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FORWARD

TO THE USER

Your SCOTSMAN Automatic Cuber is a product carefully engineered and quality constructed to provide you with many years of faithful performance with a minimum of maintenance costs.

Produced by the world's leading manufacturer of automatic icemaking equipment, your SCOTSMAN Automatic Cuber incorporates the same reliable systems already proven over years of actual operation by thousands of users.

Many of you will have an opportunity for the first time to see and use clear, solid, slow melting SCOTSMAN ice cubes. You will quickly compare the clear, glass-like quality of your SCOTSMAN cubes to the type of ice cubes produced by your refrigerator-freezer. By comparison, ice cubes made in trays in your refrigerator are very white or cloudy; they also melt faster than clear ice.

A brief explanation shows why:

First, all water contains some mineral deposits such as iron, calcium, etc. in various degrees. These deposits do not freeze. Therefore, when you freeze water in refrigerator trays, these minerals do not freeze but are trapped inside the ice cubes, contributing to their cloudiness.

In your SCOTSMAN Automatic Cuber, the water to make ice cubes is continually moved or circulated by a small electric pump, that sprays the water under gentle pressure into the inverted ice cube molds, only the water freezes, gradually building into a full ice cube. The minerals or impurities fall back down into a reservoir or sump area where they are flushed down the drain, at the end of each freezing or icemaking cycle.

This manual also contains information regarding the various working systems and helpful hints on the care and maintenance of your Automatic Cuber.

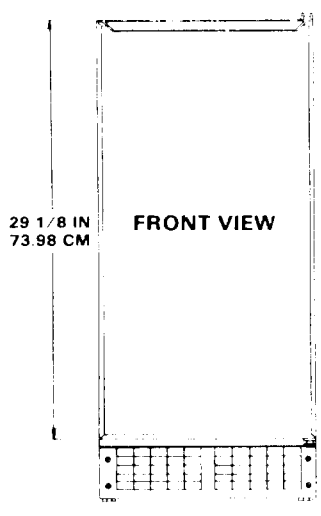
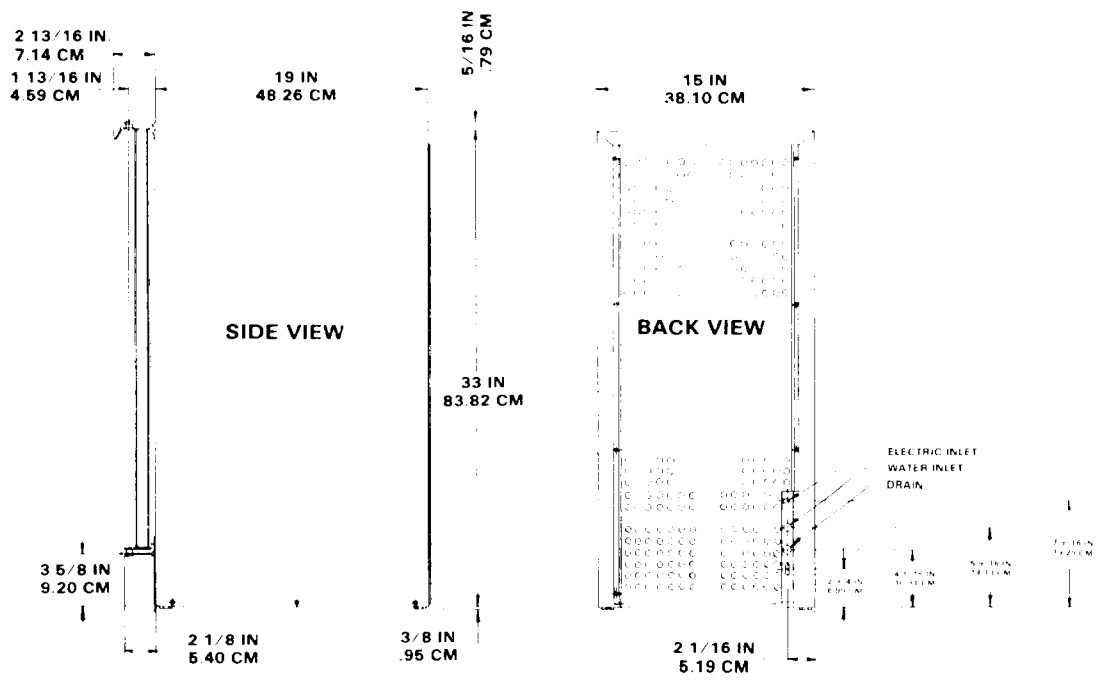
We would like to suggest you take the time now, to briefly review this manual, and if you have any further questions regarding the care or operation of your SCOTSMAN Automatic Cuber, contact:

SERVICE DEPARTMENT
SCOTSMAN ICE SYSTEMS
Albert Lea, Minnesota 56007

NOTE: *Whenever writing, please be sure to include the model and serial numbers of your SCOTSMAN Automatic Cuber.*

SPECIFICATIONS

MODEL AC11



SPECIFICATIONS (Cont'd)

MODEL AC11

Bin Storage: 26 lbs.*

Air-Cooled: Model AC11A-1

Electrical: 115/60/1


Est. Ship Wt.: 96 lbs. Standard
100 lbs. w/Sump Pump

EASY SERVICE ACCESS

Magnetic Gasket Door Latch

Adjustable Leg Levelers

Eight Cubes Per Harvest

MODEL NUMBER		A.C. SUPPLY VOLTAGE	
<input type="text"/>		<input type="text"/>	
SERIAL NUMBER		TOTAL LOAD AMPS	
<input type="text"/>		<input type="text"/>	
TEST PRESSURES		REFRIGERANT 12	
140-LO	235-HI	<input type="text"/>	OZ.
QUEEN PRODUCTS DIVISION KING-SEELEY  THERMOS CO ALBERT LEA MN 56007			

SEE NAMEPLATE, shown at left, for electrical and refrigeration specifications. NAMEPLATE is located on the front of the chassis base at the left end of the Condenser Assembly, seen with the Kick-plate removed.

*Storage based on 90-percent of total volume x 34 lb. average density of ice. A.R.I. Standard.
We reserve the right to make product improvements at any time. Specifications and design are subject to change without notice.



This icemaker has been engineered to our own rigid safety and performance standards. The National Sanitation Foundation (NSF) seal, signifies that it is listed with the NSF and that it complies with the materials and construction standards of the NSF. In addition, the Underwriters Laboratories, Inc., (UL) Listing Mark and the Canadian Standards Association (CSA) Monogram, both signify that its construction and design have been inspected and tested by them. NSF, UL and CSA inspectors also periodically examine production icemakers at the factory, to assure continued compliance.

To retain the safety and performance built into this icemaker, it is important that installation and maintenance be conducted in the manner outlined in this manual.

SECTION I

GENERAL INFORMATION & INSTALLATION

I. INTRODUCTION

This manual provides the specifications and the step-by-step procedures for the installation, start-up and operation, and the maintenance and cleaning for the SCOTSMAN Model AC11 Automatic Cuber. The Model AC11 Automatic Cubers are quality designed, engineered and constructed, and thoroughly tested icemaking and ice storage systems, providing the utmost in flexibility to fit the needs of a particular user. Separate sections detail more specifically: General Information and Installation; Start Up Operation; Principles of Operation; Adjustment and Removal and Replacement Procedures; Wiring Diagrams; and, the Illustrated Assemblies and Parts Lists.

Most service and maintenance can be performed with the front door open, kickplate removed or the rear panel removed.

DESCRIPTION

An attractive compact cabinet of stainless steel. The full-length Door, is attached with heavy duty hinges designed to allow reversing the right-hand to left-hand Door opening, as well as flush mounting.

SEALED REFRIGERATION SYSTEM

To provide quiet efficient operation of the Ice maker, the Compressor motor is internally spring-mounted. The Compressor motor is covered by a five year parts warranty.

SELF-CONTAINED STORAGE BIN

These Automatic Cubers store their own ice supply in a heavily insulated ice storage bin.

OVERALL DIMENSIONS

The standard overall dimensions of the cabinet depth, counter top height, etc., allows the Automatic Cuber to be installed in harmony with other kitchen built-in appliances, such as, dishwasher, oven-range-broiler, etc.

Flush in-the-wall mounting is another installation option, for den, playroom, the office, etc. Even the freestanding installation is often

desirable with this attractive cabinet compact enough to fit most anywhere.

II. UNPACKING AND INSPECTION

1. Call your authorized SCOTSMAN Distributor or Dealer, for proper installation. He's listed under ICE MAKING EQUIPMENT and MACHINERY in the yellow pages of the telephone book.
2. Visually inspect the exterior of the shipping container and skid. Any severe damage noted should be reported to the delivering carrier; and, a concealed damage claim filed subject to internal inspection, with carrier representative present.
3. Remove screws and shipping tape, and all doors and service panels from the cabinet, and inspect for any concealed damage. Notify carrier of any concealed damage claims, as stated in step 2 above.
4. Remove all internal support packing and tape.
5. Check that refrigerant lines do not rub or touch lines or other surfaces, and that fan blade moves freely.
6. Check that the Compressor is snug on all mounting pads.
7. Use clean damp cloth or disposable paper wiper to clean interior surfaces of the ice storage bin and the exterior surfaces of the cabinet.
8. SEE NAMEPLATE on front of chassis base, located at left end of the Condenser Assembly, with Kickplate removed. Check that location source voltage corresponds with the voltage specified on the nameplate.

CAUTION

Improper voltage supplied to the Ice maker will void your parts replacement program.

III. LOCATION AND LEVELING

WARNING

This Automatic Cuber is NOT designed for outdoor installations where air temperatures are below 50 degrees F., or above 100 degrees F., and the water temperature is below 40 degrees F., or above 100 degrees F. Extended periods of operation at temperatures exceeding these limitations will constitute misuse, under the terms of the SCOTSMAN Manufacturer's limited warranty, resulting in LOSS of warranty coverage.

1. Position the Cabinet in the selected permanent location.

NOTE

Prior consideration for location site shall include:

1. *Minimum room temperature 50 degrees F., and maximum room temperature 100 degrees F.*
 2. *Water inlet temperatures: Minimum 40 degrees F., and Maximum 100 degrees F.*
 3. *Well ventilated location for Air-Cooled model, advising user to frequently clean Condenser, located directly behind the front Kickplate.*
 4. *SERVICE ACCESS: Adequate space for all service connections, through the rear of the Cabinet. A six-inch minimum clearance at the front Kickplate, for routing cooling air drawn into and exhausted out of the compartment to maintain proper condensing operation on Air-Cooled models. Built-in installations must provide adequate space for simple and rapid removal of the cabinet for service requirements.*
2. Level the Cabinet in both the left-to-right and front-to-rear directions. The leveling legs can be adjusted with an open end wrench.

IV. ELECTRICAL CONNECTIONS

SEE NAMEPLATE for current requirements to determine wire size to be used for electrical hookup. The Automatic Cuber requires a solid earth ground wire. See wiring diagram.

Be certain the Automatic Cuber is connected to its own electrical circuit and individually fused with a maximum of a 15 ampere fuse or circuit breaker. The maximum allowable voltage variation should not exceed ten percent

of the nameplate rating, even under starting conditions. Low voltages can cause erratic operation and may be responsible for serious damage to the overload switch and motor windings.

All external wiring should conform to the national, state and local electrical code requirements. Usually an electrical permit and services of a licensed electrician will be required.

V. WATER SUPPLY AND DRAIN CONNECTIONS

A. WATER CONNECTIONS: The recommended water supply line is a 1/4 inch O.D. copper tubing. Connect to cold water supply line with standard plumbing fittings, with a shutoff valve installed in an accessible place between the water supply and the Cabinet.

In some cases, a plumbing permit and services of a licensed plumber will be required.

WARNING

DO NOT operate this unit when the water supply is OFF, or is below 20 PSI, the recommended minimum water pressure. Position the master switch to the OFF position, until proper water supply is resumed.

B. DRAIN CONNECTIONS: All drains are gravity type and must be 1/4 inch fall per foot on horizontal runs. The drains to be installed to conform with local code. The drain receptacle should be an open, trapped or vented construction. See Figure 1-1 to be properly informed on venting.

Recommended drain is 5/8-inch O.D. copper tubing or 5/8-inch I.D. flexible tubing.

WARNING

This Icemaker will NOT operate when water supply temperature is below 40 degrees F., or above 100 degrees F. Requires 20 PSI minimum flowing water pressure, without interruption.

C. SPECIAL SHUTDOWN PERIODS:

WARNING

This Icemaker is NOT designed for outside installations where air temperatures are below 50 degrees F., or above 100 degrees F., and the water temperature is below 40 degrees F., or above 100 degrees F. Extended periods of operation at temperatures exceeding these limitations will constitute misuse, under the terms of the SCOTSMAN Manufacturer's limited warranty coverage.

Complete draining of the Bin Insert sump, all water supply and drain lines are required for Automatic Cubers that are installed in locations where air temperatures during extended periods are below 50 degrees F., and the water temperatures during this period would be below 40 degrees F. It is at locations where normal use is for warm and hot weather season periods, after which those seasonal activities and associated ice usage are no longer normal, such as: swimming pool area; backyard recreational area; lakesite clubhouse; mountain summer cabin; summer boat or yacht; summer recreational vehicle, or other similar areas.

Failing to drain the water from the AC11 Automatic Cuber, to prevent freezeup and severe damage to equipment, will void the Warranty Program. Properly prepare the Automatic Cuber for the cold season period of inactive use, in order to prevent unfortunate damage and heavy costs of repair, and to be assured of being able to resume and enjoy normal high quality ice cube making when the next season use begins.

D. FILTERS AND WATER TREATMENT:

Contact your local water treatment specialists for technical data and detailed information on the most suitable treatment devices to fit your needs.

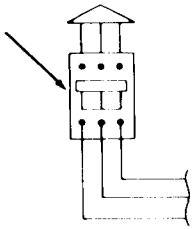
CAUTION

Standard water softeners and specifically charcoal filters generally do not provide the protection required by this Icemaker. UNDERSTAND: Component malfunctions or service requirements related to local water conditions, ARE NOT COVERED by Warranty.

VI. FINAL CHECK LIST

1. Is the Cabinet level? (IMPORTANT)
2. Have all electrical connections and piping connections including water supply line shutoff valve been made?
3. Has the voltage been tested and checked against the nameplate rating?
4. Have the Bin and Cabinet been wiped clean?
5. Have the Compressor hold down clips been checked, to be sure the Compressor is snug on the mounting pads?
6. Has the owner/user been given the Service Manual and instructed on how to operate the Icemaker?
7. Has the Manufacturer's Registration Card been properly filled out? Check for correct Model and Serial numbers from Serial nameplate, mailed to the SCOTSMAN factory.
8. Check all refrigerant lines and conduit lines, to guard against vibration or rubbing and possible failure.
9. Are there at least six inches clearance in front of the Kickplate for proper air circulation?
10. Is the Cabinet in a room where ambient temperatures are a minimum of 50 degrees F. all year around?
11. Has water supply pressure been checked to insure a minimum of 20 PSI?
12. Has the owner been given name and telephone number of the authorized SCOTSMAN Distributor, or Service Agency serving him?

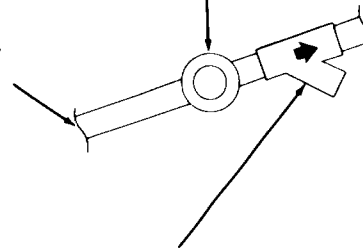
HAND
DISCONNECT
SWITCH



TO
CONTROL
BOX

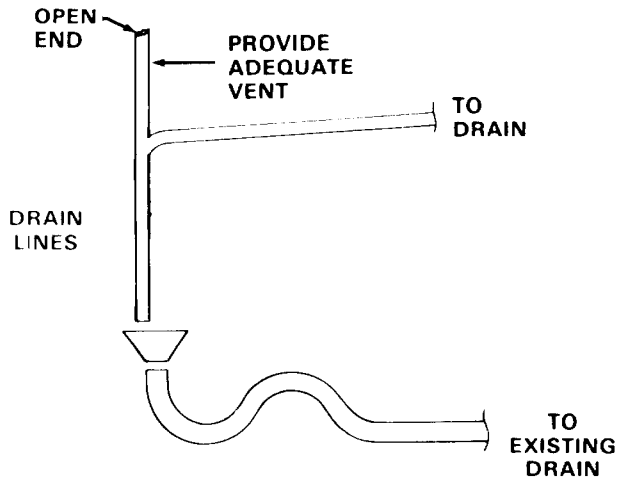
HAND
SHUTOFF
VALVE

WATER
SUPPLY
IN



TO
WATER
INLET
CONNECTION

WATER STRAINER
(CLEANOUT PLUG DOWN)
OPTIONAL



OPEN, TRAPPED OR VENTED DRAIN. RECOMMENDED
1/4-INCH FALL PER FOOT OF RUN ON DRAIN LINES.

WARNING

THIS ICEMAKER IS NOT DESIGNED FOR OUTSIDE INSTALLATION
AND WILL NOT OPERATE IN AMBIENT TEMPERATURES BELOW
50-DEGREES F., NOR ABOVE 100-DEGREES F.

THIS ICEMAKER WILL NOT OPERATE WHEN WATER TEMPERA-
TURES ARE BELOW 40-DEGREES F., NOR ABOVE 100-DEGREES
F.

SECTION II

OPERATING INSTRUCTIONS

I. START UP

1. Open the Door to gain access to the front of the Control Box Assembly.
2. Rotate the Bin Level Control knob, located on the front of the Control Box Cover, **CLOCKWISE**, to the normal operating position, the middle of the short heavy line. See Figures 2-1 & 2-2.

This cycle will take about three and one-half minutes to flush out the system and provide a necessary reservoir of water for use in the Freezing Cycle, which will begin when the Timer CLOSSES the Water Inlet Solenoid Valve.

NOTE

Observe that the Compressor starts operating, the Water Solenoid Valve OPENS and inlet water flows from the valve through tubing to the top of one end of the Platen Assembly, where the water flows around the inverted ice cube molds and drains through a small hole at the other end. Water also overflows through a short standpipe; and, all the water is drained into the bottom of the Bin Insert Assembly. Excess water, beyond a reserve of about two cups, drains out of the Bin Insert Assembly through a standpipe and exits the cabinet to the drain.

3. Check that the plastic Curtain hangs down evenly inside the opening at the front of the Bin Insert Assembly.
4. Check operation of the Freezing Cycle:
 - a. Compressor is in operation.
 - b. Water Pump is operating and water is being sprayed from the spray Nozzle Assemblies into the inverted ice cube cups.
 - c. Ice-making process begins: feeling inside inverted ice cube cups reveals temperatures changing to cold and very shortly ice begins to form.

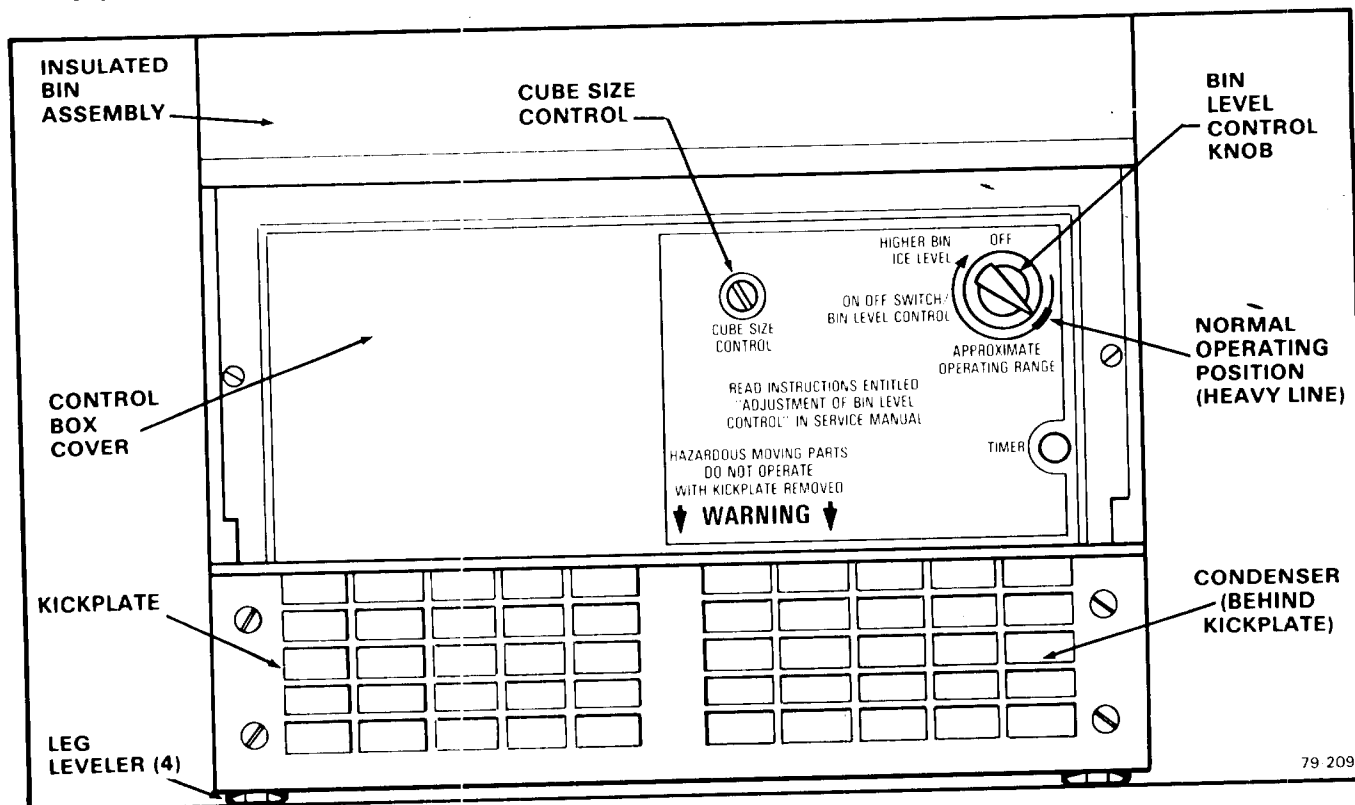


Figure 2-1. Location and Access to Controls.

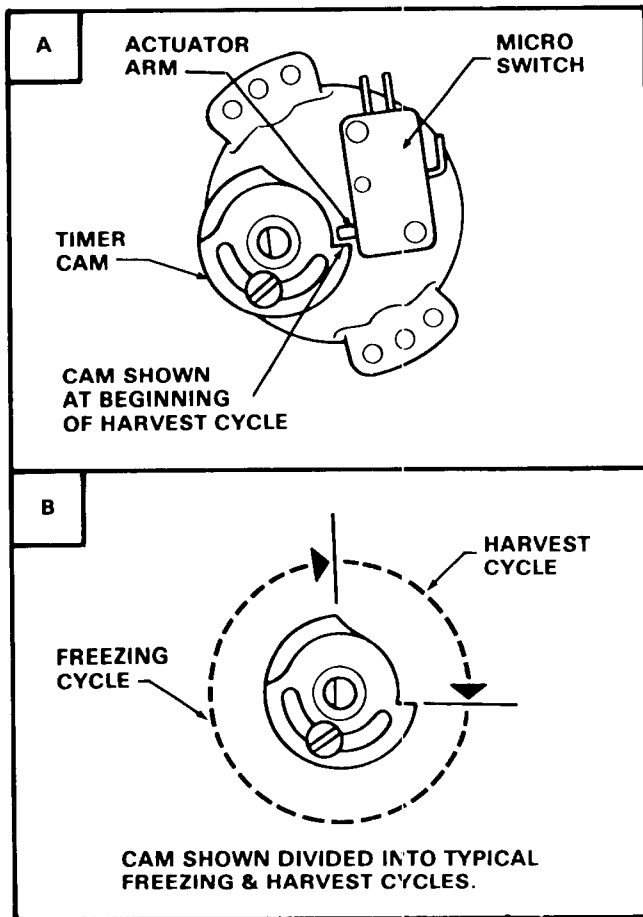


Figure 2-2. Timer Cam Positions.

NOTE

Freezing time will range between 16 and 20 minutes in a 70 degree F. ambient atmosphere. Longer time for temperatures above 70 degrees F. and shorter, when below. Average complete cycle range is about 19 to 26 minutes.

WARNING

DO NOT operate this Icemaker when the water supply is shut OFF, or is BELOW the recommended 20 PSI. Rotate the Bin Level Control knob COUNTERCLOCKWISE, to the OFF position, immediately.

5. Observe first ice cube harvest:

- a. Check size of ice cubes: when too small after a second harvest, refer to procedure IV-II for Adjustment of the Cube Size Control, to increase size of ice cube.

NOTE

Normal cube size is with a one-quarter inch depression in the crown. See Figure 4-2.

- b. Check texture of ice cubes: when partially cloudy throughout, suggests ice cube machine operating short of water near end of freezing cycle, or possibly an extreme problem water condition, wherein filtering or treatment equipment is recommended. Refer to paragraph I-V-D on Filters and Water Treatment.

- 6. Hold ice against the Bin Level Control tube to test shutoff. The ice should cause the icemaking process to shut OFF within two minutes.

NOTE

Within minutes after the ice is removed from the sensing Tube, the thermostat will warm up and cause the icemaking process to restart. This control is factory set and should not be reset until testing is performed. Normal setting is about 35 degrees F. CUT-OUT and 40 degrees F. CUT-IN.

- 7. Thoroughly explain to the owner/user the significant specifications of the AC11 Automatic Cuber, the start up and operation, maintenance and cleaning procedures. Answer all questions by the owner about the icemaker; and, inform the owner of the name and telephone number of the authorized SCOTSMAN Distributor, or Service Agency serving him.

SECTION III

PRINCIPLES OF OPERATIONS

How It Works

I. FREEZING CYCLE

Water from the sump in the Reservoir is pumped through the Spray Bar and two Nozzle Assemblies attached to it. See Figure 3-1. Each stationary Nozzle has a Jet Spinner, through which water is sprayed into the inverted cube molds of the Evaporator. At the beginning of the Freeze Cycle the electrical circuit is completed to the Compressor and the Water Pump. The Water Pump operates continuously during the Freeze Cycle.

Refrigerant is compressed in the Compressor and discharged into the Condenser as a high pressure, high temperature gas. The refrigerant is cooled and condensed by moving air and condenses to a high pressure, high temperature liquid. This liquid refrigerant then passes through a small capillary tube where the temperature and pressure of the liquid refrigerant are lowered. The low pressure, low temperature liquid refrigerant, then enters the Evaporator. The refrigerant is warmed by

water being sprayed against the Evaporator and begins to boil off, to become a gas. The refrigerant next travels through the Accumulator where any remaining liquid refrigerant then returns to the Compressor as a low pressure, low temperature gas and the cycle starts again.

During the Freezing Cycle, both the Water Inlet Solenoid Valve and the Hot Gas Solenoid Valve are CLOSED.

When the ice cubes are about 3/4 formed, the Cube Size Control bulb located on the suction line will sense the temperature at which it is preset to CLOSE. This will complete the electrical circuit to the Timer. The Timer then controls the remainder of the cycle.

The Timer will keep the Icemaker operating in the Freeze Cycle for the next four and one-half minutes. This will give the cubes time to fully form. The Timer will switch the Icemaker into the Harvest Cycle through the contacts of the Timer Assembly microswitch.

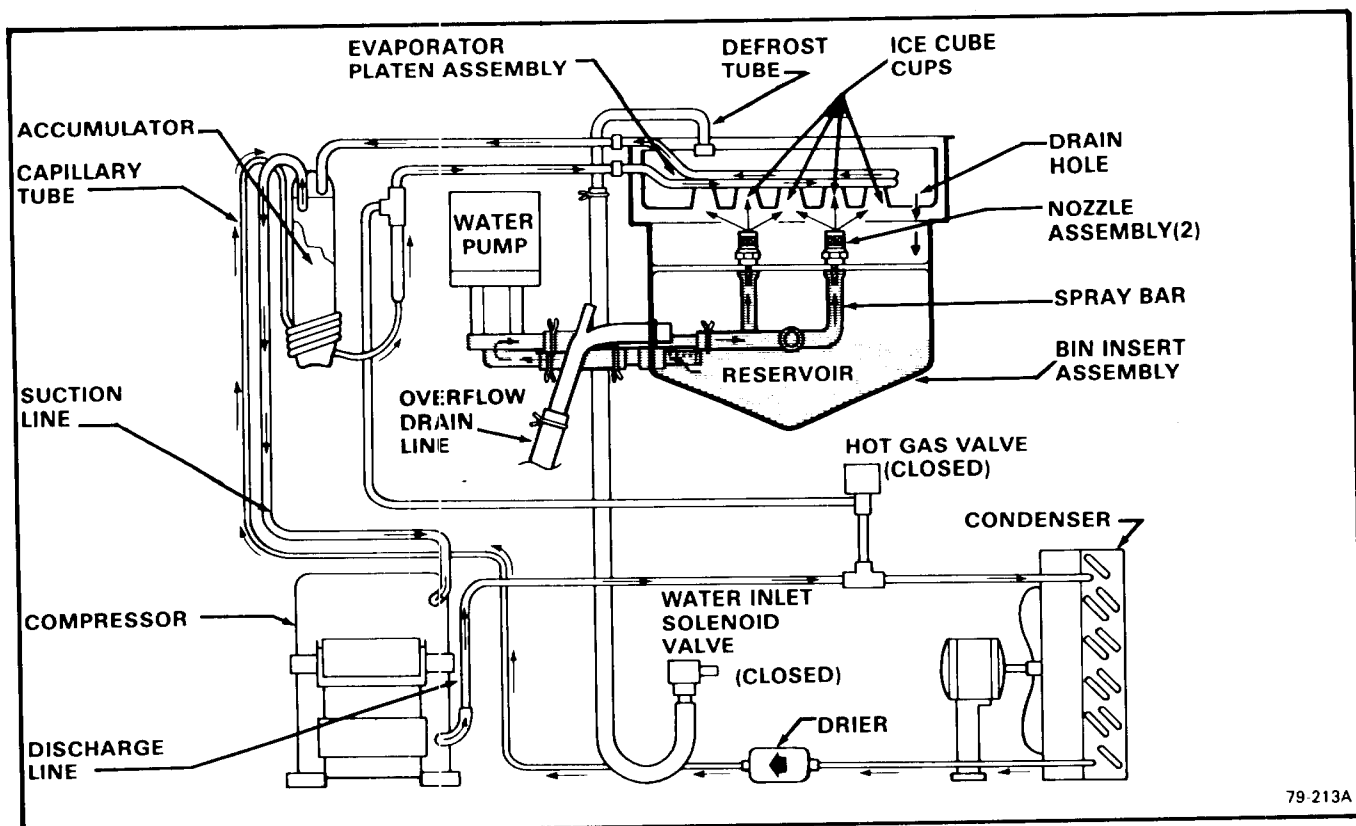


Figure 3-1. Freezing Cycle.

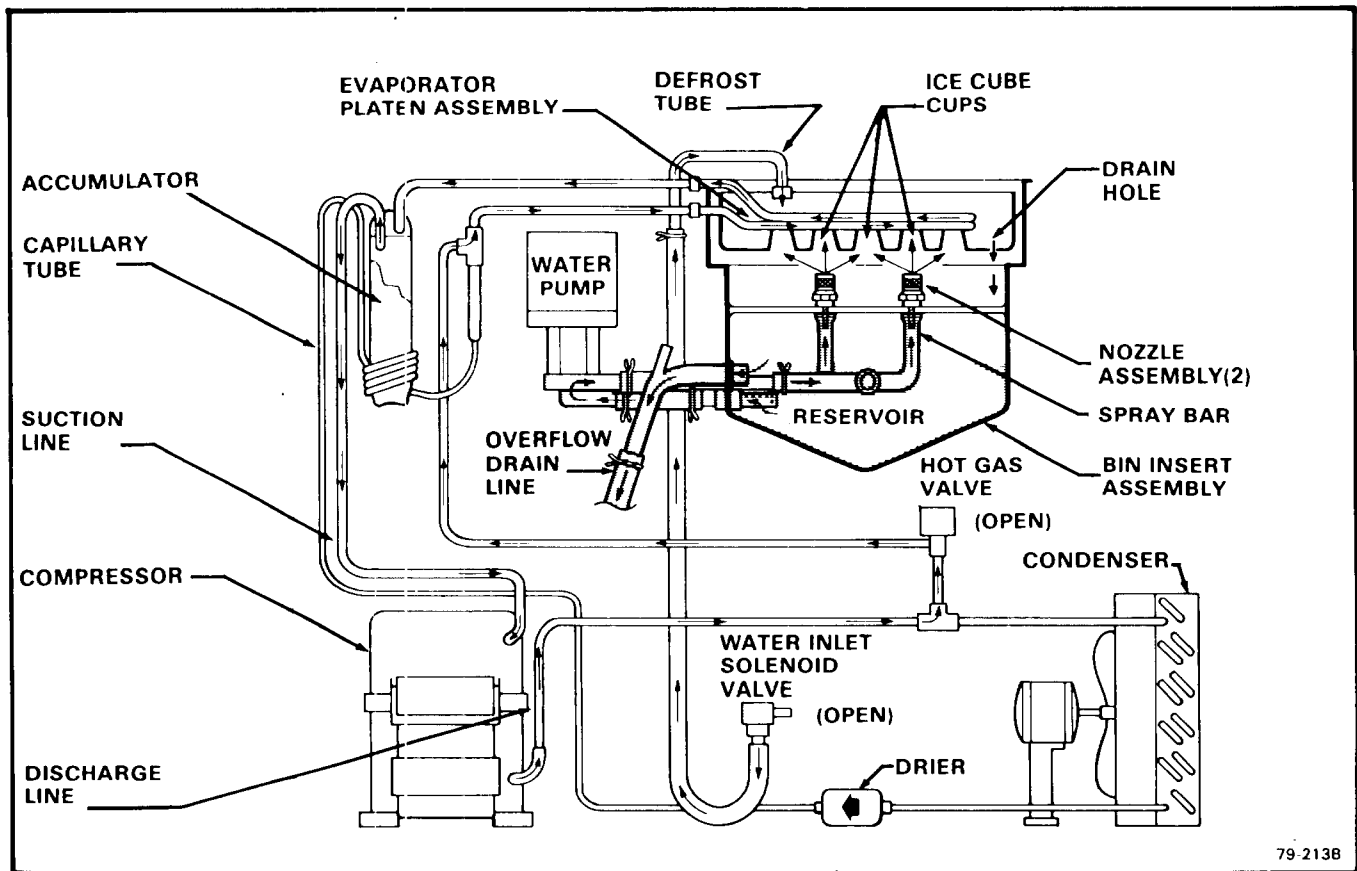


Figure 3-2. Harvest Cycle

II. HARVEST CYCLE

When the Timer switches the Icemaker into the Harvest Cycle, hot gas being discharged from the Compressor is diverted through the Hot Gas Solenoid Valve into the Evaporator. During this cycle, the hot gas circulates from the Compressor to the Evaporator and back again, bypassing the Condenser and capillary tube. In the electrical circuit, the Compressor is operating and both the Water Inlet Solenoid Valve and the Hot Gas Solenoid Valve are energized. See Figure 3-2.

Opening the Water Inlet Solenoid Valve allows a fresh water supply to be discharged into the top of the Platen Assembly Evaporator. The finished ice cubes are released from the Evaporator by the warming effect of the hot gas flowing through the Evaporator tubes and the water flow around the ice cube molds. The released ice cubes drop onto the slanted Front Cube Chute and into the ice storage bin. At the end of the Harvest Cycle, the Timer cam will start.

III. COMPONENT DESCRIPTIONS

A. BIN THERMOSTAT CONTROL

The Bin Thermostat Control is located in the right-hand section of the Control Box. The sensing capillary tube of the control, is routed out of the Control Box into the ice storage bin, through the Bulb Holder Tube, which enters the right rear of the Bin and is installed along the right inner wall of the Bin. The Control functions to automatically SHUT OFF the Icemaker, when the ice storage bin is filled and ice contacts the capillary tube. It also signals the RE-START of the Icemaker when the capillary tube starts to warm up after ice has been removed from the bin.

NOTE

Altitude adjustment should ONLY be performed on Icemakers installed at 2,000-foot level locations and ABOVE, and adjust only in increments of one-fourth turn of a screw at a time.

B. COMPRESSOR START RELAY

The current relay located on the Compressor, functions to carry the Compressor line current.

C. CUBE SIZE CONTROL

The temperature sensing Cube Size Control affects the length of the Freezing Cycle prior to initiating the Finishing Timer. The Cube Size Control closes its contacts when the Evaporator reaches a preset temperature, starting the Finishing Timer. A variation in either ambient air or incoming water temperature will affect the efficiency of the refrigeration system. This will vary the length of time it takes the Evaporator to reach the temperature at which the Cube Size Control is preset to CLOSE; which, in turn, will affect the overall cycle time.

NOTE

Be sure to refer to procedure IV-II, Adjustment of the Cube Size Control, BEFORE attempting to adjust the control.

D. FINISHING TIMER - Timer & Switch Assembly

The function of the Finishing Timer begins when activated by the Cube Size Control. The Timer controls an eight minute dual function: four and one-half minutes are programmed to finish freezing the ice cubes and the final three and one-half minute portion is for the defrost operation and harvest of the ice cubes. All electrical circuitry is connected through the terminal board and the Finishing Timer and shunted by the single-pole, double-throw microswitch to either the Freezing Cycle or the Harvest Cycle. The microswitch is actuated by a Cam Assembly directly connected to the Timer Motor. The Timer Cam can be adjusted to vary the defrost timer, as required.

E. HOT GAS SOLENOID VALVE

The Hot Gas Solenoid Valve functions only during the harvest cycle, to divert the hot discharge gas from the Compressor, bypassing the Condenser and capillary tube, for direct flow to the Evaporator Platen Assembly to release ice cubes from the inverted ice cube molds. The Hot Gas

Solenoid Valve is comprised of two parts, the Body and the Coil assemblies. Installed in the discharge line of the Compressor, the energized solenoid coil lifts the valve stem within the valve body to cause the hot discharge gas to be diverted when the Finishing Timer has advanced to the start of the harvest cycle.

F. SPRAY BAR AND NOZZLE ASSEMBLIES

The Spray Bar and Nozzle Assemblies are designed to channel recirculating water through two Jet Spinners, for uniformly spraying the water into the inverted ice cube cups.

NOTE

Refer to procedure V-III, CLEANING - Ice machine and, for problems requiring removal of parts refer to procedure IV-V for details for removing Spray Bar and Nozzle Assemblies.

G. WATER INLET SOLENOID VALVE

The Water Inlet Solenoid Valve functions only during the Harvest Cycle when it is energized to permit a metered, one-eighth gallon-per-minute rate of incoming water, to flow through the Defrost Tube onto the top of the plastic Platen Assembly, assisting in the harvest of ice cubes. The water drains through holes in the Platen Assembly into the Reservoir in the lower section of the Bin Insert Assembly; and there, the water is recirculated through the Water Pump for return to the Spray Bar and Nozzle Assemblies.

REFRIGERANT CHARGE

MODEL	AC11 Refrig. Chg.
Air-Cooled	5 oz. R-12 (Approx.)

NOTE

Always CHECK NAMEPLATE on individual Ice maker for specific refrigerant charge, BEFORE charging the refrigeration system. The above listed refrigerant charge is approximate charge for the AC11 Cubers, however it is important to CHECK NAMEPLATE for each Ice maker.

SECTION IV

ADJUSTMENT AND REMOVAL AND REPLACEMENT

The procedures provided in this Section are arranged in alphabetical order, to make specific Adjustment and Removal and Replacement information easy to locate.

Read the instructions thoroughly before performing any Adjustment or Removal and Replacement Procedures.

I. ADJUSTMENT OF THE BIN LEVEL CONTROL

NOTE

The individual customer, or user of the AC11 Automatic Cuber is responsible for the normally minor adjustments required to maintain the desired ice level in the storage bin; that is, just as it is the customer's responsibility to adjust the room thermostat in the home, to maintain the individual temperature level desired during the various annual seasons. All installations vary as to altitude, geographic location, ambient temperatures, and also where installed in the home or building, such as: near a source of heat, stove, hot air vent, sunny window; in a cool area, in a basement, on a porch, unheated room. A location very often is warm during summer and relatively cool in winter. All these variations and changing temperatures can and do cause the icemaking process to operate differently than the original setting: usually, either not enough ice is being made, or too much. The following steps are easy to understand and perform. Read thoroughly and perform minor adjustments, when necessary, to ensure a continued supply of ice cubes to the level you require, within the known limits of the AC11 Automatic Cuber. When these adjustments do not serve to correct the problem, refer to Section VI Service Diagnosis, or contact your authorized SCOTSMAN Service Agency.

WARNING

The Bin Level Control device has very sensitive response to adjustment. Over-adjusting or erratic guessing, can foul the instrument, cause ultimate delay and possible part replacement, WHICH COULD HAVE BEEN PREVENTED.

Altitude adjustment should **ONLY** be performed on icemaker installed at 2,000 foot level locations, and **ABOVE**, and adjust only in increments of a maximum of one-eighth turn of knob rotation at a time.

Adjustment of the Bin Level Control is normally performed, to cause more ice to be produced to result in a higher ice level in the bin; or, to cause less ice to be produced, to result in a response to a **TOO COLD** or too much ice condition. Be sure to adjust **ONLY** in a maximum of one-eighth turn of control knob rotation at a time.

A. TO PRODUCE MORE ICE: IF UNIT CUTS-OFF TOO SOON:

1. Locate the Bin Level Control knob protruding through the Control Box Cover. See Figure 4-1.
2. Rotate the Bin Level Control knob one-eighth of a turn **CLOCKWISE** toward **HIGHER BIN ICE LEVEL**.
3. Observe that the icemaking process of **FREEZING** and **HARVEST** cycle continue uninterrupted, until the ice level in the bin reaches the Bin Level Control Tube and causes the icemaking process to shut **OFF**. If the bin thermostat cut-off is again **TOO SOON**, repeat step 2 above, in one-eighth of a turn increments, until the proper ice level in the bin and Bin Thermostat cut-off are satisfactory.

B. TO PRODUCE LESS ICE; IF UNIT DOES NOT CUT-OFF, TOO MUCH ICE:

1. Locate the Bin Level Control knob protruding through the Control Box Cover.
2. Rotate the Bin Level Control knob one-eighth of a turn **COUNTER-CLOCKWISE** toward **OFF**.

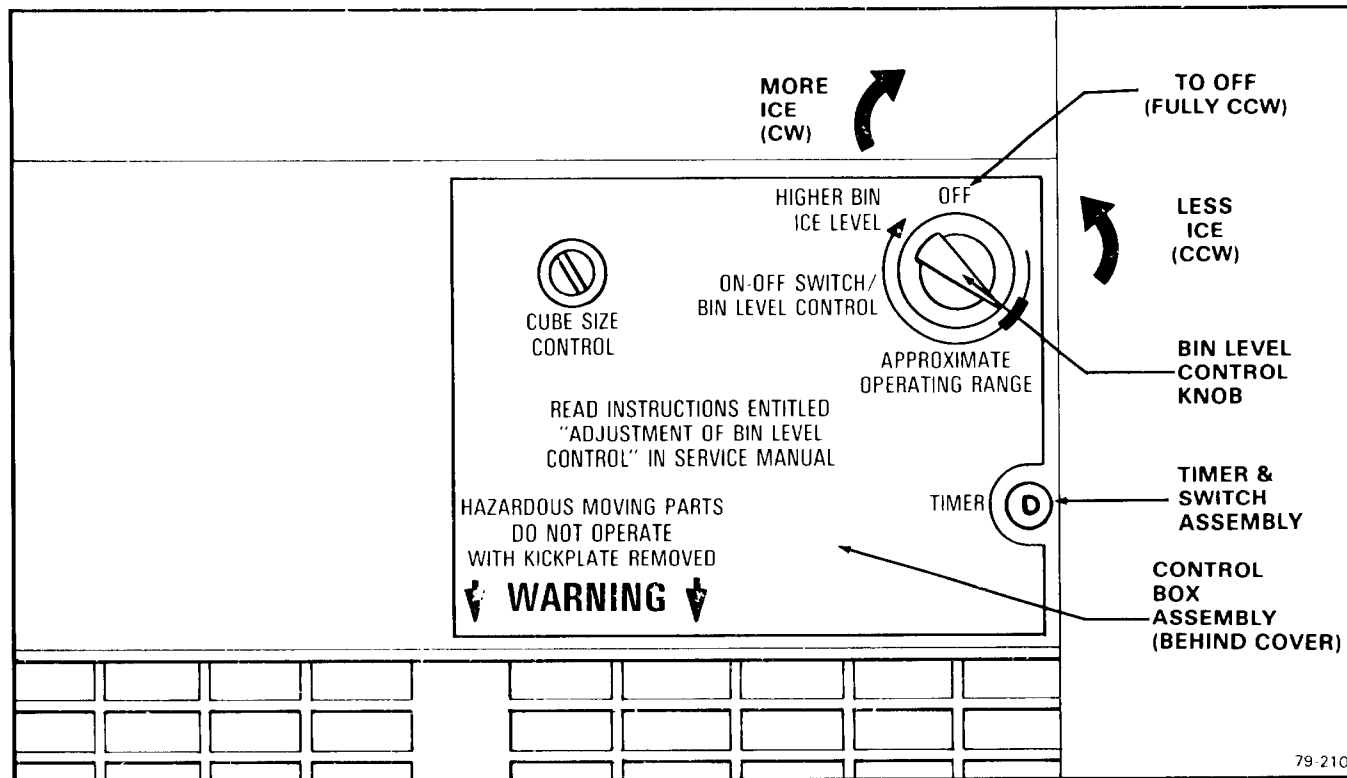


Figure 4-1. Adjustment of the Bin Level Control.

3. Observe that the icemaking process STOPS, and gradually the ice melting in the bin will cause the ice level to decrease BELOW the Bin Level Control Tube, which will eventually warm up and restart the icemaking process. If the warm up time is too fast and the icemaking process still makes too much ice, the bin is still TOO COLD, so repeat step 2 above, in one-eighth of a turn increments, until the proper ice level in the bin and the Bin Thermostat cut-in are satisfactory.

II. ADJUSTMENT OF THE CUBE SIZE CONTROL

CAUTION

BEFORE performing actual adjustment to the Cube Size Control, check other possible causes for cube size problems, refer to Section VI, SERVICE DIAGNOSIS for problem review and analysis.

DO NOT perform adjustment when a new Cube Size Control is installed, until the control bulb has been properly installed in the tube well, on the refrigerant tube of the Platen Assembly and the icemaking system has progressed through several complete freezing and harvest cycles, to observe size and quality of ice cubes and whether or not a cube size problem exists.

Adjustment of the Cube Size Control is performed:

- A. IF ICE CUBES ARE SHALLOW SIZE (indentation is too deep):
 1. Locate the Cube Size Control inside the opening in the upper left section of the Control Box Cover.
 2. Rotate the adjusting screw one-eighth of a turn CLOCKWISE toward COLDER.
 3. Observe size of ice cubes in next two ice cube harvests and repeat step 2 above, in one-eighth turn increments, until proper ice cube size is achieved. See Figure 4-2.
- B. IF ICE CUBES ARE OVERSIZE (indentation is too full):
 1. Locate the Cube Size Control inside the opening in the upper left section of the Control Box Cover.
 2. Rotate the adjusting screw one-eighth of a turn COUNTERCLOCKWISE toward WARMER.
 3. Observe size of ice cubes in next two ice cube harvests and repeat step 2 above, in one-eighth turn increments, until proper ice cube size is achieved. See Figure 4-2.

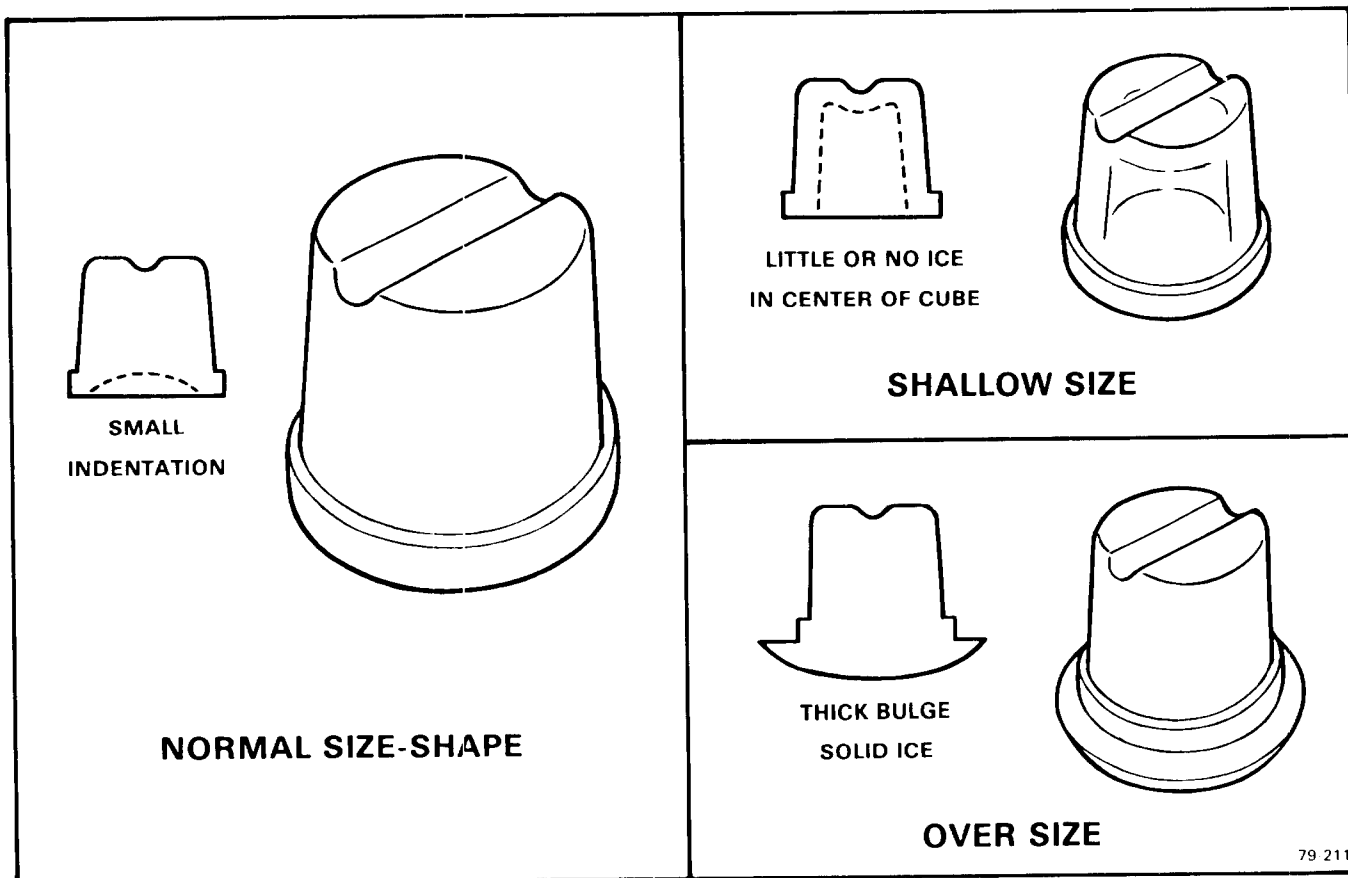


Figure 4-2. Ice Cube Shape.

III. ADJUSTMENT OF THE LEG LEVELERS

Adjustment of the Leg Levelers should be performed during the initial installation of the Cabinet and anytime the Cabinet is moved from the original location to another site.

- A. Using an open-end wrench and a carpenter's bubble level, rotate the threaded Leveler in each Leg to RAISE or LOWER the Cabinet until the Cabinet is level in the front-to-rear direction.
- B. Repeat step A, for leveling in the side-to-side leveling and repeat adjustments as necessary.

IV. ADJUSTMENT OF THE TIMER & SWITCH ASSEMBLY

The Timer and Switch Assembly is factory set, so one complete revolution of the cam on the Timer represents eight minutes. Four and one-half minutes comprise the freezing cycle event during cam rotation, and the final three and one-half minutes program the defrost and harvest cycle. Rotating the shaft of the Timer Cam CLOCKWISE will allow positioning the

actuator arm of the microswitch on the cam at the selected start position for either the freezing cycle or harvest cycle, as required in the CLEANING instructions.

TO ADJUST THE TIMER & SWITCH ASSEMBLY:

- A. **HARVEST CYCLE:** Slowly rotate the shaft of the Timer and Switch Assembly, located in a hole in the front of the Control Box Cover, CLOCKWISE, until the actuator arm on the microswitch initiates the harvest cycle. An audible click can be heard, but in a noisy area, look at the cam and switch to observe the event. See Figure 4-1.
- B. **FREEZING CYCLE:** Slowly rotate the shaft of the Timer and Switch Assembly, located in a hole in the front of the Control Box Cover, CLOCKWISE, until the actuator arm on the microswitch initiates the freezing cycle.
- C. The length of the harvest cycle can be changed by loosening the adjustment screw on the cam. The minimum harvest setting is two minutes; the maximum is three and one-half minutes, as set at the factory. It is important that the length of the

harvest cycle allow enough time for all eight ice cubes to be ejected from the evaporator. Too short of a time will cause the evaporator to freeze up and stop ejecting ice into the bin. Too much time, wastes ice-making capacity, energy and water. Adjustment of the harvest cycle may require a corresponding adjustment of the Cube Size Control.

WARNING

Be sure the electrical power supply and the inlet water supply are OFF, BEFORE starting any of the following REMOVAL AND REPLACEMENT procedures as a precaution to prevent possible personal injury or damage to equipment.

V. REMOVAL AND REPLACEMENT OF THE BIN INSERT ASSEMBLY

A. To Remove the Bin Insert Assembly:

1. Remove hinge screws and the Door Assembly.
2. Remove screws from the Control Box Cover, Kickplate, Rear Panel and the lower sides of the wrap-around Cabinet.
3. Remove the Bin Level Control knob, the Control Box Cover, Kickplate, the Rear Panel and lift up to remove the Cabinet from the Bin and Chassis Assembly.
4. Disconnect and remove three Water Pump clamps and tubes from the rear of the Bin Insert Assembly.
5. Disconnect the Tygon Tube from the copper Overflow Tube at the rear of the Bin Insert Assembly.
6. Remove the metal strap tube holder, the Platen Inlet Tube, Platen Cover, and carefully lift and temporarily place out of the way, the Evaporator Platen Assembly and attached Accumulator.
7. Lift the Bin Insert Assembly up and out of the Bin.
8. Remove four screws, the Curtain Stiffener and the Curtain Assembly from the Bin Insert. See Figure 4-3.
9. Unscrew and remove two Nozzle Assemblies, the Spray Bar Assembly, O-Ring, and the Cube Chute, from the Bin Insert. Then, unscrew and separate the Nozzle and Spinner from the Jet Base of each Nozzle Assembly. Inspect the parts for cleaning or replacement.

10. Remove O-Ring on the end of the copper Overflow Tube, inside the Bin Insert rear wall. Inspect the O-Ring for cuts, tears, excessive wear and replace if defective.
 11. Remove hose clamp and pull the Overflow Tube out the rear of the Bin Insert.
- B. To replace The Bin Insert Assembly, reverse the removal procedure.

NOTE

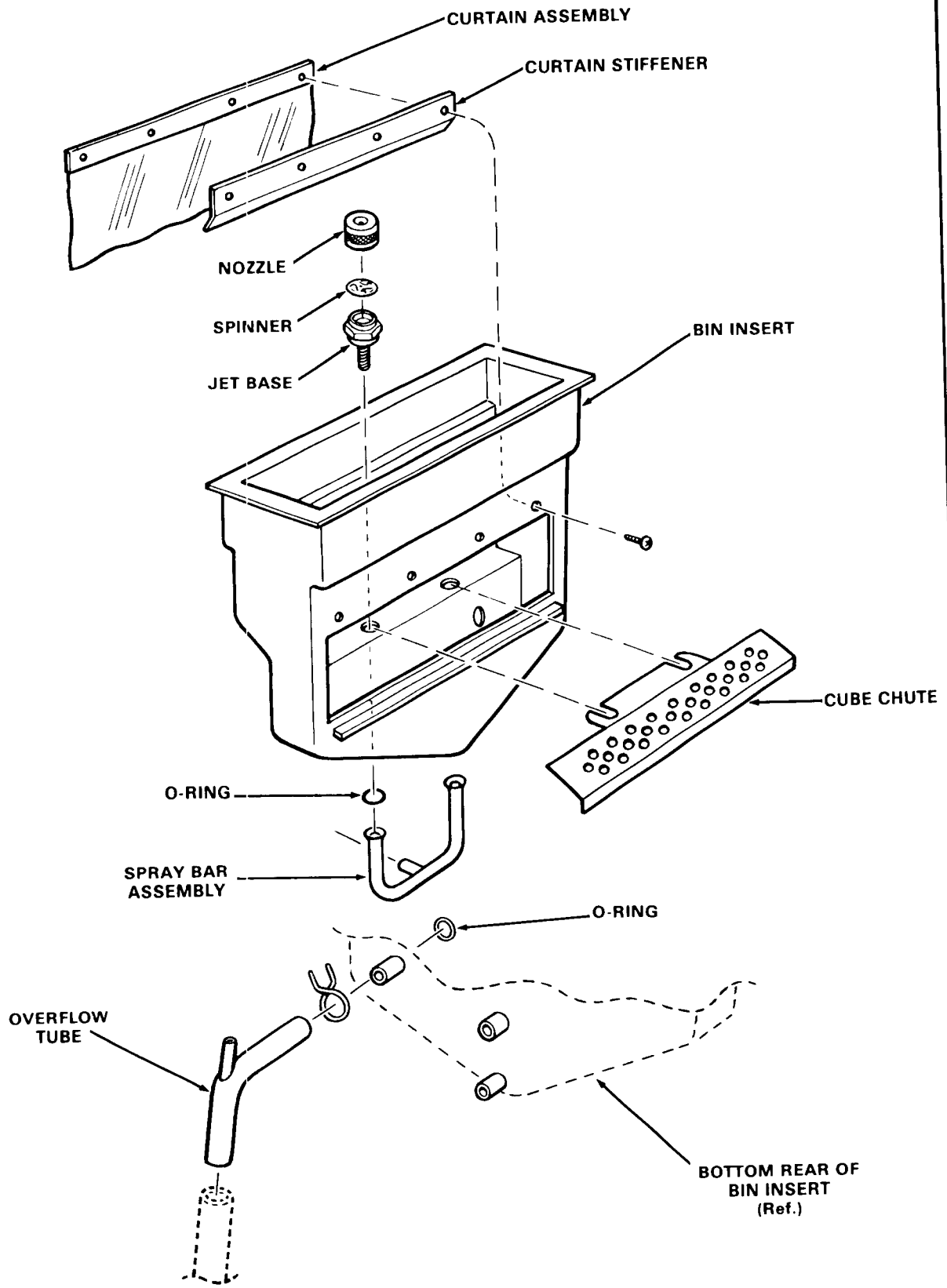
When replacing a Nozzle Assembly or an O-Ring, with the Bin Insert Assembly in normal installed position, the installation of the O-Ring is performed by feel, because it cannot be seen behind the Bin Insert Assembly. To save much lost time in trial and error, first install the Nozzle Assembly, reach up behind the Bin Insert Assembly to feel the thread of Nozzle, then fit the O-Ring on the threads, then attach thread of Nozzle to threaded end of Spray Bar.

VI. REMOVAL AND REPLACEMENT OF THE BIN LEVEL CONTROL

A. To Remove the Bin Level Control:

1. Open the Door Assembly
2. Remove screws, the Kickplate and the Rear Panel.
3. Remove the knob from the Bin Level Control at the front of the Control Box Assembly.
4. Remove screws and the Control Box Cover.
5. Remove two screws, then lower and carefully move the Bin Level Control out of the Control Box, enough to gain access to the electrical lead connections.
6. Disconnect electrical leads from the Bin Level Control.
7. At the upper right rear of the foamed Bin, carefully pull the capillary line out of the copper tube. Keep copper tube in the Bin.
8. From the front of the Cabinet, carefully remove the Bin Level Control from the Control Box, being careful not to kink, or break open, the attached length of capillary line.

B. To replace the Bin Level Control, reverse the removal procedure.



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Figure 4-3. Removal of the Bin Insert Assembly.

VII. REMOVAL AND REPLACEMENT OF THE COMPRESSOR ASSEMBLY

NOTE

Always install a replacement Drier, anytime the sealed refrigeration system is opened. Do not replace the Drier until all other repair or replacement has been completed.

A. To Remove the Compressor Assembly:

1. Remove hinge screws and the Door Assembly.
2. Remove screws and the Bin Level Control knob, the Control Box Cover, the Kickplate and the Rear Panel.
3. Remove screws from the lower sides of the wrap-around Cabinet and lift up to remove the Cabinet from the Bin and Chassis Assembly.
4. Disconnect the electrical leads from the Compressor Junction Box.

CAUTION

If tap line valves are used, proper refrigeration practice demands that the process tube be pinched OFF, the tap line valves cut OFF, and the end of the process tube sealed by soldering.

5. Bleed off or blow the refrigerant charge.

CAUTION

Be sure to use extra precaution to shield the plastic Fan Shroud and the rubber Grommets at the Compressor base, BEFORE and during unsoldering and soldering of refrigerant lines.

6. Unsolder and disconnect both the suction line and the discharge line from the Compressor.
7. Unsolder the process header tube from the Compressor and retain for installation on the replacement Compressor.
8. Remove four Compressor Mounting Clips.

NOTE

The metal Bin Bottom, on which the foamed Bin Assembly rests, may have to be partially lifted and temporarily propped up on the Compressor side, to allow removal of the Compressor. Use care to prevent excessive bending or possible kinking of refrigeration tubing.

9. Lift Compressor off of the two Compressor Mounting Brackets, protruding through holes in the Base Assembly, and remove the Compressor from the Base.
10. Remove four rubber Grommets from the base of the Compressor; also, retain the four Compressor Mounting Clips Grommets, and the two Compressor Mounting Brackets left underneath the Base Assembly.

NOTE

Thoroughly evacuate the system to remove moisture and non-condensables after Compressor replacement.

- B. To replace the Compressor Assembly, reverse the removal procedure.

VIII. REMOVAL AND REPLACEMENT OF THE CONDENSER ASSEMBLY - AIR COOLED

NOTE

Always install a replacement Drier, anytime the sealed refrigeration system is opened. Do not replace the drier until all other repair or replacement has been completed.

A. To Remove the Condenser:

1. Remove hinge screws and the Door Assembly.
2. Remove screws from the lower sides of the wrap-around Cabinet and lift up to remove the Cabinet from the Bin and Chassis Assembly.
4. Disconnect the electrical leads from the Fan Motor.
5. Tip the Bin and Chassis Assembly to the left to gain access to the bottom right; then, from underneath remove two screws, which attach the Fan Assembly, and three screws which attach the Condenser to the Base Assembly. Lower the assembly to the floor in the upright position.

6. Remove the Fan Assembly.
7. Remove two screws at each end of the Fan Shroud and remove the shroud.
8. Disconnect the inlet water line from the Water Solenoid Valve at the left end of the Control Box Assembly.
9. Remove two screws at each end of the Control Box Assembly and remove the Control Box Assembly from the Condenser; then, temporarily set aside with wiring attached, to allow room for the unsoldering and removal of the Condenser.

CAUTION

If tap line valves are used, proper refrigeration practice demands that the process tube be pinched OFF, the tap line valves cut OFF, and the end of the process tube sealed by soldering.

10. Bleed off or blow the refrigerant charge.
11. Unsolder and disconnect both the inlet and outlet tubes from the Condenser and remove the Condenser from the Base.

NOTE

Thoroughly evacuate the system to remove moisture and non-condensables after Condenser replacement.

- B. To replace the Condenser, reverse the removal procedure.

IX. REMOVAL AND REPLACEMENT OF THE CONDENSATE PUMP - SPK18-H OPTIONAL KIT

Refer to the Installation Instructions, included in the SPK18-H Condensate Pump Kit. This kit includes the Condensate Pump and all the associated parts and tubing, plus a detailed set of installation instructions, illustrations and wiring diagrams to ensure proper installation and operation of a replacement Condensate Pump.

X. REMOVAL AND REPLACEMENT OF THE CUBE SIZE CONTROL

- A. To Remove the Cube Size Control:
 1. Remove the hinge screws and the Door Assembly.

2. Remove screws and the Bin Level Control knob, the Control Box Cover, the Kickplate and the Rear Panel.
3. Remove Door Assembly and hinges per steps 1 and 2 of procedure IV-XV-A; remove two screws and the Trim Gasket from front opening to Bin; and, remove screws from lower sides of the wrap-around Cabinet and lift up to remove the Cabinet from the Bin and Chassis Assembly.
4. Remove two screws, then, carefully lower and move the Cube Size Control out of the Control Box, enough to gain access to the electrical lead connections.
5. Disconnect electrical leads from the Cube Size Control.
6. Carefully remove the coiled capillary bulb from the tube well at the rear of the Platen Assembly.
7. From the front of the Cabinet, carefully remove the Cube Size Control from the Control Box, being careful not to kink, or break open, the attached length of capillary line.

- B. To replace the Cube Size Control, reverse the removal procedures. Refer to procedure IV-II, ADJUSTMENT OF THE CUBE SIZE CONTROL.

XI. REMOVAL AND REPLACEMENT OF THE CURTAIN ASSEMBLY

- A. To Remove the Curtain Assembly:
 1. Open the Door Assembly.
 2. Remove four screws above the front opening of the Bin Insert Assembly and remove the Curtain Stiffener and the Curtain Assembly from inside the Bin Insert Assembly. Note the exact position of these two parts for correct positioning during reassembly.
- B. To Replace the Curtain Assembly:

CAUTION

BE CERTAIN the positioning of the Curtain Stiffener and Curtain Assembly is exactly the same as when removed. Improper positioning of these parts will cause recirculating spray water to leak out the front opening of the Bin Insert Assembly and result in reduced and irregular size and shape ice cubes. See Figure 4-4.

1. Position the Curtain Stiffener inside the Bin Insert Assembly, with the holes in the Curtain Stiffener aligned with the holes above and **BEHIND** the front opening of the Bin Insert Assembly; and, **VERY IMPORTANT**, the angle on the Curtain Stiffener facing toward the **REAR** and **DOWN**.

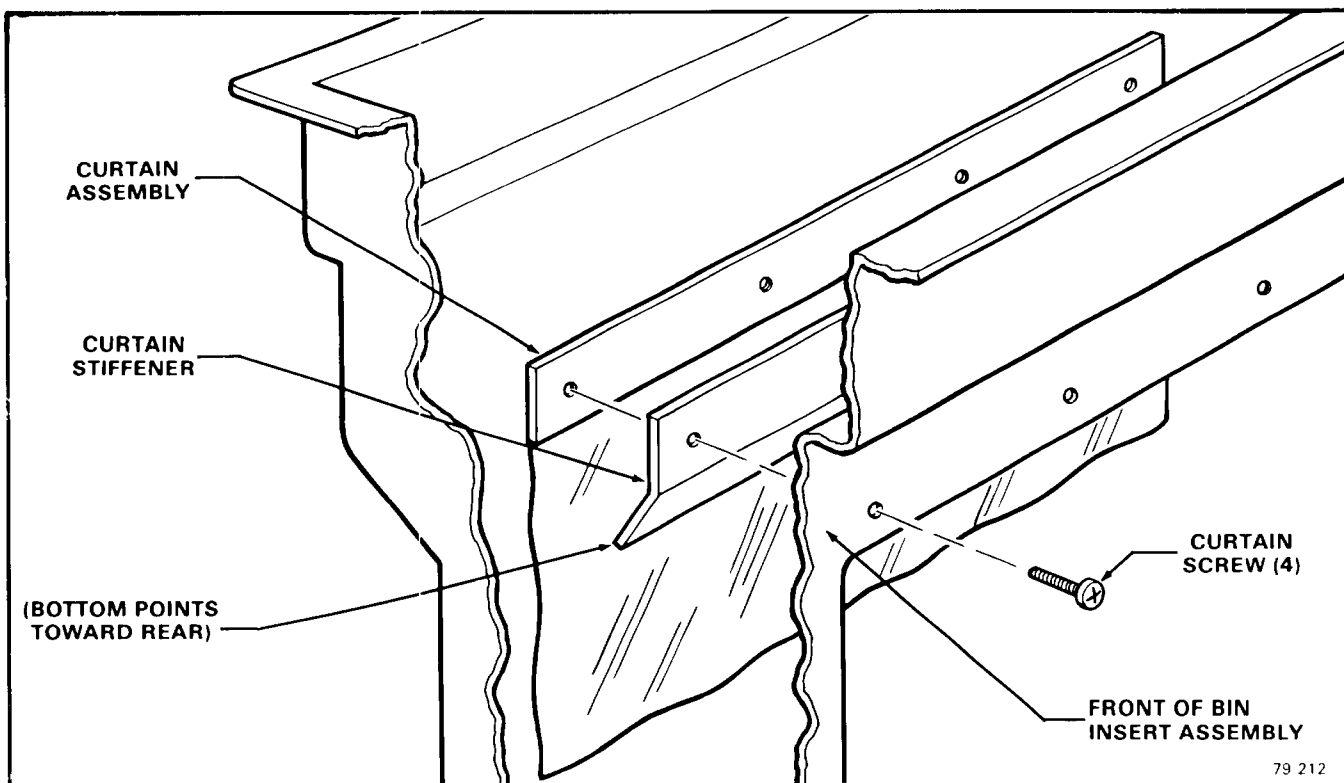


Figure 4-4. Replacing Curtain Assembly.

2. Align the holes in the Curtain Assembly BEHIND the holes in the Curtain Stiffener and secure with the four screws passing through the front of the Bin Insert Assembly, the Curtain Stiffener and into the Curtain Assembly.

XII. REMOVAL AND REPLACEMENT OF THE DRIER

NOTE

Always install a replacement Drier, anytime the sealed refrigeration system is opened. Do not replace the Drier until all other repair or replacement has been completed.

A. To Remove the Drier:

1. Remove hinge screws and the Door Assembly.
2. Remove screws and the Bin Level Control knob, the Control Box Cover, the Kickplate and the Rear Panel.
3. Remove screws from the lower sides of the wrap-around Cabinet and lift up to remove the Cabinet from the Bin and Chassis Assembly.

CAUTION

If tap line valves are used, proper refrigeration practice demands that the process tube be pinched OFF, the tap line valves cut OFF, and the end of the process tube sealed by soldering.

4. Bleed off or blow the refrigeration charge.

CAUTION

Be sure to use extra precaution to shield the plastic Fan Shroud, Compressor rubber grommets and electrical wiring, BEFORE and during unsoldering and soldering the Drier and refrigerant lines.

5. Unsolder the capillary tube from one end of the Drier and the refrigerant line from the other end of the Drier. Leave the service line on the Drier at this time and remove the Drier from the Chassis.
6. After removing the Drier from the Chassis, unsolder and remove the service line and retain for use on the replacement Drier.

B. To Replace the Drier:

CAUTION

1. If the factory seal is broken on the replacement Drier, exposing it to the atmosphere more than a few minutes, the Drier will absorb moisture from the atmosphere and lose substantial ability for moisture removal.
2. Be sure the replacement Drier is installed with the arrow positioned in the direction of the refrigerant flow.

1. Remove the factory seals from the replacement Drier and install and solder the service line in the identical opening and position as it was installed on the removed Drier.
2. Observe same precautions of step A-4, above, install and solder the system refrigerant line and the capillary line into the replacement Drier, one at each end.
3. Purge the system and check for leaks.
4. Thoroughly evacuate the system to remove moisture and non-condensables after Drier replacement.
5. Charge the system with refrigerant, by weight. SEE NAMEPLATE.
6. Replace the wrap-around Cabinet, Rear Panel, Control Box Cover, Bin Level Control knob, Kickplate, and the Door Assembly in the reverse order of the removal procedures.

XIII. REMOVAL AND REPLACEMENT OF THE FAN MOTOR ASSEMBLY

A. To Remove the Fan Motor Assembly:

1. Remove hinge screws and the Door Assembly.
2. Remove screws and the Bin Level Control knob, the Control Box Cover, the Kickplate and the Rear Panel.
3. Remove screws from the lower sides of the wrap-around Cabinet and lift up to remove the Cabinet from the Bin and Chassis Assembly.
4. Disconnect electrical leads in Control Box from the Fan Motor.
5. Tip the Bin and Chassis Assembly to the left to gain access to the bottom right; then, from underneath remove two screws which attach the Fan As-

sembly to the Base Assembly. Lower the assembly to the floor in an upright position.

6. Remove the Fan Assembly.
7. Remove the nut from the end of the Fan Motor shaft and remove the Fan Blade.
8. Remove two screws and separate the Fan Motor from the Motor Bracket.

B. To replace the Fan Motor Assembly, reverse the removal procedure.

XIV. REMOVAL AND REPLACEMENT OF THE WATER PUMP ASSEMBLY.

A. To Remove the Water Pump Assembly:

1. Remove hinge screws and the Door Assembly.
2. Remove screws and the Bin Level Control knob, the Control Box Cover, the Kickplate and the Rear Panel.
3. Remove screws from the lower sides of the wrap-around Cabinet and lift up to remove the Cabinet from the Bin and Chassis Assembly.
4. Disconnect and remove three Water Pump clamps and tubes from the rear of the Bin Insert Assembly.
5. Disconnect the electrical leads from the Water Pump.
6. Remove two screws, plain washers, special washers, spacers, and lift out the Water Pump Assembly, with electrical leads attached.
7. Retain the gasket under the Pump, for use in the replacement procedures.

B. To replace the Water Pump Assembly, reverse the removal procedure.

WARNING

1. DO NOT kink the three water tubes during reassembly, any obstruction will cause rapid failure of the motor, excessive water leaks and reduced ice cube production.
2. Secure the free end of the Grounding Strap on the replacement Water Pump, to the top of the Chassis with the top center screw while replacing the Rear Panel. BE SURE WATER PUMP IS GROUNDED.

XV. REDECORATING THE DOOR PANEL

A. To Install a Decorator Panel:

NOTE

Any panel 14-3/4 inches wide by 28-3/4 inches long and one-fourth inch thick, or less, may be used as a decorator panel. Materials such as wood, plastic and various synthetics are normal selections. A thin gauged sheet of most any metal, plain, embossed, painted or special finish, can also be used, by having a piece of matching sized corrugated cardboard or similar material, of the thickness required to make up the extra space needed with the sheetmetal, to add up to one-fourth inch thickness. Other possibilities include use of the same wood or material to blend into a built-in cabinet, or a portable bar cabinet.

1. Remove single screw and the lefthand Hinge Filler Plate from the top left corner of the Door Assembly.
2. Remove two screws from the top of the Door and lift off the Door Handle.
3. Open the Door slightly, about one-third or so; then, remove the front screw from the top right Hinge Assembly.
4. Loosen the rear screw of the top right Hinge Assembly, just enough to allow the Door to sag, or move forward, enough to gain access to the top opening of the extruded groove in the right side of the Door Assembly.
5. From the top of the Door, insert the decorator panel evenly into the openings of the left and right extruded one-fourth inch grooves; then, carefully slide the decorator panel fully into the bottom groove in the Door Assembly.
6. Check the sides, bottom and top of the decorator panel, the extruded grooves and the top of the Door Assembly for proper alignment and even fitting.
7. Push the top right corner of the Door in to align screw hole in the Door and front hole in the top Hinge Assembly; then, install screw and tighten front and rear screws and the top Hinge Assembly.
8. Replace the Door Handle and the lefthand Hinge Filler Plate in the reverse order of removal.

NOTE

A simple, yet added touch in decorating may be easily performed by installing a strip of 3/4-inch plastic, self-adhesive tape, such as No. 471 Plastic Scotch Tape, available in various colors, to match the decor, down the outside of the Door Assembly frame, in an existing 3/4-inch groove.

XVI. REVERSING DOOR HINGES FOR A LEFT HAND DOOR

NOTE

All AC11 A-1 Automatic Cubers are shipped from the factory with a right-hand Door Assembly; i.e., the door hinges are installed on the right-hand side and the door is opened to the right side. The Door Assembly and attaching hinges were designed so the door hinges can be removed and positions reversed, when necessary, to permit the door to be opened to the left. With a minimum of effort and only one different part, which is provided, these instructions describe how to reverse positions of the existing hinges, to result in a door that opens to the left.

1. Open the Door Assembly slightly, to expose both screws attaching the Hinge Assembly to the top right-hand corner of the Door; then, remove the two screws.
2. While holding the Door open and steady, or have an assistant do so, similarly remove the two screws from the bottom Hinge Assembly; then, remove the Door from the Cabinet.
3. Remove single screw and the left-hand Hinge Filler Plate from the top left corner of the Door.

NOTE

In an envelope, shipped with the AC11 Automatic Cuber, is a right-hand Hinge Filler Plate spare part. Remove the spare part for use in the next step; and be sure to store the removed left-hand Hinge Filler Plate in the same envelope and save for possible future use.

4. Install the right-hand Hinge Filler Plate on the top right corner of the Door and attach with the single screw, removed in step 3, above.

5. Remove three plastic Plug Buttons from the top, left-hand front corner of the Cabinet; then, remove three plastic Plug Buttons in the lower, left front section of the Cabinet, just above the Kickplate. Retain the Plug Buttons.
6. Remove three screws and the Hinge Assembly from the top, right corner of the Cabinet, NOTE THE INSTALLED POSITION; then rotate that Hinge Assembly 180-degrees and install it in position, at the lower, left front section of the Cabinet, attaching with the removed three screws.
7. Install three of the plastic Plug Buttons in the three holes in the top, right front corner of the Cabinet.
8. Similarly remove, observe and rotate 180-degrees, then install and attach the Hinge

Assembly from the lower, right front section of the Cabinet, to the top, left front corner of the Cabinet.

9. Install the remaining three plastic Plug Buttons in the three holes in the lower, right front section of the Cabinet.
10. Carefully install the Door Assembly on the repositioned Hinge Assemblies, on the left side of the Cabinet and align the holes in the hinges with the holes in the Door.
11. Attach the Door Assembly within the top and bottom Hinge Assemblies, using two screws in each Hinge Assembly.
12. Close the Door Assembly; then, open and close the Door a couple of times to check for proper overall fit and ease of opening and closing operation.

SECTION V

MAINTENANCE & CLEANING INSTRUCTIONS

I. GENERAL

The periods and procedures for maintenance and cleaning are given as guides and are not to be construed as absolute or invariable. Cleaning especially will vary, depending upon local water conditions and the ice volume produced; and, each Icemaker must be maintained individually, in accordance with its own particular location requirements.

II. ICEMACHINE

THE FOLLOWING MAINTENANCE SHOULD BE SCHEDULED AT LEAST TWO TIMES PER YEAR ON THIS ICEMACHINE.

1. Check and clean water line Strainers.
2. Check that the cabinet is level, in side-to-side and front-to-rear directions.
3. Clean the Water System, Evaporator, Bin Insert Assembly Reservoir and Spray Nozzles, using a solution of SCOTSMAN Ice Machine Cleaner. Refer to procedure V-III, CLEANING-Icemachine.

NOTE

Cleaning requirements vary according to local water conditions and individual user operation. Continuous check of the clarity of ice cubes and visual inspection of the water spraying parts and jet spinners, before and after cleaning will indicate frequency and procedure to be followed in local areas.

4. Check that plastic curtain hangs down evenly outside the opening at the front of the Bin Insert Assembly.
5. With Icemaker and Fan Motor OFF on Air-Cooled Models, clean Condenser, using vacuum cleaner, whisk broom or brush.
6. Check for water leaks and tighten drain line connections. Pour water down Bin drain line to be sure that drain line is open and clear.
7. Check size, condition and texture of ice cubes. Perform adjustments as required. Refer to procedure IV-II.

8. Check Bin Level Control Bulb to test shutoff. Hold ice cubes on the Bulb Holder Tube, which should cause the Icemaker to shut OFF within two minutes.

NOTE

Within minutes after the ice is removed from the Bulb Holder Tube, the sensing bulb inside the Tube, will warm up and cause the Icemaker to restart. This control is factory set and should not be reset until testing is performed.

III. CLEANING - Icemachine

1. Open the Door Assembly.
2. Rotate the Bin Level Control knob COUNTERCLOCKWISE to the OFF position, to shut OFF the Icemaker.
3. Rotate the shaft of the Timer & Switch Assembly, located in the hole in the front of the Control Box Cover, CLOCKWISE, to the start position for the freezing cycles See Figure 5-1.

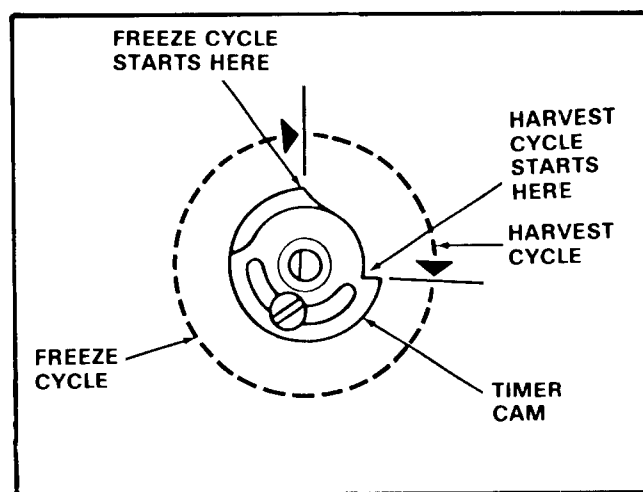


Figure 5-1. START positions for the Freeze/Harvest Cycles.

WARNING

SCOTSMAN Ice Machine Cleaner contains Phosphoric and Hydroxyacetic acids. These compounds are corrosive and may cause burns if swallowed, DO NOT induce vomiting. Give large amounts of water or milk. Call physician immediately. In case of external contact, flush with water. KEEP OUT OF THE REACH OF CHILDREN.

4. Carefully pour the cleaning solution into the Bin Insert Assembly through the front opening.
5. Immediately rotate the Bin Level Control knob **CLOCKWISE**, to the heavy-lined area marked **APPROXIMATE OPERATING RANGE**, to start the icemaking process.
6. Allow the system to operate for about one hour.
7. At end of one hour, rotate the shaft of the Timer & Switch Assembly, **CLOCKWISE**, to start a harvest cycle. Repeat procedure to effect four complete harvest cycles. See Figure 5-1.

NOTE

During each harvest cycle, fresh inlet water is introduced into the water system and acts to rinse all water-related parts and to wash away most mineral concentration through the Reservoir overflow drain.

8. Check each ice cube harvest, until the ice cubes are clear.

CAUTION

DO NOT use ice cubes produced from the cleaning solution. Be sure none remains in the Bin.

9. Add hot water to the Bin to melt the ice cubes and thoroughly wash and rinse all surfaces within the Bin.
10. Wash and wipe down all interior surfaces of the Bin with a clean cloth or disposable paper wiper soaked in the cleaning solution.
11. Wipe all washed surfaces dry with clean cloths or clean dry disposable paper wipers.
12. Close the Door Assembly.
13. Clean and sanitize the interior Bin surfaces each week.

SECTION VI SERVICE DIAGNOSIS

The Service Diagnosis Section is for use in aiding the serviceman in diagnosing a particular problem for pin-pointing the area in which the problem lies, thus an ever available reference for proper corrective action.

The following charts list corrective actions for the causes of known symptoms of certain problems that can occur in the Icemaking Refrigeration System.

I. ICEMAKING - REFRIGERATION SYSTEM

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Will not operate.	Master switch in OFF position. Blown fuse in power line. Bin Thermostat OPEN due to low air temperature. Faulty master switch. Timer contacts open.	Set switch to ON position. Check fuse. SEE NAMEPLATE for basic electricals. Check for cause and replace fuse. See ambient limits Paragraph I-III. Replace switch. Replace microswitch in Timer.
Does not make ice.	Water supply shut OFF. Timer not functioning. Broken wiring, loose connection. Compressor not operating. Water pump not operating. Faulty bin thermostat.	Slightly loosen water inlet connection, if no water flows, check shutoff valve and source. Check that cam rotates. Check all electrical circuitry. Check, replace defective start relay, overload, or compressor. Clean, repair or replace. Test, warm with hand, cool with ice. Replace when found faulty.
Poor harvest.	Defrost time is too short. Restriction in water inlet line. Water valve sticks, does not open. Hot gas solenoid valve does not open, binds, is defective. Plugged air vent holes in upper part of ice cube cup molds.	Check and adjust or replace timer switch. Check, clean strainer, or replace. Clean water lines. Clean, adjust, or replace valve. Replace hot gas solenoid valve. Clean out air vent holes. Check cleaning procedure schedule.
Cubes jam in freezer.	Curtain assembly or cube chute improperly installed, positioned wrong.	Correct positioning or replace part.

ICEMAKING - REFRIGERATION SYSTEM (Cont'd)

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Cloudy ice cubes.	Shortage of water. Accumulated impurities visible. Dirty water supply. Dirty spray jets. Cabinet not level.	SEE shortage of water correction. SEE CLEANING procedure V-III. Install water filter or water softener. SEE CLEANING procedure V-III. SEE leveling procedure I-III.
Cubes too large.	Cube size control set too cold. Cam on Timer is loose. Timer switch is defective. Timer is slow or stops.	Rotate cube size control toward CCW WARMER. Tighten cam locking nut. Replace switch. Replace Timer motor.
Cubes too small.	Cube size control set too warm. Shortage of water. Loss of refrigerant. Restricted capillary tube. Air-Moisture in the system.	Rotate cube size control toward COLDER. CW Check water supply system. SEE NAMEPLATE and properly charge system with refrigerant. Purge and recharge. Replace cap tube when necessary. Purge and recharge. Replace drier.
Cube size irregular.	Some spray jets plugged. Shortage of water.	Clean spray jets. SEE shortage of water CORRECTION.
Noisy during harvest cycle.	Excessive inlet water pressure.	Install water pressure regulator in water inlet line. Set at 25 PSIG.
Compressor cycles intermittently.	Low voltage. (Minimum voltage to be 10% less than normal rating.)	Check for circuit overload. Check building supply to voltage, contact power company.
Decreased ice capacity.	High room temperature, or poor air circulation. Inlet water temperature too warm. Connection is to hot water line. High head pressure from dirty condenser. High head pressure from faulty fan. Leaky water valve. Leaky hot gas solenoid valve. Defective compressor. Overcharge of refrigerant. Undercharge of refrigerant. Air-Moisture in the system. Partially restricted capillary tube.	Relocate to decrease temperature or cut ventilation openings. Have plumber check installation. Reconnect to cold water line. Clean condenser, check obstructions. Repair or replace fan motor. Repair or replace water valve. Replace valve. Replace compressor. SEE NAMEPLATE and slowly purge to correct refrigerant charge. Check for leaks, repair & recharge SEE NAMEPLATE. Purge and recharge. Replace drier. Purge and recharge. Replace cap tube when necessary.
Shortage of water.	Water sprays out curtain. Leaking hose connections. Plugged water filter. Water supply inadequate or plugged. Water valve will not open. Water valve plugged. Water valve leaking.	Check spray jets for even spray. Adjust curtain to hang evenly. Check clamps and hoses, correct conditions, replace parts. Check water filter and replace. Check water supply. Unplug part or lines. Repair or replace valve. Check line and valve. Repair or replace valve.
Excessive ice meltage in bin.	Bin drain or drain line plugged. Bin drain not properly installed. Improper venting or gravity flow routing, so water backs into bin.	Clear the obstruction. SEE Drain Connection procedure I-V.

SECTION VII WIRING DIAGRAMS

This Section is provided as an aid in understanding the electrical circuitry of the Automatic Cuber.

The Wiring Diagrams in this section are:

WARNING

When conducting a continuity check of the Automatic Cuber:

1. Disconnect the main power source.
2. DO NOT use an incandescent lamp or jumper wire, conduct all tests with a volt-ohm-meter.

Figure 7-1. Wiring Diagram AC11 - Air-Cooled.
Figure 7-2. Wiring Diagram AC11 - Air-Cooled
with Sump Drain Pump.

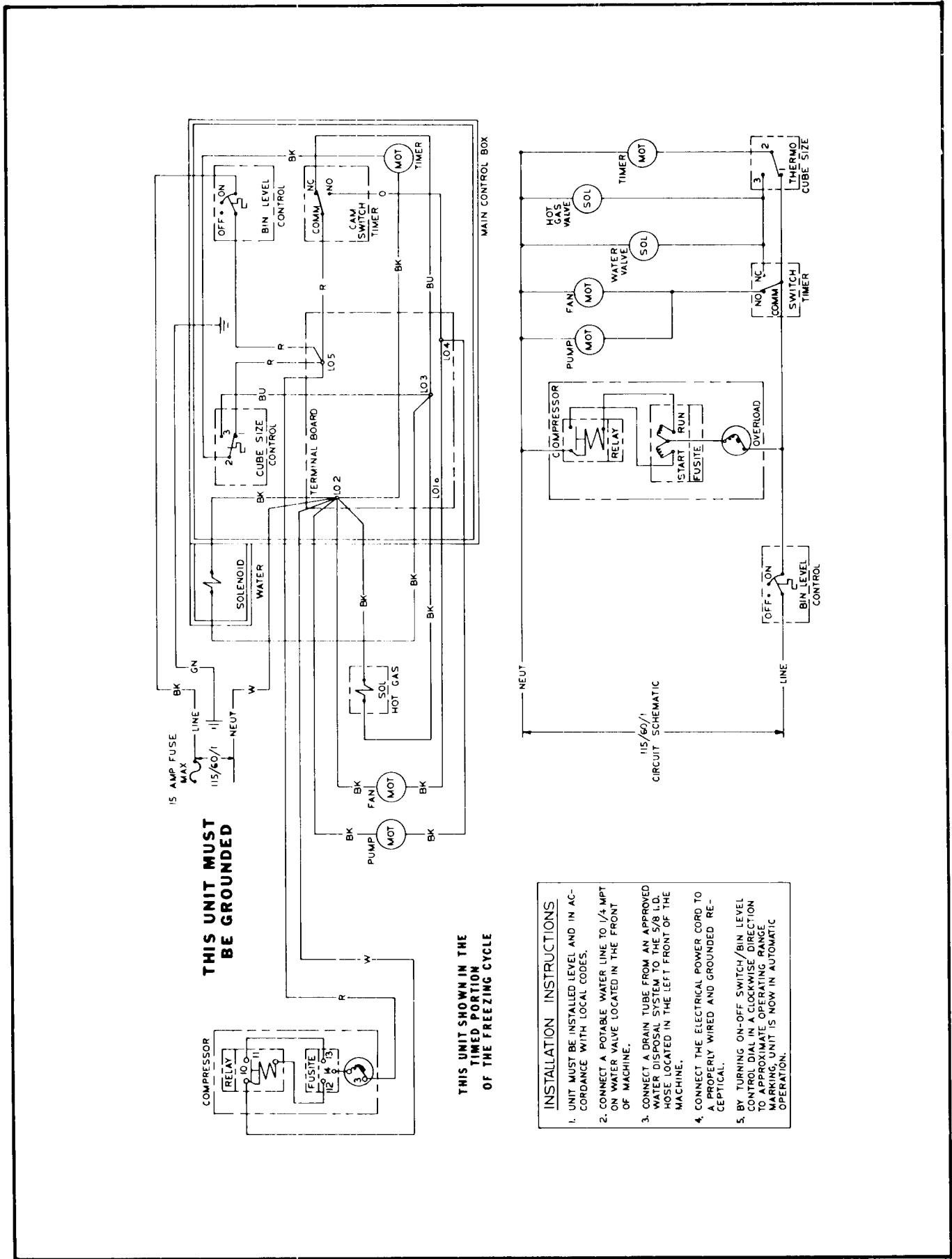


Figure 7-1. Wiring Diagram AC11 - Air-Cooled.

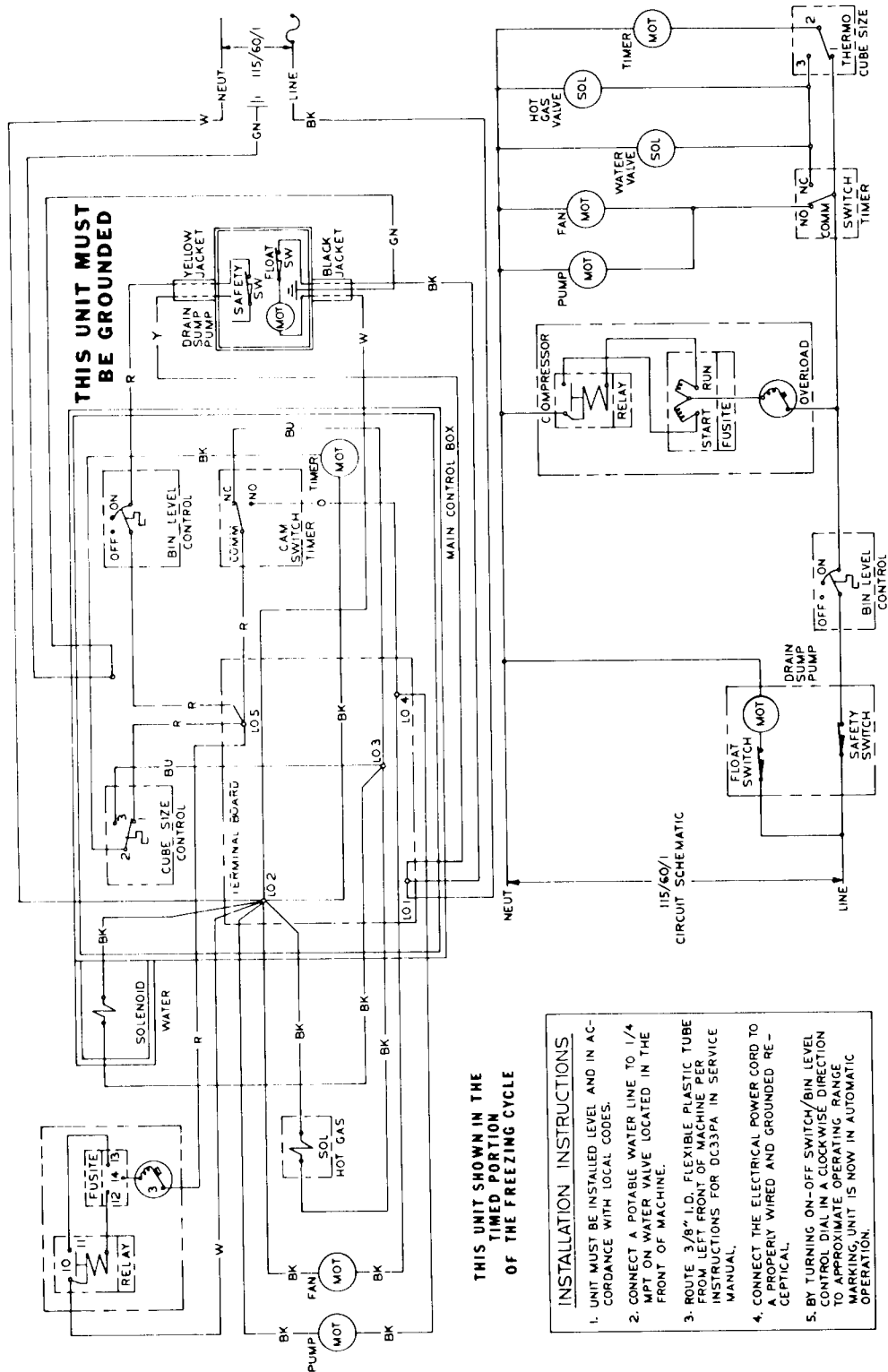


Figure 7-2 Wiring Diagram AC11 - Air-Cooled with Sump Drain Pump.

SECTION VIII

THE PARTS ILLUSTRATIONS AND PARTS LISTS

I. GENERAL

This section contains the Parts Illustrations and the Parts List for each of the major assemblies in the AC11 Automatic Cuber.

Each Parts Illustration shows an assembly as an exploded view, with an Index Number for each part or sub-assembly, given in disassembly order. These Index Numbers key with the Parts List for the assembly and are found in the parts List Column headed Index Number. The Description Column gives the identifying nomenclature for the item indexed. The Part Number Column gives the number of item. The Number Required Column gives the number of items required per assembly, but not necessarily the total number of parts required per Cuber.

All assemblies are cross-referenced both from the major assembly listing where they first appear in the Parts Listing to their break-down listing, and from the break-down listing, back to the major assembly (next higher assembly) listing.

A *No Number* designation, when used in the Part Number Column indicated the unit is not available from SCOTSMAN as an assembly. This designation is used only for the convenience and clarity of division in cataloging.

When an Index Number is followed by a letter (e.g. la, lb), the letter indicates the part listed is part of the assembly indexed by the basic Index Number. The number required of the

part indexed by the number and letter combination is only one of the assemblies indexed by the basic Index Number and not necessarily the total number or parts used in the Cuber. Where the notation *Ref* occurs in the Number Required Column the number of the assemblies or parts required for use in the Cuber will be found under a previous Index Number or in the next higher assembly Parts Listing. The next higher listing Figure/Index number is shown in the Description Column immediately following the items description.

II. HOW TO USE THE ILLUSTRATIONS AND PARTS LIST

To find the part number of a required part or assembly, turn to the List of Illustrations and find the page number of the Parts Illustration of the major or sub-assembly containing the part. Turn to the indicated page and locate the part and its Index Number on the specific illustration. Find the Index Number on the required part in the Parts List to determine the complete description of the part.

III. HOW TO ORDER PARTS OR ASSEMBLIES

When ordering parts or assemblies, to avoid costly delays and errors in shipment, give the part number, the complete description shown in the list, and the quantities of each part or assembly required. Also include the Model name, the serial number of the Cuber for which the part is required, and for parts which require color matching, the color of the Cabinet. See Figure 8-00, at the end of the Section for detailed ordering instructions.

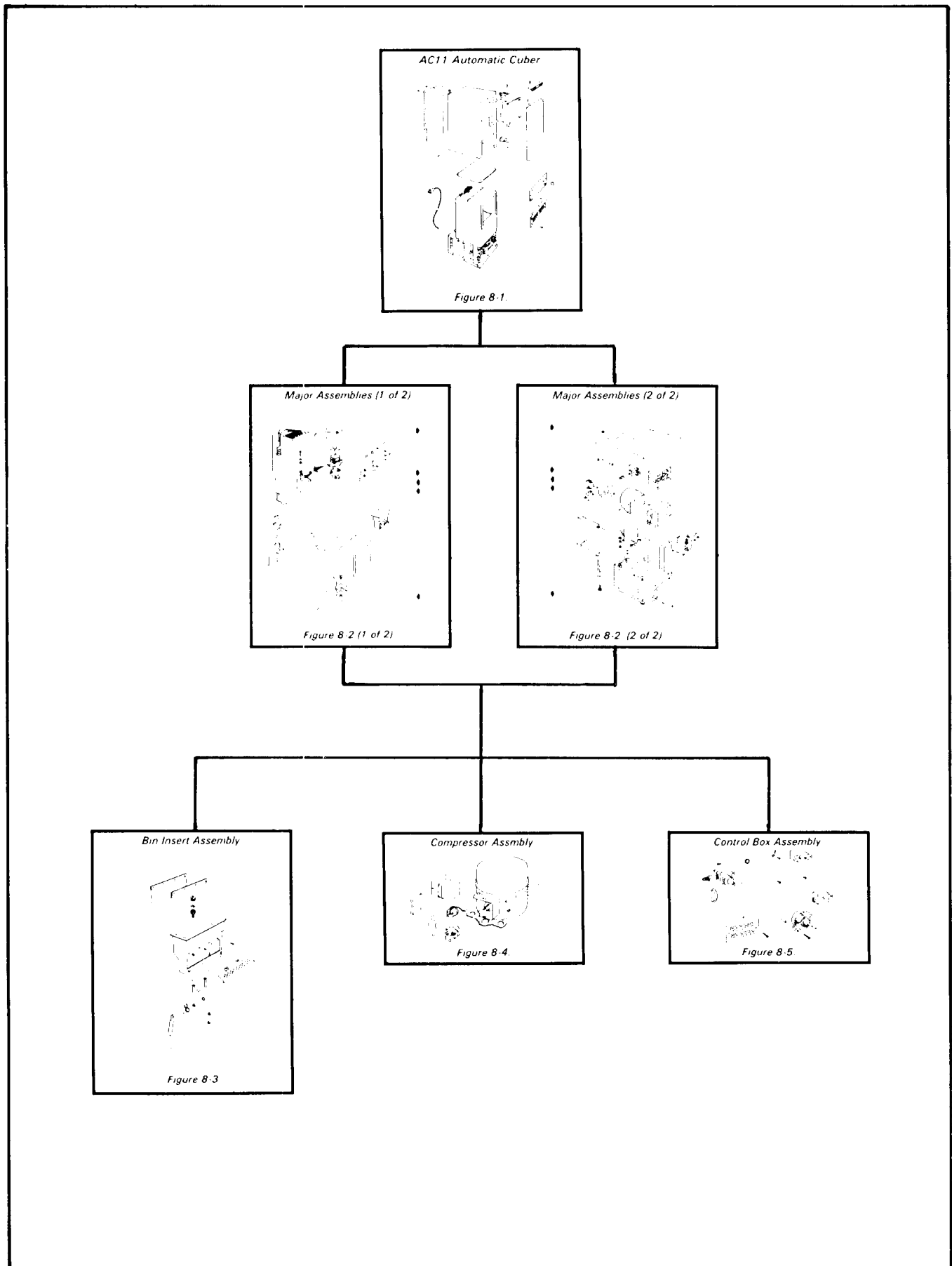


Figure 8-A. AC11 Automatic Cuber Flow Chart.

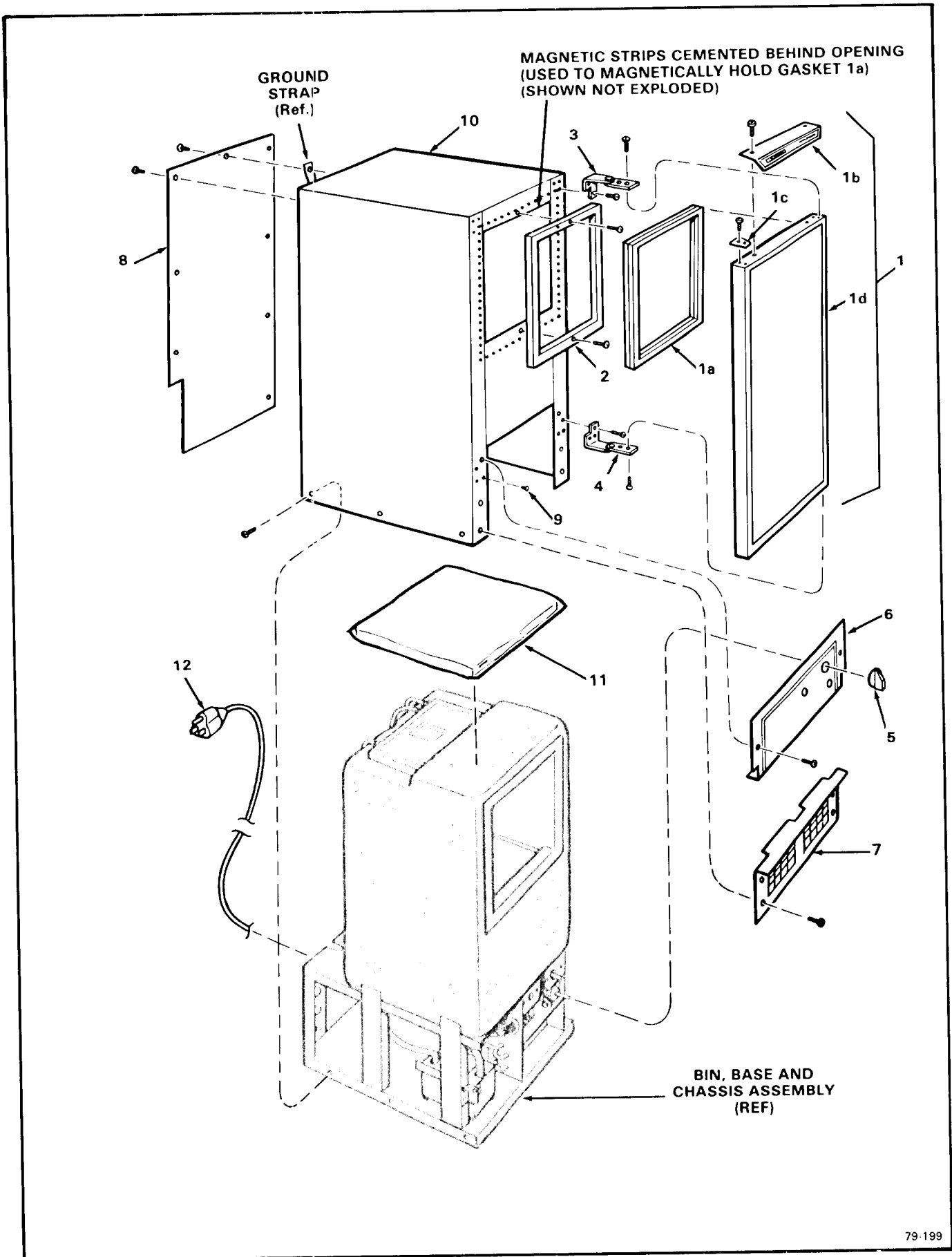


Figure 8-1. AC11 Cabinet.

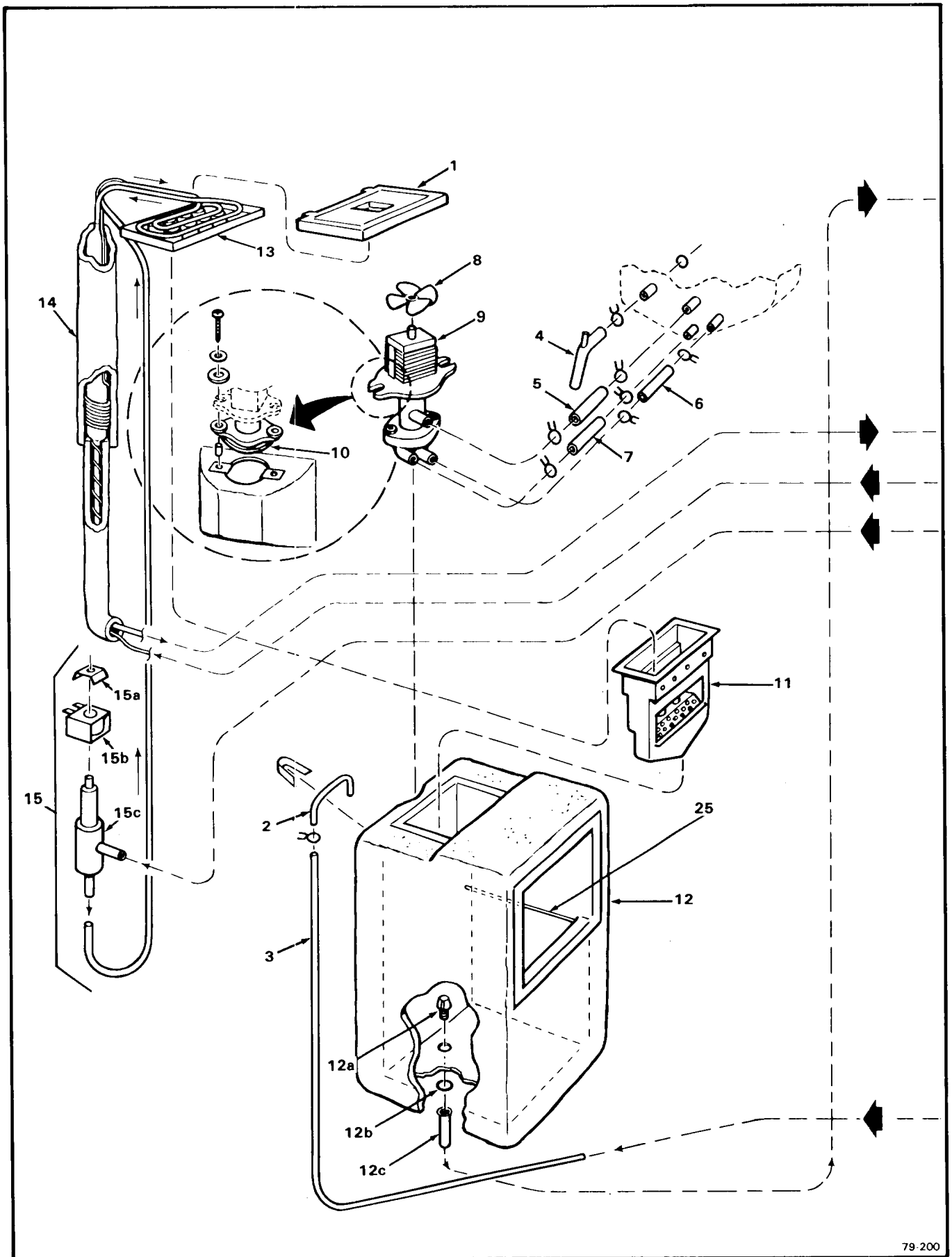
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Figure 8-1. AC11 Cabinet.

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	AC11 Cabinet ***	No Number	1
1	Door Assembly (Also order SS33 Stainless Steel Panel Kit) Stainless Steel Panel (slides into door grooves, See IV-XV-A) (attaching parts are Index 3 &4)	WDK33 SS33	1 1
1a	Gasket (magnet holds in Door grooves)	13-0826-01	1
1b	Handle, Door attaching part, Index 1	A29043-001	1
	Screw, No. 10-32 x 7/16 Phil Recess Flat Hd (ss)	13-1607-01	2
1c	Plate, Hinge Filler - Right Plate, Hinge Filler - Left (Right Hinge Filler Plate is shipped in envelope) attaching part, Index 1c	15-0648-01 15-0648-02	1 1
	Screw, No. 8-32 x 3/8 Phil Recess Flat Hd Machine	03-1418-24	1
1d	Frame, Foam Insulation, Panel & Door (Not available, order P/N WDK33) ***	No Number	Ref.
2	Gasket, Decor Trim attaching part, Index 2	13-0828-01	1
	Screw, No. 6 x 1/2 S/T Flat Hd ***	03-1419-14	2
3	Hinge	15-0653-01	1
4	Hinge attaching parts, Index 3 & 4	15-0653-02	1
	Screw, No. 8-32 x 3/8 Phil Recess Flat Hd Machine (3 Screws each Hinge to Index 10, 2 Screws to Index 1d) ***	03-1418-24	10
5	Knob, Bin Thermostat ***	15-0656-01	1
6	Cover, Control Box attaching part, Index 6	No Number	1

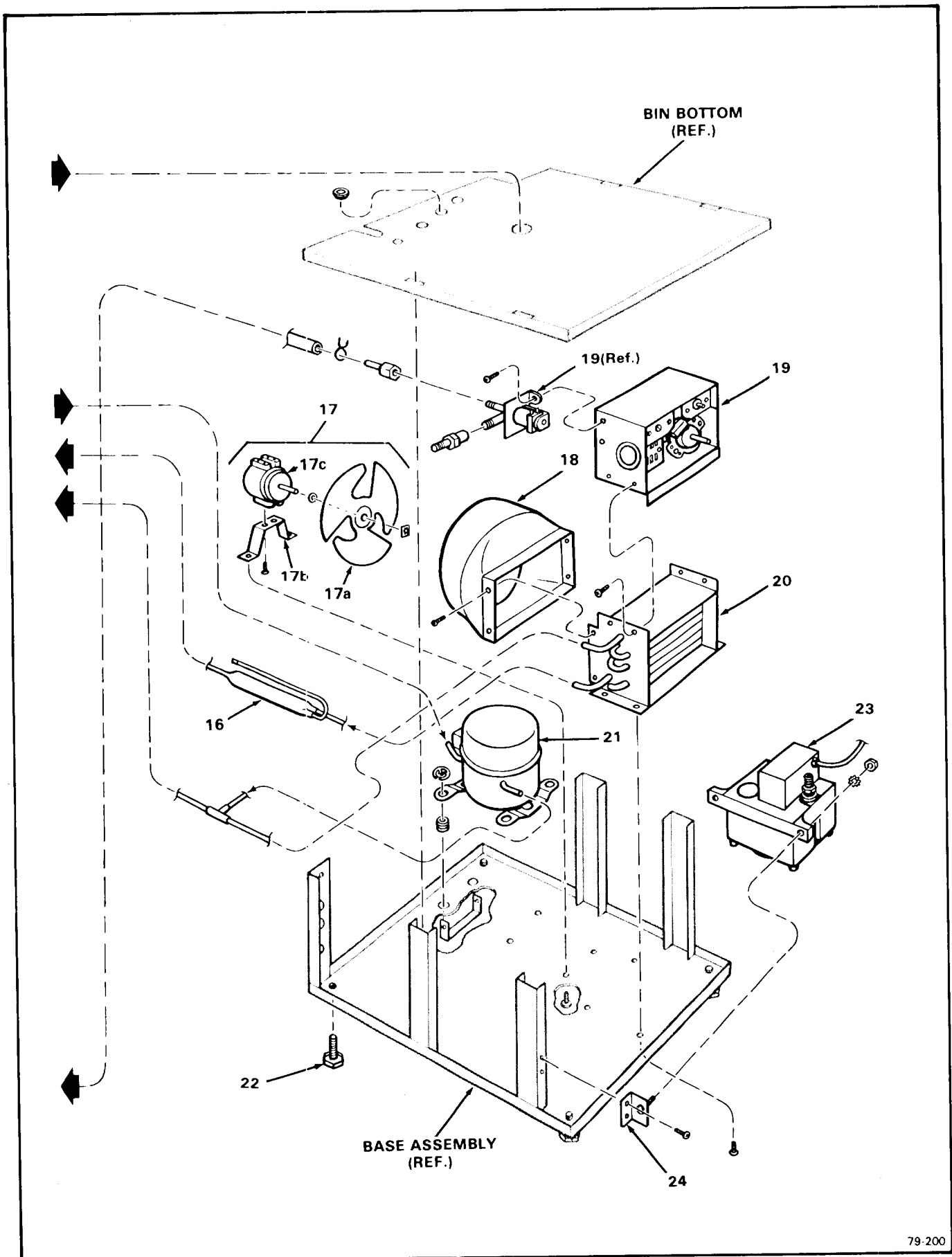
Figure 8-1. DC33 Cabinet (Cont'd)

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Screw, No. 6 x 1/2 T/F Tap ***	03-1404-07	2
7	Kickplate attaching part, Index 7	02-2243-02	1
	Screw, No. 8 x 3/8 S/T Flat Hd ***	No Number	4
8	Door, Rear Service attaching part, Index 8	A29102-001	1
	Screw, No. 6 x 3/8 T/F Tap (Top center screw also attaches Water Pump grounding strap) ***	03-1404-05	7
9	Button, Plug (Fits in unused Hinge screw holes) ***	02-2481-01	6
10	Cabinet Assembly - (wrap-around) attaching part, Index 10	A28861-002	1
	Lockwasher, No. 10 External Tooth - Carbon Steel Zinc Plated	No Number	1
	Screw, No. 10-24 x 3/8 S/T Pan Hd ***	No Number	6
	(Install tooth lockwasher under any screw, UL requirement) ***		
11	Insulation Assembly. (15-inch x 15-inch, in plastic bag) ***	A26787-001	1
12	Cord Assembly, Power ***	12-1638-07	1



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Figure 8-2 Major Assemblies (sheet 1 of 2)



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Figure 8-2. Major Assemblies (sheet 2 of 2)

Figure 8-2. Major Assemblies

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Major Assemblies	No Number	Ref.

1	Cover, Platen	02-2274-01	1

2	Tube, Platen Inlet	No Number	1
3	Tube, 1/4-inch I.D. (37-inch lg.) (Order by the foot)	13-0674-01	1
	attaching parts, Index 2 & 3		
	Holder, Tube	No Number	1
	Clamp, 7/16-inch O.D.	02-1727-00	2

4	Tube, Overflow	A24230-001	1
	attachine part, Index 4		
	O-Ring	13-0617-01	1
	Clamp	02-0535-01	1

5	Tube, 5/8-inch I.D. (4-1/4-inch lg.) (Order by the foot)	13-0688-02	1
6	Tube, 1/2-inch I.D. (3-1/4-inch lg.) (Order by the foot)	13-0688-01	1
7	Tube, 1/2-inch I.D. (3-5/8-inch lg.) (Order by the foot)	13-0688-01	1
	attaching parts, Index 5, 6, 7		
	Clamp (Index 5)	02-1775-02	2
	Clamp (Index 6 & 7)	02-0534-01	4

8	Blade, Fan	02-1719-00	1

9	Pump Assembly, Water	A27953-001	1
10	Gasket	13-0687-00	1
	attaching parts, Index 9 & 10		
	Spacer	No Number	2
	Washer, Special	No Number	2
	Washer Plain	No Number	2

Figure 8-2. Major Assemblies (Cont'd)

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Screw, No. 6 x 1/4 T/F Tap	03-1404-04	2
	Nut, U-Speed	03-1423-04	2

11	Insert Assembly, Bin (See Figure 8-3) ***	A22532-001	1
12	Bin Assembly, Storage - Complete	A29111-001	1
12a	Fitting, Drain	02-1751-00	1
12b	O-Ring - 9/16-inch I.D.	13-0617-13	1
12c	Tube, Drain ***	02-1957-00	1
13	Evaporator (Only - less Accumulator & lines) ***	A26115-020	1
14	Evaporator Assembly - Complete ***	A26127-020	1
15	Valve Assemblies, Hot Gas	No Number	1
15a	Clamp, Hot Gas Valve	12-2009-01	1
15b	Coil, Hot Gas Valve	12-2008-01	1
15c	Body, Hot Gas Valve ***	12-2010-01	1
16	Drier ***	02-2488-01	1
17	Fan Motor and Bracket Assembly attaching parts, Index 17	No Number	1
	Screw, No. 8 x 3/8 T/F Tap	03-1404-08	2
17a	Blade, Fan	18-3710-01	1
17b	Bracket, Mounting	No Number	1
17c	Motor, Fan attaching parts	12-2121-01	1
	Pad, Vibration (p/o Fan Motor)	No Number	1

Figure 8-2. Major Assemblies (Cont'd)

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Nut, Fan Mounting (p/o Fan Motor)	No Number	1
	Screw (p/o Fan Motor)	No Number	2

18	Shroud, Fan	02-2496-01	1
	attaching part, Index 18		
	Screw, No. 8 x 3/8 T/F Tap	03-1404-08	4

19	Box Assembly, Control	No Number	1
	(See Figure 8-5)		
	attaching part, Index 19		
	Screw, No. 8 x 3/8 T/F Tap	03-1404-08	4

20	Condenser Assembly	18-3729-01	1
	attaching part, Index 20		
	Screw, No. 8 x 3/8 T/F Tap	03-1404-08	3

21	Compressor Assembly	18-4800-01	1
	(See Figure 8-4)		
	attaching part, Index 21		
	Grommet	18-4700-28	4
	Bracket, Compressor Mounting	A29015-001	2
	Clip	02-2497-01	4

22	Leveler, Leg	03-1608-01	4

23	Pump Sump - (Optional)	SPK18H Kit	1
	attaching part, Index 23		
24	Bracket, Mounting - Sump Pump	No Number	1
	Screw, No. 8 x 3/8 T/F Tap	03-1404-08	2
	Lockwasher, No. 10 External Tooth	03-1417-05	1

Figure 8-2. Major Assemblies (Cont'd)

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
25	Nut, No. 10-24 Hex ***	03-1406-06	1
	Tube, Bulb Holder (shown not exploded) (Bin Level Control capillary tube inserted into tube) ***	A29047-001	1

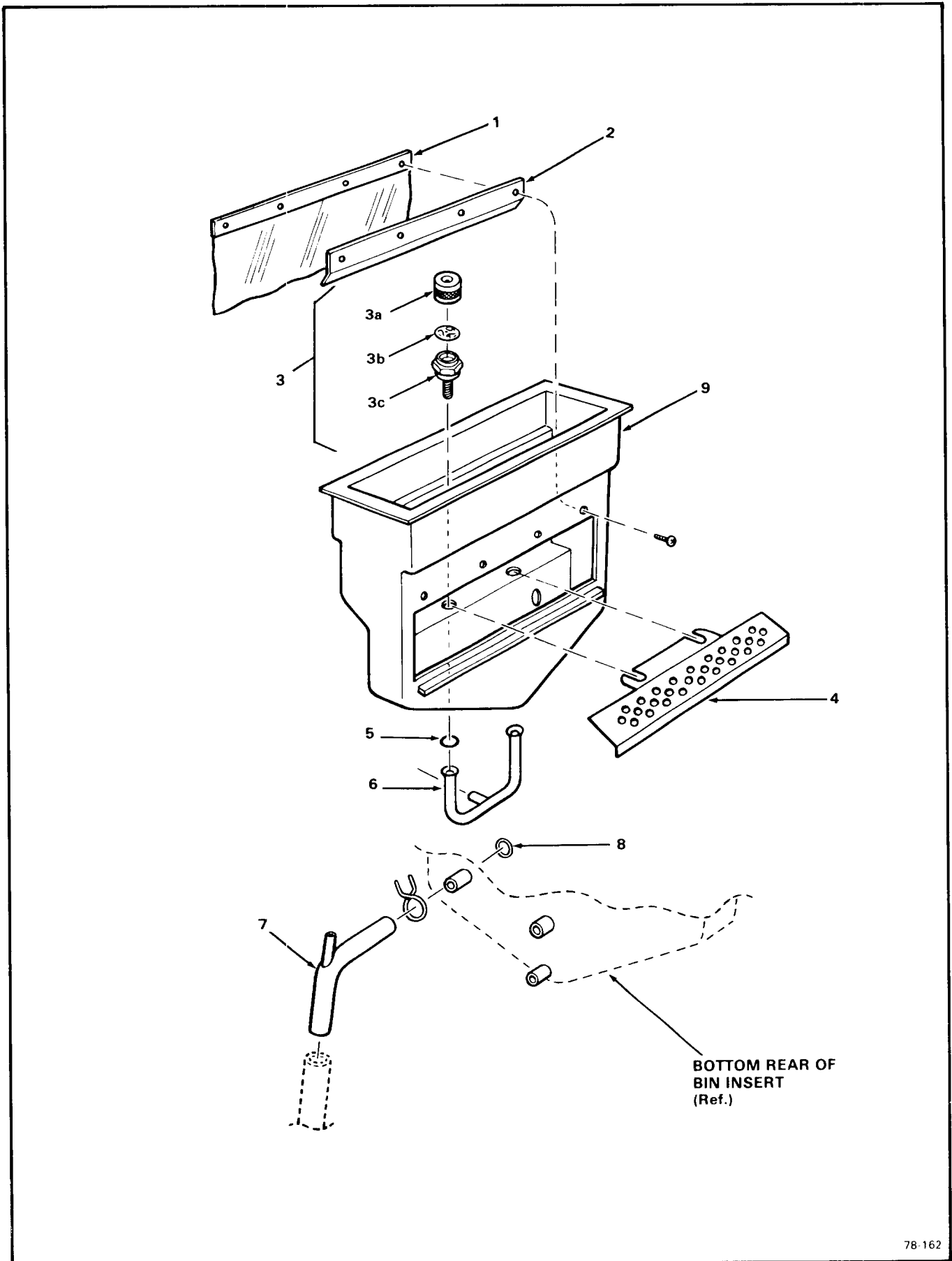
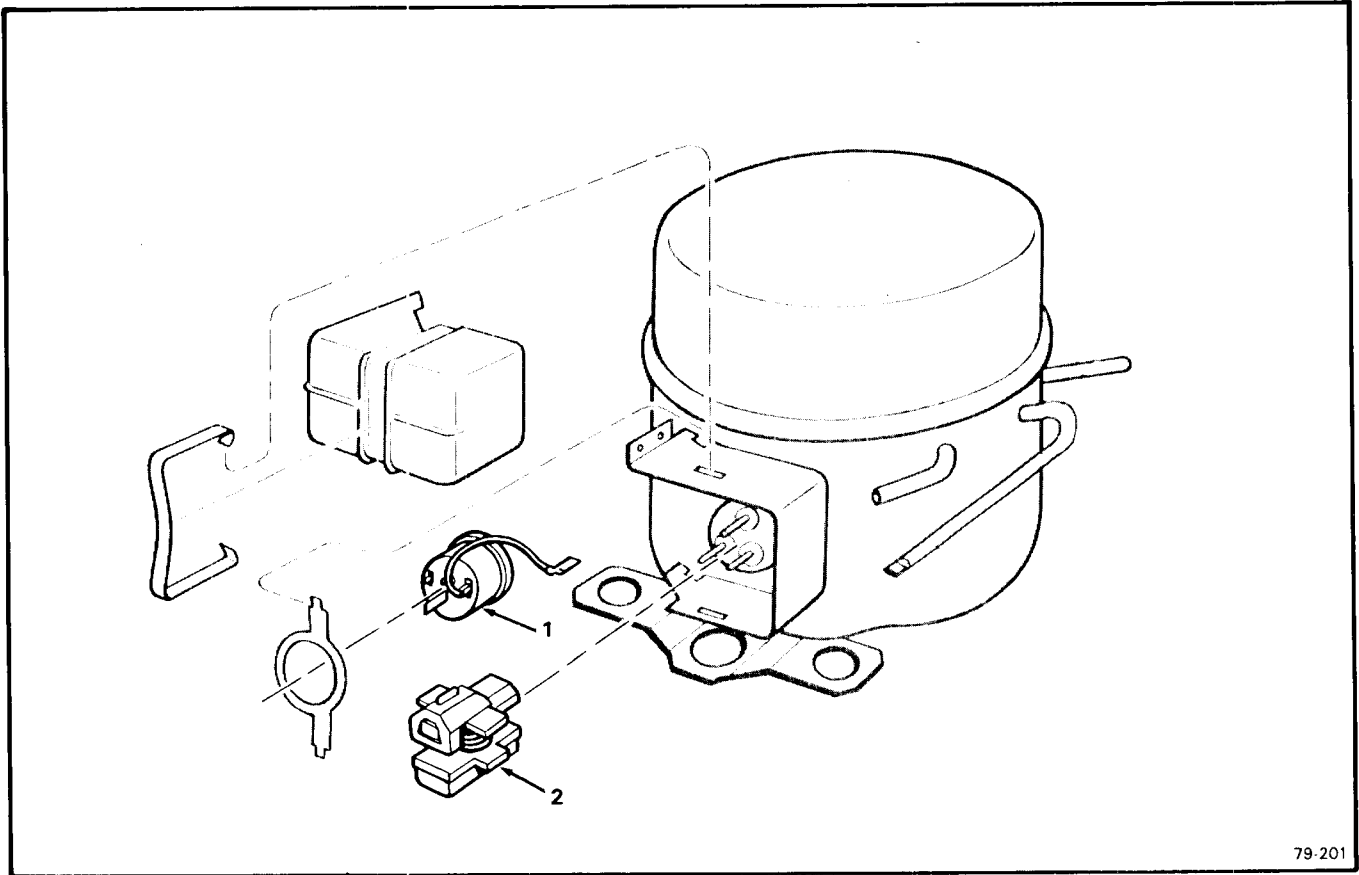


Figure 8-3. Bin Insert Assembly.

Figure 8-3. Bin Insert Assembly.

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Bin Insert Assembly - Complete (See Figure/Index 8-2/11 for next higher Assembly) ***	A22532-000	Ref.
1	Curtain Assembly	02-2053-01	1
2	Stiffener, Curtain attaching parts, Index 1 & 2 Screw, No. 10 x 3/8 T/F Tap ***	A24155-001 03-1404-16	1 4
3	Nozzle Assembly (Screws into Index 6)	No Number	2
3a	Nozzle	02-1841-00	1
3b	Spinner	A09543-000	1
3c	Base, Jet ***	02-1840-00	1
4	Chute, Cube ***	A22518-000	1
5	O-Ring (1/4-inch I.D.) ***	13-0617-08	2
6	Bar Assembly, Spray ***	A19278-000	1
7	Tube, Overflow ***	A24230-001	1
8	O-Ring (1/2-inch I.D.) ***	13-0617-01	1
9	Insert, Bin ***	02-1923-00	1



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Figure 8-4. Compressor Assembly.

Figure 8-4. Compressor Assembly.

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Compressor Assembly (See Figure/Index 8-2/21 for next higher Assembly) ***	18-4800-01	Ref.
1	Overload ***	18-4800-42	1
2	Relay, Start ***	18-4800-44	1

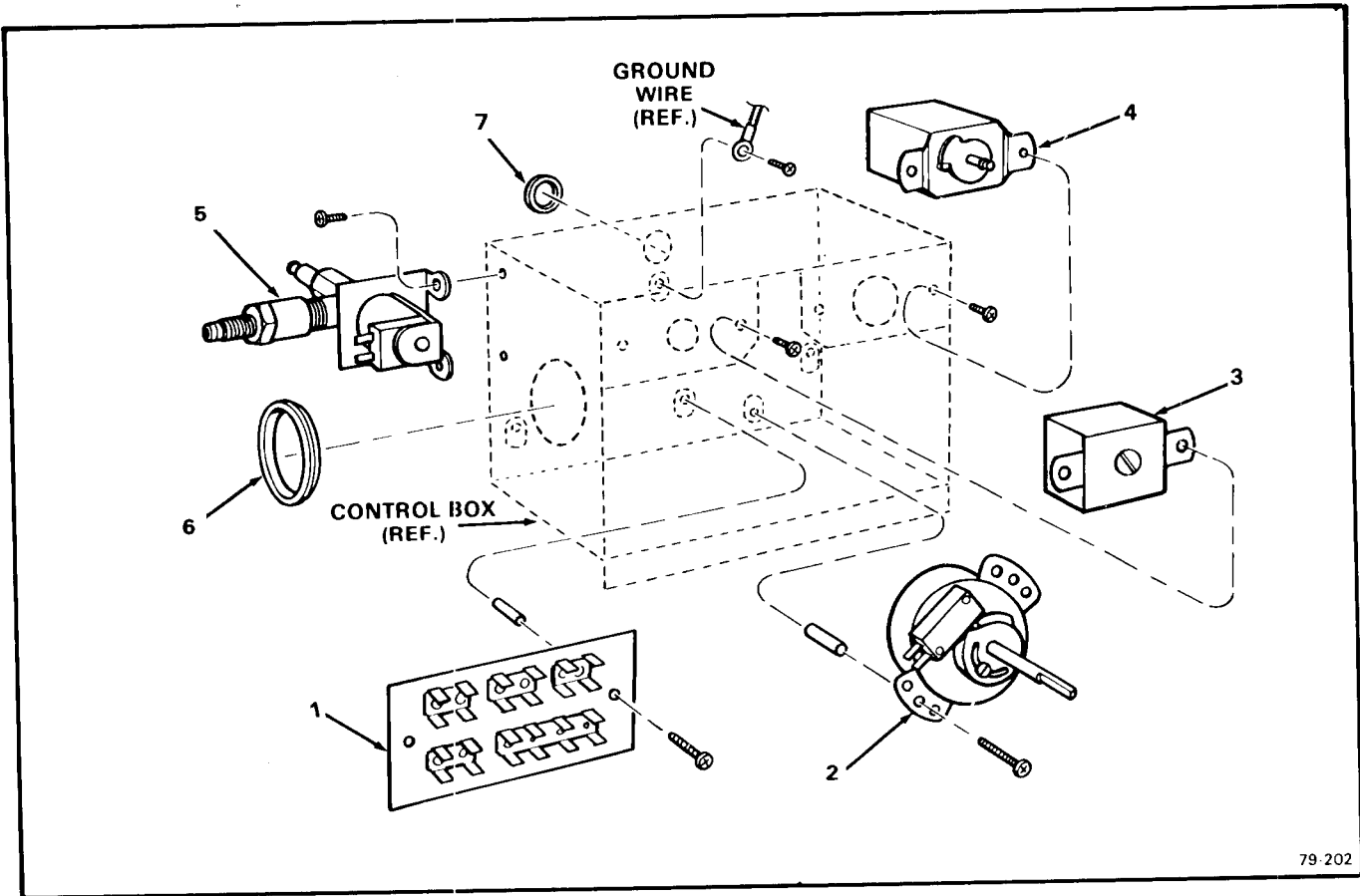


Figure 8-5. Control Box Assembly.

Figure 8-5. Control Box Assembly.

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
	Control Box Assembly (See Figure/Index 8-2/19 for next higher Assembly) ***	No Number	Ref.
1	Board Assembly, Terminal attaching part, Index 1 Stand-Off - (5/8-inch lg.) Screw, No. 6-32 x 3/4 Phil Recess Pan Hd ***	No Number No Number 03-1403-07	1 2 2
2	Timer & Switch Assembly attaching part, Index 2 Stand-Off Screw, No. 6-32 x 1-1/2 Phil Recess Pan Hd ***	12-1980-01 No Number No Number	1 2 2

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
3	Control, Cube Size attaching part, Index 3 Screw, No. 8-32 x 3/8 Phil Recess Pan Hd ***	11-0395-02 03-1403-17	1 2
4	Control, Bin Level attaching part, Index 4 Screw, No. 8-32 x 3/8 Phil Recess Pan Hd ***	11-0407-01 03-1403-17	1 2
5	Valve Assembly, Water ***	12-1646-07	1
6	Bushing ***	12-1213-12	1
7	Grommet ***	No Number	1

Figure 8-6. — Drivemotor Assembly

INDEX NO.	DESCRIPTION	PART NUMBER	REQ'D NUMBER
7	Bearing, Rotor	02-1501-00	1

NOTE: THE SHADED AREAS ARE FOR FACTORY USE ONLY

HOW TO USE A SCOTSMAN PARTS MANUAL WHEN ORDERING PARTS FOR ICE SYSTEMS PRODUCTS

IMPORTANT A. All Part Numbers have TEN DIGITS (spaces), required for use in the Computer System. BE SURE to fill in ALL SPACES in the CATALOG NUMBER column, on the Parts Order form as shown above.

B. Enter the QUANTITY of the Parts ordered, in the last digit column under the QUANTITY column heading, the one under the small 55 number, for parts from: 1 thru 9. For 10 or more parts use two columns.

To be sure you receive the proper parts in the proper quantities, ALWAYS use the PART NUMBERS and DESCRIPTIONS given in the Parts Manuals.

The figures above illustrate the way a Parts Manual would be used, if the Part being ordered were the ROTOR BEARING that is used in the DRIVEMOTOR ASSEMBLY of an A-325 Automatic Flaker, for example.

PROCEDURE:

1. At the beginning of Section VIII, THE PARTS ILLUSTRATIONS AND PARTS LISTS, in each Parts and Service Manual, is Figure 8-A; which, is a flow chart prepared from exploded views in Section VIII. Use the flow chart to quickly determine which Figure contains the Assembly, Component or Part.

FIGURE 1: Since the Part required in the above example is in the DRIVEMOTOR ASSEMBLY, shown as FIGURE 8-6.

2. Open the Manual to page showing FIGURE 8-6.

3. Locate the PART and its INDEX NUMBER on the exploded view illustration.

FIGURE 2: The INDEX NUMBER for the PART is 7.

4. Check the numerical sequence in the associated Parts List following the illustration.

5. LOCATE the INDEX NUMBER 7, in the INDEX NO. column, the first column on the left side of the Parts List page.

FIGURE 3: INDEX NO. 7 is listed as a BEARING, ROTOR in the DESCRIPTION column. The Part Number for the Rotor Bearing is 02-1501-00 as listed in the PART NUMBER column on the right side of the Parts List page. And, one Rotor Bearing is listed in the REQ'D NUMBER column, or that ONLY one of those parts is required for one Drivemotor Assembly.

6. Write an order for the Part. (Use SCOTSMAN Parts Order Form DN103)

FIGURE 4: a. Distributor Name.

b. (Use for DROP-SHIP order ONLY).

c. Distributor Purchase Order Number.

d. Carrier

e. How shipped (Truck, Rail, UPS, etc.)

f. Date ordered

g. Part Catalog Number (use full TEN digits (spaces) listed in Parts Manual, including dashes between numbers).

h. Description - as listed in Parts Manual.

i. Quantity - number of parts ordered. (use far right column)

Figure 8-00. How To Use The Illustrated Parts List.