



A Plus Reach-In Refrigerators & Freezers

Refrigerator Models: _____

- #447AP23R** 27 ½" Single Solid Door
#447AP49R 55 ¾" Double Solid Door

Freezer Models: _____

- #447AP23F** 27 ½" Single Solid Door
#447AP49F 55 ¾" Double Solid Door

Note:

Read this manual in its entirety prior to equipment setup, operation, and maintenance.

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Intertek
3078742



Intertek
3078742



NEMA
5-15P

CONFORMS TO NSF/ANSI STD. 7
CONFORMS TO UL STD. 471

Warnings

DANGER – RISK OF FIRE OR EXPLOSION. FLAMMABLE REFRIGERANT USED. TO BE REPAIRED ONLY BY TRAINED SERVICE PERSONNEL. DO NOT PUNCTURE REFRIGERANT TUBING.

PELIGRO – RIESGO DE INCENDIO O EXPLOSION. REFRIGERANTE INFLAMABLE UTILIZADO. PARA SER REPARADO SOLAMENTE POR PERSONAL DE SERVICIO CALIFICADO. NO PINCHAR LA TUBERÍA REFRIGERANTE.

DANGER – RISQUE DE FEU OU D'EXPLOSION. LE FRIGORIGÈNE EST INFLAMMABLE. CONFIER LES RÉPARATIONS À UN TECHNICIEN SPÉCIALISÉ. NE PAS PERFORER LA TUBULURE CONTENANT LE FRIGORIGÈNE.

CAUTION – RISK OF FIRE OR EXPLOSION. FLAMMABLE REFRIGERANT USED. CONSULT REPAIR MANUAL/ OWNER'S GUIDE BEFORE ATTEMPTING TO SERVICE THIS PRODUCT. ALL SAFETY PRECAUTIONS MUST BE FOLLOWED.

ATENCION – RIESGO DE INCENDIO O EXPLOSIÓN. REFRIGERANTE INFLAMABLE UTILIZADO. CONSULTE EL MANUAL DE REPARACIÓN / GUÍA DEL PROPIETARIO ANTES DE INTENTAR DAR SERVICIO A ESTE PRODUCTO. DEBEN CUMPLIR CON TODAS LAS PRECAUCIONES DE SEGURIDAD.

ATTENTION – RISQUE DE FEU OU D'EXPLOSION. LE FRIGORIGÈNE EST INFLAMMABLE. CONSULTER LE MANUEL DU PROPRIÉTAIRE/GUIDE DE RÉPARATION AVANT DE TENTER UNE RÉPARATION. TOUTES LES MESURES DE SÉCURITÉ DOIVENT ÊTRE RESPECTÉES.

CAUTION – RISK OF FIRE OR EXPLOSION DUE TO PUNCTURE OF REFRIGERANT TUBING; FOLLOW HANDLING INSTRUCTIONS CAREFULLY. FLAMMABLE REFRIGERANT USED.

ATENCION – RIESGO DE INCENDIO O EXPLOSIÓN DEBIDO A LA PERFORACION DE LA TUBERÍA REFRIGERANTE; SIGA LAS INSTRUCCIONES DE MANIPULACIÓN CON CUIDADO. REFRIGERANTE INFLAMABLE UTILIZADO.

ATTENTION – RISQUE DE FEU OU D'EXPLOSION SI LA TUBULURE CONTENANT LE FRIGORIGÈNE EST PERFORÉE; SUIVRE LES INSTRUCTIONS DE MANUTENTION AVEC SOIN. LE FRIGORIGÈNE EST INFLAMMABLE.

CAUTION – RISK OF FIRE OR EXPLOSION DUE TO FLAMMABLE REFRIGERANT USED. FOLLOW HANDLING INSTRUCTIONS CAREFULLY IN COMPLIANCE WITH LOCAL GOVERNMENT REGULATIONS.

ATENCION – RIESGO DE INCENDIO O EXPLOSIÓN DEBIDO A REFRIGERANTE INFLAMABLE UTILIZADO. SIGA LAS INSTRUCCIONES DE MANIPULACIÓN CON CUIDADO CONFORME A LAS REGLAS DE LA MUNICIPALIDAD.

ATTENTION – RISQUE DE FEU OU D'EXPLOSION SI LE FRIGORIGÈNE EST INFLAMMABLE. SUIVRE LES INSTRUCTIONS DE MANUTENTION AVEC SOIN CONFORMÉMENT AUX RÈGLEMENTATION GOUVERNEMENTALE LOCAUX.

Installation

Read this manual thoroughly prior to equipment setup, operation, and maintenance.

This unit is intended for use in a temperature-controlled environment of less than 75°F and 60% relative humidity.

Before Installation

- If the shelf has a raised lip, the lip needs to be installed facing up towards the rear of the cabinet to promote proper airflow. Failure to install the shelves properly is considered user error and is not covered by warranty.
- If the unit has recently been transported on its side, let unit stand upright for a minimum of 24 hours before plugging it in.
- Make sure that the unit has reached the desired temperature before loading the unit with products. This unit is meant for keeping cold products cold, not chilling warm products.
- Make sure that there is proper ventilation around the unit in the area where it will operate.
- Make sure all accessories are installed (i.e., shelves, shelf clips, casters) before plugging in the unit.
- Do not attempt to remove or repair any component of the unit. Consult an authorized service technician for servicing/repair.
- Do not hang on doors or stand inside the unit.

Installation of Casters

1. Cut the four straps which attach the unit to the pallet.
2. Adjust the unit on the pallet until the pre-drilled holes are exposed.
3. Using wedges or team-lift, lift the unit high enough that there is enough clearance to affix the casters.



CAUTION! NEVER LAY UNIT ON ITS BACK OR SIDES! UNIT SHOULD ONLY BE PLUGGED IN WHEN IT HAS RESTED IN THE CORRECT, UPRIGHT POSITION FOR AT LEAST 24 HOURS. Failure to meet this requirement will void warranty coverage if compressor damage ensues.

4. Ensure the unit will sit level on a sloped or uneven floor by using the shims provided.
 - a. Insert any necessary shims between the caster and the frame rail.
 - b. Make sure the slot of the shim is in contact with the threaded stem of the caster.
 - c. If using more than one shim, it is necessary to place them in opposite directions. If multiple shims are placed side by side in the same direction, they may dislodge.
5. Turn the bearing race clockwise to tighten and secure the caster. Use provided tool to secure all casters properly.

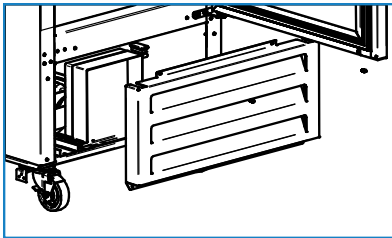


Field Convertible Doors

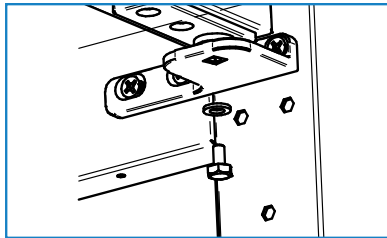
The Avantco AP-23R and AP-23F ship with a right-hinged door design. These single door models have the ability to be switched to a left-hinged door design. Please follow instructions below:

Tools Needed:

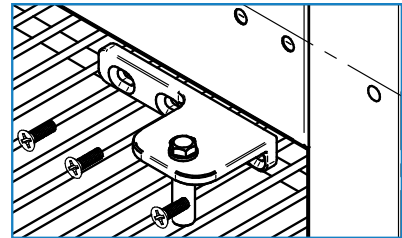
- Phillips Head Screwdriver
- 10 mm Wrench



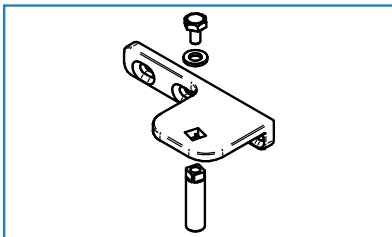
1. Use the Phillips head screwdriver to remove the front panel screws, followed by the front panel.



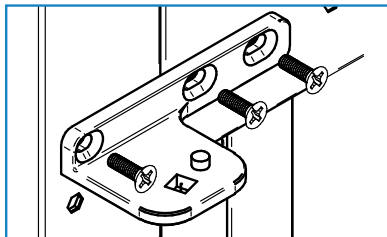
2. Use the wrench to remove the bottom hinge hex screw, then loosen the hinge screws and carefully remove the door.



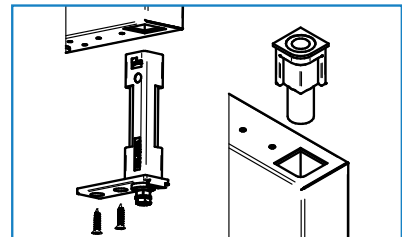
3. Use the screwdriver to remove the bottom and top hinges.



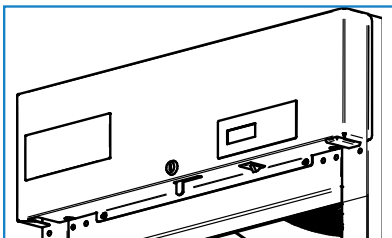
4. Use the wrench to remove the bolt of the top left hinge, then install the bolt into the bottom hinge.



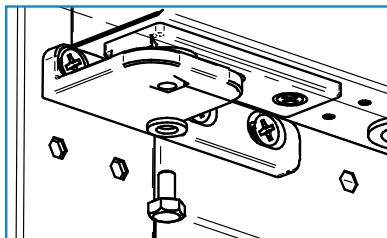
5. Install the bottom right hinge in the top left side of the equipment. Then, install the top right hinge in the bottom left side of the equipment.



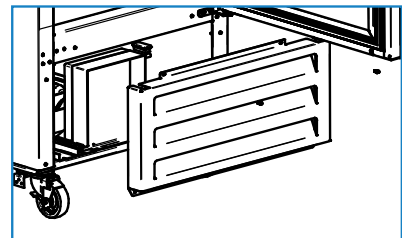
6. Remove the bottom cartridge and bolt housing from the door. Install the cartridge at the top of the door and the bolt housing in the bottom.



7. Remove the top head screws, then move the hinge cap to the right side. Reinstall the top head screws.



8. Install the hinges on the left side, but do not tighten the screws. Then, install the door and cartridge screw. Tighten all screws.



9. Reinstall the front panel with the hinge cap on the right side.

Cabinet Location Guidelines

- Install the unit on a strong and leveled surface.
 - If the surface is uneven, the unit may be noisy.
 - The unit may malfunction if the surface is uneven.
- Install the unit in an indoor, well-ventilated area.
 - For best performance, maintain clearance of 6" on the back of the unit.
 - Brackets should be attached on the back of the unit.
 - Do not use outdoors. For indoor use only.
 - Avoid direct sunlight.
- Avoid installation in a high humidity and/or dusty area.
 - Humidity above 60% can cause the unit to rust, collect condensation, and may decrease efficiency.
 - Dust collected on condenser coil will cause unit to malfunction.
- Select a location away from heat and moisture-generating equipment.
 - Ambient temperatures above 75°F may cause the compressor to malfunction.
 - For optimal performance, this unit should not be used in environments with ambient temperatures exceeding 75°F.
 - The unit should not be placed in areas with an ambient temperature over 90°F.
 - Equipment malfunctions due to ambient temperatures above 90°F could void the warranty.
 - Do not install this unit inside a closet or alcove.

Electrical






- Ensure that the required voltage is being supplied at all times.
- The unit should be plugged into a grounded and properly-sized electrical outlet with appropriate over-current protection. Refer to the electrical requirements on the unit's nameplate.
- The unit should have its own dedicated outlet.
- DO NOT use extension cords.
- Ensure the unit is not resting on or against the electrical cord.
- If the unit is not in use for a long period of time, unplug from the outlet.
- To avoid shock and fire hazards, DO NOT plug in or unplug the unit with wet hands.
- After unplugging the unit, wait at least 10 minutes before plugging it back in. Failure to do so could cause damage to the compressor.

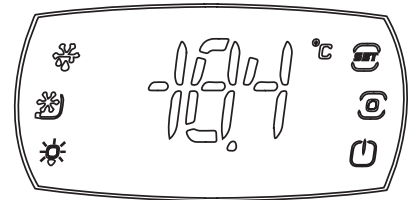
Temperature Controls

Adjusting the Temperature

- Your new refrigerator or freezer is already factory set to run at optimum temperatures for food safety and should require no adjustments.
- Refrigerators are set to cycle between a minimum temperature of 32°F and a maximum temperature of 38°F.
- Freezers are set to cycle between a minimum temperature of -8°F and a maximum temperature of 0°F.
- Adjusting the temperature changes the **minimum** temperature at which your unit will run. Your unit will not run constantly at this setting. To change it, follow these instructions:

Digital Control Unit

1. Hold down the menu button  for 3 seconds. At this time, the display screen displays "--," then the background button lights up.
2. Press the  button to enter temperature setting interface. The display screen displays the current set value.
3. Adjust the downtime temperature value used by pressing  or .
4. After the adjustment, click the menu button  to return to the menu selection interface.
5. Wait for about 7 seconds. The digital display will automatically save, exit, and return to the normal display interface.



Always remember to calculate the differential if you change the minimum temperature setting. The cabinet temperature will fluctuate up to +7 degrees over your set minimum temperature as the compressor runs and shuts off. Setting the temperature too high will result in unsafe maximum temperatures and possible health code violations.

Your Z Series unit compressor will continue to run when the door is left ajar. After 15 minutes of being left ajar, an audible alarm will sound. At the same time, the display board will display "door."

ECO Mode

Your new A Plus reach-in refrigerator or freezer is equipped with Eco Mode which will cut down on energy costs and support longevity of your unit. When the unit automatically detects a time of no use, it will switch into a power saving mode: Eco Mode. After two hours of no door openings, your unit will automatically select a more efficient food-safe temperature to maintain for four hours. The compressor will work less during the downtime of your kitchen.

Automatic Alarms

Automatic alarms are programmed to sound on your unit in the following instances:

Refrigerator Cabinet High / Low Temperature Alarm

- When the temperature reaches 8°F above your set point for 30 minutes.
- When the temperature reaches 1°F below your set point for 30 minutes.
- If the refrigerator is above the temperature of 41°F for 30 minutes.

Freezer Cabinet High / Low Temperature Alarm

- When the temperature reaches 10.4°F, which is 18°F above your set point, for 30 minutes.
- When the temperature reaches -13.9°F, which is 6.3°F below your set point, for 30 minutes.



Dirty Condenser Alarm

- If the internal system determines your condenser to be dirty, an alarm will appear on the display.

ALARMS			
	Description		Description
AFr	Frost protection	GHI	Generic alarm high threshold
AtS	Restart in pump down	GLO	Generic alarm low threshold
CE	Configuration write error	HA	Type HA HACCP alarm (high temperature during normal working)
CHt	High condenser temperature alarm	HF	Type HF HACCP alarm (high temperature after blackout)
cht	High condenser temperature warning	HI	High temperature
COM	VCC communication error	IA	Immediate alarm from external contact
dA	Delayed alarm from external contact	IOC	Incorrect I/O configuration
dor	Door open	LO	Low temperature
E1	Probe 1 broken or disconnected	LP	Low pressure
E2	Probe 2 broken or disconnected	Pd	Maximum pump down time
E3	Probe 3 broken or disconnected	rE	Control probe broken or disconnected
E5	Probe 5 broken or disconnected	rSF	Refrigerant system failure alarm
Ed1	Defrost terminated after maximum time	SF	Configuration not completed correctly
Ed2	Defrost on second evaporator terminated after maximum time	SrC	Maintenance request
Etc	Clock not updated (if featured)	UCF	VCC operation error

Manual Defrost

This unit is pre-programmed to run automatic defrost cycles at preset intervals. However, if you would like to run a manual defrost cycle at any time, follow the steps below:

1. Press and hold the menu key  for 3 seconds to enter the menu selection interface. At this time, the display screen displays "--," then the background button lights up.
2. Press the  button in the upper left corner to start manual defrosting.
3. Wait for about 7 seconds. The digital display returns to the normal display interface.

Defrost System

Automatic Defrost Cycle

- Refrigerator coils are kept below the freezing point (32°F).
- During compressor downtime, the evaporator fan continues to circulate air through the evaporator coil. This air circulation raises the coil temperature above the freezing point, melting any accumulated frost.
- Run-off water is drained into the evaporator pan and evaporated.
- Automatic defrost timers initiate at pre-set intervals and for a predetermined duration.

Loading Product

- DO NOT block the air duct/fan at the top of the unit.
- ALWAYS maintain a minimum of 4" of clearance between products and the fan.
- Ensure all shelves are sitting level and properly secured before loading products.
- DO NOT store flammable/explosive gas or liquids inside the unit.

Maintenance

DISCONNECT POWER CORD BEFORE CLEANING ANY PARTS OF THE UNIT.

It is strongly recommended that any servicing of the unit be performed by an authorized service technician.

Fan Blades & Motor

- If necessary, clean the fan blades and motor with a soft cloth.
- If it is necessary to wash the fan blades more thoroughly, cover the fan motor to prevent moisture damage, then use a damp cloth to clean the fan blades.

Interior

- Use warm water and a mild soap with a clean cloth to wipe down the interior of the unit.
- DO NOT use steel wool, caustic soap, abrasive cleaners, or bleach that may damage the interior finish.
- Wash door gaskets on a regular basis, preferably weekly. Simply remove door gasket from the frame of the door, soak in warm water and soap for thirty (30) minutes, dry with soft cloth, and replace.
- Check door gaskets for proper seal after they are replaced.
- Periodically remove the shelves and pilasters from the unit and clean them with mild soap and warm water.
- To remove the pilasters, first remove the shelves and shelf brackets. Then, simply lift the pilaster up and out.

Exterior

- A soft cloth and clean warm water should always be the first choice for mild stains and loose dirt. A final rinse with clean water and a dry wipe will complete the process and eliminate the possibility of water stains.
- Only use soft cloths, microfiber sponges or plastic scouring pads. Avoid anything that might scratch the surface.
- Clean with the polish lines by wiping parallel to the grain lines.
- Use cleaning chemicals such as alkaline, alkaline chlorinated, and non-chloride chemicals. Chlorine-free cleaning options include acetone, methyl alcohol, and mineral spirits. Noble Chemical offers Excel, a water-based aerosol cleaner and polish.
- If you are looking to sanitize your stainless steel, Noble's QuikSan is a ready-to-use sanitizer that won't damage stainless steel.

Never Use the Following Products to Clean Stainless Steel

What	Why
Chloride-Based Cleaners	Using chlorine / bleach could result in pin holes.
Sharp Objects	Sharp edges can puncture the surface.
Onion / Olive Juice	A galvanic chemical reaction transfers to the metal and causes pin holes.
Scouring Pads	These will scratch the surface.
Hard Water	This may leave hard water spots and deposits that break down the stainless steel.

NOTE: Noble Chemical offers Excel, a water-based aerosol cleaner and polish.

Cleaning the Condenser Coil

- A dusty condenser may lead to high energy consumption, less cooling effectiveness, and compressor damage.
- For efficient operation, keep the condenser surface free of dust, dirt, and lint.
- We recommend cleaning the condenser coil at least once per month.
- The condenser coil is located at the bottom behind the panel.

Cleaning the Condenser Coil Instructions

1. Disconnect the electrical power from the unit.
2. Remove the front cover and base cover with a screwdriver.
3. Using a soft brush and/or vacuum, remove the dirt, lint, etc. from the finned condenser coil in a vertical direction.
4. Clean the condenser with a commercial condenser coil cleaner, available from any kitchen equipment retailer. Ex. Noble Chemical Tech Line coil cleaners (148TLECCCLNR, 148TLHDCCLNR, 148TLECOILDD, 148TLFMCCLNR, 147TLEVPCCLNR, or 147TLHDCCLNR).
5. After cleaning, straighten any bent condenser fins with a fin comb.
6. When finished, be sure to reinstall the front cover and base cover.
7. Reconnect the electrical power to the unit.

Troubleshooting

Problem	Possible Cause	Possible Solution
Compressor not running.	Fuse blown or circuit breaker tripped.	Replace fuse or reset circuit breaker.
	Power cord unplugged.	Plug in power cord.
	Thermostat set too high.	Set thermostat to lower temperature.
	Cabinet in defrost cycle.	Wait for defrost cycle to finish.
Condensing units run for long periods of time.	Excessive amount of warm product placed in cabinet.	Allow adequate time for product to cool down.
	Prolonged door opening or door ajar.	Ensure doors are closed when not in use. Avoid opening doors for long periods of time.
	Door gasket(s) not sealing properly.	Ensure gaskets are snapped in completely. Remove gasket and wash with soap and water. Check condition of gasket and replace if necessary.
	Dirty condenser coil.	Clean the condenser coil. (Page 10)
	Evaporator coil iced over.	Unplug unit and allow coil to defrost. Make sure thermostat is not set too cold. Ensure that door gasket(s) are sealing properly.
Cabinet temperature is too warm.	Thermostat set too warm.	Set thermostat to lower temperature.
	Airflow blocked.	Rearrange product to allow for proper airflow. Make sure there is at least 4" of clearance from evaporator.
	Excessive amount of warm product placed in cabinet.	Allow adequate time for product to cool down.
	Fuse blown or circuit breaker tripped.	Replace fuse or reset circuit breaker.
	Dirty condenser coil.	Clean the condenser coil. (Page 10)
	Evaporator coil iced over.	Ensure doors are closed when not in use. Avoid opening doors for long periods of time.
	Low refrigerant levels.	Contact a service technician to check refrigerant levels.
	Door is slightly ajar.	Make sure door is completely closed.
Condensation is collecting on the cabinet and/or floor.	Gasket is not sealing properly.	Clean, repair, or replace the gasket as necessary.
	Relative humidity is above 60%.	Move unit to area below relative humidity or lower humidity level.
Interior light is not working.	Poor switch connection.	Turn off light switch and turn it back on.
	Bulb is not connected.	Make sure the bulb is correctly inserted in the socket.
	Bulb has burned out.	Replace the bulb.