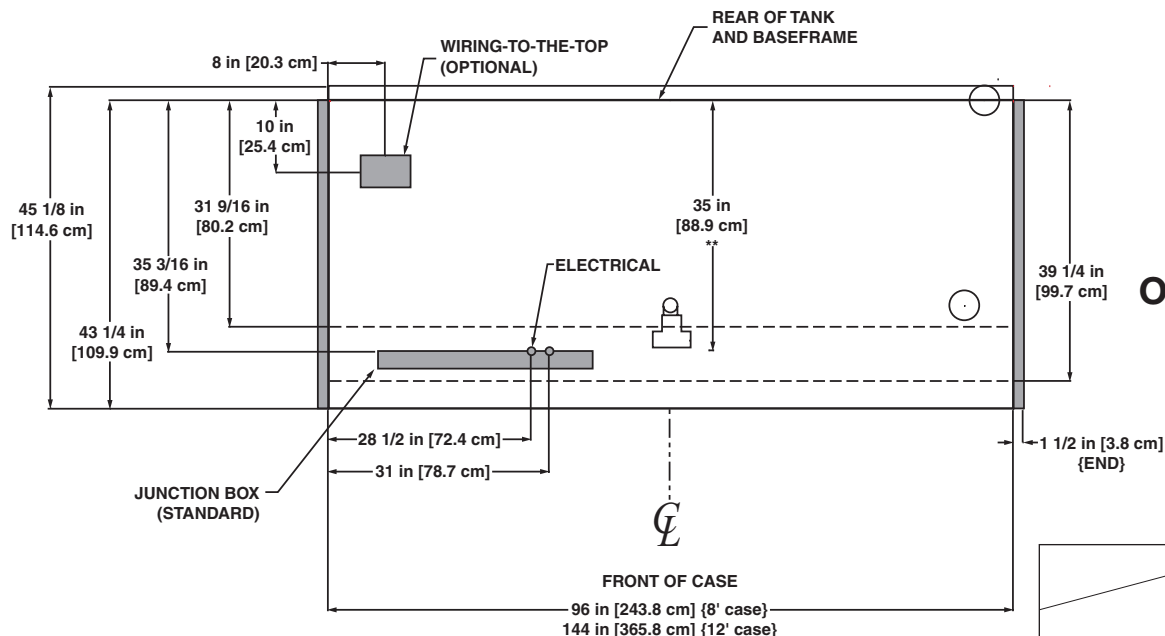
MODEL O5DR & O5DRH



ELECTRICAL HOOKUP

Electrical hookups for the case are made to a junction box located either at the bottom left hand front of the case or the top left rear of the case.

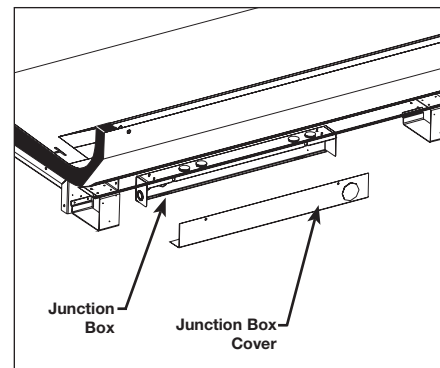
For case-to-case wiring, run “green-field”, or other conduit, between junction boxes. When connecting to the junction box on the bottom left side of the case field wiring should exit box from right side, furthest away from case wiring, to allow more room inside for wire connecting.



**MODEL
O5DR & O5DRH**

NOTES:

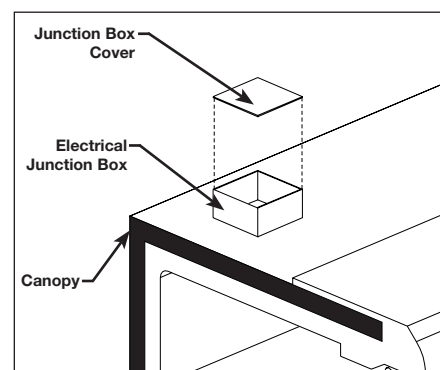
- ** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT



WIRING NUMBERS AND COLORS

COMPONENT	WIRE NUMBER	COLOR CODING
EVAPORATOR FANS, 120 VOLT	3	WHITE
	4	BLACK
HIGH EFFICIENCY FANS (OPTIONAL), 120 VOLT	5	BLUE
LIGHTS, 120 VOLT	11	WHITE
	12	BLACK
TEMPERATURE CONTROL, 120 VOLT	19	YELLOW
	20	YELLOW
DEFROST TERMINATION CONTROL, 120 VOLT	21	PURPLE
	23	ORANGE
DEFROST HEATERS, 208/240 VOLTS	L1	RED
	L2	BLUE
EQUIPMENT GROUNDING CONDUCTOR	-	GREEN

WIRING-TO-BOTTOM



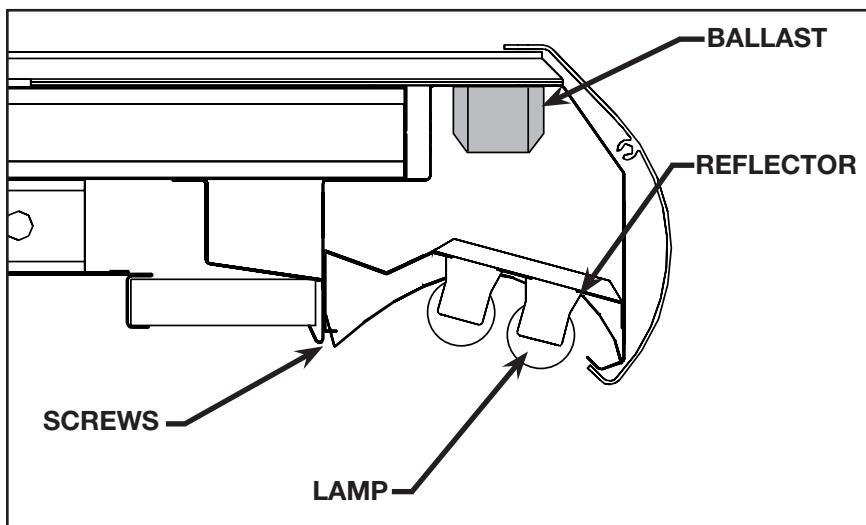
OPTIONAL WIRING-TO-TOP

HOW TO ACCESS BALLASTS

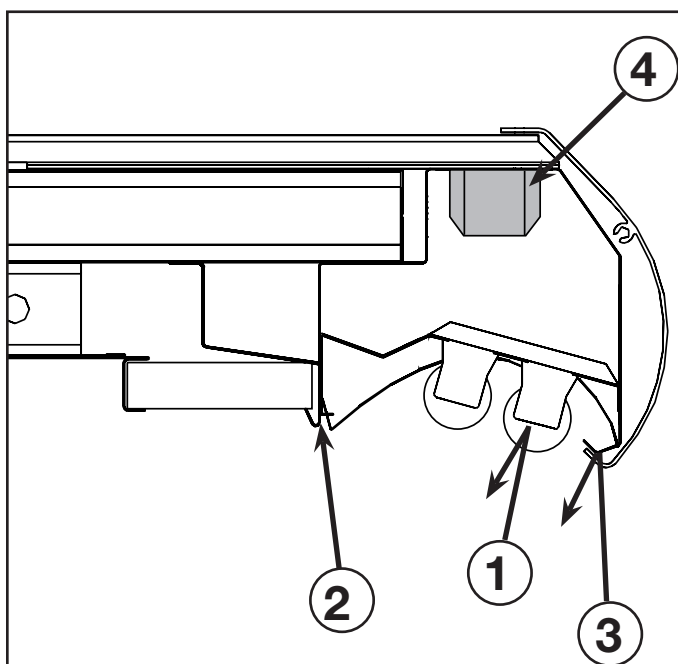
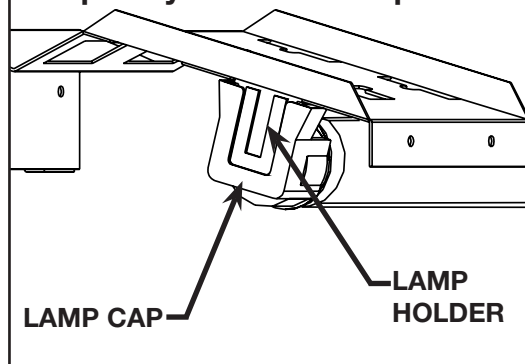
This display case is equipped with specially designed light reflectors in the cornice to improve the illumination of products. Electronic ballasts operate both the cornice and shelf lights and are located behind the reflectors.

To gain access to the ballasts the reflectors may be easily removed by removing a several screws along the length of the reflector. See below.

CROSS SECTIONAL VIEW OF CORNICE LIGHT AREA



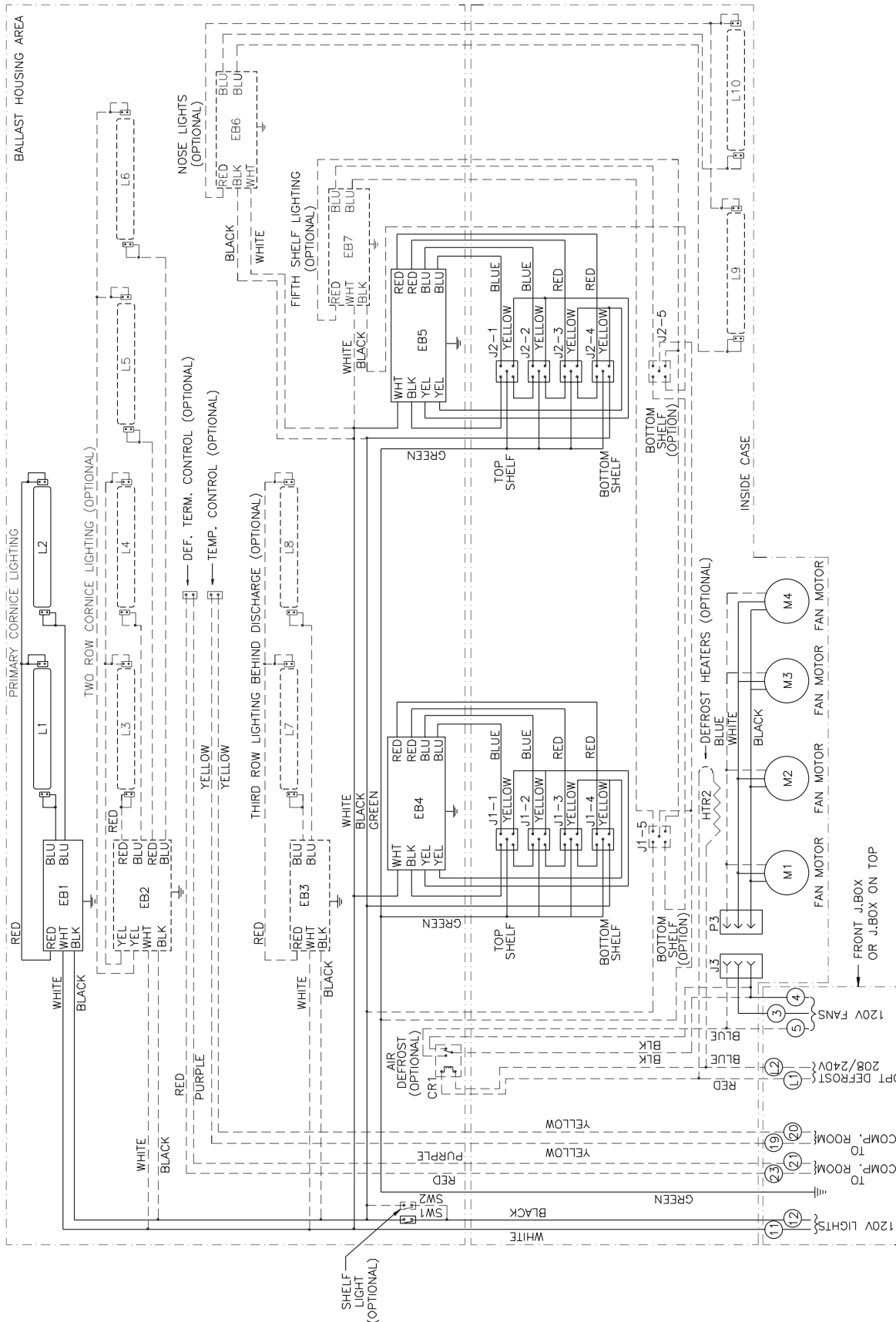
Note: When re-installing any lamp (cornice, shelf, nose, etc.) be sure the lamp cap is seated completely on to the lamp holder.



1. Remove lamps by pulling down at both ends.
2. Remove screws along length of the reflector.
3. Reflector is now free to remove.
4. Ballasts are located behind.
5. To replace, reverse procedure. First insert reflector in front channel then replace the screws in the reflector.

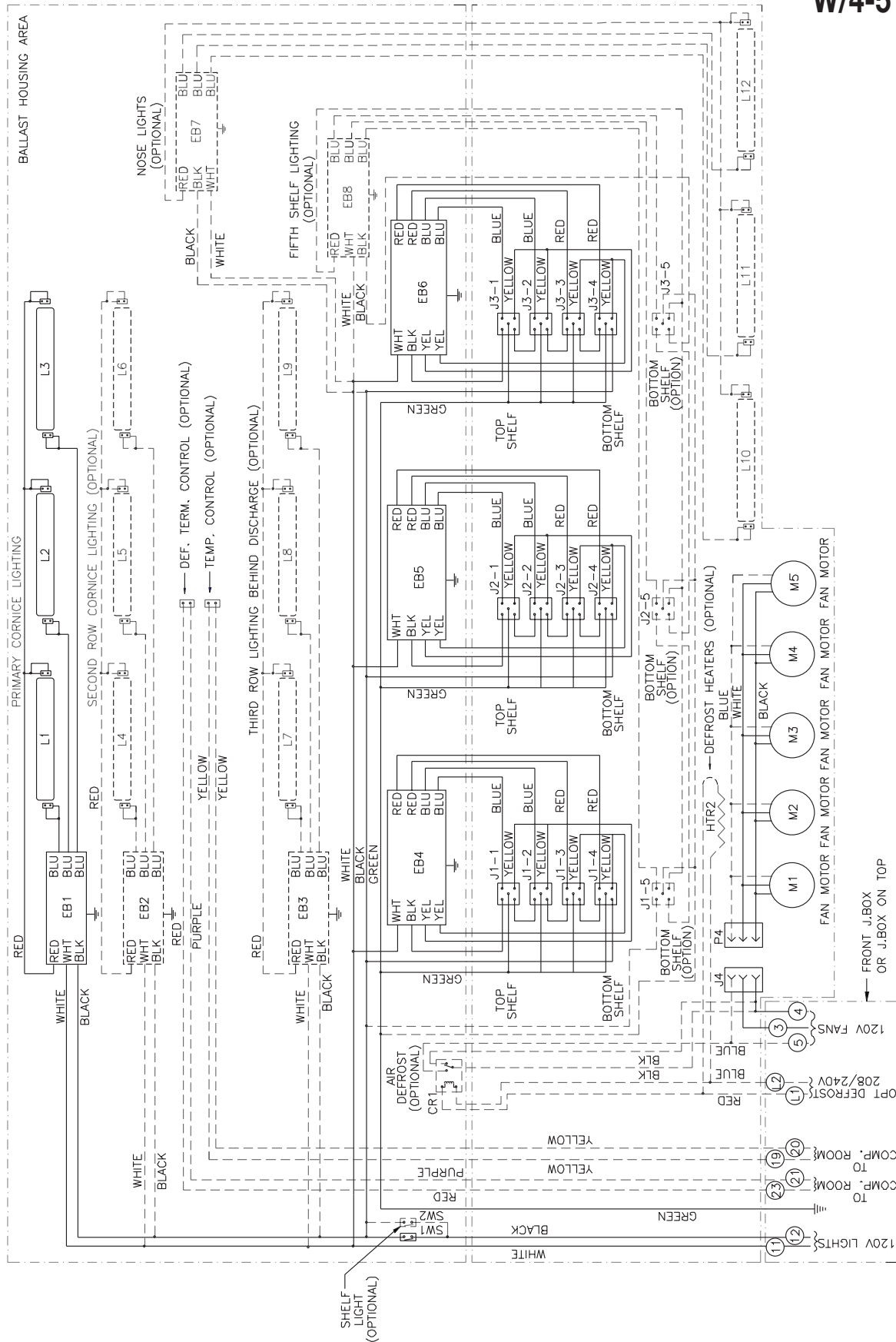
WIRING DIAGRAMS-

**MODEL
05DR/H-8'
W/4-5 SHELVES**



WIRING DIAGRAMS-

MODEL
O5DR/H-12'
W/4-5 SHELVES



Multi-Deck Rear Load Dairy Merchandiser

O5DR - 8' & 12'

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
O5DR	8'	4	3.20	213	1.44	142	- - - ¹	- - -	3.85	800	4.44	1065
	12'	5	4.00	267	1.80	178	- - -	- - -	5.78	1200	6.67	1600

¹ NOTE: - - - not an option on this case model.

Lighting Data

				Typical per Light Row		Maximum Lighting	
Model		Bulbs per Row	Bulb Length	120 Volts		120 Volts	
				Amps	Watts	Amps	Watts
O5DR	8'	2	4'	0.47	56	4.20	504
	12'	3	4'	0.70	84	6.30	756

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft ²	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity ⁴ (FPM)
O5DR Dairy	Std. Dairy	1502 ³	Enh.	22	6-8	32	47	275
	2.5" Ext.	1502 ³	Enh.	22	6-8	32	46	275
	5" Ext.	1453 ³	Enh.	22	6-8	32	42	275
	7.5" Ext.	1425 ³	Enh.	22	6-8	32	42	275
O5DR Beverage	2.5" Ext.	1422 ³	Enh.	26	6-8	35	48	275
	5" Ext.	1389 ³	Enh.	26	6-8	35	47	275

² BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

³ High efficiency fans reduce refrigeration load by 96 BTUHs/fan.

⁴ Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O5DR	4	6 - 8	32	47	45	47	26	45	42	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

All measurements are taken per ARI 1200 - 2002 specifications.



High Multi-Deck Rear Load Dairy Merchandiser

O5DRH - 8' & 12'

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
O5DRH	8'	4	3.20	213	1.44	142	- - - ¹	- - -	3.85	800	4.44	1065
	12'	5	4.00	267	1.80	178	- - -	- - -	5.78	1200	6.67	1600

¹ NOTE: - - - not an option on this case model.

Lighting Data

Model		Bulbs per Row	Bulb Length	Typical per Light Row		Maximum Lighting	
				120 Volts		120 Volts	
				Amps	Watts	Amps	Watts
O5DRH	8'	2	4'	0.47	56	4.20	504
	12'	3	4'	0.70	84	6.30	756

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft ²	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity ⁴ (FPM)
O5DRH Dairy	Std. Dairy	1543 ³	Enh.	22	6-8	32	47	275
	2.5" Ext.	1543 ³	Enh.	22	6-8	32	46	275
	5" Ext.	1493 ³	Enh.	22	6-8	32	42	275
	7.5" Ext.	1464 ³	Enh.	22	6-8	32	42	275
O5DRH Beverage	2.5" Ext.	1461 ³	Enh.	26	6-8	35	48	275
	5" Ext.	1427 ³	Enh.	26	6-8	35	47	275

² BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

³ High efficiency fans reduce refrigeration load by 96 BTUHs/fan.

⁴ Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O5DRH	4	6 - 8	32	47	45	47	26	45	42	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

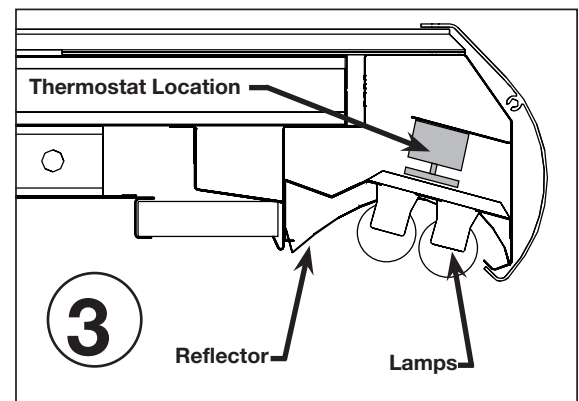
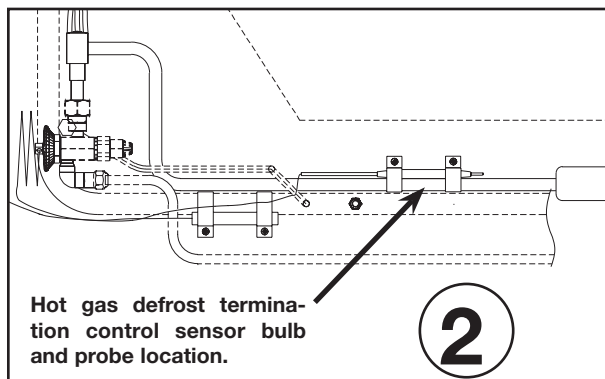
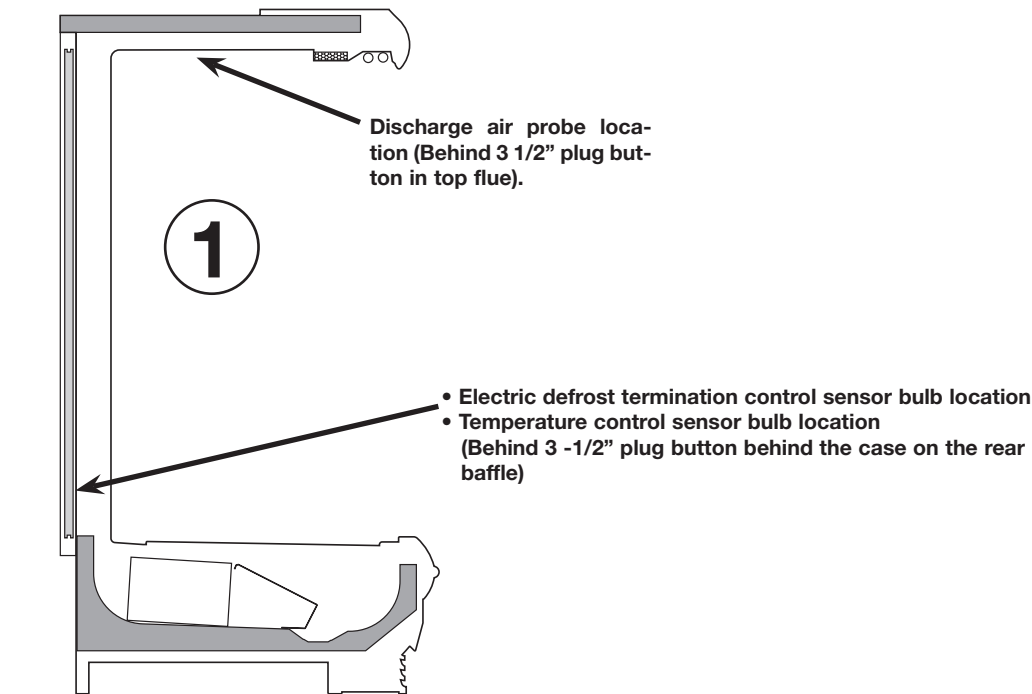
All measurements are taken per ARI 1200 - 2002 specifications.

DEFROST AND TEMP CONTROL

This case is equipped with Timed Off defrost at the owners option. The sensor bulb for timed off defrost termination, and the sensor bulb for temperature control are all located behind the rear baffle at the location shown in diagram 1 below. The discharge air probe is located behind a 3 1/2" plug button on the top flue panel also shown in diagram 1 below. The hot gas defrost termination sensor bulb and probe are attached to the dump line, as shown in diagram 2, which is in the front, left hand side of the case.

The defrost termination control thermostat and the temperature control thermostat are located on the upper left hand side of the case behind the light reflector, as shown in diagram 3. It is not necessary to remove the light reflector to adjust the thermostats.

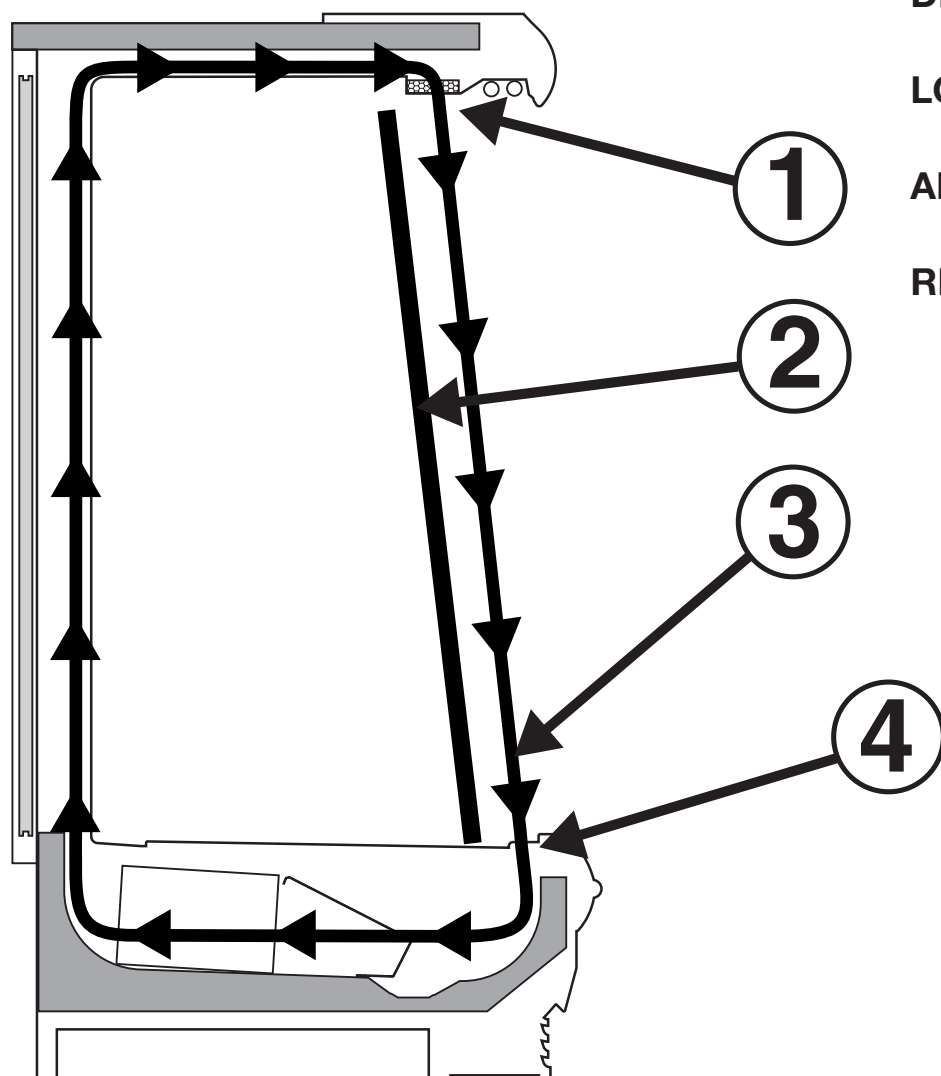
It is important to consult the control setting guidelines shown on pages 18 & 19 before setting defrost times. Further adjustment may be required depending on store conditions.



AIR FLOW AND PRODUCT LOADING

Cases have been designed to provide maximum product capacity within the refrigerated air envelope. It is important that you do not overload the food product display so that it impinges on 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 within the load limit lines shown on these diagrams.



DISCHARGE.....1

LOAD LIMIT.....2

AIR FLOW.....3

RETURN AIR GRILL...4

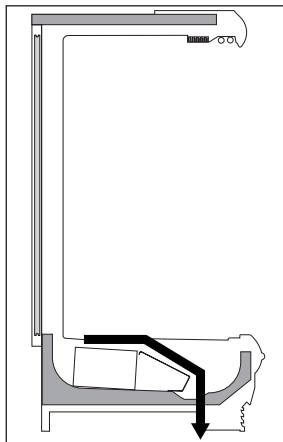
MODEL
O5DR & O5DRH

USE AND MAINTENANCE

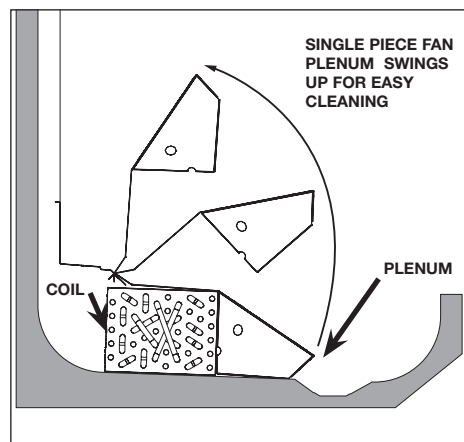
CASE CLEANING

Case is designed to facilitate cleaning. There is 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 to a deep-drawn drain trough that angles toward the front and center of case where the waste outlet is located for easy access.

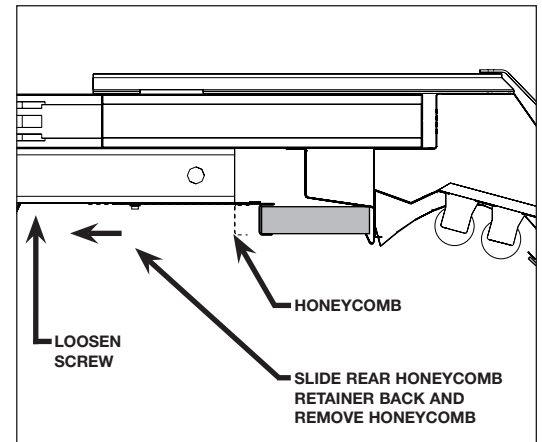
The coil is covered to keep food fluids from entering, but the cover lifts up easily when coil cleaning is desired. The single piece fan plenum lifts up for cleaning, exposing a major portion of the inside bottom of the tank. Make certain fan plenum is properly closed after cleaning to avoid air leaks. Front return air grills snap out for cleaning; no fasteners are used.



POSITIVE DRAIN OFF



SINGLE PIECE FAN PLENUM LIFT UP



CLEAN HONEYCOMB

CLEANING PROCEDURES

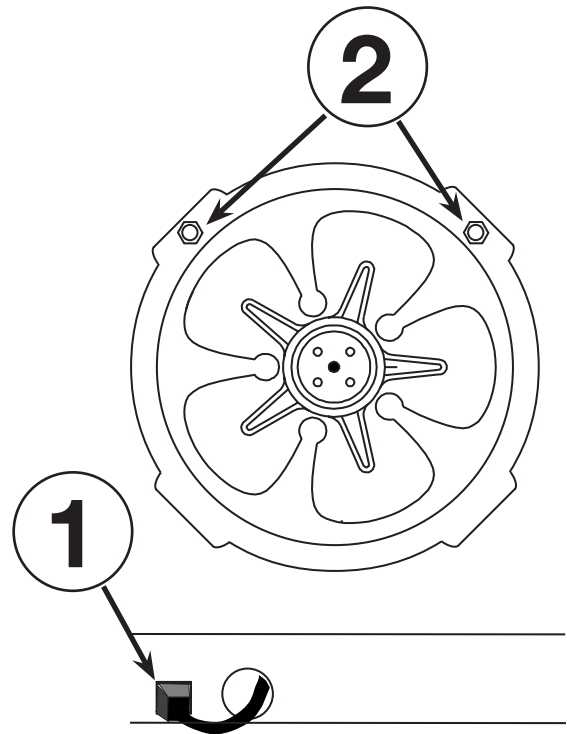
- A periodic cleaning schedule should be established to maintain proper sanitation, insure maximum operating efficiency, and avoid the corrosive action of food fluids on metal parts that are left on for long periods of time. We recommend cleaning once a week.
- To avoid shock hazard, be sure all electrical 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 process and avoid introducing water faster than the case drain can carry it away.
- 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 6 of this manual.
- Use warm water and a disinfecting cleaning solution when cleaning underneath the cases.

FANS

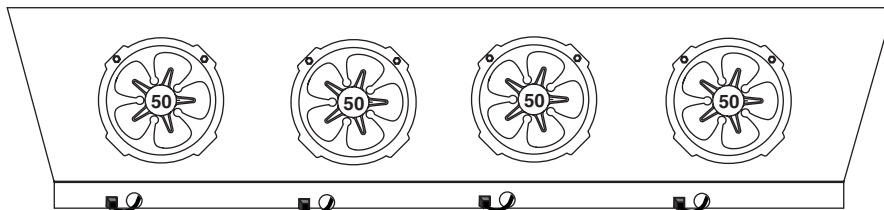
The evaporator fans are equipped with either 16 watt fan motors, 1550 RPM's, or 16 watt fan motors, 1550 RPM's. Both motors have a counter clockwise rotation when viewed from the shaft end. The fan blades are 8" in diameter and the blades are pitched according to the chart below. It is important that 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 lifting up the plenum, thereby avoiding the necessity to unload the entire product display to make a change:

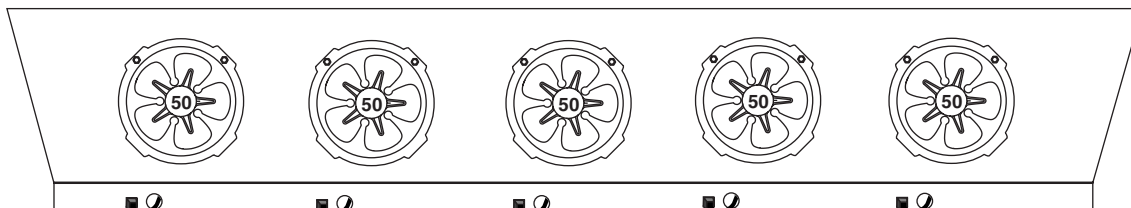
1. Unplug the fan motor, easily accessible out side the plenum.
2. Remove two fasteners, then lift out the entire fan basket.



Model	O5DR/H	
	8'	12'
No. Fans	4	5
Blade Pitch	50°	50°

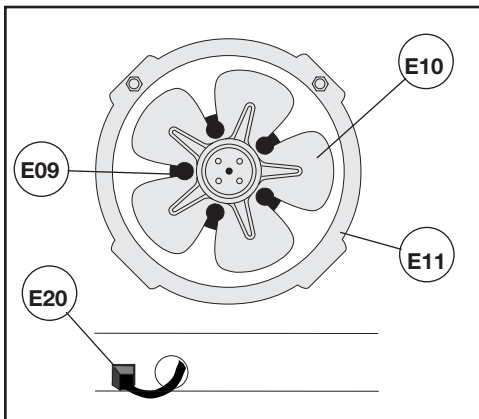
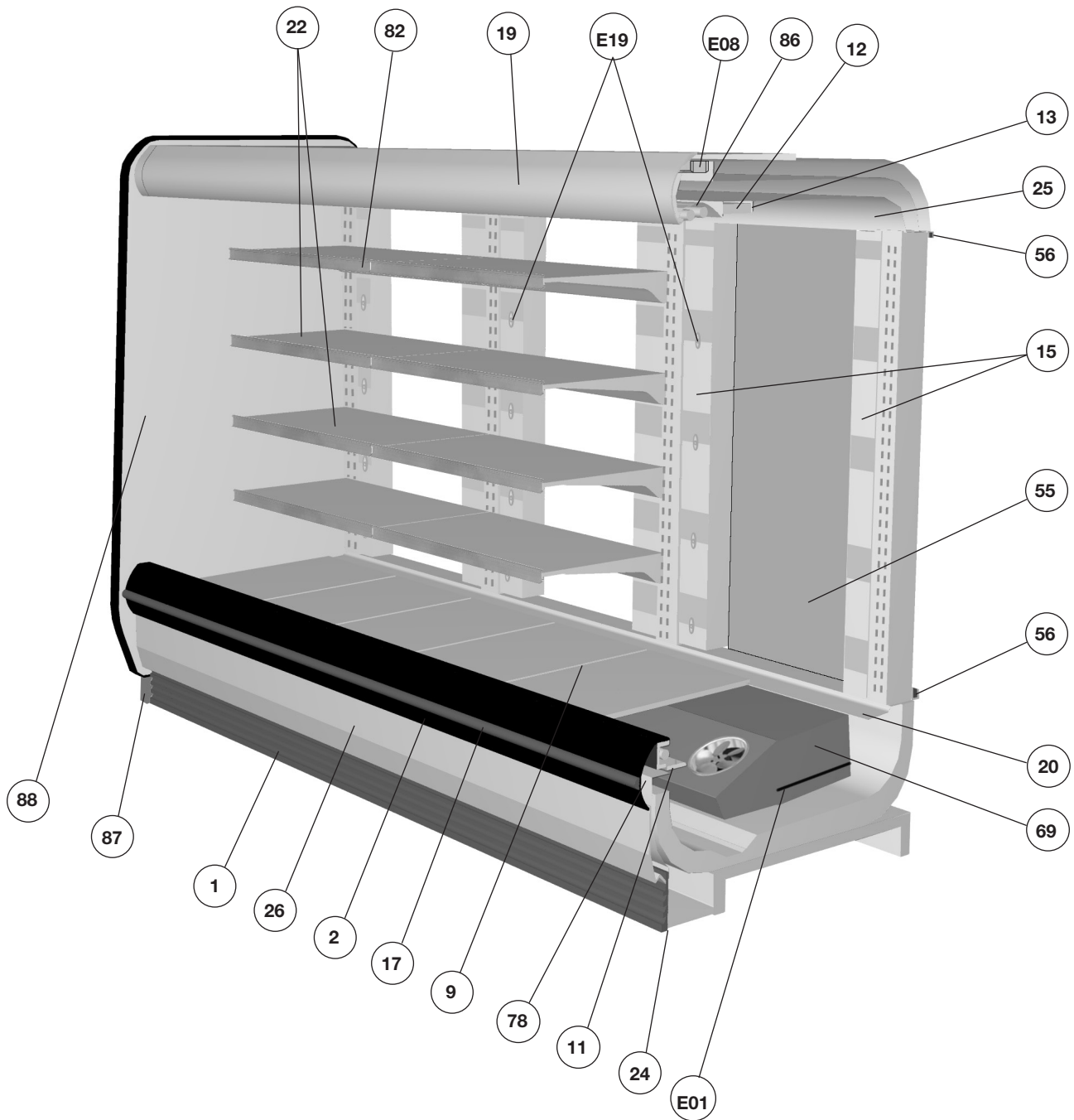


**MODEL
O5DR/H-8'**

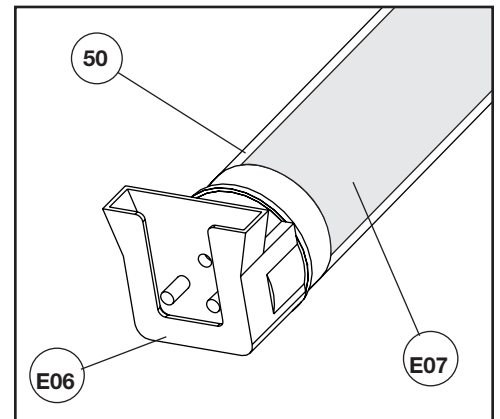


**MODEL
O5DR/H-12'**

PARTS ORDERING



**MODEL
O5DR & O5DRH**



Model O5DR & O5DRH

Location Number	Part Descriptions
1	Kickplate, PVC Extrusion, Storm Grey
2	Master Bumper, Featherstone, Smoke, White, French Vanilla, Black
9	Deck Pan, Painted, Unpainted, or Stainless
11	Front Baffle, Aluminum, Painted, or Stainless
12	Honeycomb, Discharge, 1" x 4" x 48"
13	Rear Honeycomb Retainer, Painted or Stainless
15	Upper Rear Baffle, Center or End, Painted or Stainless
17	Nose Bumper, PVC Custom Color
19	Cornice, Painted, Brushed Aluminum (for stainless steel finish)
20	Lower Rear Baffle, Painted or Stainless
22	Shelves, Lighted or Unlighted, Painted or Stainless
24	"J" Rail, for Kickplate
25	Top Flue Panel, Painted or Stainless
26	Front Panel, Painted Custom Color
50	Lamp Shield
55	Doors, Rear Sliding
56	Door Frame
69	Coil
78	Bumper Retainer
81	Bottom Wire Racks (Not Shown)
82	Shelf Tag Moulding
83	Thermometer, and Bracket (Not Shown)
86	Reflectors, Painted or Stainless (specify with or without holes)
87	End Assembly, Solid, Square, Full View, Custom Color Identify, Left or Right hand, Color of Panel, and color of PVC End Trim
88	End Kickplate, Storm Grey
E01	Defrost Heater
E06	Lamp Holder
E07	Lamp
E08	Ballast, Electronic, (Identify by brand name and model number)
E09	Fan Motor - STATE HIGH EFFICIENCY OR STANDARD
E10	Fan Blade
E11	Fan Basket, 8"
E19	Receptacle, Recessed, Shelf Light Outlet, White
E20	Fan Cord-Set, 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 on which the part is used.
- Length of part, if applicable, I.E. 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

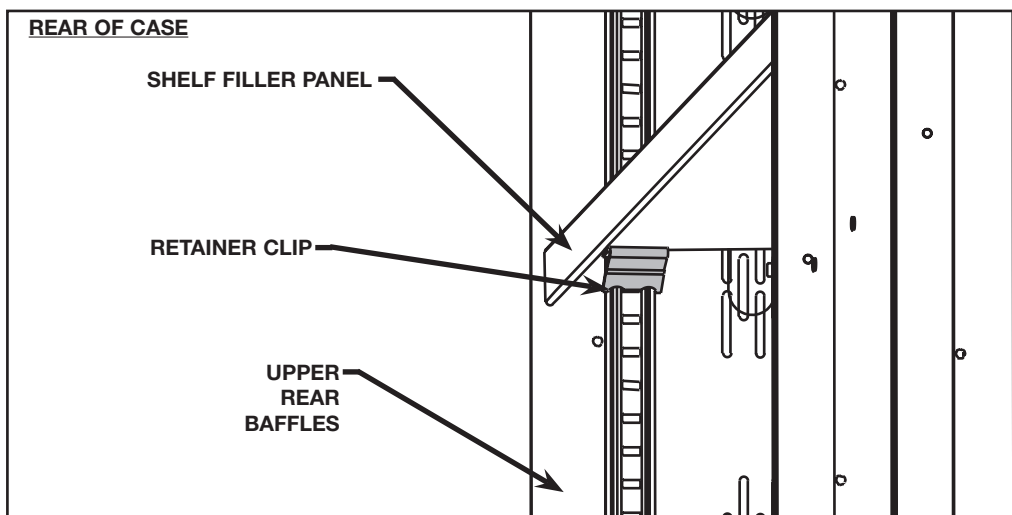
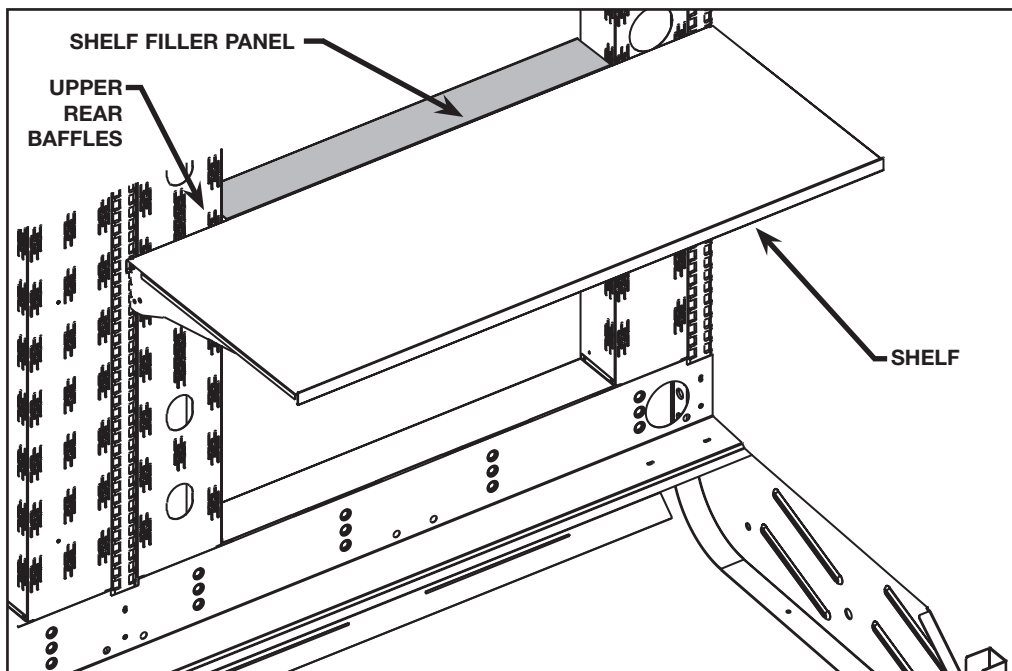
***Serial plate is located on top flue panel on the right hand side of the case (See illustration on pages 4 & 5).**

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

APPENDIX - A

Rear Shelf Filler Installation

The shelf filler panel is designed to improve airflow in the rear load series of cases. The shelf filler panel is screwed to the back of the shelf and fits between the the upper rear baffles of the case, as shown below. The back of the filler panel rests on retainer clips that fit into a track attached to the upper rear baffle of the case, also shown below. These clips help support the rear filler panel and are shipped loose with the case. Ensure these filler panels are present on any shelves being used in rear load style case.



APPENDIX - B

Examples of case sealed to cooler box.

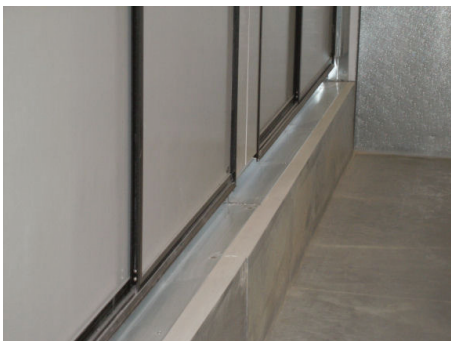


Seal Case to Cooler

The case can be aligned with the cooler wall in a number of ways. No matter how the case aligns to cooler ensure that the gap between the cooler and case is insulated and sealed completely. Remember to seal the case back to the vertical walls of the cooler as well as along the entire top horizontal wall. Flashing for the joint should be supplied by the contractor or cooler manufacturer.



Note: It may be advisable to use a closure method that can flex slightly to accomodate settling of the structure.



NOTES

NOTES



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[®]

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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