



**POLAR TEMP**  
**ICE MERCHANDISERS**

A DIVISION OF SOUTHEAST COOLER CORPORATION

865-984-5945

[www.polartemp.com](http://www.polartemp.com)

# POLAR TEMP XPORTABLE ICE MERCHANDISER SETUP MANUAL



[www.polartemp.com](http://www.polartemp.com)

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## **DISCLAIMER**

Polar Temp is committed to continuous material and product improvements. This manual is subject to modification without notice without incurring responsibility for previously sold merchandisers and components.

Thank you for purchasing from Polar Temp.

### **State of California Proposition 65 Warnings**

**WARNING:** This product contains one or more chemicals known to the State of California to cause cancer.

**WARNING:** This product contains one or more chemicals known to the State of California to cause birth defects or other reproductive harm.

## INSPECTION AND UNPACKING:

Polar Temp merchandisers are individually inspected and carefully packaged to ensure each unit arrives without damage.

- Upon receipt, **immediately inspect** the merchandiser for any evidence of shipping damage **while the delivery truck driver is there**. If the merchandiser is damaged, **document damage on the bill of lading** and give the driver a copy. Notify the delivering carrier immediately and request a damage inspection and claim. Polar Temp is not responsible for damage to merchandisers during transit. A merchandiser damaged in transit is the delivering carrier's responsibility.
- Remove plastic stretch wrap and merchandiser corner protectors. The wooden skid is removed by cutting the metal band under the skid.
- The Xportable merchandisers are shipped in stacks of two or three lying on their backs. **You will need to carefully remove one pallet load of two or three from the truck at a time using a forklift. Remove banding, corner protectors and other protective shipping material that is securing the merchandisers to the shipping pallet. Then, carefully slide one merchandiser onto the forks of the lift at a time starting with the top merchandiser. Do not tip the merchandisers to the upright position until the drop-in refrigeration system and the door is removed. The drop-in refrigeration system should be moved in an upright position.** If the refrigeration system is tilted past 45 degrees, it is recommended that it not be used for a time equal to the time it was tilted. This will allow the compressor lubricant to drain back to normal position.

## XPORTABLE MODEL SETUP:

The XPORTABLE model has been designed to maximize shipment quantities per truckload. After the merchandisers have been removed from the stack of two or three

depending on your shipment arrangements, simple assembly of each merchandiser must take place prior to operation.

Removing each merchandiser from the stack should be done carefully so as not to damage the front and rear of each merchandiser as they are stacked. As stated above in the inspection and unpacking section of this manual, removal of one merchandiser at a time is recommended.

After the merchandisers have been un-stacked, remove the refrigeration system (drop-in refrigeration system) through the door opening. Two people can pick up the refrigeration system from the interior of the merchandiser through the door opening.

Next, remove the packaging material from the interior of the merchandiser (cabinet). Below the packaging material is the glass or solid door. Remove it from the interior of the cabinet. Also enclosed in the cabinet will be black plastic floor racks (used with both glass and solid door) and a condensation evaporator (used with glass doors only).

The hinge holes have been pre-drilled for mounting the doors and it will be easier to insert the screws in the door hinges as it lies on its back. Also, inserting and tightening the J-bolt for the lock can be done at this time. After mounting the doors and inserting the “J” bolt (J-bolt used on solid door application only) the cabinet may be tipped into the upright position.



See photos. Additional instructions for hinge spring adjustment will be included separately.

After the merchandiser is tipped to the upright position, the drop-in refrigeration system can be placed on the top. Two people using two ladders can lift the refrigeration drop-in system onto the top of the merchandiser and as the name implies, carefully drop the

refrigeration system into place through the opening at the top of the merchandiser. The magnetic gasket seals the perimeter of the system to the top of the merchandiser. The weight of the system also plays a part in positively sealing the drop-in to the merchandiser top. However, you may also apply silicone sealant around the drop-in gasket for additional protection.

If your merchandiser is a glass door unit and it has shipped with it a condensation elimination drain pan and heater assembly, then you must attach it to the rear of the merchandiser as shown in the photo below. Holes should be previously drilled for ease of location in relationship to the drain tube.



Additionally, you must connect the power supply to the condensation drain pan heater. The plug on the drain pan heater will only connect to a separate wall receptacle. Be sure as you hang the pan that the drain tube from the evaporator coil is draining into the condensation aluminum pan under the white cover shown in the photo above.

After you have completed setup of the XPortable merchandiser, check your work making sure that everything has been completed, and then move to the next step of Installation.

## **INSTALLATION:**

Install the merchandiser for customer convenience, easy access and maximum exposure. The location must provide good ventilation for the refrigeration system. **DO NOT BLOCK AIRFLOW TO THE CONDENSING UNIT.**

- Outdoor merchandisers should be placed on a flat, level surface allowing water drainage away from merchandiser. The surface should also be strong enough to support the merchandiser with a load of ice. Be sure to check the load capacity of the merchandiser prior to installation. If the merchandiser is

not level, the self-closing doors on upright models may not close or seal properly.

- It is essential that auto-defrost models be placed on a level surface to allow defrost water to drain properly. If defrost water does not drain, it will freeze in the drain pan which can eventually cause the fans to seize.
- Auto-defrost models should be installed leaving sufficient distance behind the merchandiser to prevent the evaporator drain hose from being kinked or hose opening from being obstructed.
- Auto-defrost models with a condensate evaporator on the back should not be placed directly against or touching a wall.
- Adequate space should be allowed around the exterior walls of the merchandisers to allow for evaporation of any condensation that may occur on cabinet exterior.
- Outdoor merchandisers should be located in a shaded area away from direct sunlight for the most economical operation.
- A minimum 115 Volt, 15 Amp grounded power source should be provided within a range of the power cord. **DO NOT USE EXTENSION CORDS.**

#### **BEFORE OPERATION:**

##### **Glass Door Models:**

- Some glass door models have support brackets that need to be removed.

##### **Auto-defrost Glass (ADG) Door Models:**

- Install condensate evaporator unit on rear of cabinet. Screwdriver is required.

#### **OPERATION:**

##### **Electrical:**

The electrical power supplied to the merchandiser must be as identified on the serial number data plate located on the inside of the merchandiser. Electrical service connections must be in accordance with the National Electrical Code, state code and any local codes that may apply. All merchandisers are equipped with a power cord and a 3-prong plug. **WARNING: Improper use or removal of the grounding plug can result in a risk of electric shock!**

Be sure to use a grounded electrical receptacle with a fused circuit sized correctly for the electrical load. **Do not use extension cords.** Extension cords may decrease the voltage to the unit and ultimately cause the compressor or other component failure. The merchandiser data plate indicates the recommended maximum overcurrent protective device size.

Note: Some outdoor locations require ground fault interrupt (GFI) outlets. These outlets may trip upon condensing unit start. Refrigeration equipment is exempt in some areas from GFI requirements. Local electric codes should be checked.

### **Start Up:**

Plug merchandiser power cord into lower receptacle of electrical outlet. The condensing unit will start immediately and the unit cooler evaporator fans will start on the auto-defrost models. The condensing unit will continue to run until air temperature inside the merchandiser reaches +10 to +20 degree F. If the merchandiser has a condensate evaporator, plug the power cord from it into the upper receptacle of electrical outlet.

### **Mechanical Temperature Control:**

Merchandiser temperature is maintained by a thermostat that cycles the condensing unit on and off automatically. On auto-defrost (AD) models, the temperature control is located on the left end of the evaporator blower coil assembly. On cold wall models, the control is located on a bracket under the condensing unit cover.

The temperature is adjusted by turning the thermostat control knob clock-wise for colder temperature and counter-clockwise for warmer temperatures. Turning the control knob fully counter-clockwise will shut power off to the compressor. **DO NOT** re-adjust the internal adjustments of the thermostat without consulting Polar Temp.

If your ice merchandiser has electronic controls, go to [www.polartemp.com](http://www.polartemp.com) for additional information regarding various electronic controls. Additionally, wiring diagrams are available at the website.

### **Loading merchandiser with bagged ice:**

**After** the merchandiser is operating at required temperature, load it with bagged ice. Bagged ice should not be stacked such that it will obstruct air flow in automatic defrost blower coil merchandisers.

Cold wall glass door units should have ice stacked to allow open-air access to thermostat sensor at upper rear interior. Approximately 3” needs to be clear from top of stacked ice to top of inside interior for effective refrigeration and ice storage.

## **MAINTENANCE:**



**Refrigeration: WARNING – disconnect electrical power before cleaning.**

Clean refrigeration cover grill openings, condenser fins, and condenser fan blades at least two (2) times per year, more often if needed. A dirty condenser will cause the merchandiser to become less efficient, and may lead to compressor failure.

Clean the evaporator coil and fan blades on auto-defrost merchandisers as required.

- Clean condenser coil fins with a fine bristle brush or vacuum
- Routinely check wiring harness for loose connections or broken insulation

**Defrosting:** Frost cannot be avoided. It develops from moist air entering the merchandiser when the door is opened and forms on the evaporator. When the frost accumulation on the evaporator becomes too heavy, it acts as an insulator, which hinders the refrigeration efficiency.

- Excess frost or water on the interior of the merchandiser should be removed or drained. Do not allow water to stand in or around the cabinet.

**Auto-Defrost (AD):** Auto-Defrost (sometimes referred to as “electric defrost”) type merchandisers utilize a cooler evaporator with an electric defrost heating element to melt the frost off the evaporator coil. The defrost cycle is controlled by the defrost timer which energizes the defrost heating element. The defrost timer is located in the condensing unit compartment. The control is pre-set to periodically place the system in a defrost cycle automatically every four (4) hours. The length of the defrost cycle is approximately 14 to 16 minutes. The control used is normally non-adjustable.

If your ice merchandiser has electronic controls, go to [www.polartemp.com](http://www.polartemp.com) for additional information regarding various electronic controls. Additionally, wiring diagrams are available at the website.

**Doors:** Gaskets should be checked for tears or any other problems that would cause loss of seal. Replace torn/worn gaskets to maintain correct temperature and refrigeration efficiency.

Hinges exposed to harsh environmental conditions may require a lubricant for ease of operation. Spray light penetrating oil on the spring loaded hinge cartridge to extend the hinge life.

**Finish:** Schedule periodic cleaning of merchandiser interior and exterior. The cabinet can be cleaned with a mild detergent and water. **DO NOT USE** strong detergents, abrasive cleaners, or solvents, as they are likely to leave objectionable odors, which may be absorbed, by the ice. Do not use wax or polish on the interior for the same reason. Wash exterior surfaces with a mild soap and warm water applied with a soft sponge or cloth. Wax exterior to maintain appearance and to protect the finish.

## **AUTOMATIC DEFROST TROUBLESHOOTING GUIDE**

**If refrigerant valves must be opened, a qualified technician should be notified to perform the work.**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Ice is melting</b>	Power switch is in OFF position	Turn switch to ON position.
	Ice bags are blocking air flow	Move ice bags accordingly.
	Thermostat setting	Normal setting is between 4 and 6 on the dial. Jump terminals on thermostat to check, if unit starts, replace thermostat.
	Evaporator fan motors are operating but the fan blade is not turning	Check to see if fan blade is slipping on the motor shaft.
	Condenser coil is dirty	Clean condenser.
	Incorrect refrigerant charge	Check sight glass for bubbles indicating wrong charge. Add refrigerant. Locate refrigerant leak.
	Condenser fan motor and compressor are not running	Check power supply. Check if defrost timer is stuck in defrost mode Check if compressor is hot, this may indicate that condenser fan motor has failed causing thermal overload on compressor to trip.

Condenser fan motor is not operating

Check electrical power to motor.

Compressor is not operating

Check electrical power, relay, overload protector, start capacitor and compressor motor.

## **AUTOMATIC DEFROST TROUBLESHOOTING GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Ice is melting</b>	Evaporator fan motor not running	Check power supply to motor Check for faulty fan motor
	Check for ice build-up on the evaporator coil	Check power to defrost heater Check defrost heater for heat Check defrost termination thermostat Check defrost timer

## REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE

<u>Problem</u>	<u>Possible Cause</u>	<u>Solution</u>
<b>Compressor will not start (no hum)</b>	Be sure power is being supplied to the merchandiser	Check power cord Check plug in Check breaker switch
	Ambient colder than thermostat setting	Adjust thermostat if necessary
	Unit is in defrost	Allow defrost cycle to complete, usually 15-20 minutes, or turn manual control on defrost
	Overload protector stuck in open position	Replace overload protector
	Thermostat stuck in open position	Replace thermostat
	Wiring improper or loose	Check actual wiring against diagram
	<b>Compressor will not start (hums, but trips on overload protector)</b>	Improperly wired
Low voltage to unit		Check power supply. Contact Power Company

Starting capacitor defective	Replace start capacitor
Relay failing to close	Determine reason and correct or replace

## **REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Compressor will not start (hums, but trips on overload protector)</b>	Compressor motor has a winding open or shorted	Replace compressor
	Internal mechanical trouble in compressor	Replace compressor
<b>Compressor starts, but does not switch off of start winding</b>	Improperly wired	Check wiring against diagram
	Low voltage to unit	Determine reason and correct
	Relay failing to open	Determine reason and correct or replace
	Compressor motor has a winding open or shorted	Replace compressor
	Internal mechanical trouble in compressor	Replace compressor

## **REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Compressor starts and runs, but short cycles on overload protector</b>	Low line voltage to unit	Check power supply Contact Electric Company
	Overload protector defective	Replace overload protector
	Starting capacitor defective	Replace start capacitor
	Excessive discharge pressure	Check ventilation, restrictions in cooling medium, restrictions in refrigeration system
	Compressor too hot - return gas hot	Check refrigerant charge (fix leak) add refrigerant if necessary
	Compressor motor has a winding shorted	Replace compressor
<b>Compressor runs a long time or continuous</b>	Dirty condenser	Clean condenser
	Refrigerated space has excessive load.	Reduce load. Check for open door or bad door gasket.
	Evaporator coil iced	Defrost

Thermostat contacts stuck  
in closed position                      Replace thermostat

Shortage of refrigerant                      Fix leak, add charge

## **REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Starting Capacitor open</b>	Relay contacts not closing	Replace relay
	Prolonged operation on start cycle due to low line voltage	Determine reason and correct
	Prolonged operation on start cycle due to improper relay	Replace relay
	Excessive short cycling (Compressor starts and runs for a short cycle)	See “Compressor starts and runs, but short cycles on on overload protector” section
<b>Relay defective or burned out</b>	Line voltage too high or too low	Determine reason and correct
	Excessive short cycling	Determine reason and correct (see Compressor starts and runs but short Short cycles)
	Relay being influenced by loose vibrating mounting	Remount relay rigidly

## **REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Warm refrigerated storage space</b>	Thermostat setting too high	Adjust thermostat
	Inadequate air circulation	Improve air circulation
<b>Suction line frosted</b>	Evaporator fan not running	Determine reason and correct
	Overcharge of refrigerant	Correct charge
<b>Liquid line frosted</b>	Restriction in drier	Replace drier
<b>Condensing unit noisy</b>	Loose parts or mountings	Find and tighten
	Tubing rattle	Apply sponge rubber between parts (Armaflex)
	Bent fan blade causing vibrations	Replace blade
	Fan motor bearings worn	Replace motor



**POLAR TEMP ICE MERCHANDISER  
REFRIGERATION DATA AND SPECIFICATIONS**

**R404A system Automatic Defrost**

Also available for use in high ambient conditions except 3/4 HP systems.

\* Actual minimum amp draw may vary.

Model	HP	Condensing Unit	Coil	Cap Tube	Defrost Heater	Refrigerant Type	Charge Ounces	Min. Amps*	Volts	Max. Amps
300AD	1/4	119-2022	1 fan	.036" x 72"	400W	404A	12.5	9	110V	15
300ADG	1/4	119-2022	1 fan	.036" x 72"	400W	404A	12.5	10.4	110V	15
380AD	1/4	119-2022	1 fan	.036" x 72"	400W	404A	12.5	9	110V	15
400AD	1/3	119-2027	2 fan	.042" x 74"	600W	404A	13.5	12.1	110V	15
420AD	1/4	119-2022	1 fan	.036" x 72"	400W	404A	12.5	9	110V	15
420ADG	1/4	119-2022	1 fan	.036" x 72"	400W	404A	12.5	10.4	110V	15
570AD	1/3	119-2027	3 fan	.042" x 74"	800W	404A	14.5	12.5	110V	15
600AD	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	12.1	110V	15
630AD	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	12.1	110V	15
630ADG	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	14.1	110V	15
650AD	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	12.1	110V	15
650ADG	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	14.1	110V	15
670AD	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	12.1	110V	15
670ADG	1/3	119-2027	2 fan	.042" x 74"	600W	404A	15	14.1	110V	15
850AD	1/2	119-2032	3 fan	.044" x 74"	800W	404A	18	15.5	110V	20
850ADG	1/2	119-2032	3 fan	.044" x 74"	800W	404A	18	15.5	110V	20
850AD	3/4	FJAF-0075	3 fan	TX Valve	800W	404A	21	22.2	110V	30
850ADG	3/4	FJAF-0075	3 fan	TX Valve	800W	404A	21	23.4	110V	30
1000AD	1/2	119-2032	3 fan	.044" x 74"	800W	404A	18	14.3	110V	20
1000ADG	1/2	119-2032	3 fan	.044" x 74"	800W	404A	21	23.4	110V	30

1000AD	3/4	FJAF-0075	3 fan	TX Valve	800W	404A	21	22.2	110V	30
1000ADG	3/4	FJAF-0075	3 fan	TX Valve	800W	404A	21	23.4	110V	30

## **POLAR TEMP ICE MERCHANDISER POLICY**

### **Warranty**

Seller warrants the goods sold to be free from defects in materials and workmanship, under normal conditions and use for the following period of time:

**Compressor** – five (5) years from the original date of shipment

**Merchandise Parts** – one (1) year from the original date of shipment

**Labor** – 60 days (Purchaser’s authorized service technician must contact factory for approval).

This warranty applies to goods installed in the continental United States, Canada and the Caribbean Islands only. Seller’s sole obligation under this warranty shall be limited to repair or replacement of any part or parts of said goods, F.O.B. Seller’s factory which proves defective within the applicable warranty period. Seller reserves the right to inspect allegedly defective goods and to require the return, at the Buyer’s expense, of goods for the purposes of inspection. This warranty shall not apply to any good, or any part thereof, which has been subject to any accidents or negligence or abuse of misuse, alteration or detrimentally affected its physical condition, use or operation qualities.

### **Parts Orders**

Please order parts by Polar Temp part number as listed in the replacement parts list on page 24. Always have available the model and serial number of the cabinet, and in some cases the manufacturers name and model number of the part. In case of warranty replacement this information is required. Parts will not be issued as warranty or warranty authorized without this information.

### **Method of Shipment**

Every shipment is carefully packed for domestic shipment and labeled to prevent damage or loss in transit. Specify where shipment should be sent, freight, express, parcel post, airfreight or united parcel. If no preference is given, or in case of freight shipment, the routing is not furnished, shipment will be made according to our discretion without liability of any kind on our part for each selection. We welcome your suggestions on preferred carriers for better service.

Common carrier shipments are forwarded freight collect. Under pre-approved circumstances, where transportation charges are prepaid, they will be added to the invoice. Please note that prepaid freight charges are subject to sales tax if a signed sales

tax exemption certificate is not on file with Polar Temp. All UPS shipments will be prepaid and added to the invoice.

## **POLAR TEMP ICE MERCHANDISER POLICY**

### **Ship Dates**

Promise of delivery represents only our best estimate of the time required completing the work and shipping the product from our plant. Orders are accepted with the understanding that shipping dates are approximate and subject to change because of factory conditions, fires, supplier delays, material shortages, civil or military authority, mandatory priority and/or other causes beyond our knowledge or control.

### **Return of Merchandise**

No returned merchandise will be accepted without prior authorization from Polar Temp. When orders have been correctly filled, and merchandise is returned, a 10% handling charge plus reconditioning charges, if any, will be applied. No return shipment will be accepted unless authorized in advance and the freight is prepaid. During the warranty period, in order to obtain proper credit from our vendors, all defective parts must be returned within 45 days, freight prepaid to our factory for repair, replacement or credit.

### **Pricing**

All prices listed are F.O.B. Lithia Springs, Georgia, and are subject to change without notice.

## **FACTORY SALES LOCATIONS**

Tennessee  
1-877-984-5945

Texas  
1-866-598-4206

Carolinas  
1-866-827-3232

California  
1-866-746-0437

Georgia  
1-800-554-4852

Colorado  
1-877-376-0367