To ensure proper functionality and optimum performance, it is strongly recommended that Hillphoenix display cases be installed/serviced by qualified technicians who have experience working with commercial refrigerated display merchandisers and storage cabinets. For a list of Hillphoenix-authorized installation/service contractors, please visit our Web site at www.hillphoenix.com.

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**ONRM**

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PRECAUTIONARY NOTICES

At Hillphoenix®, the safety of our customers and employees, as well as the ongoing performance of our products, are top priorities. To that end, we call out important messages in all Hillphoenix installation and operations handbooks with an accompanying alert symbol. All of these notices are meant to provide information about potential dangers to personal health and safety—as well as risks of case damage—if the instructions are not carefully followed.

ATTENTION!
Indicates an important point of information that is key to ensuring proper case functionality.

CAUTION!
Indicates the potential threat of injury if all instructions are not followed carefully.

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

SERVICE NOTICE
To ensure proper functionality and optimum performance, it is strongly recommended that Hillphoenix display cases be installed/serviced by qualified technicians who have experience working with commercial refrigerated display merchandisers and storage cabinets. For a list of Hillphoenix-authorized installation/service contractors, please visit our Web site: www.hillphoenix.com

LIABILITY NOTICE
For Cases with Shelf Lighting Systems

Hillphoenix 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 Hillphoenix 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 Hillphoenix 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.

GLYCOL NOTICE
For Systems Utilizing Glycol Refrigerant

Use of glycol as a secondary refrigerant must be carried out in accordance with the procedures that have been set forth in the Hillphoenix Second Nature Medium Temperature Secondary Refrigeration Installation Manual, available for download here: http://goo.gl/JIjWd77

Additionally, Hillphoenix uses and recommends Dow glycol-based coolants, which contain specially formulated industrial inhibitors that help to prevent corrosion in our display merchandisers. Over time, the effectiveness of these inhibitors deteriorates, increasing the chance for corrosion. We recommend testing of glycol solutions annually through the Dow lab. The service is free for systems containing over 250 gallons of glycol coolants, while the cost is approximately $100 for smaller systems. For more information, see Dow’s DOWFROST and DOWFROST HD Guide here: http://goo.gl/v6i1iQ

CAUTION!
Under no circumstance should any component be replaced or added without consulting Hillphoenix Field Service Engineering. Utilizing improper components may result in serious injury to persons or damage to the refrigeration system.
Thank you for choosing Hillphoenix display cases for your food merchandising needs. This handbook contains important technical information and will assist you with the installation and operation of your new display cases. By closely following the instructions, you can expect attractive fit and finish, peak performance, and long case life.

We are always interested in your suggestions for improvements to Hillphoenix products and accessories—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 Hillphoenix, and we wish you the very best in outstanding food merchandising.

CASE DESCRIPTION
ONRM Reach-in door Fresh Meat merchandisers.

ELECTRICAL DATA & DIMENSIONAL DRAWINGS
Electrical data and dimensional drawings for the cases listed in this manual can be found in Appendices A–D.

STORE CONDITIONS
Hillphoenix 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 1-800-283-1109.

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
Hillphoenix equipment is carefully inspected before shipping to insure the highest level of quality. Any claim for lost/missing items must be made to Hillphoenix within 48 hours of receipt of the equipment.

SERVICE/TECHNICAL SUPPORT
For service or technical questions, please contact our Case Division Customer Service Department at 1-800-283-1109. For questions regarding our refrigeration systems or electrical distribution centers, please contact our Systems Division Customer Service Department at 1-770-388-0706.

PARTS ORDERING
If you need to contact Hillphoenix regarding specific fixtures or parts, please call 1-800-283-1109 and ask for a Service Parts Representative. 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 inside the case on the top-left side.

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

See Appendix H for a detailed parts list and illustration.

Hillphoenix
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
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. For narrow cases - ONRM, ONRB & ONRBH place shim packs under both the basehorses and kickplate supports (Fig. 1).

LINE-UP & INSTALLATION

Single Case

1. Roll the case into position, leaving a minimum of 2" between the wall and back of case. Using a “J” bar, raise the end of the case (under cross support), remove the caster assemblies (Fig. 2) and lower the basehorse on to the shim packs. Repeat at other end.

CAUTION!
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.

2. Once the basehorse is properly placed on the shim packs, check the horizontal level by placing a bubble level on the front sill. For the vertical plumb, repeat this process by placing the bubble level on the case frame. Add/remove shim packs as needed. **NOTE: DO NOT use doors as plumb reference; doors have a designed setback. Use case frame for measurement.**

Multi-Case

1. Remove shelves and discard the shelf clips.

2. Remove any loose items (shipping braces, mirror assemblies, etc.) from the cases that may interfere with case joining. **Keep all loose items as they will be used later in the installation process.**

3. Remove the return air grill at the case joint. The grill lifts out without fasteners and may be easily removed to gain clear access to the case-to-case joining bolts.

4. Follow the single-case installation instructions for the first case, then position the next case in the line-up approximately 3’ away. Apply the foam tape gasket (supplied) and beads of butyl or silicone sealant to one of the adjoining case ends (Fig. 3). Remove the caster assemblies.

5. When the last casters are removed, pipe-rollers may be used to help move the case. While the case is still in a raised position, position the pipe-roller(s) near an interior vertical support of the baseframe assembly, then lower the case onto the pipe-roller(s). Be certain that both the front and back baserails are resting on the pipe-roller(s), since failure to do so may result in case damage.

6. Push the case to within 3-4 inches of the adjoining case. Once the case is properly positioned, lift it at the opposite end with the “J” bar in order to remove the piperoller(s).
7. Push the cases tightly together, then lightly bolt them together through the holes that are provided (Fig. 3). Tighten all the joining bolts until all margins are equal. Be careful not to over tighten.

8. Repeat steps 2-6 of this sequence for all remaining cases. Be certain to properly level all cases.

9. If seismic brackets were ordered, see Appendix J for detailed installation instructions.

---

**TRIM OUT**

1. To align the master bumpers, install the master bumper joint trim in between adjoining master bumpers. (Fig. 4). 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

---

Fig. 3 Bolt holes, foam tape gasket and sealant

**NOTE:** It is recommended that cases be bolted together in the numbered order indicated in the diagram.

---

Fig. 4 Master bumper and joint trim

if the master bumper is moved away from the end to close the case-to-case joint seam.

3. Seal the interior case-to-case joints with caulk (supplied), then apply acrylic tape (supplied) over the pipe-chase seam (Fig. 5). The tape acts as a watershed preventing water from settling in the case joint.

4. If the case has a Streamlyne bumper (Fig. 6), the bumper will be shipped loose in the case. Before install-
ing on the case, install the external bumper joint on the Streamlyne bumper. Simply slide the joint over the bumper for either case-to-case or case-to-end joints.

5. Place the hook of the Streamlyne bumper on the lip of the master bumper bracket and rotate the bumper down while pushing it in (Fig. 7). When the top edge of the bumper has slipped under the color band, be certain that it is pushed in as far as it will go.

6. Attach the bumper to the tank with the screws provided. Insert the bumper alignment pin into the underside of the bumper to align it to the bumper on the next case.

7. If non-insulated acrylic partitions are included, see Appendix L for installation instructions.

8. Re-install shelves (or peg hook assemblies if applicable). Be aware that differing shelf configurations will affect energy consumption and case performance. If peg hook assemblies are included, see Appendix K for installation instructions.

9. Properly align the front panels as needed, then install the front panel trim (Fig. 8).

10. Fasten the door-frame joints to the adjoining door frames using the supplied T-bolts.

11. Using the screws provided, install the upper kickplate retainer and the "J" rail, both of which are shipped loose in the case (Fig. 9). The kickplate brackets are pre-installed at the factory.

12. Insert top of kickplate into the kickplate retainer. Slide the kickplate up into the retainer, then down onto the "J" rail (Fig. 10). Be certain that the bottom of the kickplate is fitted over extruding "lip" of the "J" rail.

13. Install end kickplates with screws provided and insert plug buttons.

14. 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.

15. 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.

16. If case top fascia is included, see Appendix G for installation instructions. If electronic display modules are included, see Appendix M for installation instructions.
REFRIGERATION

There are three available refrigeration piping options: standard, rear, and top-piping. Standard piping penetration is located at the front-right area of the case, fully visible in front of the fan plenum. Rear piping penetration is located at the rear-right area, consisting of a pre-cut access punch-out, exposing the foam material that must be penetrated prior to pipe joining (Fig. 11). If top piping is utilized, piping stub-outs are located at the top-back-right of the case.

The expansion valve and other controls are located on the left-hand side of the case and are accessible by lifting the left-hand deck pans—lifting the fan plenum is not required.

Before operating the case, be certain to remove the shipping blocks (Fig. 12) that protect the refrigeration lines during shipping. If it becomes necessary to penetrate the case tank in any area, be certain to seal any open gaps afterwards with canned-foam sealant and white RTV.

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

The drain outlet is specially molded out of PVC material and is located in the front-center of the case for convenient access. The “P” trap, furnished with the case, is constructed of schedule 40 PVC pipe (Fig. 13). Care should be given to ensure that all connections are water-tight and sealed with the appropriate PVC or ABS cement.

**ATTENTION!**
Be certain to clear the case of any loose packaging or case materials before energizing the case. Failure to do so may result in case damage or malfunction.

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 *Trim Out* section).

ELECTRICAL

Electrical hookups are made to a junction box located either at the bottom-front-left of the case (Fig. 14), at the top-rear-left of the case (Fig. 15) or to the raceway running along the bottom-front of the case.

For case-to-case wiring, run conduit between the junction boxes or run wiring through the raceway. 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. For more detailed electrical wiring information, see *Appendix E*.

**ATTENTION!**
Be certain that all piping and electrical connections comply with local codes.

LIGHTING

ONRM case does not feature vertical lights on the frames. Shelf lights (4 rows) on 18” shelves and a horizontal canopy light is a standard offering. For any questions or service needs, please contact Case Division Customer Service Department toll-free at 1-800-283-1109.
Before powering-up the case, be certain that all of the steps listed below have been completed to ensure proper case functionality, safety and compliance with warranty terms.

☐ Have you thoroughly examined the case for shipping damage? (see pg. 2)

☐ Have you removed and discarded the casters? (see pg. 3)

☐ Have you checked the vertical plumb of the case? The horizontal level? (see pg. 3)

☐ Have you applied the foam tape gasket and sealant between adjoining cases? (see pg. 3)

☐ Have you sealed the case-to-case joints by applying caulk and acrylic tape to the pipe-chase seam? (see pg. 4)

☐ Have you removed the shipping blocks from the refrigeration lines? (see pg. 6)

☐ Have you sealed any tank penetrations? (see pg. 6)

☐ Have you cleared the case of any loose packaging or case materials? (see pg. 7)
**AIR FLOW & PRODUCT LOAD**

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 line shown on the diagram below (Fig. 16).

**DEFROST & TEMPERATURE CONTROLS**

ONRM case utilizes timed-off defrost. The primary components used for the defrost cycle are the various defrost termination sensors, which work to terminate the defrost cycle in the case. These controls may include 1) a Klixon® thermostat, 2) a sensor probe, or 3) a dial-type thermostat with sensor bulb (the thermostat will always be mounted with the electrical con-trols of the case - i.e. in the electrical junction box, in the electrical raceway, etc.).

In a timed-off defrost, the refrigeration cycle is simply turned off by the case controls for a specified amount of time; therefore, there are generally no active defrost components utilized.

The discharge air probe monitors the temperature of the discharge air and may be used as the defrost termination sensor. The probe can generally be found behind the rear baffle, in the upper baffle, or in front of the honeycomb. NOTE: if the discharge air probe is used for defrost termination, none of the termination sensors listed earlier will be installed in the case.

For more detailed information on suggested defrost times and settings, see Appendices A–D. Further adjustments may be required depending on store conditions.

**ATTENTION!**

To insure optimal operation of the door and frame system, a constant 120V supply be used to power the electrical circuits. Cycling the input voltage will adversely impact case performance.

**DETERMINING SUPERHEAT**

To identify the correct superheat settings, complete the following steps:

1. Obtain suction pressure from the access port. Obtain suction line temperature from the area near the TXV bulb at the outlet of the evaporator coil (Fig. 17).
2. Using the suction pressure reading and the Sporlan® temperature-pressure chart (Appendix F), convert pressure-to-temperature.
3. Finally, subtract the converted temperature reading from the actual temperature reading. The resulting number is the superheat setting—once this has been determined, adjust the TXV as needed to obtain the proper setting.
FANS

Reach-in door cases feature electronically commutated (ECM) fan motor assemblies, whereby the fan blade, fan motor, and basket are integrated into a single unit.

MODULES

Fan assemblies 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 change the fan assembly:

1. Unplug the fan motor (Fig. 18) from the receptacle on the exterior of the fan plenum. Push the power cord back through the plenum opening.
2. Remove fasteners, then lift out the entire fan basket.

(Reverse procedure when re-installing fan assembly.)

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 and other debris to the waste outlet. Check waste outlet before starting the cleaning process to insure it is unclogged. Avoid introducing water faster than the case drain can carry it away.
- Lift the fan plenum to gain access to the coil for cleaning and maintenance (Fig. 19).

Fig. 18 Fan basket

ATTENTION!

Power cord must be pushed back through the plenum opening before removing the fan basket. Failure to do so may result in damage to the power cord.

CAUTION!

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

- To clean the lights, shut off the lights in the case, then wipe them down with a soft, damp cloth. Avoid using harsh or abrasive cleaners as they may damage the lights. Be certain that the lights are completely dry before re-energizing.
- If any potentially harmful cleaners are used, be certain to provide a temporary separator (e.g., cardboard, plastic wrap, 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.
A ........................................................................................................................................... ONRM OPERATING DATA & CASE DIMENSIONS
B ............................................................................................................................................... ELECTRICAL WIRING
C ........................................................................................................................................... SPORLAN PRESSURE-TEMPERATURE CHART
D ........................................................................................................................................... CASE TOP FASCIA
E ........................................................................................................................................... PARTS LIST
F ........................................................................................................................................... SEISMIC BRACKETS
G ........................................................................................................................................... NON-INSULATED ACRYLIC PARTITIONS
ONRM
Narrow Reach-In Merchandiser
4', 6', 8' & 12' (Meat)

GENERAL NOTES

• 4ft cases consist of 2 (24") doors.
• 8ft cases Bi-swing consist of 4 (24") doors.
• 12ft cases Bi-swing consist of 6 (24") doors.
• Door frames are heated. Doors are not heated.
• Lighting controls - occupancy sensors are required.

OPTION 1: OEM Provided: Lighting controls (on/off) are standard unless otherwise specified.
OPTION 2: END User Provided: Lighting controls should be based on occupancy sensors.

SHIPPING WEIGHT

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### NOTES
- "---" indicates that the feature is not an option with this case model.
- Listed discharge air velocity represents the average velocity at the peak of defrost.
- Temperature and defrost settings listed above are recommended start-up settings. Final operational settings may need to be adjusted for the store conditions in which the case operates.
- The recommended evaporator temperatures may need to be adjusted based on system setup, store conditions, etc. The minimum recommended evaporator temperature is 4°F below the listed evaporator temperature.
- Light wattages above reflect 100% run time. To acquire DOE representation, reduce the light wattage by 42% at 75°F/55%RH.

---

Operating Data

Narrow Reach-In Merchandiser
4', 6', 8' & 12' (Meat)
### DOOR OPTIONS

- BI-SWING DOOR
  - 4', 8', & 12' CASES
- 24" [61.0 cm] x 24" [61.0 cm]

### FRONT OPTIONS

- **FLAT FRONT (O SERIES)**
- **STREAMLINE BUMPER**
- **HALF BUMPER**

### NOTES

- Option available: High power lights

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**ONRM**

- Narrow Reach-In Merchandiser
- 4', 6', 8' & 12' (Meat)

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**COMPONENT**

- ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72-2005 SPECIFICATIONS. HILLPHOENIX REFRIGERATED DISPLAY CASES FOR SALE IN THE UNITED STATES MEET OR EXCEED DEPARTMENT OF ENERGY 2017 REQUIREMENTS.

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**ONRM**

- Revision Date: 4-16-18
- Revision #: 2
- Revision Description: NEW STANDARDS

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**ONRM**

- Revision Date: 12-1-17
- Revision #: 1
- Revision Description: DOE 2017

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**Hillphoenix**

- 2017 DOE COMPLIANT
- NSF
- UL US
NOTES

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

- Ends add approximately 1" to the case height, 1/2" to the back & 1" to the front.
- Back panels add approximately 1" to the rear of the case.
- Top canopy LED lights.
# Attention Electrician

For safety and code compliance, ground fixture at time of installation.

**Caution**

Risk of electric shock. More than one power-supply. Disconnect all power-supplies before servicing.

<table>
<thead>
<tr>
<th>Wire Identification</th>
<th>Black</th>
<th>White</th>
<th>Blue</th>
<th>Red</th>
<th>Yellow</th>
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<td>Drip Down Timer</td>
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<td>Ground to Exterior/Frame</td>
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<td>Ground to Junction Box</td>
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<td>Ground to Lights</td>
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</tr>
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</table>
OPTIMAL MOTION SENSOR LIGHTING CONTROL

120V LIGHTS

- WHITE
- RED
- BLACK

MOTION SENSOR
LIGHT SWITCH

LED LIGHTS

- RED
- BLK

LED 1

- VHT
- DRMR
- RED
- BLK

LED 2

- RED
- BLK

120V LIGHTS

- WHITE
- BLK

LIGHT SWITCH

DOORS
CASE-MOUNTED FRAME

ANTI-COND.
120V

- WHITE
- BLACK

AMBIENT FANS
*OPTIONAL*
120V

- WHITE
- BLACK

M1

M2

M3

GROUND

- GREEN

GROUND (ATTACHED TO CASE)

120V FANS

- WHITE
- BLACK

M1

M2

M3

M4

M5

M6

(1 FAN PER SECTION OR DOOR TYP., MAXIMUM OF 6 FANS)

(MAXIMUM OF 3 FAN UNITS IN CHAIN)

(Reference Drawing - R859742)
NOTES:
THE VERTICAL DOORFRAME LIGHTS HAVE A SWITCH MOUNTED IN THE DOORFRAME. THE SHELF AND CORNICE LIGHT SWITCHES ARE LOCATED IN THE CORNICE LIGHTROD LOCATED JUST INSIDE THE DOORS.
ELECTRICAL WIRING

**Note:** Fill opening on inside of lock nut with silicone.

**Note:** No connections in the refrigerated space.

**Note:** Use clamps (P053875A) to secure conduit to canopy top.

**Note:** No connections in the refrigerated space.

**Note:** Fill opening on inside of lock nut with silicone.

**Note:** Use clamps (P053875A) to secure conduit to canopy top.

**Note:** No connections in the refrigerated space.

**Note:** Fill opening on inside of lock nut with silicone.

1. Drill Ø7/8" hole in canopy 4" from left end to center of raceway; enlarge hole on top to Ø1-1/8".
2. Run wires through the liquid-tite conduit to the back of the case.
3. Drill Ø7/8" hole in canopy 4" from left end and 6.25" from the outside back wall of the case; enlarge hole on top to Ø1-1/8".
4. Bundle wires and run along the inside back wall of the case and through the egress into the junction box at the bottom of the case.
5. Locate the LED power supply in the junction box at the bottom of the case.

**PARTIAL LH CROSS-SECTION**

**PART NUMBER:**

**R827726**

**DATE:** 06/20/11

**TIME:** 16:02:05

**DRAWN BY:** HNG

**DATE:** 06/17/11

**INFORMATION SHOWN IS PROPRIETARY AND CONFIDENTIAL. DUPLICATION AND USE IS PROHIBITED WITHOUT PERMISSION FROM HILL PHOENIX.**
### TEMPERATURE PRESSURE CHART - at sea level

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<th>TEMPERATURE (°F)</th>
<th>REFRIGERANT (SPORLAN CODE)</th>
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<td>-60</td>
<td>-51.1 21.8 7.3 5.8 18.6 79.9</td>
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<td>-55</td>
<td>-48.3 20.3 3.9 2.2 16.6 91.1</td>
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<td>-50</td>
<td>-45.6 18.7 0.1 0.9 14.3 103.4</td>
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<td>-42.8 16.9 2.0 3.0 11.7 116.6</td>
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<td>-40</td>
<td>-40.0 14.8 4.3 5.4 8.8 131.0</td>
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<td>-35</td>
<td>-37.2 12.5 6.8 8.1 5.4 146.5</td>
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<tr>
<td>-30</td>
<td>-34.4 9.8 9.6 11.0 1.6 163.1</td>
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<td>65</td>
<td>-11.7 12.5 44.3 46.9 24.7 351.5</td>
</tr>
</tbody>
</table>

To determine subcooling for R-404A use BUBBLE POINT values (Temperatures above 50°F — Gray Background); to determine superheat for R-404A, use DEW POINT values (Temperatures 50°F and below).

** = exceeds critical temperature
If case top fascia is included for installation, secure the front and rear fascia panels at the ends with the provided Tek screws. The front fascia panels have a hole in the center near the bottom. If required, route the motion sensor cable through this hole (Fig. 1).

Attach the vertical gussets (Fig. 2) to the panels to provide additional stiffness. Slide the gusset into the inside of the fascia panel and align the holes at the top. Fasten with screws at the top and through the bottom.

Install the provided case-to-case fascia joint trim with the provided screws. Use the notched trim (Fig. 3) for bridging over a foamed partition.

Install the adjustable end fascia panels (Fig. 4). Nest one panel inside the other and slide to the desired distance. Fasten with screws once the desired front to rear distance is obtained.

Note: If ballast supports are present, utilize the support structure shown in Fig. 5 below.

The fascia is fastened directly to the ballast supports at (a) using the provided Tek screws. Brackets are fastened to the fascia at (b) and to the supports at (c). Brackets are fastened to the end fascia at (d) and the tank at (e). "L" brackets are screwed into the supports or tank at (f).
E.1 PARTS LIST
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<th>Part Descriptions</th>
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<td>Kickplate, Storm Grey</td>
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<td>2</td>
<td>Master Bumper, 3/4, 1/2, Featherstone, Smoke, White, French Vanilla, Black</td>
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<td>3</td>
<td>Lower Front Panel, Painted Custom Color (Not Shown)</td>
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<td>4</td>
<td>Color Band, Painted Custom Color or Stainless</td>
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<td>Honeycomb, 1”x 4”x 48”</td>
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<td>9</td>
<td>Honeycomb Retainer, Painted</td>
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<td>Upper Rear Baffle, Center or End</td>
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<td>Nose Bumper, Polymer Custom Color</td>
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<td>12</td>
<td>Lower Rear Baffle, Painted</td>
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<td>13</td>
<td>Electrical Junction Box, (mounted on bottom left front or on top left rear)</td>
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<td>14</td>
<td>“J” Rail, for Kickplate</td>
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<td>15</td>
<td>Top Flue Panel, Painted</td>
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<td>Plug Button, (Not Shown)</td>
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<td>Door Frame Manufacturer, Low or Medium Temperature Application</td>
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<td>Thermometer, Includes Bracket</td>
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<td>End Assembly, Solid, Custom Color, Identify Left or Right hand, Color of Panel, and Color of End Trim Color</td>
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<td>25</td>
<td>End Kickplate, Painted, Stainless Steel</td>
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<td>26</td>
<td>Defrost Heaters</td>
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<td>27</td>
<td>Anti-Condensate Heaters, Discharge</td>
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<td>Ballast, Electronic, (Identify by brand name and model number)</td>
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<td>Fan Motor - STATE HIGH EFFICIENCY OR STANDARD</td>
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<td>30</td>
<td>Fan Blade</td>
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<td>31</td>
<td>Fan Basket, 8”</td>
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<td>32</td>
<td>Fan Cord-Set, High Efficiency or Standard</td>
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</table>
The case constraint brackets can be installed in 2 ways. Option 1 can be used on multi-deck cases and uses an “L” bracket to attach the case to a vertical wall, as shown below. Option 2 can be used on multi-deck cases or on cases that do not have a canopy. Attach the “L” brackets to the base frames in either of the locations shown below. Brackets are available for all base frame heights.
7" BRACKETS
Use the following instructions to install Hillphoenix non insulated partitions. It is recommended that all shelves and deck pans from both sides of the partition be removed to avoid any potential damage or injury.

**Step 1:** Mount the two vertical retainer brackets to the shelf standard (figures 1 & 2) using the supplied tek screws (8-18x3/4). The rectangular cutouts in the retainers must align with the rectangular slots in the shelf standard. Vertical Retainer Bracket #1 should be located below the 3rd slot from the top and Vertical Bracket #2 should be located above the 6th slot from the bottom. The grooves in the vertical retainer brackets must be centered on the case to case joint. The tek screws are to be drilled through the pre-drilled holes in the retainer brackets as shown in figure 3. Note that the vertical and horizontal retainer brackets are identical.

**Step 2:** Slide the Plexiglas partition into the vertical retainer brackets. Use the supplied retainer bolts and nuts (8-32x1/2) to secure the Plexiglas partition to the vertical retainer brackets as shown in figure 3. Drill additional holes in the Plexiglas if the pre-drilled holes in the Plexiglas do not line up with the holes in the retainer brackets.

**Step 3:** Slide Horizontal Retainer Bracket #2 onto the bottom of the Plexiglas partition as shown in figure 2. Align the partition parallel to the pipe chase and secure the bracket by drilling directly into the pipe chase using the supplied tek screws. Slide Horizontal Retainer Bracket #1 onto the top of the Plexiglas partition and secure it to the top flue of the case using the supplied tek screws. Secure the partition using the retainer bolts and nuts in the horizontal retainer brackets as done in step 2.
FOURTEEN MONTH WARRANTY. MANUFACTURER'S PRODUCT IS WARRANTED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND MAINTENANCE FOR A PERIOD OF FOURTEEN MONTHS FROM THE DATE OF ORIGINAL SHIPMENT. A NEW OR REBUILT PART TO REPLACE ANY DEFECTIVE PART WILL BE PROVIDED WITHOUT CHARGE. PROVIDED THE DEFECTIVE PART IS RETURNED TO MANUFACTURER. THE REPLACEMENT PART ASSUMES THE UNUSED PORTION OF THE WARRANTY.

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

The fourteen month warranty shall not apply:

1. To any unit or any part thereof which has been subject to accident, alteration, negligence, misuse or abuse, operation on improper voltage, or which has not been operated in accordance with the manufacturer's recommendation, or if the serial number of the unit has been altered, defaced, or removed.

2. When the unit, or any part thereof, is damaged by fire, flood, or other act of God.

3. Outside the continental United States.

4. To labor cost for replacement of parts, or for freight, shipping expenses, sales tax or upgrading.

5. When the operation is impaired due to improper installation.

6. When installation and startup forms are not properly complete or returned within two weeks after startup.

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

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

MAIL CLAIM TO:

Hillphoenix
Display Merchandisers
1925 Ruffin Mill Road
Colonial Heights, VA 23834
1-800-283-1109

Hillphoenix
Refrigeration Systems &
Electrical Distribution Products
709 Sigman Road
Conyers, GA 30013
770-285-3200
Warning
Servicing & Case Care

When servicing or cleaning cases, observe the following procedures to avoid case damage or injury:

Be certain that all electricity to the case is turned off before servicing or cleaning to avoid electrical shock. In some cases, more than one switch may need 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 components must be dried thoroughly before installation and before re-energizing the lighting circuit.

Please refer to the Case Cleaning section of this installation manual.