IMPORTANT
INFORMATION
for
ST/MS/SM/SMF SERIES

This cooler has passed the
QUALITY CONTROL INSPECTION
and meets the high standards at Beverage-Air.
This inspection includes complete refrigeration
system, cabinet construction & finish.

_____
Quality Control Inspector – Beverage-Air

WARRANTY REGISTRATION CARD

Cabinet Serial No._____

Original Purchaser _____

Address _____
CITY STATE

Installation Location _____
NAME

_____
ADDRESS

Beverage-Air Model No. _____ Installation Date _____

This card must be mailed within 10 days after installation date to

BEVERAGE-AIR

BEVERAGE-AIR®

SCHOOL MILK, MIX AND BULK STORAGE COOLER SERIES

SM, MS MODELS
INSTALLATION AND OPERATING INSTRUCTIONS

INSPECTION ON ARRIVAL

UPON ARRIVAL OF THE COOLER, THE CARTON SHOULD BE CAREFULLY INSPECTED FOR ANY OUTWARD SIGN OF DAMAGE. IF ANY SIGN OF DAMAGE IS FOUND, IT SHOULD BE NOTED ON THE CARRIER'S FREIGHT BILL BEFORE SIGNING FOR THE MERCHANDISE. IN ANY CASE, THE COOLER SHOULD BE IMMEDIATELY UNCRATED TO CHECK FOR APPARENT OR CONCEALED DAMAGE WITHIN 48 HOURS AFTER DELIVERY AND THE CARRIER NOTIFIED FOR AN INSPECTION WITHIN THIS PERIOD.

UNCRATING – SM, MS MODELS

To uncrate cooler, remove staples around the bottom of carton with screw driver. Care should be taken to remove the staples completely so that they will not damage the cooler finish when the carton is removed. Lift the carton tube from around the cooler. Remove cooler from skid.

LOCATING COOLER

It is necessary to properly level cooler to provide adequate drainage and efficient functioning of the unit. Make sure there is enough room around the cooler to assure good air circulation through the condenser.

ELECTRICAL SUPPLY

Plug all standard models into a 110-115 volts A.C. 50 or 60 cycle outlet. Low line voltage is often the cause of service complaints. Check to see that the live voltage is 110 volts or more with the unit running. Other motors or heavy appliances should not be used on the same circuit with the cooler. When working on the inside of the cooler, disconnect from electrical circuit for safety reasons.

STARTING UP OF UNIT

Factory setting of temperature control is at No. 5 position (normal) on control dial which will maintain the temperature as follows:

36°F. degrees	–SM models
40°F. degrees	–MS models

For colder temperature, turn control knob to higher number, one position at a time. Excessive tampering with the control could lead to service difficulties. Should it become necessary to replace temperature control, be sure it is ordered from an authorized Beverage-Air Distributor or direct from the factory.

DRAINAGE – MS MODELS

The condensation drains into a condensate disposal pan located just below unit compartment grill. This pan is equipped with vapor glass wicking to hasten the evaporation process so plumbing is not required. The drain lines and pan should be thoroughly cleaned periodically as solids from spilled products may not evaporate, resulting in an unsanitary condition.

CLEANING

The cooler should be thoroughly cleaned inside and out at regular intervals to preserve the finish and appearance. If stainless steel becomes discolored or stained, it can be cleaned with standard cleaners such as Bon-Ami but not with steel wool. All dirt and lint should be removed from the condenser at regular intervals for efficient performance of the cooler.

SERVICE AND ANALYSIS CHART

REFRIGERATION SYSTEM

MALFUNCTION	POSSIBLE CAUSE	SOLUTION
Compressor will not start – no hum.	1. Line cord not plugged in. 2. Fuse removed or blown. 3. Overload protector tripped. 4. Control stuck in open position. 5. Wiring improper or loose.	1. Plug in line cord. 2. Replace fuse. 3. Refer to electrical section. 4. Repair or replace control. 5. Check wiring against diagram.
Compressor will not start – hums but trips on overload protector.	1. Improperly wired. 2. Low voltage to unit. 3. Starting capacitor defective. 4. Relay failing to close.	1. Check wiring against diagram. 2. Determine reason and correct. 3. Determine reason and replace. 4. Determine reason and correct, replace if necessary.
Compressor starts but does not switch off of start winding.	1. Low voltage to unit. 2. Relay failing to open. 3. Run capacitor defective. 4. Compressor motor has a winding open or shorted.	1. Determine reason and correct. 2. Determine reason and correct, replace if necessary. 3. Determine reason and replace 4. Replace compressor.
Compressor starts and runs, but short cycles on overload protector.	1. Additional current passing through overload protector. 2. Low voltage to unit. 3. Overload protector defective. 4. Run capacitor defective. 5. Excessive discharge pressure. 6. Compressor too hot – return gas hot.	1. Check wiring diagram. Check for added fan motors, pumps, etc. connected to wrong side of protector. 2. Determine reason and correct. 3. Check current, replace protector. 4. Determine reason and replace. 5. Check ventilation, restrictions in cooling medium, restrictions in refrigeration. 6. Check refrigerant charge (fix leak) add if necessary.
Unit runs OK, but short cycles.	1. Overload protector. 2. Cold control. 3. Overcharge. 4. Air in system. 5. Undercharge.	1. Check wiring diagram. 2. Differential set too close – widen. 3. Reduce refrigerant charge. 4. Recover and recharge. 5. Fix leak, add refrigerant.
Unit operates long or continuously.	1. Shortage of refrigerant. 2. Control contacts stuck or frozen closed. 3. Evaporator coil iced. 4. Restriction in refrigeration system. 5. Dirty condenser.	1. Fix leak, add charge. 2. Clean contacts or replace control. 3. Defrost. 4. Determine location and remove. 5. Clean condenser.
Start capacitor open, shorted or blown.	1. Relay contacts not opening properly. 2. Low voltage to unit. 3. Improper relay.	1. Clean contacts or replace relay if necessary. 2. Determine reason and correct. 3. Replace.
Run capacitor open, shorted or blown.	1. Improper capacitor. 2. Excessively high (line) voltage (110% of rated max.).	1. Determine correct size and replace. 2. Determine reason and correct.
Relay defective or burned out.	1. Incorrect relay. 2. Line voltage too high or too low. 3. Relay being influenced by loose vibrating mounting.	1. Check and replace. 2. Determine reason and replace. 3. Remount rigidly.
Space temperature too high.	1. Control setting too high. 2. Improper overcharge. 3. Inadequate air circulation.	1. Reset control. 2. Recover refrigerant and recharge with proper charge specified on dataplate. 3. Improve air movement.
Cooler freezing beverage.	1. Control setting.	1. Reset control.
Unit noisy.	1. Loose parts or mountings. 2. Tubing rattle. 3. Bent fan blade causing vibration. 4. Fan motor bearings worn.	1. Find and tighten. 2. Reform to be free of contact. 3. Replace blade. 4. Replace motor.

ALL SERVICING MUST COMPLY WITH STATE AND FEDERAL REGULATIONS.

BEVERAGE-AIR®

SALES OFFICE: PO Box 5932, Spartanburg, SC 29304-5932
PLANTS: SPARTANBURG, SOUTH CAROLINA BROOKVILLE, PENNSYLVAN
PHONE: 864-582-8111 TOLL FREE: 800-845-9800

FEDERAL LAW REQUIRES THAT SOME REFRIGERANTS BE RECOVERED PRIOR TO SERVICING

REFRIGERATION SYSTEM

SERVICE AND ANALYSIS CHART

- **REFRIGERATION SYSTEM**
  The Refrigeration System consists of a 115v. 60 Hz. hermetically sealed compressor, finned evaporator and condenser.

- **CONDENSER**
  The condenser has wide finned spaces which allow more air passage with less dirt or dust accumulation. The condenser still requires periodic cleaning for maximum efficiency.

- **CONDENSER FAN MOTOR**
  The condenser fan motor assembly is mounted between the condenser and compressor. Air is drawn through the condenser, over the body of the compressor and then out the rear of the unit compartment.

  The motor is wired to cycle with the compressor but will continue to operate should the compressor cut out on the over load. (The motor is permanently lubricated; therefore, oiling is not required).

- **DRIER**
  The drier is installed in the system just before the capillary tube. Its purpose is to trap minute particles of foreign material and absorb any moisture in the system.

- **LIQUID CONTROL AND HEAT EXCHANGE**
  Liquid refrigerant control to the evaporator of the system is accomplished by the use of a capillary tube. This capillary tube is soldered to the suction line to form a heat exchanger which subcools the liquid refrigerant to maintain high efficiency within the system.

REFRIGERATION SERVICE

- **EVACUATION**
  Moisture in a refrigeration system is directly or indirectly the cause of more problems and complaints than all other factors combined.

  When large amounts are present, system freeze ups will occur. Even in minute amounts, moisture will combine with refrigerants to form a hydrochloric acid. The corrosive action of this acid forms sludge which will plug the lines and drier.

  Only a vacuum pump should be used for evacuation because operating the compressor in a deep vacuum could cause serious damage to the compressor windings.

  Since most field type vacuum pumps cannot pull a low enough vacuum to remove moisture from the system, it is recommended that the system be triple evacuated, breaking each time with dry refrigerant. Use care to purge air from the charging hose when breaking the vacuum. After third vacuum, backseat valves and proceed with replacement charge.

- **CHARGING REFRIGERATION SYSTEM**
  Since capillary tube systems have small critical refrigerant charges, we recommend that a field charge either be weighed in or put in from a portable charge board. After maximum vacuum has been obtained as detailed above, attach charging cylinder to the suction line making sure to purge air from hose with refrigerant. With the unit running, allow refrigerant to run slowly into the system until the desired charge is reached.

OVERCHARGE

When the cabinet has pulled down to operating temperature, an indication of an overcharge is that the suction line will be cooler than normal with the compressor running. Running time will be higher than normal. Suction line will sweat or frost.

Purge excessive refrigerant from the system very carefully in small amounts waiting several minutes for the system to balance.

UNDERCHARGE

An undercharge or shortage of refrigerant will result in any or all of the following:

1. Lower than normal head pressure.
2. Lower than normal suction pressure.
3. Excessive or continuous operation of compressor.
4. Higher than normal cabinet temperature.

When correct charge has been obtained with cabinet at operating temperature, several seconds after compressor has started after cycle, suction line will frost and remain frosted for approximately (60) seconds.

Beverage-Air Company products are covered by one or more of the following patents: U.S. Patent Nos. 3,106,434-3,232,489,835-3,180,529-3,462,966. Other patents pending.

BEVERAGE-AIR®

METHODS FOR CLEANING STAINLESS STEEL

	CLEANING AGENT*	METHOD OF APPLICATION**	EFFECT ON FINISH
Routine Cleaning	Soap, ammonia or detergent and water.	Sponge with cloth, then rinse with clear water and wipe dry.	Satisfactory for use on all finishes.
Smears and Fingerprints	Arcal 20, Lac-O-Nu, Lumin Wash O'Cedar Cream Polish, Stainless Shine.	Rub with cloth as directed on the package.	Satisfactory for use on all finishes. Provides barrier film to minimize prints.
Stubborn Spots and Stains, Baked-On Splatter, and Other Light Discolorations.	Allchem Concentrated Cleaner.	Apply with damp sponge or cloth	Satisfactory for use on all finishes.
	Samae, Twinkle or Cameo Copper Cleaner	Rub with damp cloth.	Satisfactory for use on all finishes if rubbing is light.
	Grade FFF Italian pumice, whiting, or talc.	Rub with damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. Use light pressure on No. 2 (mill) finishes, and Nos. 7 and 8 (polished) finishes.
	Liquid NuSteel	Rub with dry cloth. Use small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Paste NuSteel or DuBois Temp.	Rub with dry cloth using a small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Copper's Stainless Steel Cleaner Revere Stainless Cleaner	Apply with damp sponge or cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Household cleansers, such as Old Dutch, Lighthouse, Sunbrite, Wyandotte, Bab-O, Gold Dust, Sapolio, Bon Ami, Ajax, or Comet	Rub with a damp cloth. May contain chlorine bleaches. Rinse thoroughly after use.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Grade F Italian Pumice, Steel Bright, Lumin Cleaner, Zud, Restoro, Sta-Clean, or Highlite.	Rub with a damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Penny-Brite or Copper-Brite.	Rub with a dry cloth using a small amount of cleaner.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
Heat Tint or Heavy Discoloration	Penny-Brite or Copper-Brite.	Rub with a dry cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Past NuSteel, DuBois Temp, or Tamite.	Rub with a dry cloth or stainless steel wool.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Revere Stainless Steel Cleaner.	Apply with damp sponge or cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Allen Polish, Steel Bright, Wyandotte, Bab-O or Zud.	Rub with a damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
Burnt-On Foods and Grease Fatty Acids, Milkstone (where swabbing or rubbing is not practical)	Easy-Off, De-Grease-It, 4 to 6% hot solution of such agents as trisodium phosphate or sodium tripolyphosphate or 5 to 15% caustic soda solution	Apply generous coating. Allow to stand for 10-15 minutes. Rinse. Repeated application may be necessary.	Excellent removal, satisfactory for use on all finishes.
Tenacious Deposits, Rusty Discolorations, Industrial Atmospheric Stains	Oakite No. 33, Dilac Texo 12, Texo N.Y., Flash-Klenz, Caddy Cleaner, Turco Scale 4368 or Permag 57.	Swab and soak with clean cloth. Let stand 15 minutes or more according to directions on package, then rinse and dry.	Satisfactory for use on all finishes.
Hard Water Spots and Scale	Vinegar.	Swab or wipe with cloth. Rinse with water and dry.	Satisfactory for all finishes.
	5% oxalic acid, 5% sulfamic acid, 5 to 10% phosphoric acid, or Dilac, Oakite No. 33, Texo 12, Texo N.Y.	Swab or soak with cloth. Let stand 10-15 minutes. Always follow with neutralizer rinse, and dry.	Satisfactory for all finishes. Effective on tenacious deposits or where scale has built up.

Cleaning data supplied by AISI

NOTES

* Use of proprietary names is intended only to indicate a type of cleaner, and does not constitute an endorsement, nor is omission of any cleanser to imply its inadequacy. It should be emphasized that all products should be used in strict accordance with instructions on package.

** In all applications a stainless steel wool or sponge or fibrous brush or pads are recommended. Avoid use of ordinary steel wool or steel brushes for scouring stainless steel.

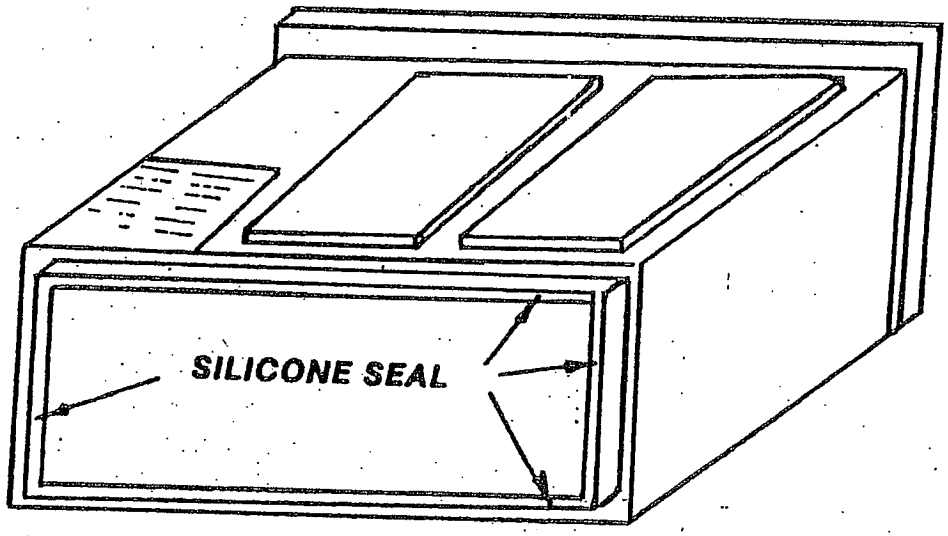
SUGGESTIONS:

- Use the mildest cleaning procedure that will do the job effectively.
- Rub in the direction of polish lines for maximum effectiveness and to avoid marring the surface.
- Rinse thoroughly with fresh water after every cleaning operation.
- Wipe dry to avoid water marks.

BEVERAGE-AIR®
Spartanburg, South Carolina
Brookville, Pennsylvania
Honea Path, South Carolina

AF 21156A

ILA-0962	
	ENG.
2	BKV.



WHEN SANITATION CODES REQUIRE SEALING TO FLOOR THIS METHOD MAY BE USED

1. Tip cabinet and apply a bead of silicone seal on bottom edge of the base.

2. Return cabinet to upright position and using proper equipment, lift cabinet into location.

2242		A	6/15/83	ALL BB, DD, MS, PT	DH
EN	SER NO		DATE	EFFECTIVE BM OR CHANGE MADE	BY
			BEVERAGE-AIR. SPARTANBURG, SOUTH CAROLINA BROOKVILLE, PENNSYLVANIA		
			PART NAME	Base Sealing	
DRAWN	DH		SIZE	PART NUMBER	
CHECKED				ILA-0962	
APP					

SERVICE RECORD