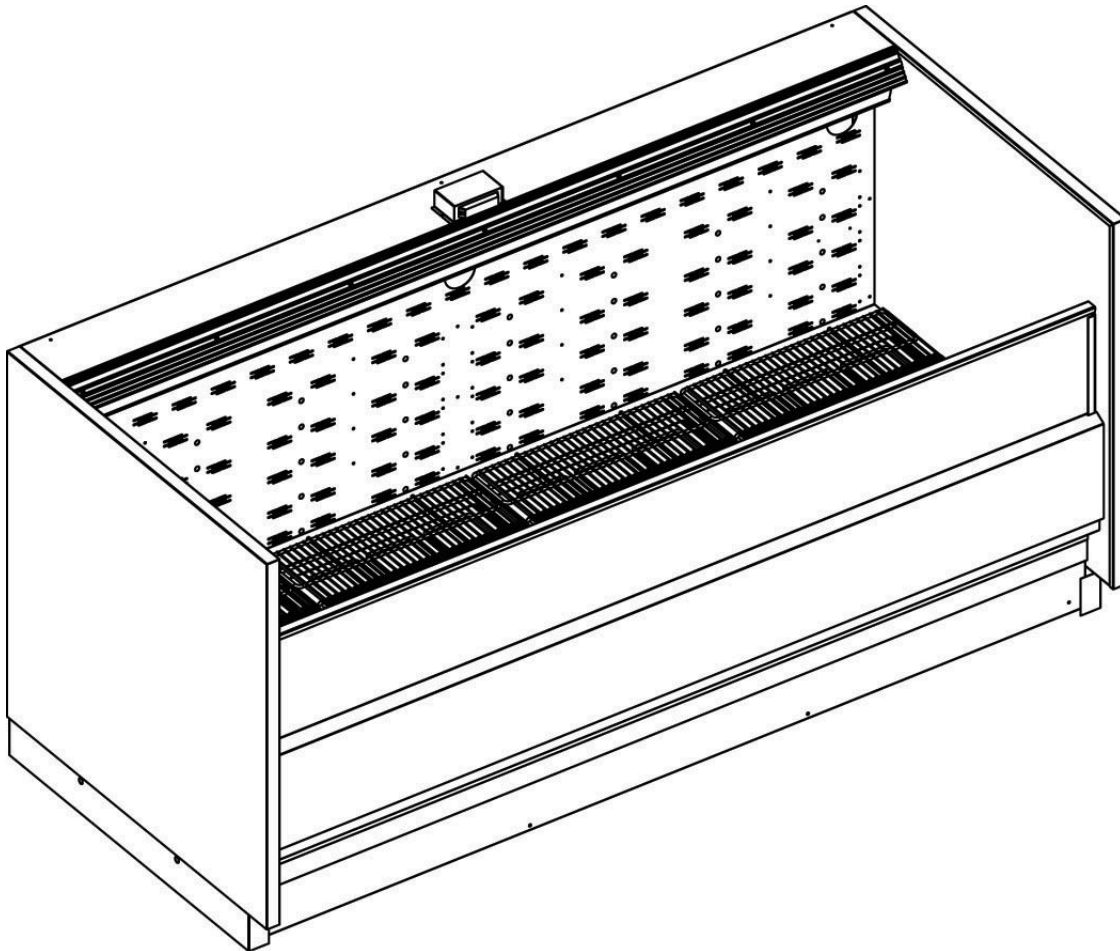


UPL-NRG

SINGLE-DECK CASE

Installation & Operation Handbook



Energy Data.....	2	Airflow, Defrost & Temp Control	8
Case Dimensions.....	3	Use & Maintenance.....	9
General Information	4	Parts Ordering	10
Installation.....	5-6	Appendix A: Wiring Diagrams	
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Important

At Hill PHOENIX[®], the safety of our customers and employees, as well as the ongoing performance of our products, are top priorities. To that end, we include important warning messages in all Hill PHOENIX installation and operations handbooks, accompanied by an alert symbol paired with the word "DANGER", "WARNING", or "CAUTION".

All warning messages will inform you of the potential hazard; how to reduce the risk of case damage, personal injury or death; and what may happen if the instructions are not properly followed.

DANGER

Indicates an immediate threat of death or serious injury if all instructions are not followed carefully.

WARNING

Indicates a potential threat of death or serious injury if all instructions are not followed carefully.

CAUTION

Indicates that failure to properly follow instructions may result in case damage.

LIABILTY 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.

UPL-NRG

Electrical Data

Model		Fans per Case	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
			120 Volts		120 Volts		208 Volts		240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
UPL-NRG	8'	2	0.17	20	---	---	---	---	---	---

Guidelines & Control Settings

Model	² BTUH/ft	Superheat Set Point @ Bulb (°F)	Evaporator (°F)	Discharge Air (°F)	Return Air (°F)	Discharge ³ Air Velocity (FPM)
UPL-NRG	500	6-8	26	30	40	250

Defrost Controls

Model	Defrosts per Day	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)
UPL-NRG	6	---	---	45	42	---	---	---	---

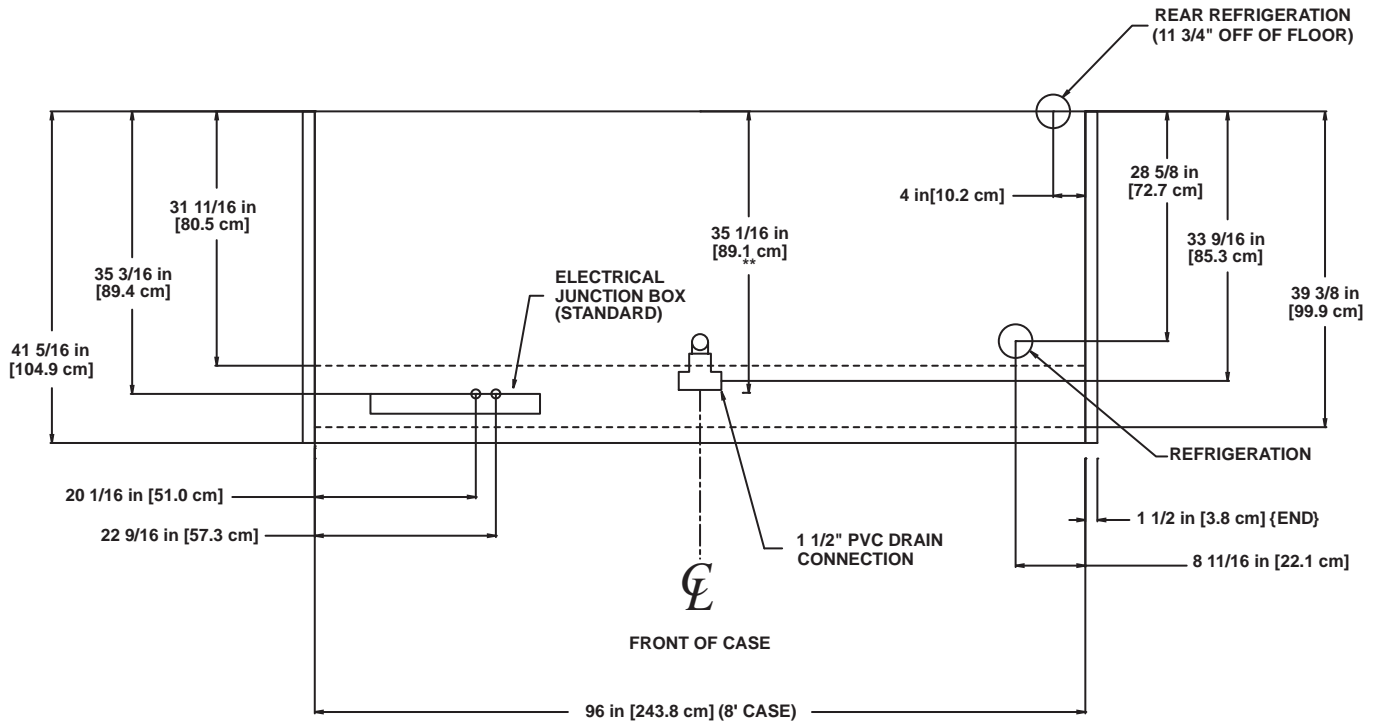
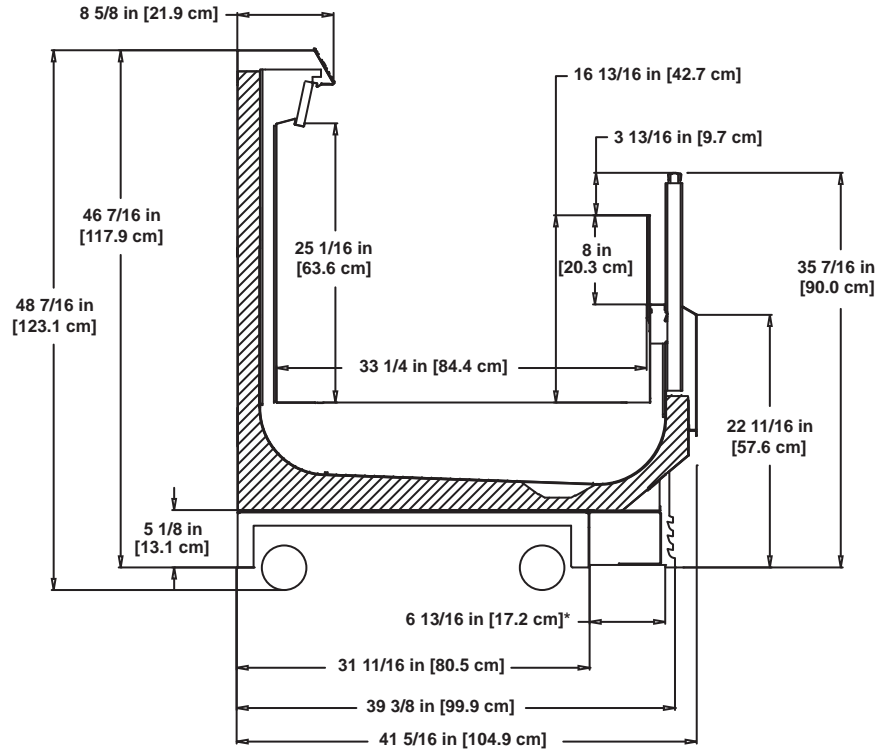
1 NOTE: "--" not an option on this case model.

2 BTUH/ft notes:

- Listed BTUH/ft indicate parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.
- Add 132 BTUH/ft when aftermarket merchandising accessories are utilized to determine the total BTUH load.

3 Average discharge air velocity at peak of defrost.

CASE DIMENSIONS



NOTES:

- * STUB-UP AREA
- ** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE

GENERAL INFORMATION

Thank you for choosing Hill PHOENIX for your food merchandising needs. This handbook contains important technical information and will assist you with the installation and operation of your new Hill PHOENIX display cases. By closely following the instructions, you can expect peak performance; attractive fit and finish; and long case life.

We are always interested in your suggestions for improvements (e.g. case design, technical documents, etc.). Please feel free to contact our Marketing Services group at the toll-free number listed below. Thank you for choosing Hill PHOENIX, and we wish you the very best in outstanding food merchandising.

CASE DESCRIPTION

This manual specifically covers the UPL-NRG single-deck produce merchandiser.

STORE CONDITIONS

Hill PHOENIX cases are designed to operate in an air-conditioned store that maintains a 75°F (24°C) store temperature and 55% (max) 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 adequate ventilation for efficient performance. Machine-room temperatures must be maintained at 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 and in the event of shipping damage and/or shortages, please contact the Service Parts Department at the toll-free number listed below.

CASE DAMAGE

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

unpacked, retain all packing materials and submit a written request to the carrier for inspection within 14 days of receipt of the equipment.

LOST/MISSING ITEMS

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

TECHNICAL SUPPORT

For technical questions regarding display cases, please contact our Case Division Customer Service Department at the toll-free number listed below. For questions regarding our refrigeration systems or electrical distribution centers, please contact our Systems Division Customer Service Department at 1-770-388-0706.

CONTACTING THE FACTORY

If you need to contact Hill PHOENIX regarding a specific fixture, be certain that you have both the case model number and serial number (this information can be found on the serial plate, located on the upper top flue panel on the right-hand side). When you have this information, call the toll-free number below and ask for a Service Parts Representative.

HILL PHOENIX
1925 Ruffin Mill Rd.
Colonial Heights, VA 23834
Mon.-Fri. (8 a.m to 5 p.m EST)
Tel: 1-800-283-1109/Fax: 804-526-7450
Web site: www.hillphoenix.com

INSTALLATION

MOVING CASES

Hill PHOENIX display cases are generally shipped to stores with casters installed on the base frame. The casters make the job of moving cases easier for everyone involved in the shipping and installation process, as well as reducing the chance of damage from raising and lowering cases with "J" bars to place them on dollies, skates or rollers. In most situations, one or two persons can easily move the case into position.

When the cases arrive at the store, simply roll them on to the store floor to the proper staging area. Occasionally, cases are shipped with skid boards attached to help with stabilization. In these instances, the casters should be attached after the case is removed from the truck.

Removing the casters is an easy process. Simply flatten and remove the cotter pins that are holding the casters in place (Fig. 1). Then lift the case with a "J" bar and slide the caster assemblies out. The dismantled casters can now be discarded.

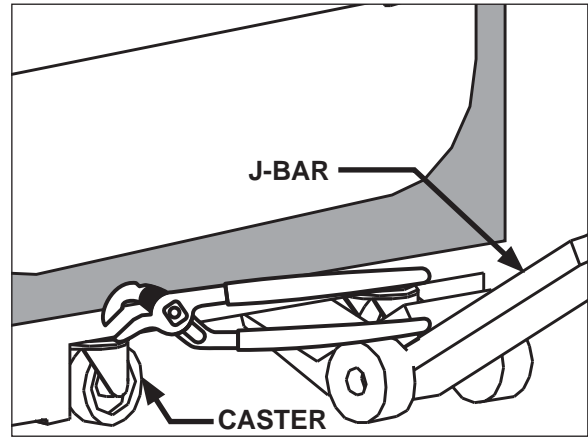


Fig. 1 Caster assembly

caster assembly and lower the basehorse on to the shim packs. Repeat on the other end of the case.

2. Once the basehorse is properly placed on the shim packs, check the vertical plumb of the case by placing a bubble level on the rear wall. Add/remove shim packs as needed. To check the horizontal level, repeat this process after placing the bubble level on the front sill.

⚠ WARNING

Be certain that your hands and feet are out of the way before lowering the case after the removal of the casters. Failure to do so may result in serious injury.

FLOOR PREP

1. Ask the general contractor if your current copy of the building dimensions are the most recently issued. Also, ask for the points of reference from which you should take dimensions to locate the cases.
2. Using chalk lines or a laser transit, mark the floor where the cases are to be located for the entire lineup. The lines should coincide with the outside edges of the case feet.
3. Leveling is necessary to ensure proper case alignment and to avoid potential case damage. Locate the highest point on the positioning lines as a reference for determining the proper height of the shim-pack levelers. A laser transit is recommended for precision and requires just one person.
4. Locate basehorse positions along the chalk line. Spot properly leveled shim packs at each basehorse location.

Multi-Case

1. Remove any loose items from the cases that may interfere with case joining (e.g. shipping braces, mirror assemblies, etc). **Be certain to keep all loose items close to the case in which they shipped as they will be used later in the installation process.**
2. Follow the single-case installation instructions (above) for the first case, then position the next case in the lineup approximately 3' away. Remove the casters on the end that is closest to the first case.
3. Apply the foam tape gasket (supplied) and a bead of butyl or silicone sealant to the end breaker of the first case. From the opposite end, push the second case to a position that is approximately 6" from the first case, then remove the remaining casters and position case on the shim packs.
4. Push the cases tightly together, then lightly bolt them together through the holes that are provided. Tighten all the joining bolts until all margins are equal. Be careful not to over tighten.
5. Repeat steps 3 and 4 of this sequence for all remaining cases. Be certain to properly level all cases.

LINE-UP & INSTALLATION

Single Case

1. Roll the case into position. Using a "J" bar, raise the end of the case (under cross support), remove the

INSTALLATION

TRIM OUT

1. If a master bumper is included, locate the hole in the center of the master bumper joint. Using a screw driver as a lever, slide the case-to-case joint to the center of the joint between the two cases (Fig. 2). Slide the master bumpers left or right to close the seams as required, working outwards from the center of the line-up to the ends.
2. Close the seam where the bumper joins the case end. The bumper joint closes the seam that may develop if the master bumper is moved away from the end to close the case-to-case joint seam.
3. Seal the case-to-case joints with caulk (supplied), then apply acrylic tape (supplied) over the pipe-chase seam (Fig. 3). The tape acts as a watershed preventing water from settling in the case joint.
4. Close the joints of the front panel, sliding the joint trim left-or-right as needed.
5. Attach the "J" rail with the supplied screws (Fig. 4).
6. Insert top of kickplate into the kickplate retainer. Slide the kickplate up into the retainer, then down onto the "J" rail (Fig. 4). Be certain that the bottom of the kickplate is fitted over extruding "lip" of the "J" rail.
7. If a master bumper is present, insert nose bumper into master bumper channel. Roll nose bumper into channel along entire lineup, up to 96'. We recommend leaving an additional 6" of nose bumper at the ends to allow for shrinkage during the first 24-48 hours following case start-up.
8. After sufficient time has passed to allow for bumper shrinkage, cut away the excess bumper for final fit and finish. Be certain to use an appropriate cutting tool (tubing- or PVC-cutter) to ensure a smooth cut.

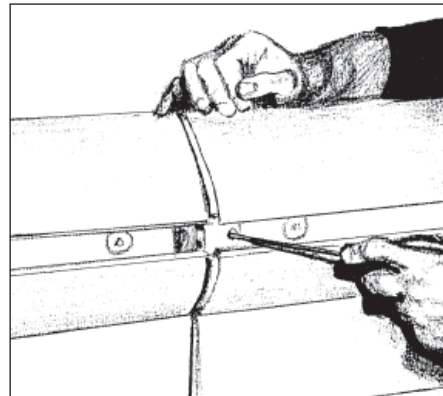


Fig. 2 Case-to-case joint

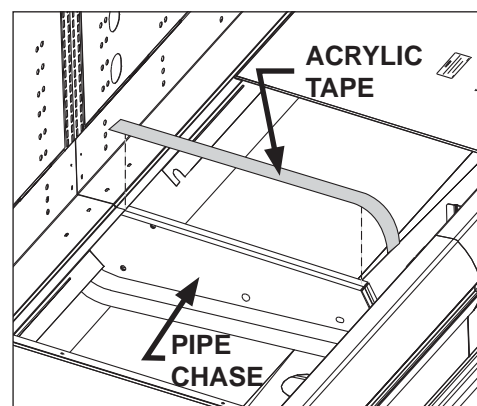


Fig. 3 Sealing the pipe chase

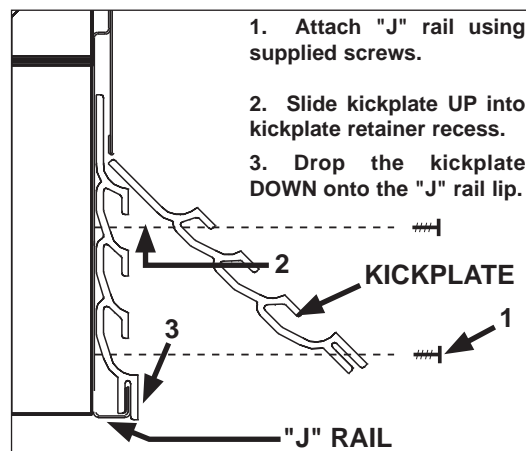


Fig. 4 "J" rail and kickplate installation

CASE CONNECTIONS

REFRIGERATION

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 - located on the left-hand side of the case - are accessible without lifting the fan plenum and may be reached by lifting the deck pans.

If it becomes necessary to penetrate the case bottom, be certain to seal it afterwards with canned-foam sealant and white RTV.

PLUMBING

The drain outlet is specially molded out of PVC material and is located in the center of the case for convenient access. The "P" trap, furnished with the case, is constructed of schedule 40 PVC pipe. Care should be given to ensure that all connections are water-tight and sealed with the appropriate PVC or ABS cement.

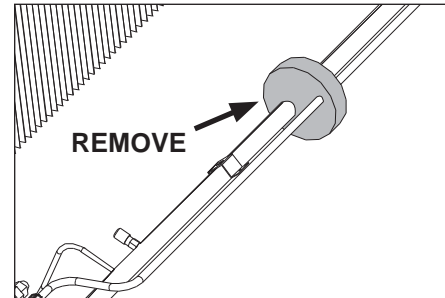
The drain lines can be run left or right of the tee with the proper pitch to satisfy local drainage requirements. Since the kickplate is shipped loose with the case, you should have open access to the drain line area during installation.

If the kickplate has been installed, you will find it very easy to remove. Simply lift the kickplate up from the "J" rail and pull it out, away from the case. See the Trim Out section on page 6.

ELECTRICAL

Electrical hookups are made to a junction box located at the bottom-left-front of the case.

For case-to-case wiring, run conduit between the junction boxes. When connecting to the junction box on the bottom-left side of the case, field wiring should exit box from the right side (furthest away from case wiring) to allow more room inside for wiring connections.

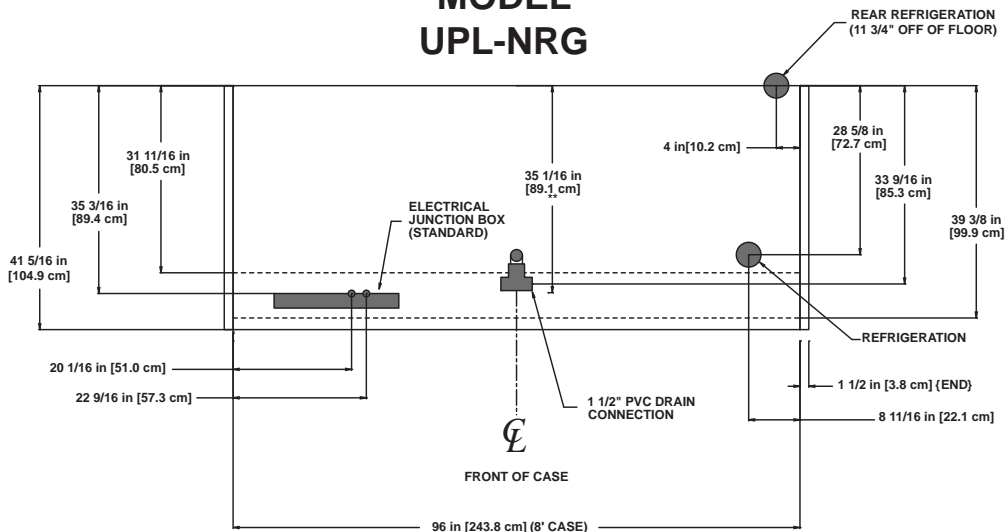


REMOVE THE SHIPPING BLOCKS THAT PROTECT THE REFRIGERATION LINES DURING SHIPMENT BEFORE OPERATING THE CASE.

CAUTION

If any brazing is necessary, place wet rags around the area to avoid tank damage.

MODEL UPL-NRG



AIRFLOW, DEFROST & TEMP CONTROLS

AIR FLOW & PRODUCT LOAD

Hill PHOENIX cases provide maximum product capacity within the refrigerated air envelope. Please keep products within the load limit line shown on the diagram below.

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.

DEFROST & TEMPERATURE CONTROLS

UPL-NRG cases are equipped with Timed-Off defrost.

The rear baffle (Fig. 5) contains the sensor bulb for temperature control and the discharge air probe. The defrost termination control thermostat and the temperature control thermostat are located in the junction box underneath the

case on the bottom-left side (Fig. 5). To access the thermostats, you must first remove the kick plate, then remove the junction box cover. For instructions on removing the kick plate, see the Trim Out section of this manual on page 6.

It is important to consult the control setting guidelines shown on page 2 before setting defrost times. Further adjustment may be required depending on store conditions.

MODEL UPL-NRG

1. DISCHARGE AIR
2. LOAD LIMIT
3. AIR CURTAIN
4. RETURN AIR

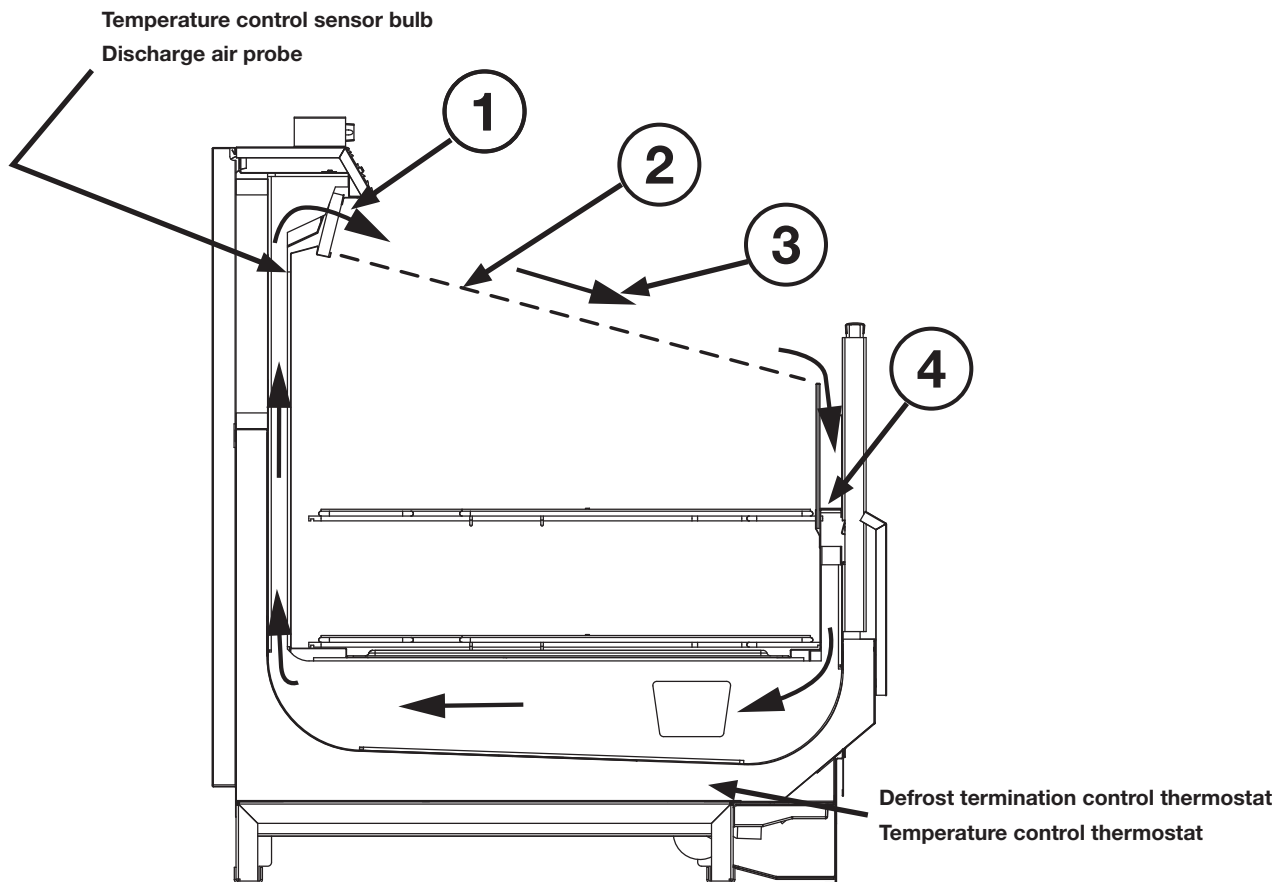
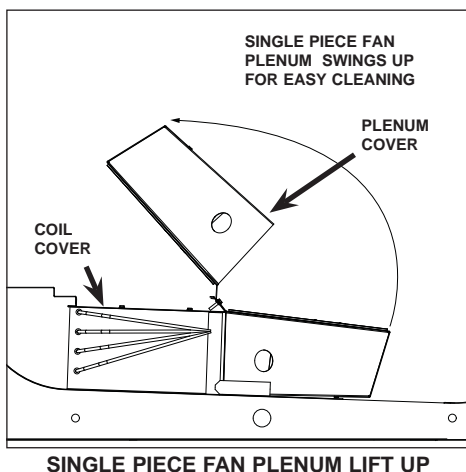


Fig. 5 Airflow; probe, sensor locations.

USE & MAINTENANCE

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.
- All surfaces pitch downward to a deep-drawn drain trough, funneling liquids/ to the front of the case where the waste outlet is located for easy access. 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.
- The coil is covered to keep food fluids from entering but is easily accessible when coil cleaning is required. Simply remove the screws; lift and remove the plenum cover; then lift and remove the coil cover. Be certain that both the plenum and coil cover are properly closed and secured after cleaning to avoid air leaks.
- If any potentially harmful cleaners are used, be certain to provide a temporary separator (e.g., cardboard, plastic rap, etc.) between those cases that are being cleaned and those that may still contain product.
- Avoid spraying cleaning solutions directly on electrical connections.
- Allow cases to be turned off long enough to clean any frost or ice from coil and pans.
- Remove kickplate and clean underneath the case with a broom and a long-handled mop. Use warm water and a disinfecting cleaning solution when cleaning underneath the cases.



FANS

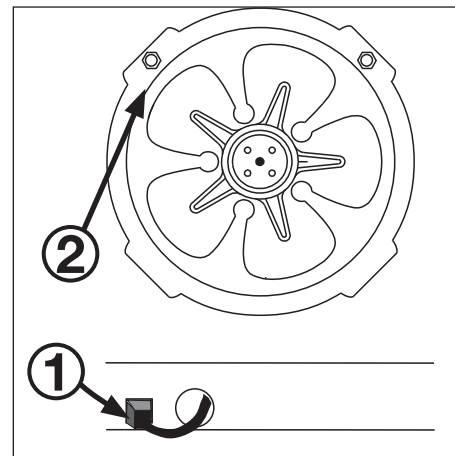
The evaporator fans are equipped with 16-watt fan motors. Motors have a counter-clockwise rotation when viewed from the shaft end.

The fan blades are 8" in diameter with a 20° fan blade pitch. It is important that the blade pitch be maintained as installed. **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 outside the plenum. Push power cord back through plenum opening.**
2. **Remove two fasteners, then lift out the entire fan basket.**

Reverse procedure when re-installing fan basket.



⚠ DANGER

SHOCK HAZARD

Always disconnect power to case when servicing or cleaning. Failure to do so may result in serious injury or death.

⚠ WARNING

Exercise extreme caution when working in a case with the coil cover removed. The coil contains many sharp edges that can result in severe cuts to the hands and arms.

Contact the Service Parts Department at:

1-800-283-1109

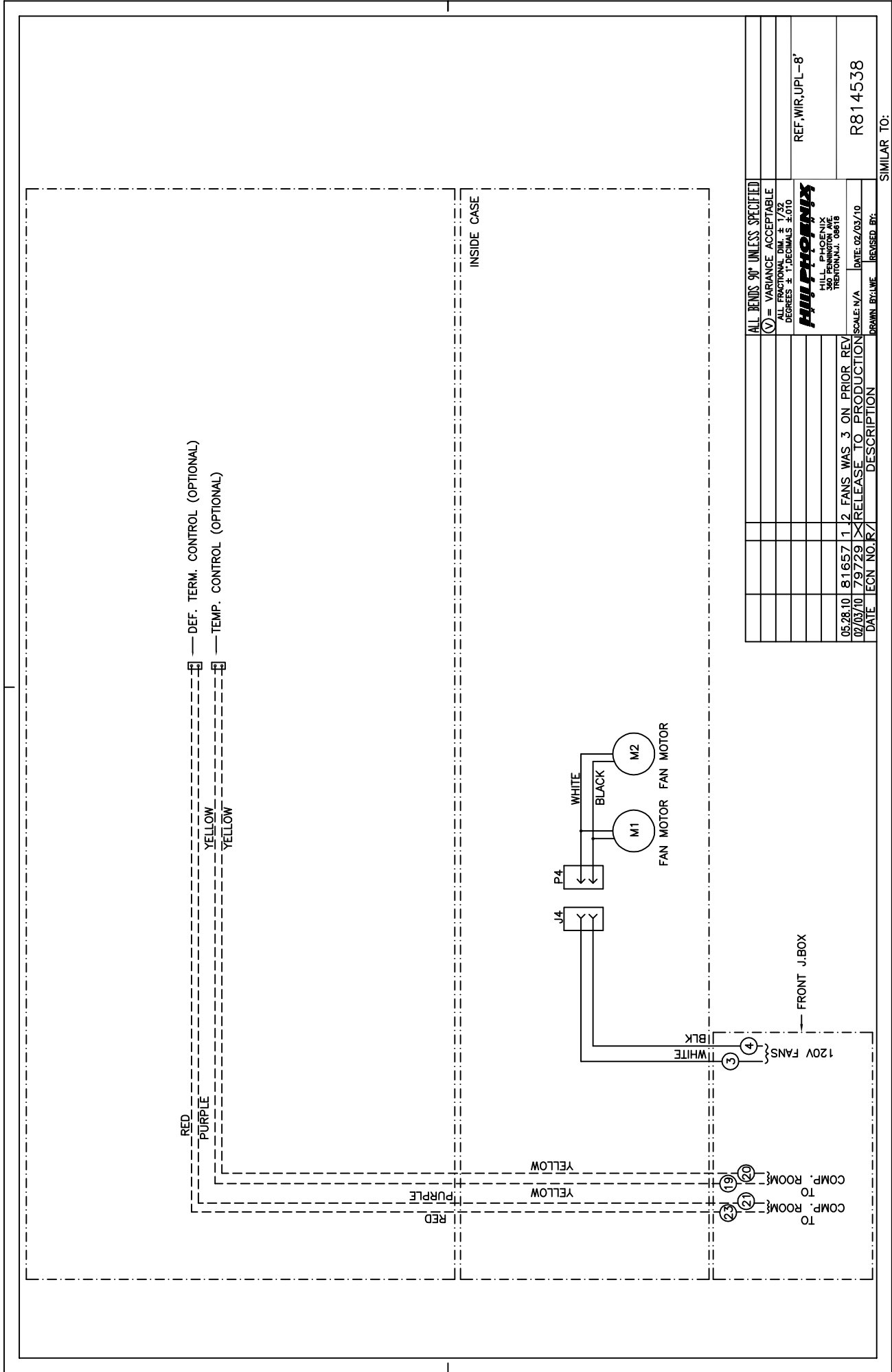
Provide the following information about the part you are ordering:

- **Model number and serial number of the case for which the part is intended.**
- **Length of the part (if applicable).**
- **Color of part (if painted) or color of polymer part.**
- **Whether part is for left- or right-hand application.**
- **Quantity**

**Serial plate is located on the back of the case on the right-hand side.*

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

APPENDIX A: WIRING DIAGRAMS



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
1-800-283-1109

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.



Tel: 1-800-283-1109

1925 Ruffin Mill Road, Colonial Heights, VA 23834
Due to our commitment to continuous improvement, all specifications are subject to change without notice.
Hill PHOENIX is a Sustaining Member of the American Society of Quality.
Visit our web site at www.hillphoenix.com

