

CM1200C

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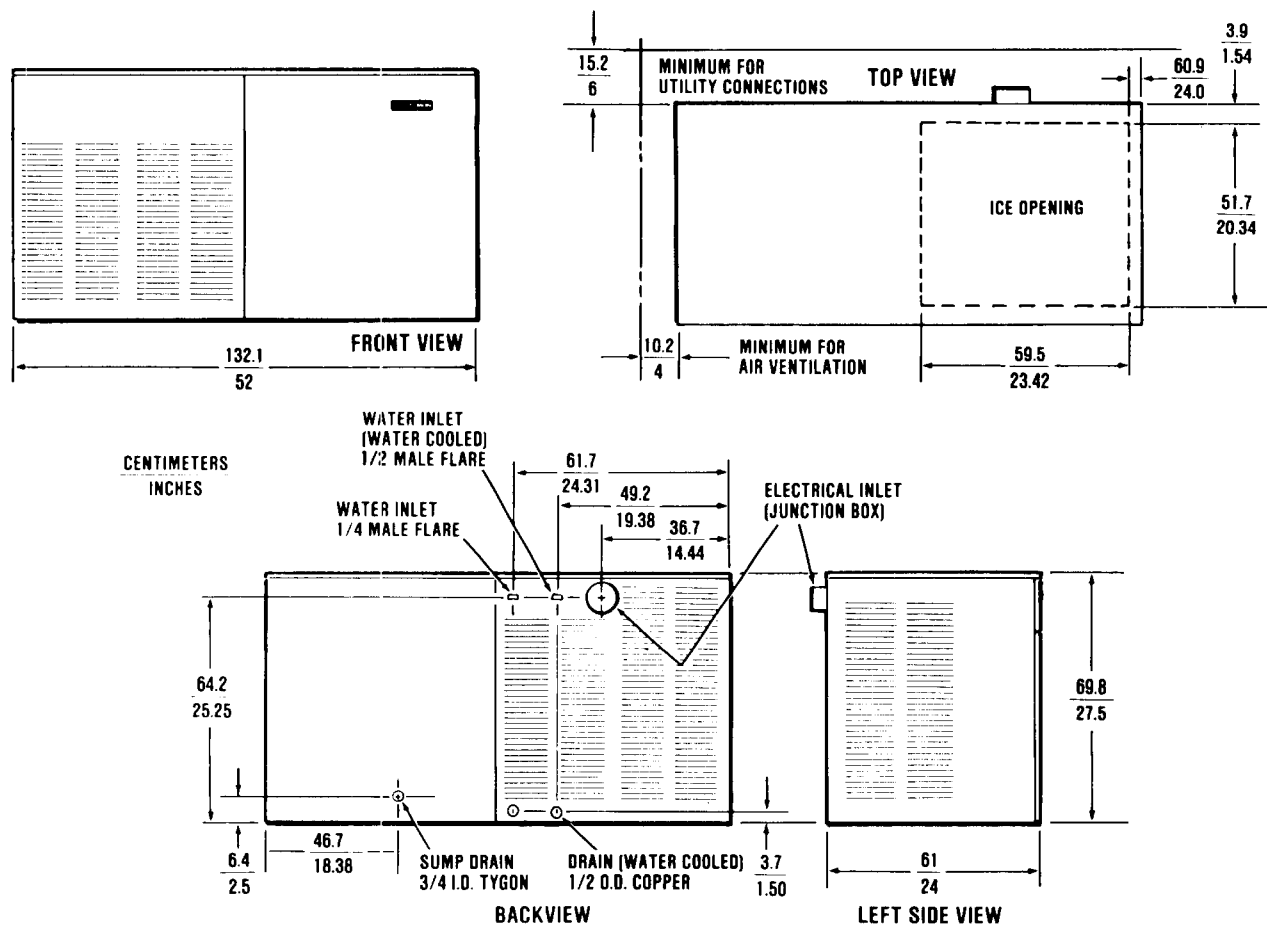
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CM1200C MODULAR CONTOUR CUBER



This product qualifies for the following listings:

SPECIFICATIONS

Model Number	Dimensions H" x W" x D"	Cond Unit	Finish **	Basic Electrical	Comp. H.P.	Run. Amps.	Max. Oper. Amps.	No. of Wires	Min. Circuit Ampacity †	Max. Fuse Size	Shpg. Wt. lbs./kg.
CM1200AE-9C	28 x 52 x 24	Air	ES	115/208-220/60/3	1.5	9.0	10.8	4	13.1	15	375/170
CM1200AE-31C	28 x 52 x 24	Air	ES	115/208-230/60/1	1.5	13.6	14.9	3	18.1	20	375/170
CM1200WE-9C	28 x 52 x 24	Water	ES	115/208-220/60/3	1.5	7.2	9.1	4	9.2	15	375/170
CM1200WE-31C	28 x 52 x 24	Water	ES	115/208-230/60/1	1.5	11.6	14.0	3	17.6	20	375/170

** (ES) Sandlewood, Leathergrain embossed steel with high gloss baked enamel finish.

† Use this value to determine minimum wire size as per National Electric Code Standards.

OPTIONAL STAINLESS STEEL PANEL KIT

SPKCM1200C contains top, front and 2 end panels. Not factory installed.

IMPORTANT OPERATING REQUIREMENTS

	MINIMUM	MAXIMUM
Air Temperatures	50° F (10.0° C)	100° F (37.7° C)
Water Temperatures	40° F (4.4° C)	100° F (37.7° C)
Water Pressures	20 lbs. gauge	120 lbs. gauge

Electrical Voltage Variation

Voltage rating specified on nameplate -10% +10%

Extended periods of operation exceeding these limitations constitutes misuse under the terms of Scotsman Manufacturer's Limited Warranty, resulting in a loss of warranty coverage.

STORAGE BIN

The CM1200 stacks onto Scotsman Bin Model BH750.

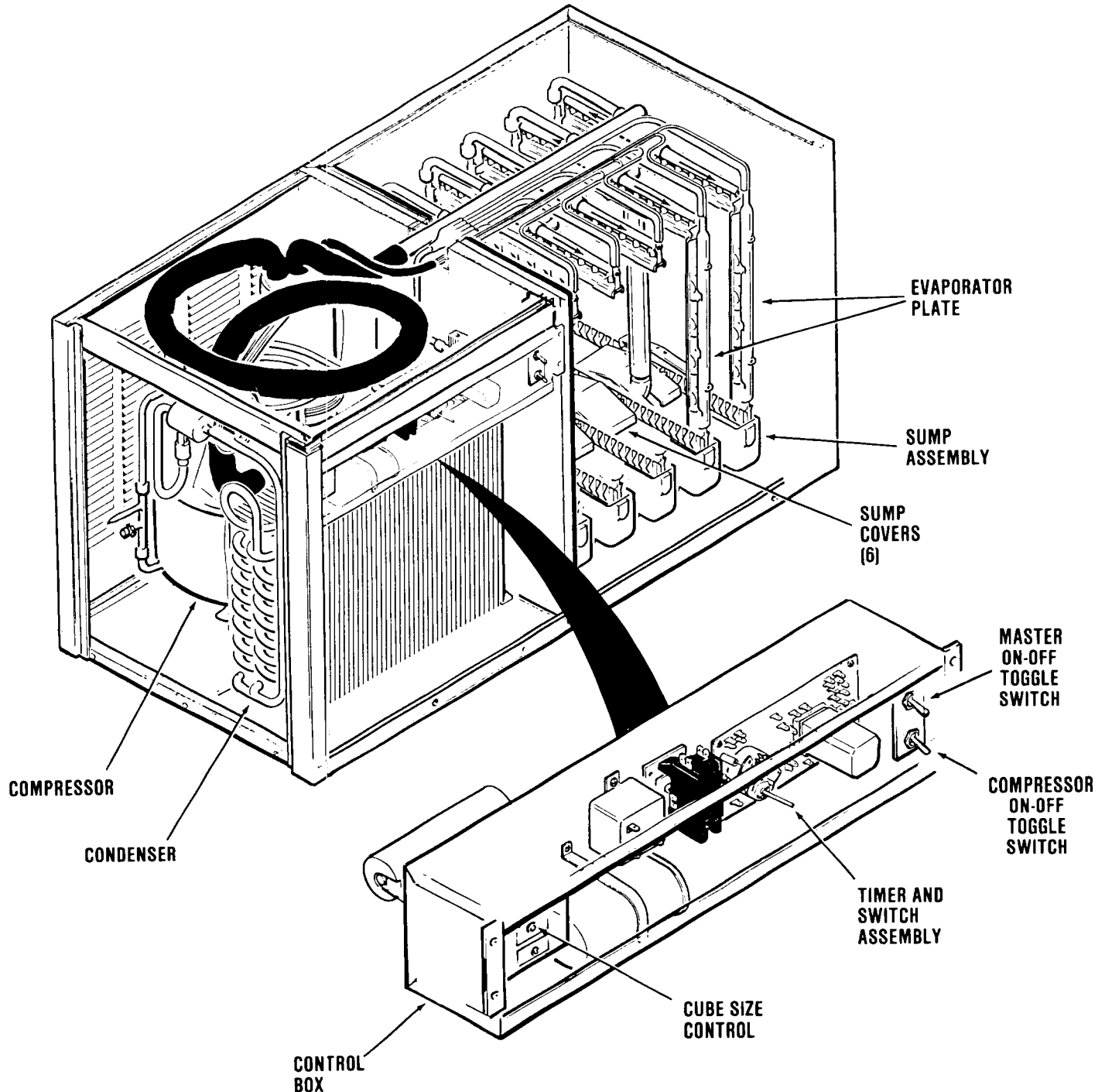
We reserve the right to make product improvements at any time. Specifications and design are subject to change without notice.

CM1200C GENERAL INFORMATION & INSTALLATION

INTRODUCTION

These instructions provide the specifications and the step-by-step procedures for the installation, start up and operation for the Scotsman Model CM1200C Modular Cuber.

The Model CM1200C Modular Cubers are quality designed, engineered and constructed, and are thoroughly tested icemaking systems, providing the utmost in flexibility to fit the needs of a particular user.



CM1200C — Component Location

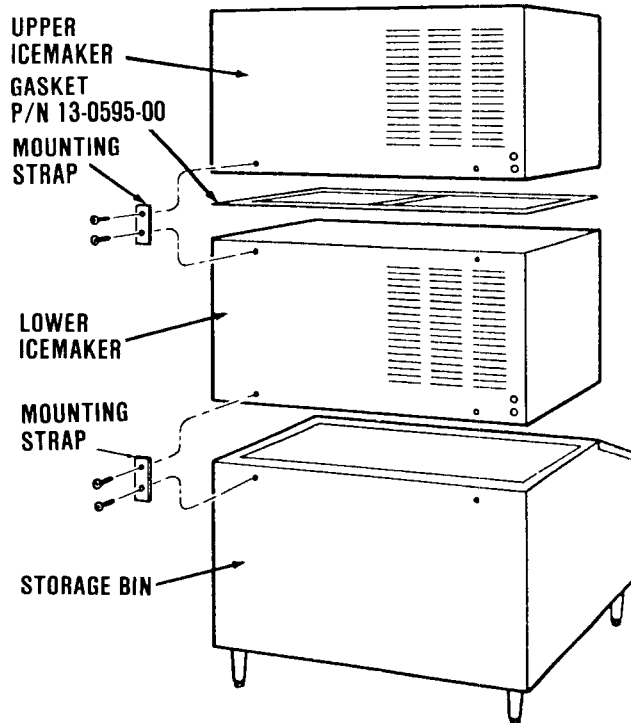
CM1200C GENERAL INFORMATION & INSTALLATION

LOCATION & LEVELING

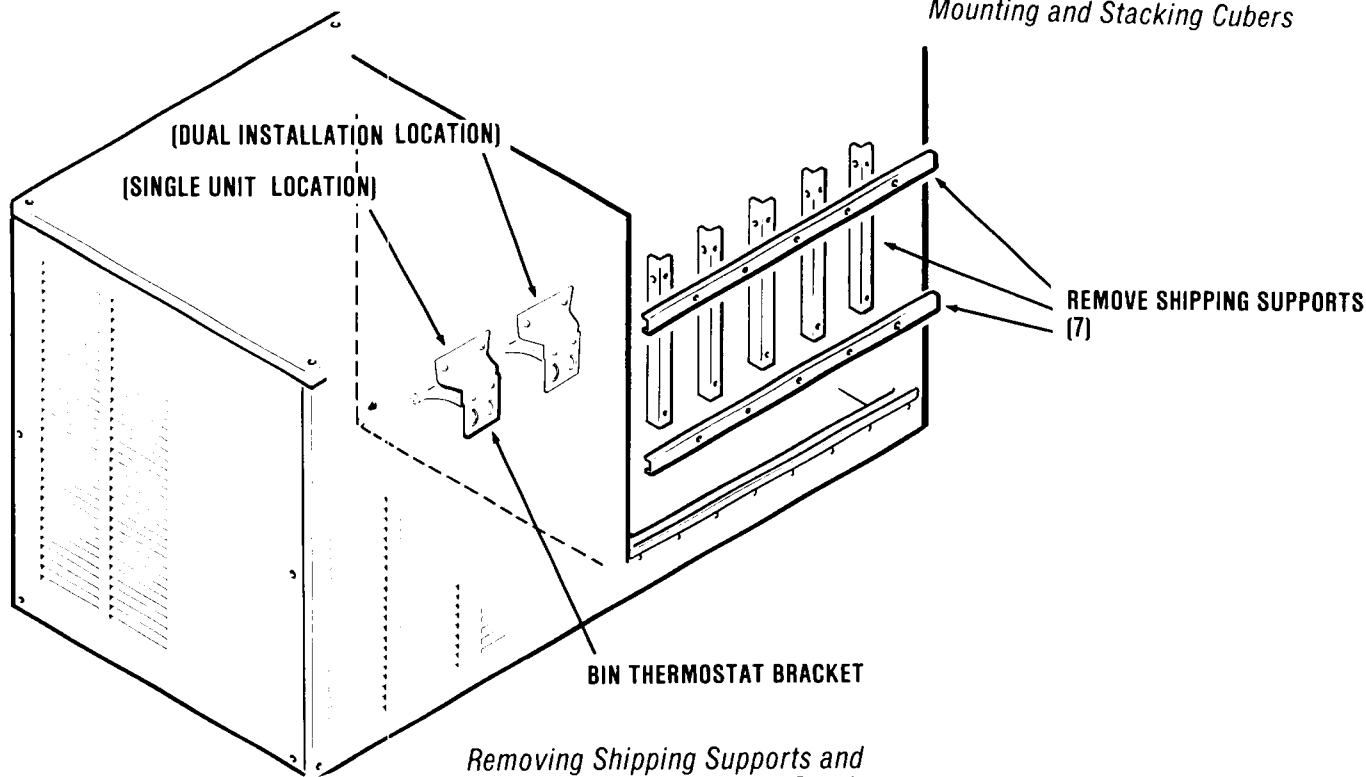
1. Position the Model BH750 Bin in the selected location, which should have a minimum room temperature of 50-degrees F., and maximum room temperature of 100-degrees F. Level the bin, adjusting the leg levelers in both the front-to-rear and side-to-side directions. Select a well-ventilated location for the air-cooled models.
2. Inspect the bin top mounting gasket, which should be flat, with no wrinkles, to provide a good water seal when the CM1200 Cuber is installed on top of the bin.
3. Install the CM1200 Modular Cuber on top of the BH750 Bin, using care to be sure a good seal is made between the two cabinets. Align the holes in the bottom rear of the CM1200 cabinet to mate with the two mounting straps on the top rear of the BH750 Bin.
4. Use two bolts retained from the removal of the holddown straps during unpacking, to secure the mounting straps to the CM1200 in the two holes used for the holddown straps. When alignment and leveling are completed, tighten the bolts to secure the mounting straps.
5. Remove nylon straps securing bin thermostat bracket to the front evaporator support and carefully reposition bin thermostat bracket on the back wall of the freezing section of the cabinet and attach using the second and third screws from the left corner. When properly

installed, the capillary tube is insulated from the dividing wall to the bin thermostat bracket and the bin thermo bracket hangs DOWN, below the bottom of the icemaker chassis into the bin.

6. Remove seven shipping supports from the evaporator plates.



Mounting and Stacking Cubers



*Removing Shipping Supports and
Installing the Bin Thermostat Bracket.*

CM1200C GENERAL INFORMATION & INSTALLATION

ELECTRICAL CONNECTIONS

SEE NAMEPLATE for current requirements to determine wire size to be used for electrical hookup. The cuber requires a solid chassis-to-earth ground wire. See Wiring Diagram.

Be certain the cuber is connected to its own electrical circuit and individually fused. Voltage variation should not exceed \pm 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 icemaker.

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.

WATER SUPPLY AND DRAIN CONNECTIONS

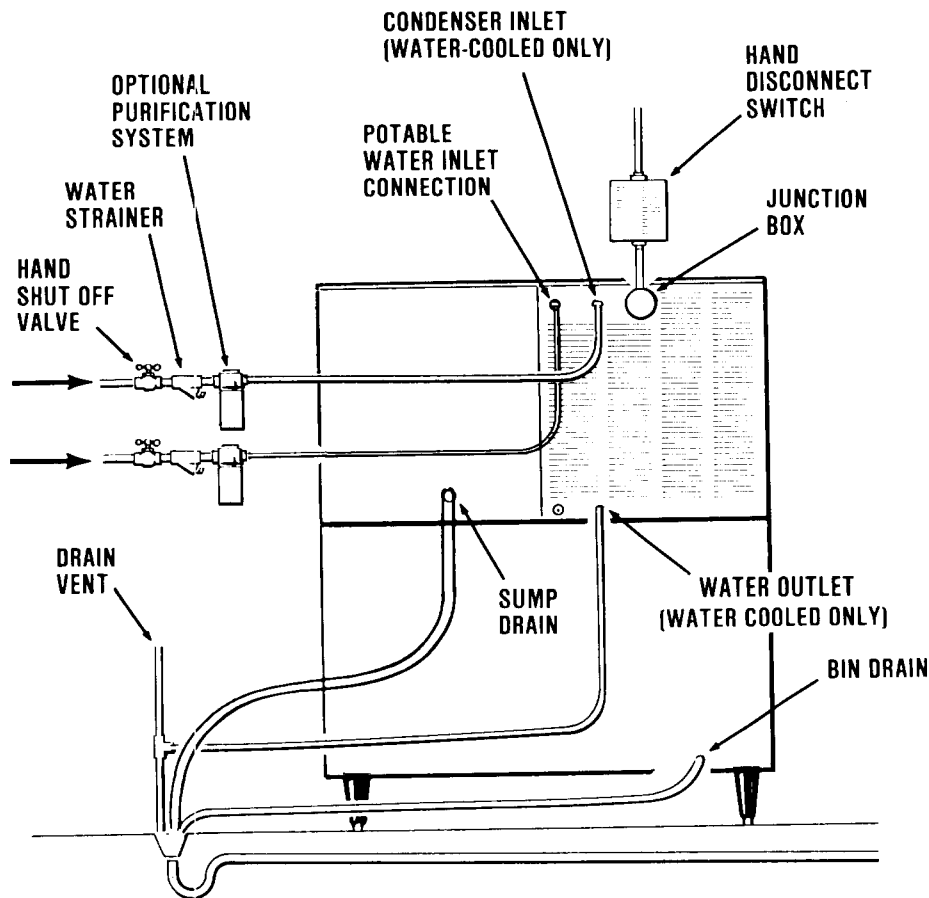
AIR-COOLED MODELS: The recommended water supply line is a 3/8-inch O.D. copper tubing with a minimum operating pressure of 20 PSIG and a maximum of 120 PSIG.

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

WATER-COOLED MODELS: On water-cooled models, a separate cold water supply inlet is required, to be connected to a second 1/2-inch O.D. male flare fitting at the rear of the cabinet. Additional drain lines are required to drain the water-cooled condenser.

DRAIN CONNECTIONS: All drains are gravity type and must have a minimum of 1/4-inch fall per foot on horizontal runs. The drains to be installed to conform with the local plumbing code. Install separate drain line for discharge water from the water-cooled condenser. Install a vertical open vent on drain line to ensure good venting. The drain receptacle should be an open, trapped or vented construction.

Recommended bin drain is 5/8-inch O.D. copper tubing and should be vented and run separately.



OPEN TRAPPED OR VENTED DRAINS — ALL DRAINS MUST HAVE 1/4 PER INCH FALL

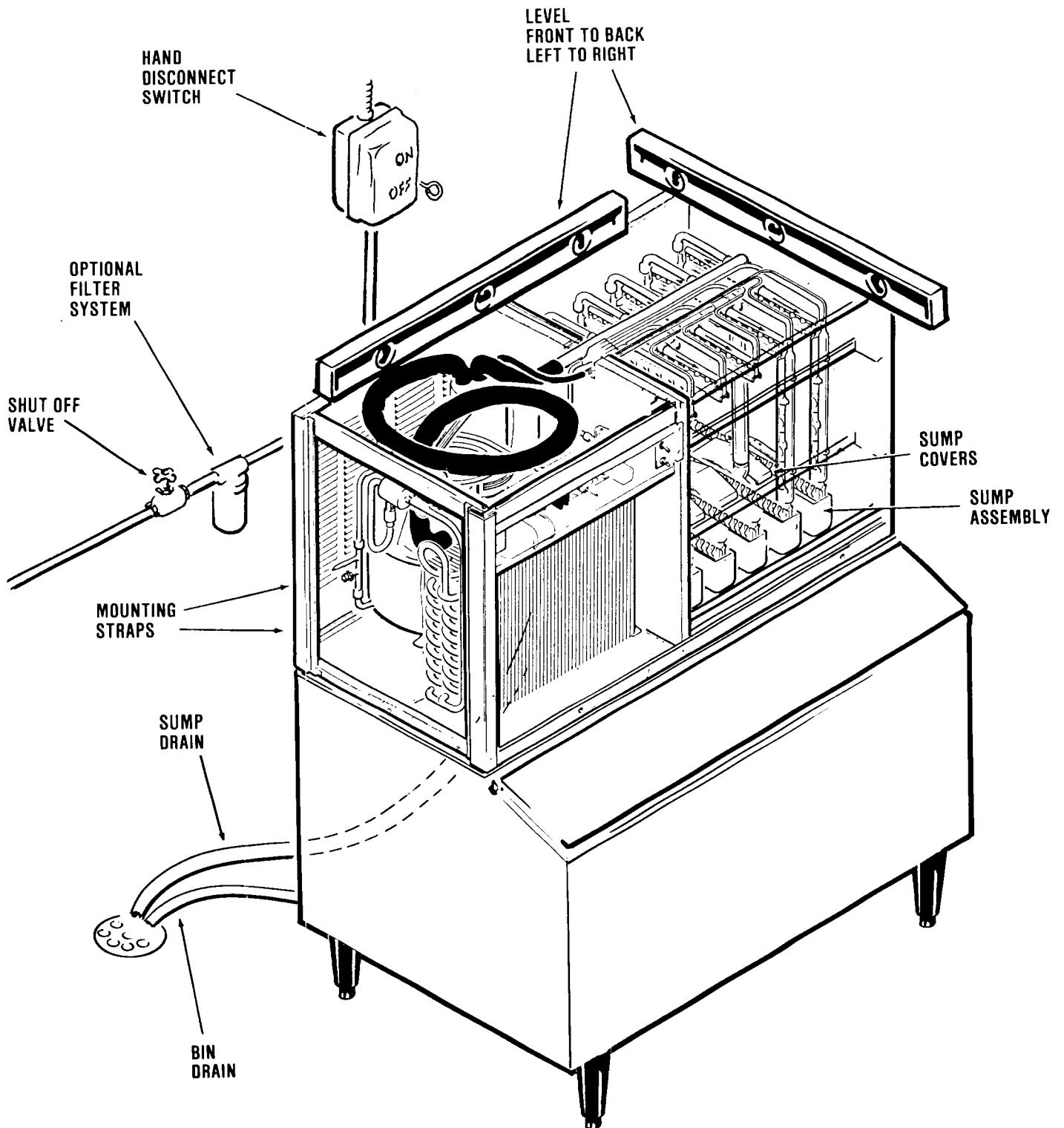
Installation, Electrical, Water Supply and Drain Connection

CM1200C GENERAL INFORMATION & INSTALLATION

FINAL CHECK LIST

1. Is the cabinet/bin level? (IMPORTANT)
2. Is the cuber in a location where ambient temperatures are a minimum of 50-degrees F. all year around and do not exceed a maximum of 100° F?
3. Is there at least a six-inch clearance behind and around the cabinet for all connections and for proper air circulation?
4. Have all electrical and piping connections been made?
5. Has the electrical power supply wiring been properly connected, and the voltage tested and checked against the nameplate rating? Has proper chassis-to-earth ground been installed?
6. Is the water supply line shutoff valve installed and opened and has the inlet water supply pressure been checked to ensure a minimum of 20 PSIG?
7. Check the wood blocks, foam packing and front brace supports have been removed from the evaporator plates.
8. Check that the reservoir is properly secured to the bottom of the evaporator plates.
9. Check that the sump covers are properly secured to the bottom of the evaporator plates.
10. Have the compressor holddown bolts been checked to be sure the compressor is snug on the mounting pads?
11. Check all refrigerant lines and conduit lines to guard against vibration and possible failure.
12. Has the bin thermostat bracket been properly installed?
13. Has the cuber and the bin been wiped clean with clean damp cloths?
14. Has the owner/user been given the User Manual and instructed on how to operate the icemaker and the importance of periodic maintenance?
15. Has the owner/user been given the name and telephone number of the Authorized Scotsman Distributor or Service Agency serving him?
16. Has the Manufacturer's Registration Card been properly filled out? Check for correct Model and Serial Numbers from nameplate, then mail the completed card to the SCOTSMAN factory.

CM1200C GENERAL INFORMATION & INSTALLATION

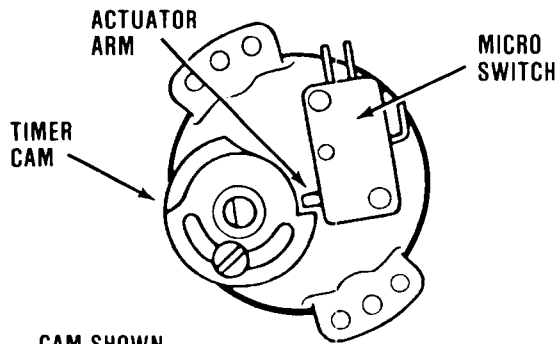


Final Checklist

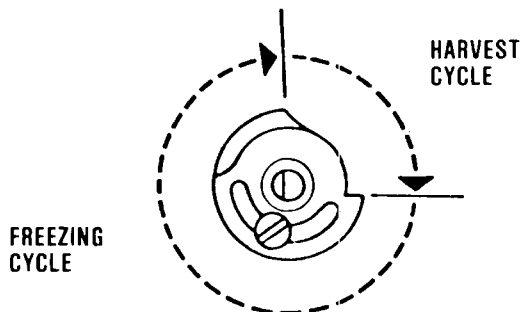
OPERATING INSTRUCTIONS

START—UP

1. OPEN the water supply line shutoff valve.
2. Check that the two toggle switches, the MASTER ON-OFF toggle switch and the COMPRESSOR ON-OFF toggle switch are in the OFF position, on the control box.
3. Remove screws and remove both front panels and the left side panel.
4. Remove two screws at the top of the control box and OPEN the hinged cover downward.
5. Inside the control box is the shaft of the timer and the switch assembly. Rotate the shaft of the timer and switch assembly clockwise until the actuator arm on the microswitch drops off outer cam into cam slot. See Timer Cam Positions. An audible click can be heard, but in a noisy area, look at the cam and switch to observe the event.



CAM SHOWN
AT BEGINNING
OF HARVEST CYCLE



CAM SHOWN DIVIDED INTO TYPICAL
FREEZING & HARVEST CYCLES

Timer Cam Positions

6. Move the master ON-OFF toggle switch, the bottom toggle switch, to the ON position.
7. Observe water fill cycle: Water inlet solenoid valve OPENS, incoming water flows from the valve through the tubing, the reservoir fills and excess water is overflowed through the stand pipe. This cycle will take about three minutes. Timer will close the water inlet solenoid valve and the water fill cycle is complete.

Advancing the shaft of the timer and switch assembly through the remaining cycle into a new harvest cycle, restarts the timer and allows a check that: Water inlet solenoid valve OPENS and the reservoir overflows through the stand pipe. Water inlet valve CLOSES, stopping water overflow.

8. Check that the water cascades down over each cube mold and into the sump.
9. When the second cycle is completed, move the compressor ON-OFF toggle switch, to the ON position.
10. Check operation of the freezing cycle:

The compressor is operating.

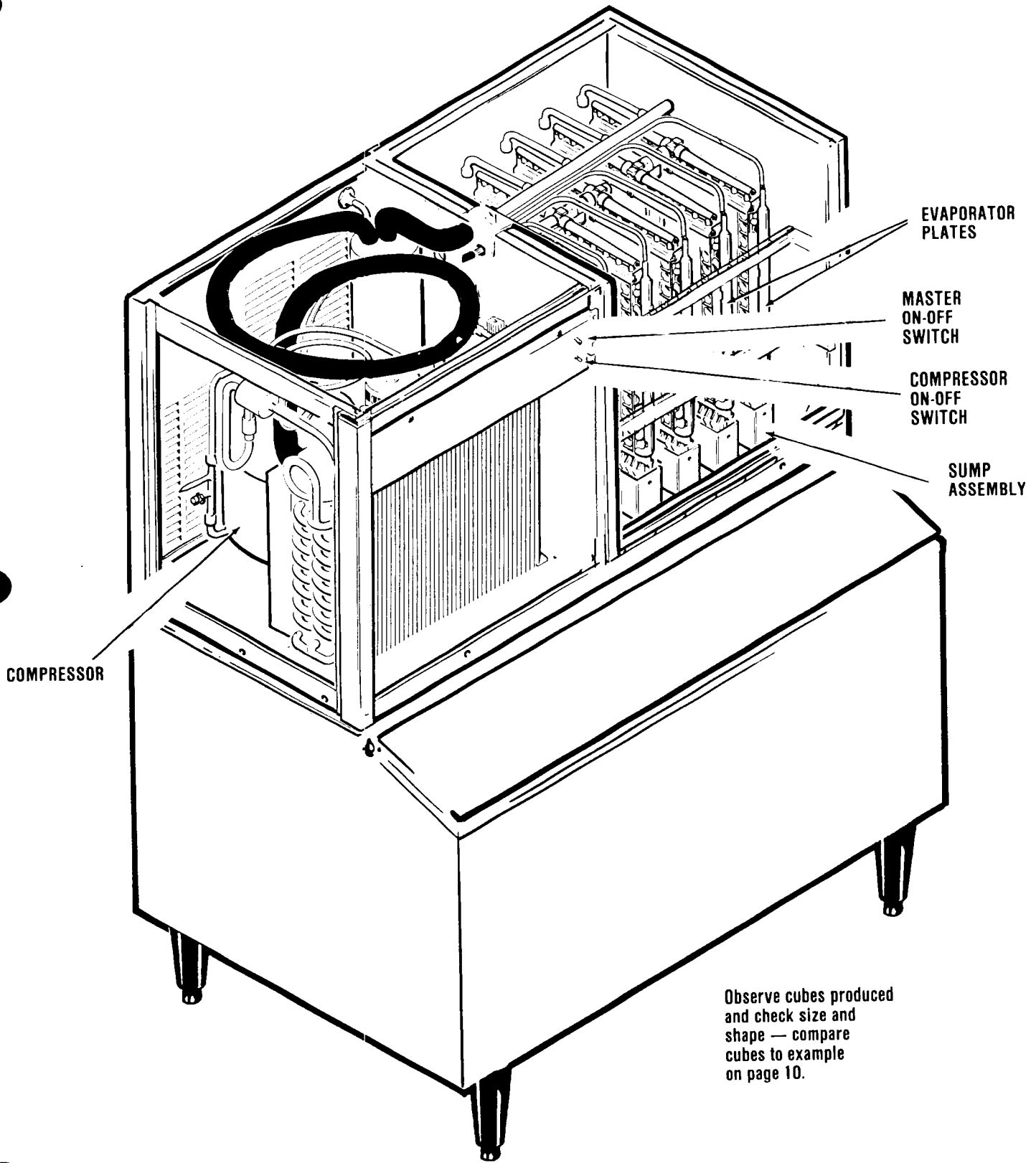
The water pump is operating, as seen by water moving through the two tygon tubes between evaporator plates, up to the water manifold at the top of the evaporator plates, where water is uniformly dispensed and cascades down both sides of each evaporator plate and drains back into the sump assembly for recirculation.

The icemaking process begins; feeling the metal parts of the evaporator plates reveals cold temperature, very shortly ice begins to form. Tubing will become frosted at the top of the evaporator plates.

Freezing time will range between 16 and 19 minutes in a 70-degree F. ambient temperature. Longer time for temperatures above 70-degrees F., and shorter time required when temperatures are below 70-degrees F. Average complete cycle range is about 18 to 22 minutes.

(Continued on page 10)

CM1200C OPERATING INSTRUCTIONS



Operation

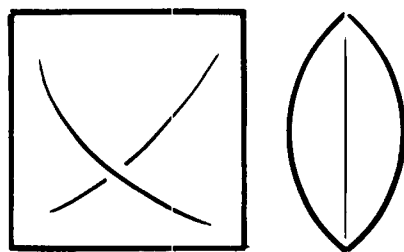
CM1200C OPERATING INSTRUCTIONS

11. Observe first ice cube harvest:

Check size of SCOTSMAN CONTOUR CUBE

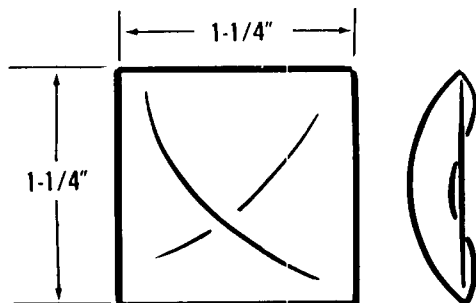
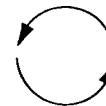
Unlike other SCOTSMAN cubes which are made in a definite molded shape, contour cubes are produced in indentations and many shapes and sizes of contour cubes may be produced — only ONE size and shape combination is correct.

An under-charged refrigeration system produces smaller cubers at the top of the evaporator plate and large cubes at the bottom. Charge system per NAMEPLATE specifications.



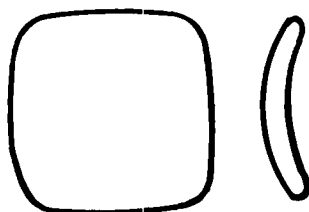
TOO LARGE

Too LARGE requires longer freezing cycle — may cause evaporator freeze ups. Adjust cube size control to produce a smaller cube.



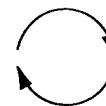
PROPER SIZE AND SHAPE

PROPER SIZE AND SHAPE of the contour cube. Icemaker operates at peak efficiency when a cube this size and shape is produced. A finely tuned system produces vertical strips of ice which easily break when they fall.



TOO SMALL

TOO SMALL. Adjust cube size control. Any cubes this size or shape are too small and cause excessive cycling to produce an equal quality of production. Can also lead to freeze up problems due to poor harvest.



CM1200C OPERATING INSTRUCTIONS

ADJUSTMENT OF CUBE SIZE

To produce LARGER sized ice cubes:

Locate cube size control, in the top right section of the control box.

Rotate the adjusting screw one-eighth of a turn COUNTERCLOCKWISE to COLDER.

Observe size of ice cubes in the next two cube harvests and adjust in one-eighth turn or less increments, until desired ice cube size is achieved.

To produce SMALLER sized ice cubes:

Locate cube size control, in the top right section of the control box.

Rotate the adjusting screw one-eighth of a turn COUNTERCLOCKWISE to WARMER.

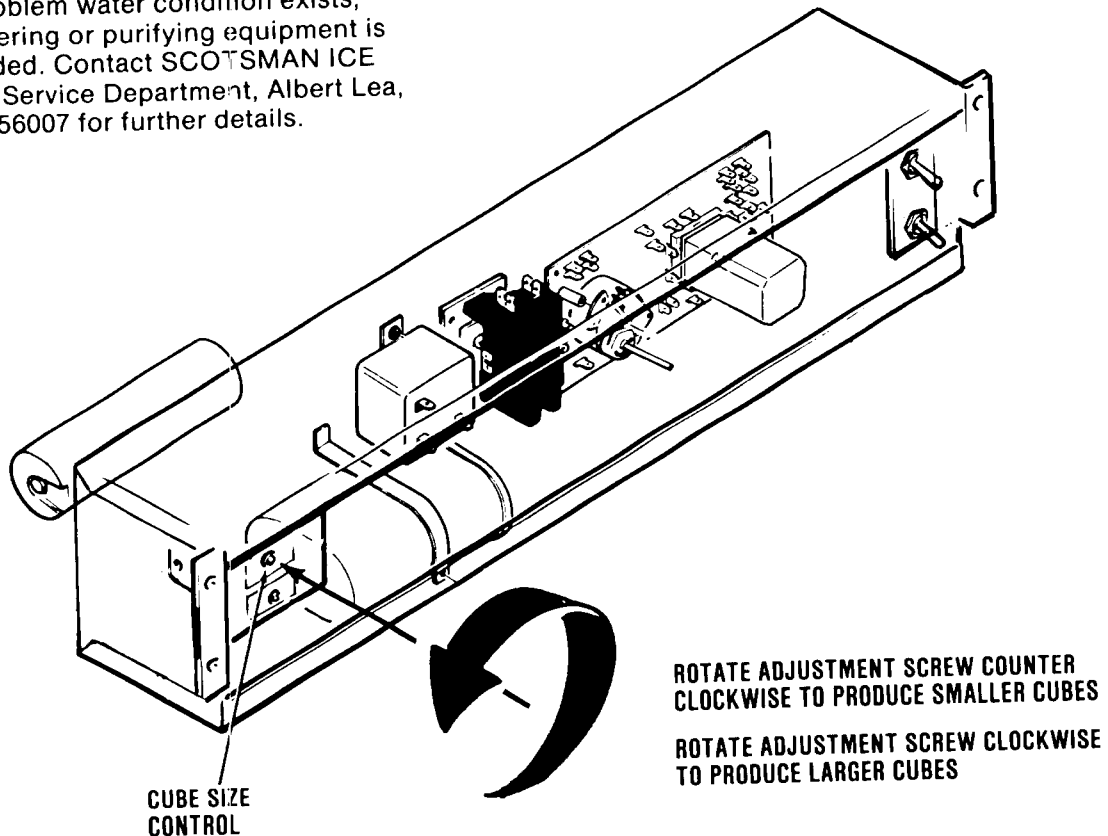
Observe size of the ice cubes in the next two ice cube harvests and adjust in one-eighth turn increments, until desired ice cube size is achieved.

Check texture of ice cubes; when cloudy throughout, suggests icemaker is operating short of water; or, possibly an extreme problem water condition exists, wherein filtering or purifying equipment is recommended. Contact SCOTSMAN ICE SYSTEMS, Service Department, Albert Lea, Minnesota 56007 for further details.

12. With the icemaker in the harvest cycle; hold ice against the bin thermostat control bulb to test shutoff, which should cause the icemaker to shut OFF at the END OF THE HARVEST CYCLE.

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

13. Replace control box cover and all cabinet panels and screws.
14. Thoroughly explain to the owner/user the significant specifications of the icemaker, the start up and operation, going through the procedures in the operating instructions. Answer all questions about the icemaker by the owner; and inform the owner of the name and telephone number of the authorized SCOTSMAN Distributor, or service agency serving him.



Cube Size Control Adjustment

CM1200C OPERATING INSTRUCTIONS

OPERATION

FREEZING CYCLE

Water from the sump in the reservoir of the sump assembly is pumped to the water distributor system, at the top of the evaporator plates. From the water distributors at the top of each evaporator plate, the water cascades by gravity over all cells of the plates and to the sump assembly below for recirculation. At the beginning of the freezing cycle, the electrical circuit is completed to the compressor and the water pump. The water pump operates continuously, through both the freezing cycle and the harvest cycle.

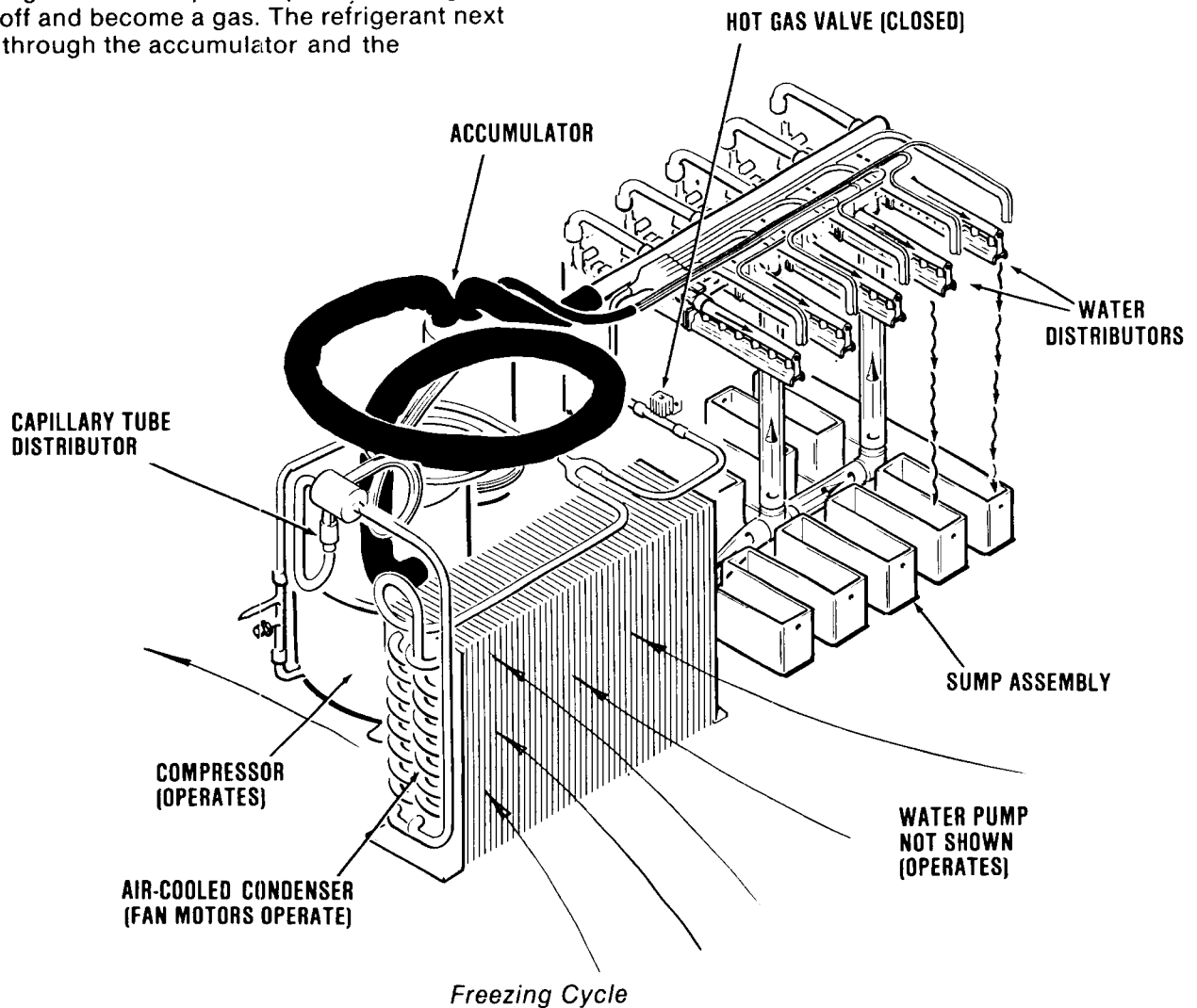
In the compressor, gaseous refrigerant is compressed and discharged into the condenser, as a high pressure, high temperature gas. The refrigerant is cooled by either air or water, and condenses into a high pressure, medium temperature liquid. This liquid refrigerant is then distributed through the capillary tubes where the temperature and pressure of the liquid refrigerant are lowered and enters the evaporator plates. The refrigerant is warmed by the water cascading over the Evaporator plates and begins to boil off and become a gas. The refrigerant next travels through the accumulator and the

heat exchange area of the suction line where any remaining liquid refrigerant boils off and returns to the compressor as a low pressure, low temperature gas, and the cycle starts again.

During the freezing cycle, the hot gas solenoid valve is CLOSED and the water inlet solenoid valve is CLOSED.

When the ice cubes are partially formed, the cube size control 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 freezing cycle.

The timer will keep the icemaker operating in the freezing cycle for a selected length of time. This will give the ice cubes time to fully form. After that selected length of time, the timer will switch the icemaker into the harvest cycle, through the contacts of the timer assembly microswitch.



CM1200C OPERATING INSTRUCTIONS

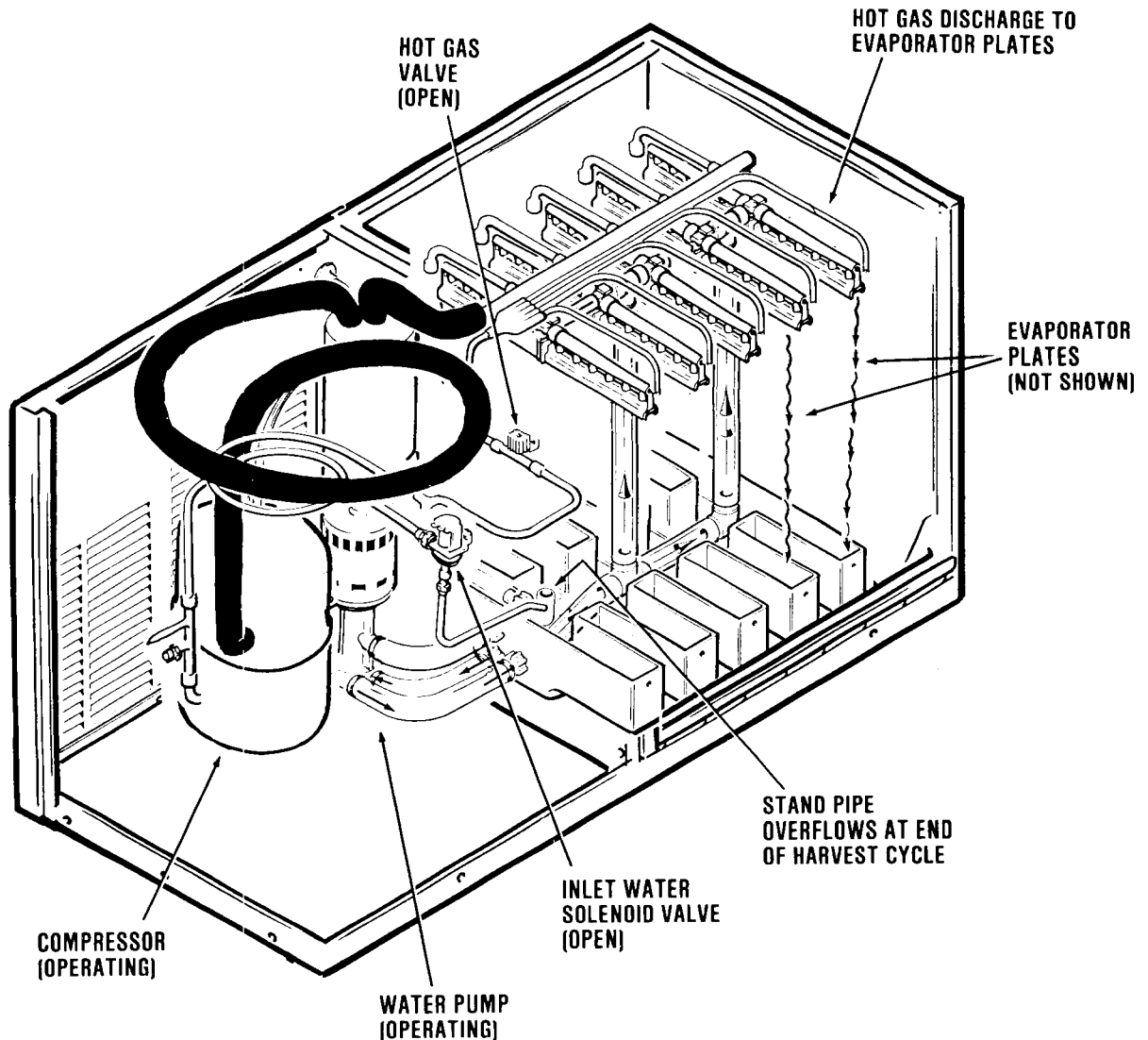
HARVEST CYCLE

When the timer switches the icemaker into the harvest cycle, high pressure, high temperature gaseous refrigerant being discharged from the compressor is diverted from the condenser through the hot gas solenoid valve into the evaporator plates. During this cycle, the gaseous refrigerant bypasses the condenser and the capillary tube.

In the electrical circuit, both the compressor and the water pump are operating and the hot gas solenoid valve is energized and OPEN and the water inlet solenoid valve is OPEN.

The finished ice cubes are released from the sides of the evaporator plates, by the warming effect of the hot gas flowing through the evaporator plates and the water cascading over the ice cubes. The released ice cubes drop into the ice storage bin below.

At the end of the harvest cycle, the timer cam will push the actuator arm of the microswitch IN. If the bin thermostat is still CLOSED, a whole new cycle will begin. If the bin thermostat is OPEN, the icemaker will shut OFF, at this time.



Harvest Cycle

COMPONENT DESCRIPTION

COMPONENT DESCRIPTION

BIN THERMOSTAT CONTROL

The bin thermostat control is located in the left end of the control box. The sensing capillary tube of the control is routed from the rear of the control box through a grommet in the lower back corner of the left wall of the evaporator section, downward to the bin thermo control bracket hanging in the ice storage bin. The bin thermostat 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 RESTART of the icemaker, when the capillary tube starts to warm up, after ice has been removed from the bin.

Adjustments to the bin control setpoint should only be made if the ice machine shuts off prematurely or ice fills up into the evaporator area and adjust only in increments of one eighth turn or less.

COMPRESSOR CONTACTOR

The compressor functions to carry the compressor line current. The contactor is wired so any control in the pilot circuit, such as the bin thermostat and high pressure controls, etc., will cause the holding coil to be de-energized, when the control contact OPENS, thereby breaking the circuit to the compressor.

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.

See *Cube Size Adjustment* BEFORE attempting to adjust the control.

FINISH RELAY

The multi-function, three pole, double-throw, plug-in relay is installed directly into a receptacle on the printed circuit board in the control box. The relay functions, in part, to by-pass the bin thermostat control to prevent the icemaker from shutting OFF, when a filled-bin condition occurs, during the freezing cycle. The by-pass action serves to ensure full-sized ice cubes with each harvest cycle; and, to prevent short cycling on the bin thermostat control.

FINISHING TIMER — Timer & Switch Assembly.

The function of the finishing timer begins when activated by the cube size control. The outer surface, or large diameter lobe of the timer cam, determines the timer cycle to finish freezing the ice cubes, while the inner surface, or small diameter lobe, determines the time cycle for the harvest sequence. All electrical circuitry is connected through the printed circuit board, the finishing timer and the single-pole, double-throw microswitch. The microswitch is actuated by a cam assembly directly connected to the timer motor. The timer cam can be adjusted to vary the defrost line, as required.

HIGH PRESSURE CONTROL — Water-Cooled Model

The high pressure control, a safety control is factory set at 250 PSIG. The control functions as a precautionary device, to shut OFF electrical power to the icemaker, should a loss of water occur to the water-cooled condenser.

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 in the evaporator plates assembly to release ice cubes from the ice cube molds. The hot gas solenoid valve is comprised of two parts, the body & plunger and the coil & frame 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.

WATER INLET SOLENOID VALVE

The water inlet solenoid valve functions to fill the sump assembly with water and overflow out the overflow standpipe located at the side of the sump. This action rinses the sump at the end of each harvest cycle.

WATER DISTRIBUTION SYSTEM

The water distribution system functions to evenly supply water to all cells of the evaporator plates. The water pump pumps water from the sump up two vertical tygon tubes to two tees. From there water is channeled through water manifolds to ten water distributors, two atop each evaporator plate, and distributed evenly down both sides of each evaporator plate.

(Continued on page 31)

CM1200C

THE PARTS ILLUSTRATIONS AND PARTS LISTS

GENERAL

This section contains the Parts illustrations and the Parts List for each of the major assemblies of the Model CM1200C Cuber.

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

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 icemaker for which the part is required, and for parts which require color matching, the color of the Cabinet.

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.

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.

Write an order for the Part. (Use SCOTSMAN Parts Order Form DN103). Be sure to include:

- Distributor Name.
- (Use for DROP-SHIP order ONLY.)
- Distributor Purchase Order Number.
- Carrier.
- How shipped (Truck, Rail, UPS, etc.)
- Date ordered.
- Part Catalog Number. (Use full TEN digits (spaces) listed in Parts Manual, including dashes between numbers.)
- Description - as listed in Parts Manual.
- Quantity - number of parts ordered. (Use far right column.)

CM1200C

WIRING DIAGRAMS

This section is provided as an aid in understanding the electrical circuitry of the modular cuber:

//////////////////// **WARNING** //////////////////////

When conducting a continuity check of the modular 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.

////////////////////////////////////

The wiring diagrams in this Section are:

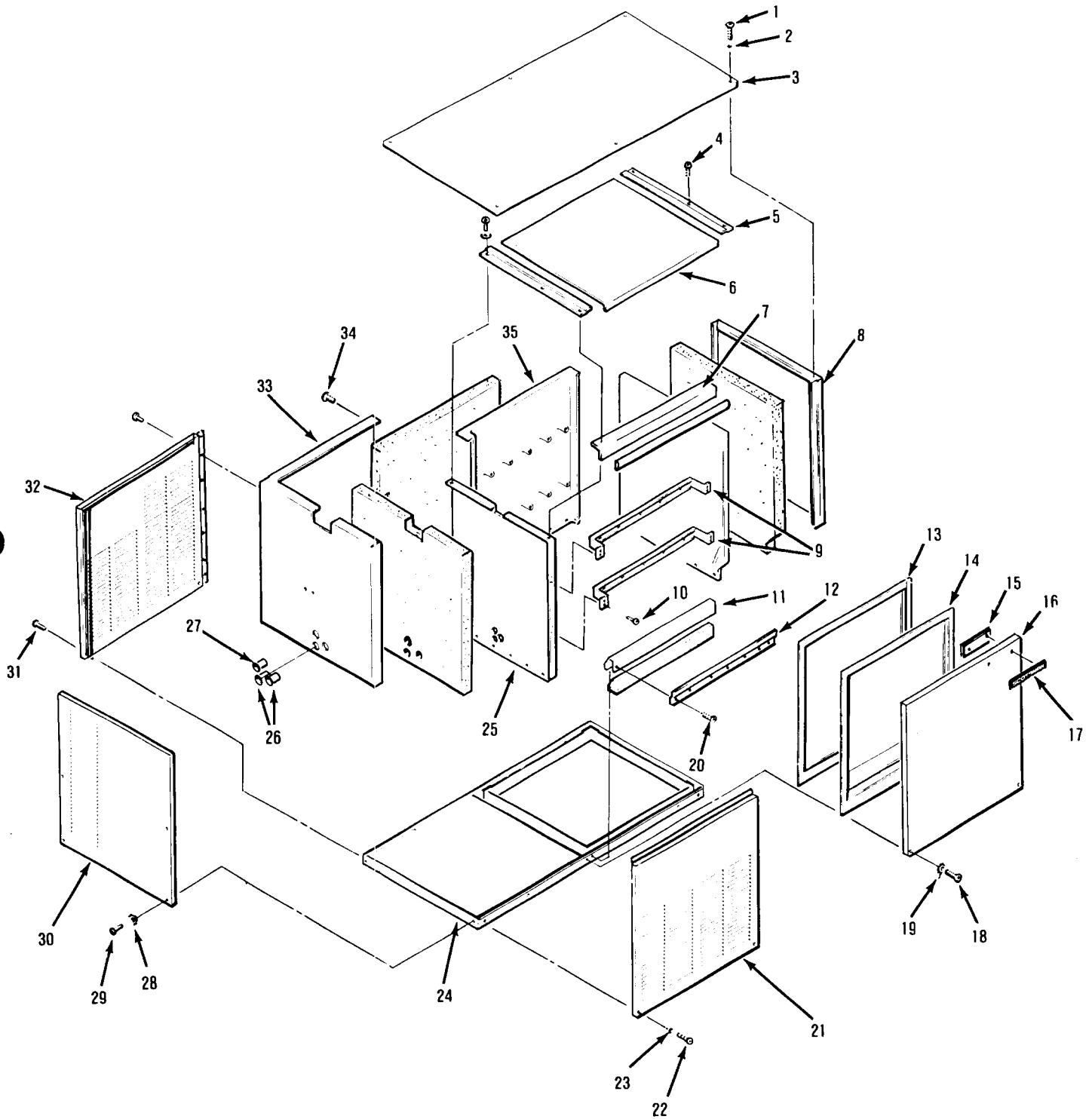
- CM1200-9C 115/208-230/60/3 - Air-Cooled
- CM1200-9C 115/208-230/60/3 - Water-Cooled
- CM1200-31C 115/208-230/60/1 - Air-Cooled
- CM1200-31C 115/208-230/60/1 - Water-Cooled

CM1200C
THE PARTS ILLUSTRATIONS AND PARTS LISTS

CABINET ASSEMBLY

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	03-1404-09	(6) Screws, 8 x 1/2
2	03-1407-03	(2) Washers
3	A30744-001	Panel Top (Enamel)
	A30744-002	Panel Top (Stainless Steel)
4	03-1404-10	Screw, 8 x 1/2 (Stainless Steel)
5	<i>No Number</i>	Liner Guide
6	A30329-001	Liner Top
7	<i>No Number</i>	Upper Front Brace
8	A29164-003	Right Panel (Enamel)
	A29164-002	Right Panel (Stainless Steel)
9	A29204-001	Brace Front
10	03-1404-10	Screw 8 x 1/2 (Stainless Steel)
11	02-2532-01	Liner Cap
12	<i>No Number</i>	Liner Guide
13	13-0595-00	Gasket — Foam
14	02-2795-01	Liner Front Panel
15	03-0271-00	(2) Speed Clip
16	A30743-001	Panel, right front (Enamel)
	A30743-001	Panel, right front (Stainless Steel)
17	15-0711-01	Emblem
18	03-1404-19	(2) Screws, 8 x 1
19	03-1417-03	(2) Washers
20	03-1404-10	(8) Screws, 8 x 1/2 (Stainless Steel)
21	A30742-001	Panel, left front (Enamel)
	A30742-002	Panel, left front (Stainless Steel)
22	03-1404-19	(2) Screws 8 x 1
23	03-1417-03	(2) Washers
24	<i>No Number</i>	Base Fab Assembly
25	02-2533-01	Liner Left Side
26	<i>No Number</i>	(4) Bushing
27	<i>No Number</i>	(2) Bushing
28	03-1407-03	(2) Washer
29	03-1404-10	(4) Screws 8 x 1/2 (Stainless Steel)
30	A29168-003	Panel, left side (Enamel)
	A29168-002	Panel, left side (Stainless Steel)
31	03-1404-09	(4) Screws, 8 x 1/2
32	A30604-001	Panel, left back
33	<i>No Number</i>	Retainer
34	03-1404-09	(4) Screws 8 x 1/2
35	02-2531-01	Liner back

CM1200C THE PARTS ILLUSTRATIONS AND PARTS LISTS



CM1200C
THE PARTS ILLUSTRATIONS AND PARTS LISTS

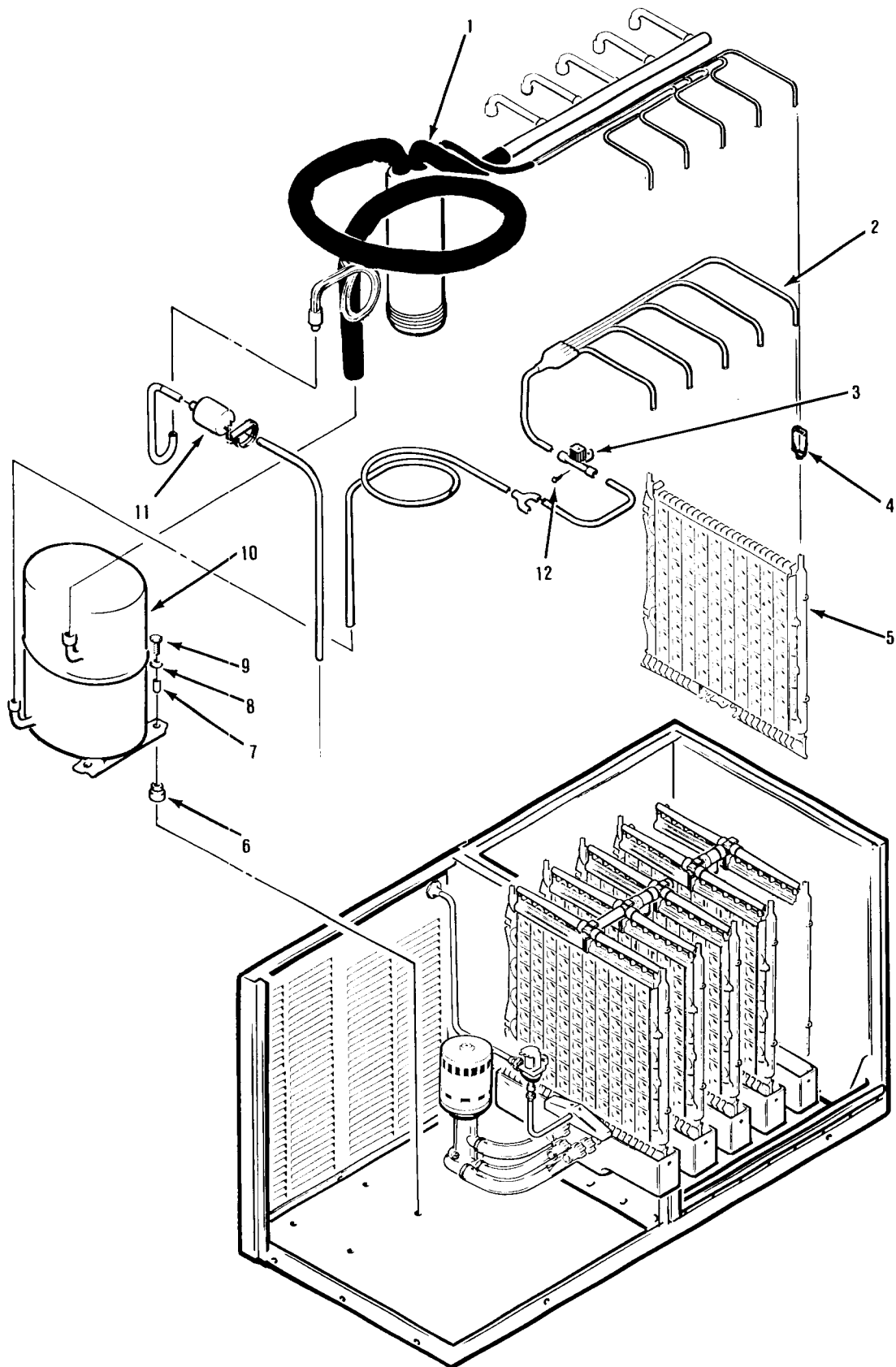
REFRIGERATION COMPONENTS
COMMON TO AIR-COOLED OR WATER-COOLED MODELS

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	A30325-020	Heat Exchange F/A
2	A29260-001	Hot Gas Tube Assembly
3	12-2146-01	Hot Gas Valve
4	<i>No Number</i>	Evaporator Plate Adaptor
5	A30296-020	Evaporator Plates
6	18-5100-51	Grommet
7	18-5100-50	Sleeve
8	03-1407-07	Washer
9	03-1405-20	Screw 5/16-18 x 1 1/2
10	18-5100-02	Compressor 208-230/60/1
	18-5100-03	Compressor 230/60/3
11	02-2426-02	Drier
12	03-1404-09	Screw, 8 x 1/2

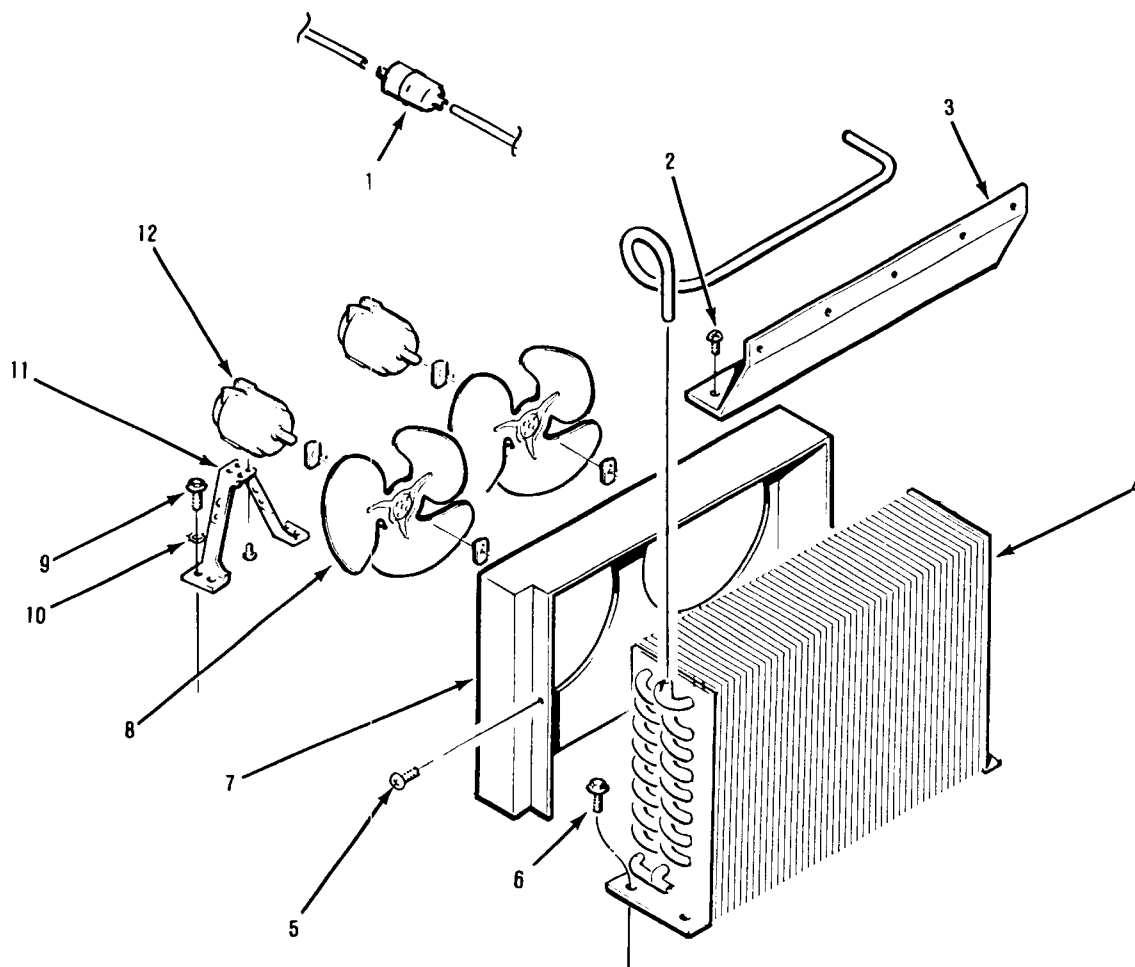
BH750 BIN (Not Shown)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	A29210-001	Left Door Hinge
2	A29210-002	Right Door Hinge
3	A29213-001	Left Bin Hinge
4	A29213-002	Right Bin Hinge
5	A29216-001	Door
6	A29407-001	Door Frame
7	02-2380-01	Hinge Bushing
8	02-2380-02	Spacer
9	02-2806-01	Shoulder Screw
10	03-1539-09	E Ring
11	KLP2	Enamel Legs (Set of 4)
12	KLP2S	Stainless Steel Legs (Set of 4)

CM1200C THE PARTS ILLUSTRATIONS AND PARTS LISTS



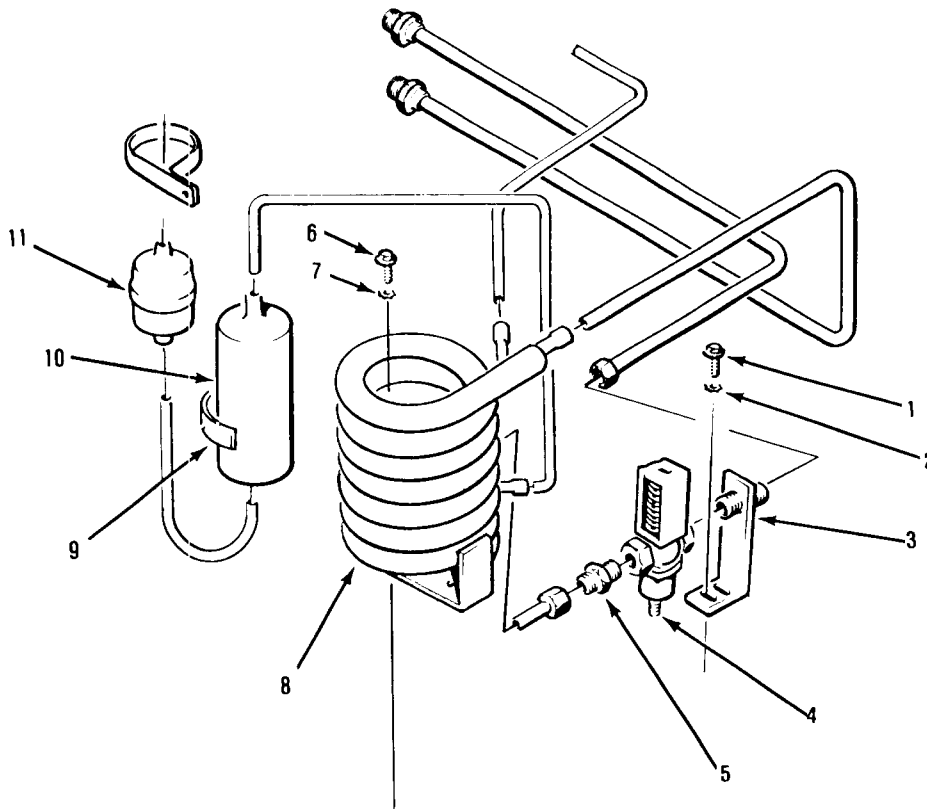
CM1200C THE PARTS ILLUSTRATIONS AND PARTS LISTS



AIR-COOLED ASSEMBLIES

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	02-2426-02	Drier
2	03-1404-09	(5) Screw No. 8 x 1/2
3	A29240-001	Shroud Extension
4	18-3311-01	Condenser
5	03-1404-09	(8) Screw No. 8 x 1/2
6	03-0571-00	Screw 1/4-20 x 1/2
7	A29182-001	Shroud
8	18-3732-01	Fan Blade
9	03-0571-00	(8) Screw 1/4-20 x 1/2
10	03-1417-08	Washer
11	18-0597-00	Fan Mounting Bracket
12	18-5105-02	Fan Motor

CM1200C THE PARTS ILLUSTRATIONS AND PARTS LISTS



WATER-COOLED ASSEMBLIES

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	03-0571-00	Screw 1/4-20 x 1/2
2	03-1417-08	Washer
3	A15924-000	Bracket, Water Regulator
4	11-0198-02	Water Regulator
5	16-0253-00	Fitting
6	03-0571-00	Screw 1/4-20 x 1/2
7	03-1417-08	Washer
8	18-3306-03	Condenser
9	02-0706-09	Clamp
10	02-2628-01	Receiver
11	02-2426-02	Drier

CM1200C
THE PARTS ILLUSTRATIONS AND PARTS LISTS

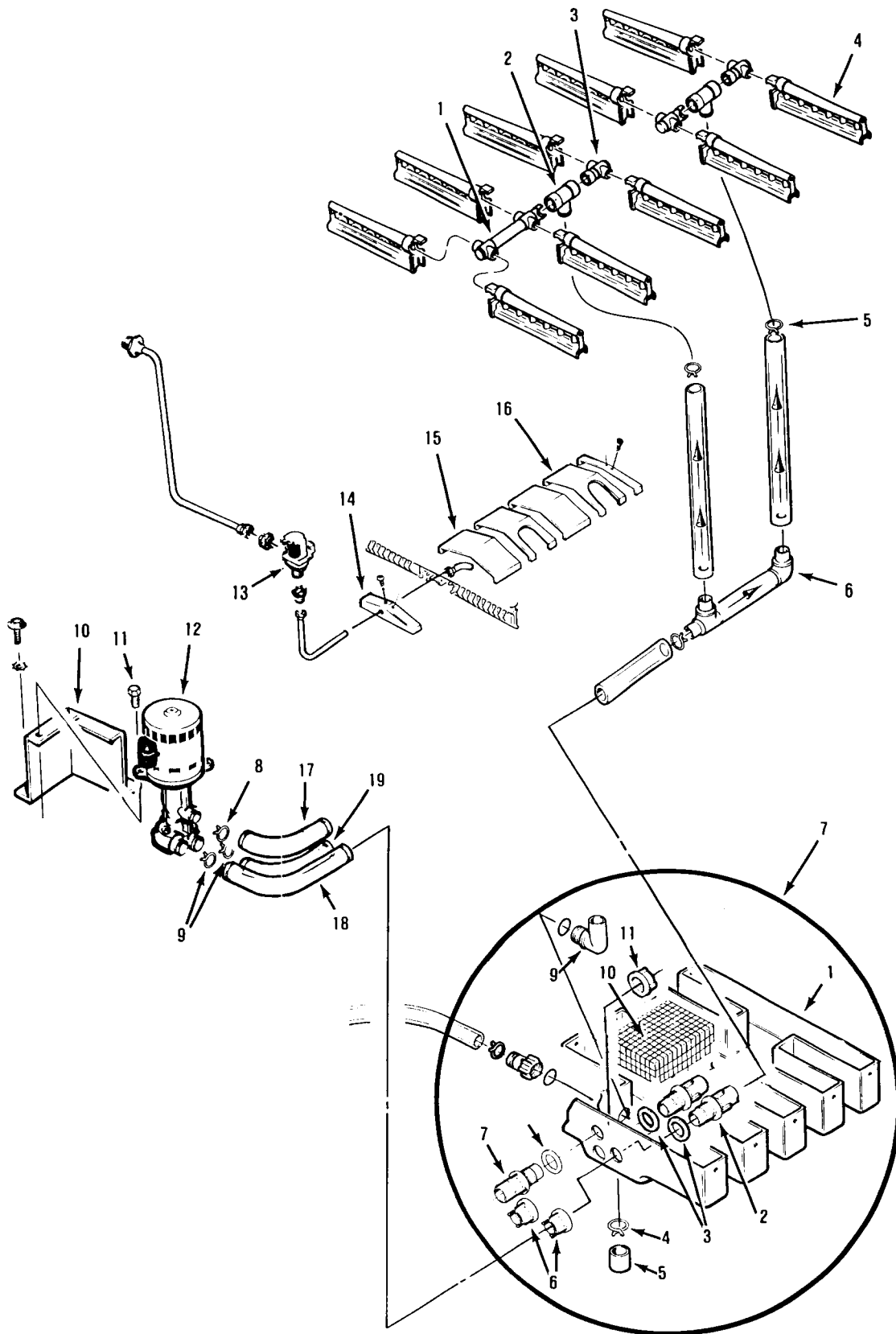
WATER SYSTEM

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	02-2521-01	Manifold Water (Long)
2	02-2519-01	Tee
3	A29703-001	Manifold Water (Short)
4	02-2527-01	Tube, Water Distributor
5	02-1358-01	Clamp
6	A29730-001	Water Tube Assembly)
7	A30761-020	Sump Assembly
8	02-1530-01	Clamp
9	02-1800-01	Clamp
10	A29746-001	Pump Bracket
11	13-0571-01	Screw 1/4-20 x 3/4
12	A30751-022	Water Pump
13	12-1646-05	Water Valve
14	02-2523-01	End Cover - Sump
15	02-2520-01	Sump Cover
16	02-2520-02	Sump Cover - Center
17	A29259-001	Preformed Tubing
18	A30758-002	Pump Discharge Preformed
19	A30758-001	Pump Suction Preformed

SUMP ASSEMBLY

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	A30761-020	Sump (Complete Assembly)
2	02-2787-01	Tube - Pick Up
3	03-1409-23	Washer - Rubber
4	02-1530-01	Clamp
5	13-0796-01	Rubber Cap
6	02-2786-01	Tube - Inlet
7	02-2788-01	Nut - Water Inlet
8	13-0617-02	"O" Ring
9	02-2125-01	Elbow
10	A30760-001	Screen
11	02-1800-01	Hose Clamp

CM1200C THE PARTS ILLUSTRATIONS AND PARTS LISTS



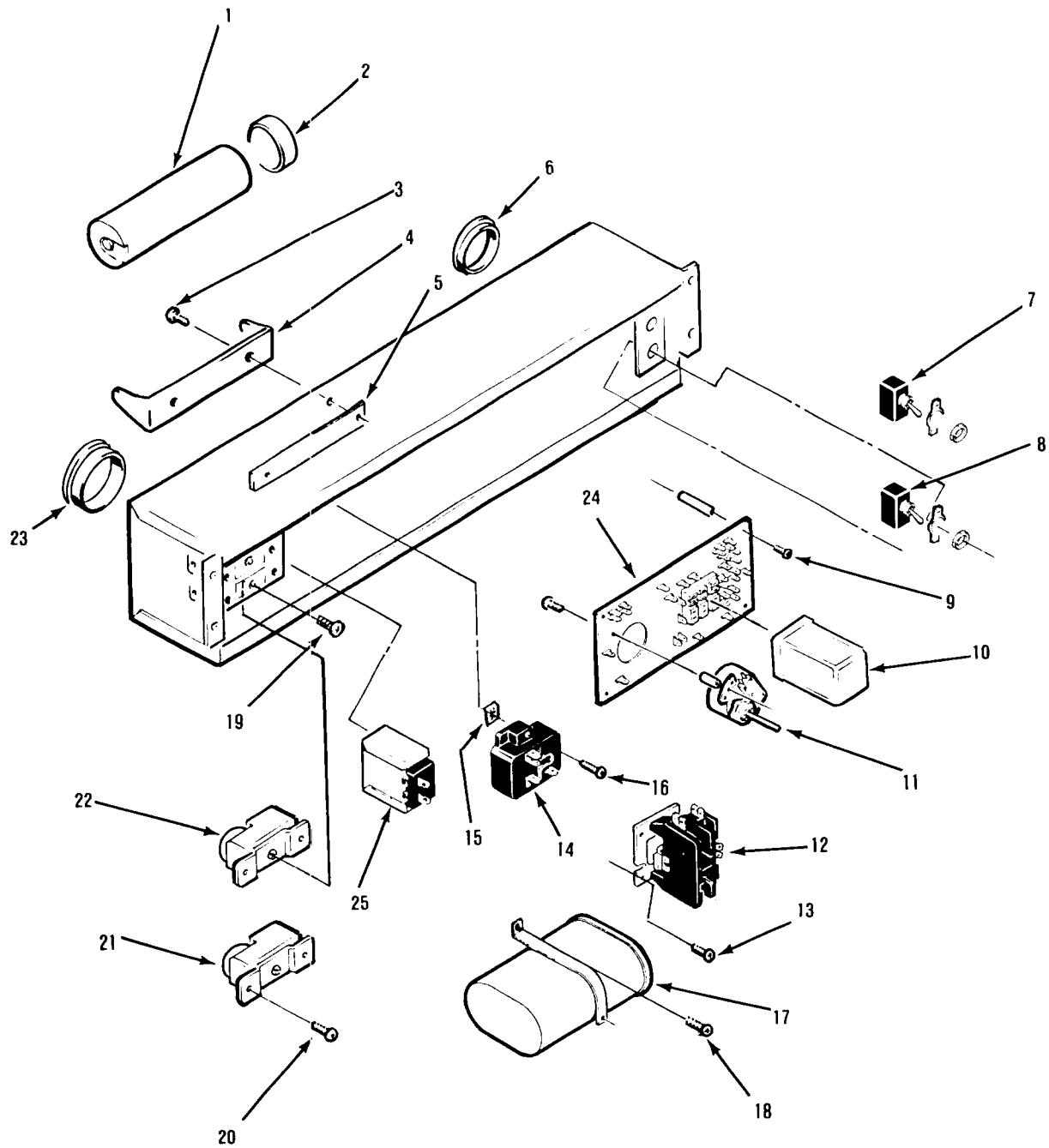
CM1200C

THE PARTS ILLUSTRATIONS AND PARTS LISTS

CONTROL BOX ASSEMBLY

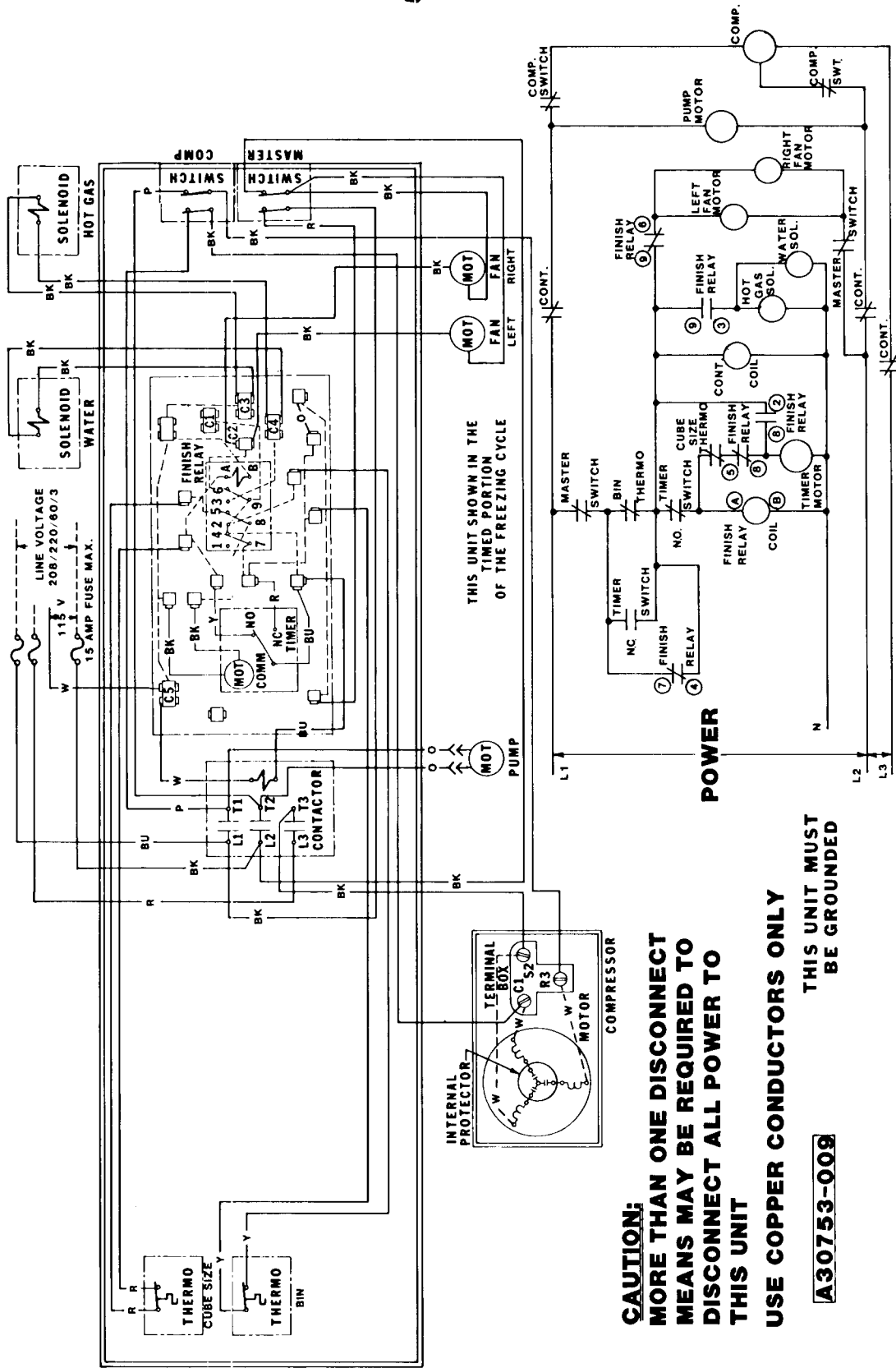
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	18-1901-40	Start Capacitor
2	18-3850-33	Cap Capacitor
3	03-1419-06	Screw
4	18-2200-39	Capacitor Bracket
5	03-1103-00	Twin Speed Nut
6	12-1213-13	Snap Bushing
7	12-0426-01	Compressor Switch - Single-Phase
	12-2174-01	Compressor Switch - Three-Phase
8	12-2174-01	Master Switch (Air-Cooled)
	12-0426-01	Master Switch (Water-Cooled)
9	03-1403-04	(5) Screw
10	12-1879-02	Relay
11	12-1979-01	Timer
12	12-2048-01	Contactactor 208-230/60/1
	12-0739-01	Contactactor 230/60/3
13	03-1403-17	(2) Screw
14	18-1903-40	Potential Relay
15	03-1423-01	Speed Nut
16	03-1403-04	Screw
17	18-1902-51	Run Capacitor
18	03-1403-21	Screw No. 8 - 32 x 3/4
19	03-1403-14	Screw
20	03-1403-14	(2) Screw
21	11-0351-02	Cube Size Control
22	11-0419-01	Bin Thermostat
23	12-1213-17	Snap Bushing
24	12-1912-01	Circuit Board
25	11-0388-02	Pressure Control (Water-Cooled)

CM1200C THE PARTS ILLUSTRATIONS AND PARTS LISTS



CM1200C WIRING DIAGRAM

5



THIS UNIT SHOWN IN THE
TIMED PORTION OF THE
FREEZING CYCLE

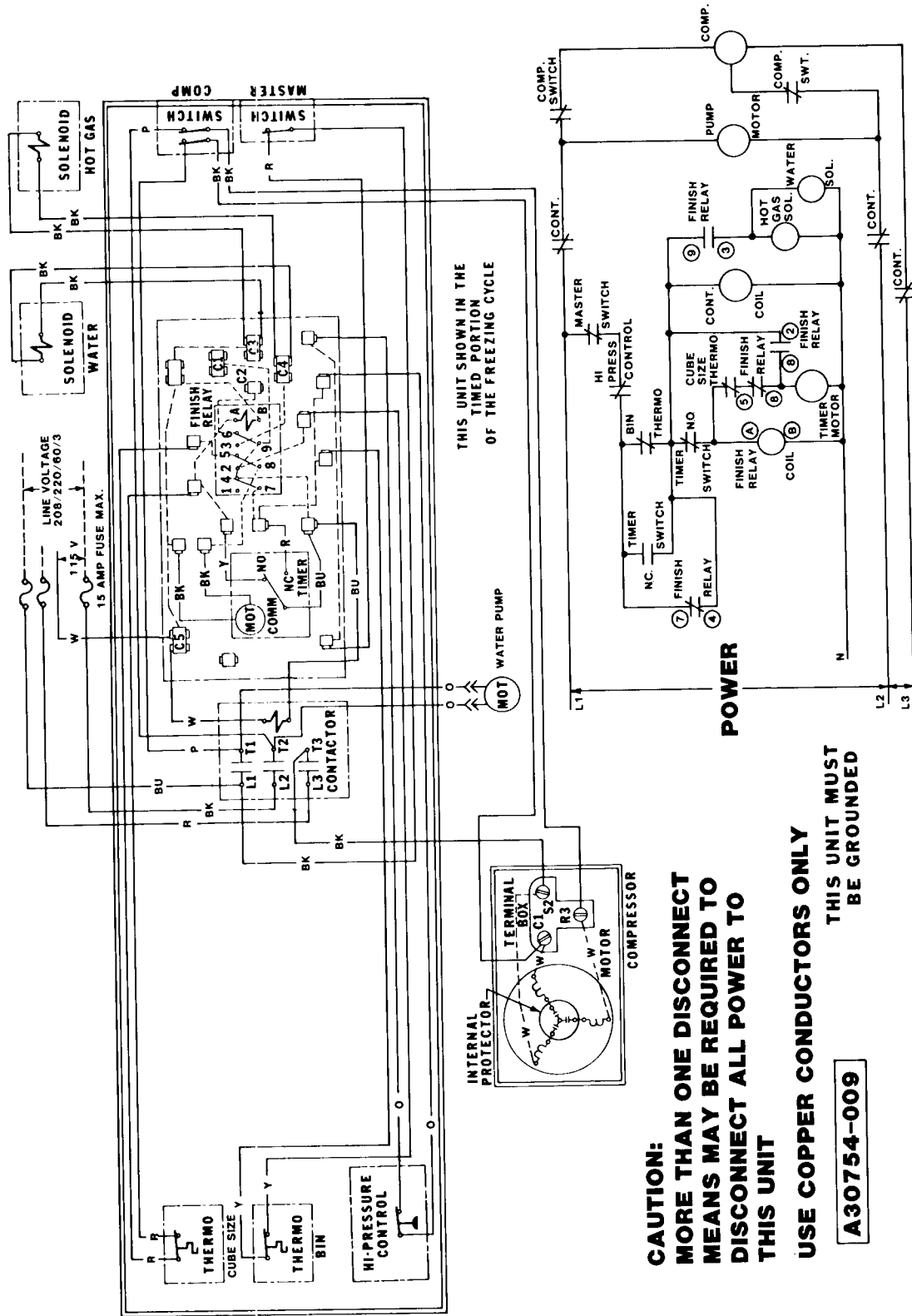
CAUTION:
MORE THAN ONE DISCONNECT
MEANS MAY BE REQUIRED TO
DISCONNECT ALL POWER TO
THIS UNIT
USE COPPER CONDUCTORS ONLY

THIS UNIT MUST
BE GROUNDED

A30753-009

Wiring Diagram CM1200AE-9C Air-Cooled

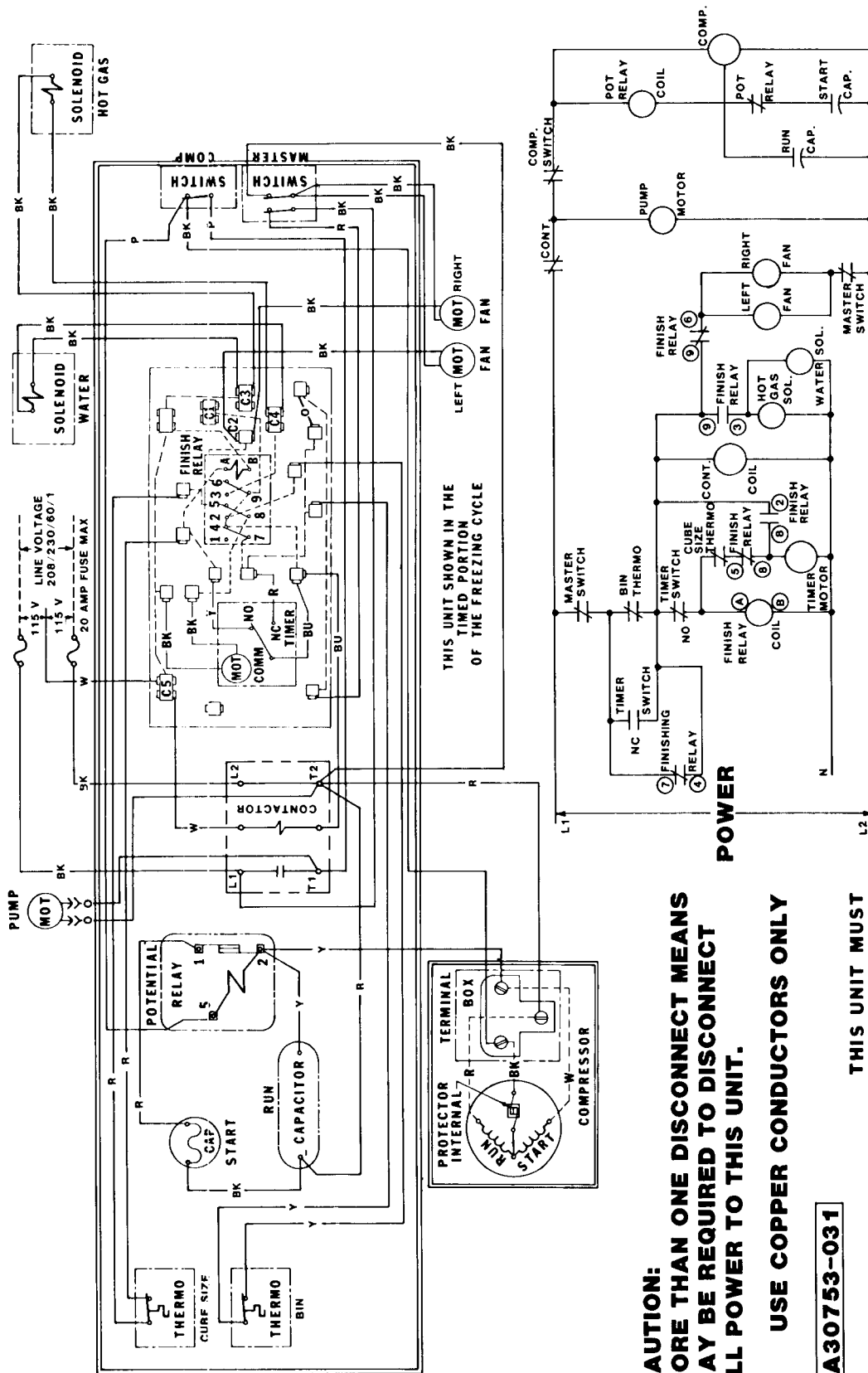
CM1200C WIRING DIAGRAM



CAUTION:
MORE THAN ONE DISCONNECT
MEANS MAY BE REQUIRED TO
DISCONNECT ALL POWER TO
THIS UNIT
USE COPPER CONDUCTORS ONLY
THIS UNIT MUST
BE GROUNDED

A30754-009

CM1200C WIRING DIAGRAM



CAUTION:
MORE THAN ONE DISCONNECT MEANS
MAY BE REQUIRED TO DISCONNECT
ALL POWER TO THIS UNIT.

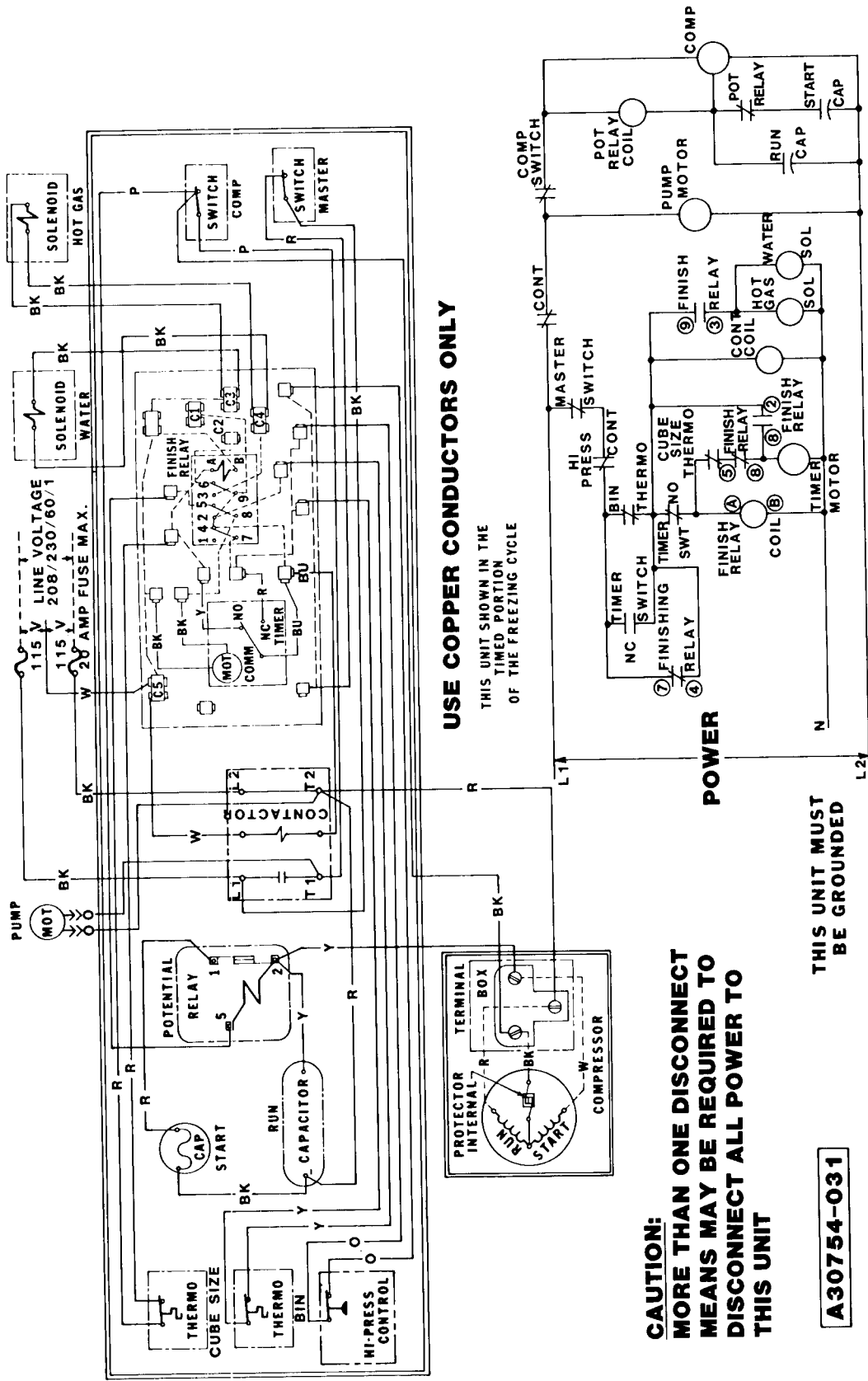
USE COPPER CONDUCTORS ONLY

A30753-031

THIS UNIT MUST
BE GROUNDED

Wiring Diagram CM1200AE-31C Air-Cooled

CM1200C WIRING DIAGRAM



Wiring Diagram CM1200WE-31C Water-Cooled

AUGUST 1983

SCOTSMAN

775 CORPORATE WOODS PARKWAY
VERNON HILLS, ILLINOIS 60061
U.S.A.

708/634-3505

CM1200C COMPONENT DESCRIPTION

(Continued from page 14)

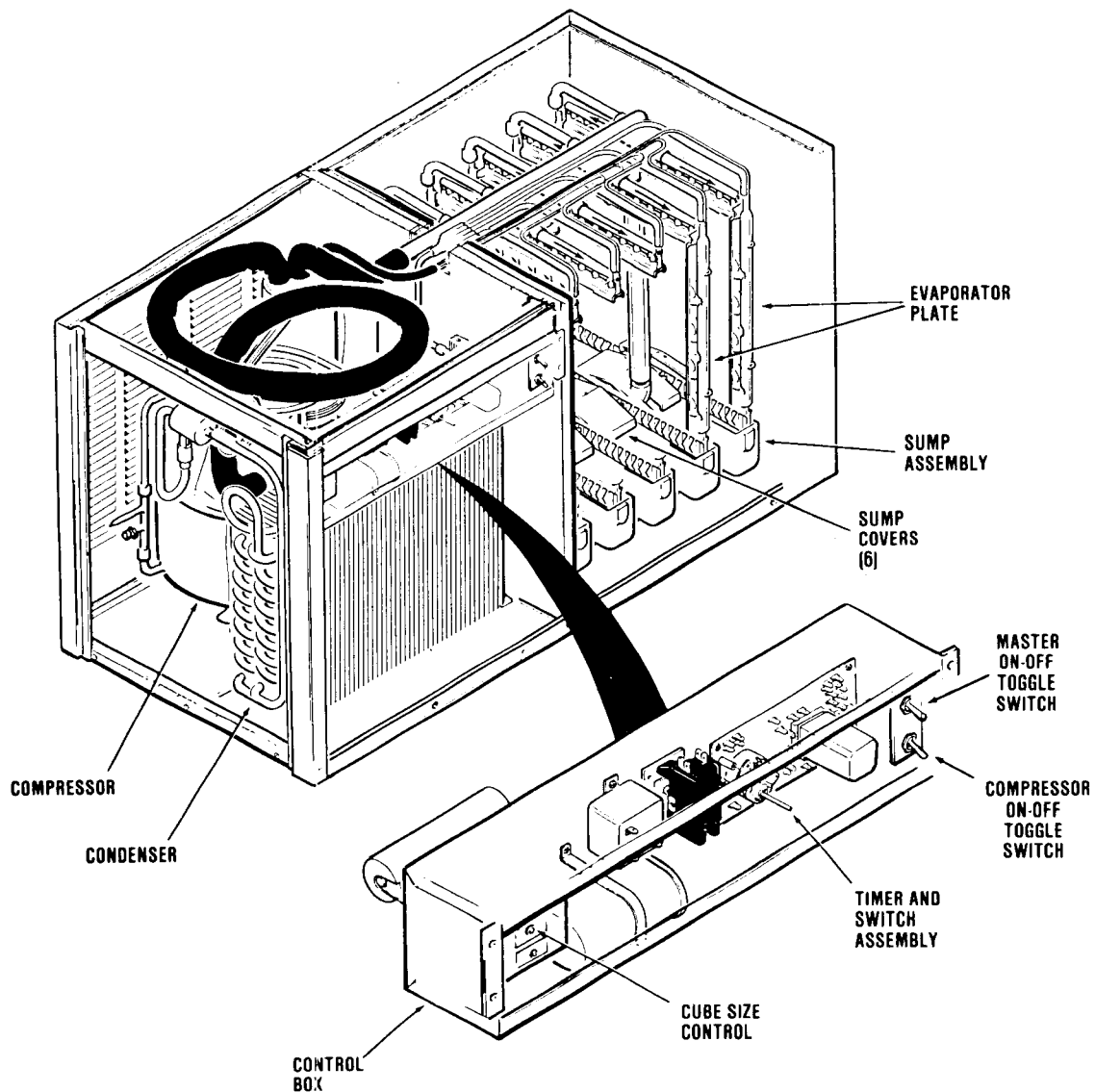
Gravity flow returns the water to the sump reservoir for recirculation.

WATER REGULATOR VALVE — Water-Cooled Model

The water regulator valve functions to maintain a constant compressor head pressure, by regulating the amount of inlet water flow through the condenser on water-cooled models. The valve operates through the refrigerant system high side

pressure. Rotating the adjusting screw, located on top of the valve, can INCREASE or DECREASE the water flow through the water-cooled condenser, which in turn, will DECREASE or INCREASE the compressor operating head pressure.

When installing a replacement water regulator valve, be sure the replacement valve is installed with the arrow positioned in the direction of the water flow.



Component Description

ADJUSTMENT, REMOVAL AND REPLACEMENT PROCEDURES

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.

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 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 icemaker 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.

As a reverse acting temperature control, adjustment on the cube size control is performed to cause either larger sized ice cubes or smaller sized ice cubes to be produced.

To produce **LARGER** sized ice cubes:

1. Locate the cube size control, in the left end of the control box.
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 desired ice cube size is achieved.

To produce **SMALLER** sized ice cubes:

1. Locate the cube size control, in the left end of the control box.
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 adjust in one-eighth turn increments, until desired ice cube size is achieved.

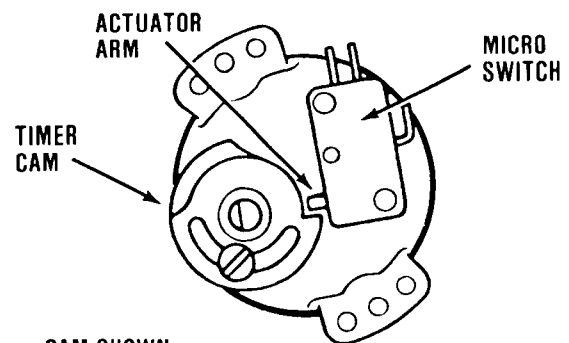
ADJUSTMENT OF THE TIMER & SWITCH ASSEMBLY

The timer & switch assembly is factory set, so that one complete revolution of the cam on the Timer represents fifteen minutes. Eleven 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.

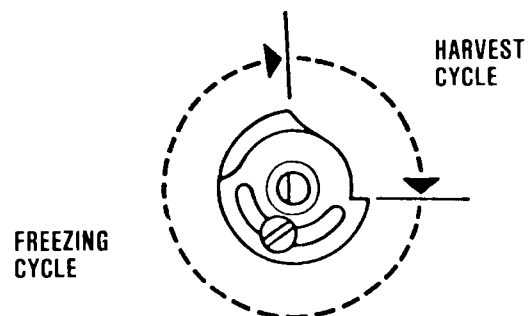
Rotating the shaft of the timer cam, **CLOCKWISE**, will allow positioning the actuator arm of the microswitch on the cam at the selected start position for either the freezing cycle or harvest cycle, as required, during the **START UP** procedures and in the **CLEANING** instructions. Rotating the shaft **COUNTERCLOCKWISE** will unscrew the shaft from the threaded stud on the timer cam.

WARNING

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.



CAM SHOWN AT BEGINNING OF HARVEST CYCLE



CAM SHOWN DIVIDED INTO TYPICAL FREEZING & HARVEST CYCLES

Adjustment of the Timer & Switch Assembly.

To adjust the timer switch assembly:

- A. **HARVEST CYCLE:** To start, slowly rotate the shaft of the timer & switch assembly, located in the control box, **CLOCKWISE**, until the actuator arm on the microswitch drops off of the outer cam into the cam slot. An audible click can be heard, but in a noisy area, look at the cam and switch to observe the event. See *Adjustment of the Timer and Switch Assembly* illustration.
- B. **FREEZING CYCLE:** To start, slowly rotate the shaft of the timer & switch assembly, located in the control box, **CLOCKWISE**, until the

CM1200C ADJUSTMENT PROCEDURES

actuator arm on the microswitch rides up and out of the cam slot to the start of the surface of the outer cam.

////////// **WARNING** //////////

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

//////////

For installations having stacked CM1200 cubers mounted on a bin, disregard steps to remove the top panel. Access to all areas and parts can still be gained through removal of the necessary front, side.

ADJUSTMENT OF THE WATER REGULATOR ASSEMBLY — WATER-COOLED MODELS

The correct compressor head pressure on water-cooled models is 135 PSIG. Adjusting the water regulator valve increases or decreases the rate of flow of water, through the water-cooled condenser; which increases or decreases the affected temperature/pressure of the compressor head pressure, **INCREASED** water flow, results in **DECREASED** or **LOWER** head pressure; while, **DECREASED** water flow, results in **INCREASED** or **HIGHER** head pressure.

To adjust the water regulator assembly:

To **INCREASE** the head pressure: Rotate the adjusting screw **COUNTERCLOCKWISE**.

To **DECREASE** the head pressure: Rotate the adjusting screw **CLOCKWISE**.

Check change in compressor head pressure, and repeat step A or B as necessary, to achieve desired operating head pressure.

REMOVAL AND REPLACEMENT OF THE BIN THERMOSTAT CONTROL

To remove the bin thermostat control:

1. Remove screws and all front panels.
2. Remove two screws at the top of the control box and **OPEN** the hinged Cover downward.
3. Unthread the capillary tube and remove from the bin thermo control bracket at the bottom left side of the evaporator section.
4. Remove two screws attaching the bin thermostat control to the left end of the control box; then, carefully pull the capillary tube out of the evaporator section through the dividing wall and grommet and carefully remove the bin thermostat control and

capillary tube from the control box and refrigeration section of the cabinet.

To replace the bin thermostat control, reverse the removal procedure.

REMOVAL AND REPLACEMENT OF THE COMPRESSOR ASSEMBLY

To remove the compressor assembly:

1. Remove screws and the top and left side panels.
2. Bleed off or blow the refrigerant charge through the Schrader valve.
3. Remove the cover from the terminal box on the compressor; then, remove electrical leads from the compressor.
4. Unsolder compressor.
5. Remove four bolts and washers which secure the compressor to the chassis mounting base.
6. Remove the compressor from the cabinet.

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.

REMOVAL AND REPLACEMENT OF THE CONDENSER — AIR-COOLED MODELS

To remove the condenser:

1. Remove screws and the left side panel and left front panel.
2. Bleed off or blow the refrigerant charge through the Schrader valve.
3. Unsolder and disconnect refrigerant lines from the condenser.
4. Unsolder and remove the drier from the refrigerant lines connecting to the condenser.
5. Remove screws, lockwashers and the condenser from the chassis base.
6. Remove screws and condenser shroud from old condenser.

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.

To replace the air-cooled condenser, reverse the removal procedure.

REMOVAL AND REPLACEMENT OF THE CONDENSER — WATER-COOLED MODELS

To remove the condenser:

1. Remove screws and the left front panels.
2. Bleed off or blow the refrigerant charge through the Schrader valve.
3. Check to be sure building source water inlet supply shutoff valve to rear of chassis is **OFF**.

CM1200C REMOVAL AND REPLACEMENT PROCEDURES

4. Disconnect water-cooled condenser inlet water line at the water regulator assembly outlet fitting.
5. Unsolder the refrigerant capillary tube distributor line at the outlet end of the drier, the refrigerant outlet line from the bottom of the condenser, and remove the drier from the lines.
6. Unsolder the compressor discharge line, at the top of the water-cooled condenser.
7. Unsolder the condenser water outlet line, at the top of the water-cooled condenser.
8. Remove two screws and washers and the water-cooled condenser from the cabinet.

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.

To replace the water-cooled condenser, reverse the removal procedures.

WARNING

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

REMOVAL AND REPLACEMENT OF THE CUBE SIZE CONTROL

To remove the cube size control:

1. Remove screws and the left front panel, Top panel and control box cover to gain access to the cube size control.
2. Trace capillary tube, from the cube size control, to the refrigerant suction line on the evaporator platen assembly; then peel back the insulation.
3. Remove the coiled capillary tube bulb from the tube well on the suction line.
4. Remove electrical leads from the cube size control.
5. Remove screws and the cube size control.

To replace the cube size control, reverse the removal procedure.

REMOVAL AND REPLACEMENT OF THE DRIER

To remove the drier:

1. Remove screws and the left side panel.
2. Bleed off or blow the refrigerant charge through the Schrader valve.
3. Unsolder refrigeration lines at both ends of the drier, and remove the drier.

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.

To replace the drier:

CAUTION

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.

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 the drier in the refrigerant lines with the arrow positioned in the direction of the refrigerant flow.
2. Solder the drier into the lines, two places, taking precautions to NOT OVERHEAT the drier body, during installation soldering.
3. Purge the system and check for leaks.
4. Thoroughly evacuate the system to remove moisture and non-condensables.
5. Charge the system with refrigerant, by weight. SEE NAMEPLATE.
6. Replace and attach the left side panel.

REMOVAL AND REPLACEMENT OF THE EVAPORATOR PLATE ASSEMBLY

To remove the evaporator plate:

1. Remove screws and the top and two front panels.
2. Bleed off or blow the refrigerant charge through the Schrader valve.
3. Remove hose clamp and rubber cap from bottom of sump assembly and drain all water. Replace rubber cap and hose clamp.
4. Slide three hose clamps off and unclamp Tygon tubes at left end of the Sump Assembly.
5. Remove sump covers.
6. Disconnect Tygon water inlet tube(s), at the water manifold tee(s), above the evaporator plates.
7. Unsnap the sump assembly from the lower front and rear attachment points on each evaporator plate; then, CAREFULLY lower the RIGHT END of the sump assembly to clear the bottom of the plates, and work the connecting

CM1200C REMOVAL AND REPLACEMENT PROCEDURES

Tygon tubes OFF the LEFT end, and carefully remove the sump assembly so as not to split or break the plastic.

8. Slide the water distributor tubes forward, about 1/8-inch along the top of the evaporator plate to be removed, until the rear water distributor tube can be lifted upward, see *Removal of the Water Distributors, Manifolds and Tees*.
9. Lift the end of the rear water distributor tube and slide the distributors toward the rear along the top of the evaporator plate, until the flexible front notch is cleared.
10. Unsnap and disconnect each front and rear water distributor tube from the water manifold section.

If all ten water distributor tubes are being removed, disconnect the water manifold tubes at the tee(s) and remove the connected water distributors and water manifold tubes as larger assemblies, from the tops of the evaporator plates; then, disassemble the individual parts at the workbench.

CAUTION

Use **EXTRA PRECAUTION** to protect the plastic parts during the next step to unsolder the refrigerant lines, two places, at the top of the evaporator plate. Position wet cloths over top of plates, as well as over the plastic liner at the rear, or sides, to prevent accidental head damage, or possible fire from torch flame.

11. Unsolder and remove the refrigerant lines at top front and rear of the evaporator plate to be replaced.
12. Remove screws at one end of the front braces, then, loosen the braces just enough to remove the evaporator plate. Temporarily replace the braces, to support the remaining evaporator plates.

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.

To replace the evaporator plate, reverse the removal procedure.

WARNING

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

REMOVAL AND REPLACEMENT OF THE FAN MOTOR ASSEMBLY — AIR-COOLED MODELS — (TWO)

To remove the fan motor assembly:

1. Remove screws and the left side panel, left front panel and control box cover.
2. Disconnect the two electrical leads, from the fan motors, at the control box assembly.

BEFORE next step, measure or make accurate mental note of the distance the fan blades extend beyond the fan shroud, so during replacement the correct distance is maintained.

3. Remove screws and each fan motor and bracket assembly; and remove the fan motors and brackets from the chassis base.
4. Loosen set screws on the fan blade and remove the fan blade from the fan motor. Mark or note position of the blade on the shaft of the fan motor, for replacement.
5. Remove screws and lockwashers and separate the fan motor from the fan motor bracket.

To replace the fan motor assembly, reverse the removal procedure.

Be sure to replace the fan blade with the hub of the fan blade facing the fan motor, to ensure air flow is toward the fan motor; and, is set at marked location on shaft and setscrews tightened on the FLAT part of the shaft of the fan motor.

WARNING

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

REMOVAL AND REPLACEMENT OF THE INLET WATER SOLENOID VALVE ASSEMBLY

To remove the inlet water valve assembly:

1. Remove screws, left front, left side and top panels.
2. Loosen and remove inlet water line fitting from the inlet water solenoid valve assembly.
3. Remove two screws and remove water valve assembly from the dividing wall.

To replace the inlet water valve assembly, reverse the removal procedure.

REMOVAL AND REPLACEMENT OF THE SUMP ASSEMBLY

To remove the sump assembly:

1. Remove screws and the right front panel.

CM1200C REMOVAL AND REPLACEMENT PROCEDURES

2. Remove hose clamp and rubber cap from bottom of sump assembly and drain all water. Retain rubber cap and hose clamp.
3. Slide three hose clamps off and unclamp Tygon tubes at left end of sump assembly.
4. Remove hose from overflow drain.
5. Disconnect the two Tygon tubes at the water manifold tees above the evaporator plates.
6. Unsnap the sump assembly from the lower front and rear attachment points on each evaporator plate; then, carefully lower the right end of the sump assembly, to clear the bottom of the plates, and work the connecting Tygon tubes OFF the left end, carefully to prevent damage to the plastic.
7. Unscrew nuts on two fittings to disassemble three female tubes and O-Rings, from the outside of the sump assembly, connected to one pump pick-up tube and two male tubes, installed from inside the sump assembly and remove the overflow filters.

To replace the sump assembly, reverse the removal procedure. BE SURE the pump pickup tube, lowest of three tubes, is installed with the slotted opening facing DOWN, toward bottom of sump.

REMOVAL AND REPLACEMENT OF THE WATER DISTRIBUTOR TUBES AND MANIFOLD TUBES

To remove the water distributor tubes and manifold tubes:

1. Remove screws and the right front panel.
2. Slide each water distributor tube forward about 1/8-inch along the top of the evaporator plate, until the rear water distributor tube can be lifted upward.
3. Lift the end of the rear water distributor tube and slide the distributors toward the rear along the top of the evaporator plate until the flexible front notch is cleared.
4. Unsnap and disconnect each front and rear water distributor tube from the water manifold section.

If all ten water distributor tubes are being removed, disconnect the water manifold tubes at the tee(s) and remove the connected water distributors and water manifold tubes as larger assemblies, from the tops of the evaporator plates; then, disassemble the individual parts at the workbench.

To replace the water distributor tubes and manifold tubes, reverse the removal procedure. BE SURE the notches in the water manifold tubes properly engage the alignment keys in the tee(s).

BE SURE each front water distributor tube is securely fastened at the notch at the top front of the evaporator plate.

Check identical attachment for each rear water distributor tube and notch; also, that the distributor/manifold connections at the top center of each evaporator plate is snug against the top of the plate.

REMOVAL AND REPLACEMENT OF THE WATER PUMP ASSEMBLY

To remove the water pump assembly:

1. Remove screws and two front panels.
2. Remove drain plug and drain the sump.
Air-Cooled Only:
3. Remove screws at each end of the control box and carefully pull the control box and attached wires out, and lay the control box on top of the cabinet; or, let hang down in front of the cabinet.
4. Remove three hose clamps connecting three Tygon tubes to the left end of the sump assembly.
5. Disconnect electrical leads and ground wire from the water pump assembly.
6. Remove two screws and washers, attaching the water pump assembly to the water pump bracket; then, work the Tygon tubes loose from the sump assembly and remove the water pump assembly.
7. Remove clamps, tygon tubes and insulation.

To replace the water pump assembly, reverse the removal procedure.

REMOVAL AND REPLACEMENT OF THE WATER REGULATOR ASSEMBLY — WATER-COOLED MODELS

To remove the water regulator assembly:

1. Remove screws and the left front panel.
2. Check to be sure building source water inlet supply shutoff valve to rear of chassis is OFF.
3. Bleed off or blow the refrigerant charge through the Schrader valve.
4. Disconnect water inlet supply line at the left bottom rear of the chassis.
5. Disconnect water line at the inlet and outlet fittings on the water regulator assembly.
6. Unsolder the water regulator valve capillary tube from the compressor refrigerant discharge line.
7. Remove two screws and the water regulator assembly from the chassis base.

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.

To replace the water regulator assembly reverse the removal procedure.

CM1200C

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 chart lists corrective actions for the causes of known symptoms of certain problems that can occur in the icemaking-refrigeration system.

ICEMAKING - REFRIGERATION SYSTEM

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Irregular size cubes some cloudy.	Some distributor holes plugged.	Clean distributor holes.
	Shortage of water.	Clean water sump. See Shortage of water CORRECTION.
	Unit not level.	Level cabinet, as required.
Cubes too large.	Dirty air-cooled condenser.	Clean condenser.
	Cube Size Control set too cold.	Rotate Cube Size Control dial toward WARMER.
Cubes too small.	Cube Size Control set too warm.	Rotate Cube Size Control dial toward COLDER.
	Partially restricted capillary tube.	Replace heat exchanger assembly.
	Moisture in refrigeration system.	Blow refrigerant charge; replace drier; evacuate system; add proper refrigerant charge.
	Shortage of water.	See Shortage of water CORRECTION.
Cloudy Cubes.	Shortage of water.	See Shortage of water SYMPTOM.
	Dirty water supply.	Install water filter or softener.
	Accumulated impurities.	Use SCOTSMAN Ice Machine Cleaner. Procedure V-III.
Shortage of water.	Short Harvest Cycle.	Adjust cam of timer and switch assembly.
	Water leak in sump area.	Locate Leak and correct condition.
	Partial restrictions in water strainer.	Clean or replace strainer.

CM1200C SERVICE DIAGNOSIS

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Decreased Ice capacity.	Restricted water flow to condenser.	Restore proper water flow rate.
	High head pressure, result of dirty Condenser or faulty Fan Motor.	Clean Condenser. Repair or replace Fan Motor.
	Non-condensable gas in the system.	Purge the system and recharge per nameplate requirements.
	Poor circulation or extreme hot location.	Relocate the cabinet; or provide ventilation by cutting openings.
	Overcharge of refrigerant.	Slowly purge off to correct charge.
	Hot gas solenoid valve leaking.	Replace valve.
	Partially restricted capillary tube.	See Cubes Too Small CORRECTION.
	Defective Compressor.	Replace Compressor.
Poor harvests. Icemaker does not harvest.	Too short defrost time.	Check and adjust harvest cycle.
	Restriction in water inlet line.	Check strainer and flow check valve.
	Hot gas solenoid does not open. Binds or burned out.	Replace solenoid.
	Undercharge of refrigerant.	Charge to nameplate requirements.
	Water pressure too low.	Check for 20 PSI flowing water.
Compressor cycles intermittently.	Low voltage.	Check for circuit overload. Check building supply voltage, if low, contact power company.
	Dirty Condenser.	Clean Condenser with vacuum cleaner or brush. DO NOT USE A WIRE BRUSH.
	Air circulation blocked.	Locate cabinet with adequate air space for proper air flow.
	Defective Fan Motor.	Replace Fan Motor.
	Non-condensable gases in system.	Purge the system and recharge per nameplate requirements.
Icemaker will not operate.	Blown fuse in line.	Replace fuse and check for cause.
	Master switch in OFF position.	Set switch to ON position.
	Low or loose at water pressure.	Restore water pressure — reset high pressure control.
	Faulty Master switch.	Replace switch.
	Timer contacts open.	Replace Timer microswitch.

MAINTENANCE & CLEANING INSTRUCTIONS

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.

ICEMAKER

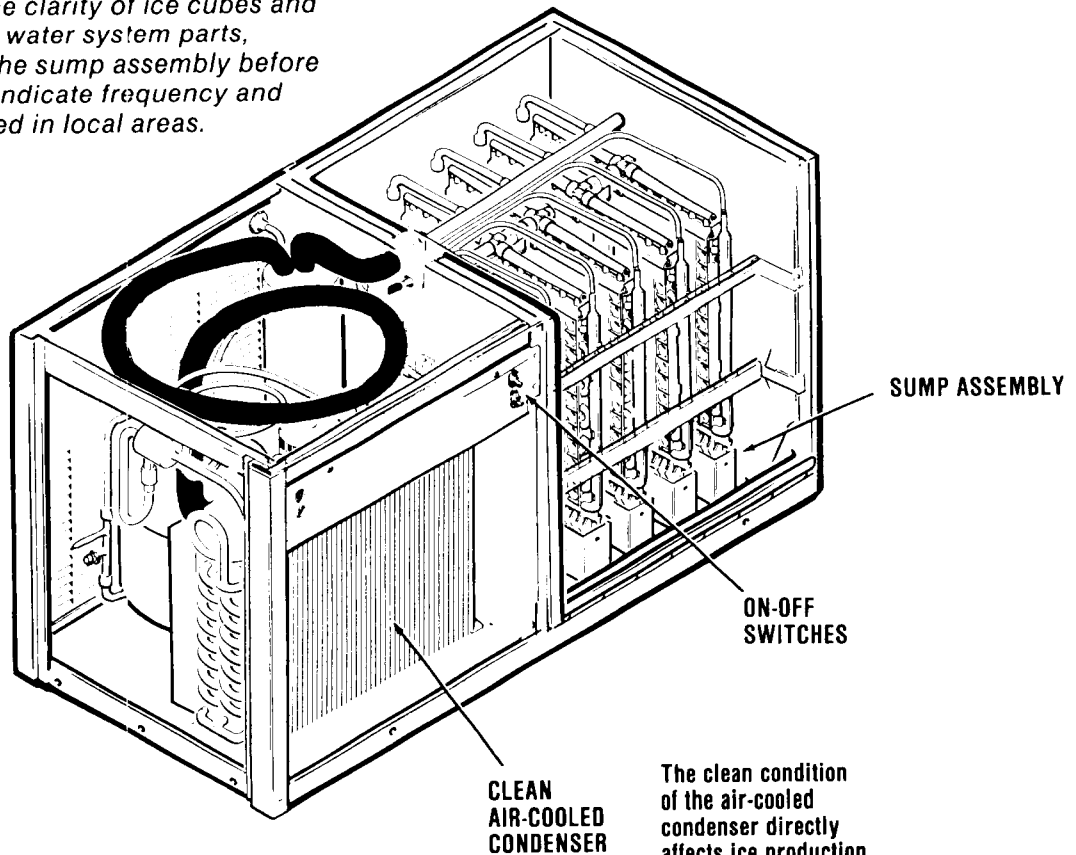
THE FOLLOWING MAINTENANCE SHOULD BE SCHEDULED AT LEAST TWO TIMES PER YEAR ON THIS ICEMAKER. CALL YOUR AUTHORIZED SCOTSMAN SERVICE AGENCY.

1. Check and clean or service any optional water treatment devices, if any installed.
2. Check the CM1200 cabinet is level, in the side-to-side and front-to-back directions.
3. Clean the water system, evaporator plates and sump assembly, using a solution of SCOTSMAN Ice Machine Cleaner. Refer to CLEANING

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 system parts, evaporator plates and the sump assembly before and after cleaning will indicate frequency and procedure to be followed in local areas.

4. Check that each evaporator plate assembly is snug and secure on each wall support on the bin rear wall, in the holes of the front brace, and in each indent recessed in each arm of the sump assembly, below the bottom corners of the evaporator plates.
5. Check and tighten all bolts and screws.
6. Check and tighten all electrical connections.
7. Check hot gas solenoid valve for correct operation.
8. With MASTER ON-OFF toggle switch and COMPRESSOR ON-OFF toggle switch in the OFF position, clean the condenser using vacuum cleaner, whisk broom or brush. Instruct customer to clean condenser frequently. DO NOT USE A WIRE BRUSH.
9. Check for water leaks and make corrections.
10. Check the bin thermostat control bulb to test shut off. Holding ice against bin thermostat control bulb should cause the icemaker to shut off at the end of the harvest cycle.

Within minutes after ice is removed from the bin thermostat control bulb, the icemaker will restart.



Maintenance and Cleaning

CM1200C MAINTENANCE & CLEANING INSTRUCTIONS

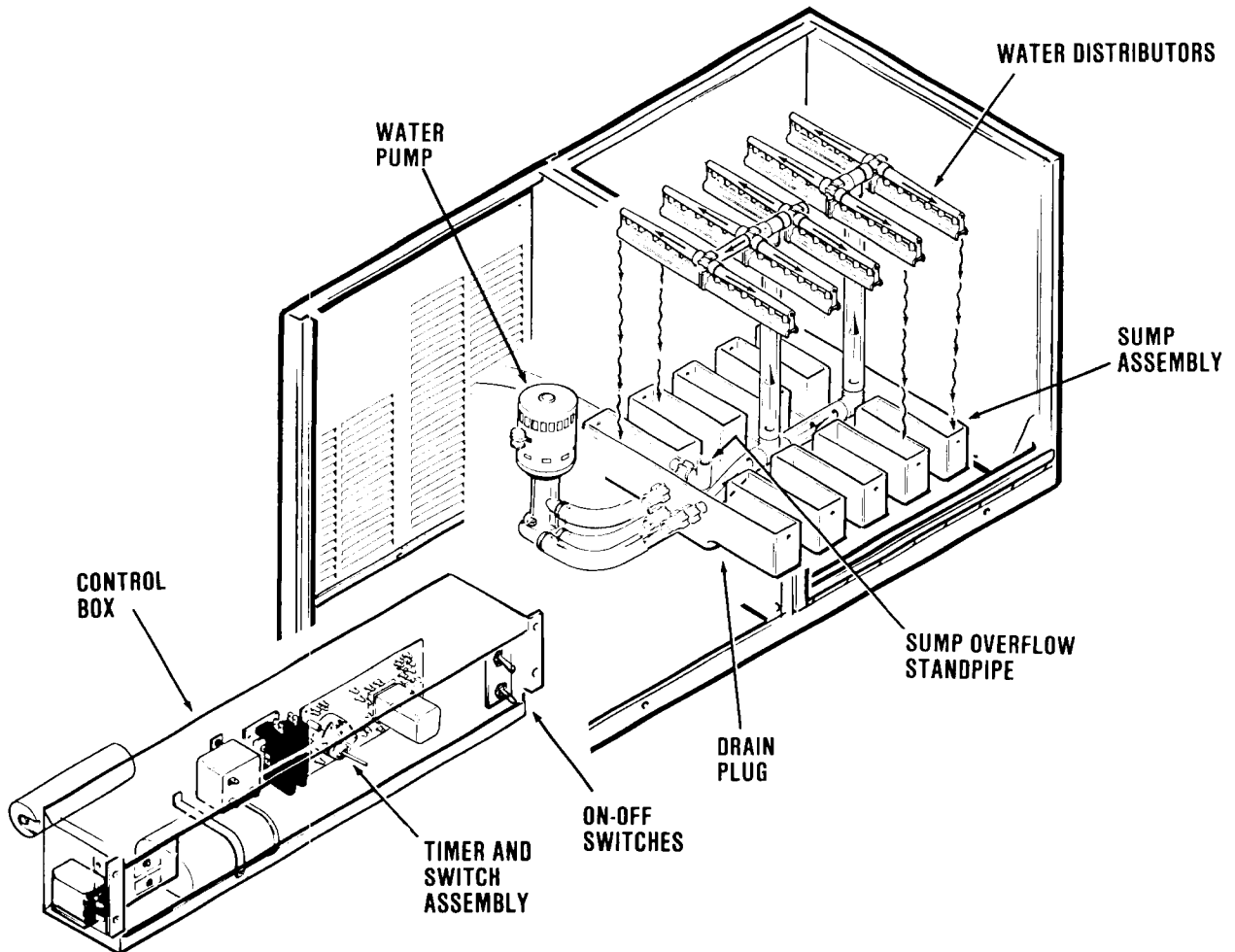
CLEANING - Icemaker

1. Remove screws and the front, and left side panels.
2. Check that both toggle switches on the control box are in the OFF position.
3. Rotate the shaft of the timer and switch assembly, located in the control box, CLOCKWISE, until the actuator arm on the microswitch rides up out of the cam slot, to the outer surface of the cam, then stop. This is the start position for the freezing cycle. See START Positions for the Freeze/Harvest Cycles.
4. Position a container for catching drain water under the rubber plug at the bottom of the sump assembly.
5. Remove hose clamp, the rubber plug, and drain all water from the sump assembly into the container.
6. Replace rubber plug and hose clamp.

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.

7. Prepare cleaning solution: Mix 24 ounces of SCOTSMAN Ice Machine Cleaner with two gallons of fresh, potable warm water.
8. Carefully pour the cleaning solution into the sump assembly.
9. Immediately move the MASTER ON-OFF toggle switch on the control box, to the ON position.
10. Allow the system to operate for about thirty minutes.

No ice cubes will be made, because the COMPRESSOR ON-OFF toggle switch is off.



Cleaning Water System

CM1200C MAINTENANCE & CLEANING INSTRUCTIONS

11. At the end of thirty minutes, move the main ON-OFF switch to the OFF position. Remove drain plug and drain the cleaning solution from the sump and rinse. Replace drain plug.
12. Rotate the shaft of the timer and switch assembly CLOCKWISE advancing through the freezing cycle to start the harvest cycle. 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.

If, after completing the cleaning and flushing procedure, inspection of the water flow reveals that one or more evaporator plates does not have a full flow of water for each vertical row of cubes, shut down the operation and remove and clean all water distributor tubes. Re-install the water distributor system.
13. Move the compressor ON-OFF toggle switch to the ON position to start the icemaking process.
14. Check each ice cube harvest, until the ice cubes are clear and the acid taste is eliminated.

CAUTION

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

15. Add hot water to the bin to melt the ice cubes and thoroughly wash and rinse inner surfaces of the bin.
16. Check each ice cube harvest until the ice cubes are clear and the acid taste is eliminated.
17. Wash and wipe down all interior surfaces of the evaporator section of the cabinet with a clean cloth, or disposable paper wipers, soaked in the cleaning solution.
18. Wipe all washed surfaces dry, including the bin, with clean dry cloths, or clean dry disposable paper wipers.
19. Replace all panels.
20. Clean and sanitize the interior bin surfaces each week.