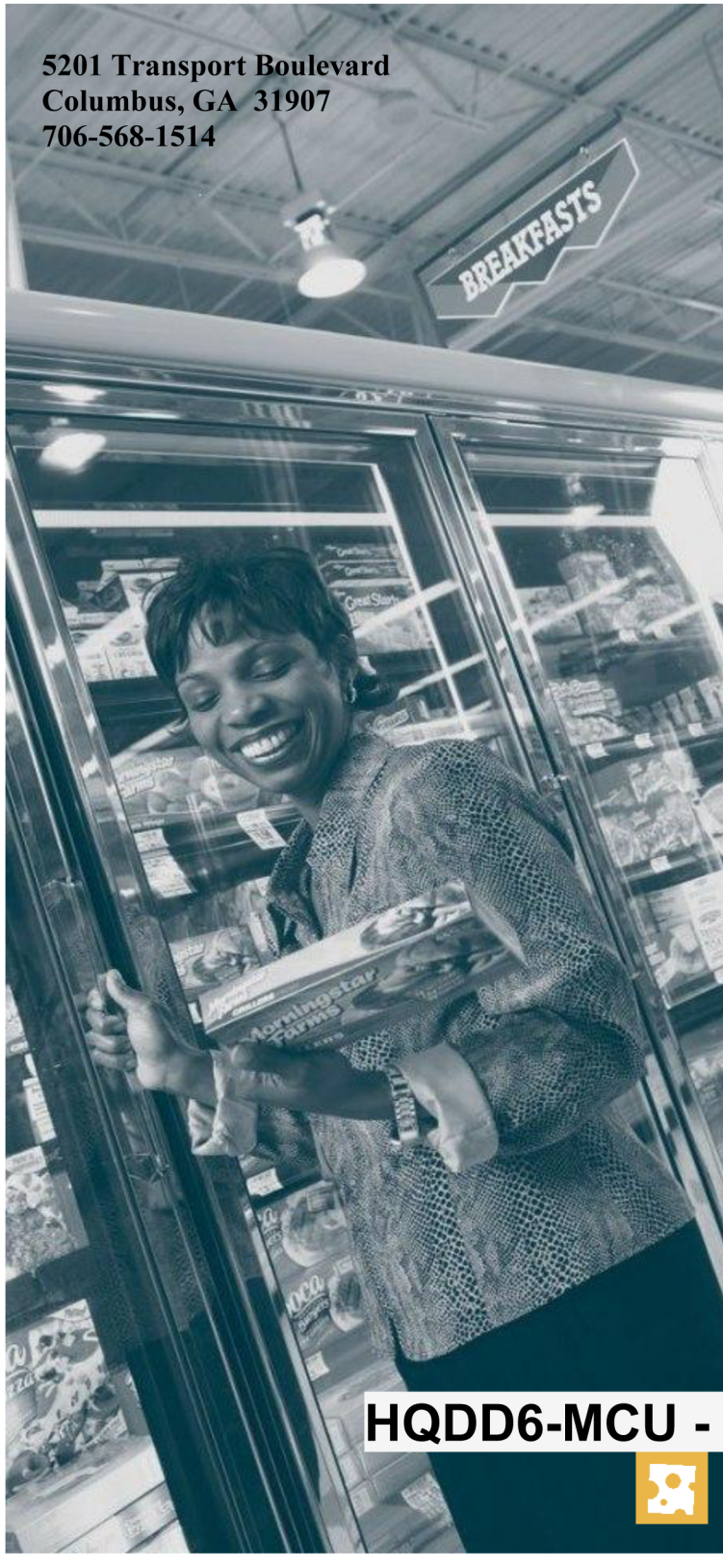
KYSOR/WARREN

Part Number: 31E11036
Date Revised: 2009-07-21



5201 Transport Boulevard
Columbus, GA 31907
706-568-1514

Installation & Operation Manual

HQDD6-MCU - Medium Temperature

HEATCRAFT Worldwide Refrigeration

KEEP IN STORE FOR FUTURE USE

Table of Contents

Introductions – General Information

This manual has been prepared for our customers and the personnel involved in setting up and maintaining our cases.

Icon Key	
	Caution
	Special Note
	Warning

The HQDD6 self-contained case offers you a medium temperature, multi-deck case with reach in door energy savings - 60% savings over comparable open multi-deck cases! Your multi-deck case with standard 48" length shelves - fits your current merchandise plans! The HQDD6 also offers you a clear 48" wide door opening with a constant door size on the 4', 8' and 12' foot cases. All of this without sacrificing the versatility of a standard multi-deck case for bakery, produce, cheese, deli items, dairy, drinks and ready to go meals.

These cases should be installed and operated according to the instructions contained in this manual to insure proper performance. They are designed for display of products in an air-conditioned store where temperature and humidity are maintained at a **maximum of 75° dry bulb temperatures and 55% relative humidity.**

Case Description

Standard Multi-Deck, Reach-in Case

The standard Reach-In Case will have the following features as default options with an additional option, a modular condensing unit:

- Top/Rear Piping (Pipe Line sized to the Case spec)
- Top Wiring
- Suction to liquid line heat exchanger
- Medium temp cases are off cycle defrost

Model	Description
HQDD6	Multi-Deck, Reach-In Medium Temp Merchandiser (Off-Cycle Defrost) Vertically Lighted Door

Receiving/Shipping Damage/Lost Items

All equipment should be examined for shipping damage before and during unloading. If there is any damage, the carrier should be notified immediately and an inspection requested. The delivery receipt must be noted that the equipment was received damaged. If damage is of a concealed nature, you must contact the carrier within three (3) days following delivery. The consignee for all damages must file a claim with the carrier.

Note: All claims for shortages must be within 10 days after receipt of shipment.

Refrigerant

The HQDD6 medium temperature case uses R404A refrigerant.

Modular Condensing Unit:

The selected Condensing Unit will have following default features

- Electrical rating of 208-230V/60Hz/1Ph
- Refrigerant R404A
- Manual Reset High Pressure Safety Cut-Out
- Receiver and Suction Valve
- All Refrigeration Lines Sweat Connections
- Each Condensing Unit designed to operate one Case
- Condensing units are UL Listed

Refrigerant Charge

MODEL	4 FT	8 FT	12 FT
HQDD6	3.50 lbs.	5.08 lbs.	6.00 lbs.

Condensate Pump

The condensate pump is a compact top mount suction head pump. It has the following features:

- Electrical rating of 115 VAC / 60 Hz / 1 Ph 0.44 Amps @ 20 psi
- Capacity: 1.4 GPM @ 11’ of head
- Pump is UL Listed
- Pump operates during defrost only

Case Controller

A Paragon Case Controller is provided to control the compressor, fan, and case defrosts.

• **Temperature Control** - When the case reaches the desired discharge air temperature, the controller shuts off the compressor. When the discharge air temperature increases above the cut-in set point, the compressor turns on.

• **Compressor Control** – Compressor operating parameters such as minimum off time, minimum run time and start-up time delay are field adjustable.

PARAGON
Commercial Refrigeration Controls

Part No. 75A10280
June 27, 2005

ERC 2 – Electronic Refrigeration Control

The **ERC 2 Electronic Refrigeration Control** is a microprocessor-based electronic controller designed to control both the temperature and the defrost functions of a commercial refrigeration unit. It can be powered by 120, 208 or 240 VAC (50 or 60Hz). The control comes with four relay outputs: compressor, defrost, evaporator fan and alarm.

The ERC 2 includes a digital display module that provides readout of the temperature, time and built-in diagnostics. The display module can be mounted locally or remotely from the unit and it contains a touch keypad for simple programming. For defrost control, it uses a real time clock.

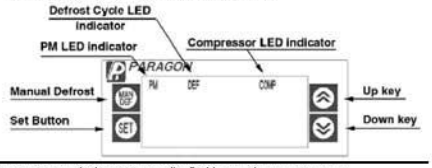
This control is NSF certified and it can be applied to many different commercial refrigeration applications like reach-ins, walk-ins, refrigerated cases or other different products where accurate control of refrigerated space and defrost cycles are required.

Programming Paragon Case Controller

PARAGON ERC-2 SET-UP INSTRUCTION STICKER HQDD6-(8,12)M

Part No.: 31C11495

1. Remove cover from Paragon display so display LED is visible as shown:



2. To change time-of-day and setpoint temperature (First Level) follow these steps:
   - STEP 1. Press and hold SET for 5 seconds. The display will show CLoC. Press SET again to change the time-of-day.
   - STEP 2. Press UP or DOWN until the correct time-of-day is displayed. Press SET to accept the new time.
   - STEP 3. Press DOWN to go to the next parameter – Setpoint Temperature – SEt (cut out).
   - STEP 4. Press SET to change the setpoint temperature.
   - STEP 5. Press UP or DOWN to go to the desired setpoint. The range is –40 to 60°F or –40 to 16°C.
   - STEP 6. Press SET to accept the change.
   - STEP 7. Press DOWN to exit the first level of programming.

Note 1: During programming, if no button is pushed during 30 seconds, the control will go back to the normal operating mode. This is valid for both programming levels.

Note 2: When changing time, press and hold the MAN DEF button for 3 seconds to change the AM/PM mode.

3. To change the other parameters (Second Level) follow these steps:
   - STEP 1. Press and hold SET and DOWN for 10 seconds. The display will show dSPL. Press SET to change parameter.
   - STEP 2. Press UP or DOWN to change options, time or temperature for current parameter. Press SET to accept new value.
   - STEP 3. Press Down to go to next parameter. Then go back to step 2. After last parameter is displayed (ALHi), the display will return to normal operating condition

Set the following parameters as described:

Set Clock to local time	**SEt** = 33	**CLHr** = 12HR	**dSPL** =rSP°	**dSP** = F	**dFtP** = Elec	**EFAN** = Yes	**CFAN** = On	**dFin** = Tday	**CoFF** = 0	**Con** = 0	**Alrd** = 0
CPrn = 0	**nodF** = 1	**dEF1** = 24*	**dEFd** = 40 minutes	**Fand** = 0	**Pudn** = 0	**driP** = 0	**diF** = 3	**tDEF** = n/a	**dEF** = 45	**FAn** = n/a	**ALLo** = 27
ALHi = 60										

*Set defrost intervals at every 24 hours

For further detail, see the Paragon manual included.

Condensate Evaporator Pan Heater

The Condensate Evaporator Pan Heater has the following features:

- Electrical rating of 120V/60Hz/1Ph, 8.3A, 1000 W
- Condensate dissipation rate: 8.5 Gallons per day
- 3 Gallon Evaporator Pan
- Evaporator Pan Heater is UL Listed

Buck & Boost Transformer (optional)

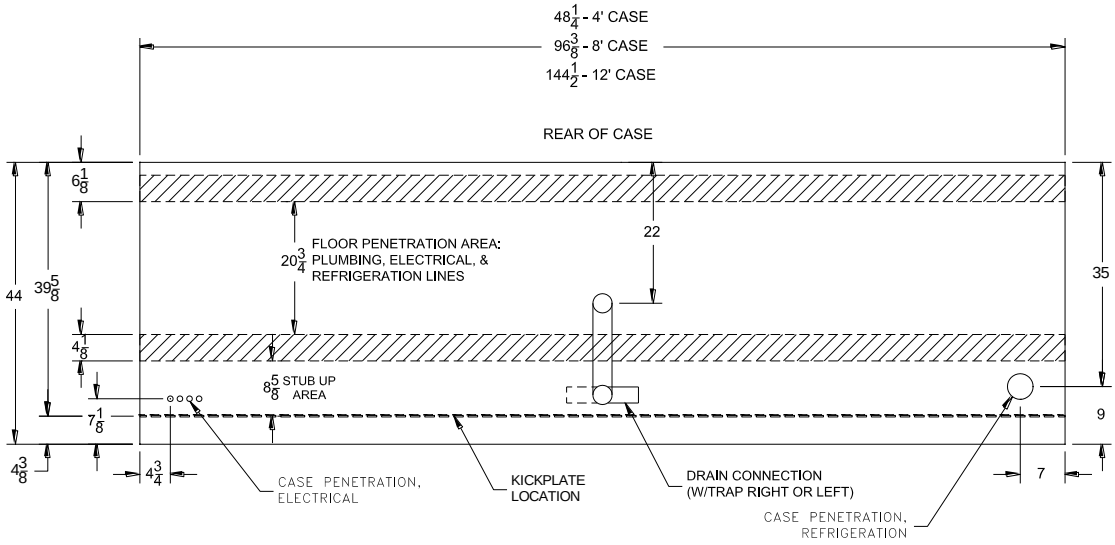
A 1.5 KVA Buck & Boost transformer is an available option. The primary and secondary of Buck & Boost transformer can be interconnected for use as an autotransformer to slightly step up or down voltages. When used as an autotransformer to slightly adjust voltage, the Buck & Boost Transformer can carry loads in excess of its nameplate rating.

Example: With the transformer wired to provide 208V output with 195V input, the load capacity of the transformer is 19.5KVA.

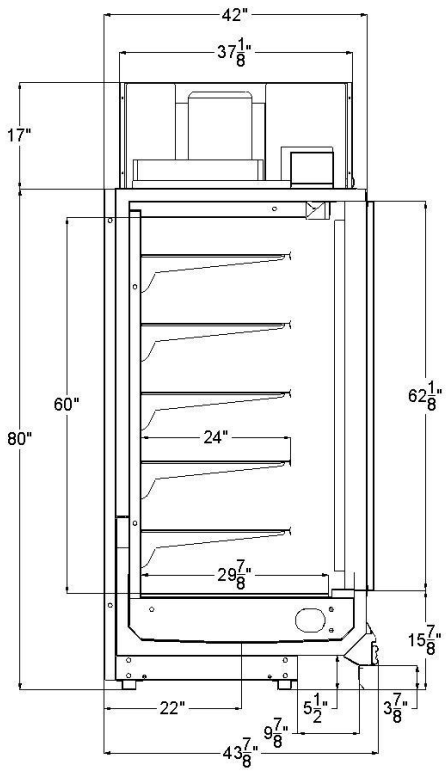
When the Buck & Boost transformer option is chosen, the transformer is factory wired to provide 208V output with 195V input. The transformer connections can be rewired in the field to provide alternative buck and boost percentages. Wiring instructions are provided on the transformer cover. Transformer is UL listed.

Plan View and Cross Section

HQDD6 – MCU Plan View



HQDD6 – MCU Cross Section



Case Data

HQDD6 – Med Temp – Eliminator Door with Modular Condensing Unit

208V/1/60 Circuit Data Amps	4'	8'	12'
Compressor RLA	4.2	5.7	5.7
Compressor LRA	16.8	24.1	24.1
Condenser Fan Motor	0.6	0.7	0.7
Minim. Circuit	6	8	8
Maxim. Overcurrent Protection	10	10	10
Horse Power	1/2	1/2	1/2

DEFROST CONTROLS			
Defrost	Per Day	Fail Safe	Termination
Off Cycle	1	40 min	45°F

BTUH Per FT of case with LED Lights	
ECM Fan	322

115/V/1/60 Circuit Data Amps	4'	8'	12'
Anti-Sweat Amps	0.64	1.27	1.82
ECM Fan Motors	0.25	0.5	0.75
LED Light Amps (Gelcore opt)	0.29	0.55	0.86
Condensate Pump Amps	0.44	0.44	0.44
Condensate Evaporator	8	8	8
Minim. Circuit Ampacity	15	15	15
Maxim. Overcurrent Protection	20	20	20
Refrigerant - R404A			

CAPACITIES	4'	8'	12'
Facing Area	20.1 ft^2	40.2 ft^2	60.3 ft^2
Cubic Capacity	50.3 ft^3	107.4 ft^3	161.1 ft^3

Evap Temp	Discharge Air Velocity (1 hr. after defrost)	Discharge Air Temp
+30°F	225 FPM	+34°F

Note: Temperature is measured in discharge air. Defrost frequency is at design conditions. Higher temperature or humidity may require more defrost and longer fail-safes. Maximum 75 ºF and 55% humidity continuously is recommended for the efficiency of your case. Refer to www.kysorwarren.com for other electrical data and information.

Case Installation

The display cases are installed individually.

Preparation (with modular condensing unit)

Prepare the installation area as follows:

1. Clean area where case is to be installed.
2. Verify installation area is at least 15 feet from any outside entrances or heating and cooling outlets.
3. Verify at least 2 feet distance between hot and cold cases.

Caution: To prevent condensation on the end panels of cases, a minimum of 6.0 inches between walls or other cases is required for airflow. If 6.0 inches is not possible, then the space between the cases must be completely filled and sealed or an updraft fan kit must be installed to provide air circulation through the space.

4. Ensure floor loading will support the case and the case contents.
5. Ensure proper AC power is available. Refer to case AC input requirements located in the electrical connections section of this manual.
6. Ensure that R404A Refrigerant is available at the installation site.

Installation

The following instructions are provided for unpacking, moving, loading, and lifting the case prior to installation.

Note: READ ALL INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION

Unpacking

1. Remove all shipping tape from lamps and ensure that all lamp ends are snapped in place.

Caution: Use caution when removing the strapping in the following procedure, as the shelves are very heavy and could fall causing personal injury or equipment damage.

2. Ensure the evaporator cover is installed correctly and the deck pans are installed.
3. Move the case into position.

 Caution: Be careful not to damage the factory-installed end while moving the case. Use the case lift points on the case to move it to the proper location.

Installing Assembly

1. Ensure all preparation for installation, as outlined in the above paragraphs, have been fully complied with and are complete.

2. Allow a minimum of 6 inches between the rear of the case and the store walls and/or other cases. This space reduces the possibility of condensation problems. It may be necessary to provide forced air ventilation in some installations.

3. All cases must be located on a firmly based floor and leveled within plus or minus 1/16 in.

4. Use shims provided to support and level the entire length of your case(s). All rails of the case must be properly shimmed and in contact with the floor. Cases with shims on the ends must also have shims in the middle and no more than 4 ft. apart. All legs of the case must be properly adjusted and in contact with the floor.

5. If multiple cases are to be installed, refer to the floor plan and install the first case in the line up by snapping a chalk line where the front and rear of the cases are to be located.

6. Continue the chalk line if multiple cases are to be installed. The first case is typically the case that is at the highest area on the floor.

7. Connect water drain line. Reference waste outlet (drip pipe) description and location procedure later in this chapter.

8. Connect input AC power (SEE Case Data Section).

9. Set condensing unit on top of case at location supplied. Pipe into case using the sight glass and liquid line filter drier supplied. Follow normal procedures for brazing; pressure testing, and evacuation of the system. Once system has been evacuated charge system, program controller and check for proper operation.

10. Remove shipping tape on fluorescent lamps and remove all other shipping material

CASES MUST BE LEVELED FROM FRONT TO BACK END-TO-END AND SUPPORTED CONTINUOUSLY AS NEEDED WITH SHIMS.

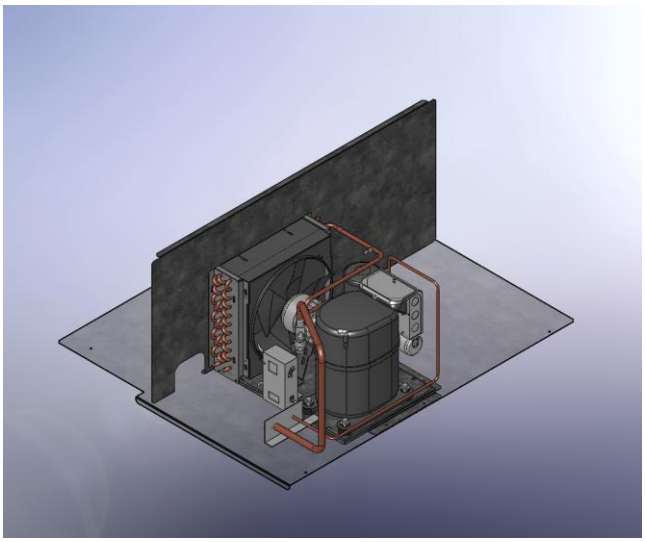
Modular Condensing Unit

Mounting Base & Enclosure

The evaporator pan, control box, and Buck & Boost transformer are factory mounted on a base plate attached to the top of the case. Condensing unit, enclosure panels, sight glass, & liquid line filter drier are shipped loose and will be field installed. (Refer to pictures below)

Assembly – Modular Condensing Case

The front enclosure panel has a knock out provided for the controller display.
This panel must face the front of the case.



1. All the components must be installed in the locations as shown in the picture.
2. The condensing unit must be slid from the back of the case, facing the condenser coil to the left side of the case. Viewing from the back of the case, condensing unit must be aligned to the corner brace (13) at right back corner of the condensing unit. The condensing unit should be screwed to the base plate at all pre-punched hole locations.
3. When the condensing unit is installed properly, there must be a minimum 12" or more space between condenser coil and the side panel; minimum 5" or more space between back of condensing unit and rear panel.
4. All electrical wires must be routed through flexi metallic conduit.

Refrigeration Connections

This case is designed to operate with a 208-230 Volt single condensing unit located on top of the case. Units are supplied with refrigeration line quick connects (See installation of quick connect refrigeration line coupling for reference). This case comes with the following charges.

Model	Charge in Condenser	Charge in Case	Total
HQDD6 – 4'	2.20 lbs	1.30 lbs	3.50 lbs
HQDD6 – 8'	3.00 lbs	2.08 lbs	5.08 lbs
HQDD6 – 12'	3.00 lbs	3.00 lbs	6.00 lbs

Swivel Nut Before Connecting

Male End Before Connecting

Coupling Connection Instructions

The couplings on the ends of the pre-charged line sets are self-sealing when installed properly. Follow these instructions carefully.

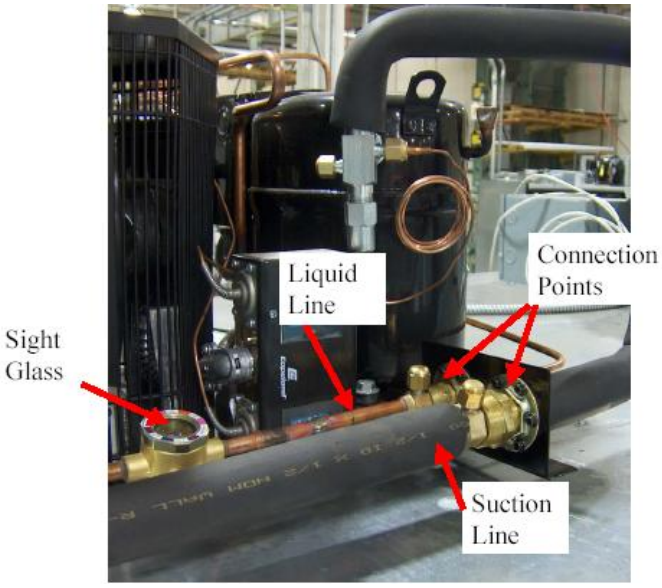
An EPA Certified Type II or higher technician must perform these steps.

Initial Connections

1. Remove the protector caps and plugs. Wipe the seats and threaded surfaces with a clean cloth to remove any possible foreign matter.
2. Thoroughly lubricate the threads, o-rings, diaphragms and all internal coupling surfaces with polyolester refrigerant oil.

Caution: Lubricating is very important. Couplings will leak without lubrication.

Clean and Lubricate Couplings



3. Position the condenser with the fittings facing the female fittings on the case. See picture above for locations and fitting size in table below.
4. Begin to tighten the couplings together by hand. Continue to turn the swivel nuts by hand until it is certain that the threads are properly engaged.
5. Using two wrenches, one to rotate the swivel nut and one to hold the tubing in place, tighten each coupling.

Caution: It is CRITICAL that ONLY the NUT on the pre-charged tube be turned, or the diaphragms will be torn by the piercing knives and become loose in the refrigeration system causing severe operational problems.

Tighten Swivel Nut

Note: As the coupling is tightened, the diaphragms in the quick connect couplings will begin to be pierced. As that happens, there will be increased resistance to tightening the swivel nut.

6. Continue tightening the swivel nut until it bottoms out or a very definite increase in resistance is felt (no threads should be showing). Do NOT over tighten.

Rotate Swivel Nut ¼ Turn More

7. Use a marker or pen to mark a line on the coupling nut and unit panel. Then tighten the coupling nut an additional one-quarter turn. The line will show the amount that the nut turns.
8. After all connections have been made, check the couplings for leaks.

Coupling Description

The following pages show the stages of coupling assembly as the swivel nut and male fitting are drawn together.

The swivel nut end contains one diaphragm in the center post. The male fitting contains the knife blades and its own diaphragm.

Note: 3/8 male ends have one knife blade.

No sealing takes place until the **final stage**, when the outer edge of the center post in the swivel nut is forced against the bottom of the male fitting, creating a mechanical seal.

Below appears to be a completed assembly with only two threads showing, but the diaphragms have just begun to be pierced. This causes severe operational issues as well as refrigerant leaks.

Two Threads Showing

Knives Just Showing

Barely Pierced

Below shows an even more complete assembly, with only one thread showing. However, this assembly is still not complete. If not tightened further, there will be refrigeration restrictions and leaks.

One Thread Showing

Partly Pierced

Knives Exposed

Below shows the two parts almost together; the threads are flush. At this point the main problem will be refrigerant leaks.

Threads Flush

Pierced but will leak

Knives Visible

Correct coupling assembly

Correctly Tightened

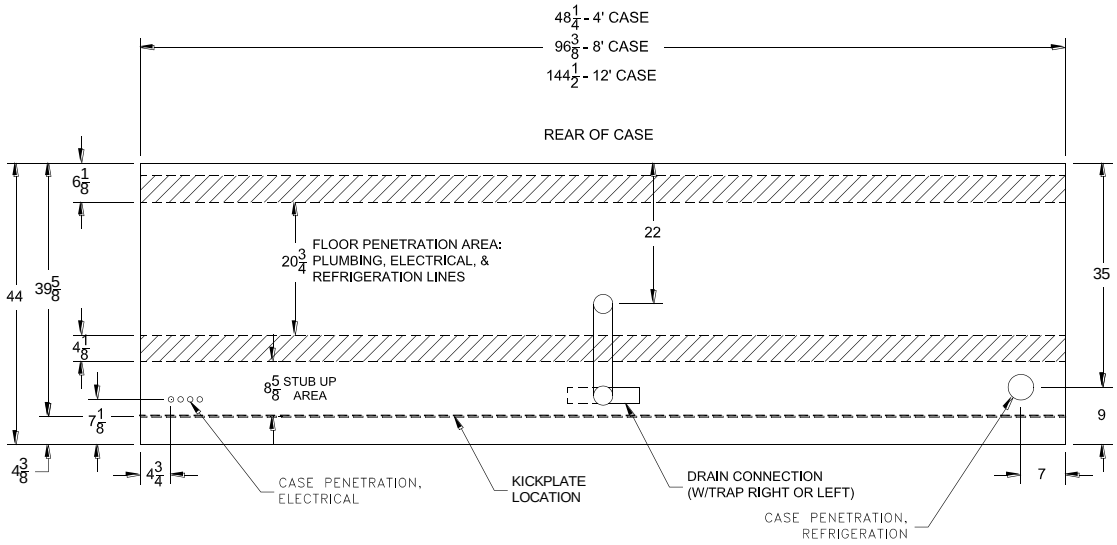
Fully Open

Fully Open

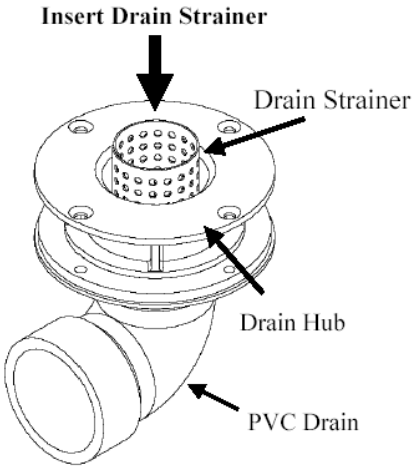
Note: Couplings that are screwed together but have threads showing are not only leaking refrigerant, they are restricting the flow of refrigerant through the small slits in the membranes or diaphragms.

Waste Outlet (Drip Pipe) Description and Location

These cases are equipped with 1 ½" M-NPT waste outlet connection that terminates in the center of the refrigerator below the insulated bottom. The water seal trap is shipped loose for field installation.



Drain Strainer



Note: Not all of our cases have drain strainers. This information applies only to the cases equipped with the strainers.

•**Purpose:** Keep debris or any foreign objects from entering the PVC drain, which could cause blockage.

•**Installation:** Insert into drain until drain strainer stops. It will not be flush. Strainer will exceed hub by 1". DO NOT flatten drain strainer.

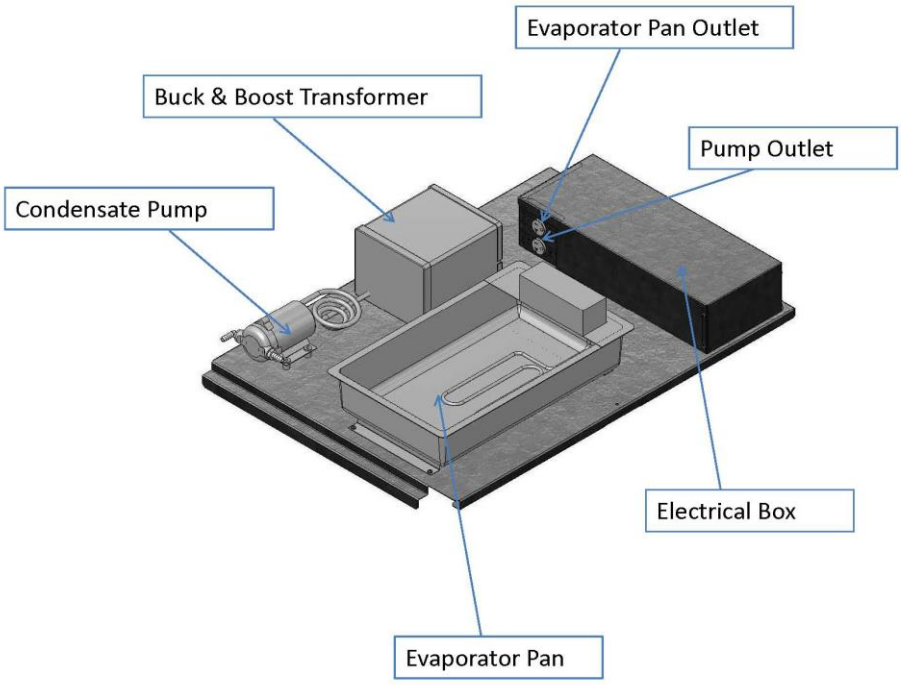
Note: The condensate drain pan will slide under the case. The pump will be located on the top of the case. An outlet is provided under the case to plug the pump into. Under no conditions should anything else be plugged into this outlet.

A 3/8" plastic drain tube is supplied with the case and must run from the drain pan pump up the back of the case to the top of the case and into the evaporative condensate pan.

The copper loop on the end of the tube hangs over the edge of the evaporative pan.

Electrical Connections – General

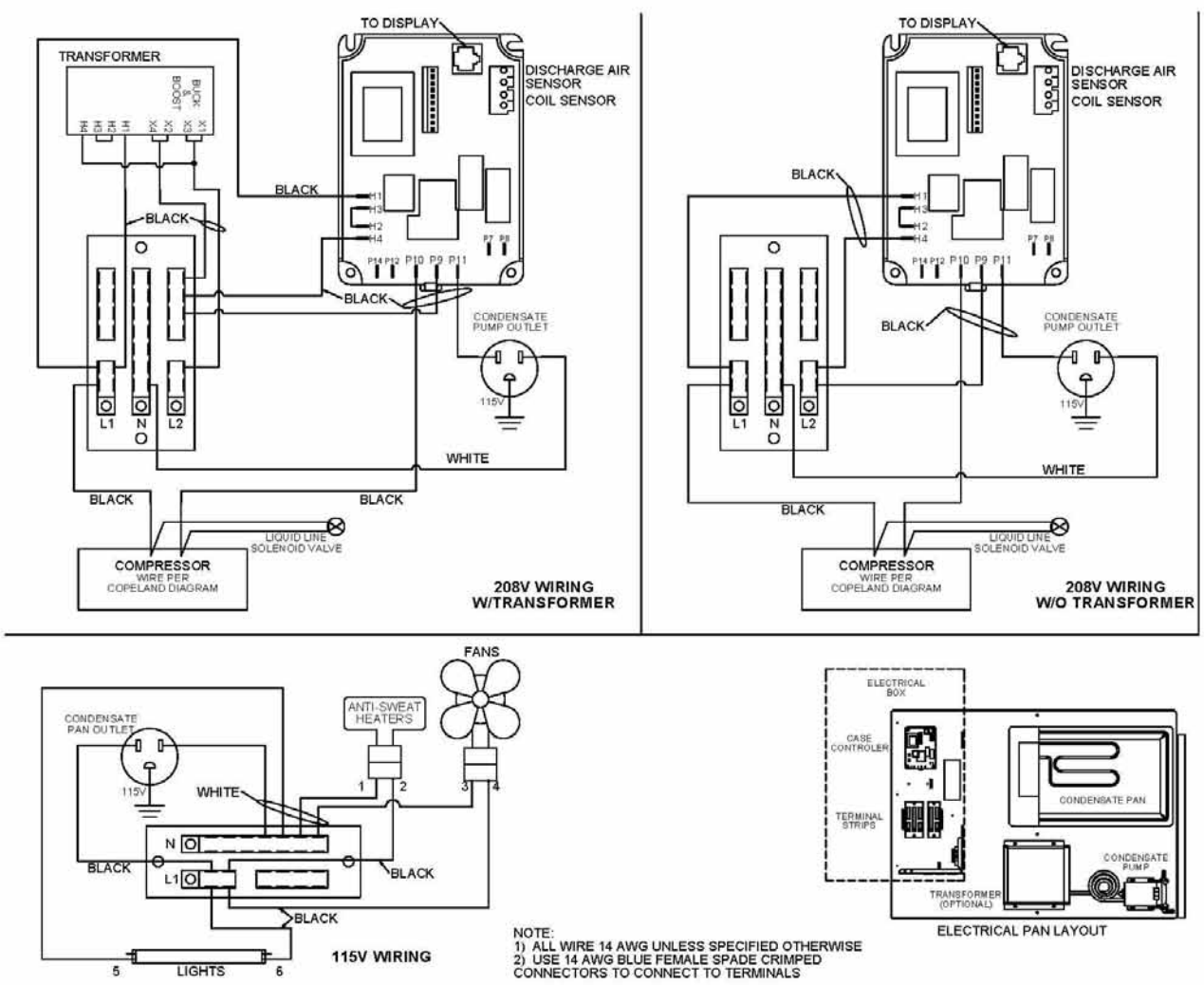
Electrical Termination



There are three field connections consisting of the condensing unit and two power supplies (see the arrows on the Wiring Diagram in this section). All remaining connections are made at the factory as shown on the left.

Wiring Diagram

There will be 2 power sources: One 208V/60Hz/1Ph power supply for the condensing unit and the defrost heater; this power supply will be connected through the optional Buck & Boost Transformer. One 115V/60Hz power supply for the case. There is an electrical box on the top of the case to wire all the electrical components.



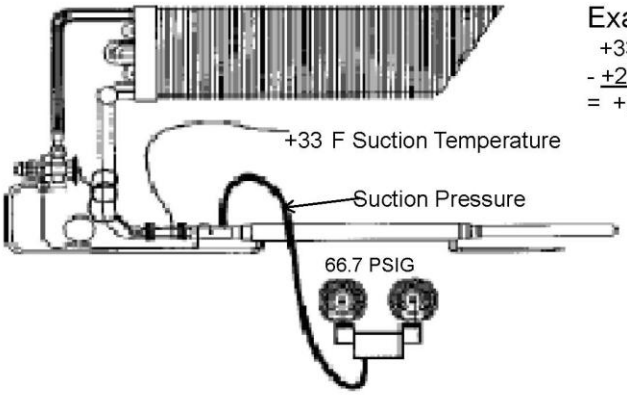
Expansion Valve and Superheat

Caution: During service of this equipment, precautions should be taken to prevent loss of refrigerant to the atmosphere. Always install the expansion valve stem cap after making valve adjustments.

The expansion valve furnished with your case has been sized for maximum coil efficiency. To adjust superheat, perform the following:

1. Place a thermocouple near the expansion valve bulb. Read the suction line pressure as near coil as possible. (If at the condensing case, estimate suction line loss at 2 PSIG).
2. Convert coil suction pressure to temperature. The difference between coil temperature and the thermocouple temperature is superheat. (Use average superheat when expansion valve is hunting).
3. Do not set superheat until cases have pulled down to operating temperature and never open or close the valve over ¼ turn between adjustments and allow 10 minutes or more between adjustments.
4. Superheat should be set to 8-10°F for medium temp cases. Superheat should be set to 6-8°F for low temp cases.
5. After the initial setting, the superheat should be rechecked when product is stocked and at designed temperature.

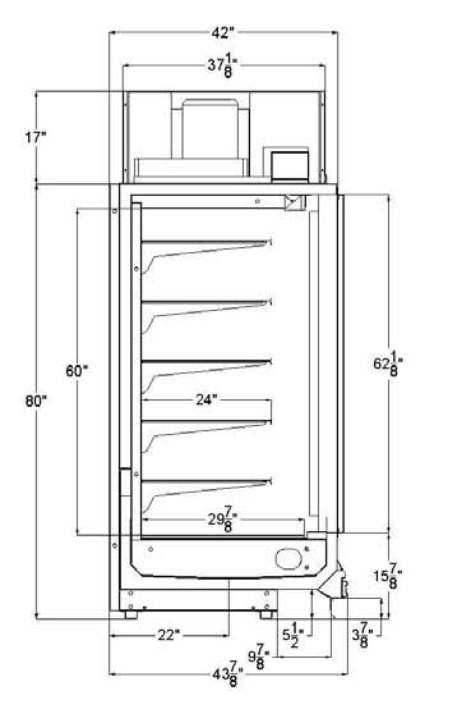
Superheat Calculations



Example: R-404
+33 F Suction temperature
- +28 F Suction pressure converted to temperature
= +5 F Superheat

Operation

Loading



Merchandise should not be placed in the fixture until all controls have been adjusted and the case is at the proper temperature.

AT NO TIME SHOULD THE CASE BE STOCKED BEYOND THE LOAD LINE OR OVER THE FRONT EDGE OF ADJUSTABLE SHELVES.

Air discharge and return flues must remain open and free of debris or obstruction at all times to provide proper refrigeration and air current performance. Do not allow any product, signs, debris, etc. to block these grilles. Do not use any non-approved shelving, display racks or any accessory that could hamper air current performance..

Warning. Do not walk on top of the cases! This could result in damage to the case and serious personal injury could occur. These cases are not designed to support excessive external weight. Do not use top of cases for storage.

Normal Operation (with modular condensing unit)

1. Off-Cycle Defrost is standard on medium temperature models. The fans run continuously and defrost termination is by termination Klixon.

2. Electric Defrost Models are standard for low temperature cases. Electric heaters are utilized to melt the frost and ice on the coil. The heaters are located in the air stream underneath the coil. The defrost cycle is time initiated and temperature terminated. Case fans shut off during defrost. During refrigeration the fans start after the evaporator coil temperature reaches 10°F and run continuously thereafter. As a safety precaution, a safety cutoff Klixon is wired in series with the defrost heater to turn the heater off at temperatures above 65°F.

3. Condensing Unit: An electronic controller is used to control case temperatures. The sensing bulb is mounted in the discharge air stream.

Cleaning

As a general rule, always use mild soap and water to wipe the case down. Special precautions must be taken when cleaning some components of the case.

Exterior surfaces should be cleaned with warm water and mild soap to protect and maintain the finish. **Do not use cleaners containing abrasive materials or ammonia, which will scratch or dull the finish.** The waste outlet should be flushed with water following each cleaning.

Interior surfaces may be cleaned with most mild soap formulas, ammonia based cleaners and sanitizing solutions with no harm to the surface.

WARNING! Always shut power off during the cleaning process. Cleaning the case with electrical power applied is a shock hazard that may cause serious injury or death.

WARNING! DO NOT USE HOT water on COLD glass surfaces. This could cause the glass to shatter and could result in personal injury. Glass fronts and ends should be warm before applying hot water.

WARNING! Do not flush modular condensing unit cases with a water hose. The condensate drain pan will over flow resulting in water on the floor.

Caution: The following could damage the case:

- Do not use solvent, oil or acidic-based cleaners on any interior surfaces as the surface may become damaged.
- Do not use abrasive cleaners and scouring pads, as these will mar the finish.
- Never introduce water into the case faster than the waste outlet can release it.
- DO NOT USE STEAM OR HIGH PRESSURE SYSTEMS TO CLEAN THE CASE, AS SEALS MAY BE BROKEN WHICH WILL CAUSE THE CASE TO LEAK.

Shelves

Do not use a hose or submerge shelves in water. When cleaning lighted shelves, wipe down with a wet sponge or cloth so that water does not enter the light rails.

Mirrors

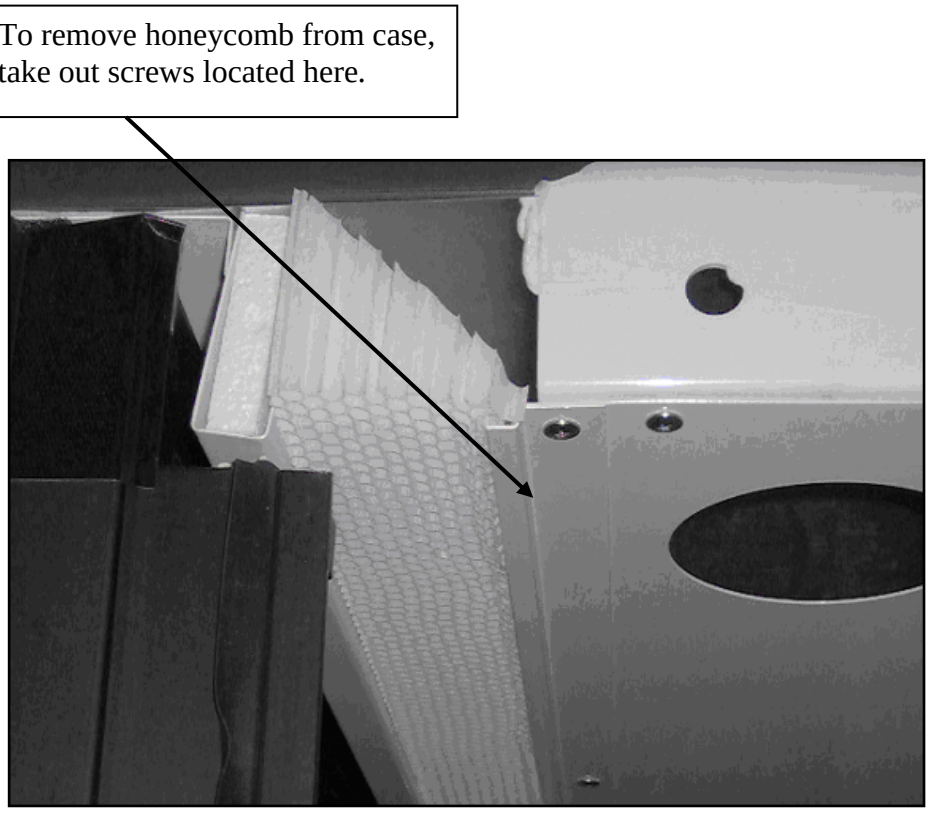
Mirrors are sheets of clear glass that have a very thin reflective coating applied to one side. These coatings are susceptible to deterioration if certain cleaning solutions and even water are allowed to come in contact with them. Every precaution should be made to keep liquids away from the coated side of the mirrors. If liquids are allowed to flow along the face side of the mirror to its edge, the liquid can seep between the coating and the glass, causing serious damage.

To help prolong the life of the mirrors:

- Use only mild cleaning solutions (Windex, Solox, or a weak solution of vinegar and water.)
- Do NOT spray liquids on mirrors. Dampen the cleaning cloth, and then use the cloth to wipe the mirror.
- Wipe water from the mirrors immediately to prevent difficult to remove water spots and also to prevent the water from reaching the mirrors edge.
- Never use dirty cloths, scrapers or any other abrasive materials for cleaning.

Honeycomb Assembly

Honeycomb should be cleaned every 6-8 months, depending on store conditions. Honeycomb may be cleaned with a vacuum cleaner or removed to be washed with soap and water. The honeycomb must be completely dry before returning it to the case.



Notice the position and angle of the honeycomb when removing from the case. Honeycomb must be replaced at the same angle.

Note: Standard parts are provided in the parts lists. Cases may be equipped with specialty parts that were incorporated into the case(s) at the time they were manufactured. It is important to have the case serial number when contacting Kysor//Warren for replacement parts. The model and serial number can be located on the data plate, which is located on the left hand side, top or back panel, depending on the model.

Parts List – HQDD6 - MCU

Description	Part No.	Quantity		
		4’	8’	12’
Fan Motor PSC	09A10102	1	2	3
Fan Motor ECM	09A10107	1	2	3
Fan Blade 31 Dg 8” Diameter	09B10043	1	2	3
Honeycomb-White	13A15145	1	2	3
Honeycomb - Black	13A15146	1	2	3
Fan Bracket PSC / ECM	54V11870	1	2	3
Deck Pan PTD	54N18604	2	4	6
Deck Pan BRT	55M16178	2	4	6
External Drain Trap	96H41573	1	1	1
Case Control - Paragon ERC2	08A10118	1	1	1
Condensate Pan Heater 1000W 120V	28H12042	1	1	1
Pump Condensate	48A10004	1	1	1
Evap Pan Full Size 2-1/2 Deep SS	28B12016	1	1	1

Note: Standard parts are listed. Individual cases may have options different than listed and the serial number for these cases is required when ordering parts.

Warranty

ONE-YEAR WARRANTY Rev.4.1.2009

KYSOR//WARREN warrants to the original purchaser this new equipment and all parts thereof, to be free from defects in material and workmanship under normal use and service. If any part or parts of the equipment should prove defective during the period of one year from installation date (not to exceed one year and thirty days from the date of original shipment from the factory), KYSOR//WARREN hereby guarantees to replace or repair, without charge (F.O.B. Columbus, Georgia), such part or parts as proven defective, and which KYSOR//WARREN'S examination disclosed to its satisfaction to be thus defective, with a new or functionally operative part. The liability of KYSOR//WARREN under this warranty shall be limited to claims made by the original purchaser to KYSOR//WARREN or KYSOR//WARREN'S authorized dealer or distributor within the warranty period.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS, AND ALL OTHER OBLIGATIONS OR LIABILITIES OF KYSOR//WARREN.

I. GLAZING: Glass is not guaranteed against breakage. If this refrigerator is equipped with a glazing assembly carrying the manufacturer's brand name (Thermopane, Twindow, etc.), the manufacturer's glazing warranty in effect at the time of this shipment is extended to that assembly.

II. BULBS: Light bulbs and fluorescent lamp tubes are not covered by any warranty for length of life or for any type of breakage.

III. THIS WARRANTY SHALL NOT APPLY:

1. **To the condensing unit used with refrigerated equipment unless same was sold and shipped by KYSOR//WARREN.**
2. **When this equipment or any part thereof is damaged by accident, fire, flood, act of God, alteration, abuse, misuse, tampering, when the original model and serial number plate has been altered, defaced, or removed or used other than the recommended application by KYSOR//WARREN.**
3. **When this equipment or any part thereof is subject to operation on low, high or improper voltages. Low and high voltage is defined as more than a 5% drop below or 10% higher than name plate voltage ratings. Note: Proper field supply voltage to the equipment is the responsibility of the owner (end user).**
4. **To damage caused by overloading shelves or wire racks beyond the specified weight limits. The maximum weight limit for standard KYSOR//WARREN shelves and wire racks is 30lbs per square foot.**
5. **When this equipment or any part thereof is damaged, or when operation is impaired, due to failure to follow installation manual Note: Proper installation is the responsibility of the installer, owner (end user).**
6. **Operational issues caused by ambient environmental conditions outside of the**

specified limits. All KYSOR//WARREN equipment is specified to operate in a conditioned ambient environment not to exceed 75 degrees Fahrenheit or 55% relative humidity. Note: Providing specified ambient environmental conditions are the responsibility of the owner (end user).

7. **To equipment with final destinations unknown to KYSOR//WARREN as indicated on the original sales order.**
8. **To labor cost for repair or replacement of parts.**
9. **To special or expedited freight or shipping charges or to customs duties to any country.**
10. **If the Warranty holder fails to comply with all the provisions, terms and conditions of this Warranty.**

Parts replaced under this Warranty are warranted only through the remainder of the original Warranty. KYSOR//WARREN may, at its option and in its discretion, elect to honor this Warranty and to disregard the original purchaser's non-compliance with any of the provisions, terms and conditions of the Warranty.

THIS WARRANTY DOES NOT COVER CONSEQUENTIAL DAMAGES.

KYSOR//WARREN shall not be liable under any circumstances for any consequential damages, including loss of profits, additional labor costs, loss of refrigerant or food products, or injury to person or property caused by defective material or parts or for any delay in the performance of this Warranty due to causes beyond its control. The foregoing shall constitute the sole and exclusive remedy of any purchase and the sole and exclusive liability of KYSOR//WARREN in connection with this product.

Note: IN THE CONSTANT EFFORT TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO CHANGE AT ANY TIME SPECIFICATIONS, DESIGN, OR PRICES WITHOUT INCURRING OBLIGATION.

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Kysor//Warren, whose policy is one of continuous improvement, reserves the right to change at anytime, these specifications, designs or prices without incurring obligation.