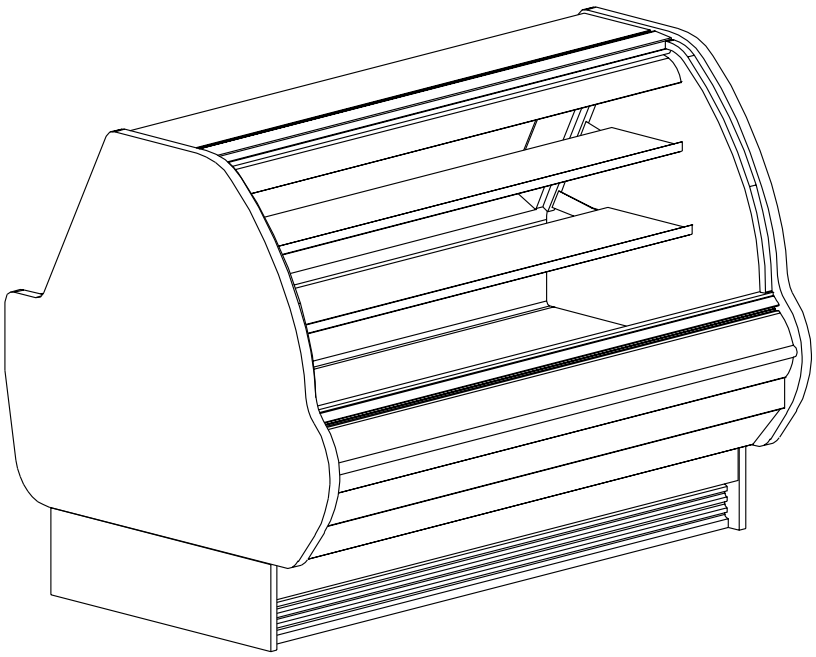
DELI

CASES

MODEL: OSAA



ORIGIN^2™

INSTALLATION & OPERATION

HANDBOOK

Hill PHOENIX
EXCELLENCE®

A DOVER™ COMPANY

NSF® c UL® us

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9/03

Welcome to the ORIGIN^2 display case family. We're very pleased you joined us.

This installation and operation handbook has been especially prepared for everyone involved with ORIGIN^2 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.

TABLE OF CONTENTS

GENERAL INFORMATION

DESCRIPTION OF CASES: The refrigerated display cases described in this handbook are part of the ***Hill PHOENIX***, Origin^2 design series. Specifically covered in this manual is model OSAA, self-contained service deli case.

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.

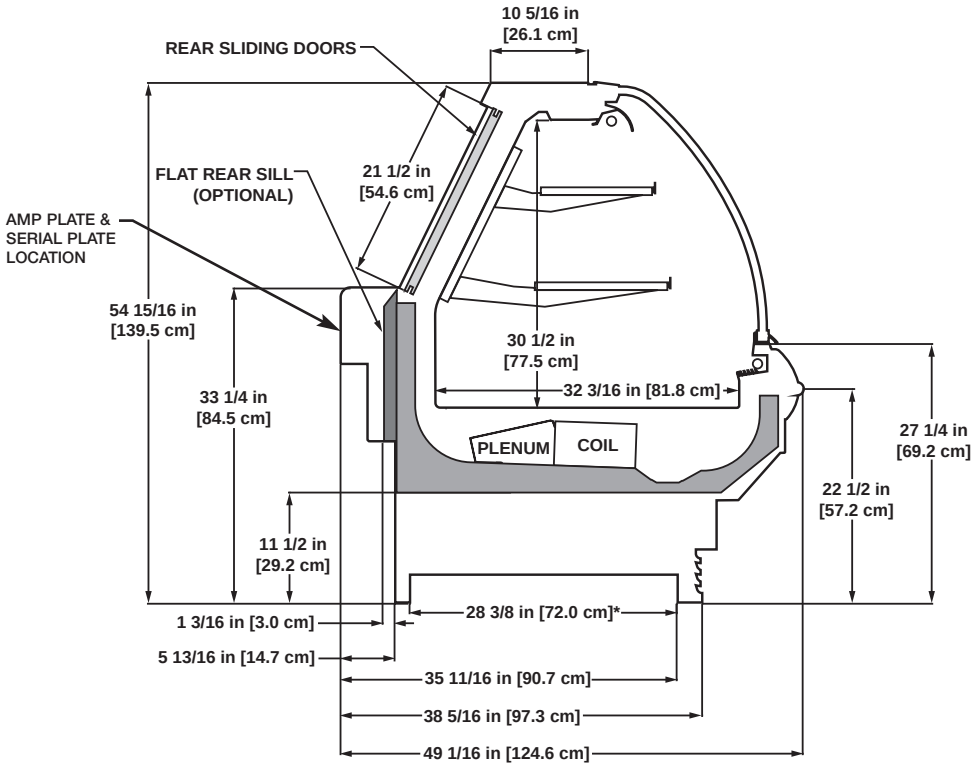
CONCEALED DAMAGE: If damage is not apparent until after the equipment is unpacked, retain all packing materials and submit a written request to the carrier for inspection within 15 days of receipt of equipment.

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.

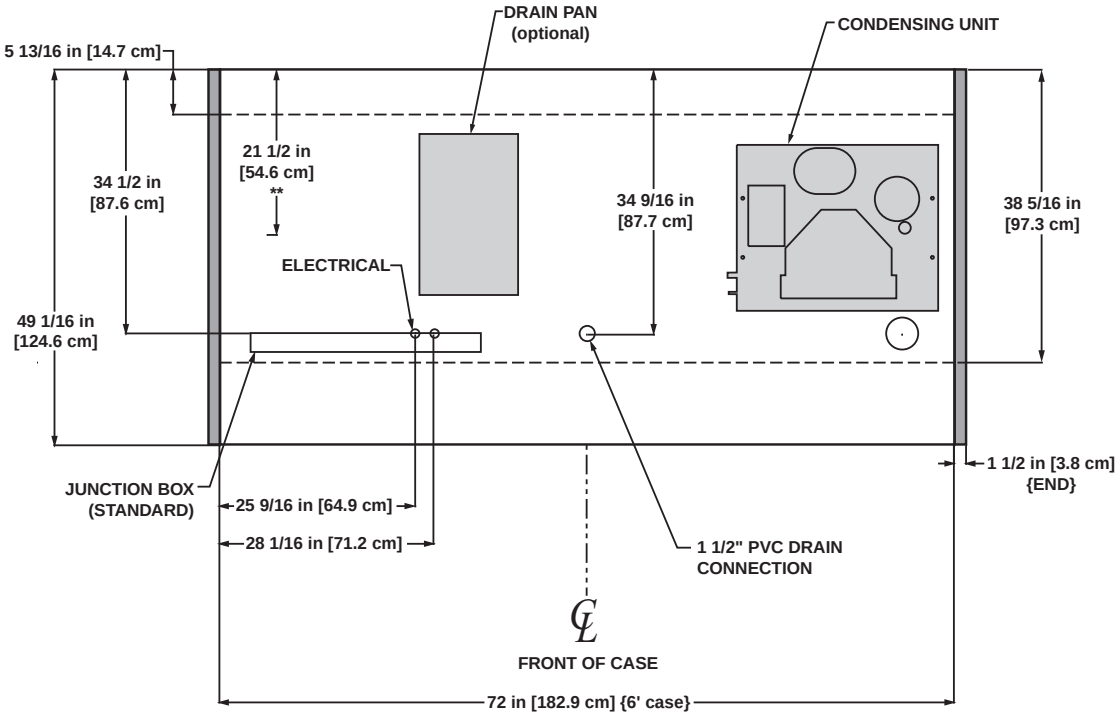
TECHNICAL SUPPORT: If any technical questions arise regarding a refrigerated display case contact our Customer Service Department in Richmond at 1-804-526-4455. For any questions regarding our refrigeration systems or electrical distribution centers contact our Customer Service Department in Conyers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

ORIGIN^2™



MODEL
OSAA-6'

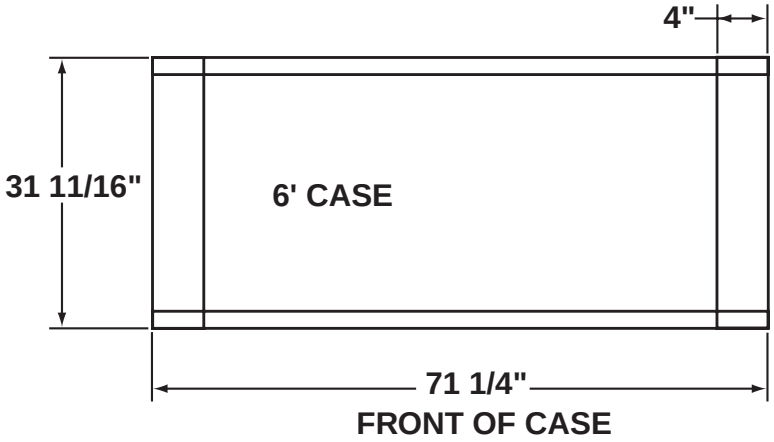


NOTES:

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

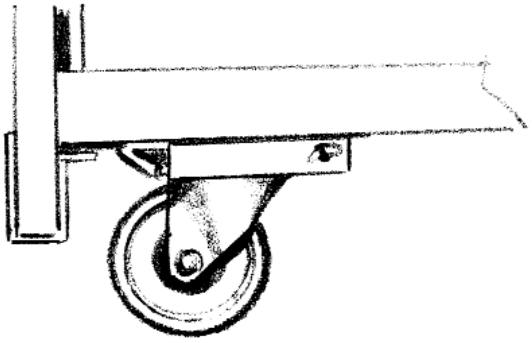
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 10" & 12"

GENERAL INFORMATION



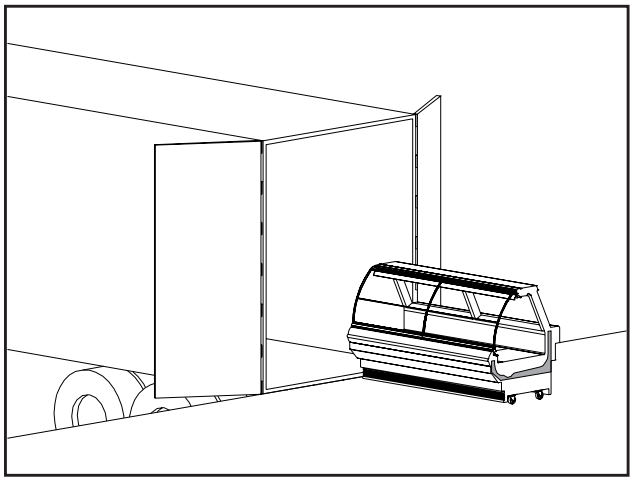
BASEHORSE LOCATIONS FOR MODEL OSAA

CASES MOVE ON CASTERS FOR EASIER INSTALLATION



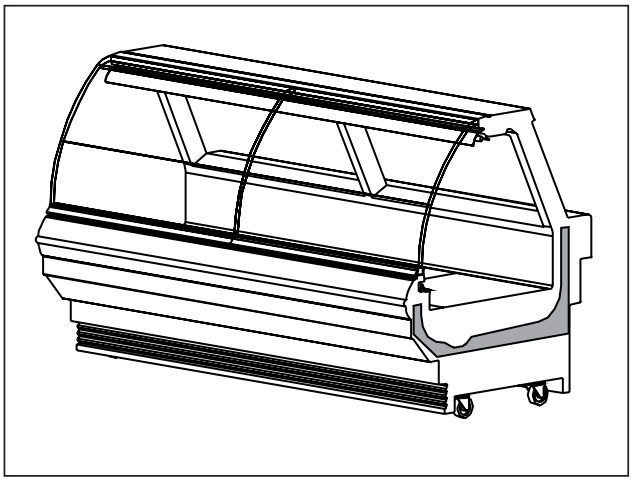
ORIGIN^2 cases are manufactured and shipped to stores with casters installed on the base frame to make the job of moving cases easier for everyone involved with the manufacturing, shipping and installation process.

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.



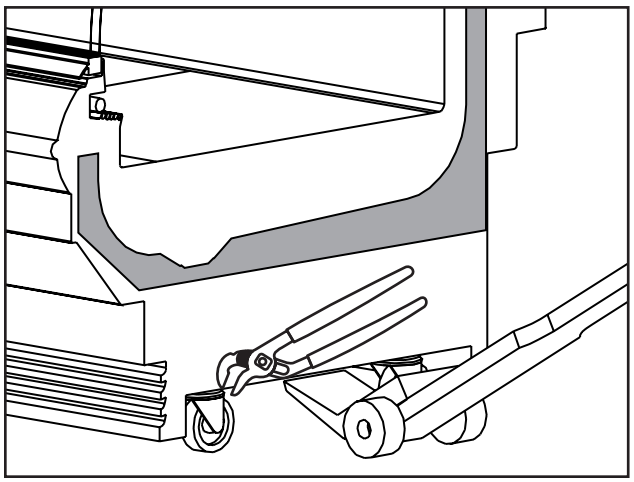
ROLL OUT OF TRUCK. When there is a truck - level delivery dock, cases may be rolled directly from the truck to the store floor. [CAUTION] If skid boards are required to unload cases, casters should be removed prior to sliding them down the skid; after which they can be reinstalled on case.

1



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.

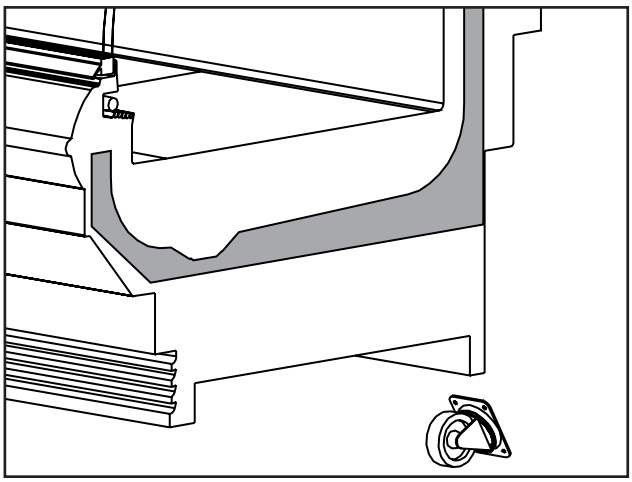
2



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.

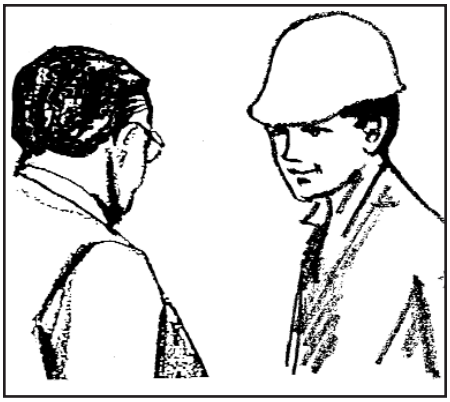
3



CASTERS MAY BE DISCARDED.

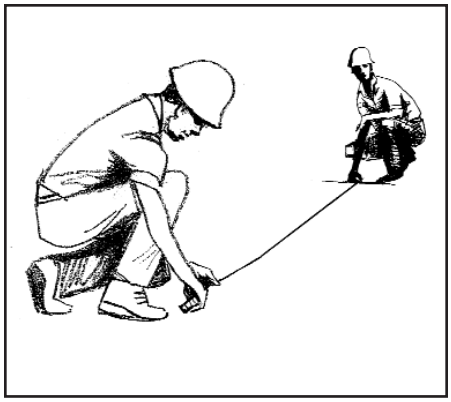
4

LINE UP



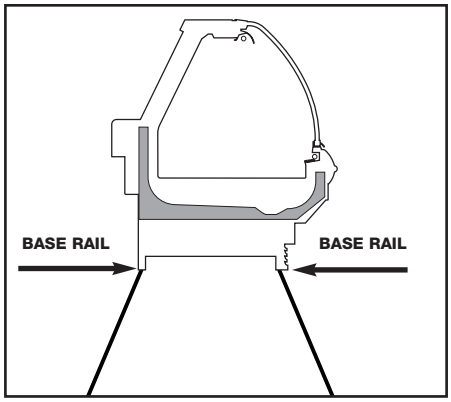
Consult With General Contractor

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.



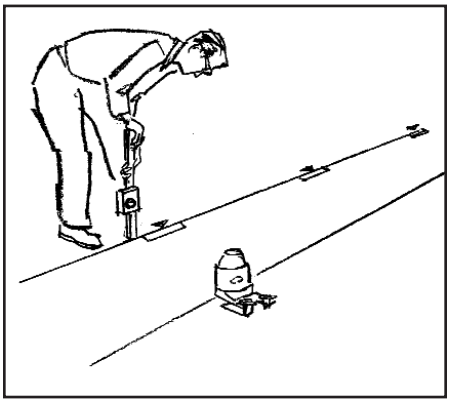
Snap Chalk Lines

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



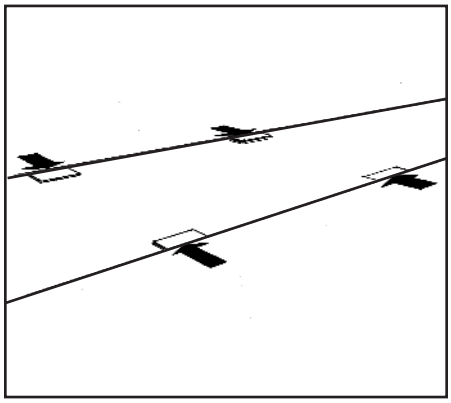
Snap Lines On Base Rail Locations

Snap lines where base rails are positioned, not the front or back edges of the cases. See case cross section drawing, pages 3-4 for rail location dimensions.



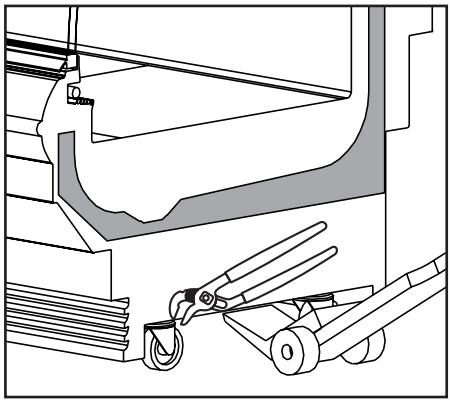
Level Floor. Use Laser Transit

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



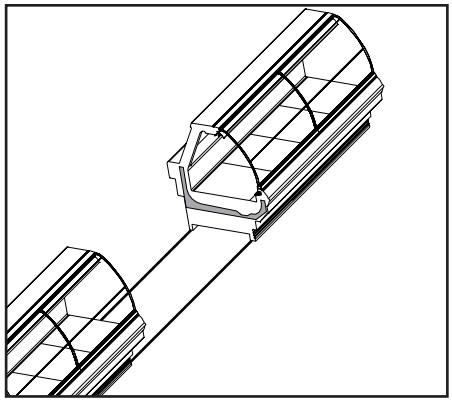
Set Shims On Basehorse Locations

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



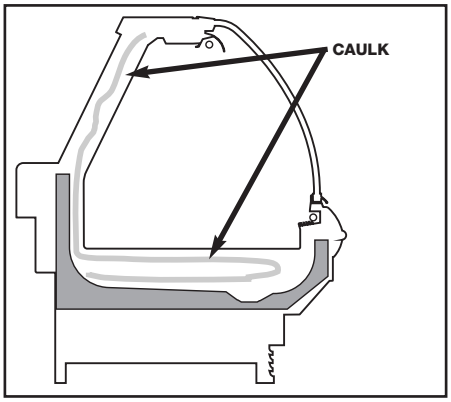
Position First Case In Lineup, Remove Casters, Level

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.



Position Next Case In Line Up

Roll case approximately 2' 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.

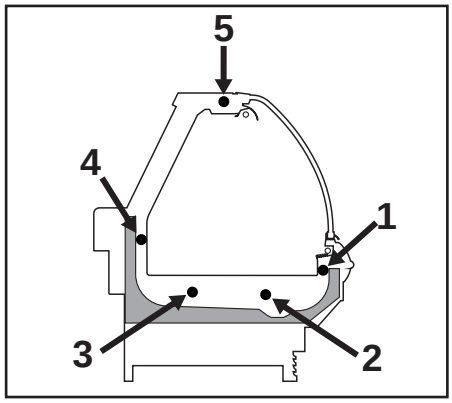


Remove Shipping Accessories From Case. Add Sealant.

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.



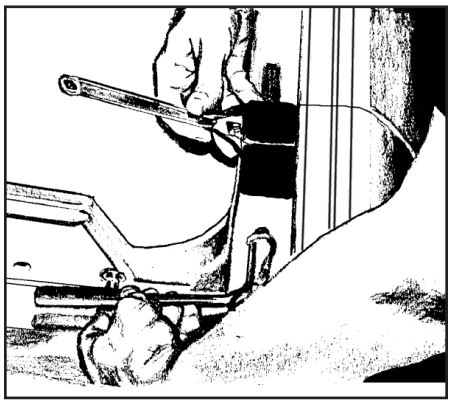
Bolt Cases Together Using Bolt Holes Provided

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

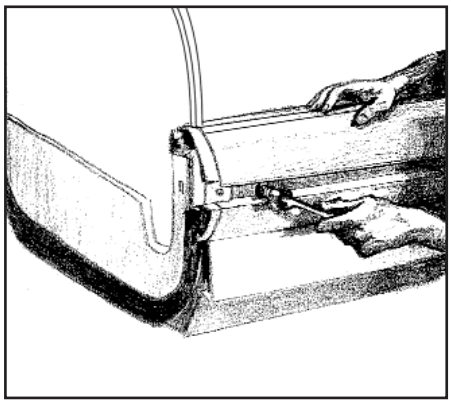
Ask about our case installation video available by request through your local ***Hill PHOENIX*** Sales or Field Service Representative. Spanish version available.

TRIM OUT

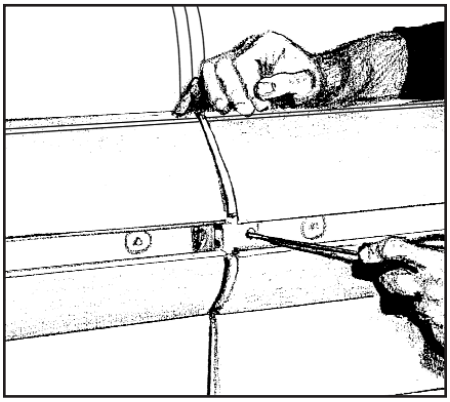
Now that cases have been positioned and leveled, you may proceed to trim-out case lineup. Trim parts have been designed to be applied easily with only a small number of fasteners required. Most external parts are adjustable to achieve almost invisible, snug-fitting joints and a high level of excellence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



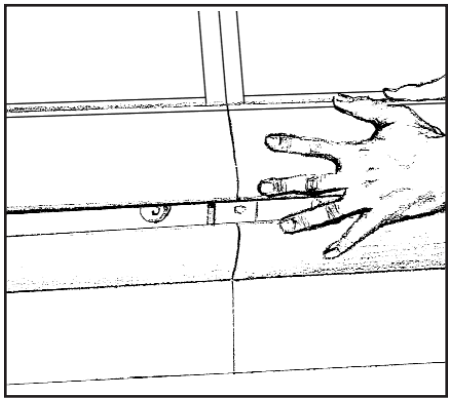
1 Tighten all joint bolts. Draw up tightly, but do not over tighten.



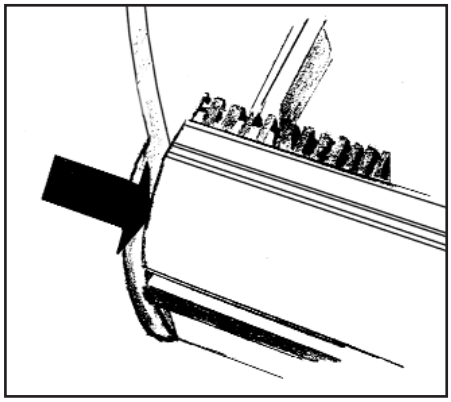
2 Adjust polymer master bumper joints, if required. First loosen bumper screws.



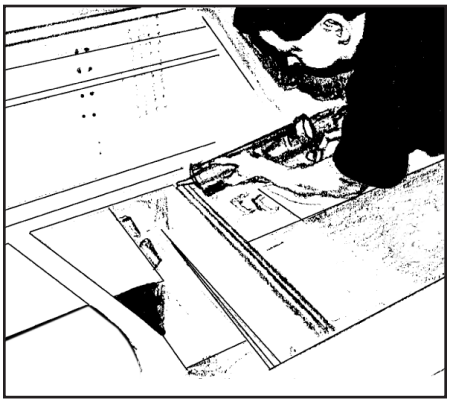
3 Slide bumper joint to the center of the joint between the two cases. Use screw driver in hole provided.



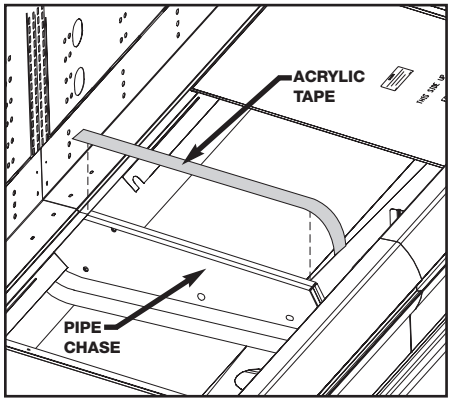
4 Slide master bumper left or right to close seam as required. Bumper joint neatly finishes any gap that may remain.



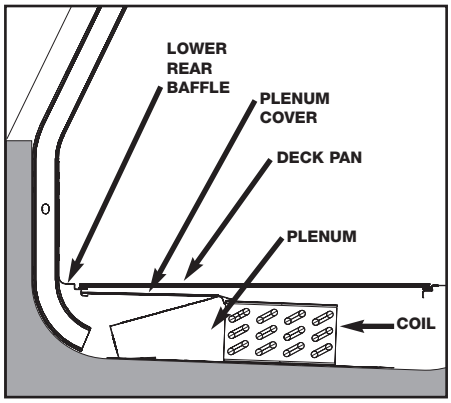
5 Close seam where bumper joins case end. Bumper joint closes seam that may develop if master bumper is moved away from end to close case-to-case joint seam.



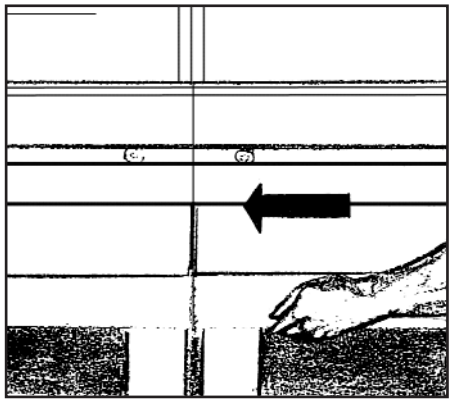
6 Seal joints along pipe chase seam with the caulk provided.



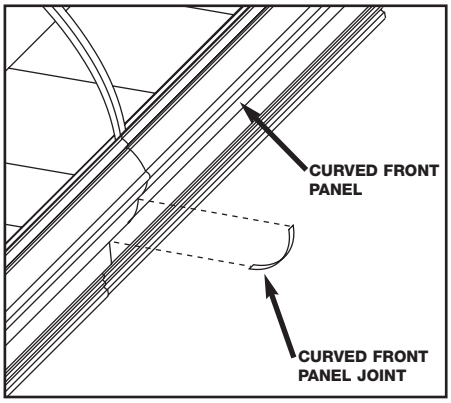
7 Apply acrylic tape over pipe chase seam. Tape is found with the ship loose items and acts as a watershed preventing water from settling in case joint.



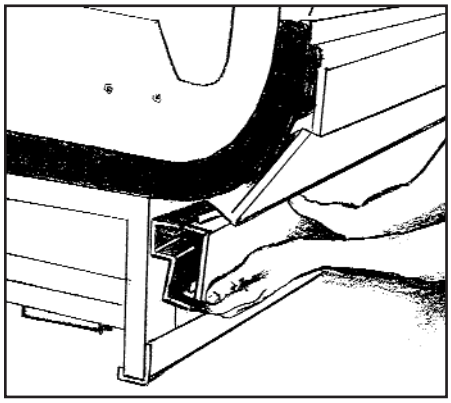
8 Install plenum covers under deck pans. The plenum covers are shipped loose in the case and are installed between the lower rear baffle and the fan plenum.



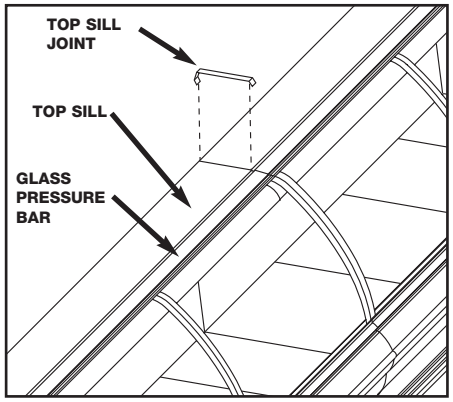
Close joints of front panel. The panel is slotted on the bottom to allow left or right adjustment as required.



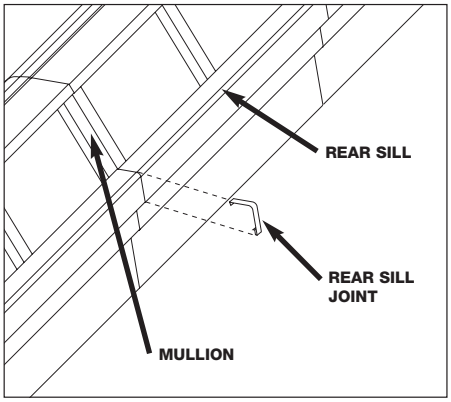
Install curved front panel joint (if cases come equipped with curved front panels). Curved panel joints are shipped loose in the case and are attached with the screws provided. Wide joints (1") are for case-to-case joining and narrow joints (1/2") are for cases with ends.



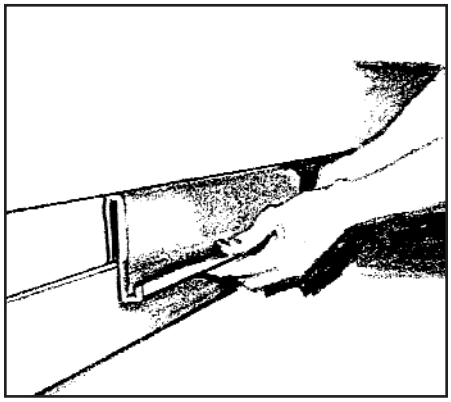
Attach lower front panel (for cases on 11" baseframes). Slots and tabs are designed for easy installation without fasteners. The lower front panel is slotted to allow adjustment left or right as required.



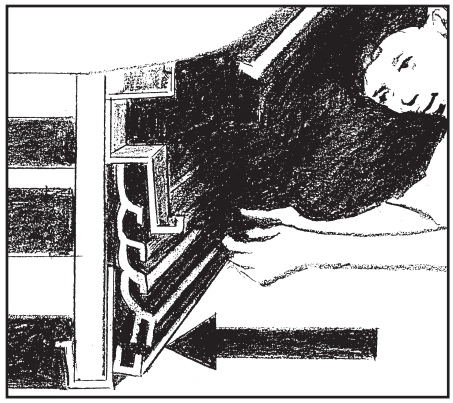
Install top sill joint. The top sill joints are shipped loose in the case. The front lip of the joint fits into the crevice between the top sill and the glass pressure bar. The rear lip is attached to the back of the case with the screws provided.



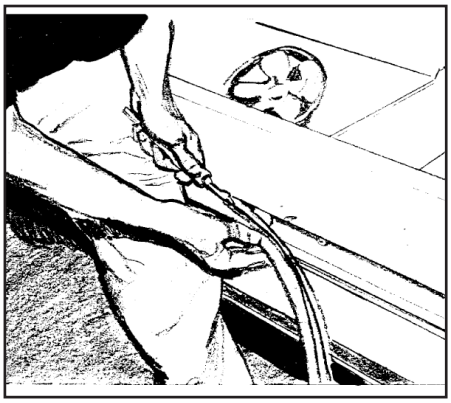
Install rear sill joint. The rear sill joints are shipped loose in the case. The bottom portion of the joint should be slid on the rear sill first then the top lip fits between the rear sill and the mullion. Secure the joint underneath the rear sill with the screws provided.



Install the "J" rail onto the case base rail. For cases with an 11" baseframe, the "J" rail easily slides over the base rail and requires no fasteners. Space "J" rails evenly along the base rail (2 "J" rails per 6', 8', and 12' case). For cases with the 7" baseframe there is a single "J" rail that is screwed into place.



Insert kickplate into "J" rail. Slide the kickplate up and behind the lower front panel bracket then down on the "J" rail.



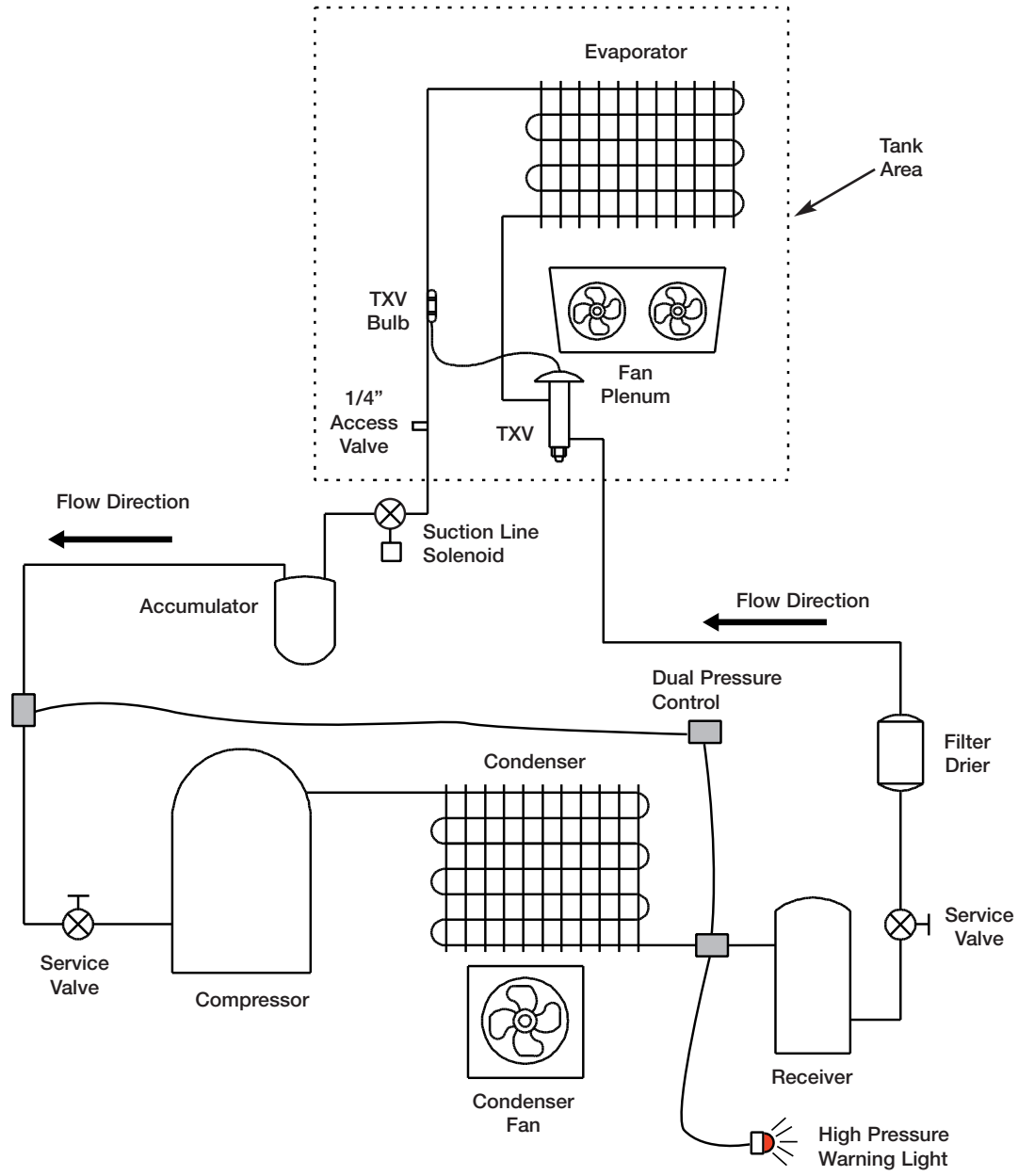
Insert nose bumper into master bumper channel. Roll nose bumper into channel along entire lineup (up to 96'). We recommend that the nose bumper be left in the store 24 hours before installing. DO NOT STRETCH the bumper during installation as it will shrink to its original length and leave a gap.

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 COMPONENTS

Refrigeration components for the OSAA-6' are easily accessible in the tank and underneath the case. The expansion valve and suction line 1/4" access valve are both located in the left hand front side of the tank and are accessible without lifting the fan plenum. These components may be reached by lifting *only* the left hand deck pan which minimizes the need to remove product.

The diagram below illustrates all of the refrigeration components in the OSAA-6' case. The components surrounded by the box are located within the case tank. Basic definitions of these components are listed on the following page.



COMPONENT DEFINITIONS

Access Valve - Access port on the evaporator that allows service personnel to check system pressure.

Accumulator - A device installed on the suction line that is used to boil off small amounts of liquid refrigerant so liquid does not reach the compressor.

Compressor - An electrically driven piston pump that pumps vapor refrigerant from a low pressure level to a higher pressure level.

Condenser - The component in a refrigeration system that transfers the heat that was absorbed by the refrigerant in the evaporator and the heat of compression from the system by condensing the refrigerant.

Condenser Fan - Fan that forces air through the air cooled condenser to aid heat transfer.

Dual Pressure Control - A device that protects the compressor from low charge and high pressure.

Evaporator - The component of the refrigeration system that absorbs heat from the air by boiling liquid refrigerant to vapor.

Evaporator Fans - Fans that circulate air through the case and force air through the evaporator to aid heat transfer.

Filter Drier - A device installed on the liquid line of a refrigeration system that removes water and other impurities from the refrigerant in the lines during initial start-up.

High Pressure Warning Light - Indicator light that warns the operator that the system pressure is to high.

Receiver - The component in a refrigeration system that stores liquid refrigerant that is not being used by the system in low load conditions or when the system is shut down.

Service Valve - A manually operated valve in the refrigeration system that is used for various service operations such as isolating the high or low sides of the system.

Suction Line Solenoid - A device that prevents liquid from entering the compressor.

Thermostatic Expansion Valve (TXV) - A valve that controls the flow of liquid refrigerant to the evaporator coil and also separates the high pressure side of the system from low pressure side of the system.

Thermostatic Expansion Valve (TXV) Bulb - A bulb that is attached to the suction line of the evaporator that controls the TXV. Inside the bulb is a charge that reacts to temperature and regulates the flow of refrigerant through the expansion valve.

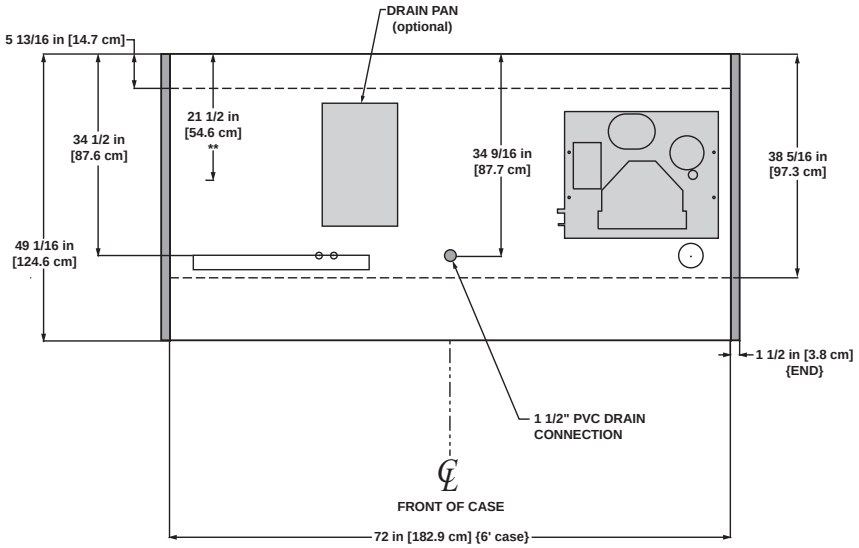
PLUMBING

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 drain can be piped to a evaporative drain pan at the owners option.

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 9.

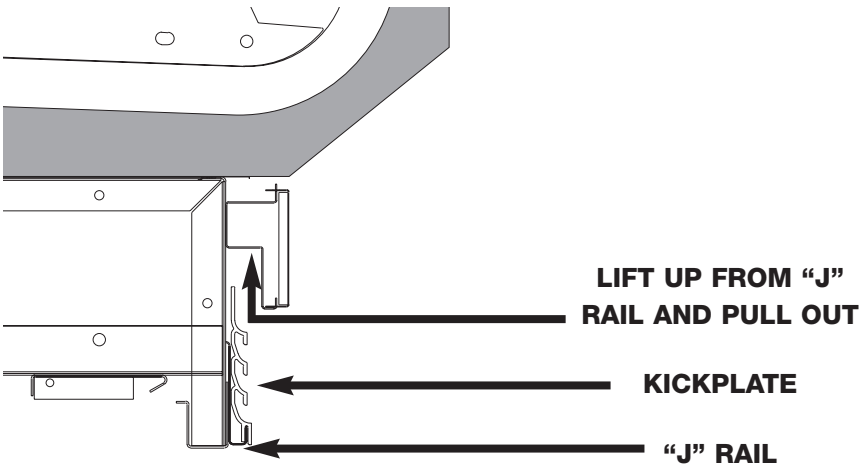


NOTES:

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

MODEL OSAA

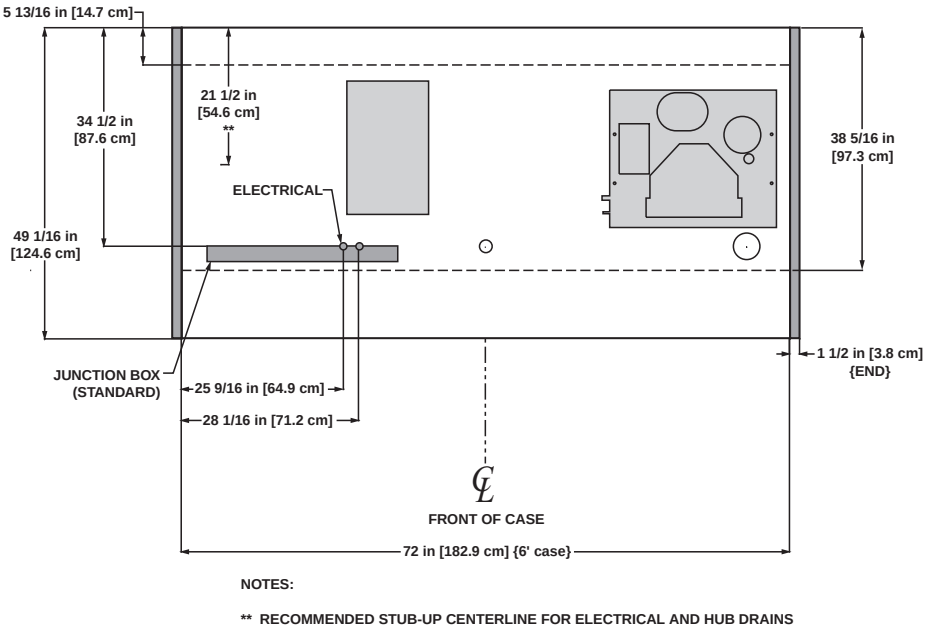
HOW TO REMOVE KICKPLATE



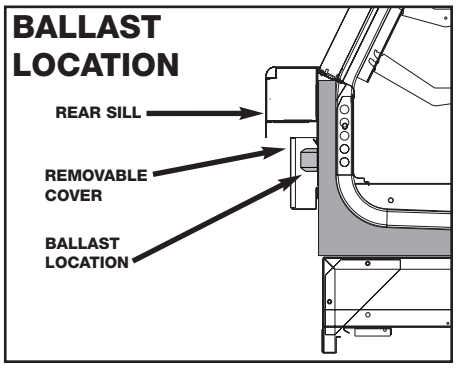
ELECTRICAL HOOKUP

Electrical hookups for the OSAA are made to a junction box located underneath the case on the bottom left hand front. The light ballasts for the case are located under the rear sill behind a removable access cover as shown below.

For case-to-case wiring, run "green-field", or other conduit, between junction boxes. When connecting to the junction box field connections should be made on the right hand side of the box to allow more room inside for wire connecting.



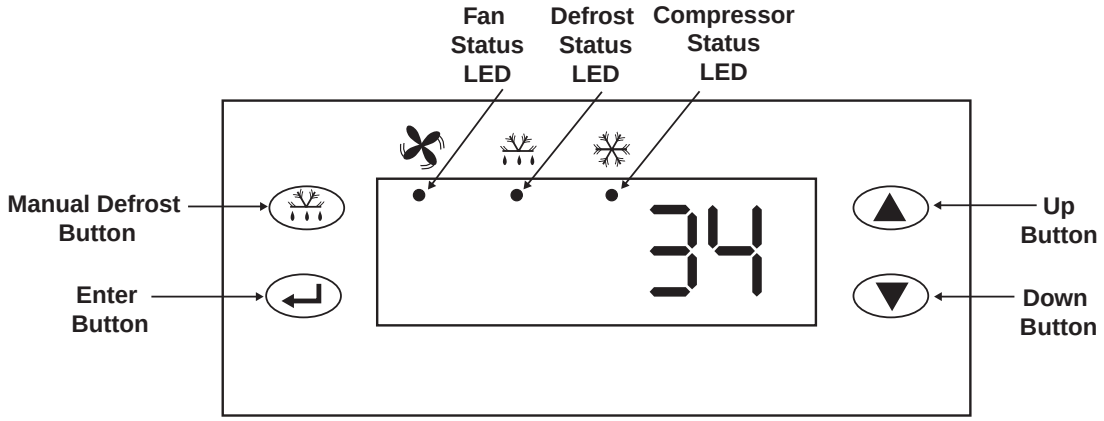
MODEL OSAA-6'



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
DEFROST HEATERS, 208/240 VOLTS	L1	RED
	L2	BLUE
EQUIPMENT GROUNDING CONDUCTOR	-	GREEN

CONTROL SETTINGS- MODEL OSAA-6'



Factory Control Settings

Parameter	Description	Factory Settings OSAA-6'
	Setpoint	22
HY	Hysteresis (differential) [1 to 9°F/°C]	3
LL	Setpoint Low Limit [67°F (55°C) to HL]	18
HL	Setpoint High Limit [LL to 99°F/°C]	30
CC	Anti-Short Cycling Timer [0 to 9 min.]	1
Co	Deep Freeze Cycle Time [0 to 99 min.]	60
AH	High Temperature Alarm Value (degrees above setpoint) [0 to 55°F/°C]	10
AL	Low Temperature Alarm Value (degrees below setpoint) [-50 to 0°F/°C]	-10
Ad	Alarm Differential [1 to 9°F/°C]	5
At	Alarm Time Delay [0 to 99 min.]	3
dF	Defrost Type (0-electrical; 1-hot gas)	0
dE	Defrost End Mode (0-timed defrost; 1-temperature terminated defrost)	1
dt	Defrost Termination Temperature [32°F to 68°F (0°C to 20°C)]	50
di	Defrost Interval [0 to 99 hours]	8
dd	Maximum Defrost Duration [1 to 99 min.]	45
dC	Dripping Time After Defrost [0 to 99 min.]	0
dU	Initial Defrost Interval (time before first defrost after startup) [0 to 99 min.]	0
dP	Defrost Display (0-displays last value before defrost; 1-displays setpoint)	0
dr	Display Delay After Defrost [1 to 99 min.	5
iF	Digital Input Type (0-no digital input; 1-if digital input open, compres. off w/alarm on: 2-if digital input open, alarm on (contacts closed); 3-if digital input open, fan off w/alarm on)	0
id	Digital Input Time Delay [0 to 99 sec.]	0
FF	Fan Function (0-fan runs parallel with compressor; 1-fan on)	1
Fd	Fan Start-Up Delay (after defrost) [0 to 99 min.]	0
Fr	Fan Start-Up Temp. [-22°F to 41°F/-30°C to 5°C]	40
SF	Sensor Failure Operation (0-compressor off; 1-compressor on; 2-compressor on/off based on last 4 cycles)	1
So	Temperature Sensor Offset [-20° to 20°F/°C]	0
Un	Units Used (0-°C; 1-°F)	1
PU	Display Refresh Rate [1 to 99 sec.]	1

Error Code		System Status
F1	Indicates an open or shorted temperature sensor. Cycle Power to reset control.	Alarm output on compressor runs according to the sensor failure mode selected (parameter sf)
F2	Indicates an open or shorted evaporator sensor. Correct problem to reset control.	Alarm output on defrost cycle is controlled by parameters di (defrost initiation) and dd (defrost duration)
A1	Digital input was open for longer than time delay (id) and digital input option (if) 1 is selected.	Compressor off Alarm output on
A2	Digital input is closed and digital input option (if) 1 is selected.	Alarm output is on
A3	Digital input is open for longer than time delay (id) and digital input option (if) 3 is selected.	Fan output is off Alarm output is on
HI	Temperature has exceeded the high temp. alarm value (AH).	Alarm output is on
LO	Temperature has fallen below the low temp. alarm value (AL).	Alarm output is on
EE	Program failure: control must be replaced.	Alarm output is on Other outputs off

To program parameters:

1. Hold the “Enter” button down for about 10 seconds. The display will change to “Hy.”

2. Press the “Up” and “Down” button until the desired parameter is shown

3. Press the “Enter” button. The parameter’s current value will be shown.

4. Press the “Up” and “Down” button until the desired value is shown.

5. Press the “Enter” button to save the new value. After 10 seconds of inactivity, the display will return to its normal function.

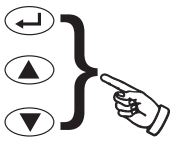
To change setpoint:

1. Hold down the “Enter” button down for 3 seconds. The display will change to show the setpoint.

2. Press the “Up” or “Down” button until you reach the new setpoint.

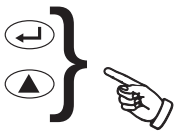
3. Press the “Enter” button to save the new setpoint.

To lock and unlock the unit:



Press the “Enter,” the “Up,” and the “Down” buttons in sequence and hold them all down until “- - -” is displayed. Hold for about 10 seconds until the current temperature is displayed.

To Initiate a deep freeze cycle:

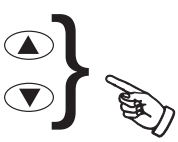


Press and the “Enter” and “Up” buttons in sequence and hold for five seconds. The compressor status LED will light.

To Initiate Manual Defrost:

Hold the Defrost button down for 3 seconds.

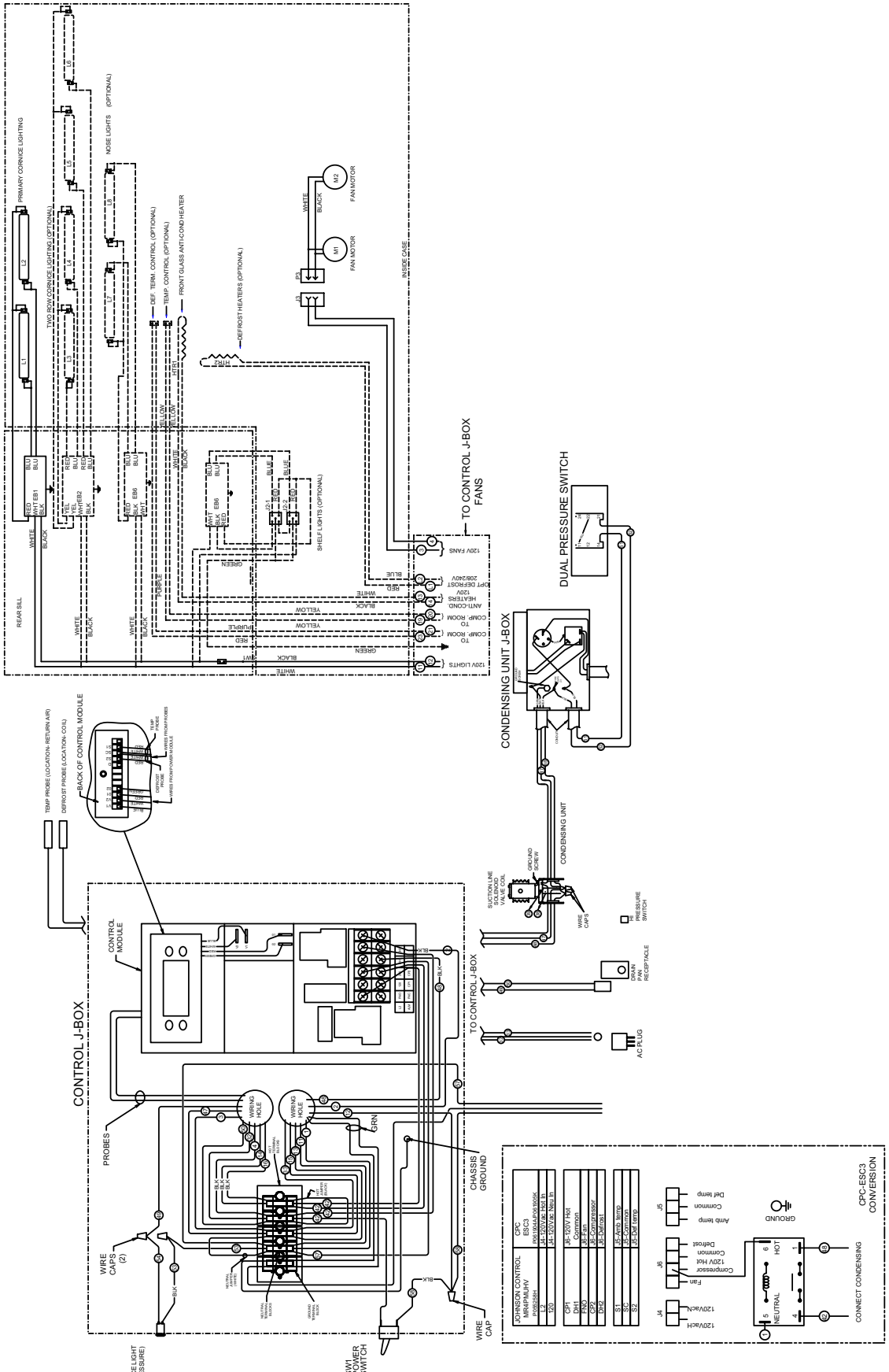
To Initiate Self-Test:



IMPORTANT: <u>Disconnect loads before beginning self test. Cycle power to resume operation.</u>

Press the “Up” and the “Down” buttons in sequence and hold for 5 seconds.

WIRING DIAGRAMS- MODEL OSAA-6'



CASE OPERATION

American Style Self-Contained Curved Glass Service Deli Merchandiser

OSAA - 6’

System Requirements

Model		Volts	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OSAA	6’	120	60	2 wire + ground	9.74	15

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	Condenser Fan 120 Volts Amps	Condenser Fan 120 Volts Watts	Drain Pan Heater 120 Volts Amps	Drain Pan Heater 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 120 Volts Amps	Defrost Heaters 120 Volts Watts
OSAA	6’	3	1.02	51	0.53	66	4.16	500	0.42	50	5.0	600

Guidelines & Control Settings

Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[1] (FPM)
OSAA-6’		20	6-8	30	39	235

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OSAA-6’	115	1	60	1/3	7.45	37.5	R134A	2.5

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSAA-6’	2	35	49	- - -[4]	- - -	- - -	- - -	- - -	- - -

[4] 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

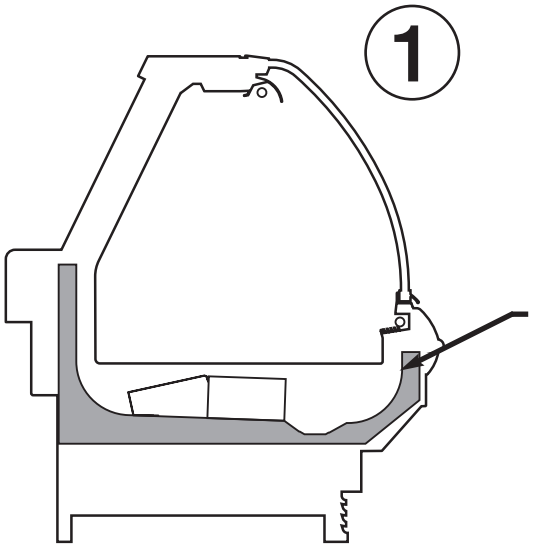
All measurements are taken per CRMA specifications.

DEFROST AND TEMP CONTROL

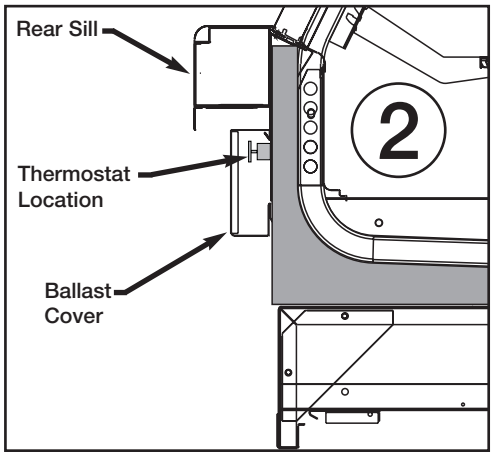
These cases are equipped with Electric Defrost. The sensor bulb and probe for electric defrost termination and the sensor bulb for temperature control are located behind the front baffle at the location shown in diagram **1** below.

The defrost termination control thermostat and the temperature control thermostat are located under the rear sill behind an easily removable cover, as shown in diagram **2.**

It is important to consult the control setting guidelines shown on page 17 before setting defrost times. Further adjustment may be required depending on store conditions.



- Electric defrost termination control sensor bulb location
- Electric defrost termination probe location
- Temperature control sensor bulb location (OSA)



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.

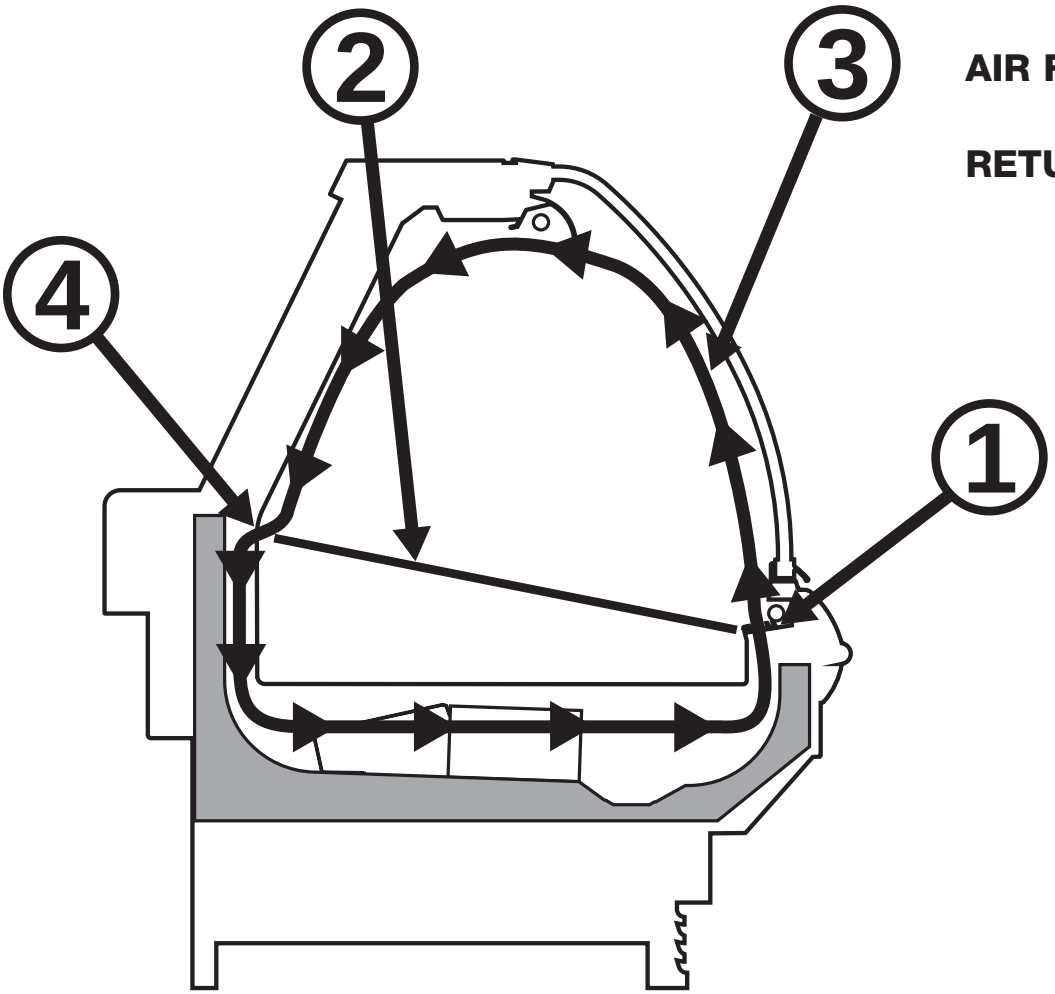
Overloading will cause malfunction and the loss of proper temperature levels, particularly when discharge and return air sections are covered. Please keep products within the load limit lines shown on the diagram.

DISCHARGE.....1

LOAD LIMIT.....2

AIR FLOW.....3

RETURN AIR GRILL...4



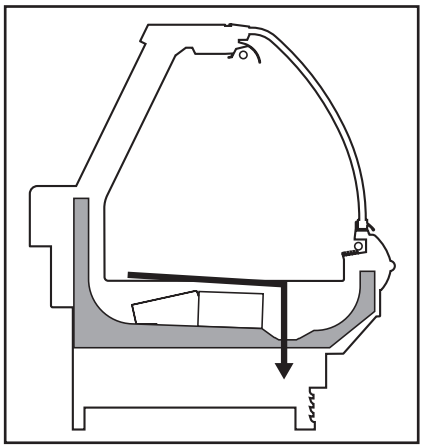
MODEL
OSAA

USE AND MAINTENANCE

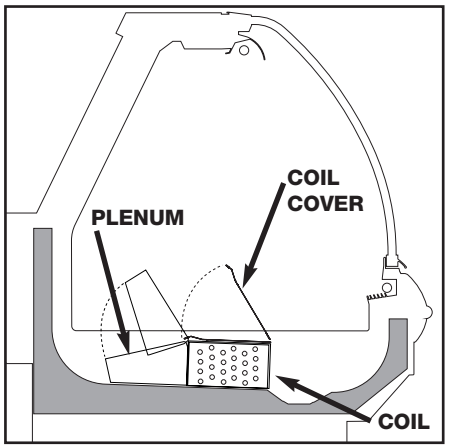
CASE CLEANING

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.

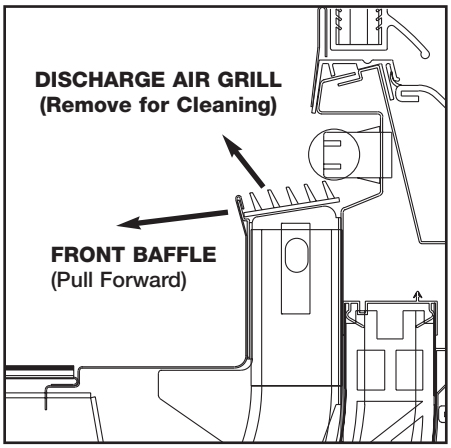
The coil is covered to keep food fluids from entering, but the cover lifts up easily when coil cleaning is desired. The fan plenum also lifts up for cleaning, exposing a major portion of the inside bottom of the tank. Make certain the coil cover is properly closed after cleaning to avoid air leaks. Front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



POSITIVE DRAIN OFF



COIL COVER AND PLENUM LIFT UP



CLEAN DISCHARGE AIR GRILL

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.
- Avoid using high pressure water to flush the tank. A hose without a nozzle should provide enough pressure for cleaning purposes. Always use cold water.
- 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.
- When cleaning non-glare glass be sure to use a standard glass cleaner and not a multi-purpose cleanser or combination cleanser.
- A mixture of white vinegar and water or isopropyl alcohol straight from the bottle is very effective in cleaning “build-up” on non-glare glass.
- Under no circumstances should abrasive cleaning solutions such as scouring powders or steel wool be used to clean non-glare glass.
- When cleaning rear door tracks be sure to remove the rear doors and clean from the outside channel to the inside channel using the wipe-out groove machined into the track.
- 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.

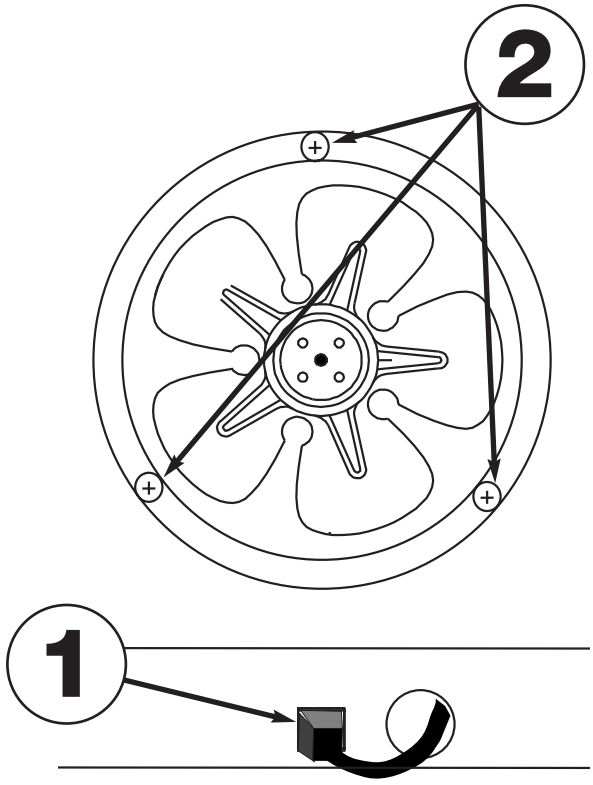
FANS

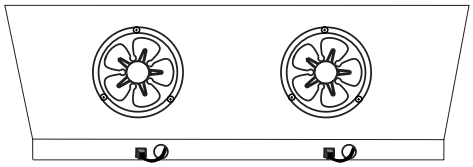
The evaporator fans are equipped with 5 watt fan motors, 1550 RPM's. The motor has a counter clockwise rotation when viewed from the shaft end. The fan blades are 6" in diameter and the blades are pitched according to the charts below. **It is important that the blade pitch be maintained as specified. 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 three fasteners, then lift out the entire fan basket**

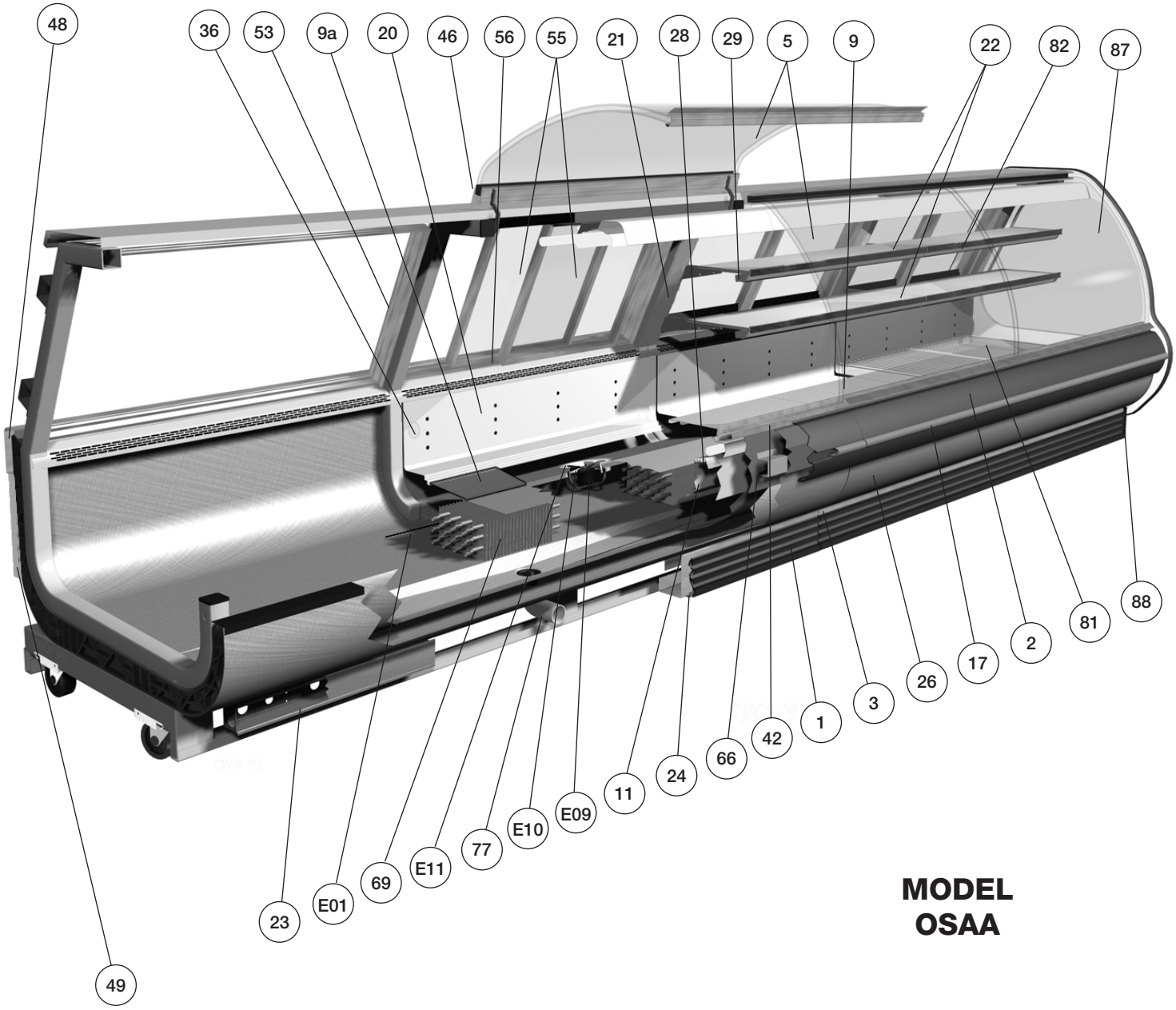




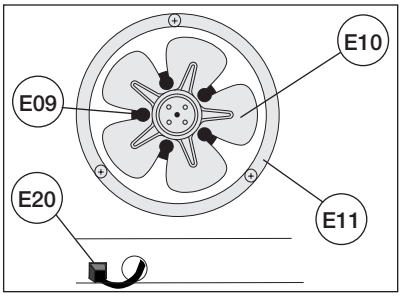
MODEL OSAA-6'

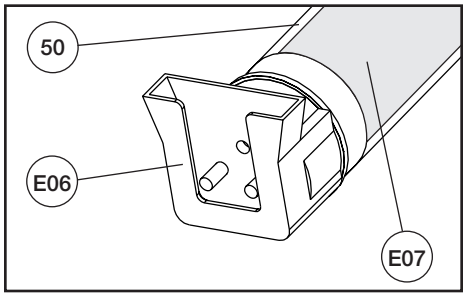
Model	OSAA 6'
No. Fans	2
Blade Pitch	37°

PARTS ORDERING



MODEL
OSAA





Location Number	Part Descriptions
1	**Kickplate**, Storm Grey
2	**Master Bumper**, Featherstone, Smoke, White, French Vanilla, Black
3	**Lower Front Panel**, Painted or Stainless
5	**Front Glass,** Lift-Up Thermopane
9	**Deck Pan**, Painted, Unpainted, Stainless
9a	**Plenum Cover**
11	**Front Baffle**, Aluminum, Painted White, Custom Color, or Stainless
17	**Nose Bumper,** Custom Color
20	**Lower Rear Baffle**, Painted White, Custom Color, or Stainless
21	**Shelf Standard**, Specify standard or Vieler Shelving
22	**Shelves**, Lighted or Unlighted, Painted White, Custom Color or Stainless
23	**Electrical Junction Box, or Sliding Ballast Tray**
24	**"J" Rail**, for Kickplate
25	**Top Flue Panel**, Painted Custom Color or Stainless (Not Shown)
26	**Front Panel**, Painted Custom Color, or Stainless
28	**Discharge Air Grill**
29	**Lightrod,**
36	**Plug Button**
42	**Glass Pressure Bar**
46	**Glass Clamp**
48	**Rear Sill,** Stainless Steel
49	**Rear Filler Panel**
50	**Lamp Shield**
53	**Mullion Cover,** Stainless Steel
54	**Inside Mullion Cover,** (Not Shown)
55	**Doors**, Specify Outside or Inside when ordering
56	**Door Frame**
62	**Light Rod Cover** (Not Shown)
66	**Front Extensions**, Inside and Outside
69	**Coil,** Specify upper or lower coil
77	**P-Trap**
81	**Wire Racks**
82	**Tag Moulding**
83	**Thermometer**, and Bracket (Not Shown)
87	**End Assembly**, Solid, 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 Heaters**
E02	**Anti-Condensate Heaters**, (Not Shown)
E03	**Thermostats**, Temperature and Defrost Termination Control, (Not Shown)
E05	**Light Switch**, (Not Shown)
E06	**Lamp Holder**
E07	**Bulb**
E08	**Ballast**, Electronic, (Not Shown), (Identify by brand name and model number)
E09	**Fan Motor -** State High Efficiency or Standard
E10	**Fan Blade** 6"
E11	**Fan Basket**, 6"
E19	**Receptacle**, Recessed, Shelf Light Outlet, White (Not Shown)
E20	**Fan Cord-Set** - High Efficiency or Standard (Not Shown)

Note: Ballasts are located under the rear sill for cases equipped with a standard rear sill . Cases equipped with a flat rear sill have the ballasts located in a sliding ballast tray underneath the case.

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. 6'.
- 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 rear panel on the right hand side of the case (See illustrations on page 3).

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

NOTES

NOTES

Hill PHOENIX
EXCELLENCE®

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

A DOVER™ COMPANY

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

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1925 Ruffin Mill Road, Colonial Heights, VA 23834