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SPECIFICATIONS

	SC-1000H	SC-1000WH
Compressor	3 hp twin cylinder Semi Hermetic	3Hp twin cylinder Semi-Hermetic
Condenser	Cleanable Air Cooled	Cleanable Water Cooled
Refrigerant	R12	R12
Refrigerant Charge	115 ounces	115 ounces
Refrigerant Control	Twin Capillary Tube	Twin Capillary Tube
Power Consumption	14.6 Amp., 3 Wire 230 V., 60 Hertz Single Phase	8.4 Amp., 3 Wire 230 V., 60 Hertz Single Phase
Water Consumption to Produce Ice	30.9 Gallons per hour	30.9 Gallons per Hour
Water used by Condenser		1 to 3 1/2 Gallons per minute. Varies with water temperature.
Companion Bin	*B-700	B-700
Cube Size	Scotsman Large cube	Scotsman Large cube
Cubes Per Harvest	340	340
Average Operating Head Pressure	135-155 P.S.I.	140 P.S.I.
Average Operating Back Pressure	50-60 During off cycle	5 P.S.I. End of freeze cycle.

NOTE:

All Scotsman Cubers require neutral wire for secondary 115 volt components curcuit. 3 phase cubers require 4 wire service with neutral. Special voltages upon request.

* Models B-700 storage bins are not equipped with legs.Order leg package from Scotsman Sales Department.

SCOTSMAN®
ICE MACHINES

PRODUCT NAME:

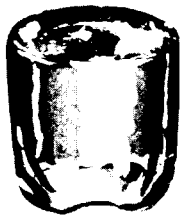
SCOTSMAN®
CUBER MODEL 1000 SERIES

MANUFACTURER:

QUEEN PRODUCTS DIVISION
KING-SEELEY THERMOS CO.
ALBERT LEA, MINNESOTA 56007

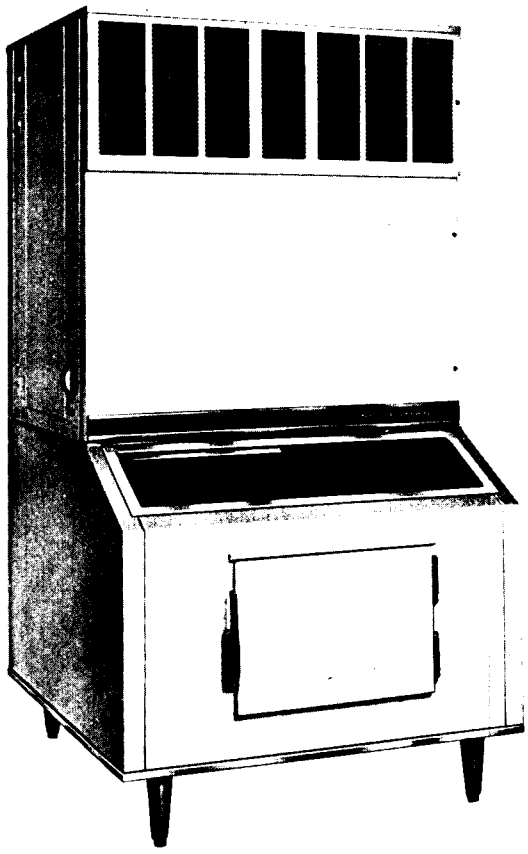
SHOWN 3 QTR. SIZE

Model SC1000 produces large cubes



Model SM1005 produces medium cubes

Model MM1010 produces small cubes



(ILLUSTRATED ON B700 BIN)

ice making capacity

Daily Ice Capacity is directly related to condenser air inlet temperature, water temperature, and age of machine.

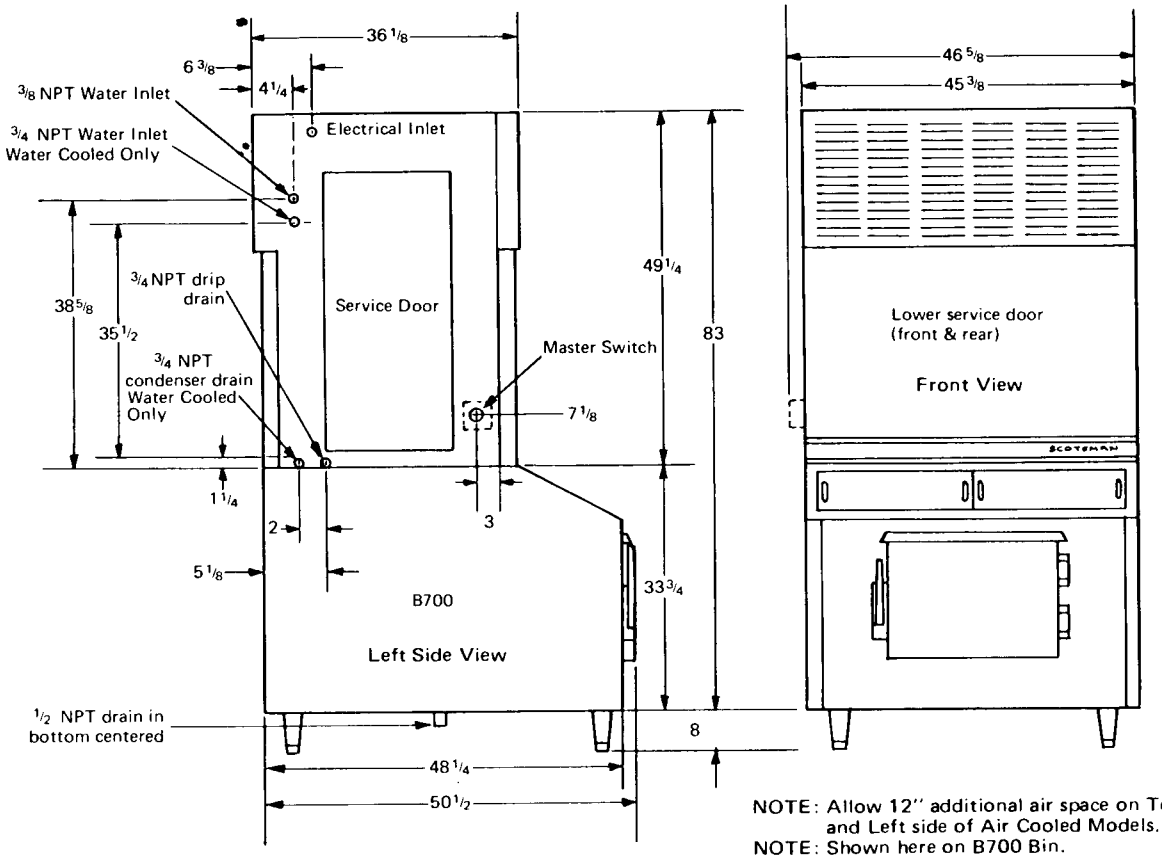
NOTE: To keep your SCOTSMAN CUBER performing at it's maximum capacity, it is necessary to perform periodic maintenace as outlined on page 45 of this manual.

MANUFACTURER:

QUEEN PRODUCTS DIVISION
KING-SEELEY THERMOS CO.
ALBERT LEA, MINNESOTA 56007

1000 Series

Capacity: Refer to production chart.
Storage Bin: B700 Stainless Steel Lined
Height: 49-1/4"
Width: 46-5/8"
Depth: 36-1/8"



NOTE: Allow 12" additional air space on Top, Back and Left side of Air Cooled Models.
NOTE: Shown here on B700 Bin.

SPECIFICATIONS:

Model	Condensing Unit	Compressor Horsepower	Finish (P-painted) (SS-Stainless Steel)	Shipping Weight (lbs.)
SC1000HA	Air	3	P	915
SC1000HASS	Air	3	SS	915
SC1000WHA	Water	3	P	915
SC1000WHASS	Water	3	SS	915
SM1005HA	Air	3	P	915
SM1005HASS	Air	3	SS	915
SM1005WHA	Water	3	P	915
SM1005WHASS	Water	3	SS	915
MM1010HB	Air	3	P	915
MM1010HBSS	Air	3	SS	915
MM1010WHB	Water	3	P	915
MM1010WHBSS	Water	3	SS	915

Basic Electricals	Minimum Wire Sizes (w-wire) (g-gauge)			Total Amperages		
	SC 1000	SM 1005	MM 1010	SC 1000	SM 1005	MM 1010
Air Cooled						
115/230/60/1	3w 10g	3w 10g	3w 10g	23.1	23.1	23.1
115/208-220/ 60/3	4w 10g	4w 10g	4w 10g	20.1	20.1	20.1
Water Cooled						
115/230/60/1	3w 10g	3w 10g	3w 10g	20.9	20.9	20.9
115/208-220/ 60/3	4w 10g	4w 10g	4w 10g	17.9	17.9	17.9

Specifications subject to change without notice.

INSTALLATION LIMITATIONS

ELECTRICAL

1. Scotsman, like most manufacturers, purchases electrical motors that are rated to operate within 10% variance above or below nameplate ratings.

2. Improper voltages applied to Scotsman equipment can cause premature failures and burnouts. Failures of this type are not considered as factory fault or defect.

AMBIENT

WARNING — This machine is not designed for outdoor installations. This machine will not operate when air temperatures are below 50° F. or above 100° F.

This unit was not fabricated nor intended to be installed outdoors.

WATER

3. Scotsman Ice Systems require 20 pounds flowing water pressure to operate satisfactorily. Pressures lower than 20 pounds or unterruptions in the water supply can cause serious mechanical damage to this product.

This machine will not operate when water supply temperatures are below 40° F. or above 100%F.

INSTALLATION INSTRUCTIONS

The following installation instructions were written for use by a authorized tradesman only, not the user or customer. We suggest you call your local authorized Scotsman Service Agency for hook-up, and check out. He's listed under "Ice Making Machinery & Equipment" in your telephone book, yellow pages.

INSTALLTION

LOCATION OF THE ICE CUBE MACHINE

1. Select a location as convenient as possible for the user.
2. Accessible to the necessary electrical and plumbing connections.
3. If possible, have a minimum space of 12 inches above top and from left end panel for service.
4. A minimum of 24 inches for the convenience of the user in front of the machine.
5. Room temperature--minimum of 50 degrees, maximum of 100 degrees.

ALL INSTALLATIONS--Locate, if possible, so left end panel is accessible. Locate unit so proper circulation can be attained around the unit and behind it at least four inches. Provide plumbing and electrical connections so the unit can be moved out where the entire top can be removed and the unit can still be operated.

KITCHEN INSTALLTIONS--As a rule, the kitchen is not the most practical place to install an air-cooled condensing unit, as grease is almost always present and makes cleaning of the condensing unit difficult. Do not locate near range or steam table or other heating devices that may be used in the kitchen.

STOREROOM INSTALLATIONS--Be sure storeroom is of adequate size and properly ventilated. A small, poorly ventilated room will greatly impair effeiciency of the unit. The storeroom must be kept above 50 degrees in the winter months.

BASEMENT INSTALLTION---Locate machine in the coolest place. Locate the machine in a dry place. Keep away from furnace and boiler room. Keep away from service chutes and runways, also coal or other dust of any kind. If the machine is set over a floor drain, block the machine up enough to eliminate any possibe damage to the machine.

LOCATE THE MACHINE SO IT CAN BE SERVICED WHEN NECESSARY. ALLOW AT LEAST 12 INCHES OF SPACE AROUND THE MACHINE FOR CIRCULATING AIR.

UNCRATING

1. If possible, do not uncrate until equipment is in permanent location.
2. Storage bin and machine compartments are shipped in separate crates.
3. Remove hold-down bolts from skids.
4. Remove crate in usual manner for wood crating.

PREPARATION FOR INSTALLATION

1. Inspect complete unit cabinetry for shipping damage. Notify carrier of concealed damage claims.
2. Remove all service doors and panels.
3. Loosen motor compressor hold down nuts until motor compressor rides freely on mounting springs.

PREPARATION FOR INSTALLATION

5. Remove all masking tape and packing members from curtains and inner cube making compartments. Re-align components such as sump pump or cube racks that may have shifted in transit.

6. Remove water strainer from compressor section for installation on unit or in water supply line feeding unit.

7. Open electrical control box and prepare for hook up. Use knock outs, cord connectors, etc. Then check unit name plate voltage against building source voltage to make sure they correspond. Caution - Improper voltage applied to units will void your warranty protection.

8. Select unit location prior to hook up of water, drain and electric in accordance with local and nation codes, minimum room temperatures 50% Fahrenheit. On air cooled models select well ventilated location.

9. Remove service manual from storage bin and wipe bin clean with damp cloth.

SETTING UP MACHINE

1. Be sure floor strength is capable of 2,000 pounds in an area of 46 inches by 50 inches.

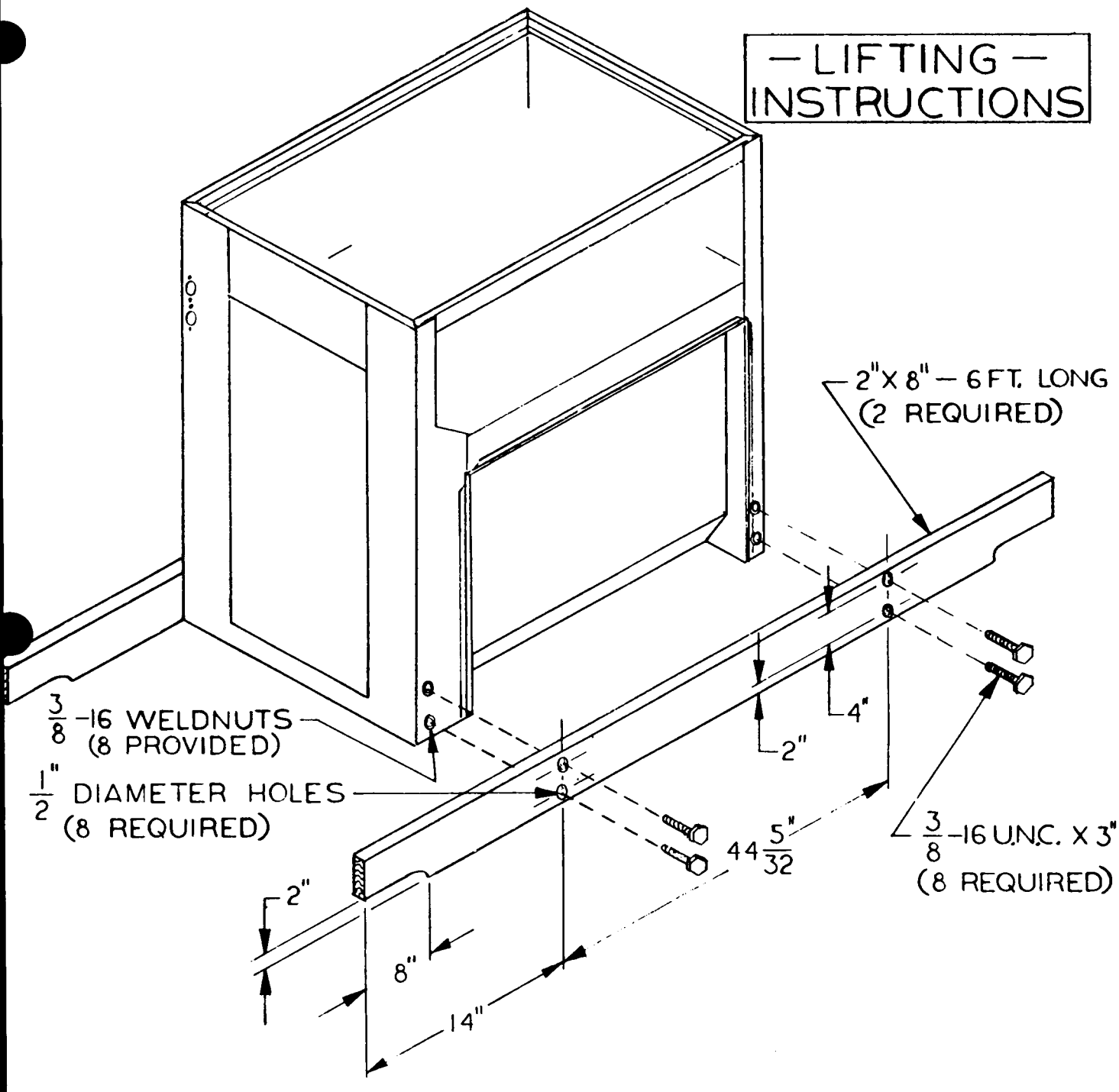
2. If ceiling height permits, use 8 inch base legs for the storage bin which will make a more convenient height for the user and allow more fall from the storage bin drain.

3. Storage bin must be absolutely level. (This is important).

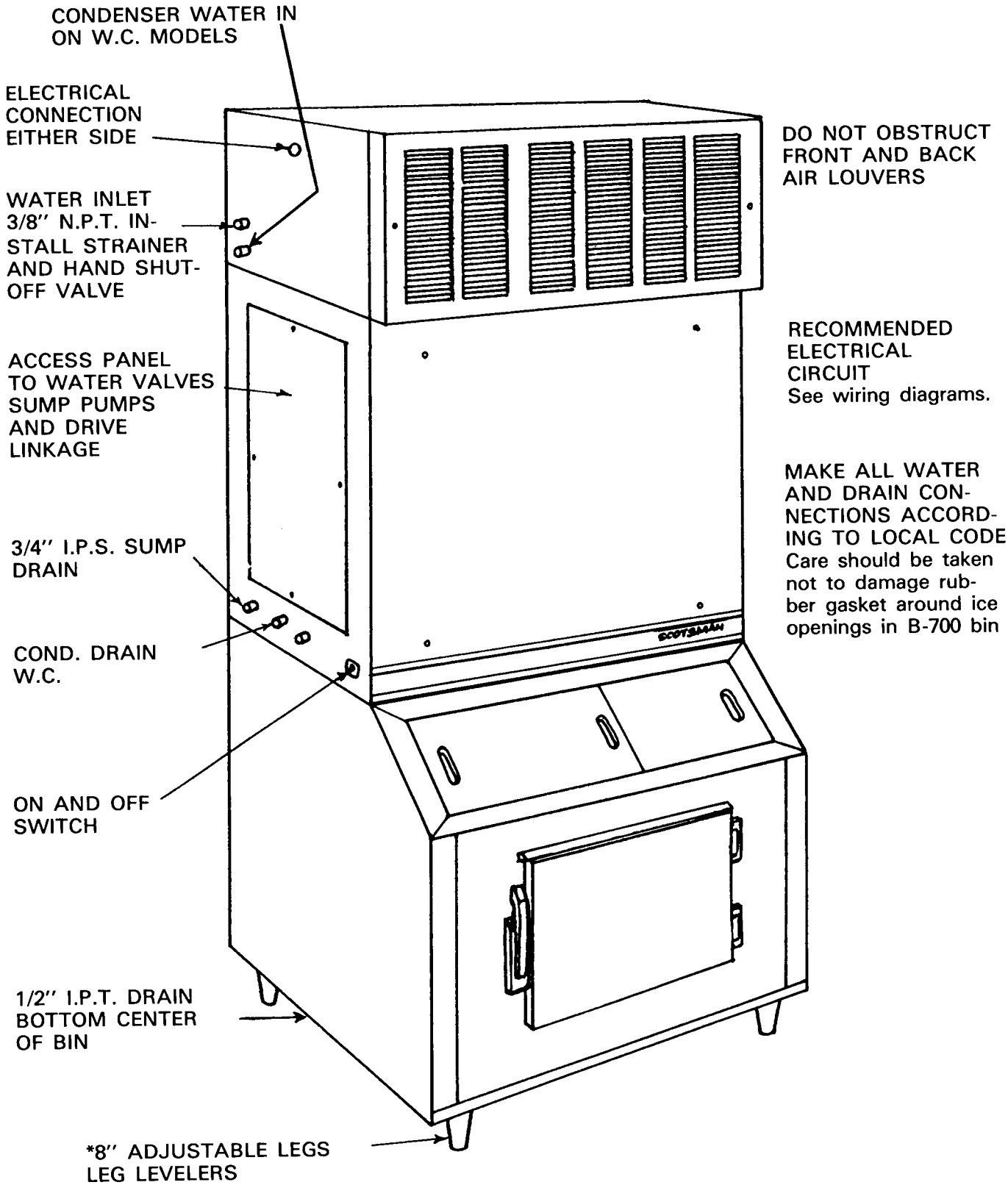
PLACING MACHINE SECTION IN POSITION ON ICE STORAGE COMPARTMENT

1. Remove top and bottom doors on front and back of unit.
2. Extreme caution must be used to prevent damage to equipment or injury to the personel.
3. Weld nuts for attaching carrying handles have been incorporated in each unit. Two in each corner of the front and back, these are 3/8" and spaced 4" x 43 5/8".
4. For carrying handles use 2 x 6's at least 8 feet. This allows 2 feet on each end for hand holds.
5. On the B-700 bin, care should be taken to avoid damaging rubber gasket around opening.

— LIFTING — INSTRUCTIONS



REMOVE DOORS. BOLT THE 2" X 8"S TO THE MACHINE BY MEANS OF EIGHT $\frac{3}{8}$ -16 U.N.C. CAP SCREWS INTO THE WELDNUTS PROVIDED IN THE FRAME.



SC-1000 INSTALLATION ON B-700 BIN

* LEGS OPTIONAL

PLUMBING

1. Refer to Installation Diagram.
2. Water inlet should be 3/8" pipe or larger.
3. Strainer should be installed on outside of machine as close as possible to unit.
4. A shut-off valve either of globe or gate type should be installed next to strainer for the convenience of the service man.
5. (SC 1000 is equipped with three separate drains so as to comply with all plumbing codes.)
6. Drain marked sump should be kept 3/4" in size with adequate fall which assures complete emptying of the sump tank at the end of the freezing cycle; and also with enough velocity to remove any sediment or solids which may have accumulated from the preceding batch of ice cubes.
7. Storage drain should be connected to open drain.
8. The drain from the condensor on W.C. units has a slight pressure NOTE: If outlet of conected drain is visible, it is helpful to the service man in checking condensor water valve.

WATER SUPPLY AND DRAIN CONNECTIONS

Page 5 shows recommended water piping connections and drain facitlities for Model SC-1000

WATER SUPPLY

The cuber water supply line is 3/8" N.P.T. for all units. Connect to a cold water supply line with regular plumbing fittings with a shut-off valve installed in an accessibe place between supply line and machine. The water strainer supplied with the unit should be mounted with clean-out plug down. Locate the strainer next to the machine and the arrow in the direction of the flow.

Use care in connecting up water line to the machine. Water supply must be installed to conform with local code.

DRAIN

The recommended drain 3/4" N.P.T. tubing. Sweat to drain connections, must be run to open or trapped drain. If drain is a long run, allow a 1/4" pitch per foot. Drain must be installed to conform with local code. Run separate 1/2" bin drain.

WATER TREATMENT

1. In areas where vast amounts of solids and impurities are present in the water supply, it may be necessary to use some type of filtering equipment on the water that is used in the actual manufacture of the ice and not for the condenser.
2. If above condition is true, it is suggested to disconnect water regulator from present location in machine compartment and connect it to a 3/8" OD copper line which may be run to the filtering equipment.
3. For water treatment over and above normal local impurities, consult Service Dept., Scotsman Queen Products, Albert Lea, Minnesota.

PLACING OF BIN THERMOSTATE BULB IN STORAGE AREA

1. When mounting SC-1000 on B-700, 2 holes for fastening thermobulb are located on the back wall of the bin
2. Control has 12 foot cap tube. This should be brought down right front of freezing chamber, under cuber close to right side.
3. Bulb cover, gasket, and 2 buttons are packed with cuber.
4. When mounting unit on custom-built Bin, bulb should be mounted close to the bottom, back, right-hand corner of the cuber.
5. Bulb should always be mounted so as to not be damaged by scoops or shovels

ELECTRICAL

1. IMPORTANT: An ice machine must be connected by competent electrician.
2. Refer to wiring diagram.
3. SC-1000-4 (115-230/60/1) required 230 volt 3 wire, single phase system.
4. SC-1000-9 (115-208 & 220/60/3) requires 208-220 volt 4 wire, 3 phase system.
5. Compressor operates on higher voltages and components parts on 115 volts only. (Caution: In area where a wild phase is present in the system, it must be kept out of the low voltage circuit.
6. Electrician should be instructed to install proper disconnect switch with a solid neutral.

ELECTRICAL CONNECTION AND CHARACTERISTICS

Standard Voltage 3 Wire 230/60/1

All external wiring should conform with National Underwriters' and local code requirements. Check the voltage on the line before connecting the machine.

Be certain that the cubers are on their own circuit and individually fused. The maximum allowable voltage variation should not exceed 10% of the nameplate rating even under starting conditions. Low voltage can cause erratic operation, and may be responsible for serious damage to the overload switches and motor windings. Do not install 230 volt units on 208 volt supply. If necessary, use boost-back transformer to correct voltage.

208/220/60/3 3 phase 4 wire

Wire according to diagram on machine. All wiring to be done according to local, state and Nation codes.

MANUAL SWITCH

A manual switch is provided on left side of the unit for the convenience of the user when it is desired to shut the unit down for a period of time. When any electrical component parts are being removed or serviced, it is recommended that the line switch be put in the "Off" position.
Manual switch is also located in control box for shutting off compressor while cleaning unit.

FINAL CHECK LIST

1. Is the unit level (IMPORTANT).
2. Have all electrical and piping connections been made?
3. Has the voltage been tested and checked against the nameplate rating?
4. Have the compressor hold-down bolts been loosened so the compressor rides freely on its mounting springs.
5. Is the water supply valve open and the electric power on?
6. Is the water pressure adequate but not over 50# P.S.I.?
7. Is the unit clean?
8. Has the owner been given the operating manual, and has he been instructed on how to operate the machine?
9. Have the installation date sent to factory. This is the owner's protection as well as the sellers.
10. Check all the refrigerant and conduit lines to guard against vibration and possible failure.
11. Is there 12" clearance behind and around unit for proper air circulation?
12. Is unit in a room where ambient temperatures are minimum 50° F., even in winter months?

HIGH PRESSURE CONTROL W.C. MODELS

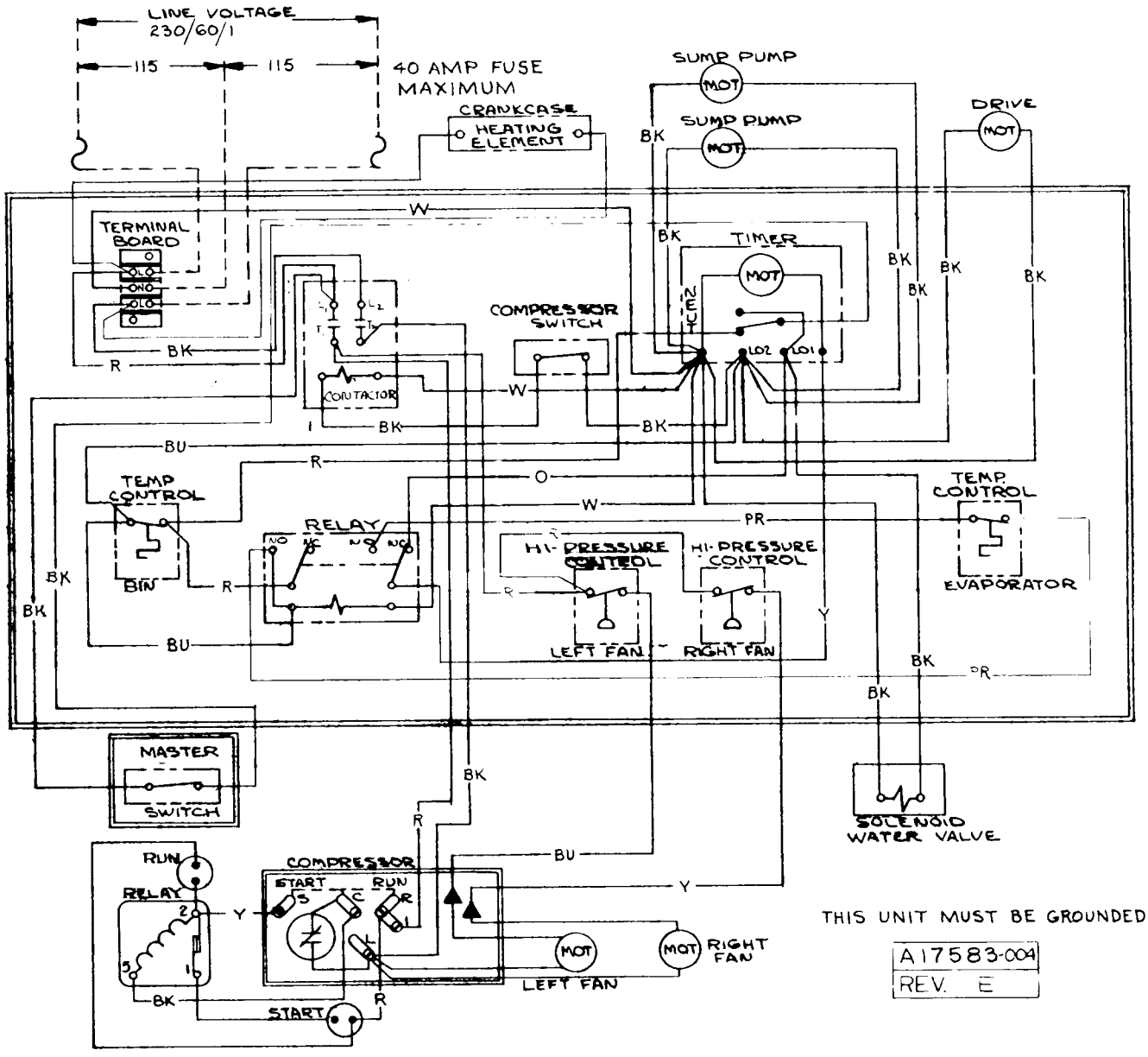
A high pressure control is provided to shut down the complete unit in case of extremely high head pressures or interrupted water supply. Some models are equipped with a lock-out type, and the unit will remain off until the control is reset manually. (To reset, press down small plunger on top of control.) The high pressure control should be set at 185 pounds.

START UP

1. Make sure all service valves on the condensing unit are backseated and turned as far as possible to the left. Replace the valve caps after checking the valves.
2. Make sure that the flow of air is not impeded in any way over condenser on air-cooled models. Keep condenser clean, (Check and clean the condenser monthly.)
3. Turn on cube water supply at hand shut-off valve. Make sure water pressure does not exceed 50# p.s.i. pressure. If necessary, install water pressure regulator to reduce pressure to approximately 50 pounds.
4. Remove cover from control box, check for loose or frayed wire, then turn compressor switch to "on" position. Also on off switch left side of unit.
5. Turn disc on time clock to the right just far enough for water solenoid valve to energize. Allow clock to take it through harvest cycle. This will be approximately 2 1/2 minutes. (Figures on dial represent minutes.) Dial pointer should be set on Number 2-1/2. After the compressor starts, turn the dial completely around and send it through another harvest cycle. Do this several times. This will completely flush out machine of any dust that may have accumulated in shipment.
6. After the machine has been properly flushed, allow it to go into a freezing cycle--check for possible water leaks, check sump pump operation--should be running freely. Also note if jet tube travel is correct, and that none of the jets are plugged. Jet spray of water should hit the middle of the cup.
7. Time clock dial does not rotate at the end of the harvest cycle; it is started later by the cube size control located in the control box.
8. Freezing time will be approximately 30 minutes in a 70 degree ambient. (Longer if above, and shorter if below.)
9. Watch first cube harvest and check to make sure that plastic curtain has not been damaged in shipment.
10. Check texture of cubes made: Partially cloudy cubes throughout suggest unit running short of water near end of freezing, or possible an extremely bad water condition, which would indicate use of filtering or purifying equipment. Contact SCOTSMAN - Queen Products, Ice Machine Service Department, Albert Lea, Minnesota, For further details..
11. With unit on harvest cycle, take a handful of cubes made and hold on storage bin thermostat cover. Should cut unit off in one to two minutes--remove ice; unit should cut back on automatically. Thermostat is factory set at 35° out, 39° in.
12. Install gauges and check head and back pressures; on air-cooled models head pressure after twenty minutes of freezing cycle at 70° ambient will be approxmately 150 pounds p.s.i. back pressure gradually pulls down to approximately 4 pounds p.s.i. just before harvest cycle. Higher ambients will cause higher head pressure.
13. Remove gauges, replace control box cover and all service panels.

WIRING DIAGRAM

230/60/1
Air Cooled

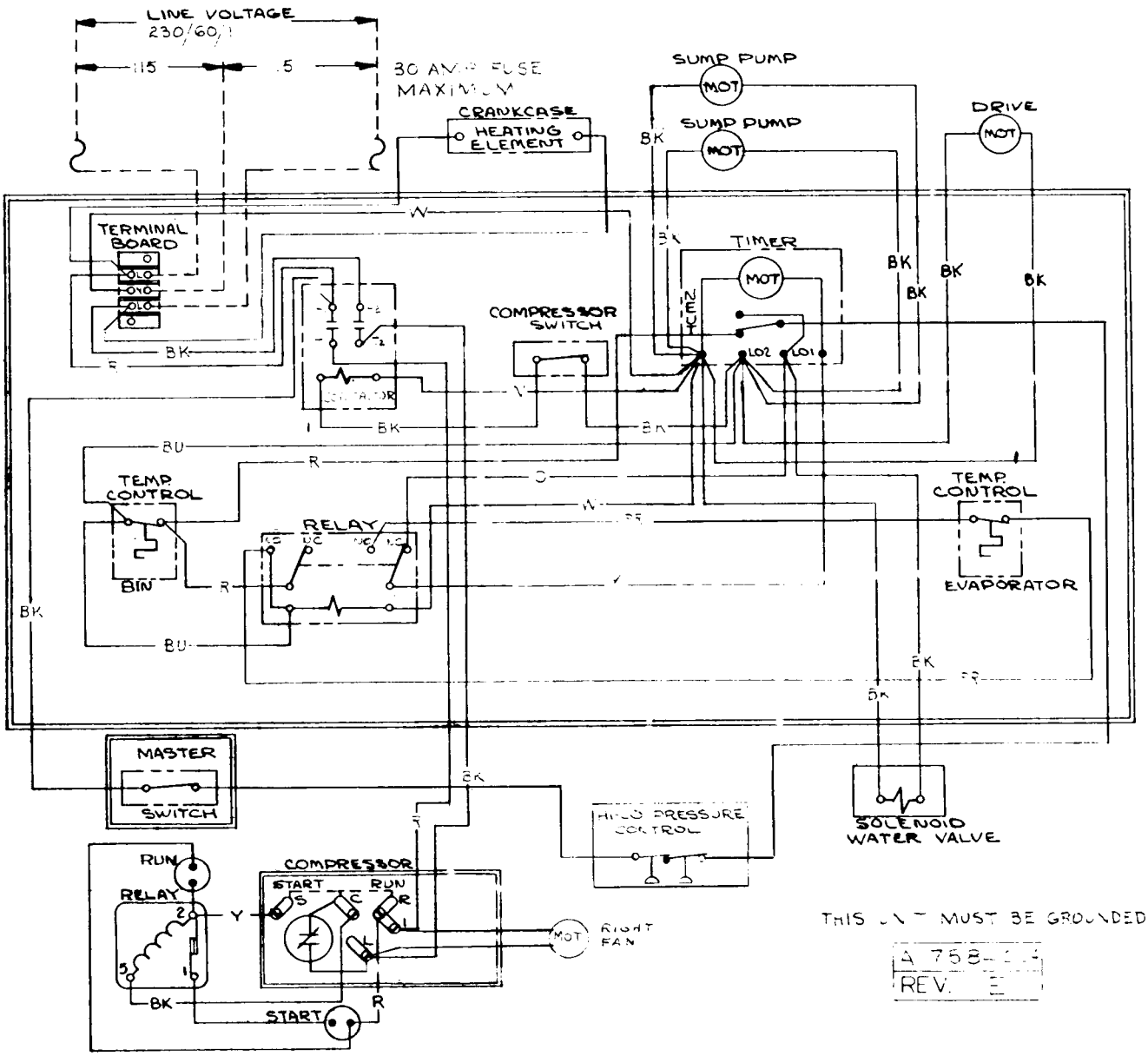


THIS UNIT MUST BE GROUNDED

A17583-004
REV. E

WIRING DIAGRAM

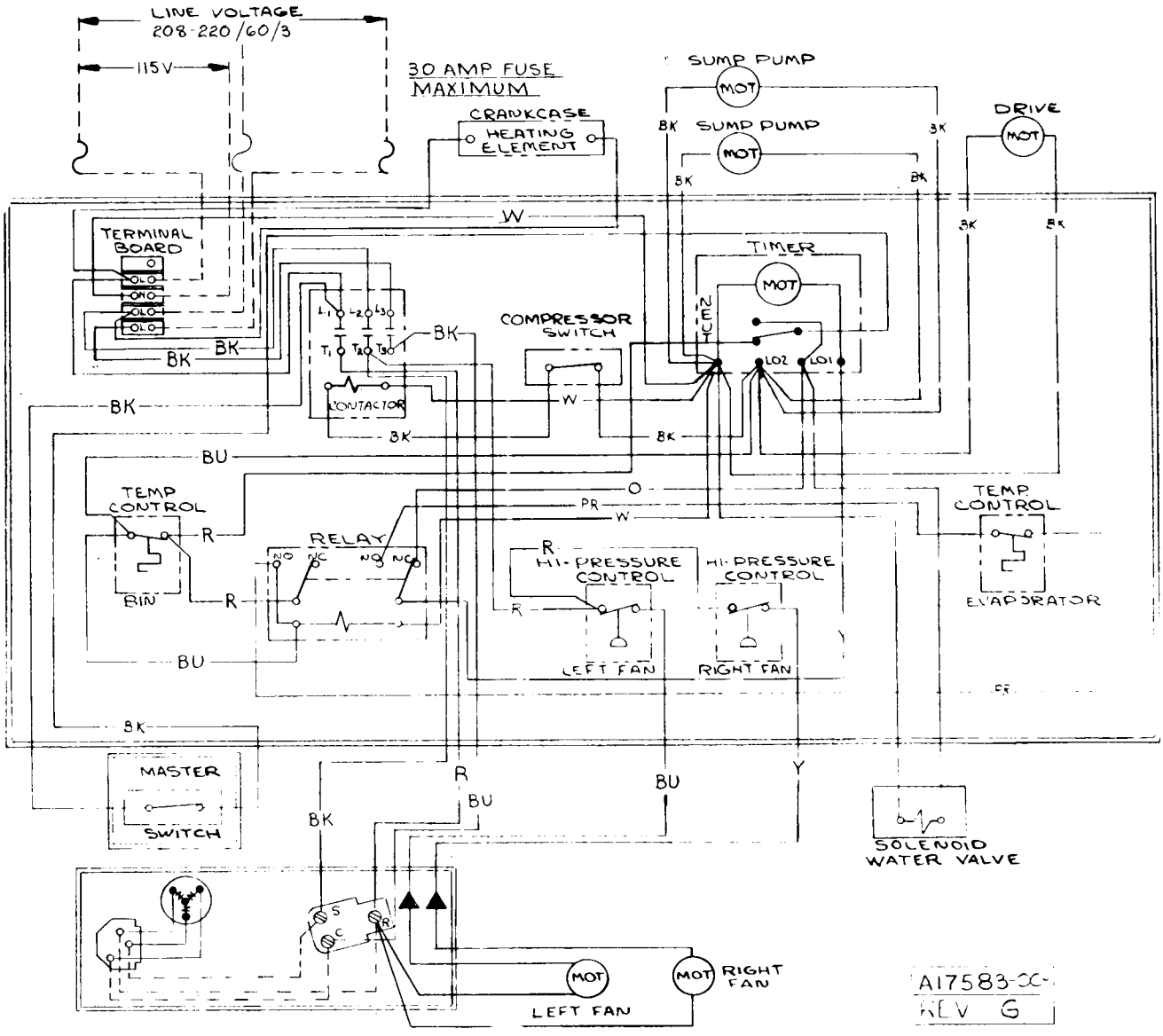
230/60/1
Water Cooled



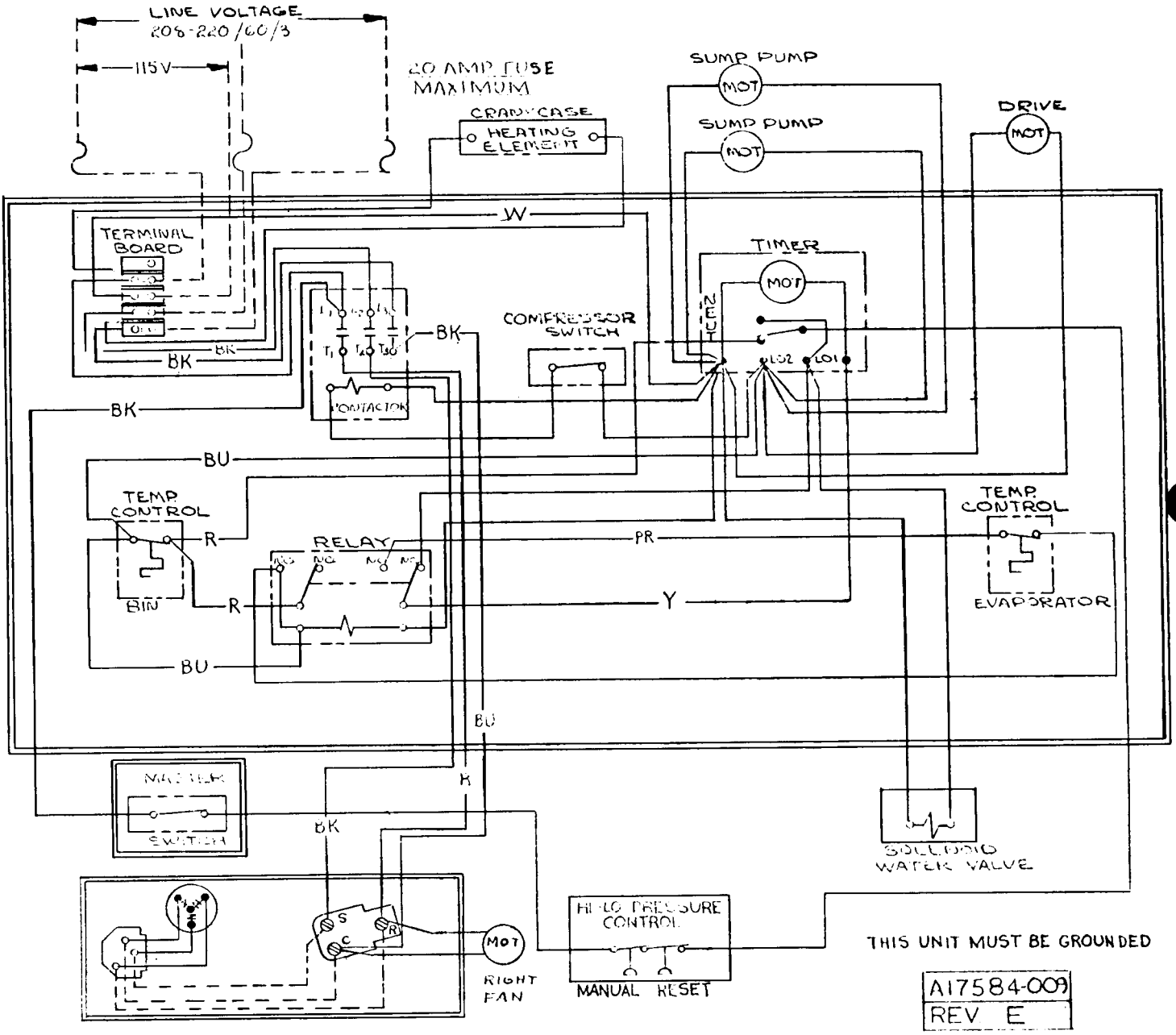
WIRING DIAGRAM

208-220/60/3

Air Cooled



WIRING DIAGRAM
208-220/60
Water Cooled



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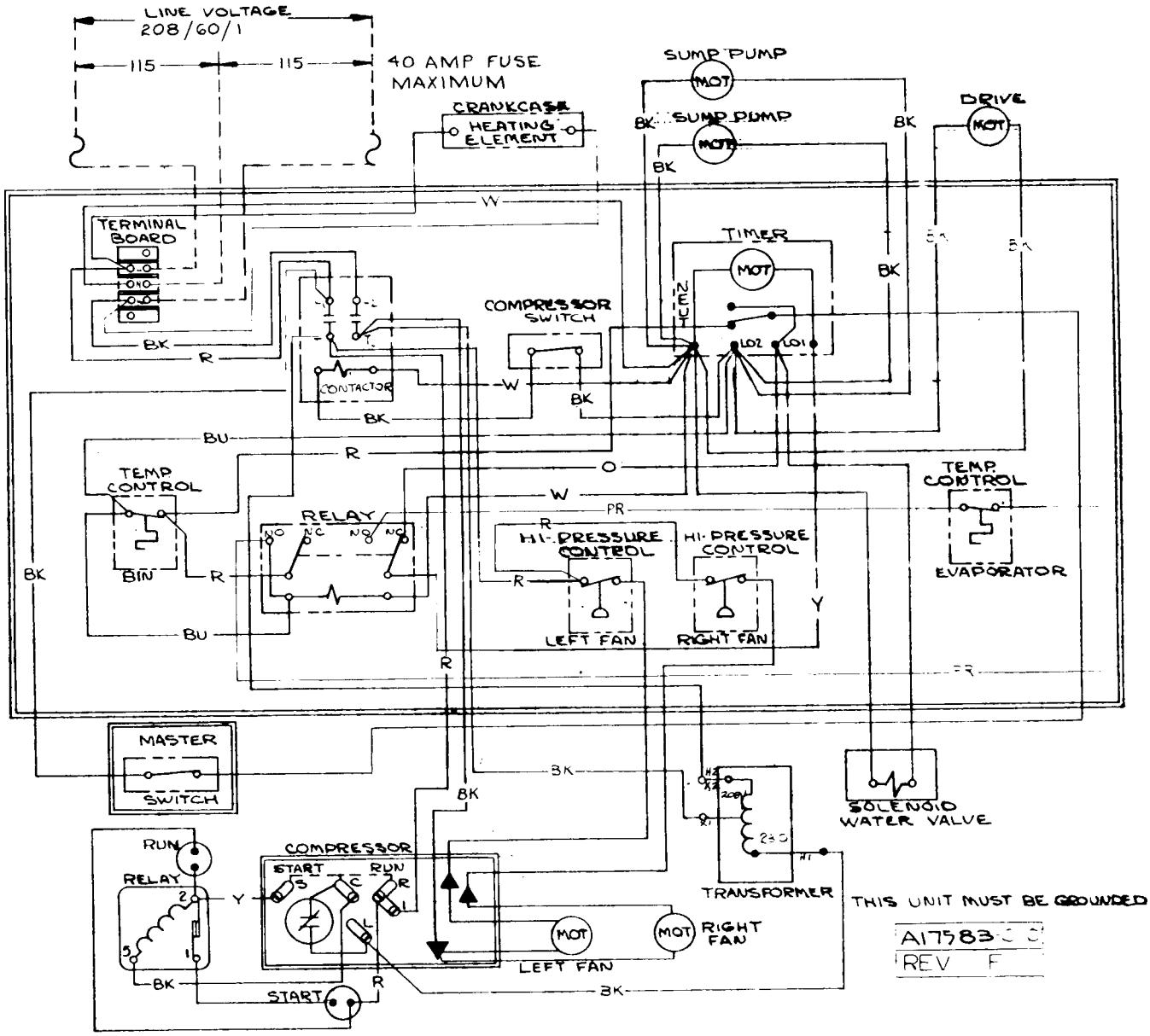
REV-E

WIRING DIAGRAM

208/60/1
Air Cooled



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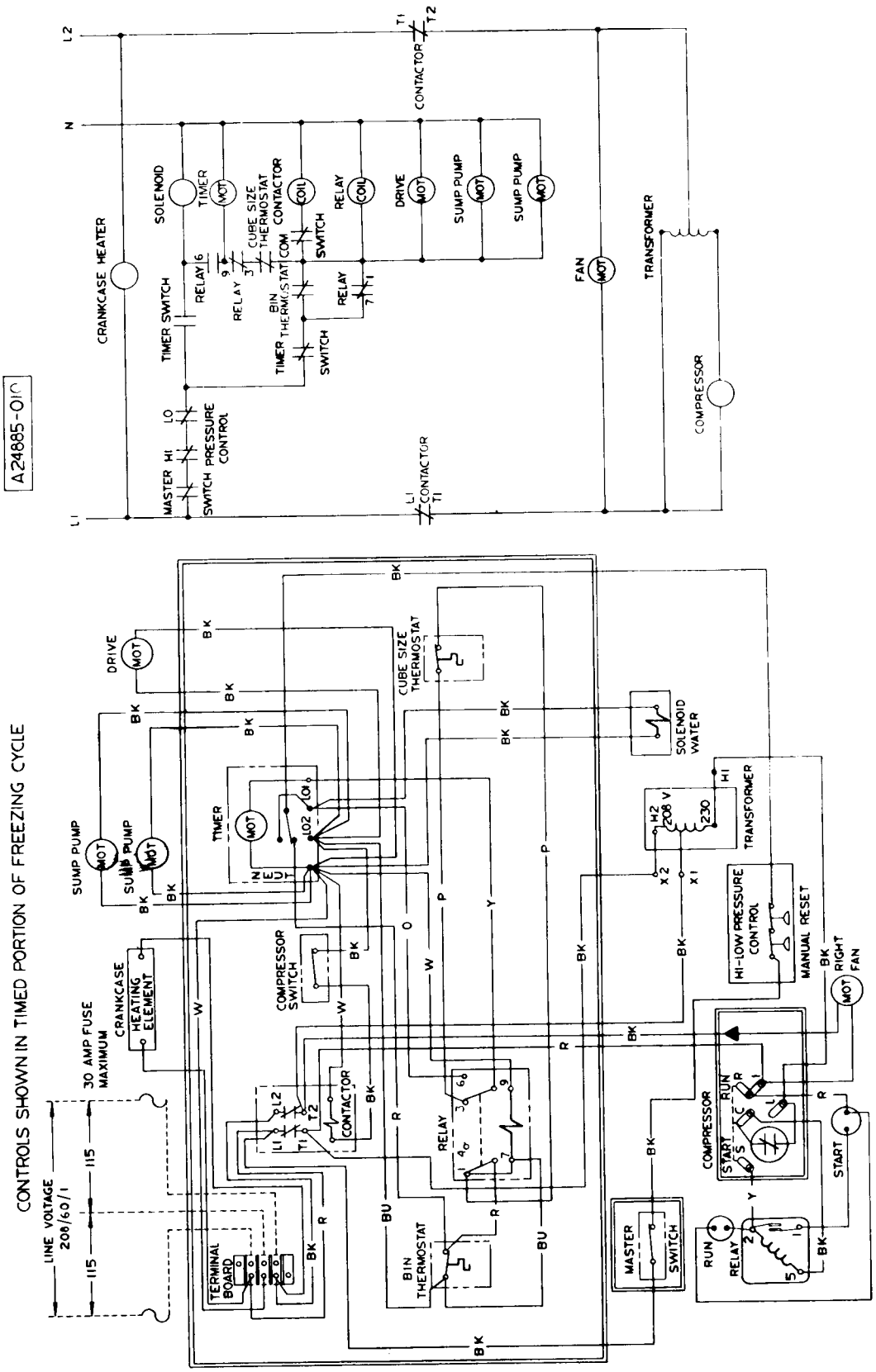
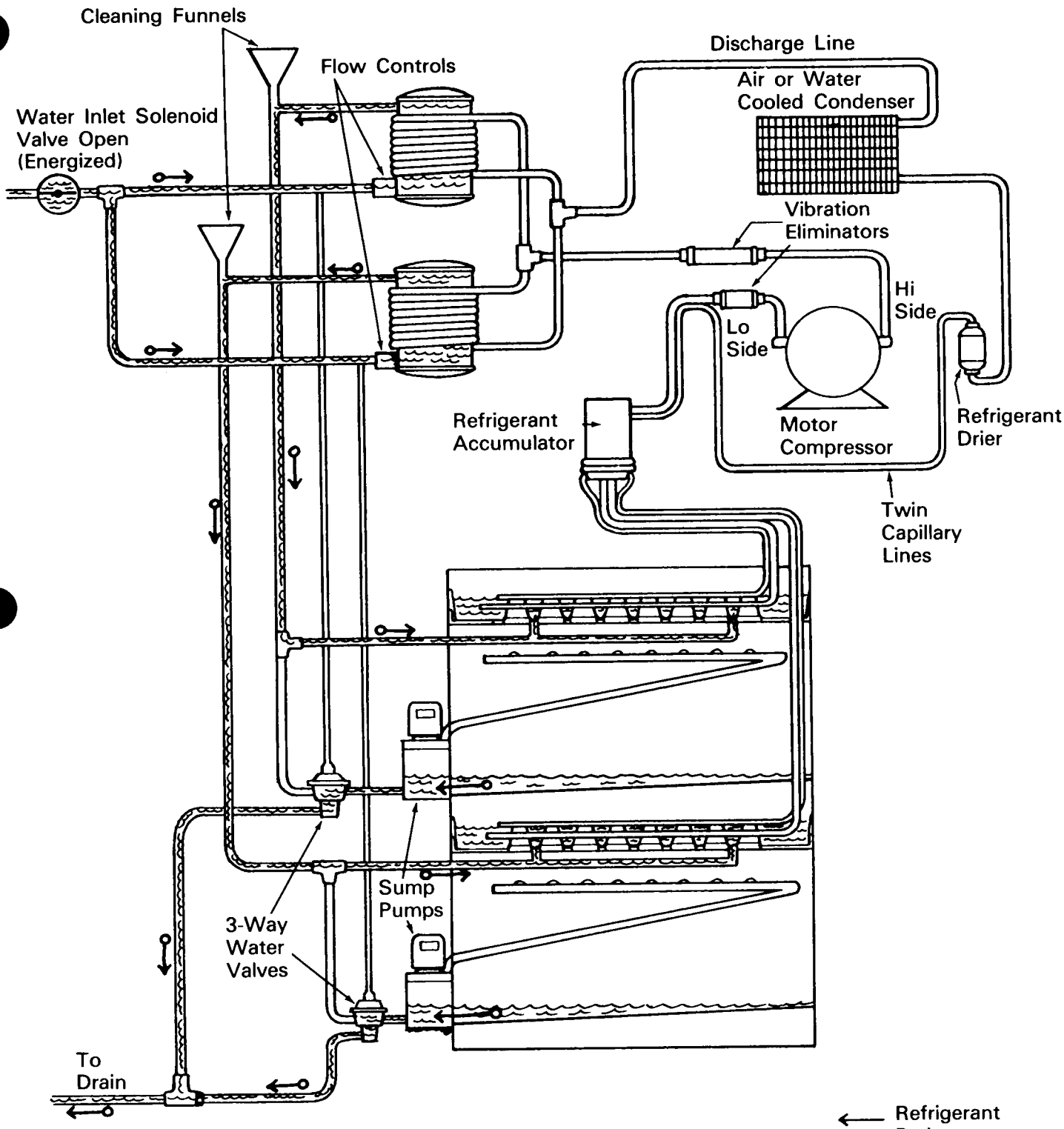
WIRING DIAGRAM
208/60/1
Water Cooled

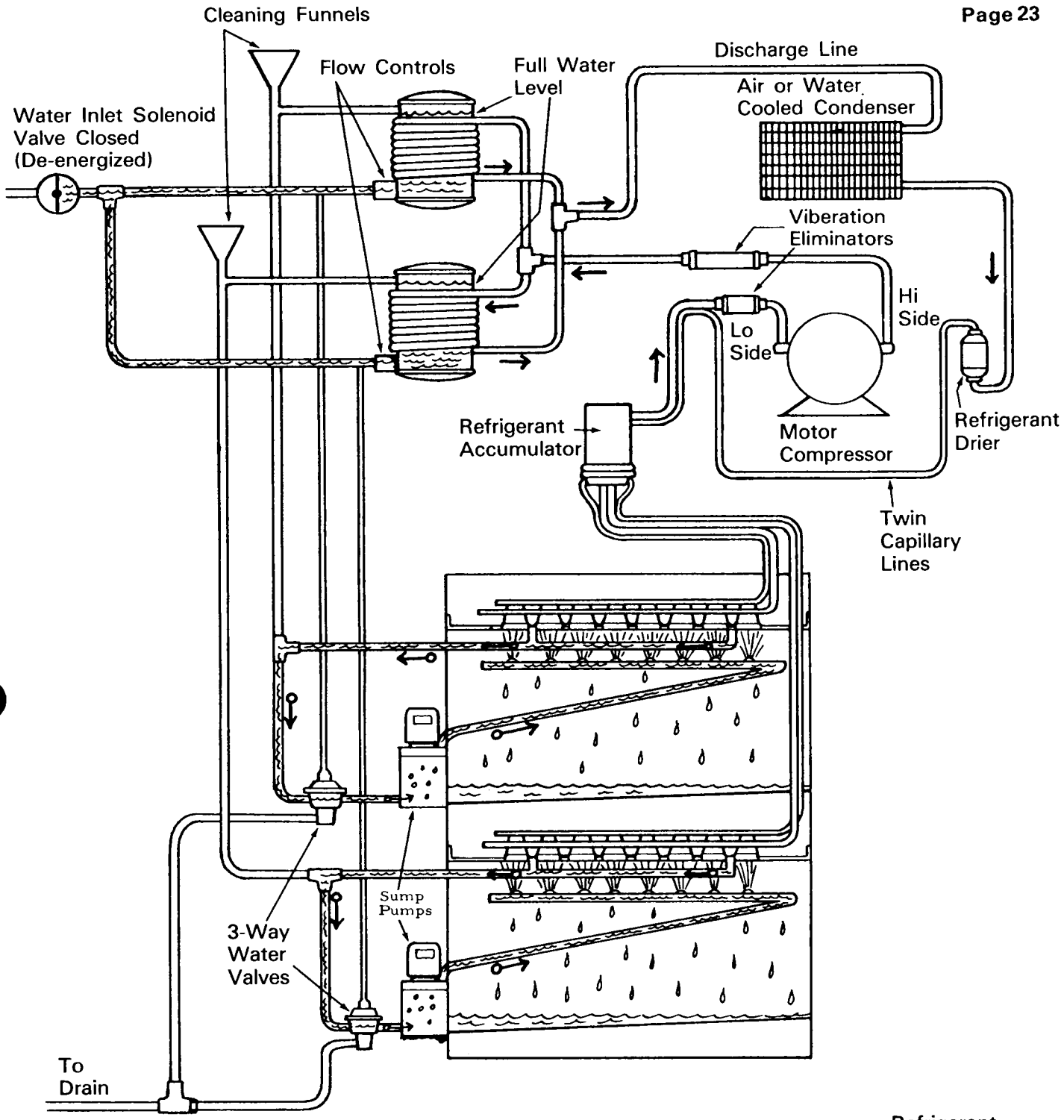




WATER-REFRIGERANT SCHEMATIC
SC-1000
HARVEST CYCLE

HARVEST

With master switch (on left side of unit) and compressor switch (in main control box) in the on position turn timer manually to the harvest position. This energizes water inlet solenoid valve allowing water to flow thru flow contols into heat exchanger tanks. This inlet water pressure forces water out of tanks and also actuates 3-way water valves which in turn allows water to flow into upper cavity of freezing chambers and surplus water from preceeding batch of ice cubes to go down the drain. The platen cavity is completely filled up to the overflow point,and continues to overflow while in the defrost cycle; the amount of this water running over the overflow pipe is controlled by the flow control device and the length of harvest time setting on the time clock; overflow water goes down the drain also. Meanwhile, cubes being released from the cups drop by gravity into cubes chute, through curtained opening into storage bin. At completion of harvest cycle, micro-switch on the timer now drops points holding defrost components in cycle and switches to freezing cycle set of contacts. Clock motor now stops and will not start until cube size control closes once more. As the new freezing cycle starts, note that our inlet solenoid closes. Since water enters heat exchanger tank on bottom and flows out through top, this insures full tank for the next cycle. The chilled water from the upper cavity flows by gravity through the water valve to the sump tank and resevoir. This water is used produce the next batch of cubes.



WATER-REFRIGERANT SCHEMATIC
SC-1000
FREEZING CYCLE

FREEZING CYCLE

At the start of the freezing cycle, sump tank contains enough water to make a complete batch of ice cubes, plus approximately an extra gallon. When time clock closes load circuit, it starts the compressor, sump pump and spray bar motor. At the same time, it opens circuit to clock motor. (Clock motor does not run first part of freezing cycle--this is approximately 20 minutes.) This timer has an arrangement for carrying and directing current. After a predetermined amount of ice is frozen, the cube size or reverse acting temperature switch closes, actuating the time clock motor circuit which continues the freezing cycle approximately 9 more minutes. (After clock motor starts, freezing time will be 12 minutes less defrost time setting.) At the end of the 9 minute period, time clock operated cam opens compressor, sump pump and drive circuit, and closes circuit to time clock motor.

NOTE:

Harvest water is used to make next batch of ice, therefore on initial start up unit must be in a defrost cycle. This can be done by manually operating timer.

SERVICE ANALYSIS

Symptom	Possible Cause	Suggested Correction
1. unit will not run	Power off	Check main switch, fuses and wiring.
	Manual switch in off position.	Check
	High pressure control locked out.	Reset. (Water cooled models)
	Ambient temperature of room too low.	Must be above 50° .
	Bin controls set too high.	Set approximately 35° cut out, 39° cut in.
2. Compressor cycles intermittently.	Low voltage	Check with volt meter.
	Air in system causing high head.	Purge system.
	Shortage of refrigerant	Check frost line and operating pressure.
3. Cubes small. (short cycle)	Cube size control not properly set.	Set control to colder
	Moisture in system	Purge charge, evacuate, change dryer, & re-charge
	Short of water because too low setting on water supply.	Increase pressure, new lines or larger lines.
	Lower drain valve in sump tank leaking	Flush or remove and clean.
	Sump tank stand pipe not properly seated.	Check and re-seat
4. Cubes small. (long cycle)	Shortage of refrigerant	Check frost line and charge as required. Check for system leaks.

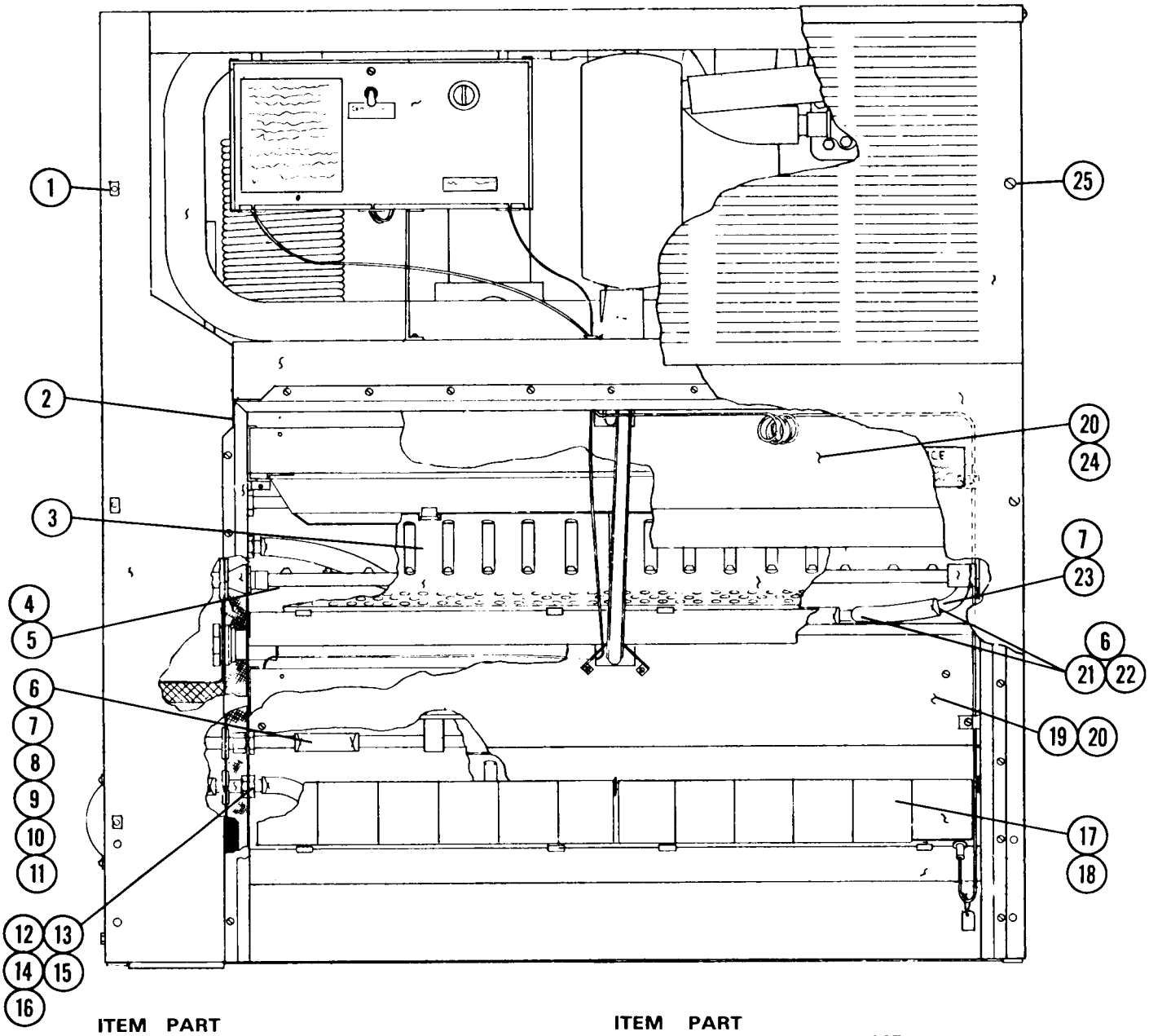
SERVICE ANALYSIS		
Symptom	**Possible Cause**	**Suggested Correction**
5. Cubes too large. (slow defrost)	Very small shortage of refrigerant. Cube size control set too low.	Check frost line, charge as required. Reset to warmer setting.
6. Cubes cloudy	Drain valve and sump tank leaking, loosing water. Curtains damaged or binding. Restriction in incoming water. Screen plugged on bottom of sump pumps.	Check during freeze cycle jet tubes plugged, clean all jets. Repair or replace Check at strainer and flow controls Remove and clean.
7. Irregular cubes. (some clear, some cloudy)	Clogged jets in jet tubes. Cube slides interfering with jets.	Remove & Clean Adjust
8. Improper harvest	Time clock not set properly. Incoming water restricted. Solenoid valve leaking. (Hot water tank) Head pressure too low.	Reset on 2 1/2 Minutes Check water lines, etc. Check during freeze cycle Adjust regulator on water cooled units. Check fan cycling on air cooled units.

SERVICE ANALYSIS

Symptom	Possible Cause	Suggested Correction
8. Improper harvest (Cont'd.)	Machine not level. (Allow water to stand in upper cavities and freeze.)	Level machine.
9. High head pressure	Over-charge of refrigerant.	Purge
	Air in system	Purge
	Defective water regulating valve.	Replace
	Burned out or stuck fan motor(s) air cooled	Replace or oil as needed
	Water valve improperly adjusted.	Readjust to desired head. Water cooled models 135# p.s.i.
	Incoming water restricted.	Check screens, lines, etc.
10. High suction	Dirty or plugged condenser. Air cooled.	Blow condenser clean
	Ineffeicient compressor	Check with gauges and replace valve plate if necessary.
	Overcharge of refrigerant.	Check frost line and high back pressures purge off excess.
11. Low suction pressure.	Restricted dryer.	Check back pressure and replace drier if necessary
	Moisture in system.	Blow charge, replace drier evacuate system and recharge per name plate specs.

Symptom	Possible Cause	Suggested Correction
11. Low suction pressure. (Cont'd.)	Extreme shortage of refrigerant.	Add refrigerant. Check and correct system leaks.
	Ambient temperatures too low. Air cooled.	Increase ambient to minimum 50° F.
12. Unit noisy.	Hold-down bolts on compressor not loosened.	Turn up until unit is free.
	Refrigernat lines vibrating.	Straigten
	Compressor short of oil.	Check oil level. Proper level 1 1/2 inches below crankcase port, or 1/2 of sight glass bullseye on compressor.
	High head pressures.	Check with gauges. Purge if necessary.
	Shroud touching fan blades on air cooled models.	Reposition shroud

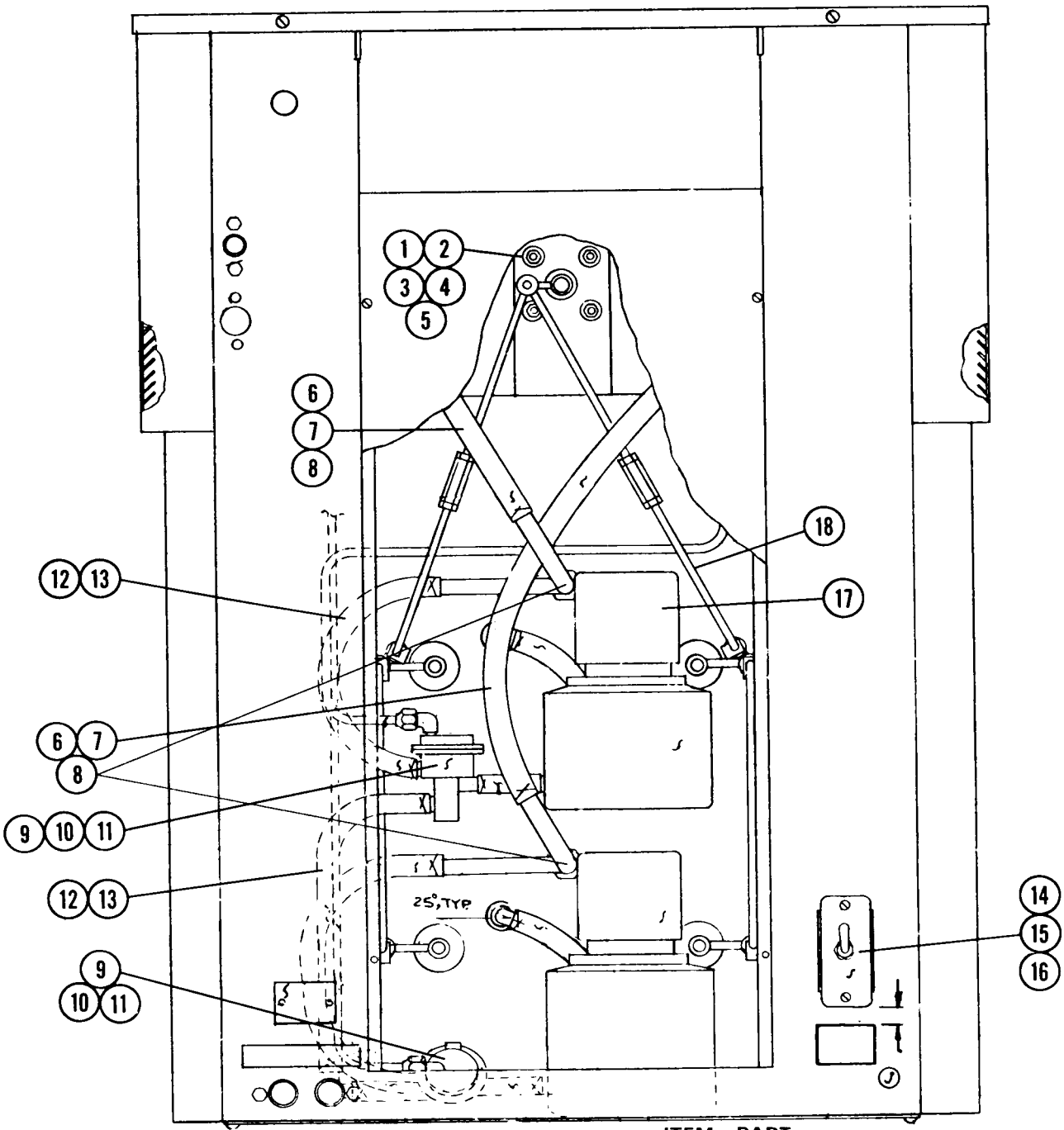
SC-1000 H
Front View



ITEM NO.	PART NO.	NAME
1.	03-1029-00	Nut (2 reqd.)
2.	A18165-000	Door Gasket (2 reqd.)
3.	A17573-000	Chutes (8 reqd.)
4.	A13815-001	Platen & Cup Assy. (2 reqd.)
5.	13-0314-00	Rubber Cupholder only (2 reqd.)
6.	13-0674-07	Tygon 3/4" I.D. Per Foot
7.	02-1358-00	Hose Clamps 3/4"
8.	A18004-000	Inlet Water Assy.
9.	13-0617-02	"O" Ring
10.	13-0327-00	Grommet
11.	A13796-000	Inlet, Inner Assy.
12.	A18174-000	Inlet, Spray Bar
13.	A18172-000	Nut, Inlet Tube
14.	A18173-000	"O" Ring Nut
15.	13-0617-05	"O" Ring

ITEM NO.	PART NO.	NAME
16.	13-0169-00	Grommet
17.	A17243-000	Cutain Assy. (4 reqd.)
18.	03-0727-000	Thumb Screw (curtain)
19.	A17604-000	Face Plate, Lower
20.	03-1404-10	S.S. Screws
21.	02-0536-01	Hose Clamps
		TEE 5/8 x 5/8 x 3/4
23.	13-0674-06	Tygon Tube 5/8" Per Ft.
24.	A17603-000	Face Plate, Upper
25.	03-1418-22	Screws (12 reqd.)
		IN PACKAGE
	A15759-000	Bulb Cover
	13-0590-00	Gasket
	A16108-000	Bulb Holder Buttons

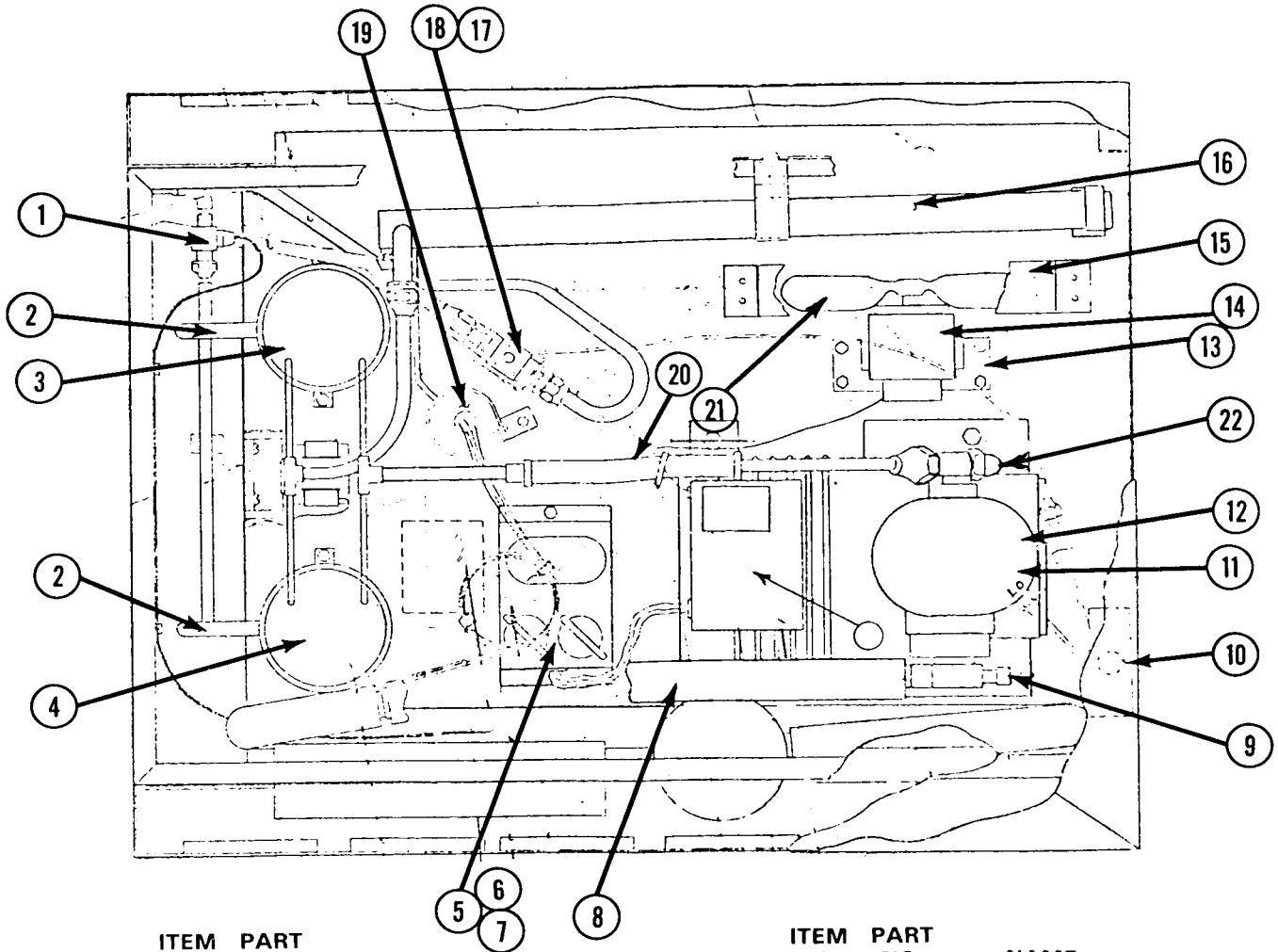
SC-1000 H
Left Side View



ITEM NO.	PART NO.	NAME
1.	A23392-001	Drive Motor
2.	13-0100-00	Grommet (4 reqd.)
3.	03-1403-22	Screw (4 reqd.)
4.	03-1406-03	Nut (4 reqd.)
5.	03-1407-04	Washer (8 reqd.)
6.	13-0674-07	Hose 3/8" I.D. per foot
7.	02-1358-01	Hose Clamps 3/4"
8.		Tank Outlet
9.	A19722-000	3 way Water Valve
10.	03-1403-28	Screws (4 reqd.)
11.	03-1417-05	Lockwashers (4 reqd.)
12.	02-0536-00	Hose Clamp
13.	13-0674-10	Tygon Hose 7/16 per ft.
14.	12-0426-00	Switch
15.		Switch Plate
16.		Switch
17.	12-1395-01	Sump Pump
18.	A17569-000	Drive Linkage Complete

SC-1000 H, WATER COOLED

Top View

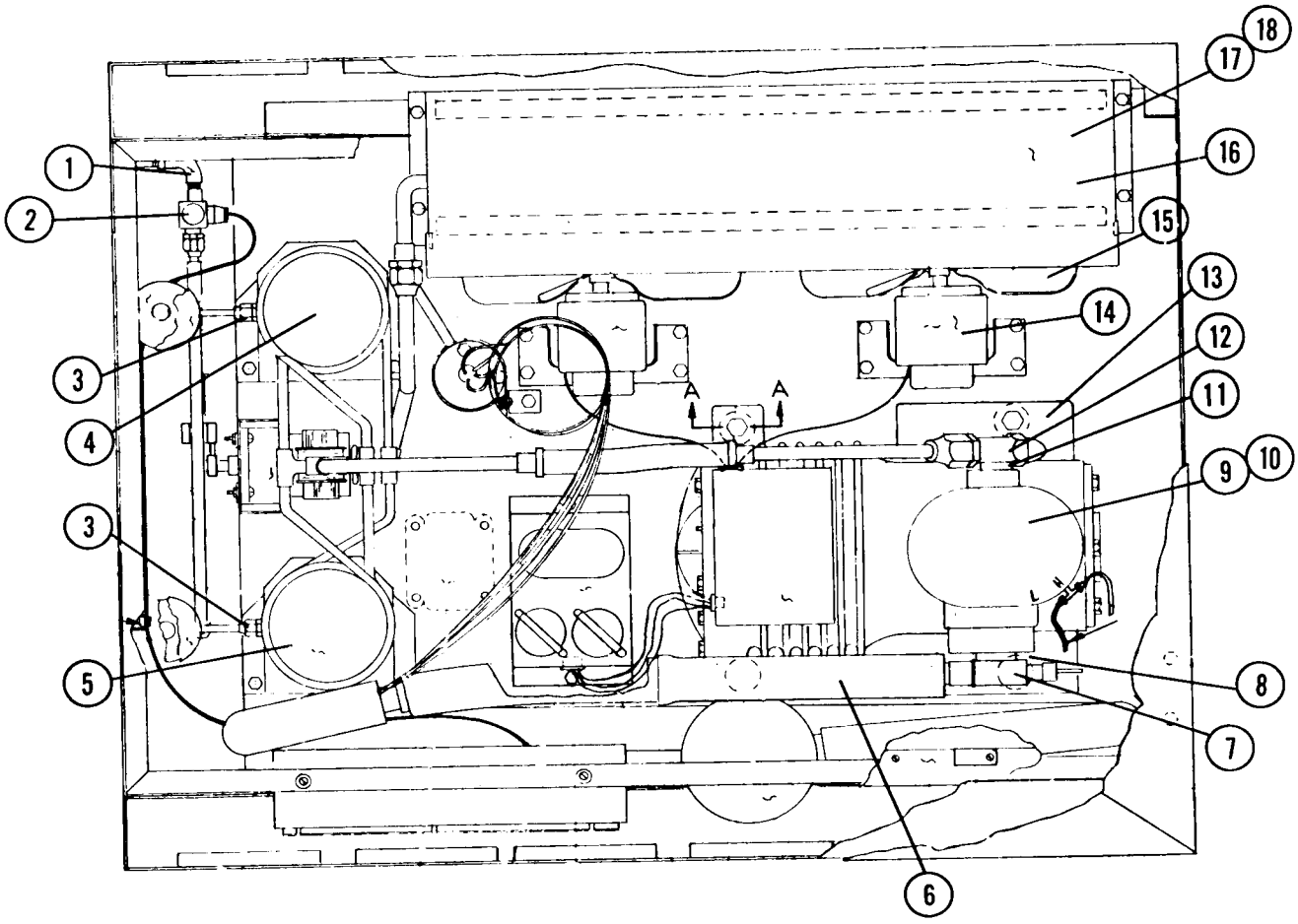


ITEM NO.	PART NO.	NAME
1.	12-0621-G1	Solenoid Valve
2.	A13346-006	Flow Control
3.	A17836-000	Rear Water Tank
4.	A17837-000	Front Water Tank
5.	18-1901-27	Starting Capacitor
6.	18-1405-00	Overload
7.	18-1903-26	Relay
8.	16-0326-00	Flexible Line
9.	18-1410-00	Suction Service Valve
10.	11-0286-00	Hi-Lo Press Control
11.	18-1400-02	Compressor 115/230/60/1
	18-1400-03	Compressor 115/208-220/60/3
	18-1400-02	Compressor 115/208/60/1

ITEM NO.	PART NO.	NAME
12.	18-1415-00	Valve Plate Kit
13.	18-1421-00	Fan Bracket
14.	18-0788-02	Fan Motor 115/230/60/1
	18-0788-07	Fan Motor 115/208/220/60/3
15.	A24927-001	Fan Shroud
16.	18-1422-00	Condensor
17.	11-0198-01	Water Regulating Valve
18.	A18500-000	Regulator Bracket
19.	02-0822-00	Dryer
20.	16-0247-00	Vibration Eliminator
21.	18-0787-00	Fan Blade
22.	18-1411-00	Discharge Service Valve

SC-1000 H, AIR COOLED

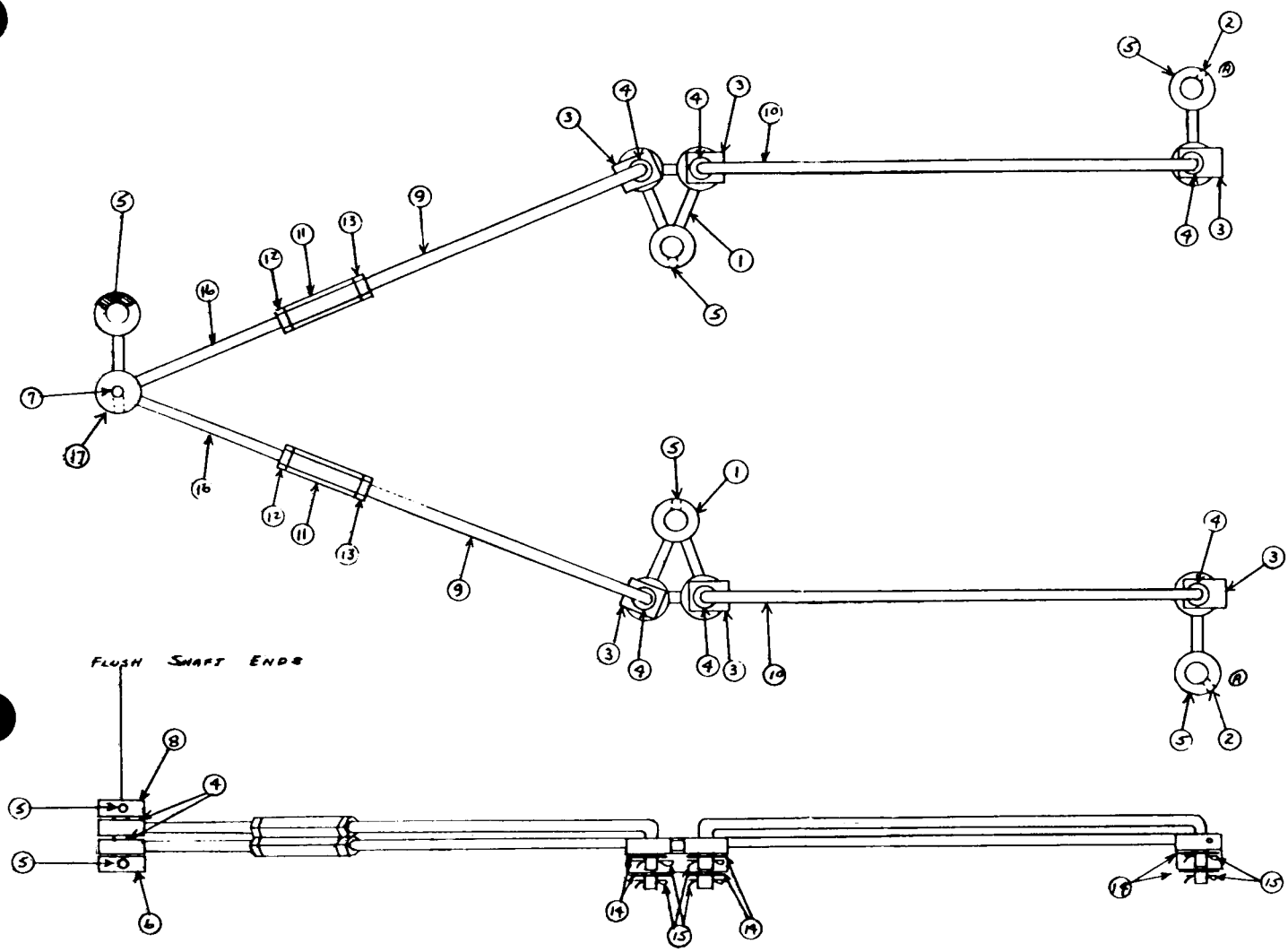
Top View



ITEM NO.	PART NO.	NAME
1.		Street Elbow
2.	12-0621-G1	Solenoid Valve
3.	A13346-00	Flow Control
4.	A17836-000	Rear Water Tank
5.	A17837-000	Front Water Tank
6.	16-0326-00	Flexible Line
7.	18-1410-00	Suction Serv. Valve
8.	18-0736-00	Suction Serv. Valve Gasket
9.	18-1400-02	Compressor 115/230/60/1
	18-1400-03	Compressor 208/220/60/3
10.	18-1415-00	Valve Plate Kit
11.	18-1411-00	Discharge Serv. Valve
12.	18-0242-00	Discharge Valve Gasket
13.	18-1929-01	Crank Case Heater*
14.	18-0788-02	Fan Motor
15.	18-0787-00	Fan Blade
16.	18-0399-01	Condensor
17.	A13860-000	Shroud Assy.
18.	03-1404-15	Shroud Fasteners (6)
19.	16-0247-00	Vibrator
20.	18-1405-00	Overload 230/60/1
21.	18-1901-26	Starting Capacitor
22.	18-1902-20 (2 reqd.)	Running Capacitor 13/52
23.	18-1903-26	Relay
24.	02-0822-00	Dryer
25.	18-1406-00	Overload 208-220/60/3

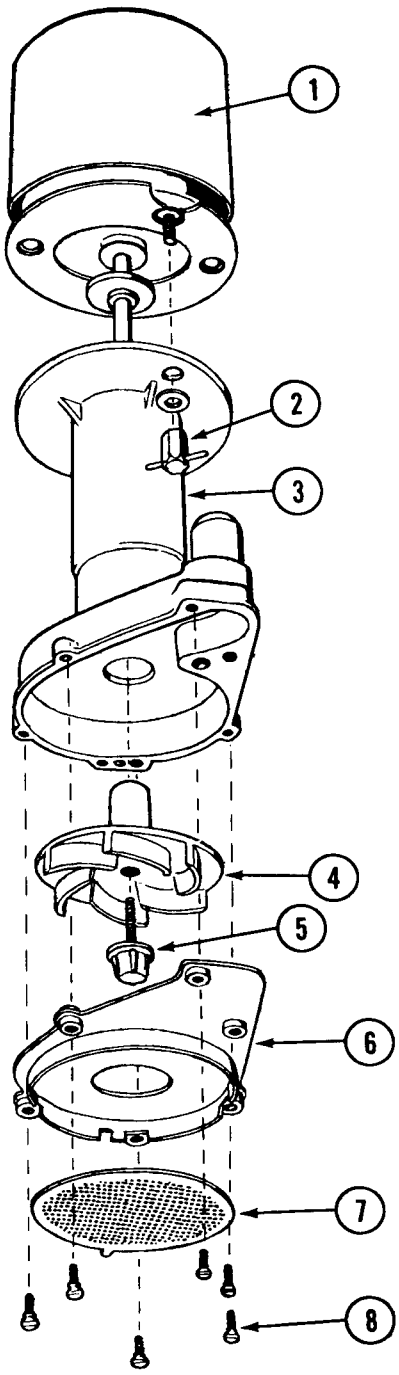
(*) Not Shown

SC-1000 LINKAGE ASSEMBLY
A-17569-000



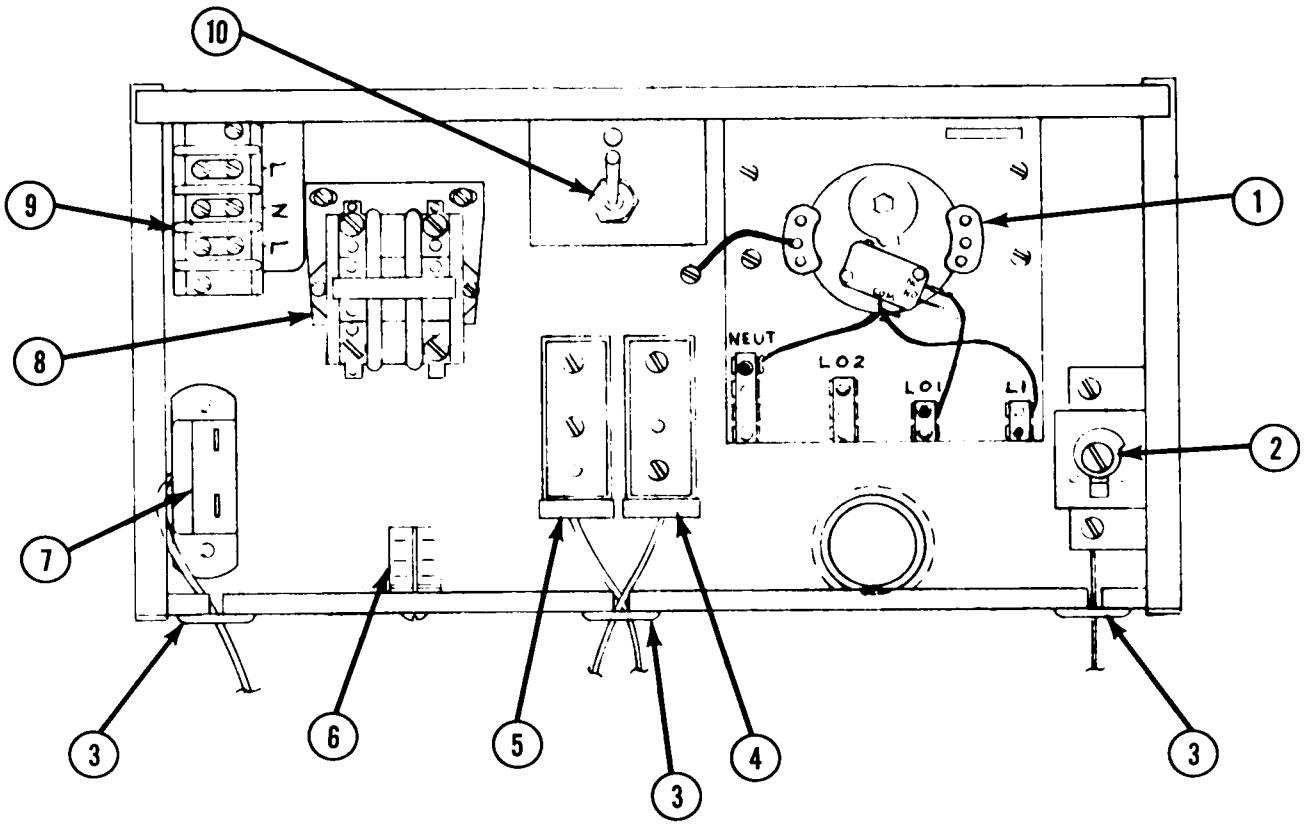
ITEM NO.	PART NO.	NAME
1.	A17233-000	Double Drive Arm
2.	A17232-000	Drive Arm
3.	S07558-000	Bearing Clip
4.	02-0654-01	Bearing
5.	03-0431-00	Set Screw
6.	A18948-000	Motor Drive Arm
7.	A13849-000	Shaft
8.	A13848-000	Arm End
9.	S07938-000	Right Linkage
10.	A17568-000	Lower Linkage
11.	S07936-000	Kinkage Coupling
12.	S07937-000	Left Linkage Nut
13.	03-1407-05	Washer
14.	03-0396-01	Cotter Pin
15.	A13850-000	Linkage Upper Assy.
16.	A18948-000	Motor Drive Arm
*	A17569-000	Complete Linkage

SUMP PUMP
SC-1000



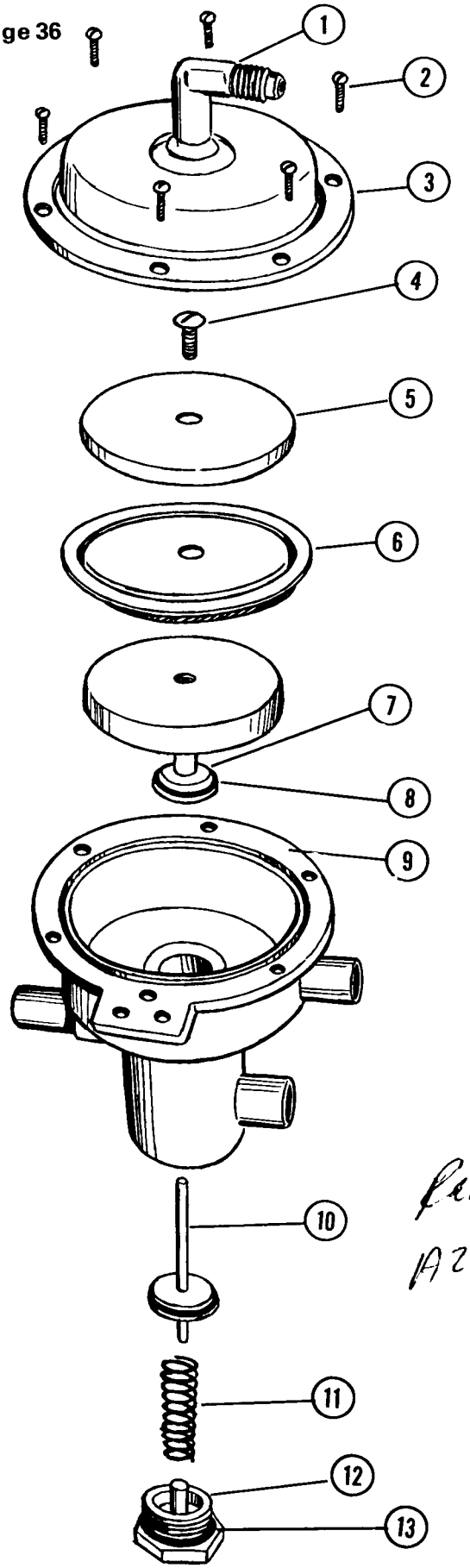
ITEM NO.	PART NO.	NAME
1.	12-1395-32	Motor Only
2.	12-1351-32	Wing Hex Nuts
3.	12-1351-30	Pump Body
4.	12-1351-21	Impellar and Spring
5.	12-1351-31	Impellar Screw and Gasket
6.	12-1351-27	Bottom Inlet Plate
7.	12-1351-26	Inlet Screen
8.	12-1351-29	Wing Screws
	12-1395-01	Complete Pump

CONTROL BOX



ITEM NO.	PART NO.	NAME
1.	A25939-001	Timer
2.	11-0345-00	Temperature Control
3.	13-0124-00	Grommet
4.	11-0343-00	Right Fan Control
5.	11-0342-00	Left Fan Control
6.	12-1645-00	Relay
7.	11-0353-01	Bin Thermostat
8.	12-0820-01	Contactor
9.	12-0813-00	Terminal Block
10.	12-0426-01	Switch

3-WAY WATER VALVE
SC-1000

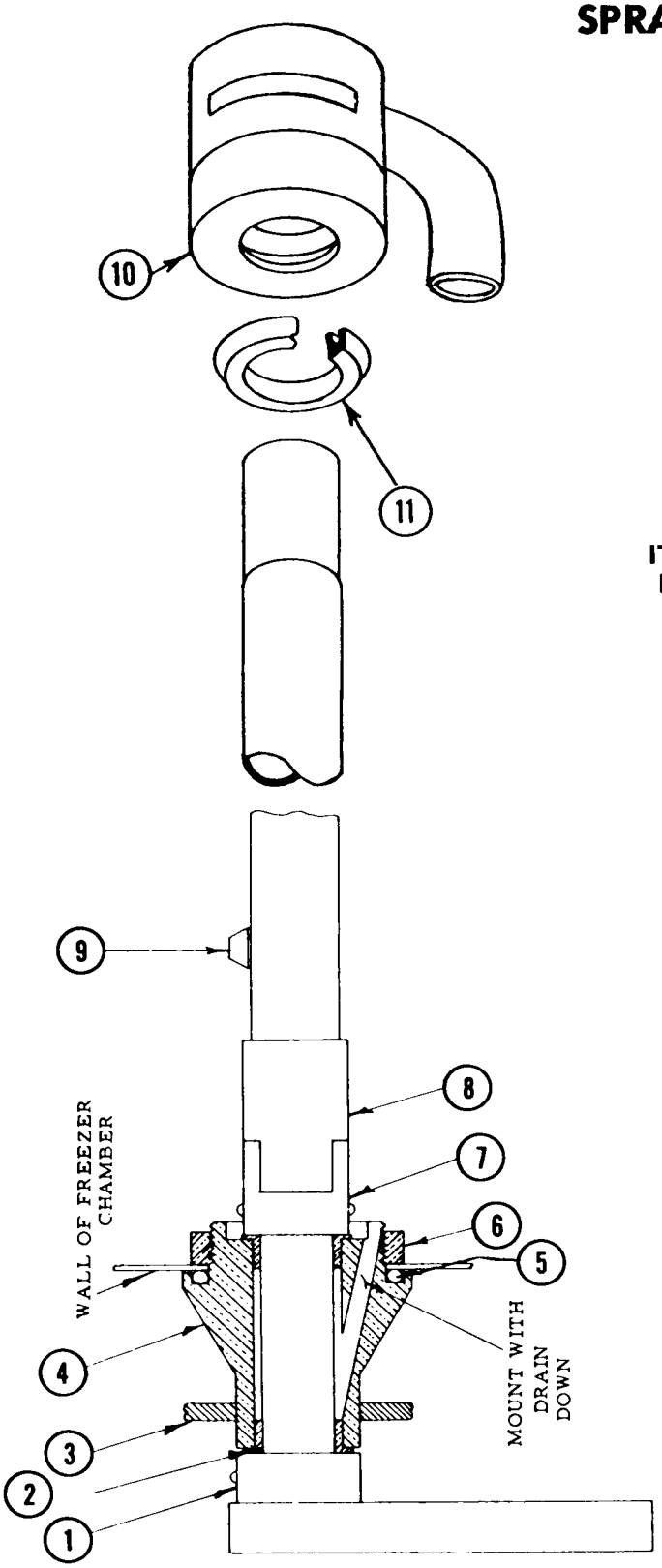


ITEM NO.	PART NO.	NAME
1.	16-0190-00	Elbow
2.	03-1403-06	Screws
3.	A18192-000	Valve Cover
4.	13-1506-01	Screw
5.	A18312-000	Diaphram Cover
6.	13-0606-00	Rolling Diaphram
7.	A17941-000	Plunger Assy.
8.	13-0617-01	"O" Ring
9.	A17947-000	Valve Body
10.	A17942-000	Plunger
11.	02-1545-00	Spring
12.	A17937-000	Valve Cap
13.	13-0617-02	Bottom "O" Ring
	A19722-00	Valve Complete

Repair Kit
A24561-001

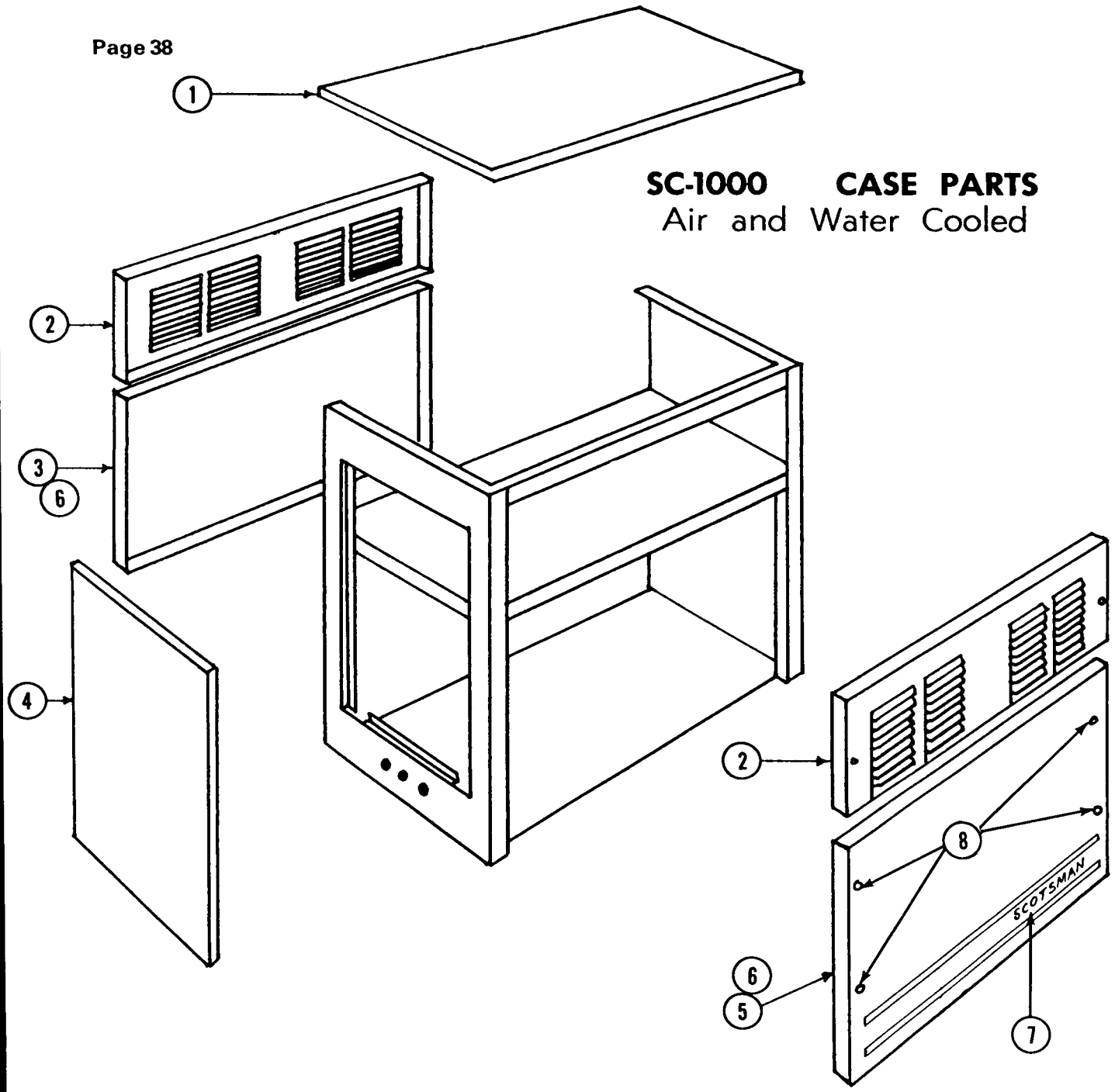
SC-1000 SPRAY TUBE AND SPRAY TUBE DRIVE ASSEMBLY

4 per Unit



ITEM NO.	PART NO.	NAME
1.	S07130-000	Collar
2.	02-0438-00	Flange Bearing
3.	13-0169-00	Grommet
4.	S08887-000	Drive Bearing Support
5.	13-0617-33	"O" Ring
6.	S07635-000	Nut
7.	A13837-000	Driving Journal Assy.
8.	A17563-000	Sprayer Tube
9.	02-1803-01	Jet
10.	A16963-000	End Bearing Ass'y.
11.	13-0168-00	"U" Cup

SC-1000 CASE PARTS
Air and Water Cooled



ITEM NO.	PART NO.	NAME
1.	A17990-008	Top
2.	A17988-008	Upper Door
3.	A17684-002	Rear Lower Door
4.	A17710-008	Left Door
5.	A17663-000	Front Lower Door
6.	02-1548-00	Plastic Door Liner
7.	15-0474-01	Emblem Decal
8.	03-1418-22	Screws (26 Reqd.)

SERVICE-COMPLETE UNIT

ALL STEPS LISTED BELOW SHOULD ONLY BE STARTED WHEN WATER AND ELECTRICAL SUPPLY ARE OFF TO PREVENT ACCIDENTS.

TO REMOVE SUMP PUMP

1. Remove left access panel. (4 screws)
2. Loosen hose clamp on sump pump discharge tube.
3. Pull sump pump out.
4. Pull wire from pump to control box.
5. Replace pump in reverse of above. Note: Always try new pump in shop before putting on the job.

TO REMOVE DRIVE MOTOR

1. Remove left side panel.
2. Loosen set screw on drive journal arm to motor.
3. Take 4 nuts loose on mounting bracket to motor, including the four rubber grommets.
4. Pull electrical cord from control box receptacle.
5. Install new motor in reverse or above.
6. Check and adjust spray bar travel as required.

TO REMOVE SPRAY TUBE ASSEMBLY

1. Remove lower front door.
2. Remove plastic curtain and cube chutes.
3. Lift right end of spray bar out of holder. This loosens spray bar, also the tygon tubing connection and elbow.
4. Pull tygon tubing and stationary elbow off this end of spray tube. (Has rubber O-Ring sealer).
5. Replace in reverse order.

TO REMOVE WATER INLET SOLENOID/FLOW CONTROL

1. Remove cabinet top.
2. Pull electrical leads from spade terminals on top of solenoid.
3. Loosen the 3/8" S.A.E. flare nut on outlet side of valve.
4. Unscrew entire valve body assembly from its pipe fitting on inlet side.
5. Replace in reverse of above.

TO REPLACE MOTOR COMPRESSOR VALVE PLATE

1. Install compound gauge in suction service valve port and close suction service valve by turning valve stem all the way in (Front seated).
2. Operate motor compressor until gauge reading reaches zero. Turn off unit.
3. Front seat discharge service valve.
4. Loosen all head bolts and tap lightly with rubber-faced or plastic hammer to break loose.
5. Remove head, defective valve plate and any gasket material that may have stuck to head or compressor body.
6. Install new valve plate with all new gaskets as provided, tightening each head bolt a little at a time until all are snug.
7. Remove port gauge plug from discharge valve and crack open suction side letting gas purge off trapped air from head. Install hi side gauge in this port, back up both service valve stems and check around valve plate for refrigerant leaks.

SERVICE--COMPLETE UNIT (Continued)

8. Start unit, noting head and back pressures. If normal, let run until compressor gets warm. Tighten all head bolts once more, and again check for leaks.

TO REPLACE THE COMPRESSOR

1. Front seat both suction service valve and discharge service valve on the compressor.
2. Disconnect the wiring from the compressor.
3. Remove the bolts holding the service valve to the motor compressor body.
4. Remove the compressor hold-down nuts and lift the compressor out of the unit.
5. Reverse steps 1 through 4 in replacing the compressor.
6. Check the compressor for oil before connecting the oil lines. Should be 2 inches down from the top of the oil plug hole, or 1/2 of sight glass.
7. Remove the gauge port plug from the discharge service valve. Crack the suction service valve slightly, allowing some gas to escape out the gauge port of the discharge valve. When you have thouroughly purged the compressor, replace the plug and open all valves. It may be necessary to charge the unit because some of the gas was lost when the defective compressor was removed. Check and charge if necessary.

TO REPLACE SILENT 3-WAY WATER VALVES

1. Remove left side access panel.
2. Remove 2 screws from mounting bracket.
3. Remove top 1/4" flare fitting.
4. Remove 3 hose clamps.
5. Replace in reverse.

FUNCTIONAL PARTS AND MAINTENANCE

PART NAME: Relay Potter & Brumfield Type PR5AX

NUMBER: 12-0419-00

FUNCTION: Relay is used as a by-pass on the bin thermostat when it tries to cut unit off on a full bin of cubes during a freezing cycle. This insures full cubes every time a harvest occurs and prevents short cycling on bin thermostat.

SETTING: Factory set.

REPAIRABLE: No. Replace when inoperative.

MAINTENANCE: Check electrical connections and blow points free of lint or dirt.

PART NAME: Temperature Control Storage Bin White Rodgers Type 1604-31

NUMBER: 11-0353-01

FUNCTION: To automatically cut machine off when ice level in storage bin reaches thermobulb. Automatically starts machine when ice level in bin falls below bulb location.

SETTING: These controls have adjustable differential. Setting on range dial should be 35° out, 39° in.

REPAIRABLE: No. Replace when inoperative.

MAINTENANCE: Remove cover, check points for corrosion or arching every six months. Blow control free of bugs, dirt, etc. Check capillary for cracks or worn spots due to vibration.
Hold a small handful of ice on thermostat bulb to check operation of control. Tighten electrical connections.

PART NAME: Inlet Water Solenoid

NUMBER: 12-0621-G1

FUNCTION: During freezing cycle this valve is closed, keeps water from entering heat exchanger tank and also from leaking out of tank.
During harvest or defrost cycle this valve opens and allows inlet water to pass to flow control orfice and thence to push warm water out of heat exchanger tank into back of cups molds, performing the defrost.

SETTING: Factory set.

REPAIRABLE: Yes

MAINTENANCE: Flush control each six months.

FUNCTIONAL PARTS AND MAINTENANCE

PART NAME: Drive Motor Merkle Korff

NUMBER: A23392-001

FUNCTION: This motor is used to drive the linkage mechanism which in turn drives the osillating jet spray tubes, this provides a constant spray movement to all the inverted cube molds and by so doing also aerates the water producing clear, solid Scotsman cubes.

SETTING: No settings on motor.

REPAIRABLE: Yes--to some extent. Not recommended although front bearings and windings could possibly be replaced by electric motor shop. Normally replace out of warranty motors.

MAINTENANCE: Oil every six months or less as use indicates. Use SAE 20 oil. There are two oil cups on the motor and a gear case slotted screw which has to be removed to add or change oil in gear case proper. Drive linkage should be inspected to insure free movement with no binding or drag on drive motor.

PART NAME: Time-Finishing Clock

NUMBER: A19070-021

FUNCTION: Heart of cyclematic control system is the reverse acting cube size control, No. 11-0345-01, and the time clock it actuates. All electrical components are connected to the time clock terminal board and are shunted by means of a double pole single throw micro-switch to either the freezing cycle or harvest cycle. Micro-switch is in turn actuated by two metal cams that are directly connected to the electric timer clock motor. Timer has 12 minute cycle, 10 1/2 minutes on freezing cycle after being cut on by cube size control and 2 1/2 minutes on defrost cycle. Time clock face has numerals to 12 on half the face. Each numeral represents a half minute period. Adjustable cam can be moved to lengthen or shorten defrost period.

SETTING: Normal setting for defrost is on No. 5 which is 2 1/2 minutes.

REPAIRABLE: Yes. Micro-switch only, Part No. 12-0645-20 is replaceable as well as timer clock motor only, Part No. A19070-021.

MAINTENANCE: Check all electrical connections, blow contact points free of dust, dirt, etc.

FUNCTIONAL PARTS AND MAINTENANCE

PART NAME: Reverse Acting Cube Size Control

NAUMBER: 11-0345-01

FUNCTION: Reverse acting temperature control, closes on temperature decrease, opens on temperature rise. Control determines length of freezing cycle and by the same token, the cube size. A lower setting on control will produce larger cubes, a higher setting, smaller cubes. This control actuates time clock motor, which takes over balance of freezing cycle and also defrost period.

SETTING: Turn dial clockwise to lower setting.

REPAIRABLE: No. Replace when inoperative.

MAINTENANCE: Check electrical connections. Blow points free of dust, dirt, lint, etc.

PART NAME: Sump Pump

NUMBER: 2 per unit 12-1395-01

FUNCTION: Recirculating pump used to pump supply water in sump tank to jet tubes during freezing cycle.

SETTING: Factory set.

REPAIRABLE: Motor only available part no. 12-1395-32.

MAINTENANCE: Flush out sump tank and sump pump intake with Scotsman ice machine cleaner.

FUNCTIONAL PARTS AND MAINTENANCE

PART NAME:	Control Hi-Pressure Penn
NUMBER:	11-0342-00
FUNCTION:	To control one condenser fan motor between pressures of 170 lbs. and 150 lbs.
SETTING:	Factory set.
REPAIRABLE:	No.
MAINTENANCE:	None
PART NAME:	Control Hi-Pressure Penn
NUMBER:	11-0343-00
FUNCTION:	To control one condenser fan motor between pressures of 155 lbs. and 135 lbs.
SETTING:	Factory set.
REPAIRABLE:	No
MAINTENANCE:	None
PART NAME:	3 way valve
NUMBER:	A19722-000
FUNCTION:	To route water for freezing and harvest cycles. Incoming water pressure during harvest flexes rubber diaphram against valve stem assy. which opens and closes necessary ports. Stem is spring loaded for return to position during freezing cycle.
SETTING:	None
REPAIRABLE:	Yes, diaphram, "O" ring and spring replacable.
MAINTENANCE:	Flush during maintenance cleaning.

MAINTENANCE INSTRUCTION FOR SCOTSMAN CUBERS

THE FOLLOWING MAINTENANCE MUST BE ACCOMPLISHED TWO (2) TIMES PER YEAR ON ALL SCOTSMAN CUBERS. Call your authorized scotsman service department.

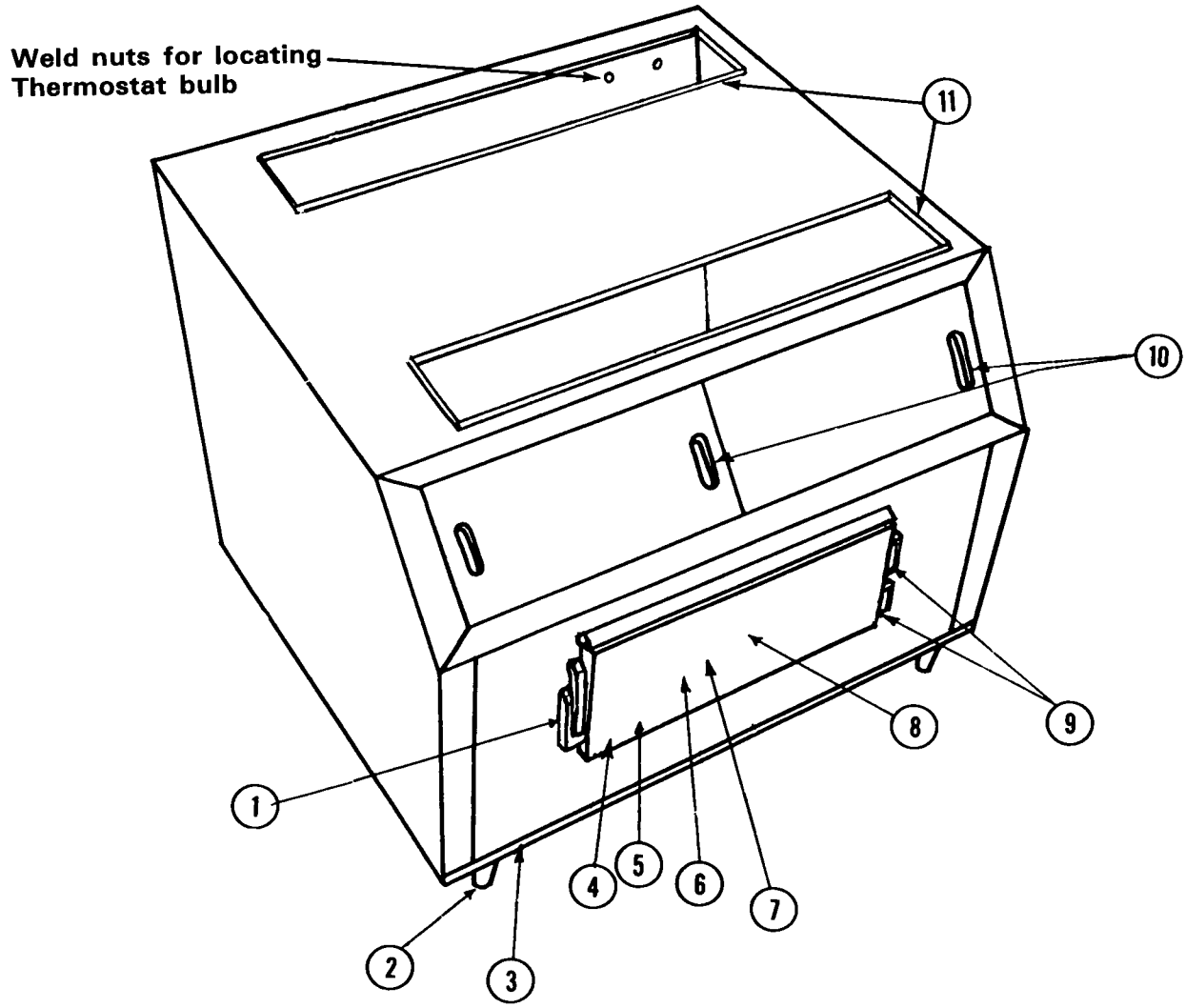
1. Clean air-cooled condenser. This is to be done frequently with the machine shut off.
2. Clean evaporator, sump tank and screen using Scotsman Ice Machine Cleaner or equivalent.
3. Remove jet tube and manually clean jets by unscrewing jets.
4. Check curtain assembly.
5. Tighten all electrical connections.
6. Tighten all bolts.
7. Check water supply. Clean and flush flow control. Clean water strainer.
8. Oil jet tubes drive motor three (3) places. Use SAE 20 oil-2 oil cups, 1 crank case screw covered opening.
9. Oil condenser fan motor. Punch sealed cap or remove screws where possible.
10. Check for refrigeration leaks.
11. Check for water leaks. Tighten drain line connections.
12. Check size and condition of cubes. Adjust as required. See Service Analysis Section.
13. Check bin thermostat setting. Factory set as 35° out, 39° in.

CLEANING INSTRUCTIONS FOR SCOTSMAN ICE MACHINES MODELS SC1000

1. Remove front access doors.
2. Locate control box with time clock knob protruding thru cover.
3. Put unit through a harvest cycle manually. This may be done by turning the time clock knob clockwise until the arrow on the knob is pointing to the hole in the control box cover.
4. Locate the two funnels which are directly under the top cover on the left end of the machine. Remove the metal covers from the funnels. Immediately after the arrow and the hole are lined up as described in Step #3, pour 24 ounces of "Scotsman Ice Machine Cleaner" into each funnel.
5. Let unit finish cube harvest cycle and start into freezing cycle. This will be approximately 5 minutes after Step #3. At this time turn off the compressor switch.
6. Let unit operate normally for 10-15 minutes into the freezing cycle. No ice will be made because the motor compressor is not in operation.
7. At the end of this time put the unit through 2 or 3 harvest cycles manually to allow fresh make up water to clean out remaining solution. Each time waiting approximately 5 minutes after the arrow and the hole are lined up until the next harvest cycle is done manually.
8. Turn the compressor switch back on.
9. Check each new batch of cubes until they are clear and until acid taste has been removed from cubes.
10. Put hot water in storage bin to melt the cubes and there-by clean the drains with the same solution that has just cleaned the unit.
11. Use a damp cloth to wipe off curtains and inside of storage bin.
12. Replace all access doors.
13. Unit is now ready for continued automatic operation.

B-700 STORAGE BIN FOR SC-1000 CUBER

H Models



ITEM		NAME
1.	02-1568-00	Latch & Strike
*2.	KLP2	Leg (4 Reqd.)
3.		Moulding
3.	A15114-000	Baffle *
4.	A17342-000	Spill Door *
5.	02-1000-00	Door Liner *
6.	13-0264-00	Door Gasket *
7.	A18300-010	Door Assy. Complete with Hardware-- grey
8.	A18300-002	Door Assy. Stainless Steel
9.	02-1569-00	Hinges
10.	02-1529-00	Sliding Door Plastic 2/unit
	A18770-000	Sliding Door Stainless Steel
11.	02-1544-00	Gasket

* OPTIONAL