PIPER

The Food-Focused Equipment Company

REFRIGERATED MERCHANDISERS

OTR (1-3)

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

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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.

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.

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:

- Only 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 of air space at the louvered panel front and rear of the cabinet.

Refrigerated Space Air Flow

- Blocking the return air grills will cause the evaporator coil to freeze up 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

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˚ or below for the unit to maintain a safe temperature.

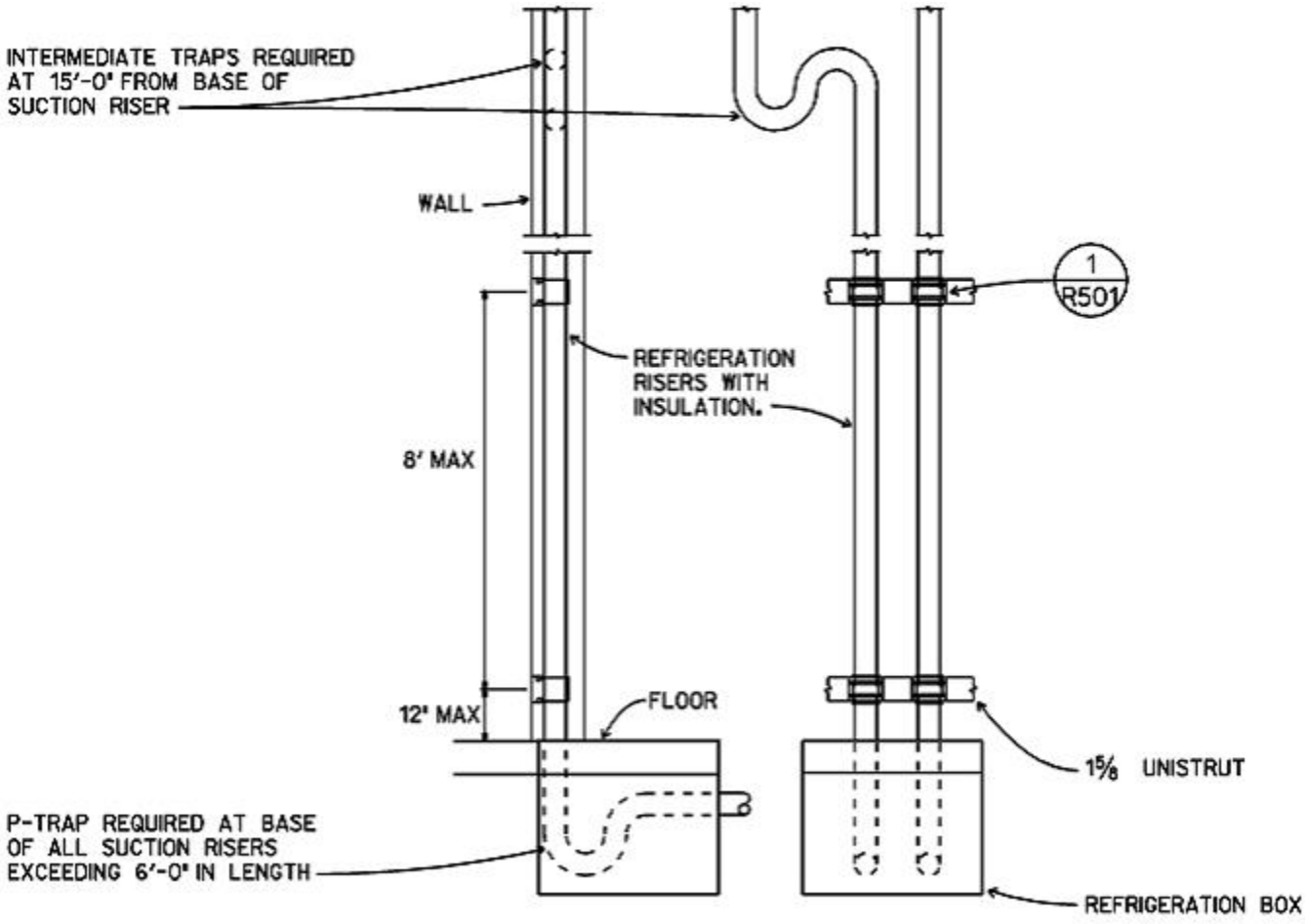
INSTALLATION

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 for Remote Units

Liquid Line - 3/8 inch Refrigeration Copper Tubing
Suction Return Line - 7/8 inch Refrigeration Copper Tubing



INSTALLATION

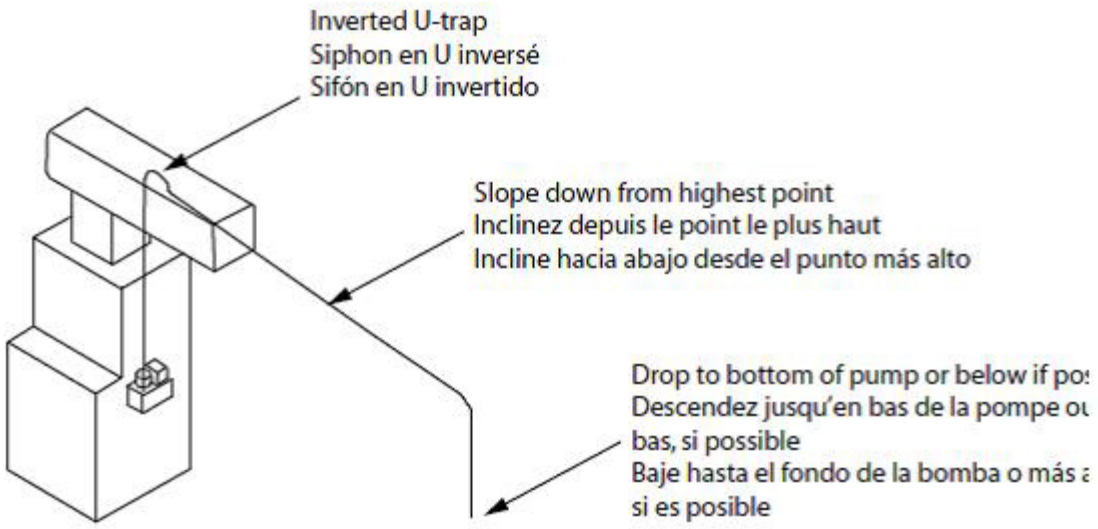
Condensation Pump (Optional)

NXTGen																
Performance (GPH @ Head)																
Model #	Item #	Volts	Hz	Amps	Watts	Check Valve	Safety Switch	1'	6'	10'	15'	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 the 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 UNIT SUB-COOLING ADJUSTMENT

Mechanical Expansion Valve and Superheat

CAUTION

During service of this equipment, precations 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 thermocouple near the expansion valve bulb. Read the suction line pressure as near to 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 1/4 turn between adjustments, and allow 10 minutes or more between adjustments.

4. Superheat should be set at 6-8˚F.

5. After the nitial setting, the superheat should be rechecked when product is stocked and at designed temperature.

Superheat Calculations

Example R404

+33˚F Suction Temperature
+28˚F Suction pressure converted to temperature

+ 5˚F Superheat

TEMPERATURE CONTROL SETTINGS

Temperature Settings
- Temperature control settings vary depending upon the regulatory requirements
- The temperature settings are optimized at the factory
- If the unit is operating in adverse temperature and humidity conditions contact Piper Service

Adjustments
- Changes in the control could result in poor performance

START-UP AND OPERATION

OPERATING INSTRUCTIONS FOR COLD FOOD UNITS

Self-Contained Models
- Energize the unit and allow the temperature control to cycle twice before adding product

Remote Models
- Superheat must be adjusted and allow the temperature control to cycle twice before adding product

LOCATION OF THE MODEL
- The unit is designed for temperatures maintained at or below 75˚F and below 55% humidity
- Placing the unit 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 unit.

LOADING

ATTENTION

Products should not be placed into the fixture until the case is at the proper temperature

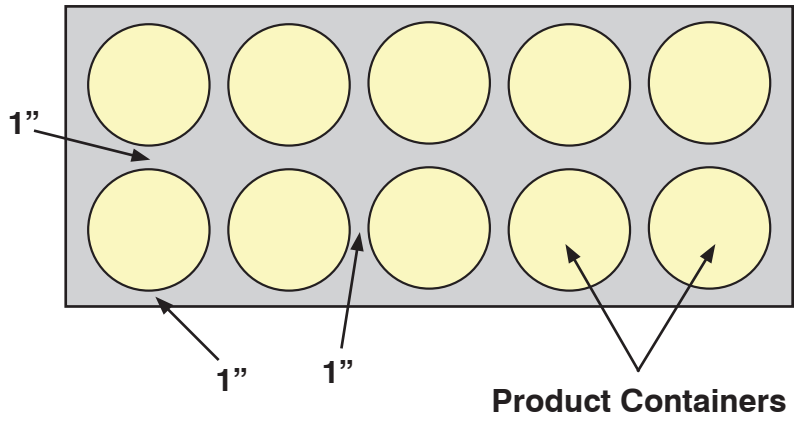
The case should never be stocked beyond the load line or the front edge of the adjustable shelves.

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

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.

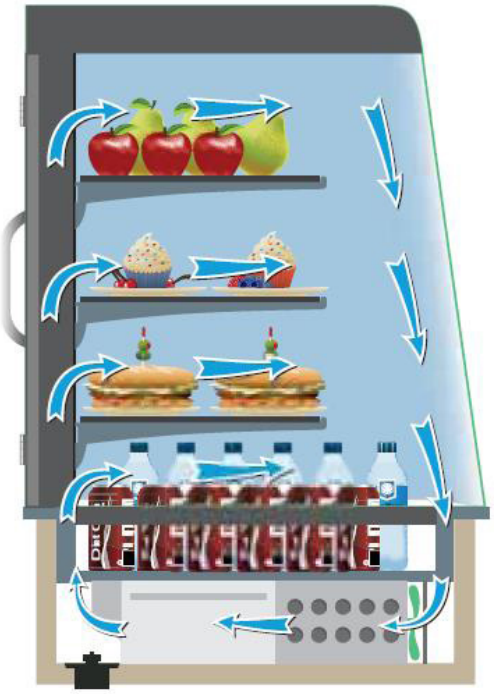
Packaged Product Placement



A refrigerated air-curtain (flow) creates a COLD CONTAINMENT AREA within each unit.

- Over-stacking product of displaying product that is too tall deflects refrigerated air flow, pushing it into the merchandiser creating warm zones.

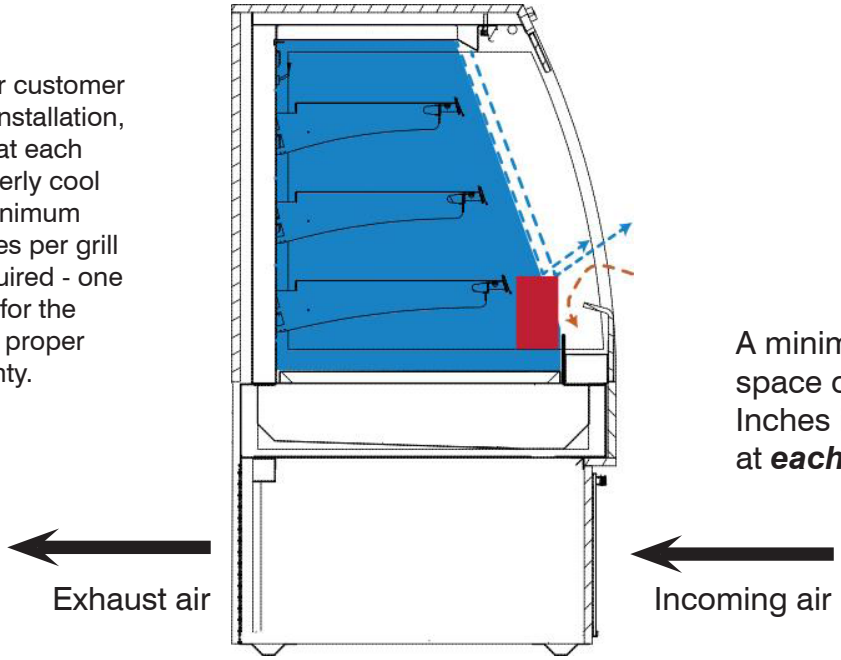
TYPICAL LOADING AND AIR FLOW TO ACHIEVE BEST PERFORMANCE



The food is cooled by a precisely controlled air flow pattern that maintains 38˚F to 40˚F within the cabinet, even though the customer side is open for self service.

DO NOT STACK PRODUCTS IN THE REFRIGERATED AIR CURTAIN; POOR PERFORMANCE WILL OCCUR.

Drop-in units are designed for customer specific installations. During installation, ventilation must be provided at each end of the condenser to properly cool the refrigeration system. A minimum vent space of 90 square inches per grill is required. Two grills are required - one for incoming air, and another for the exhaust air. Failing to provide proper ventilation will void the warranty.



A minimum vent space of 90 Square Inches is required at ***each*** grill

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

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.

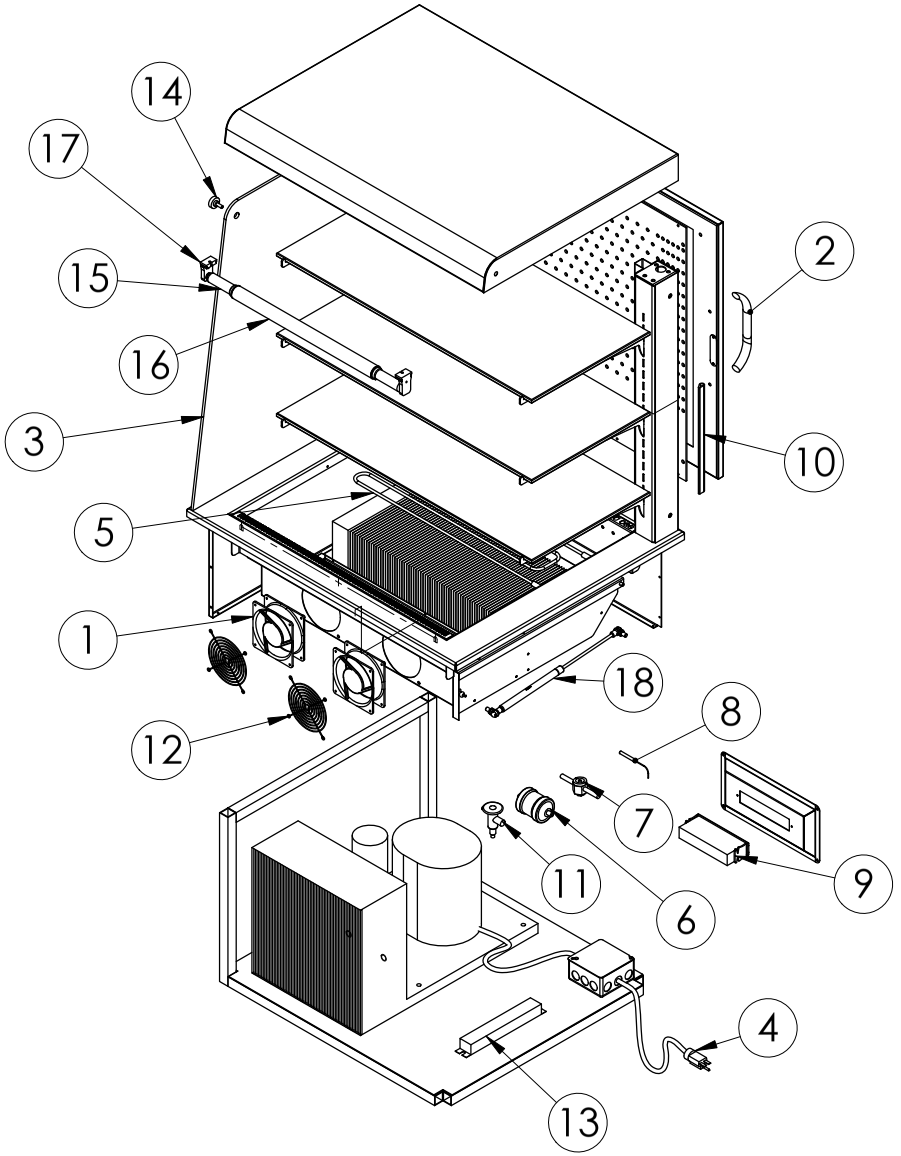
DANGER: Disconnect all power to unit before servicing.

SYMPTOMS	POSSIBLE CAUSE	REMEDIES
Pilot light 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.
Pilot light is on but condensing unit does not run	Thermostat control	Is the thermostat set properly?
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 pre-cool for at least 45 minutes with lids on?
	Thermostat control	Is the thermostat set properly?
	Voltage	Call a service technician.
Does not maintain 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	Has the unit been allowed to pre-cool for at least 30 minutes?
	Food Temperature	Was the product loaded at or below 38˚F?
	Loading	Are product packages blocking air flow?
	Voltage	Call a service technician.

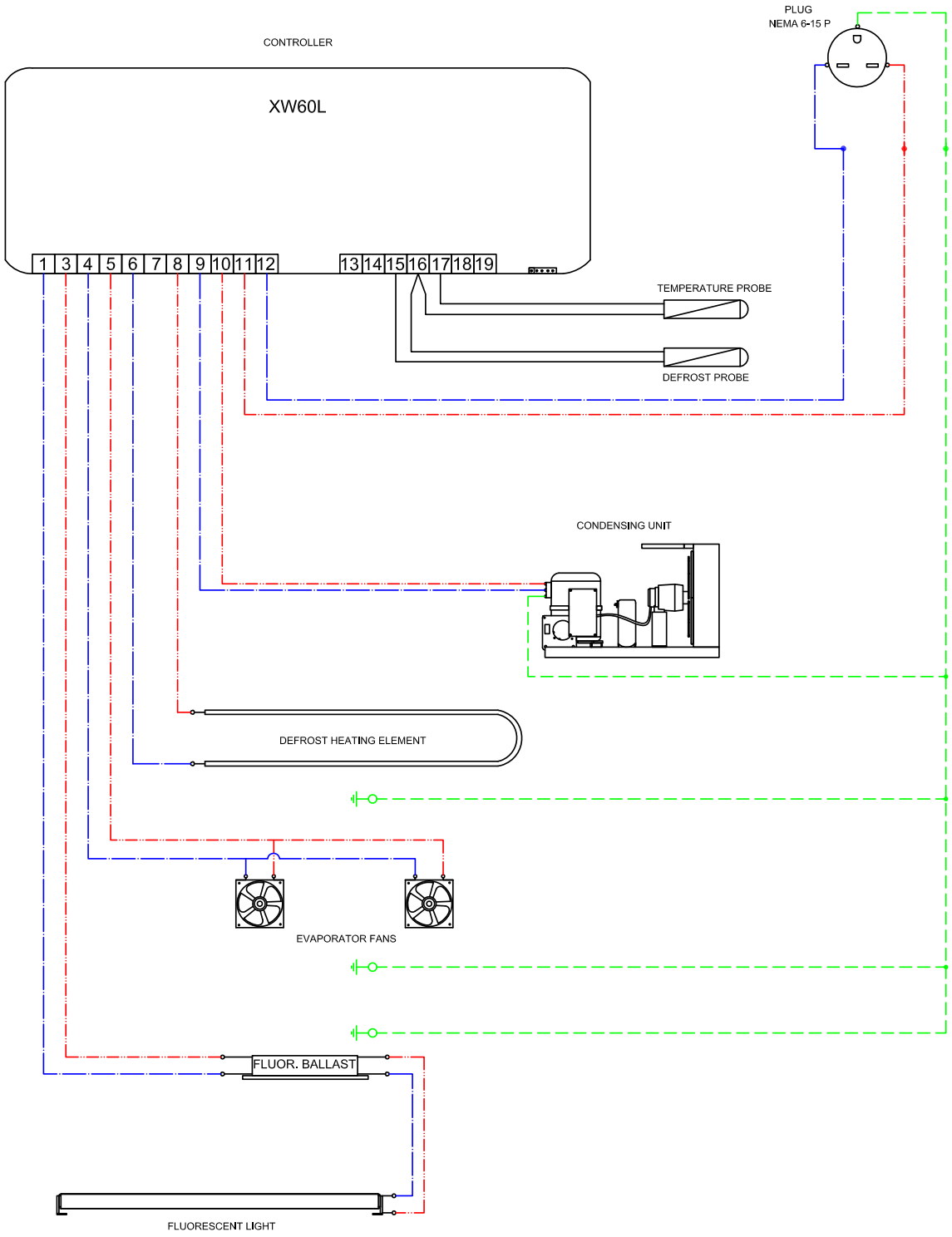
Call Piper Products directly at 800-544-3057 if you need further assistance.

OTR PARTS BREAKDOWN

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	13-501263	OTR FAN	2
	0115306	FAN MOTOR CORD (NOT SHOWN)	2
2	13-700064	HANDLE FOR OTR UNITS	1
3	13-700023	GLASS - SIDE - OTR	2
4	0111879	CORD:SJTOW 14/3 W/6-15P 10’	1
5	13-700060	HEATING ROD - OTR-1	1
6	13-105323	DRIER FILTER ALCO 3/8” ODF	1
7	13-501413	SA-13S C81099 SIGHT GLASS	1
8	706420	PROBE - 18NB-NTC-2.5M	2
9	13-106894	CONTROL OTR	1
10	13-700185	OTR DOOR GASKET	1
11	13-300154	DANFOSS TEV VALVE OTR	1
12	13-700040	FAN GUARD OTR	2
13	13-700071	FLOUR. LIGHT BALLAST	1
14	13-700041	GLASS STANDOFF	6
15	13-700074	BULB, FLOURESCENT 208V OTR-1	1
16	0303350	SHIELD:T60WT8-15W W/T8 CAP LMP	1
17	13-700070	FLUORESCENT LIGHT FIXTURE	2
18	13-700066	GAS SHOCK OTR	2



OTR WIRING DIAGRAM



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 cabinets, 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 work-ing 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 misapplication, 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.

NOTES

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