PIPER

The Food-Focused Equipment Company

REFRIGERATED MERCHANDISER

Installation and Operating Manual

For service information call 800-544-3057

Please have the following information available before calling. Information can be found on the identification/certification tag:

- Model Number
- Serial Number
- Date of Purchase
- Part Description and number as shown in parts list

IMPORTANT INFORMATION
READ BEFORE USE

This manual contains important safety information concerning the maintenance, use and operation of this product. Failure to follow these instructions could result in damaging equipment, voiding the warranty, serious injury or even death.

Piper Products, Inc
300 South 84th Avenue
Wausau, WI 54401
Phone: 715-842-2724 . FAX: 715-842-3125

TABLE OF CONTENTS

INTRODUCTION

Congratulations! You have just purchased one of the finest pieces of equipment on the market today. Before installing or operating your new Piper equipment, you should read through this manual. This manual should be retained for further reference as it contains installation and operating instructions, service tips, part lists and warranty information.

For your safety, read and follow all cautions and warnings.

FREIGHT DAMAGE CLAIMS

Your Piper equipment was carefully inspected and packed before leaving our factory. The transportation company assumes full responsibility for safe delivery of this equipment. Piper Products cannot assume responsibilities for damage or loss incurred in transit. Visible damage or loss should be noted on the freight bill and signed by the person making the delivery.

A freight claim should be filed immediately with the transportation company. If damage is unnoticed or concealed until equipment is unpacked, notify the transportation company immediately and tell them you want to file a concealed damage claim. This must be done within ten (10) days after delivery was made. Be sure to retain all packing material and cartons.

WARNING

Installation of this equipment should be done only by persons qualified or licensed to install electrical equipment.

Adjustments and service work should be performed only by a qualified service technician. Service is available through Authorized Piper Parts and Service Distributors throughout the United States. For a complete listing of these call or write Piper Products, Inc. for the name of the nearest distributor.

This equipment is intended for commercial use only. Not for household use.
Use of other than genuine Piper replacement parts or service work performed by other than an authorized Piper service agent will void the warranty.

Do not use any corrosive cleaners. Piper only approves soap and water for cleaning stainless steel.

INSTALLATION

ELECTRICAL CONNECTION

WARNING!!!! DO NOT USE EXTENSION CORDS (VOIDS WARRANTY)

- If the unit requires an electrical line to be connected to an internal load center or junction box, have a qualified electrician perform the installation.
- Always follow local, state, federal, and NEC electrical and plumbing codes to ensure compliance.
- Do not operate the unit if the electrical components appear damaged.
- Check the rating label for electrical rating.
- Check the wiring diagram for connection instructions.
  (See wiring diagram attached to Merchandiser)

Ground:
The electrical outlet must be provided with an efficient ground, and the voltage and the frequency of the electrical line matches those indicated on the data plate.

If unsure about the efficiency of the ground, have your electrical circuit checked by a qualified technician

Supply Voltage:
When the cooler is operating, check that the supply voltage is not dropping or increasing under/over + 10% the rated voltage (98 Volts to 127 Volts) OR (198 Volts to 243 Volts)

The manufacturer is not responsible for damages or accidents arising from the misuse or disregard of electrical connections.

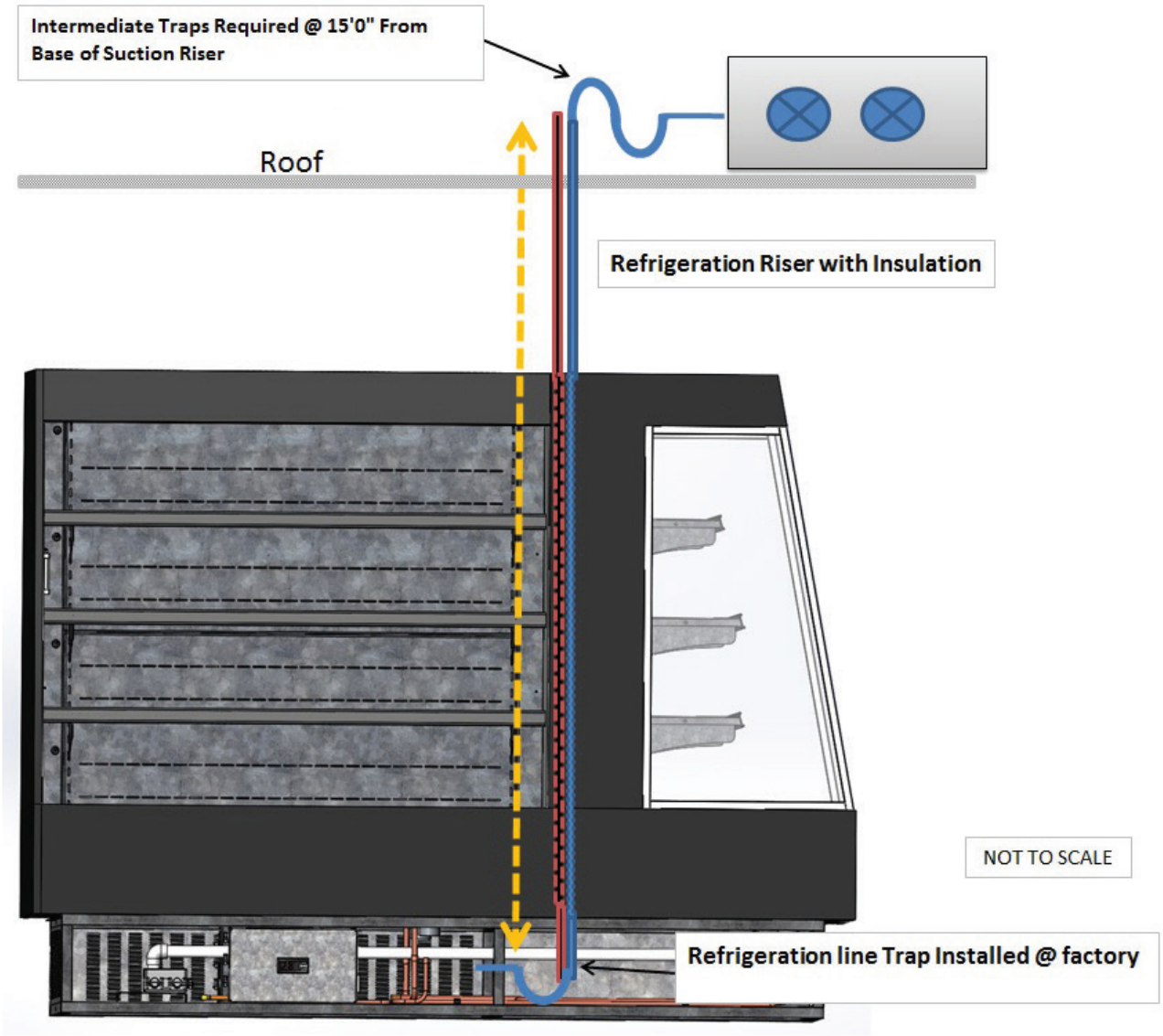
Caution, Risk of Electric Shock. If the cord or plug becomes damaged, replace only with a cord and plug of the same type.

Plumbing Installation
- If the unit requires a drain, have a qualified plumber perform the installation.
- Some jurisdictions may require an approved air gap or other flow back prevention device in the drain

Refrigeration Piping Installation

Line Sizes:

- Liquid Line- 3/8 inch
- Suction Return Line - 7/8 inch



Condensation Pump

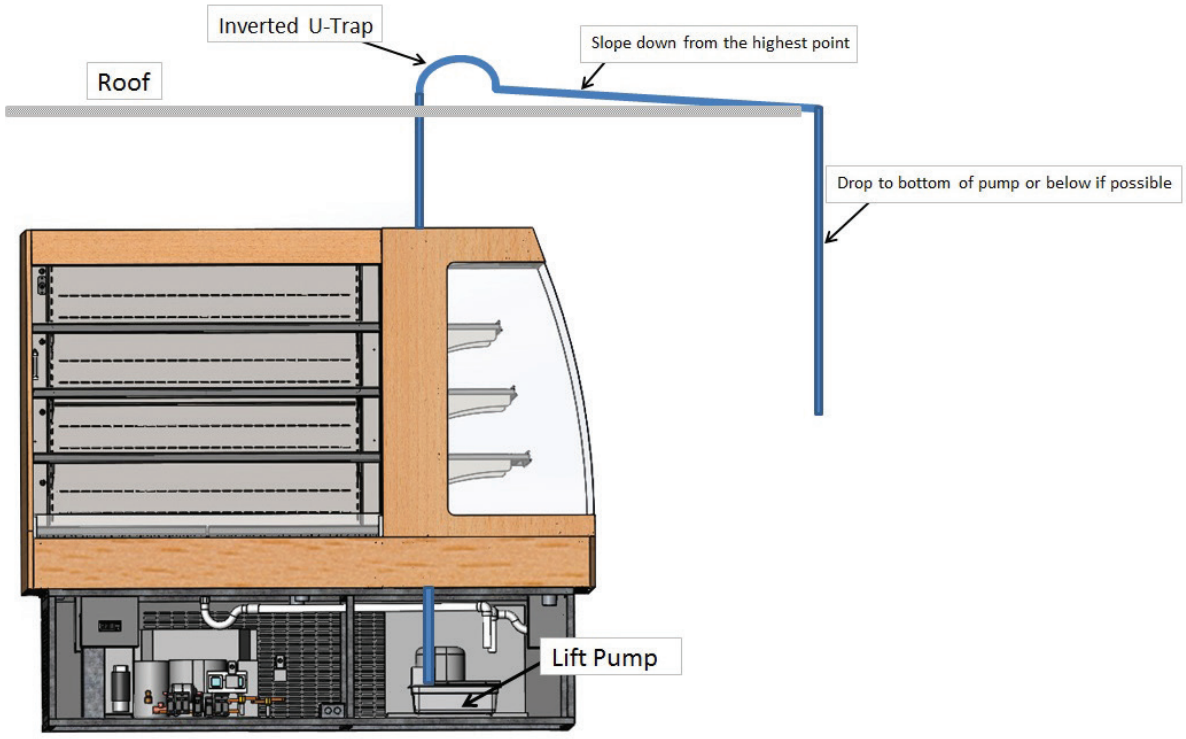
Specifications

NXTGen™

Model #	Item #	Volts	Hz	Amps	Watts	Check Valve	Safety Switch	Performance (GHP @ Head) 1’	6’	10’	16’	20’	Shutoff (ft)	PSI	Cord	Weight (lbs)
554530	VCMX-20ULS	115	60	1.5	93	3/8”	YES	84	75	60	42	10	21	9.1	6’	5.5

Piping

1. Run an inlet line (flexible tubing or pipe) from the evaporator drain into one of the three drain holes, ensuring that the line is sloped downward to allow gravity flow. Cut the inlet line at an angle where it will enter the tank, then put the line into the tank 1 to 2 inches to ensure that it will not interfere with proper float operation.
2. The discharge line (Fig 6.) should be flexible tubing secured with a hose clamp (not provided) or pipe (3/8 inch I.D. maximum to prevent excessive flow back to unit). From the pump, extend the discharge line straight up as high as necessary (but not above the head/GPH of the pump). From this high point, slope the discharge line down slightly to a point above the drain, then turn down and extend to a point below or approximately level with the bottom of the pump. This will give a siphoning effect, which will improve the efficiency of the pump and will, in most cases, eliminate the need for a check valve. If it is not possible to slope the discharge line down, make an inverted U-trap directly above the pump at the highest point.



REMOTE UNITS SUB-COOLING ADJUSTMENT

Mechanical 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.

Setting Superheat

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

Superheat Calculations

Example: R404

+33°F Suction Temperature
+28°F Suction pressure converted to temperature
5°F Superheat

INSTALLATION

Outside Storage: ATTENTION!
- The cooler is not designed for outdoor use.
- The cooler should not be stored outside in direct sun or rain.

Ambient (Environmental) Conditions:
- Locate the cooler in a maximum condition of 75°F (25°C) and 55% Relative Humidity

Positioning:
- Keep away from heat sources, such as radiators or air conditioning pipes.
- The ambient temperature must not be higher than 75°F (25°C).

Condensing Unit Air Flow:
- When installing unit, ensure a minimum of 2 inches air space at side louvers.
- When installing unit, ensure 12 inches air space at the louvered panel front and rear of the cabinet.

Refrigerated Space Air Flow:
- Blocking the return air grills on will cause a freeze up of the evaporator coil and voids the warranty
- Avoid stacking products that block the air flow. Maintaining a good air flow allows this unit to run more efficiently.

Cooler Leveling:
- To provide the best performance the cooler must remain level.

Cooler Loading: See Loading Section (p.12)

Always remember that this unit is designed to maintain a product's temperature. It is not designed to bring a warm product's temperature to the required refrigerated level. All product placed in this unit must be at 38°F or below for the unit to maintain a safe temperature.

RECOMMENDED TEMPERATURE CONTROL SETTINGS

DIXELL CASE CONTROLLER SETTING					
LBL	**DESCRIPTION**	**RANGE**	**DEFAULT**	**LEVEL**	**ORIGINAL SET**
REGULATION					
Hy	Differential	1÷45°F	36°F	L1	14
LS	Minimum set point	-67°F÷SET	-40°F	L2	24
US	Maximum set point	SET÷210°F	99°F	L2	45
ot	First probe calibration	-18÷18°F	0.0	L2	Default
P2P	Second probe presence	n - Y	y	L2	Default
oE	Second probe calibration	-18÷18°F	0.0	L2	Default
od	Outputs activation on delay at startup	0÷99 min	0	L2	Default
AC	Anti-short cycle delay	0÷50 min	0	L1	3
Cy	Compressor ON time faulty probe	0÷99 min	15	L2	Default
Cn	Compressor OFF time faulty probe	0÷99 min	30	L2	Default
DISPLAY					
CF	Measurement units	°C - °F	°F	L2	Default
rE	Resolution (only for °C)	dE - in	in	L1	Default
Ld	Default display	P1 - P2 - SP	P1	L2	Default
dy	Display delay	0÷15 min	0	L2	Default
DEFROST					
dTF	Defrost type	Electric/Hot gas	EL	L1	Default
dTE	Defrost termination temperature	-58÷122°F	46°F	L1	46
idF	Interval between defrost cycles	0÷99 hrs	6	L1	3
MdF	Maximum length for defrost	0÷99 min	20	L1	60
df	Display during defrost	rt - in - dE	it	L2	rt
ALARMS					
AU	Maximum temperature alarm	ALL÷210°F	99°F	L2	60
AL	Minimum temperature alarm	-67°F÷ALU	-50°F	L2	10
Ad	Temperature alarm delay		15	L2	Default
dA	Exclusion of temperature alarm at startup	0÷99 min	99	L2	Default
OTHER					
d2	Evaporator probe display	Read Only	---	L1	
Pt	Parameter code table	Read Only	---	L2	
rL	Firmware release	Read Only	---	L2	

DIGITAL CONTROL OPERATION

Factory Temperature Setting is 24° HY differential set 14

- Changing the temperature is achieved by changing each the Temperature and the HY differential settings. Failing to properly change the control and HY settings can result in freezing evaporator and product loss.

Temperature Setting: Change the temperature by

1. View the temperature set point by press and release the SET button
2. Adjust the temperature, press and hold the SET button until the display shows the set point. Once the current set point is visible press the Arrow up/down to change the setting
3. When the new set point has been reached, press the SET button to confirm the change.

HY Setting: Change the HY by

1. Press SET and the Down Arrow at the same time until HY appears.
2. Press the SET button again to update the setting for HY.
3. Pressing SET the label begins to flash; at this point Arrow up/down to change the setting
4. Wait (+/-) 10 seconds and the controller will move back into the operation mode.
5. Change Complete

We welcome your call for assistance setting the controls on your merchandiser. Please don't hesitate to call. Please refer to contact numbers on back cover

SET To display target set point. In programming mode it selects a parameter or confirms an operation.

To start 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.

To switch the instrument off, if onF = oFF

Not enabled

Key Combinations

+ To lock and unlock the keyboard

SET + To enter into programming mode

SET + To return to the room temperature display

Use of LEDs

Each LED Function is described in the following table

LED	MODE	FUNCTION
	ON	Compressor enabled
	Flashing	Anti-short cycle delay enabled
	ON	Defrost enabled
	Flashing	Drip time in progress
	ON	An alarm is occuring
	ON	Continuous cycle is running
	ON	Energy saving enabled
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase

How to see the Set Point

1. Push and immediately release the SET key. The display will show the Set Point Value
2. Push and immediately release the SET key or wait for 5 seconds to display the probe value again.

How to change the Set Point

1. Push the SET key for more than 2 seconds to change the Set Point Value
2. The valve of the set point will be displayed and the “°C” or “°F” LED starts blinking
3. To change the Set Value push the ^ or v arrows within 10 seconds
4. To memorize the new Set Point Value push the SET key again or wait 10 seconds.

How to start a manual defrost

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

Operation Instructions for Cold Food Units

- **Self-Contained Merchandisers**
  Energize the unit and allow the temperature control to cycle twice before adding product.
- **Remote Merchandisers**
  Super Heat must be adjusted and allow the temperature control to cycle twice before adding product.
- **See Dixell Settings for instructions**

Location of the Merchandiser

- The merchandiser is designed for displaying products in air-conditioned stores where temperature is maintained at or below the ANSI/NSF-7 below 55% humidity.
- Placing the units in direct sunlight, near hot tables, and adjacent to other heat sources could impair efficiency.
- The merchandiser is sensitive to ambient air. Air currents passing around the units can seriously impact operation.
- Do NOT allow air conditioning, electric fans, open doors or windows, etc. to create air currents around the merchandisers.

Loading

Merchandise should not be placed into the fixture until all the controls have been adjusted and the case is at the proper temperature. THE CASE SHOULD NEVER BE STOCKED BEYOND THE LOAD LINE OR THE FRONT EDGE OF THE ADJUSTABLE SHELVES.

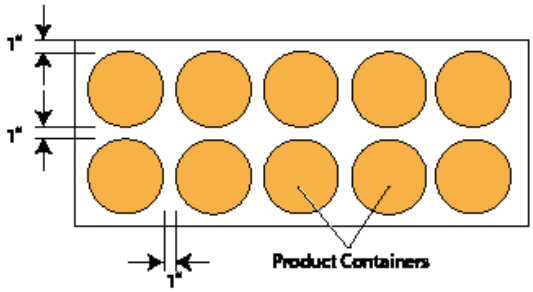
Air discharge and return flues must remain open and free of debris or obstruction at all times to provide proper refrigeration and air current performance. Do not use any non-approved shelving, display racks or accessories that could hamper air current performance.

On air-cooled units (air-over/air-under) with refrigerated display for packaged food:

- Containers should not be stacked 2 levels high.
- Product should be placed 1 inch from the back wall and allow 1 inch cold air flow on all sides.

Leave approximately 1” space around product containers.

Rotate product regularly with new product placed at the back and older product moved to the front of the shelves.

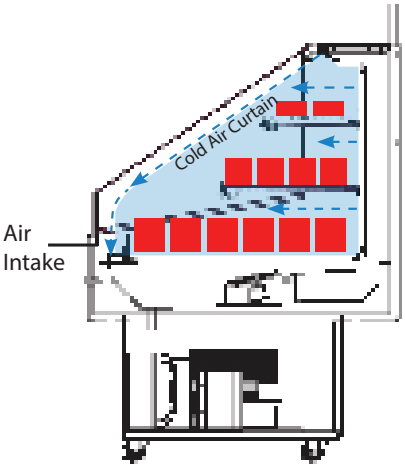


- Merchandise must not be stacked beyond the price tag molding on merchandiser shelving.
- Over-stacking product or displaying product that is too tall deflects refrigerated air flow, pushing it into the merchandiser creating warm zones.

A Refrigerated Air Curtain (flow) creates a COLD CONTAINMENT AREA within each unit.

Loading Mobile Merchandisers

Correct



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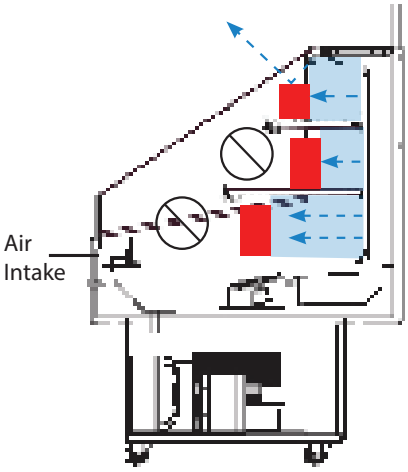
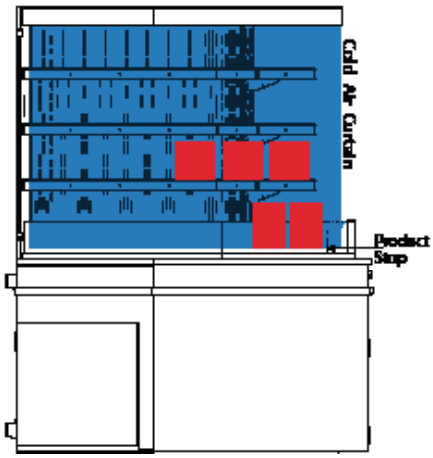


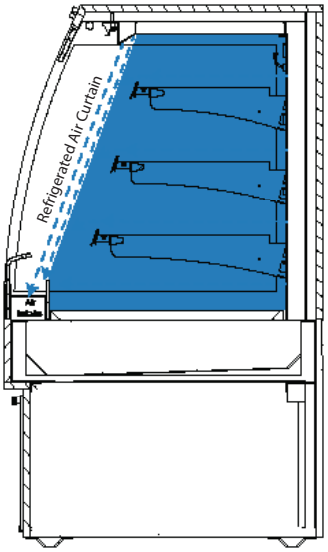
Loading End Cap Merchandisers



- Do not place product outside of the vertical air curtain line created by the merchandiser's canopy.
- Do not stack product or place containers so that they are touching each other or the vertical parts of the machine. Leave approximately 1" of air space between containers.
- Rotate product from back to front at regular intervals to help maintain constain product temperature.

Loading Grab-N-Go Merchandisers

Correct



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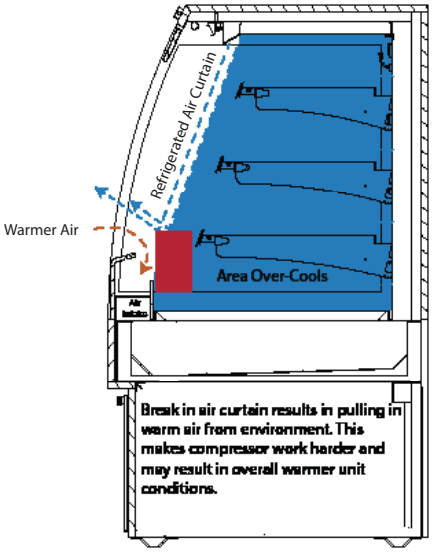

MAINTENANCE

To obtain the best performance from your equipment, it should be cleaned daily and maintained in good condition.

SAFETY / ENVIRONMENTAL CAUTION

Personal protection
Check your company safety and environmental policy before cleaning or servicing.

Safety Tip! : Utilize protective gloves and safety glasses

Electrical power

Before performing EXTENDED CLEANING where electrical components can become wetted, the power switch must be turned to OFF and the unit disconnected from the power source.

WARNING: Do not use any chlorinated or highly caustic cleaners, acids, ammonia or other corrosive cleaners. These may cause corrosion and/or damage to the stainless steel. Piper only approves soap and water for cleaning stainless steel. Do not allow water to stand in wells for long periods of time. Well must be emptied and cleaned after every serving period.

Required monthly maintenance

- Check that the condenser fan works properly
- Check thermostat settings
- Check operating temperature of unit
- Clean entire refrigerated case
- Clean condenser coils
- Check and clean drainage lines
- Check electrical connection
- Check and clean the electrical heated drain pan
- Check and clean trash, or labels from the cooler deck to avoid drain overflow

MAINTENANCE

Cleaning condensing unit

NOTICE: FAILURE TO PROPERLY CLEAN THE CONDENSER WILL VOID THE WARRANTY

Monthly cleaning of the condensing unit is essential for product temperature and refrigeration system performance.

Cleaning Method:

- WARNING: Disconnect electrical power to the cooler by turning master switch to the “OFF” position and unplugging cooler from electrical receptacle
- Remove the louvered panels from the condensing unit compartment.
- Clean condenser by using a brush and vacuum cleaner to remove all dust and dirt.

CAUTION: The fins on the condensing unit coils are sharp!
Safety Tip! : Utilize protective gloves and safety glasses

WARNING: Refrigerant is under high pressure. Do NOT bend, kink or damage any tubing or condensing unit coil.

Cleaning deck pans and drains

Monthly cleaning of the cooler floor is essential to prevent drain water overflow.

Cleaning Method:

- WARNING: Disconnect electrical power to the cooler by turning master switch to the “OFF” position and unplugging cooler from electrical receptacle
- Unload product from the cooler floor and lift out to gain access to the drain.
- Check and clean the drain area for dirt, trash, or product

Failure to properly clean and maintain the drains will void the warranty

TROUBLESHOOTING GUIDE

If problems are not found by the following checks, then you should contact your Authorized Parts and Service Dealer for service. They have the necessary parts and training to repair your unit quickly and efficiently.

DANGER: Disconnect all power to unit before servicing.

SYMPTOMS	POSSIBLE CAUSE	REMEDIES
Control is off and condensing unit does not run	No electrical supply	Is the unit plugged in?
		Check circuit breaker and fuse
		Check switch on control panel is in “ON” position
Control is On but condensing unit does not run	Thermostat control	Is the thermostat control set properly?
Drain overflowing	Blocked line	Check for sales tags blocking the drain
Unit does not cool to proper temperature	Ducting	Are there heating or A/C ducts, make-up air ducts or fans causing cool drafts?
	Not Pre-cooled	Has the unit been allowed to cycle twice?
	Thermostat control	Is the thermostat control set properly?
	Voltage	Call a service technician
Does not maintain food temperature	Air Flow	Check condenser coils for proper air flow
	Ducting	Are there heating or A/C ducts, make-up air ducts or fans causing cool drafts?
	Not pre-cooled	Was the merchandiser allowed to cycle twice before loading?
	Food temperature	Was the product loaded at or below 38°F?
	Loading	Are product packages blocking air flow?
	Thermostat control	Is the thermostat control set properly?
	Dirty condenser	Clean condenser
	Voltage	Call a service technician

PIPER PRODUCTS, INC. LIMITED WARRANTY

Piper Products, Inc. warrants to the original purchaser that its equipment will be free from defects in the materials and/or parts for a period of 12 months from date of shipment and reported to the factory.

The purchaser is responsible for having equipment properly installed, operated under normal conditions with proper supervision and to perform periodic preventative maintenance. Equipment failures caused by inadequate water quality, improper cleaning, harsh chemicals, or acids are not covered under warranty.

The manufacturer's obligation under this warranty shall be the replacement or repair of defective parts within the warranty period. Excessive labor (more than 1/2 hour) required to access Piper equipment built into cabi¬nets, tables or structures by others, is NOT covered under labor warranty. Example: Piper multiple- or single-well food wells. All labor shall be performed during regular working hours. Overtime premium will be charged to buyer. After thorough examination, the decision of the Piper Products Service Department shall be final.

Any defective parts to be repaired or replaced must be returned to Piper Products, Inc., 300 South 84th Avenue, Wausau, WI 54401, transportation charges prepaid, and they must be properly packed and tagged. The serial and model number of the equipment and date of original installation of such equipment must be given. However, after one year we will not assume any responsibility for any expenses (including labor) incurred in the field incidental to the repair or replacement of equipment covered by this warranty. Our obligation hereunder to repair or replace a defective part is the exclusive remedy for breach of this warranty; and we will not be liable for any other damages or claims, including consequential damages.

If, upon inspection by Piper Products, Inc. or its Authorized Service Agency, it is determined that this equipment has not been properly installed or has not been used in an appropriate manner, has been modified, has not been properly maintained, the warranty will be void. Also, if the nameplate or other identifying marks have been removed, defaced or changed or the unit has been repaired or altered by persons other than expressly approved by Piper Products, Inc., the warranty will be void. If the equipment has been subjected to misuse or misapplica-tion, neglect, abuse, accident, damage during transit or delivery, fire, flood, riot or acts of God, then this warranty shall also be void. When any situation occurs which voids the warranty the manufacturer shall not be liable for any damage to any person or any property which may result from the use of the equipment thereafter.

Warranty is limited to Piper manufactured products only and does not apply to other equipment which may be connected to or installed within.

No representative, dealer, distributor or any other person is authorized or permitted to make any other warranty or obligate Piper Products, Inc. to any liability not strictly in accordance with this policy.

This warranty is in lieu of all other warranties expressed or implied, including any warranty of merchantability, and fitness for a particular purpose. Piper Products does hereby exclude and shall not be liable to purchaser for any consequential or incidental damages including but not limited to damages to property, damages for loss of use, loss of time, loss of profits or income, resulting from any breach of warranty.

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