SINGLE-DECK MERCHANDISER **INSTALLATION & OPERATIONS MANUAL**

CNZLA/CNEZLA (R-290)

WARNING / FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WARNING

R290 flammable refrigerant in use. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

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To ensure proper functionality and optimum performance, it is STRONGLY recommended that Hillphoenix specialty 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 website at www.hillphoenix.com.



a DOVER company 01/25 Rev 1.04 P117904D





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Important

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 include important warning messages in all Hillphoenix 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.

This manual must be stored near the display case where it can be easily consulted. If this manual does not provide the information you require please contact Hillphoenix for more information.

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 care-fully.

CAUTION

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

Revision History

- Rev. 1.01; New manual format_04/22
- Rev. 1.02; Technical references_03/23
- Rev. 1.03; Pallet disassembly instructions_10/23
- Rev. 1.04; Safety and troubleshooting update_01/25

TECHNICAL REFERENCE

CNZLA

4', 7', & 8' Coldwall R290 Merchandiser Beverage/Dairy/Meat/Frozen Food/Ice Cream

GENERAL NOTES:

• "---" indicates that feature is not an option on this case model and/or the data is not yet available.





SHIPPING	à WEIGHT		
Case Weight			
CNZLA			





COMPLIANT Intertek Intertek ENGINEERED FOR STORES WITH AMBIENT CONDITIONS NOT TO EXCEED 75° AND 55% RELATIVE HUMIDITY. DUE TO ENGINEERING IMPROVEMENTS SPECIFICATIONS MAY CHANGE WITHOUT NOTICE. ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72 SPECIFICATIONS. HILLPHOENIX REFRIGERATED DISPLAY CASES FOR SALE IN THE UNITED STATES MEET OR EXCEED DEPARTMENT OF ENERGY 2017 REQUIREMENTS. NUMBERS ARE BASED ON STANDARD CASE SIZES. CONSULT ENGINEERING.

CNZLA

Rev. Date	Rev. #	Rev. Title
12-16-24	2	DATA UPDATE
03-17-23	1	DATA UPDATE



CNZLA

4', 7', & 8' Coldwall R290 Merchandiser Beverage/Dairy/Meat/Frozen Food/Ice Cream

GUIDELINES AND CONTROL SETTINGS

		Defrost		
	Set Point	Termination	Defrost	Fail Safe
Application	St (°F)	Temp (°F)	Interval (hr)	(Min)
Dairy	39	50	24	10
Meat	36	50	24	10
Frozen Food	5	50	24	10
Ice Cream	- 9	50	24	10

SYSTEM REQUIREMENTS

Case			Frequency						Product	Gross Weight
Length	Overall Size	Volts	(Hz)	Phase	Plug*	TLA	MCA	MOP	Weight (lbs)	(lbs)
4'	56.7" x 34.5" x 36.6"	120	50/60	1	NEMA 5-15	5.1	6.4	15	210	276
7'	84.8" x 34.5" x 36.6"	120	50/60	1	NEMA 5-15	10.3	12.9	15	298	362
8'	98.7" x 34.5" x 36.6"	120	50/60	1	NEMA 5-15	10.9	13.7	15	364	430

CONDENSING UNIT DATA

Case			Hysteresis	Max	Running Load	Locked Rotor		Refrigerant	Noise Limit
Length	Volts	Phase	(Min)	Capacity (hp)	Amps (RLA)	Amps (LRA)	Refrigerant	Charge (grams)	(dBA)
4'	120	1	2	0.75	7	Electronic Cut Off	R290	120	60
7'	120	1	2	1.25	7	Electronic Cut Off	R290	140	60
8'	120	1	2	1.25	7	Electronic Cut Off	R290	150	60

LIGHTING DATA

Case Length	Lights per case	Amps	Watts
4'	1	0.86	10.5
7'	1	1.13	13.5
8'	1	1.25	15

24hr Ene	ergy	
Case		
Length	Application	(kWh)
4'	Dairy, Meat	1.3
4'	Frozen Food, Ice Cream	2.7
7'	Dairy, Meat	2.0
7'	Frozen Food, Ice Cream	3.6
8'	Dairy, Meat	2.5
8'	Frozen Food, Ice Cream	4.1

NOTES:

- "---" indicates that feature is not an option on this case model and/or the data is not yet available.
- Minimum clearance for single unit installation = 3.9" (100mm).
- Minimum clearance for island arrangement: Rear = 5.5"; Side = 0".
- NEMA L5-15P locking plug available upon request.



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4', 7', & 8' Coldwall R290 Merchandiser Beverage/Dairy/Meat/Frozen Food/Ice Cream







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	03-17-23	1	DATA UPDATE



CNEZLA

Endcap Case Coldwall R290 Merchandiser Beverage/Dairy/Meat/Frozen Food/Ice Cream

GENERAL NOTES:

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SHIPPING	WEIGHT		
Case Weight			
CNEZLA			



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CNEZLA

Endcap Case Coldwall R290 Merchandiser Beverage/Dairy/Meat/Frozen Food/Ice Cream

R-290

GUIDELINES AND	CONTROL	SETTINGS	
		Defreet	

	Set Point	Termination	Defrost	Fail Safe
Application	St (°F)	Temp (°F)	Interval (hr)	(Min)
Dairy	39	50	24	10
Meat	36	50	24	10
Frozen Food	5	50	24	10
Ice Cream	-9	50	24	10

SYSTEM REQUIREMENTS

Cas	9		Frequency						Product	Gross
Leng	h Overall Size	Volts	(Hz)	Phase	Plug*	TLA	MCA	MOP	Weight (lbs)	Weight (lbs)
6'	73.6" x 34.5" x 36.6"	120	50/60	1	NEMA 5-15	5.9	7.4	15	262	321

CONDENSING UNIT DATA

OONDE									
Case			Hysteresis	Max Capacity	Running Load	Locked Rotor		Refrigerant	Noise Limit
Length	Volts	Phase	(Min)	(hp)	Amps (RLA)	Amps (LRA)	Refrigerant	Charge (grams)	(dBA)
6'	120	1	2	0.75	7	Electronic Cut Off	R290	132	60

LIGHTING [DATA
Casa	Lights po

Case Length	Lights per case	Amps	Watts
6'	1	0.10	13

24hr Energy					
Case Length	Application	(kWh)			
6'	Dairy, Meat	1.6			
6'	Frozen Food, Ice Cream	3.1			

NOTES:

- "---" indicates that feature is not an option on this case model and/or the data is not yet available.
- Minimum clearance for single unit installation = 3.9" (100mm).
- Minimum clearance for island arrangement: Rear = 5.5"; Side = 0".
- NEMA L5-15P locking plug available upon request.



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TECHNICAL REFERENCE

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CEED 'S.	12-16-24	2	DATA UPDATE
ZES.	03-17-23	1	DATA UPDATE



GENERAL INFORMATION

Thank you for choosing Hillphoenix for your food merchandising needs. This handbook contains important technical information and will assist you with the installation and operation of your new Hillphoenix 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 number listed below. Thank you for choosing Hillphoenix, and we wish you the very best in outstanding food merchandising.

CASE DESCRIPTION

This manual specifically covers the CNZLA and CNEZLA (R-290) deli, meat, frozen food and ice cream application self-service single-deck merchandiser with sliding doors.

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 (ASHRAE 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.

THIS UNIT CONTAINS R-290 FLAMMABLE REFRIGERANT. USE CAUTION WHEN HANDLING, MOVING OR SERVICING THE DISPLAY CASE. AVOID DAMAGING THE REFRIGERANT TUBING WHICH COULD INCREASE THE RISK OF A LEAK.

SHIPPING CASES

Transportation companies assume all liability from the time a shipment is received by them until the time it is delivered to the consumer. Our liability ceases at the time of shipment.

RECEIVING CASES

Examine fixtures carefully and in the event of shipping damage and/or shortages, please contact the Service Parts Department at the 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. Failure to follow this procedure will result in refusal by the carrier to honor any claims with a consequent loss to the consumer.

If a UPS shipment has been damaged, retain the damaged material, the carton and notify us at once. We will file a claim.

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 Hillphoenix within 48 hours of receipt of the equipment. When making a claim please use the number listed below.

SERVICE PARTS & TECHNICAL SUPPORT

For service parts questions regarding our cases, please contact our Service Parts Department at 1-844-HPX-PART (1-844-479-7278) or dfr-caseclaims@doverfoodretail.com (warranty claim group) and dfr-orderparts@doverfoodretail. com (non-warranty claim group). For parts choose your language, then select option 1 for Case Division Parts.

For technical questions regarding our cases, please contact our Technical Support Department at 1-833-280-5714. For Technical Support select option 2, then once in that menu, select option 1 for the Main Case Division.

CONTACTING THE FACTORY

If you need to contact Hillphoenix regarding a specific fixture, be certain that you have both the case model number and serial number. (This information can be found on the data tag, located at the top-left interior, rear exterior panel or interior rear lower storage of the case. *Location may vary based on case design.*)

Hillphoenix 1925 Ruffin Mill Rd Colonial Heights, VA 23834 Website: www.hillphoenix.com

UNITIZATION ASSEMBLY KITS

		CLOSE OF	FF PANEL KIT (GRAY 4')	
HPX P/N	ITEM	QNTY	DESCRIPTION	COLOR
	4.1	10	Flange Hexagon Bolt, M6x16	
	3.3	2	Front Kickplate Linking Plate, IHF-0D2209PB	Gray
P116702CGY	1.5	1	Cover Plate, IHF-D1509PB	Gray
	*1.3	2	Middle Cover Plate, IHFD2209PB	Gray
	1.4	1	Case Connecting Cover, IHF-D2209PB	Gray
		CLOSE OFF I	PANEL KIT (WHITE 6' END)	
HPX P/N	ITEM	QNTY	DESCRIPTION	COLOR
D44070700V		5	Flange Hexagon Bolt, M6x16	
P116707CGY	1.1	1	Supporting Column, IHF-D2209PB	Gray
		CLOSE OF	FF PANEL KIT (GRAY 7')	
HPX P/N	ITEM	QNTY	DESCRIPTION	COLOR
	4.1	10	Flange Hexagon Bolt, M6x16	
	3.3	2	Front Kickplate Linking Plate, IHF-D2209PB	Gray
P116710FGY	1.2	1	Cover Plate, IHF-D2209PB	Gray
	*1.3	2	Middle Cover Plate, IHF-D2209PB	Gray
	1.4	1	Case Connecting Cover, IHF-D2209PB	Gray
		CLOSE OF	FF PANEL KIT (GRAY 8')	
HPX P/N	ITEM	QNTY	DESCRIPTION	COLOR
	4.1	10	Flange Hexagon Bolt, M6x16	
	3.3	2	Front Kickplate Linking Plate, IHF-D2209PB	Gray
P116713MGY	1.6	1	Cover Plate, IHF-D2509PB	Gray
	*1.3	2	Middle Cover Plate, IHF-D2209PB	Gray
	1.4	1	Case Connecting Cover, IHF-D2209PB	Gray
		SIDE CLOS	E OFF KIT (GRAY/GRAY)	
HPX P/N	ITEM	QNTY	DESCRIPTION	COLOR
	3.2	1	Side Kickplate IHF-D2209PB	Gray
P116714HGY	1.1	1	Supporting Column, IHF-D2209PB	Gray
	4.2	5	Flange Hexagon Bolt, M6x16	
		SIDE CLOSI	E OFF KIT (GRAY/WHITE)	
HPX P/N	ITEM	QNTY	DESCRIPTION	COLOR
	3.2	1	Side Kickplate, IHF-D2209PB	Gray
P116714HWH	1.1	1	Supporting Column, IHF-D2209PB	White
	4.2	5	Flange Hexagon Bolt, M6x16	

REFERENCE DIAGRAMS ON FOLLOWING PAGES (CONT'D)

 * See (Fig. 11) for a detail of the connecting plate.

BACK-TO-BACK ASSEMBLY (DIAGRAM 1)



BACK-TO-BACK ASSEMBLY W/ END CAP ASSEMBLY (DIAGRAM 2)



PALLET DISASSEMBLY INSTRUCTIONS

The CNZLA/CNEZLA case will be shipped in a corrugated, cardboard box on a wooden pallet that will need to be disassembled following the instructions below. Remove the corrugated, cardboard box first and then disassemble the wooden pallet.





After removing the exterior packaging for the case, it will appear like the image above.

Remove the fixing screws to remove the crossbeams. The location of the fixing screws are shown using the arrows.





Within the boxes shown in the figure, remove the two screws in the left box, remove the one screw in the middle box, and then two screws in the right box. Then remove the front wooden board.

Repeat these steps to remove the rear wooden board on the other side of the pallet.

Step 3



Remove the screws to the brackets shown in the box and pointed out by the arrow.

On the front side of the pallet, one bracket is on the left and one bracket is on the right (pointed out by the arrow on the right). Remove these brackets.

Once complete, go to the back side of the pallet and remove the brackets on the rear side using the same method.

Step 4



Using a J-bar, locate strong support points within the white box shown on the case. Lift as close to the ends of the white box as possible.

Gently lift the case at the chosen support point, then carefully slide out the pallet ends and set the case down. Do this for both ends of the case.

CASE INSTALLATION

LOCATION

This refrigerated display case has been designed for displaying and storing perishable food product. It is engineered for air-conditioned stores with a maximum ambient of $75\,^{\circ}$ F and 55% relative humidity.

When selecting the location for placement of this case, avoid the following conditions:

Excessive Air Movement

- 1. Doors
- 2. Air-conditioned vents
- 3. Other air sources

Excessive Heat

- 4. Windows
- 5. Sun
- 6. Flood lamps 8 feet or less from the product
- 7. Other heat sources

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. Move case as close as possible to its permanent location. Remove all crating and shipping braces above the shipping pallet. Loosen the plastic dust cover from the pallet, but leave cover over the case to protect it while removing the case from the pallet.
- 4. The power cord shipping brace can be removed with a screw gun if attached to the pallet. Otherwise, the power cord is attached to the case with a zip tie and needs to be removed carefully.
- 5. Carefully, if horizontal supports, lift case up and off the pallet. Remove dust cover. Check for loose components in the packaging. Do not dispose of loose components. If it cannot be determined where the loose components belong, call Hillphoenix technical support. (Hillphoenix self-contained display cases are sometimes designed with casters. In most situations, one or two persons can easily move the case into position.) If there are casters simply roll them on to the store floor to the proper staging area. First remove all crating then all sled runner, caster, and/or power cord shipping braces. (Dependent on case design.)
- Leveling is necessary to ensure proper operation of the refrigeration system and drainage of the condensate. Locate the highest point on the positioning lines as a reference for determining levelers. A laser transit is

recommended for precision and requires just one person. When in final position level adjustable feet (Fig. 1 & 2) as needed so that the casters are not engaged to the floor. To do so, first rotate the nut at the adjustable feet counterclockwise. Turn feet until engaged to the floor and the casters no longer make contact to the ground.



Fig. 1 Vertical supports



Fig. 2 Adjustable leveling feet and casters

Note: Avoid contact with the castors under the case when using a forklift to move the case.

CAUTION

Failure to properly level the case could result in lack of proper condensation drainage leading to failure of the unit.

 (CASTERS/BULLET LEGS) If necessary, attach two brackets at two separate corners of the case (Fig. 3) and fasten to the floor with concrete anchors. Prior to attaching brackets be sure to turn the power OFF to the case and unplug power cord.



Fig. 3 Seismic anchoring (brackets)

8. The brackets need to be affixed in the exact locations specified here (below) due to the R-290 case design components inside the case. Be sure that at least two

brackets are used, one at each corner.



DANGER

FLAMMABLE

DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



DANGER

SHOCK HAZARD

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

CAUTION

Locate the horizontal or vertical (caster) supports under unit before removing from pallet. Failure to do so will damage the finished metal if correct lift points are not identified prior to removal.

CAUTION

These cases are not designed for excessive external weight. Do not walk on top or inside of cases. Doing so may result in case damage and/or personal injury.

LINE-UP & INSTALLATION

Single Case

1. Remove any loose items from the cases that may interfere

with case joining. Keep all loose items as they will be used later in the installation process.

- 2. Move the case into position. The case has a two lane pallet with connecting strips and enforcement steel panels.
- 3. Refer to the Pallet Disassmbly Instructions found on pg. 11 of this manual. Follow steps 1 4 to properly remove the case from the pallet.



Fig. 4 Palletized CNZLA case

WARNING

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

- 4. Once the case is properly placed check the vertical plumb of the case by placing a bubble level on the rear wall. For the horizontal level, repeat this process after placing the bubble level on the front sill.
- 5. Install the bumper, if applicable, into pre-attached bumper track and snap into place. (Most self-contained cases ship with bumper pre-installed.)
- 6. Install the kickplate fixing plate according to the position shown in the figure, and use the screws delivered with the product, with the specifications of ST4.2 x 13.
- 7. Install the front kickplate (Fig 5). The specification of the screw is the same as that mentioned above. Fix the right side first.



Fig. 5 Front kickplate install

CASE INSTALLATION

8. Install the side skirting board (Fig. 6).



Fig. 6 Side skirting board corner connections

9. Use the front kickplate linking plate to fix the front and side kickplate.

CAUTION

Do not obstruct ventilation around the base of the display case condensing unit. Obstructing could cause the case to not operate correctly and failure to maintain product temperatures.

Multi-Case

- Follow the single-case installation instructions 1 5 then position the next case in the line-up approximately 3' away.
- 2. Due to congestion of the warm exhaust air (heat accumulation). The front, rear and undercase air vents of the unit must not be covered for island arrangement.
- 3. An end case will butt against the ends of the straight cases with a 0" gap. Note: Exhaust on side of end cases.
 - a) The exhaust air must be able to escape freely at the backside of the unit.
 - b) Minimum distance for single unit installation All Around = 3.9 in
 - c) Minimum distance for island arrangement A = 0 in B = 5.5 in



4. Install the screws supplied at the rear of the case with the equipment in the frame selected part of the diagram (Fig. 7). The bolt specification is m6 x 16. The screws don't need to be tightened for the time being.



Fig. 7 Frame screw locations at rear of case

5. Insert the column (Fig. 8) into the screw installation position, one on the left and one on the right.



Fig. 8 Insert columns onto screws

6. Place the showcase back-to-back, lift the column, and connect the two cases together (Fig. 9).



Fig. 9 Back-to-back column connection

7. Place the cover plate at the middle of the two cases, as shown here (Fig. 10). Hardware is not required for this step. Note: Do not merchandise on top of the cover plate as this will restrict the air exhaust.



Fig. 10 Placing cover plate

If more than two cases need to be spliced in a line-up, install the connecting plate according to the position (Fig. 11) after the two cases are placed.



Fig. 11 Connecting plate for line-up

 Repeat steps for case splicing as needed and put the middle cover plate down in the middle when ready (Fig. 12).



Fig. 12 Middle cover plate

10. Install the kickplate fixing plate according to the position (Fig. 13) and use the screws delivered with the product, with the specifications of ST4.2 x 13.



Fig. 13 Kickplate fixing plate

- 11. Install the front kickplate with the fixing plates at the top of each two double cutouts depicted (Fig. 14). The specification of the screw is the same as that mentioned above. Fix the right side first.
- 12. Install the side skirting board at each connecting corner (Fig. 15). Two screws at each corner. **Note: Pre-install the corner kickplate. If the adjoining case is an end case be sure to next attach the corner kickplates (Fig. 16) to the**

end of the side skirting board kickplate (Fig. 14).

13. If there is an end cap case, fix the front and corner kickplates together with screws (Fig. 16).



Fig. 14 Front kickplate install



Fig. 15 Side skirting board corner connections



Fig. 16 End cap front and corner kickplate connections

14. Use the front kickplate linking plate to fix the front and side kickplate (Fig. 17).



Fig. 17 Kickplate linking plate

15. If there are more than two groups of cases that need to be

CASE INSTALLATION

spliced in a line-up, install the kickplate linking plate after the front skirting board is fixed.

- 16. Repeat steps of this sequence for all remaining cases. Be certain to properly level all cases.
- 17. Install the price tag molding using double sided sticky tape. Do not use hardware to install the tag molding as this will interfere with the assembly of the center cover panel.

CAUTION

Installation of 3rd-party materials may result in diminished case performance.

Adjustable wire racks

The wire racks inside of the case(s) have four available heights when including the base. First cut the zip ties holding the

racks in place for shipping, then adjust the level of the wire rack by using the side racks for placement (Fig. 18).

Note: Do not use the highest available point (Fig. 18) as this height exceeds the load limit line for product.



Fig. 18 Adjustable wire racks and zip ties

ADJUSTABLE WIRE WRACK POSITIONS

WIRE RACK POSITION	HEIGHT OF RACK FROM TANK BOTTOM "A"	MERCHANDISING HEIGHT RACK TO LOAD LIMIT LINE "B"
Base (Bottom)	1-13/16"	18-5/16"
2nd Height	7-1/4"	12-7/8"
3rd Height	12"	8-1/8"
4th Height	17"	3-1/8"

ELECTRICAL

This case has a NEMA 5-15P plug (locking NEMA-15P plug when applicable) that will need to be connected. **Note: The locking NEMA L5-15P plug can replace the standard NEMA 5-15P plug via the connector disconnect that is found in the condensing unit compartment on the customer right hand side of the case.**

The case must be grounded. For more detailed electrical wiring information (see Appendix A1).

Power Cord Locking L5-15P

Prior to plugging in and starting up the case always check the data tag located on the outside back panel of the case, as well as the voltage label found on the main power cord (if applicable) which can be found at the rear base panel. **Note: Check that the voltage of the receptacle you are going to use for power and the voltage required for the case match.**

CAUTION

Prior to plugging in and starting up the case. Be certain that the voltage of the receptacle you are going to use and the voltage required for the case match. Failure to do so may result in case/ system damage.

Cord Replacement (5-15P to L5-15P)

Prior to replacing the power cord and plug, be sure to DISCONNECT POWER to the case before proceeding. The power can be disconnected at the main panel breaker in the building. Just turning OFF the case with the main power switch will NOT disconnect power coming to the case. Note: The front control panel has a clear cover to help protect against accidental access to switches. The controls can be accessed by use of a tool put through the provided holes in the cover.

To replace the standard 5-15P cord with the locking cord L5-15P in the field it is a quick disconnect of the connector and ground terminal (Fig. 20) within the CDU compartment; accessed from the rear air grill.

DANGER

CAUTION, RISK OF ELECTRIC SHOCK. Prior to replacing the power cord and plug, be sure to DISCONNECT POWER WITH THE MAIN PANEL BREAKER to the case, before proceeding.

CAUTION

Be certain that all electrical connections are compliant with local codes.

DANGER

CAUTION, RISK OF ELECTRIC SHOCK. If the cord or plug becomes damaged, replace only with a cord and plug of the same type.



Fig. 19 Front panel grill & power switch



Fig. 20 Connector and ground terminal

REFRIGERATION & COMPRESSOR COMPARTMENT

A bottom mounted compressor compartment (Fig. 21) can be accessed by removing the lower rear panel. See Appendices for full instructions on how to program the Dixell electronic controller.



Fig. 21 Compressor compartment

CASE CONNECTIONS

Access locations and/or R-290 compartment configurations will vary based on case design. See page 19 for a compressor compartment diagram.

CAUTION

Be sure to remove all Styrofoam shipping blocks from piping and refrigerant lines. Failure to do so may result in case damage.

Temperature Probe Connections

1. The top probe is for defrost temperature and the bottom probe is the case temperature (Fig. 22).



Fig. 22 Temperature probe connections

Electronic Cutoff

The CNZLA/CNEZLA compressors have an electronic cutoff mechanism such that the LRA (Locked Rotor Amps) has zero (0) amp draw after 4 seconds when the rotor becomes locked.

Power Supply & Light Switch

- 1. After the main power cord located at the base panel of the case is plugged in and the power switch (Fig. 23) flipped to ON the case should begin normal operations.
- 2. After establishing power the light control switch (Fig. 23) (if applicable) located on the exterior front panel can be flipped to the ON position. The case should now be fully operational and all lights functioning when in the ON position (if applicable).
- 3. Note: The front control panel has a clear cover to help protect against accidental access to switches. The controls can be accessed by use of a tool put through the provided holes in the cover.

DANGER

When carrying out maintenance tasks inside the refrigerated case or compressor compartment, it is essential to disconnect the power source to the case from the main power.

DANGER

ALWAYS CHECK THE THERMOSTAT CURRENT RATING. It may have a limited current, as low as 2A. If necessary protect digital thermostat contacts with a contractor.



Fig. 23 Front panel power and light switch



defrosting cycle route —

R-290 COMPRESSOR COMPARTMENT DIAGRAM



Note: Access locations and/or compartment configurations will vary based on case design.

SAFETY LABELS

Inspect the refrigerated display case and ensure all safety warnings/information applied on the refrigerated case are not removed. Any labels removed must be replaced. The following signs are applied:

Warning #.	Description of Warning	Symbol/Information	Application
1.	ID Plate/Data Tag		Close to Field Wiring Box
2.	Danger: connect to an electrical system with a magneto-thermal cut-out	<u>A</u>	On Field Wiring Box
3.	Danger: connect to an electrical system with a magneto-thermal cut-out	ATTENZIONE: Il Collegamento eletricio dell'apparecchio deve essare protetto da interruttore magnetotermico ad alta sensibilità ATTENTION: Tra device electrical connection must be protect forn high sensibility main avuic- no chengi mettinette Hugochalter gracettita verden ATTENTION: La connection éléctrique de l'appareil doit étre protegée par un interrupteur magnéto-thermique à sensibilité élevée	On electrical panel. Power lead
4.	Danger: Do not lift. Dis- connect electrical power first; do not use water jets directly; moving parts; disconnect electri- cal power.	Togiere tensione prima di sollevare! Switch of before to operate! Ausschalten vor dem Ahteben! Coupez fairmentation avant de soulever!	On all fan holders
5.	Ground connection point.		On the electrical switch box.

CASE CONNECTIONS

SAFETY LABELS (CONT'D)

6.	Type label	ANSI/NSF-7 Type 1 Display Refrigerator intended for 75°F/55%RH	Close to Field Wiring Box
7.	Intended use label	This equipment is intended for the storage of packaged products only	Close to Field Wiring Box
8.	Load limit		Inside/fixed and/or mobile
9.	Danger: Risk of fire or explosion. Flammable refrigerant used. Do not use mechanical devices to defrost refrig- erator. Do not puncture refrigerant tubing.		Flammable locations
10.	Danger: Risk of fire or explosion. Flammable refrigerant used. Do not use mechanical devices to defrost refrig- erator. Do not puncture refrigerant tubing.	A DANGER Hak Of An USA Faint Of An USA Faint Of An USA An USA	Flammable locations/Case Exterior
11.	Danger: Risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing. Caution: Flammable refrigerant used. Consult repair manual/owner's guide before attempt- ing to install or service this product. All safety precautions must be followed.	A DANGER Pisk of First of Explosition. To Be Repaired Only By Trained Do Kot Puncture Refrigrant Using. Data CADUDON Risk Of Fire of Explosition. Rismable Refrigrant Using. Data CADUDON Risk Rof Fire of Explosition. Comult Repair Manual/Owner's Guide Diagnostic Strategiant Using. Diagnostic Refrigerant Using. Manual Refrigerant Using Refrigerant Using Refrigera	Near the Machine Compart- ment Nameplate
12.	Caution: Risk of fire or explosion. Dispose or properly in accordance with federal or local regulations. Flammable refrigerant used.	A CAUTION Risk Of Fire or Explosion. Dispose Of Properly in Accordance With Federal Or Local Regulations. Flammable Refrigerant Used. A ATTENTION ATTENTION - Risque d'Incendie ou d'explosion. Eliminer conformément aux régementations fédérales ou locales. Refrigérant infammable utilisé.	Exterior of Display Case
13.	Caution: Risk of fire or explosion. Do not puncture refrigerant tubing; follow handling instructions carefully. Flammable refrigerant used.	Risk Of Fire or Explosion Do Not Puncture Refrigerant Ubing: Follow Handling Instructions Carefully. Hammable Refrigerant Ubing: Follow Handling Instructions Carefully. Anternation Refrigerant Ubing: National Structure Instructions de manipulation. Refrigerant inflammable utilisé.	Exterior of Display Case
14.	Caution: Risk of fire or explosion. Due to flammable refrigerant used. Follow handling instructions carefully in compliance with U.S. government regulations.	Acception Rak of Fire or Explosion Due to Handing Instructions Carefully in Compli- ance with U.S. Government Regulations. Actement Regulations. Actement Regulations. Actement Regulations. Actement Regulations. Instruction Carefully in Compli- ance with U.S. Government Regulations. Actement Regulations. Actement action and drappication dia user different inflammable de manipulation conformisment aux regio- mentations du gouvernement américain.	Exterior of Display Case

LIGHTING & POWER SUPPLIES

GENERAL LIGHTING INFORMATION

Hillphoenix cases are equipped with LED luminaires.

The lighting system has an ON/OFF switch located on the front panel grille. Should a power supply need to be removed and/ or replaced, DISCONNECT POWER to the case before proceeding. The power can be disconnected at the main panel breaker in the building. Just turning OFF the case with the main power switch will NOT disconnect power coming to the case. Once a case has been properly positioned in the store the lights may be turned on to verify that they are connected and functioning properly.

To ensure peak performance, it is advisable to run the lighting systems only when the store climate control is on and case refrigeration is started. Note: It is highly recommended that the ambient store temperature not exceed 75°F.

DANGER

SHOCK HAZARD

Always disconnect power to case when cleaning, servicing or configuring components of the lighting system. Failure to do so may result in serious injury or death.

WARNING

Using improper DC power supplies may damage the luminaires, resulting in sub-standard operation and increased chances of safety issues/ injury.

WARNING

Never replace a 24V DC power supply with a T8 or T5 ballast of any kind! Ballasts use alternating current (AC) instead of direct current (DC) and operate at a much higher voltage than is used by this LED system. Doing so will damage the LED system and increases the chance of safety issues/injury.

LED DRIVER/POWER SUPPLY ACCESS

To gain access to the LED driver (Fig. 24) or power supplies remove the lower front panel grille.

REPLACING LED LIGHTS

Once store power is connected the LED system should operate without the need for any significant maintenance for several years. **Should a power supply need to be removed and/or replaced, DISCONNECT POWER to the case before** proceeding. The power can be disconnected at the main panel breaker in the building. Just turning OFF the case with the main power switch will NOT disconnect power coming to the case. Be certain to replace the power supply with genuine Hillphoenix parts.



Fig. 24 LED driver behind front panel grille

LED LUMINAIRES/ADAPTER

Disassembling lampshades and LED luminaires:

First turn the power to the case OFF with the switch (Fig. 25) found at the front panel. DISCONNECT POWER to the light before proceeding.



Fig. 25 Front panel power and light switch

- 2. Gently push in at the top of the lampshade until there is a small gap (Fig. 26) while at the same time using a slotted screwdriver (Fig. 27) to gently pry open the lampshade at the top of the shade.
- 3. Carefully, sliding horizontally while using your fingers loosen the top of the lampshade from left to right (Fig. 28) until the entire shade can be pulled out and away.
- 4. Once the lampshade is removed, unscrew the terminal wiring brackets (Fig. 29).

LIGHTING & POWER SUPPLIES



Fig. 26 Lampshade top gap



Fig. 27 Screwdriver placement at top



Fig. 28 Lampshade left to right removal



Fig. 29 Terminal wiring brackets

 After the brackets are detached, the terminals (Fig. 30) can be unplugged and the LED light bar(s) separated from the clips (Fig. 31) running down the length of the bar. Note: There will be multiple clips.



Fig. 30 Terminals to unplug



Fig. 31 LED light bar removal/clips

Reassembling lampshades and LED luminaires:

- 1. First turn the power to the case OFF with the switch (Fig. 25) found at the front panel. **DISCONNECT POWER to the** case before proceeding. The power can be disconnected at the main panel breaker in the building. Just turning OFF the case with the main power switch will NOT disconnect power coming to the case.
- 2. Follow steps 2-5 from the previous section covering the disassembly of the lampshades and LED luminaires.
- 3. Clip (Fig. 31) in the new LED light bar luminaires.
- 4. Plug in the terminals (Fig. 30).
- 5. Screw the terminal wiring brackets (Fig. 29) back in to place.
- 6. The lampshade (Fig. 28) will go back in next by gently placing it in the slotted bracket, along the bottom of the shade while moving down the shade left to right. Once the bottom of the lampshade is in position you will then move left to right again but this time carefully pressing the top portion of the shade back in to the slotted bracket that will hold it in place.

LIGHTING & POWER SUPPLIES

Disassembly of LED Driver:

First turn the power to the case OFF with the switch (Fig. 32) found at the front panel grill. DISCONNECT POWER to the case before proceeding. The power can be disconnected at the main panel breaker in the building. Just turning OFF the case with the main power switch will NOT disconnect power coming to the case.



Fig. 32 Front panel grill & power switch

 Once case power is OFF and POWER DISCONNECTED you can remove the grill. With a slim tool similar in width to a plastic card, place the tool in to the upper seam of the grill (Fig. 33.) While doing so push the tool in, then downward to disengage the snap features of the panel.



Fig. 33 Front panel removal

- 3. There are two snap features (Fig. 34) on top and one on each side holding the grill in place. Note: When returning the grill be sure that the flanges on the bottom of the panel are engaged between the bottom of the grill and the case structure.
- 4. Unplug the terminal, the switch connected to the input terminal and the LED light wiring connected to the output terminal (Fig. 35). One plug is for the lights, the other for the condensor fan. The plug with the yellow wire is the fan.
- 5. Use a screwdriver to remove the screws securing the power supply to complete the disassembly.



Fig. 34 Snap features and wiring



Fig. 35 LED driver

PRE-POWER CHECKLIST

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. 8)
Have you checked to ensure the case is horizontally level? (see pg. 11)
Have you checked and verified the voltage of the receptacle you are going to use for power and the voltage required for the case match? (see pg. 16)
Have you verified the display case switch is in the OFF position prior to plug ging in to the main power source? (see pg. 16-17)
Have you checked all exposed refrigeration lines to ensure that they are not kinked, dented or rubbing together and have installed the compressor compartment access panel? (see pg. 17-18)
Have you reviewed safety warning labels and verified all are present and in good condition? (see pg. 18-19)

After 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.

- **1.** Check case temperature and adjust controller as needed. All display case connections comply with the information/instructions?
- 2. Store the installation manual in the vicinity of the display case itself to where it can be accessed and consulted by all members of staff involved in the use of the refrigerator display case.
- 3. Before placing food in the display case, allow the case to operate for approx imately two (2) hours and ensure the case is at the proper temp before loading.

AIRFLOW & DEFROST

AIRFLOW & PRODUCT LOAD

Hillphoenix cases provide maximum product capacity within the refrigerated air envelope. Please keep products within the appropriate load limit.

It is important that you do not overload the food product display so that it impinges on performance. Overloading will cause malfunction and the loss of proper temperature levels. *For full technical reference drawings with load limit lines, refer to pages 4 and 7.*

Access to the product is from the top. The case must only be loaded with product when the temperature specified for the product has been reached.

WARNING

Always keep product within the designated air curtain. Failure to do so may result in case malfunction and product losing proper temperature, resulting in sub-standard operation and increased chances of food contamination.

CAUTION

Proceed to the loading only once the display case has reached the proper temperature setting.

DEFROST

Cases are delivered with a customer specific factory setting. Each case contains one or more hermetically sealed refrigerant circuits, the components of which are technically connected to each other permanently. The units can operate in four different operating modes: Ice Cream, Frozen Food, Meat and Deli.

The waste heat generated in the case is discharged to the ambient air via an air condenser.

The case is defrosting automatically to keep the inner tank free of frost and ice. The unit work properly even when the frost/ice accumulates on the surface of the inner tank. Automatic defrost and manual defrost are set inactive in freezer mode.

A limited number of manual defrosts can be performed. Push the DEF key for more than 2 seconds and a manual defrost will start.

Triggered by a factory-set time, the unit starts one defrost cycle per day (during night time).

Defrost cycle stops automatically when ice/frost is removed (triggered by the internal temperature sensor or software based max time out period).

During automatic defrost the display shows "dEF". For more detailed Dixell operating information (see Appendix B1).

The accumulated defrost water is drained then evaporated.

TEMPERATURE DISPLAY

Indication of indoor temperature: lce Cream, $<0^{\circ}F$ (-18°C) Frozen Food, $<10^{\circ}F$ (-12°C) Meat, 29°F (-1.5°C) \sim 39°F (4°C) Deli, 33°F (0.5°C) \sim 40°F (4.5°C)

Responsibility: operating staff Frequency: several times a day

DANGER

FLAMMABLE

DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



CASE CLEANING

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. Further suggestions for case cleaning include the following:

CAUTION

Material damage due to excessive amounts of cleaning agents. Use only cleaning devises moistened with cleaning agents.

- 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 the 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. This can be found about half way down the case wall. The condensate runs to the trough where it will exit the case to the condensate pan to be evaporated off.
- To clean the LED luminaires, shut off the lights in the case, then wipe the luminaires down with a soft, damp cloth. Avoid using harsh or abrasive cleaners as they may damage the lights. Be certain that the luminaires are completely dry before re-energizing.
- Clean from top to bottom when cleaning the display case to avoid cross contamination.
- 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 any cleaning liquids directly on the 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.

DANGER

SHOCK HAZARD

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

CAUTION

Use specific products for disinfection and cleaning: use soft, non-abrasive sponges and rags!

DANGER

FLAMMABLE

The refrigerant can escape and create an explosive gas/air mixture. Risk of fire due to sparks or overloading.



DANGER

When carrying out cleaning work or maintenance on the condensing unit it is essential to disconnect the machine and all its accessories from the main power.

DANGER

DANGER OF BURNS

Be careful of the elements inside the condensate dissipator pan: this operates at high temperature.

CLEANING AGENTS	CLEANING AREA
Clean water	Unit and glass surfaces out- side and inside.
Slightly alkaline cleaning agent for heavier contami- nation (e.g. neutral soap and water).	Unit outside and inside. Glass surfaces outside.
Glass cleaner (recom- mended pH-value 5-7).	Glass surfaces outside.

CAUTION

Material damage due to wrong cleaning agents. Do not use abrasive, chemically aggressive, strongly acidic (pH-value <4), strongly alkaline (pH-value>8) or highly flammable cleaning agents. All cleaning devices must be clean themselves.

FOR CLEANING			
CLEANING DEVICES	CLEANING AREA		
Damp soft cotton cloth.	Unit and glass surfaces out- side and inside.		
Damp sponge cloth or sponge.	Unit Inside		
FOR DRYING			
Lightly moistened soft cot- ton cloth.	Unit and glass surfaces out- side and inside.		

DURING OPERATION

Cleaning Steps

- 1. Clean exterior walls and the frame.
- 2. If available, clean the bumpers and water protection strips.
- 3. Clean glass surfaces outside.
- 4. Remove food residues, such as spilled liquids and packaging residues.
- 5. Clean the tracks for the lids.
- 6. Dry all cleaned surfaces and components.
- 7. Clean the floor in front of the unit.

COOLING FUNCTION SWITCHED OFF

Cleaning Steps

Frequency: For hygiene reasons at least twice a year.

- 1. Move product to another unit.
- 2. Switch refrigeration OFF by pressing the main power switch.
- Remove the glass lids by pushing up into the seel then puling out. Clean before re-installation with a spray bottle filled with an approved mild detergent and warm water. Also clean the associated plastic unit frame and seels. Do not apply large amounts of cleaning agent to these surfaces.

CAUTION

Material damage due to improper cleaning. Damage to surface of plastic bezels/unit frame and impairment of the function of seals. Always clean plastic bezels/unit frame and seals again with clean water. There must not be any detergent residues on the plastic bezels/unit frame and seals.

- 4. Remove all accessories from the interior of the unit. After use ensure for a neat and safe storage.
- 5. Remove all defrost water from the following options;
 - a) Wet vacuum cleaner/electrical devices with mark ing of explosion protection.
 - b) Lightly moistened cloth.

c) Units with defrost water plug; Place a pan under the drain and remove the defrost water plug. Let the defrost water drain off then close the drain with the defrost water plug again.

- 6. Remove food residues, such as spilled liquids and packaging residues.
- 7. Clean the interior of the unit such as the defrost drain and the defrost water sieve.
- 8. All cleaned areas and components must be dried again.
- 9. Re-install all accessories correctly.
- 10. Re-install the lids properly and close them completely.
- 11. Switch refrigeration function on by pressing the main power switch.

CAUTION

The case must only be loaded with goods when the temperature specified for the product has been reached.

DANGER

FLAMMABLE

DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



Condenser Air Intake

Clean and remove the debris from the condenser air intake monthly. If not cleaned regularly the head pressure will rise and cut all power off to the compressor by means of the pressure switch.

This can be cleaned with an air hose. Be sure to remove all debris and wait until completely dry before turning power back on to the case.

CAUTION

Be sure to clean the condenser air intake monthly. Failure to do so may result in loss of normal compressor functions and case damage.

Cleaning Condensate Tray

Inspect the condensate tray (Fig. 36) at least once every six months. Ensure you disconnect the electrical power supply and make sure you DO NOT touch the elements as they reach high temperatures (necessary for evaporation inside the pan).

Cleaning Condenser

The condensers used on the condensing units gather dust and dirt and must be cleaned regularly. Under normal working conditions this task must be executed at least once a month. A dirty condenser will reduce the display case performance: it will also result in increased energy consumption (Fig. 36).

1. Open the front panel grill after power switch is turned OFF.

- 2. Use a brush to brush of the dust on the surface of the condenser, or use a hand-held vacuum cleaner to suck out the dust on the surface of the condenser.
- 3. When done re-install the front panel grille.

UNSCHEDULED CASE MAINTENANCE

Unscheduled maintenance concerns all those tasks that cannot normally be carried out by the routine user as specified. Such tasks require qualified personnel with specific technical skills (e.g. refrigeration system specialists, electricians etc.) and must be carried out at least once a year. See the scheduled maintenance table for a list of the main tasks (Fig. 37).

If inspection reveals any rust, cracks and etc., it will be necessary to carry out repairs and/or replacement of parts so that the case meets code and the display case is in prime operating condition. To enhance safety, it is recommended that you always seek the advice of a specialized technician before carrying out any repair work.



Fig. 36 Cleaning the condensate tray and condensing unit

SCHEDULED MAINTENANCE TABLE

Maintenance	Weekly	Monthly	Half Yearly	Yearly
Cleaning case				
Cleaning gas condenser		\checkmark		
Case visual check	 ✓ 			
Safety labels visual check	~			
Check electric system				\
Check water drainage system.				•
Check refrigeration system				\
General inspection				

Fig. 37 Recommended cleaning schedule

TROUBLESHOOTING

PARTS SUBJECT TO WEAR & SPARE PARTS

Most spare parts carry clear, complete ID information. It is important that the refrigerated case parts be replaced by analogous parts of equivalent safety and quality: to order spare parts please contact Hillphoenix, stating the case model and serial number, found in this manual or on the case ID plate, and provide a description of the component and the desired quantity. Refer to the Parts section in the back of the manual for parts ordering and to identify parts that may need to be replaced.

CAUTION

Do not pressure wash equipment as damage to electrical components may result.

INSTRUCTIONS FOR PERSONNEL

In the Event of General Emergency

Immediately inform those in the vicinity of the perceived danger, gesticulating if necessary; cut the electrical power to the cabinet.

In the Event of Fire

In the event that the refrigerated case catches fire or is involved in a fire it is possible to use an extinguisher with a powder-type or CO2 extinguishing agent.

Resetting the Case

To restore normal operation it is necessary to eliminate all the causes of the emergency situation; if necessary repair or replace damaged parts.

Note: If safety devices are tripped it will be necessary to identify the cause before continuing work.

CAUTION

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

CAUTION

R-290 flammable refrigerant in use. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation operating and maintenance instructions thoroughly before installing or servicing this equipment.

DANGER

FLAMMABLE

DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



FAILURES AND TROUBLESHOOTING

Failures

In the event of a failure of mechanical/electrical/refrigeration parts the initial safety conditions must be restored immediately by replacing or repairing such faulty parts.

TABLE OF FAILURES AND TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The refriger- ated cabinet does not work.	 The main circuit breaker is set to OFF; The power line between refrigerated cabinet and power socket is faulty; The switch on the refrigerated cabinet control panel switch is not on. 	 Turn the main power on; Make sure the plug is inserted properly in the socket; Turn the power switch on the refrigerated cabi- net panel ON.
The refrigera- tion effect of the refriger- ated cabinet is poor.	 The product door is not closed tightly; The product temperature is set too high. The product is exposed to direct sunlight or close to hot objects; The goods are placed higher than the load line 	 Close the door tightly; Lower the product temperature; Keep the product in a cool place; Place goods below the load line
The outer surface of the product is hot.	The outer surface of the product is wrapped with a con- denser, which will generate heat during refrigeration.	This phenomenon is normal.

(Cont'd) NEXT PAGE

TROUBLESHOOTING

TABLE OF FAILURES AND TROUBLESHOOTING (Cont'd)

PROBLEM	POSSIBLE CAUSE	SOLUTION
The product is noisy	 The product is in the high-frequency operation stage at the initial stage of operation; The product is in the defrosting stage; The product is not placed stably. 	 After one to two hours of operation, the noise will be significantly reduced; The defrosting cycle of the product is 24 hours. In the defrosting stage, high noise is a phenom- enon of genuine produc- tion; Adjust the foot to make the cabinet stable.
Condensation occurs on the glass door	The ambient tem- perature and humid- ity of the product are too high	The operating environ- ment of the product is 75°F/55RH. In case of excessive humidity, please wipe off the water stains on the surface with a rag
There is peculiar smell inside the product	 New products will smell like plastic; Check whether there are deterio- rated goods in the cabinet; The product has not been cleaned for a long time. 	 After the product is used for a period of time, the smell will disappear naturally; Clean up spoiled food in time; Clean the product regularly.

SAFETY DEVICES

WARNING

It is absolutely forbidden for the user to

tamper with safety devices. Before using the refrigerated case check that mechanical safety covers are properly in place. Any tampering shall render the warranty null and void and exonerate Hillphoenix from any liability with regard to users of the refrigerated case.

Only maintenance personnel may carry out maintenance tasks involving safety devices. These tasks are listed below.

SAFETY DEVICE	SCOPE OF	ACTION
Incorporated over- pressure cut-out	On incorporated condenser unit compressor	Cuts the electrical power of the compressor if the pressure of the refriger- ant rises above the safety limits.
Fixed cover on elec- trical control panel. Remove only with aid of tools	Electrical control panel	Prevents access to live parts. Electrical danger warning sign applied (see "DESCRIPTION OF DANGERS AND RISKS RESIDUAL)

DESCRIPTION OF RESIDUAL DANGERS AND RISK

Residual Dangers

Dangers that have not been reduced/eliminated with the safety measures adopted on the refrigerated case can nevertheless be reduced/eliminated as long as users apply proper managerial practices.

□ Ensure that all safety warning and labels are always in good condition; inspect them periodically and have them replaced whenever necessary.

 \Box Do not install any spare parts that are not identical to the originals or of equivalent performance.

□ Do not carry out any modifications or structural work without approval from Hillphoenix or a qualified field service technician.

 \Box Should the refrigerated case be dented, inspect the structure visually or have qualified personnel carry out an inspection.

After a long period of disuse have a qualified field service technician carry out an inspection of the case to check that it is in good condition and working properly.

Residual Risks

While the refrigerated case has been designed to ensure maximum safety, there nevertheless remain some residual risks. Hillphoenix has identified the main **dangers and residual risks for users and maintenance personnel** as follows in chart below:

SCHEDULED MAINTENANCE TABLE

DESCRIPTION OF RESIDUAL RISK	CAUSE	SAFETY MEASURES
Danger of falls in area surrounding the cabinet	Presence of: stairs, columns etc. and/or slippery floors and objects and/or work tools	Mark out the relevant zones and highlight them with warning signs and symbols (e.g. yellow/black striped marker tape on stairs etc.) that are visible during both routine use and maintenance.
Danger of objects accidentally falling	Haphazard storage of tools/objects.	Use tool boxes in work areas. Ensure personnel are trained.
Danger of injury to hands, arms, legs and head	During cleaning and maintenance there may be objects or parts of the cabinet protruding from the case itself (e.g. glass covers open during cleaning)	Mark out the work area with appropriate barriers. Always use the recommended personal safety devices.
Risk of refrigerating gas leaks	Accidental damage to pipes	Immediate shutdown of case operation. Disconnect electrical power supply. Contact a service technician.

REFRIGERANT

This piece of equipment uses an R-290 Refrigeration system. This equipment has been clearly marked on the serial tag the type of refrigerant that is being used. There is also a warning label stating that the unit contains R-290 refrigerant.

No smoking or open flames when servicing this equipment. If needed, use a Class B (CO2 or dry powder) type fire extinguisher.

Only an authorized service technician, certified in R-290 system should service this equipment.



SHOCK HAZARD

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

Use an R-290 approved fan for constant ventilation while working.

- If an R-290 approved fan is not available, make sure fan is at least 10' away from cabinet.
- Remove at least two panels from the base to allow air flow through the unit.
- Point the fan towards the bottom of the work area as R-290 is heavier than air.

The work area must be free from sources of ignition such as open flames and sparking electrical devices, like light switches. Keep a 10' perimeter around the case of clearance.

The propane gas used in the unit has no odor. The lack of smell does not indicate a lack of escaped gas.

Recommend posting a "Flammable Refrigerant" placard in the area prior to servicing.

MANIFOLD SET

An R-134a manifold set can be used for servicing this equipment.

REFRIGERANT RECOVERY

Follow all national and local regulations for R-290 refrigerant recovery.

LEAKING CHECKING AND REPAIR

Leak check an R-290 system the same way you would an R-134a or R-404a system with the following exceptions.

- 1. Do not use a Halide leak detector on an R-290 system.
- 2. Electronic leak detector must be designated specifically for combustible gas.

A quality combustible gas leak detector is mandatory for hydrocarbon service work. Leak detector should be placed near the bottom of the cabinet, as R-290 is heavier than air. When repairing a leak, it is recommended using oxygen free dry nitrogen with a trace gas not exceeding 200PSI.

When accessing an R-290 system, proper charge is to be weighed into the system and the system is to be leak checked afterwards.

The R-290 equipment must have red process tubes and other devices through which the refrigerant is serviced, such as any service port. This color marking must remain on the equipment. If marking is removed, it must be replaced and extended at least 2.5 centimeters (1") from the compressor.

CAUTION

Component parts shall be replaced with like components. Service work shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

CHARGING

Follow the charge amount specified on the data tag. It is recommended to use the shortest hoses possible to prevent undercharging.

- Component parts shall be replaced with like components. Service work shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.
- Ensure the system is sealed and leak checked
- Evacuate system to a minimum 500 microns
- Weigh in correct charge
- Leak check the system again
- Bleed the refrigerant from the high side hose to the low side hose
- Disconnect the hoses
- Remove line taps
- Be sure that you have proper ventilation

DANGER

FLAMMABLE

DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



CAUTION

It is highly recommended that a technician servicing a case with HC refrigerant is aware of safety considerations and maintenance procedures on how to safely handle flammable refrigerants.


a - DOVER company

Contact the Service Parts Department at:

1-844-HPX-PART (1-844-479-7278) or dfr-caseclaims@doverfoodretail.com (warranty) dfr-orderparts@doverfoodretail.com (non-warranty)

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

*Data tag is located on the left end rear exterior panel of the case.

If the parts are to be returned for credit, contact the Parts Department. Do not send parts without authorization.

A1	Piping Diagram
A2	Wiring Diagram
B1-B3	Dixell Operating Instructions
C1	Sporlan Pressure-Temperature Chart (R290)
D1-D2	Parts List
E1-E29	Exploded Parts List

A1: PIPING DIAGRAM



A2: WIRING DIAGRAM



B1: DIXELL OPERATING INSTRUCTIONS

Dixell

Installing and operating instructions

EMERSO

DIGITAL CONTROLLER WITH DEFROST AND

FANS MANAGEMENT

XR06CX

- General warnings ... General description Regulation ... Defrost . Fans Front panel commands Parameters. Digital inputs (ONLY XR03CX) .. Installation and mounting 10 Electrical connections How to use the hot key 12 Alarm signalling. Technical data 13
- 14 15 Connections . Default setting values

1

GENERAL WARNINGS

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device
- Check the application limits before proceeding.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance. Fit the probe where it is not accessible by the End User. The instrument must not be opened
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.r.l." (see address) with a detailed description of the fault. Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful

GENERAL DESCRIPTION 2

The XR06CX, format 32 x 74 x 60 mm, is microprocessor based controller, suitable for applications on medium or low temperature ventilated refrigerating units. It has three relay outputs to control compressor, fan, and defrost which can be either electrical or reverse cycle (hot gas). The device is also provided with 2 NTC probe inputs, the first one for temperature control and the second one to be located onto the evaporator, to control the defrost termination temperature and to managed the fan and it's provided with a configurable digital input. With the HOTKEY it's possible to program the instrument in a quick and easy way

3 REGULATION



Tempo In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters "Cy" and "Cn".

4 DEFROST

- Two defrost modes are available through the "td" parameter
- td=EL → defrost through electrical heater (compressor OFF)
- td=in → hot gas defrost (compressor ON).

Other parameters are used to control the interval between defrost cycles (id)), its maximum length (Md) and two defrost modes: timed or controlled by the evaporator's probe. At the end of defrost dripping time is started, its length is set in the dt parameter. With dt=0 the dripping time is disabled.

5 FANS

- With FC parameter it can be selected the fans functioning:
- FC=cn → will switch ON and OFF with the compressor and not run during defrost
- FC=on → fans will run even if the compressor is off, and not run during defrost

After defrost, there is a timed fan delay allowing for drip time, set by means of the "Fd" parameter.

- FC=cy → fans will switch ON and OFF with the compressor and run during defrost
- FC=oY → fans will run continuously also during defrost.

An additional parameter "FS" provides the setting of temperature, detected by the evaporator probe, above which the fans are always OFF. This is used to make sure circulation of air only if his temperature is lower than set in "FS"

FANS AND DIGITAL INPUT 5.1

When the digital input is configured as door switch iF=do, fans and compressor status depends on the dC parameter value:

- dC=no → normal regulation;
- dC=Fn → fans OFF
- dC=cP → compressor OFF; dC=Fc → compressor and fans OFF

When rd=y, the regulation restart with door open alarm.

FRONT PANEL COMMANDS



To display target set point, in programming mode it selects a parameter or confirm an operation

To start a manual defrost

In programming mode it browses the parameter codes or increases the displayed value In programming mode it browses the parameter codes or decreases the displayed value

KEYS COMBINATION

To lock or unlock the keyboard



To enter in programming mode

To return to room temperature display

LED	MODE	SIGNIFICATO
L.	On	Compressor enabled
<u>भ</u> र्भ	Flashing	Anti short cycle delay enabled (AC parameter)
Å	On	Defrost in progress
4,4,4	Flashing	Dripping in progress
ł	On	Fans output enabled
7	Flashing	Fans delay after defrost
Ĉ	On	Measurement unit
L	Flashing	Programming mode
°F	On	Measurement unit
-	Flashing	Programming mode
61		

6.1 HOW TO SEE THE SET POINT

- Push and immediately release the **SET** key, the set point will be showed; Push and immediately release the **SET** key or wait about 5s to return to normal visualisation. 2.

6.2 HOW TO CHANGE THE SETPOINT

- Push the SET key for more than 2 seconds to change the Set point value;
- The value of the set point will be displayed and the "°C" or "°F" LED starts blinking: 2
- 3. To change the Set value push the A or V arrows 4
- To memorise the new set point value push the SET key again or wait 10s.

6.3 HOW TO START A MANUAL DEFROST

Push the DEF they for more than 2 seconds and a manual defrost will start

HOW TO CHANGE A PARAMETER VALUE 6.4

To change the parameter's value operate as follows

- Enter the Programming mode by pressing the SET+ v keys for 3s ("°C" or "°F" LED starts 1. blinking)
- Select the required parameter. Press the "SET" key to display its value
- 3 Use △ or 🗢 to change its value.
- Press "SET" to store the new value and move to the following parameter.
- To exit: Press SET+ or wait 15s without pressing a key.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire

HIDDEN MENU 6.5

Tempo

The hidden menu includes all the parameters of the instrument.

- HOW TO ENTER THE HIDDEN MENU
- 1. Enter the Programming mode by pressing the SET+ マ keys for 3s ("°C" or "°F" LED starts blinking).
- 2. Released the keys, then push again the SET+ v keys for more than 7s. The L2 label will be displayed immediately followed from the Hy parameter. NOW YOU ARE IN THE HIDDEN MENU.
- Select the required parameter. Press the "SET" key to display its value 4.
- 5. Use \bigtriangleup or \bigtriangledown to change its value.
- 6 Press "SET" to store the new value and move to the following parameter.
- To exit: Press SET+ or wait 15s without pressing a key.

NOTE1: if there aren't any parameter in L1, after 3s the "nP" message is displayed. Keep the keys pushed till the L2 message is displayed.

NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire. HOW TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.

Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing SET+ \checkmark . In HIDDEN MENU when a parameter is present in First Level the decimal point is on

6.6 TO LOCK THE KEYBOARD

- Keep pressed for more than 3s the △ and マ keys.
- The "OF" message will be displayed and the keyboard will be locked. If a key is pressed more than 3s the "OF" message will be displayed. 2

SET

V_{AUX}

B2: DIXELL OPERATING INSTRUCTIONS

Installing and operating instructions

EMERSO

Dixell TO UNLOCK THE KEYBOARD 67

Keep pressed together for more than 3s the ♠ and ♥ keys till the "on" message will be displayed

7 PARAMETERS

REGULATION

- Differential: (0,1°C ÷ 25°C / 1°F ÷ 45°F) Intervention differential for set point. Compressor Cut Hy IN is SET POINT + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point
- Minimum SET POINT: (-55°C+SET/-67°F+SET): Sets the minimum value for the set point... Maximum SET POINT: (SET+99°C/ SET+99°F). Set the maximum value for set point.
- US
- First probe calibration: (-9.9÷9.9°C / -17°F ÷ 17°F) allows to adjust possible offset of the first ot nrohe
- P2 Evaporator probe presence: n= not present; y= the defrost stops by temperature. Second probe calibration: (-9.9÷9.9°C / -17°F ÷ 17°F) allows to adjust possible offset of the
- οE second probe.
- Outputs activation delay at start up: (0+99min) This function is enabled at the initial start up of od the instrument and inhibits any output activation for the period of time set in the parameter. **Anti-short cycle delay**: (0+50 min) minimum interval between the compressor stop and the AC
- following restart Compressor ON time with faulty probe: (0+99 min) time during which the compressor is active Cy
- in case of faulty thermostat probe. With Cy=0 compressor is always OFF. Cn Compressor OFF time with faulty probe: (0÷99 min) time during which the compressor is OFF
- in case of faulty thermostat probe. With Cn=0 compressor is always active

DISPLAY

- Measurement unit: (°C÷°F) °C =Celsius; °F =Fahrenheit. WARNING: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, oE, o1, AU, AL have to be checked and modified if necessary.
- Resolution (only for °C):(dE + in) dE= decimal between -9.9 and 9.9°C; in= integer Default display: (P1 + P2) P1= thermostat probe; P2= evaporator probe. SP=Set point (only Ld
- XR04CX) dy Display delay: (0+15 min.) when the temperature increases, the display is updated of 1 °C/1°F
- after this time.

DEFROST

- Defrost type: (EL in) EL= electrical heater, compressor OFF; in= hot gas, compressor ON; td **Defrost termination temperature:** (-55÷50°C / -67÷99°F) if **P2=Y** it sets the temperature dE
- measured by the evaporator probe, which causes the end of defrost. id Interval between defrost cycles: (0+99 minutes) Determines the time interval between the beginning of two defrost cycles
- Maximum length for defrost: (0÷99 min. with 0 no defrost) when P2=n, (not evaporator probe: timed defrost) it sets the defrost duration, when P2 = y (defrost end based on temperature) it sets Md the maximum length for defrost.
- Start defrost delay: (0+99min) This is useful when different defrost start times are necessary to Ьb avoid overloading the plant.
- Display during defrost: (rt / it / SP / dF) rt= real temperature; it= start defrost temperature; SP= SET-POINT; dF= label dF. dF
- Drip time: (0÷99 min) time interval between reaching defrost termination temperature and the restoring of the control's normal operation. This time allows the evaporator to eliminate water drops that might have formed due to defrost.
- dP Defrost at power -on: (y+n) y= at power on defrost starts; n= defrost doesn't start at power-on

FANS

- Fans operating mode: (cn, on, cY, oY) cn= in runs with the compressor, OFF during defrost; FC on= continuous mode, OFF during defrost;; cY= runs with the compressor, ON during defrost; oY= continuous mode. ON during defrost.
- Fans delay after defrost: (0+99 min) Interval between end of defrost and evaporator fans start. FS Fans stop temperature: (-55÷50°C / -67°F ÷ 99°F) setting of temperature, detected by evaporator probe, above which fans are always OFF.

ALARMS

- AU Maximum temperature alarm: (AL+99°C/99°F) when this temperature is reached the alarm is enabled, after the "Ad" delay time.
- Minimum temperature alarm: (-55÷AU°C /-67÷AU°F) when this temperature is reached the AL alarm is enabled, after the "Ad" delay time
- Temperature alarm delay: (0+99 min) time interval between the detection of an alarm condition Ad and alarm signalling.
- Exclusion of temperature alarm at startup: (0+99 min) time interval between the detection of dA the temperature alarm condition after instrument power on and alarm signalling.

DIGITAL INPUT

- iP Digital input polarity: (oP ÷ cL) oP= activated by closing the contact; cL= activated by opening the contact;
- Digital input configuration: (EA/bA/do/dF/Au/Hc) EA= external alarm: "EA" message is iF displayed; bA= serious alarm "CA" message is displayed; do= door switch function; dF= defrost activation; Au =not used; Hc= inversion of the kind of action; Digital input delay: (0+99 min) with iF=EA or bA delay between the detection of the external
- di alarm condition and its signalling. . With iF=do it represents the delay to activate the door open alarm
- dC Compressor and fan status when open door: (no/Fn/cP/Fc): no= normal; Fn = Fans OFF; cP =Compressor OFF; Fc = Compressor and fans OFF;
- Regulation with door open: (n+y) n = no regulation if door is opened; Y= when di is elapsed rd regulation restarts even if door open alarm is present;

OTHER

Thermostat probe display (read only) d1

- Evaporator probe display (read only)
- Pt Parameter code table rL Software release

DIGITAL INPUTS (ONLY XR03CX) 8

The free voltage digital input is programmable in different configurations by the "i1F" parameter.

8.1 DOOR SWITCH (IF=DO)

It signals the door status and the corresponding relay output status through the "dC" parameter: \mathbf{no} normal (any change); Fn = Fan OFF; CP = Compressor OFF; FC = Compressor and fan OFF. Since the door is opened, after the delay time set through parameter "di", the door alarm is enabled, The dorp shows the message "dA" and the regulation restarts if $\mathbf{d} = \mathbf{y}$. The dorp attent so as a so as the external digital input is disabled again. With the door open, the high and low temperature atarms are disabled.

EXTERNAL ALARM (IF=EA) 8.2

As soon as the digital input is activated the unit will wait for "di" time delay before signalling the "EA" alarm message. The outputs status don't change. The alarm stops just after the digital input is de-

SERIOUS ALARM (IF=BA) 8.3

When the digital input is activated, the unit will wait for "di" delay before signalling the "CA" alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is deactivated.

84

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the "Md" safety time is expired.

INVERSION OF THE KIND OF ACTION: HEATING - COOLING (IF=HC) 8.5

This function allows to invert the regulation of the controller: from cooling to heating and viceversa

INSTALLATION AND MOUNTING



Instrument XR06CX shall be mounted on vertical panel, in a 29x71 mm hole, and fixed using the special bracket supplied. The temperature range allowed for correct operation is 0+60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.

ELECTRICAL CONNECTIONS 10

The instrument is provided with screw terminal block to connect cables with a cross section up to 2.5 mm². Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.

10.1 PROBES

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

HOW TO USE THE HOT KEY 11

HOW TO PROGRAM THE HOT KEY FROM THE INSTRUMENT (UPLOAD) 11.1

- Program one controller with the front keypad
- When the controller is ON, insert the "Hot key" and push A key; the "uP" message appears 2. followed a by flashing "Ed"
- Push "SET" key and the "Ed" will stop flashing. Turn OFF the instrument remove the "Hot Key", then turn it ON again.

NOTE: the "Er" message is displayed for failed programming. In this case push again o key if you want to restart the upload again or remove the "Hot key" to abort the operation.

11.2 HOW TO PROGRAM AN INSTRUMENT USING HOT KEY (DOWNLOAD)

Turn OFF the instrument

- Insert a programmed "Hot Key" into the 5 PIN receptacle and then turn the Controller ON. 2 Automatically the parameter list of the "Hot Key" is downloaded into the Controller memory, the 3.
- "do" message is blinking followed a by flashing "Ed". After 10 seconds the instrument will restart working with the new parameters.
- Remove the "Hot Key".

NOTE: the "Er" message is displayed for failed programming. In this case push again o key if you want to restart the upload again or remove the "Hot key" to abort the operation

12 ALARM SIGNALLING

Mess.	Cause	Outputs
"P1"	Room probe failure	Compressor output according to "Cy" e "Cn"
"P2"	Evaporator probe failure	Defrost end is timed
"HA"	Maximum temperature alarm	Outputs unchanged
"LA"	Minimum temperature alarm	Outputs unchanged
"EA"	External alarm	Outputs unchanged
"CA"	Serious external alarm	All outputs OFF
"dA"	Door Open	Compressor and fans restarts

Probe alarms P1" and "P2" start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the

activated

START DEFROST (IF=DF)

B3: DIXELL OPERATING INSTRUCTIONS

Di	xell	Installing a	nd operating	j instr	uctions
	emperature alarms "HA" and "LA" automatical	y stop as soon as the temper	ature returns to	Ld	Default Display
normal va Alarms "I	aues. EA" and "CA" (with iF=bL) recover as soon as	the digital input is disabled.		dy	Display delay
13]	TECHNICAL DATA			DEFRO	ST
	self extinguishing ABS.			td	Defrost type
	ntal 32x74 mm; depth 60mm; g: panel mounting in a 71x29mm panel cut-out			dE	Defrost termination t
Protectio	n: IP20; Frontal protection: IP65			id	Interval between de
Power su	ions: Screw terminal block $\leq 2,5 \text{ mm}^2$ wiring. upply: according to the model 230Vac $\pm 10\%$, 5	0/60Hz 110Vac ±10%, 50/6	0Hz	Md	Maximum length for
	osorption: 3.5VA max 2 digits, red LED, 14,2 mm high; Inputs: Up to	2 NTC.		dd	Start defrost delay
Digital in	put: free voltage contact tputs: compressor SPST 8(3) A, 250Vac; SP		50\/ac	dF	Display during defro
itelay ou	defrost: SPDT 8(3) A, 250Vac		00 4 40	dt	Drip time
Data sto	fan: SPST 8(3) A, 250Vac or SPST 5(2 ring: on the non-volatile memory (EEPROM).) A		dP	Defrost at power-on
	ction: 1B; Pollution degree: 2;Software clas pulsive voltage: 2500V; Overvoltage Catego			FANS	
Operatin	g temperature: 0÷60 °C;Storage temperature			FC	Fans operating mod
Neasurir	humidity: 20÷85% (no condensing) ng and regulation range: NTC -40÷110°C;			Fd	Fans delay after def
Resoluti	on: 0,1 °C or 1°C or 1 °F (selectable); Accurate	cy (ambient temp. 25°C): ±0,	1 °C ±1 digit	FS	Fans stop temperate
14 (CONNECTIONS			ALARM	IS
14.1 X	R06CX – 20+8+5A OR 16+8+5A – 110V	AC OR 230VAC		AU	Maximum temperatu
		IO	E - L,	AL	Minimum temperatu
			₽ ₽ ₽	Ad	Temperature alarm
	FL 16FLA(96LRA)			dA	Exclusion of temp
	_ 20(8)A 250V	9 10 11			startup
Max 20A				iP	Digital input polarity
				iF	
	1 2 3 4 5 6 7	8			Digital input configur
4	ine 🛠 Supply Line 🕅	Hot Key		di	Digital input delay Compressor and far
L	ine Supply Line 🕅 Fan 230V~ 50-60Hz De	f N.C.		dC	door
OTE. T	he commence relation 20/8\A at 16/6\A daman	dina an tha madal		rd	Regulation with door
	he compressor relay is 20(8)A or 16(6)A depen onnect the 120Vac power supply to 4-5	uling on the model.		OTHER	1
4.2 X	R06CX 8+8+8A 110VAC OR 230VA	C		d1 d2	Thermostat probe di
				Pt	Evaporator probe dis Parameter code table
			Γ λ	rL	Firmware release
	8(3)A 8(7 ••••	•		
	DEFAULT SETTING VALUES				
LABEL	DESCRIPTION	RANGE	DEFAULT		
REGUL	-				
Ну	Differential	0.1 ÷ 25°C/1 ÷ 45°F	2.0°C / 4 °F -55 °C /-		
LS	Minimum Set Point	-55°C+SET/-67°F+SET	55°F		
US	Maximum Set Point	SET÷99°C/ SET÷99°F	99 °C / 99°F		
ot	First probe calibration	-9.9÷9.9°C/-17÷17°F	0.0		
P2	Second probe presence	n – Y	У		
οE	Second probe calibration	-9.9÷9.9°C/-17÷17°F	0.0		
od	Outputs activation delay at start up	0 ÷ 99 min	0		
AC	Anti-short cycle delay	0 ÷ 50 min	1		
Су	Compressor ON time faulty probe	0 ÷ 99 min	15		
Cn	Compressor OFF time faulty probe	0 ÷ 99 min	30		

0 ÷ 99 min

°C - °F

dE – in

Ld	Default Display	P1 - P2 - SP	P1
dy	Display delay	0 ÷ 15 min	0
DEFRO	ST		
td	Defrost type	EL – in	EL
dE	Defrost termination temperature	-55÷50°C/-67÷99°F	8.0 °C / 46 °F
id	Interval between defrost cycles	0 ÷ 99 hours	6
Md	Maximum length for defrost	0 ÷ 99 min.	30
dd	Start defrost delay	0 ÷ 99 min.	0
dF	Display during defrost	rt – in – SP – dF	it
dt	Drip time	0 ÷ 99 min	0
dP	Defrost at power-on	y - n	n
FANS			
FC	Fans operating mode	cn - on - cY - oY	on
Fd	Fans delay after defrost	0 ÷ 99 min	10
FS	Fans stop temperature	-55÷50°C/-67÷99°F	2.0 °C / 36 °F
ALARM	S		
AU	Maximum temperature alarm	ALL÷99°C / ALL÷99°F	99 °C / 99 °F
AL	Minimum temperature alarm	-55°C÷ALU/- 67°F÷ALU	-55 °C / - 55 °F
Ad	Temperature alarm delay	0 ÷ 99 min	15
dA	Exclusion of temperature alarm at startup	0 ÷ 99 min	90
DIGITAL	INPUT		
iP	Digital input polarity	cL – oP	cL
iF	Digital input configuration	EA – bA – do – dF – Au – Hc	EA
di	Digital input delay	0 ÷ 99 min	5
dC	Compressor and fan status when open door	no /Fn / cP / Fc	FC
rd	Regulation with door open	n - Y	у
OTHER			
d1	Thermostat probe display	Read Only	
d2	Evaporator probe display	Read Only	
Pt	Parameter code table	Read Only	
rL	Firmware release	Read Only	

EMERS

Dixell



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Measurement units

Compressor OFF time faulty probe

Cn

CF

rE

DISPLAY

30

°C / °F

dE

C1: SPORLAN PRESSURE-TEMPERATURE CHART

SPORLAN Parker

TEMPERATURE - PRESSURE CHART NATURAL REFRIGERANTS

At Sea Level, psig									2	/ww.sporla	www.sporlanonline.com	E										
TEMP.		REFRIGER	REFRIGERANT TYPE (SAFETY CLASS) REFRIGERANT (SPORLAN LETTER CODE)	(SAFETY CLAS	ss) ER CODE)		TEMP.	o	REFF	REFRIGERANT TYPE (SAFETY CLASS) REFRIGERANT (SPORLAN LETTER CODE)	NT TYPE (SAF (SPORLAN	ETY CLASS)	CODE)		TEMP.		REFRIGE	REFRIGERANT TYPE (SAFETY CLASS) REFRIGERANT (SPORLAN LETTER CODE)	PE (SAFETY CL) DRLAN LETT	.ass) TER CODE)		
° °	нс (A3) 1 70(K)	нс (А3) 290 (0)	нс (АЗ) 441А	HC (A3) 600a(U)	AMMONIA (B2L) 717(A)	co2 (A1) 744	*	°C HC (A3) 170(K)	M HC (A3) K) 290 (0)		нс (А3) HC 441A 60	HC (A3) AMN 600a(U) 7	AMMONIA (B2L) 717(A)	coz (A1) 744	°C °C	нс (A3) 170(K)	нс (А3) 290 (0)	нс (A3) 441А	нс (A3) 600a(U)	AMMONIA (B2L) 717(A)) CO2 (A1) 744	
-50 -45.6	78.9	4.3	21.1	23.6	14.3	103.4	-	-12.2 239.7	-	-	5.8		23.8	345.7	60 15.6	480.9	93.0	6.77	23.5		733.1	-
-45 -42.8	88.1	0.9	19.7	22.6	11.7	116.6	Ŧ					0.0	24.7	351.5	62 16.7	493.2	96.3	80.6	24.9	96.9	753.2	
-40 -40.0	98.1	1.4	18.1	21.4	8.8	131.0	12 -1	-11.1 247.2			6.8	0.4	25.6	357.4	64 17.8	505.7	99.7	83.4	26.3	101.1	773.8	
-35 -37.2	108.7	3.4	16.3	20.2	5.4	146.5	13 -1	-10.6 251.1				0.7	26.5	363.4	65 18.3	512.1	101.4	84.7	27.0	103.2	784.2	
-30 -34.4	120.0	5.7	14.3	18.8	1.6	163.1	14 -1		9 35.4			1.0	27.5	369.5	66 18.9	518.5	103.1	86.2	27.7	105.3	794.8	
-29 -33.9	122.4	6.1	13.8	18.5	0.8	166.6	12	-9.4 258.8	_	_	8.2	1.4	28.4	375.6	68 20.0	531.4	106.6	89.0	29.1	109.7	816.2	_
-28 -33.3	124.7	6.6	13.4	18.1	0.0	170.1	16		_				29.4	381.8	70 21.1	544.7	110.2	91.9	30.6	114.2	838.1	
-27 -32.8	127.1	7.1	12.9	17.8	0.4	173.7	- 11	8.3 266.7	7 38.2	_	9.2	2.1	30.4	388.0	72 22.2	558.2	113.9	94.9	32.2	118.8	860.5	
-26 -32.2	129.6	7.6	12.5	17.5	0.8	177.3	-						31.4	394.3	74 23.3	571.9	117.6	97.9	33.7	123.5	883.3	
-25 -31.7	132.1	8.1	12.0	17.2	1.3	181.0	-	-7.2 274.8	_		_	_	32.4	400.7	75 23.9	578.9	119.5	99.5	34.5	125.9	894.9	
-24 -31.1	134.6	8.6	11.5	16.8	1.7	184.8	7			-	10.8		33.5	407.2		585.9	121.4	101.0	35.3	128.3	906.7	
-23 -30.6	137.1	9.1	11.0	16.5	22	188.5	י א	-6.1 283.0				3.5	34.6	413.8	78 25.6	600.2	125.4	104.2	37.0	133.3	930.5	-
-22 -30.0	139.7	9.6	10.5	16.2	2.6	192.4	- 2		+	+	+	+	35.7	420.4	80 <u>26.7</u>	614.8	129.3	107.4	38.7	138.4	954.9	Т
-21 -29.4	142.3	10.2	10.0	15.8	3.1	196.3	3		44.2		+	+	36.8	427.1	82 27.8		133.4	110.7	40.4	143.7	979.8	Т
C 0C 07-	144.9	11.2	0.0	10.4	3.0	7007	24 44	1.052 4.4			0.01		50.0	433.0	04 20.9		13/.0	114.1	42.2	143.1	4-COD1	Т
18 27 8	150.3	1	84	10.1	46	204.2	3 8						0.50	A47.6	86 20.0	660 5	1/1 8	117.5	1.24	15/ 6	1031.6	T
-17 -27.9	1530	12.4	70	14.1	5 1 2	212.4	3 5		+			5.0	41.4	454.6	88 31-1	676.4	146.1	120.0	45.0	160.3	*	1
-16 -267	155.7	13.0	23	13.0		216.5	3 8		49.6				42.6	461.7		*	150.5	124.5	47.8	166.1	*	T
-15 -26.1	158.5	13.6	6.7	13.5	6.9	220.8	3 g	-17 317.7					43.8	468.8	92 33.3	*	155.0	128.1	7.92	172.0	*	Т
-14 -25.6	161.4	14.9	61	13.1	0.2 G 7	225.0	3 8		+		+	7.9	45.0	476.1	00 20 00.0	*	150.6	131.8	517	178.1	*	T
12 25.0	16/3	14.6	0.1	19.1	1.0	0.022	र ह ह	322.3	01.0		17.0	2.1	40.0	4/0.1	94 04.4	*	151.0	121.0	59.7	1011	*	Т
10.02 01	167.1	15.4	04	12.1	78	122 8	5 8						40.5	400.8	30.0 06 35 6	*	16/13	135.5	53.7	181.4	*	T
-11 -23.9	170.0	16.1	43	11.8	8.4	238.2	3 8	0.6 336.1					48.9	498.3	98 36.7	*	169.1	139.3	55.8	190.8	*	1
-10 -23.3	173.0	16.7	3.7	11.4	9.0	242.7	æ	1.1 340.9	9 56.5			9.0	50.2	505.8	100 37.8	*	173.9	143.2	57.9	197.3	*	1
-9 -22.8	176.0	17.4	3.0	10.9	9.6	247.3	33						51.6	513.4	102 38.9	*	178.9	147.2	60.1	204.0	*	
-8 -22.2	179.0	18.0	2.4	10.4	10.3	251.9	36						52.9	521.2	104 40.0	*	183.9	151.2	62.3	210.9	*	
-7 -21.7	182.1	18.7	1.7	10.0	10.9	256.6	37 2				21.3 1	10.4	54.3	529.0	105 40.6	*	186.5	153.2	63.5	214.4	*	
-6 -21.1	185.2	19.4	1.0	9.5	11.5	261.3	89 89						55.7	536.9	106 41.1	*	189.1	155.3	64.6	217.9	*	
-5 -20.6	188.3	20.1	0.3	9.0	12.2	266.1	39 39	3.9 365.2	2 62.7		22.7	11.4	57.2	544.8	108 42.2	*	194.3	159.5	6.99	225.1	*	
-4 -20.0	191.5	20.8	0.2	8.5	12.9	271.0	40				23.4 1	11.9	58.6	552.9	110 43.3	*	199.6	163.7	69.3	232.5	*	
-3 -19.4	194.7	21.5	0.6	8.0	13.6	275.9	41					12.4	60.1	561.0	112 44.4	*	205.1	168.0	71.7	240.0	*	
-2 -18.9	197.9	22.2	0.9	7.5	14.3	280.9	42		_			-	61.6	569.3	114 45.6	*	210.6	172.4	74.2	247.7	*	
	201.2	22.9	1.3	7.0	15.0	285.9	43 43		5 67.9			_	63.1	577.6	115 46.1	*	213.4	174.6	75.5	251.6	*	_
0 -17.8	204.5	23.7	1.7	6.4	15.7	291.0	44 6				26.4	14.0	64.7	586.0	120 48.9	*	227.8	186.0	82.0	271.9	*	
	207.9	24.5	2.1	5.9	16.4	296.2	45		_	_	_	14.5	66.3	594.5	125 51.7	*	242.9	197.9	88.8	293.3	*	
2 -16.7	211.3	25.2	2.5	5.3	17.2	301.5	4e	7.8 401.2	2 72.0	_		15.0	67.9	603.1	130 54.4	*	258.7	210.3	95.9	315.8	*	Ţ
	214.7	26.0	2.9	4.8	18.0	306.8	48					6.2	71.1	620.5	135 57.2	*	275.1	223.1	103.5	339.6	*	T
	218.2	26.8	3.3	4.2	18.8	312.1	20		9 77.6	+	31.3	17.3	74.5	638.3	140 60.0	*	292.3	236.5	111.4	364.7	* •	Т
0-11- 0-11-0	771.1	9772	3.1	3.6	19.6	31 / 15	26	434.1		-	+	18.5	18.0	676.0	145 62.8	•	310.2	C:0CZ	119.6	391.0		-
	228.8	20.2	45	2.4	21.2	328.6	- + 5 E					20.3	83.4	684.5	155 68.3	*	348.4	279.9	137.4	447.8	*	1
8 -13.3	232.4	30.1	5.0	1.8	22.1	334.2						0.9	85.2	694.0	160 71.1	*	368.7	295.5	146.9	478.3	*	1
9 -12.8	236.0	30.9	5.4	1.2	22.9	339.9	- 28	4.4 468.9	9.68			22.2	89.0	713.3	165 73.9	*	389.9	311.6	156.8	510.2	*	
												_										
To determine Sul	bcooling for 4(To determine Subcooling for 400-Series blends, use Bubble Point in Gray.	use Bubble Point	t in Gray.						USE THIS	OR CODE									*Exce	*Exceeds critical temperature	ature
To determine Su ₁	perheat for 40	To determine Superheat for 400-Series blends, use Dew Point in Blue.	se Dew Point in	Blue.						TODOV	TO DOWNLOAD											
Pressure, psig (pounds per square inch guage), BOLD	inds per square i	nch guage), BOLD			P-H DIAGRAM BLENDS	LENDS	(ა	CHILLMASTER P-T APP	FER P-T	₫ЪР	S'forter	Your Think	y F	15						
vacuum, mng (mone	is or mercury), rial.	ICS.			Bubble Point		Refrig	Refrigeration Cycle			国際開始		Superheat?	hear?	161	Temperature	Ire					
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D1: PARTS LIST *CNZLA (R-290)



- A Price Tag Molding
- B Top Glass Door
- C Top Glass Door Handle
- D Outside Back
- E Compressor Compartment
- F Compressor Air Exhaust
- G End Kickplate
- H Compressor Air Exhaust
- I Light Switch (Green)
- J Main Power Switch (Red)
- K Condenser Air Intake
- L Dixell Controller
- M Front Kickplate
- N Cart Bumper
- 0 Front Exterior Panel/Die Board

Note: The visual side panel shown separate from the case is not removable and only shown in this manner for visibility of the components behind it. The side panel shown removed in the exploded rendering here is for the labeling of parts only.

D2: PARTS LIST *CNEZLA (R-290)



- A Price Tag Molding
- B Top Glass Door
- C Top Glass Door Handle
- D Right Glass (Reverse Side Left)
- E Outside Back
- **F** Compressor Compartment
- G Compressor Air Exhaust
- H End Kickplate
- I Compressor Air Exhaust
- J Light Switch (Green)
- K Main Power Switch (Red)
- L Condenser Air Intake
- M Dixell Controller
- N Front Kickplate
- 0 Cart Bumper
- 0 Front Exterior Panel/Die Board

E1: EXPLODED PARTS LIST (CNZLA-4)



E2: EXPLODED PARTS LIST (CNZLA-4)



E3: EXPLODED PARTS LIST (CNZLA-4)



E4: EXPLODED PARTS LIST (CNZLA-4)



E5: EXPLODED PARTS LIST (CNZLA-4)



E6: EXPLODED PARTS LIST (CNZLA-4)



E7: EXPLODED PARTS LIST (CNZLA-4)



E8: EXPLODED PARTS LIST (CNEZLA-6)



bly bly 物料编码 Part Number 3509001328 360000219 3509001329 3509001329 3509001329 3509000218 3509000218 3509000218
2-Right & Left Bar Assembly 承母 2-Right & Left Bar Assembly 原母 名奈 1 Right Glass 3 Right Bar Foaming Block 3 Right Bar Foaming Block 3 Right Bar Insulated Cotton 4 Right Bar 5 Aflex after 6 Aflex after 7 Right Bar 8 Foam for Left Bar 8 Foam for Left Bar 8 Aflex after

E9: EXPLODED PARTS LIST (CNEZLA-6)





E11: EXPLODED PARTS LIST (CNEZLA-6)



E12: EXPLODED PARTS LIST (CNEZLA-6)



E13: EXPLODED PARTS LIST (CNEZLA-6)



E14: EXPLODED PARTS LIST (CNEZLA-6)



E15: EXPLODED PARTS LIST (CNEZLA-6)



E16: EXPLODED PARTS LIST (CNZLA-7)



E17: EXPLODED PARTS LIST (CNZLA-7)







E19: EXPLODED PARTS LIST (CNZLA-7)



E20: EXPLODED PARTS LIST (CNZLA-7)



E21: EXPLODED PARTS LIST (CNZLA-7)



E22: EXPLODED PARTS LIST (CNZLA-7)



E23: EXPLODED PARTS LIST (CNZLA-8)



E24: EXPLODED PARTS LIST (CNZLA-8)



E25: EXPLODED PARTS LIST (CNZLA-8)



E26: EXPLODED PARTS LIST (CNZLA-8)



E27: EXPLODED PARTS LIST (CNZLA-8)



E28: EXPLODED PARTS LIST (CNZLA-8)



E29: EXPLODED PARTS LIST (CNZLA-8)





A DOVER COMPANY

Hill PHOENIX, Inc. Hereinafter Referred To As Manufacturer

LIMITED WARRANTY

GENERAL WARRANTY

Manufacturer's products are warranted to be free from defects in materials and workmanship under normal use and maintenance for fourteen months from date of shipment from manufacturer (the "Base Warranty Period"). In the event of a qualifying warranty claim, a new or rebuilt part to replace any defective part will be provided without charge. The replacement part is covered under this warranty for the remainder of the applicable Base Warranty Period. In order to be eligible for warranty coverage, customer must: (i) notify Manufacturer promptly upon discovery of a warrant defect, and (ii) comply with the warranty claim procedures provided by Manufacturer from time to time.

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

The warranty shall not apply:

- 1. To any unit or any part thereof which has been subject to accident, alteration, negligence, misuse or abuse, or which has not been operated in accordance with the manufacturer's recommendations, or in conditions outside of Manufacturer's specifications, 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. To products that are impaired or damaged due to improper installation.
- 4. When installation and startup forms are not properly completed or returned within two weeks after startup.
- 5. If the defective part is not returned to the Manufacturer.
- 6. To service, maintenance or wear and tear parts (such as lights, starters and ballasts)

MODIFICATIONS TO GENERAL WARRANTY

The following sets forth certain modifications to the General Warranty for specific products of Manufacturer:

DISPLAY CASE AND SPECIALTY PRODUCTS CLEARVOYANT® LED LIGHTING

The warranty period for Clearvoyant LED lighting components within the Clearvoyant lighting system is five years from date of shipment.

REMEDY LIMITATION/DAMAGES EXCLUSION

THE REMEDY OF REPAIR OR PROVISION OF A REPLACEMENT PART WITHOUT CHARGE SHALL BE THE EXCLUSIVE REMEDY FOR ANY WARRANTY CLAIM HEREUNDER. WITHOUT LIMITING THE FOREGOING, MANUFACTURER SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF PROFIT, LABOR COST, LOSS OF REFRIGERANT OR FOOD PRODUCTS.

EXCLUSIVE WARRANTY

THE FOREGOING WARRANTY IS THE EXCLUSIVE WARRANTY WITH RESPECT TO THE PRODUCTS. ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED. NO IMPLIED WARRANTY SHALL BE DEEMED CREATED BY COURSE OF DEALING OR USAGE OF TRADE. NO OTHER PERSON IS AUTHORIZED TO EXPAND OR CREATE ANY OBLIGATION GREATER THAN OR MORE EXPANSIVE THAN THE WARRANTY PROVIDED HEREIN.

Submit warranty claims to:

Hillphoenix Refrigeration & Power

Systems Division

2016 Gees Mill Road Conyers, GA 30013 Warranty / Service Phone: 1-833-280-5714

Hillphoenix Display Case Division

1925 Ruffin Mill Road Colonial Heights, VA 23834 Warranty / Service Phone: 1-833-280-5714

Hillphoenix Specialty Products Division

703 Franklin Street Keosauqua, IA 52565 Warranty / Service Phone: 1-833-280-5714

<u>Warning</u> <u>Maintenance & Case Care</u>

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.



a DOVER company

Tel: 804-526-4455

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