

OWNER'S MANUAL

CAMBRO® AIR CURTAIN ULTRA™

This owner's manual applies to all models that begin with the prefix ACU.



CAMBRO®
TRUSTED FOR GENERATIONS™

**AIR
CURTAIN
ULTRA**™

www.cambro.com

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I - Introduction

Exclusive “Food Sentry” Air Curtain Controls offer the ultimate performance and accurate cabinet temperatures when operating with the door opened, maintaining a temperature of 41°F (5°C) or below for a minimum of 45 minutes and a maximum of 120 minutes (conditional).

Congratulations and thank you for purchasing a Cambro Air Curtain Ultra Refrigerator. Your unit has been designed and manufactured under rigid controls to assure you the most efficient service. It is a full time unit, and may be used continuously as a “standard” refrigerator (with the door closed) or as an “air curtain” with the door open maintaining a 41°F (5°C) temperature or below for a minimum of 45 minutes and a maximum of 120 minutes (conditional). Please take a moment to read through this booklet of important information pertaining to your cabinet. By following a routine of proper use and care described on the following pages, your Cambro Air Curtain Ultra Refrigerator will last for many years.

IMPORTANT THINGS TO DO BEFORE USING AIR CURTAIN ULTRA:

- Properly uncrate your unit and check for any possible damage.
- Read this operating manual and instructions.
- Return your **Warranty & Manufacturer Registration Card** online (www.fweparts.com/cambro) or by email (AirCurtainUltra@cambro.com)
Your Manufacturer Registration Card must be returned within 30 days after initial delivery to put warranty into effect.
- Review installation instructions and have your unit(s) properly installed.
- Make sure all operators understand the contents of this manual and operation.



II - Delivery Inspection

All Cambro Air Curtain Ultra Refrigerators are shipped in containers to prevent damage. Upon delivery of your new Air Curtain Ultra: Inspect the shipping container for external damage. Any evidence of damage should be noted on the delivery receipt which should be then signed by the driver. Uncrate the unit and check for external damage. Carriers will accept claims for concealed damage if notified within fifteen (15) days of delivery and shipping container is retained for inspection.

Cambro Manufacturing Company cannot assume responsibility for loss or damage suffered in transit. The carrier assumed full responsibility of delivery in good order when shipment was accepted. We are, however, prepared to assist you if filing a claim is necessary. Notices are posted on the outside of each carton regarding freight claims and damage to further familiarize you with this information, as shown here.

All units are factory tested for performance and certified free from defects when shipped. The utmost care has been taken in manufacturing, crating and final inspection at the factory and / or shipping point to assure against damage in transit.

Should there be noted damage upon uncrating, carefully check the crate for visible signs of the cause. Save all crating material and immediately file a claim of damage with the carrier. Under no conditions may a damaged unit be returned to Cambro without prior written factory authorization (RMA). If damage is discovered, call your dealer, trucking company & **Cambro Customer Service Department at 833-935-1091**.

Delivery Inspections & Electrical Requirements, Continued:

Packaging: Your Air Curtain Refrigerator is shipped from the factory on a wood pallet and packaged in a durable cardboard container. The carton is attached to the wooden skid with the use of large staples. These should first be removed to avoid scratching the unit when lifting off the crate. Remove the wooden pallet and strapping material, and the unit should be rolled off the skid. Avoid laying the unit on its front, side or back for removal of the pallet.

Note: Cambro does not recommend laying the unit down on its front, side or back. However, if you must, please be certain to allow the unit to remain in an upright position afterwards for 48 hours before plugging the unit in or attempting to place the unit in to service, to assure that the compressor oils and refrigerant may settle.

Cambro's policy on damaged goods:

There are two types of damaged merchandise: VISIBLE DAMAGE and CONCEALED DAMAGE.

- A. CRATE HAS VISIBLE DAMAGE:
 - 1. The product / crate being received is visibly damaged.
 - 2. The receiver should **refuse the damaged merchandise**.
 - 3. Receiver should **sign the bill of lading indicating which merchandise is being "refused due to damage"**
- B. CONCEALED DAMAGE:
 - 1. Merchandise is damaged and could not be externally detected.
 - 2. Your receiving operation should inspect for this type of damage.
 - 3. **Save all packing material.**
 - 4. Contact Cambro Customer Service at 833-935-1091 and alert them to the situation.
 - 5. Receiver must call the carrier to schedule an inspection of the damaged merchandise within **15 days**.

Electrical

- 1. Check SERIAL PLATE to be sure the unit is installed on the proper NEMA plug 5-20P (on standard unit) electrical supply.
- 2. WARNING: This unit is provided with a three-pronged grounding plug. Be sure that the unit is plugged into a properly grounded outlet to avoid the possibility of electrical shock.

Cord & Plug: Your Air Curtain Refrigerator is supplied with a cord & plug attached. It is shipped coiled at the bottom of the cabinet, secured by a nylon strip. For your safety and protection, all units supplied with a cord and plug include a special three-prong grounding plug on the service cord. Select only a dedicated electrical outlet with grounding plug for power source. NOTE: Do not under any circumstances, cut or remove the round grounding prong from the plug, or use an extension cord.

Power Supply: The supply voltage should be checked prior to connection to be certain that proper voltage for the cabinet wiring is available (refer to the serial tag to determine correct unit voltage). Make connections in accordance with local electrical codes. Use qualified electrician's **USE OF A SEPARATE, DEDICATED 20 AMP CIRCUIT IS REQUIRED**. Size wiring to handle indicated load and provide necessary over-current protector in circuit (see amperage requirements on the unit's serial tag).

Wiring Diagram: Refer to the wiring diagram for any service work performed on the unit. Should you require service, please contact Cambro Customer Service and provide the model and serial number of the unit involved.

III - Installation

Location:

Selecting a proper location for your Cambro Air Curtain Ultra Refrigerator is very important.

Always:

- ✓ Install to assure that unit is level.
- ✓ Install to assure that unit is away from extreme heat.
- ✓ Install to assure that unit is away from a steamer.
- ✓ Install to assure that unit is NOT place near or under a ventilation duct or hood, (this will disturb the airflow of the Air Curtain and will hamper the performance of the unit).
- ✓ Install to assure that unit is 6" minimum distance from back of unit to wall or obstruction (ie: a wall).
- ✓ Install to assure that the door(s) may open a minimum of 90 degrees.

Never:

- ✗ Never install equipment in an area of standing water.
- ✗ Never install near or under a ventilation hood of duct return.
- ✗ Never install equipment in an area not conducive to safe and proper operator use.

Clearance:

It is important for proper operation and longevity of your Cambro Air Curtain Ultra that it have adequate provisions for air supply to the compressor. Allow approximately 6"-12" between the back grill of the unit and the wall for proper air flow.

Installation Steps:

1. The outside carton has already been removed and inspected for damage. Remove all packing and strapping material from the exterior and interior of the unit. (Note: Packing material should be saved should there be any damage to the unit.)
2. Remove the Cambro Air Curtain Ultra from the shipping skid. This is done by lifting the unit and rolling it off the skid. **Do not lay the cabinet down.**
3. Tray slides have tabs formed into the side of the support. Simply put the tab into the square hole in the side of the cabinet and push down to seat. The supports can be installed in a horizontal plane or can be mounted in a slightly sloped orientation to cause the product to slide forward on the sheet pans.
4. The LED digital temperature display is powered up when the unit is plugged in, it registers temperature in Fahrenheit degrees. The unit can be set up to show temperature in Celsius degrees. (See section VII, ON / OFF Switch for Instructions.)

IV - Performance

The Air Curtain Ultra Refrigerator is specifically designed to hold 41°F (5°C) temperature or below for a minimum of 45 minutes and a maximum of 90 minutes, dependent upon application and operating conditions. Examples that may alter performance include room temp, humidity, surrounding air exchanges, voltage, internal temperature of food product placed into the cabinet, profile of food product, and food product density.

When the door of the unit is closed, it operates as a force air refrigerator with a highly efficient refrigeration system that provides faster "pull down" and "recovery" times than standard refrigerators. When the door is opened, a series of blower fans create a "wall" of air and areas of pressure, localizing a unique pattern of air to keep the cold air in and the warm air out of the food zone and is specifically designed to help maintain and prolong the interior cabinet temperature and, thus, help maintain internal food product temperatures for extended periods of time with the door open, contributing to safer product storage during service hours. The Air Curtain seals itself around objects and is ideal for hospital and nursing home tray line / assembly line kitchen operations, flight kitchens, cafeterias, fast food and QSR applications. For best results, the air curtain was designed for "low profile" food products typical of these applications.

V - Intended Use

Typical Operating Parameters:

The “curtain” of air is capable of maintaining 41°F (5°C) temperature or below for a minimum of 45 minutes and a maximum of 2 hours based at 75°F / 45% RH. 120V 20 amp dedicated circuit. A “typical” operational environment can expect a result of a 60 minute range. HOWEVER, actual time your unit will run in this temperature zone depends on many factors, such as:

- Room ambient temperature
- Humidity levels
- Air disruption (such as a hood, vent, or air return)
- Amount of time unit was allowed to precondition the food(s)
- Food temperatures when placed into the unit
- Type of food packaging and profile of foods
- Regularly maintained and CLEANED condensing unit

It should also be noted that there is a lag time between the “ambient air” temperature in the cabinet and that of the actual product temperature. The food temperature differential can be 10°F (-12°C) to 25°F (-4°C) cooler than the temperature indicated by the temperature display. The Air Curtain Ultra is supplied with a electronic controller, which is very accurate and intuitive.

VI - Cabinet Features

Full Swing Door with Magnetic Hold Open Catch:

Door opens to lay flat against cabinet and is secured by a magnetic door edge “catch”. In addition, when the door is closed, it also is secured magnetically, thus removing the need of a cumbersome door latch.

Tray Slides:

Ten (10) pairs of removable stainless-steel trays slides are provided standard at 4 1/2” spacing. Each tray slide can accommodate one (1) 18”x26” pan / tray.

Side Grips & Rear Handle:

For easy mobility and maneuvering stainless steel recessed hand grips are provided on the left and right sides, in addition to a 1” welded tubular push/pull handle is attached to the rear of the cabinet. A full wrap-around perimeter bumper protects the unit.

Casters:

6” diameter polyurethane casters are supplied standard for Air Curtains models. They are attached to 10 gauge stainless steel corner plate reinforcements/stress pads. These are shipped already installed on the unit for immediate use.

VII - Electronic Controls

(A) ON/OFF BUTTON: Your unit’s ON/OFF button has two uses: The first is to turn your unit on and off. The second allows for you to select temperature display in either Fahrenheit or Celsius. Temperature display can be changed to indicate either degrees (F) Fahrenheit or degrees (C) Celsius. To change between temperature scales: While unit is plugged in and turned off, Press and hold the ON/OFF button for five seconds, after 5 seconds the display will show “de9F” or “de9C”, release the ON/OFF button, display will continue to show “de9F” or “de9C” for three seconds then display will go blank: Press ON/OFF button to turn your unit on. Display will show temperature followed by “F” or “C” to allow at glance recognition of temperature scale. Repeat this step to change temperature scale again.

- “de9F” indicates your unit will display temperature in Fahrenheit.
- “de9C” indicates your unit will display temperature in Celsius.

(B) POWER INDICATOR “ON” LIGHT: Your unit is equipped with an on indicator light. When illuminated the on light indicates Power is ON.

(C) CYCLING INDICATOR LIGHT: Your unit is equipped with a cooling system cycle indicator light. When cycle light is “ON”, this indicates your unit is cooling down to the desired temperature. When the refrigeration compressor is running the cycle light will come “ON” until your unit has reached the desired temperature, and go “OFF” when your unit has reached desired temperature.

(D) TEMPERATURE DISPLAY: Your unit allows you to select the temperature display in two modes, Actual temperature or Set Point temperature. Set Point temperature is the Cambro factory default. In circumstances where displaying the Actual temperature is desired the Cambro Air Curtain Ultra allows you to choose this function. Actual temperature will display internal cabinet temperature acting as an internal thermometer. To switch between Set-Point and Actual temperature display press and hold the temperature recall button. Display will flash “S” or “A” then display “SET” for Set-Point or “ACT” for Actual. When display is “SET” or “ACT” release the temperature recall button, to accept the new setting press and release the temperature recall button.

(E) TEMPERATURE SETTING: Your units operating temperature is PRE-SET at 34°F (1.1°C) with an operating temperature range of 33°F to 38°F (0.56°C to 3.33°C). To change temperature, press the up or down arrow temperature setting buttons.

(F) TEMP RECALL: Your unit is equipped with an easy access temp recall button. The temp recall button has two uses. First is to momentarily display set-point or actual temperature. When your unit is set to display Set-Point temperature press and release the temp recall button to see actual temperature, display will show actual temperature for 3 seconds then revert back to Set-Point display. When your unit is set to display actual temperature press and release the temp recall button to see set-point temperature, display will show set-point temperature for 3 seconds then revert back to actual temperature display. Second, The temp recall button is used to change temperature display between Set-Point and Actual temperature. Item (D) above describes how to change the display.

(G) DEFROSTING THE EVAPORATOR COIL: **Your unit offers you four defrost options.**

First is a smart auto defrosting option. Smart defrost is the factory default option and requires you to do nothing, the defrost cycle is automatic. Sensors on the evaporator coil read coil temperature and decide how long and how often your unit requires defrosting. Depending on usage and environment your unit will defrost in intervals of 4, 6, 8 and 10 hours.

Second defrost option is a user selected defrost time interval. This will allow you to select defrost time intervals that work best for your operation. You can select unit defrost time intervals from every 4 hours to every 12 hours in one hour increments. To activate and set your custom defrost option press and hold the manual defrost, up arrow and down arrow buttons for ten seconds. The controller will beep and display a flashing 4HR, use the up and down arrow button to set your desired defrost interval time. When desired defrost interval time is reached press the temp recall button to accept your defrost time option. To unselect your timed defrost option repeat same steps and use the up or down arrow buttons until display shows “OFF”, press the temp recall button to accept. This will revert back to the worry free auto smart defrost option. Important note: If you do select to use the timed interval defrost option Cambro recommends setting the defrost interval at every 8 hours.

Third defrost option is a manual forced defrost. This is simply pressing the manual defrost button at any time you need to defrost the evaporator coil. Pressing the manual defrost button will start a defrost cycle at any time regardless of what defrost option is selected. The light above the manual defrost will illuminate to let you know the unit is in defrost. The manual defrost button has a second function, when your unit is in a defrost cycle you can terminate the defrost by pressing the manual defrost button, allow two minutes for cooling cycle to start.

Fourth defrost option is a hard defrost. This option will start a prolonged defrost cycle and should only be used in case of extreme evaporator ice build up. You should only use the hard defrost option when instructed to do so by a member of Cambro Customer Service staff.

Cambro Customer Service - 833-935-1091.

During a defrost cycle the indicator light located above the manual defrost button will illuminate. The cooling system condenser/compressor and fans are momentarily disabled. Defrost feature allows proper defrosting of accumulated ice build up on the evaporator coil. The defrost cycle can be canceled by pressing the manual defrost button. If a defrost cycle is canceled in this manner there is a ONE minute wait period before the cooling system starts. The controller will display a 60 second countdown indicating the one minute wait period.

During a defrost cycle the condensation from the evaporator coil will flow from the top of the unit down a drain line to the condensate vapor pan. The condensate vapor pan will automatically evaporate all defrost condensation. There is no need to empty a defrost water pan. Vapor can sometimes be visible and should be considered a normal operating condition. Proper attention should be given to defrost your unit. Every “Event” or time the unit is used with door open, the coil may build up ice reducing the effectiveness and overall operation of your unit.

(F) Temp Recall -

Press to display either the "Actual Internal Cabinet" or "Set Point" Temperature.

(D) Temp Display -

Unit may display either "Actual Internal Cabinet" actual temperature, or desired "Set Point" Temperature in either Fahrenheit "dgF" (33°F to 38°F) or Celsius "dgC" (.56°C to 3.33°C) Scale.

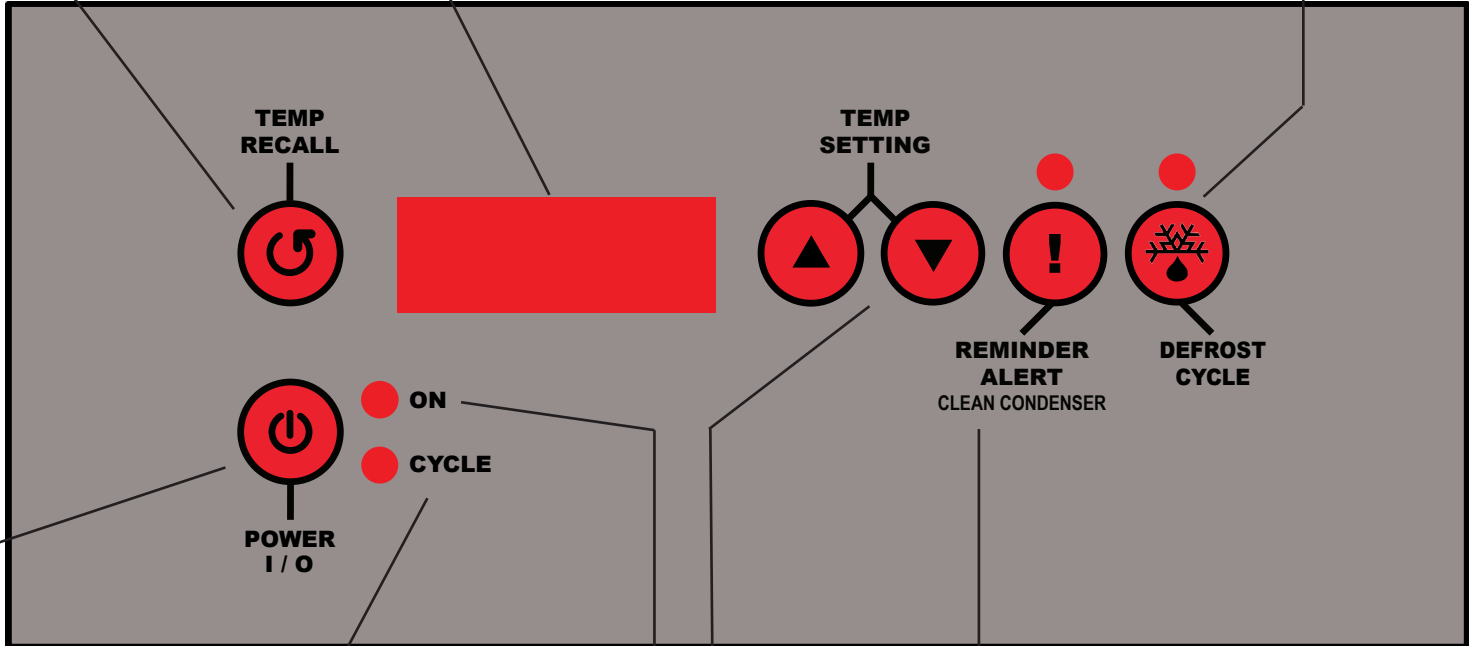
Actual: The factory default setting shows the actual internal cabinet temperature and acts as a digital thermometer.

Set Point: To have temperature read-out display the "Set Point" temperature, press and hold the "Temp Recall" button for five (5) seconds. The display will flash either "S" (Set), or "A" (Actual) to indicate which mode is active. To switch back again, repeat this step holding the "Temp Recall" button for five (5) seconds.

To momentarily review the alternate display value, press and release the Temp Recall button

(G) DEFROST

Press to initiate "ON DEMAND DEFROST"
- OR - Over-ride a defrost cycle in progress
Defrost cycle is automatic.



(A) On/Off Switch -

Serves two functions, turns cabinet ON or OFF and also allows you to change the temperature scale from Degrees (F) Fahrenheit to Degrees (C) Celsius as required.

(B) Power Indicator Light -

Indicates that the power is on

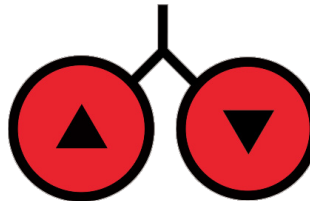
(C) Cycling Indicator Light -

Indicates cabinet is cooling down

(E) Temperature Setting -

TO CHANGE TEMPERATURE:

Press UP Arrow - or - DOWN Arrow.



Operating temperature is pre-set at 34°F (1.1°C) with temperature range 33°F to 38°F (.56°C to 3.33°C).

(H) Clean Condenser Reminder -

Your unit comes with a clean condenser reminder light, located next to the up and down arrow temperature control buttons. The most important thing you can do to insure a long, reliable service life for your Air Curtain Ultra is to regularly clean the condenser coil.

The condensing unit requires regularly scheduled cleaning to keep the finned condenser clean of lint and dust accumulation. Keeping the condenser clean allows the unit to operate efficiently, use less energy and achieve top performance values. The clean condenser light will illuminate approximately every 60 days of run time to remind you its time to care for your unit and clean the condenser coil. Reset the clean condenser timer by pressing the clean condenser button.

Refer to the "General cleaning and maintenance" section of this manual for proper cleaning instructions.

Every "event" or time the unit is used with the door open, the coil will build-up ice, reducing the effectiveness of the overall operation of the unit. Defrost feature allows proper defrosting of the accumulated condensation and ice build-up on the coil. Check water pan for a higher water level which indicates a successful defrost of the coil. Certain conditions may require 3 repeated sequential defrosts.

VIII - Transporting

WARNING: Do not attempt to move the Air Curtain Ultra Refrigerator until the unit is turned off, the power cord is unplugged and out-of-the-way, or secured around rear handle.

Door must be securely shut and all caster locks released.

Maneuver unit by grasping the side handles or rear handle. **CAUTION:** The unit is designed for internal use and not designed for outdoor all-terrain transport. Though the compressor has been located at the bottom of the unit, lowering the center-of-gravity, the distribution of weight of the unit and food product makes the unit top heavy. Be cautious when approaching uneven flooring (such as door sills, drains, thresholds, etc).

IX - Open Door Operation

1. Set Temp. Pre-Chill empty cabinet to minimum of 34°F to 36°F (1°C to 2.2°C) with door closed minimum of one (1) hour.

Load cabinet from bottom to top with PRE-CHILLED FOOD AT 40F (4.4°C) or colder. Push trays to rear of wall.

FULL SWING DOOR WITH MAGNETIC HOLD OPEN CATCH:

Door opens to lay flat against cabinet and is secured by a magnetic door edge.

Note: Prior to “operating with door open”, food product should be prechilled to an internal food temperature of 36°F (2.2°C) or below.

2. After loading, close cabinet door and allow inside temperature to re-stabilize to designated set temperature (or to desired internal temperature of food product).
3. Unload cabinet from top to bottom. Empty trays can be removed or left in the unit after unloading. Trays will not appreciably effect the overall performance of the unit, however, keeping the 10 tray slides racked in the cabinet after trays have been emptied of food product may result in slightly better performance.
4. This unit is equipped with an automatic condensate evaporator. To prevent water spills, leave unit plugged in with door closed after use. A recommendation would be to defrost after use as well, to free coil from ice build up formed during use.
5. Your unit is equipped with a smart controller. During open door operation your unit knows the door is open. When operating your unit with door open the display will show “OPEn” and an internal count down timer will start. Your unit will allow open door operation for a maximum of 2 hours. During the open door operation your unit will not go into an auto or timed interval defrost cycle. During open door operation the cooling system will remain on. This ensures you will receive optimum open door performance. If door is open longer than 2 hours an open door alarm will be activated. Display will flash “OPEn” and beep three times every ten seconds. **To terminate the open door alarm, the door must be closed and remain closed for five minutes. If door open alarm is activated, unit will activate a hard defrost cycle five minutes after door is closed.** Door must remain closed until defrost cycle is complete, approximately 30 minutes.
6. **INTERNAL CABINET TEMPERATURE WILL ELEVATE DURING DEFROST CYCLE.**
7. For performance values with door open, *see section V.*
8. For trouble shooting and addressing performance issues, *see section XII.*

X - General Cleaning & Maintenance



WARNING: RISK OF ELECTRICAL SHOCK. DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT OR PRIOR TO ANY SERVICE.

Cleaning the Condenser:

The most important thing you can do to insure a long, reliable service life for your Cambro Air Curtain ultra Refrigerator is to regularly clean the condenser (compressor) coil. The condensing unit requires regularly scheduled cleaning to keep the finned condenser clean of link and dust accumulation. Keeping the condenser clean allows the cabinet to operate efficiently, use less energy, and achieve top performance values.

Cleaning the Condenser, Continued:

To clean the condenser, first disconnect electrical power to the cabinet and remove the front and/or rear louver assembly. To remove the front louver assembly simply pull the assembly down and out, the louver assembly is held in place with magnets. To remove the rear louver assembly, remove all screws located on the louver assembly. Once the screws are removed the louver assembly can be removed. Removing front louver assembly allows full access to the front facing condenser. Vacuum any dirt, lint, or dust from the finned condenser coil, the compressor and other cooling system parts. If significant dirt is clogging the condenser fins*, use soft brush or compressed air to blow this clear.

***NOTE: Care should be taken not to bend any of the condenser fins, as this will reduce performance and compressor life.** Replace louver assembly and screws, on rear louver assembly, which hold it in place.

General Cleaning Guide of Stainless Steel:

Stainless steel should be cleaned with warm water, mild soap and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain. A stainless steel polish may be used to renew and protect finish.

- Do not use gritty or abrasive cleaners as they may tend to mar and scratch the surface.
- **Do NOT use cleansers containing chlorine, this may promote corrosion of the stainless steel.**
- Check the ingredients of cleaning solutions or disinfectants used as they may contain chlorinated solvents. Always read the label of the cleaning solutions. Check for warnings about use on stainless steel products. Repeated use of chlorinated solvents may cause a chemical reaction with the stainless steel, which will damage the surface and cause rusting.

Care should also be taken to avoid splashing the unit with water containing chlorinated cleansers, when mopping the floor around the unit.

For stubborn harder spills, use baking soda and water (mixed to a 1TBSP baking soda to 1 pint water ratio), or a paint thinner may be used. Unit must be then cleaned with warm water to remove any baking soda or thinner cleaner residue.

Cleaning the Interior:

For stubborn stains, the use of baking soda is recommended. Use on breaker strips as well as door gaskets.

- For routine cleaning, it is NOT necessary to remove the interior air flow tunnels (left and right sides). These panels are critical to the performance of the Air Curtain.
- Door gasket is removable for cleaning when necessary.

AIR FLOW TUNNELS: Should the situation arise where the air flow tunnels needed to be removed (not required for routine cleaning) to clean a major spill that has flowed behind the air flow vents, lift pivot upward on retention device to loosen tunnel.

Routine Visual Check:

1. Inspect door gaskets. They should “snap” against door jamb before closure is complete. Visually check that the gaskets are sealed in their retainers and inspect for wear and tear. Replace if gaskets are torn or broken.
2. Inspect bumpers for damage or wear.
3. Inspect cord for damage or wear.
4. Remove any debris such as mop strings, hair and hair nets from casters and replace when tread is 1/4” thick.

Experiencing White Powder Residue?
Your cleanser contains chlorine.
Do NOT use cleansers containing chlorine.

XI - Service Information

Before calling for service, please check the following:

If the unit is NOT COOLING down to the proper temperature, check these two common causes:

1. **The evaporator coils needs defrosting.** Press the "ON DEMAND DEFROST" button on the control panel. Unit will defrost in approximately 20 minutes. Light above defrost button will illuminate when in defrost. The unit will automatically return to normal operation after a defrost cycle, having a transition time of two (2) minutes. **Certain conditions may require 3 repeated sequential defrosts. A "HARD DEFROST": Consult Cambro Customer Service for HARD DEFROST procedures.**
2. **Dirt, lint, and/or dust are on the condenser (compressor) coil.** To clean the condenser, first disconnect electrical power to the cabinet and remove the screws on the front and/or rear louver assembly. Removed louvered panel allowing full access to the front facing condenser. Vacuum any dirt, lint, and/or dust from the finned condenser coil, the compressor and other cooling system parts. If significant dirty is clogging the condenser fins, use brush or compressed air to blow this clear. **NOTE: Care should be taken not to bend any of the condenser fins, as this will reduce performance and compressor life.** Replace louver assembly and screws which hold it in place.

If the unit is **NOT WORKING** at all, please check the following:

- Is the electrical cord plugged in?
- Is the circuit breaker on and fuse OK?
- Is the "ON" indicator light illuminated? Press POWER On/Off button to illuminate.

If after checking the above items and the unit is still not operating properly, please contact Cambro for an authorized service agent.

Phone 833-935-1091

Email: AirCurtainUltra@Cambro.com

Spare Parts:

Spare or replacement parts may be obtained through a parts supplier or an authorized service agent.

Phone: 833-935-1091

Warranty Registration:

Complete the enclosed warranty card shipped with the unit, Mail to:

Cambro Manufacturing
C/O Food Warming Equipment Co., Inc.
P.O. Box 1001
Crystal Lake, IL 60039-1001

HELPFUL HINTS FOR TOP PERFORMANCE

- **LOAD CABINET FROM BOTTOM TO TOP**
- **PUSH PANS AND TRAYS ALL THE WAY BACK TO REAR WALL**
- **UNLOAD CABINET FROM TOP TO BOTTOM**
- **DEFROST UNIT DAILY OR AFTER EACH PROLONGED USAGE**
- **REGULARLY CLEAN CONDENSER (COMPRESSOR) COIL**

XII - Troubleshooting Guide

- 1. Product zone temperature too high.**
 1. Control Setting Too High - Reset Control
 2. Inadequate Air Circulation - Rearrange Product Load To Improve Air Circulation And Flow. Keep Empty Trays in Position.
 3. Unit May Need To Be Manually Defrosted. (Refer to Page 5.)
 4. Unit May Be In Defrost Cycle. See Indicator Light. Close Door And Wait 20 Minutes for Defrost Cycle To Finish.
 5. Clean the Condenser (Refer to Page 11.)
- 2. Air Screen unit fails to start - no hum.**
 1. Power Cord is Disconnected - Reconnect
 2. Fuse - Replace Fuse
 3. Circuit Breaker has Tripped. Reset Breaker in Electrical Box.
 4. Overload Protection - Determine Reason & Correct, Replace If Necessary
 5. Unit may need to be defrosted or has tripped off due to overload. Wait 30 minutes: Unit will self-reset.
- 3. Condensing unit fails to start - hums but trips on overload protector.**
 1. Unit may need to be defrosted or has tripped off due to overload. Wait 30 minutes: Unit will self-reset.
 2. Improperly Wired - Check Wiring Against Diagram
 3. Low Voltage - Determine Reason & Correct
 4. Starting Capacitor Defective - Determine Reason & Replace
 5. Relay Not Closing - Determine Reason & Correct, Replace If Necessary
 6. Compressor Motor Has Winding Open Or Shorted - Replace Compressor
 7. Internal Mechanical Trouble In Compressor - Replace Compressor
- 4. Condensing unit starts, but fails to switch.**
 1. Improperly Wired - Check Wiring Against Diagram off of "start" winding.
 2. Low Voltage - Determine Reason & Correct
 3. Relay Failing To Open - Determine Reason & Correct, Replace If Necessary
 4. Run Capacitor Defective - Determine Reason & Replace
 5. Excessively High Discharge Pressure - Check Discharge Shut-Off Valve, Or Insufficient Cooling On Condenser
 6. Compressor Motor Has Winding Open Or Shorted - Replace Compressor
 7. Internal Mechanical Trouble In Compressor - Replace Compressor
- 5. Condensing unit starts and runs, but short cycles on overload protector.**
 1. Additional Current Passing Through Overload Protector - Check Wiring Diagram. Check For Added Fan Motors, Pumps, etc., Connected To Wrong Side Of Protector
 2. Low Voltage To Unit (or unbalanced if three phase) - Determine Reason & Correct
 3. Overload Protector Defective - Check Current - Replace Protector
 4. Run Capacitor Defective - Determine Reason & Replace
 5. Excessive Discharge Pressure - Check Ventilation, Restrictions In Cooling Medium, Restrictions in Refrigeration System
 6. Suction Pressure Too High - Check For Possibility Of Misapplication. Use Stronger Unit
 7. Compressor Too Hot (return gas) - Check Refrigerant Charge (fix leak) Add If Necessary
 8. Compressor Motor Has Winding Shorted - Replace Compressor
- 6. Condensing unit runs but short cycles on.**
 1. Overload Protector - See #3 Above
 2. Thermostat - Differential Set Too Close
 3. High Pressure "Cut-Out" Due To:
 - a) Insufficient Air or Water Supply - Check Air or Water Supply To Condenser, Correct
 - b) Overcharge - Reduce Refrigerant Charge
 - c) Air In System - Purge
 4. Low Pressure "Cut-Out" Due To:
 - a) Liquid Line Solenoid Leaking - Replace
 - b) Compressor Valve Leak - Replace
 - c) Undercharge - Fix Leak, Add Refrigerant
 - d) Restriction In Expansion Device - Replace Device
- 7. Condensing unit operates for prolonged periods or continuously.**
 1. Unit may need to be defrosted
 2. Shortage Of Refrigerant - Fix Leak, Add Charge
 3. Control Contacts Stuck or Frozen Closed - Clean Contacts or Replace Control
 4. Excessive Heat Load Placed Into Cabinet - Allow Unit Sufficient Time For Removal Of Latent Heat
 5. Prolonged or Too Frequent Door Openings - Plan or Organize Schedule To Correct Condition
 6. Evaporator Coil Iced - Defrost
 7. Restriction In Refrigeration System - Determine Locations & Remove
 8. Dirty Condenser - Clean Condenser
 9. Filter Dirty - Clean or Replace

Troubleshooting Guide, Continued:

8. Start capacitor open or shorted or blown.

1. Relay Contacts Not Opening Properly - Clean Contacts or Replace Relay If Necessary
2. Prolonged Operation On Start Cycle Due To:
 - a) Low Voltage To Unit - Determine Reason & Correct
 - b) Improper Relay - Replace
 - c) Starting Load Too High - Correct By Using Pump Down Arrangement If Necessary
3. Excessive Short Cycling - Determine Reason For Short Cycling (see #6, previous page) And Correct
4. Improper Capacitor - Determine Correct Size

9. Run capacitor open, shorted or blown.

1. Improper Capacitor - Determine Correct Size & Replace
2. Excessively High Line Voltage (110% of rated max) - Determine Reason & Correct

10. Relay defective or burned out.

1. Incorrect Relay - Check & Replace
2. Incorrect Mounting Angle - Remount Relay In Correct Position
3. Line Voltage Too High or Too Low - Determine Reason & Correct
4. Excessive Short Cycling - Determine Reason (see #6, previous page) & Correct
5. Relay Being Influenced By Loose Vibrating Mounting - Remount Rigidly
6. Incorrect Run Capacitor - Replace With Proper Capacitor

11. Suction line frosted or sweating.

1. Overcharge of refrigerant - Correct Charge
2. Evaporator Fan Not Running - Determine Reason & Correct

12. Liquid line frosted or sweating.

1. Restriction In Dehydrator or Strainer - Replace Part
2. Liquid Shut-Off (king valve) Partially Closed - Open Valve Fully

13. Noisy condensing unit.

1. Loose Parts or Mounting - Find & Tighten
2. Tubing Rattle - Reform To Free Of Contact
3. Bent Fan Blade Causing Vibration - Replace Blade
4. Fan Motor Bearing Worn - Replace Motor

14. Error Message:

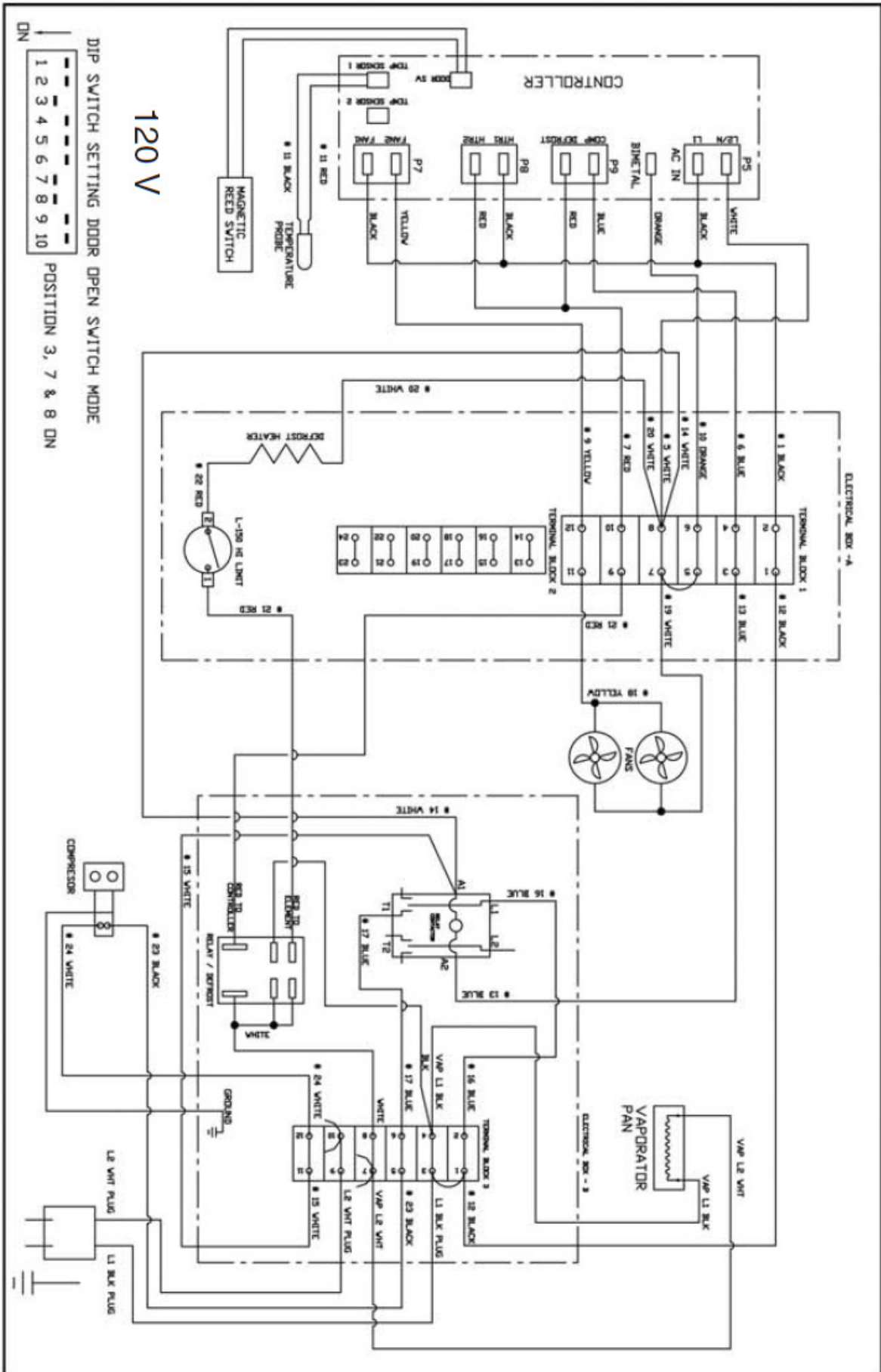
- | | |
|--------|----------------------------------|
| "Err1" | 1. Sensor Failure |
| "Err2" | 2. Configuration Connector Error |
| "Err3" | 3. Not Defined |
| "Err4" | 4. Under Temperature |
| "Err5" | 5. Over Temperature |
| "Err6" | 6. Key Shorted |
| "Err7" | 7. Door Switch |
| "Err8" | 8. EEPROM Possible Corruption |

XII - Replacement Parts

Please visit www.fweparts.com/cambro for a full list of replacement parts, exploded view documents and other resources or scan the below QR code from a mobile device:



XIII - Wiring Diagram



LIMITED ORIGINAL COMMERCIAL ELECTRICAL EQUIPMENT WARRANTY

Cambro Manufacturing Company (Seller) warrants to the original purchaser, subject to the exceptions and conditions below, that Cambro manufactured equipment shall be free from defects in material or factory workmanship, under ordinary use for the purpose for which it is designed. The effective warranty period is as follows:

PARTS: Seller will furnish without charge to the original purchaser, FOB Sellers' factory, replacement parts for repairs to all new standard catalog products and factory custom / modified units, which in Seller's sole judgment, prove defective in materials or workmanship under normal and proper use with the reserved right to request the return of any part claimed to be defective, prior to issuing replacement part or authorizing warranty service, for a period of two (2) years from date of original shipment from Seller's plant, except for equipment used in a Correctional Environment / Facilities, which is warranted for a period of one (1) year from date of original shipment from Seller's plant.

LABOR: Seller's labor warranty shall be performed by a Seller-approved Service Agency who must contact Seller to obtain a Warranty Service Authorization (WSA) number prior to performing any repairs. If service is required during overtime periods, the difference between overtime and standard labor rates shall be paid by the purchaser. Seller does not assume any responsibility for any charges not expressly authorized, incidental to the repair or replacement of equipment covered by this warranty, nor charges exceeding, in Seller's sole judgment, normal and customary amounts. Only approved travel charges will be allowed. Seller's labor warranty shall be from the date of original shipment date from Seller's plant for a period of one (1) year, except for equipment used in a Correctional Environment / Facilities which is warranted for a period of six (6) months.

This warranty is for normal usage and does not apply to any product or parts thereof that have been misused, altered, or where Seller's operating instructions or specific voltage is not observed; nor shall this warranty apply to defective products or parts resulting from accident following date of original shipment, nor extend to or cover removal, installation, re-installation or calibration, or service calls or cost of repairs undertaken by a customer.

Cambro Manufacturing does not recommend or authorize the use of any product(s) in a non-commercial application, including but not limited to residential use. The use or installation of any product(s) in non-commercial applications renders all warranties, express or implied, including the warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, null and void, including any responsibility for damage, costs and legal actions resulting from use or installation of product(s) in any Non-commercial setting.

This states the exclusive remedy against Cambro Manufacturing relating to the product(s), whether in contract or in tort or under any other legal theory, and whether arising out of warranties, representations, instructions, installations or defects from any cause. Cambro Manufacturing shall not be liable, under any legal theory, for loss of use, revenue or profit, or for substitute use of or performance, or for incidental, indirect, or special or consequential damages or for any other loss or cost of a similar type.

THIS WARRANTY AND THE REPRESENTATIONS AND TERMS SET FORTH HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, INCLUDING BUT NOT LIMITED TO, OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE AND CONSTITUTES THE ONLY WARRANTY OF CAMBRO MANUFACTURING WITH RESPECT TO THE PRODUCT(S).

This warranty is also subject to the following:

1. Customer returning the warranty registration card, accompanying Sellers original shipment, to Seller within thirty (30) days of receipt;
2. Giving immediate notice of any allegedly defective part or product to Seller; and
3. Customer, at Sellers request, returning said defective parts or product to Seller.

This is the sole warranty applicable to the merchandise. It is expressly understood that Seller's liability hereunder is limited to the repair or replacement, at Seller's option, of products or parts, defective materials or workmanship as provided above. Seller's judgment as to the cause and nature of any defect will be final. Seller shall in no case be responsible for special or consequential damages or any other obligation or liability with respect to products sold by Seller.

This warranty, as stated above, applies to equipment installed in the Continental United States. Cambro equipment installed outside the Continental United States shall carry parts coverage only. All labor costs are approved on a discretionary basis, based on like repairs in the Continental U.S. This warranty shall stand in whole or in part as allowed by law. Any exclusion of a part of this warranty, as may be allowed by law, shall not void balance of warranty.

This is a limited warranty pursuant to the Consumer Product Warranties Act, 15 U.S. Code. Section 2303.

RETURN POLICY: Cambro Manufacturing products cannot be returned without prior written factory authorization (**RMA**). The restocking charge is 15% plus any costs required to recondition the equipment. No returns accepted after 90 days from date of invoice. Electrical components returned are subject to inspection prior to credit being issued. Electrical components which have been installed by an operator or non-approved service agent are not returnable for credit.

