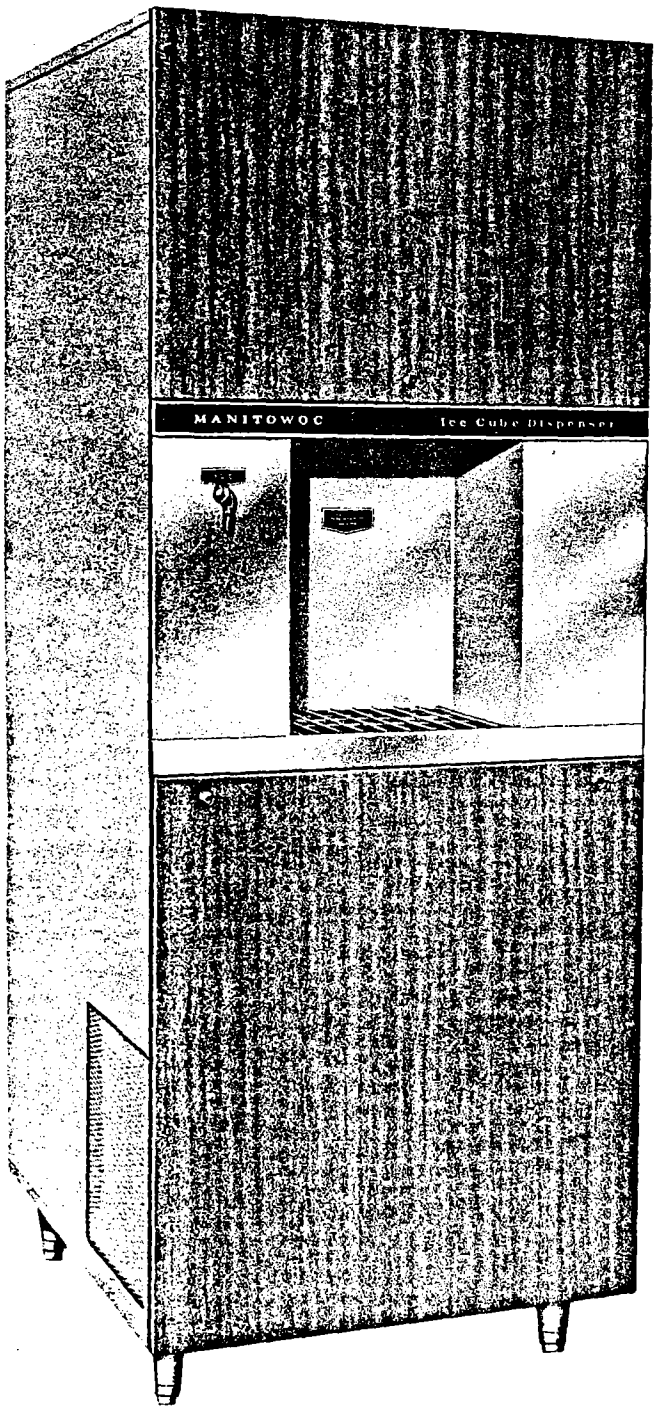
Manitowoc



SERVICE MANUAL

for

MODELS

AM 0311 A

AM 0312 A

AM 0313 A

AM 0321W

AM 0322 W

AM 0323W

ICE CUBE DISPENSER BIN

Manitowoc equipment works

Division of The Manitowoc Company, Inc.

MANITOWOC
WISCONSIN

Form No. 80-0029-1

FORWARD

Manitowoc Equipment Works, Division of the Manitowoc Company, Inc., Manitowoc, Wisconsin, presents this Service Manual to assist the service man with information concerning CONSTRUCTION, INSTALLATION, and MAINTENANCE of the MANITOWOC 300 SERIES ICE CUBE DISPENSER.

The problems of the user and the service man have been given special emphasis in the development of the latest MANITOWOC Ice Machines.

If you encounter a problem which is not answered by this manual, please feel free to write or call the Service Department of the Manitowoc Equipment Works, Division of The Manitowoc Company, Inc., Manitowoc, Wisconsin 54220, describing the problem you have encountered. The Service Department will be happy to give you particularized advice and assistance. Whenever calling or writing, please state the complete model and serial number of the ice making equipment.

MANITOWOC EQUIPMENT WORKS
Div. of THE MANITOWOC CO., INC.
Manitowoc, Wisconsin 54220

MODELS

This manual includes the following models:

MODEL NUMBERS

AM-0311A Push button ice control – Air Cooled

AM-0312A Key Ice Control – Air Cooled

AM-0313A Push button ice and water – Air Cooled

AM-0321W Push button ice control – Water Cooled

AM-0322W Key ice control – Water Cooled

AM-0323W Push button ice and water – Water Cooled

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UNCRATING AND INSPECTION

The "300" Series Cube Dispenser is shipped in a heavy cardboard carton to help prevent damage in transit.

Inspect carton thoroughly before uncrating, for punctures or damage. To uncrate cabinet, remove the band along the lower edge of carton. Remove the carton by sliding up and off of cabinet. Remove the corner posts and the inner carton.

Inspect cabinet for possible concealed damage. If damage is evident notify carrier at once for inspection.

Remove the four skid bolts from the bottom of cabinet, and remove skid. Unpack the four bin legs, packaged inside of cabinet. Screw these legs into the same holes at bottom of bin where skid bolts were removed.

LOCATION AND INSTALLATION

After legs are securely in place, locate Dispenser Bin in desired location. Once bin is located, allowing a minimum of 4 inches on all sides for air circulation, level bin side to side and front to back.

Remove the front panels, top and bottom with the keys supplied. Remove the packing from beneath water pump, and all tape from splash curtain and damper door assembly. Also remove the compressor blocks and the shipping block at the top of auger.

ELECTRICAL SUPPLY

115 Volt – 60 Cycle – 1 Phase. Maximum fuse size (See Serial and Electrical Plate). Minimum wire size (See Serial and Electrical Plate Min. ampacity rating).

GENERAL REQUIREMENTS

All electrical and water supply and drain connections must conform to all local and national codes.

CONNECTING POWER SUPPLY

Your cube dispenser should be connected to a separately fused circuit. Fuse size must not exceed maximum fuse size shown on the electrical plate.

All electrical wiring connected to your dispenser must be rated equal to the minimum circuit ampacity shown on the electrical plate.

Remove cover from control panel. Insert power supply leads through the hole marked "A" in Fig. 1 and attach supply leads to leads "B" and "C" Fig. 1. Replace cover to control panel.

CONNECTING WATER SUPPLY

Connect the water supply line to the 1/2 inch N.P.T. female fitting located in the bottom of the dispenser (See Fig. 3 "A") a water strainer is supplied with dispenser.

NOTE: Check all local plumbing codes.

DRAIN CONNECTIONS

It is essential that drain connections be made so waste water can't back up into the head unit or bin. On water cooled models, a separate connection is provided for discharging condenser water. (Fig. 3 "B"). All connections are labeled. We recommend covering all incoming water and drain lines with a plumbing insulation material to prevent condensation.

Tee the three (3) bin drains, located at the bottom rear of dispenser together. We recommend 3/4" common drain line be used. (See Fig. 3 "C").

SERIAL AND ELECTRICAL PLATE

The combined serial and electrical plate is located outside the cabinet in the upper right front corner. Be sure to send complete model and serial number of your dispenser when calling for parts or service.

CHECK LIST FOR STARTING MACHINE

Turn on water, and observe that the float valve shuts off the water when the level is about 2 inches deep. Should float require adjustment merely bend float rod carefully until desired water level is achieved. Turn the toggle switch to "water pump" position.

The water pump will start pumping water into the tube located at the top of the evaporator. Return water will flow into the sump.

CHECK FOR THE FOLLOWING THINGS

A higher than necessary water level wastes water and reduces ice making capacity.

Turn the machine on and off several times to flush clean water through the system and to observe that waste water drains properly.

With the toggle switch in the "ICE" position, reach in and push the damper door open. The entire machine should stop and remain off until the damper is released.

Observe one ice cycle before replacing front panels.

The ice size controls consist of a Ranco or Penn reverse-acting pressure control (opens on pressure rise) and a Paragon time clock. These controls are factory set and should need no adjustment except in altitudes above 5,000 feet.

MANITOWOC'S FREEZE AND HARVEST CONTROL FOR 300 SERIES DISPENSER

Freeze and harvest cycles on the above model Manitowoc Dispenser are regulated by three very simple controls. The basic control is a low side reverse-acting pressure regulator made by either Ranco or Penn. This is mounted in the compressor compartment. (Fig. 1 "E") The second control is a Paragon Timer, located in the control panel. (Fig. 1 "F") The third is a thermo disc installed on the suction line outlet of the evaporator. On starting a warm machine, the suction pressure may be upwards of 75 PSIG; but as the compressor runs, the

suction pressure and temperature within the line is lowered. When the line temperature reaches 35 degrees F., the thermo disc "cuts in" and closes the clutch on the timer and holds it "in" continuously through the freezing cycle. When the suction pressure reaches 11 lbs. the pressure control electrically activates the timer motor. The cam on the timer motor is set at approximately 4½. This is equal to 6½ minutes running time. The clock continues to run until the cam stalls against the harvest micro switch. This places the unit in defrost, and it will stay in defrost until released by the bin damper switch when the sheet of ice falls into the bin. The thermo disc remains closed during the entire harvest cycle. It opens only when the temperature of the suction line rises to 65 degrees. This is a safety measure to prevent overheating in case the unit would stay in harvest.

If the dimple in the cubes is too pronounced, you may set the timer dial to 5. This will increase the freezing time. Likewise, if the bridging between cubes is too heavy, you may set the dial back to about 4. This shortens the freezing time.

CONTROLS

High Pressure Cut-Out

This shuts entire machine off, should the head pressure exceed 275 PSIG.

Suction Line Thermo Disc

Suction line thermo disc is a safety control located on suction line. This control is a Klixon switch that opens at 75°F + -5° and closes at 40°F + -5°. The thermo disc acts only as a safety device to prevent overheating of the machine. Should the damper door switch fail after harvest, the thermo disc will open. Then the suction line temperature reaches 75° + -5° this will return the machine to its normal freezing cycle by disengaging the clock clutch located on the clock.

TOGGLE SWITCH

The main power "ON and OFF" toggle switch is a double pole, double throw switch with "OFF" in the center position. With the toggle switch in the "water pump" position, only the water pump and the condenser fan operate. This is for checking the water inlet float level, pump operation, and for circulating cleaning solution.

With the toggle switch in the "ICE" position, the water pump, compressor, and condenser fan (air cooled models), run for a normal ice making cycle.

Ranco or Penn Pressure Control

This control is a reverse-acting pressure control that opens on pressure rise. Upon decrease in suction pressure to 11 PSIG, the pressure control closes, actuating the time clock.

Paragon Time Clock

After the pressure control energizes the time clock, the time clock motor turns a cam for 6½ minutes (number 4½ on time clock face). When the 6½ minutes have elapsed, the cam trips a micro switch which in turn cycles the machine into hot gas or harvest cycle. Simultaneously, the water pump (and condenser fan on air cooled models) are shut off.

Damper Door Switch

When the harvest is completed, the ice falls through the damper door tripping the damper door switch. This, in turn, opens the holding clutch on the time clock momentarily to reset the clock and return the machine to its normal freeze cycle.

When the ice bin is full, the ice holds the bin switch open keeping the machine shut off.

Should the damper switch fail, the suction line thermo disc will open to reset the time clock.

SETTING TIMER

Should it be necessary to adjust the timer for an accurate bridge thickness, proceed as follows:

1. Remove cover from the control box Fig. 2 "A".
2. Locate timer Fig. 1 "F".
3. Loosen adjustment screw Fig. 4 "D".
4. To decrease bridge thickness, set arrow Fig. 4 "C" to number 3. Likewise to increase bridge thickness, set arrow to number 5.
5. Retighten set screw.

HOW THE DISPENSER WORKS

Manitowoc has designed its 300 Series Combination Ice Dispenser Bin to manufacture, store and deliver up to 275 lbs. of crystal clear ice cubes daily. The cube is a 7/8" dice cube.

After the dispenser bin is installed, allow the ice cuber to operate 4 to 6 hours before dispensing ice. When this time period has elapsed there will be a sufficient amount of ice in the bin to enable the ice to be dispensed.

To dispense the ice, hold the glass or container under the ice opening at front center of dispenser (Fig. 2 "B". Push the ice button or turn the key control to begin ice

delivery. When the required amount of ice is delivered, merely release the button or key to discontinue ice delivery.

- If bin is equipped with optional water controls, push the button or trigger for the desired amount of water required in the container.

The cuber delivers its ice into the Dispenser Bin in its normal manner. The auger, by revolving, conveys the ice to the ice opening. The ice then falls through this opening and into the container. The auger is driven at a slow RPM by a 1/3 HP motor through a speed reducing gear train located in the compartment above the storage bin. See Fig. 2 "C".

The opening in the ice delivery chute is designed to reject ice cubes, frozen together, to avoid jamming of the ice chute opening. These rejected cubes are either sheared by the chute or are dropped off the auger to the bottom of bin to be re-dispensed.

The Dispenser is available with a chute extension for filling small containers.

When ice is dispensed from the bin it is replaced by the ice cuber at the rate of approximately 300 lbs. daily. This continual falling of ice into the storage bin, keeps the ice loose for maximum dispensing capacity of dispenser.

The water created by some melting of the ice is drained out of the bin through the drain located at the back of the Dispenser. The other two drains are for the waste pan and bin condensate. (See Fig. 3 "C".)

REMOVING AUGER ASSEMBLY

To remove the auger assembly for cleaning or maintenance proceed as follows:

1. Remove top front panel.
2. Remove the four ice chute extension screws marked "D" in Fig. 2, and remove chute extension.
3. Remove the two bolts marked "B" and the four bolts marked "A" in Fig. 5.
4. Disconnect the drive motor electrical leads and lift entire gear drive assembly up and out of dispenser.
5. Remove the two bolts on each side of the auger chute Fig. 5 "C".
6. Lift the auger assembly up and out of Dispenser as indicated in Fig. 6 "A".

REPLACING AUGER ASSEMBLY

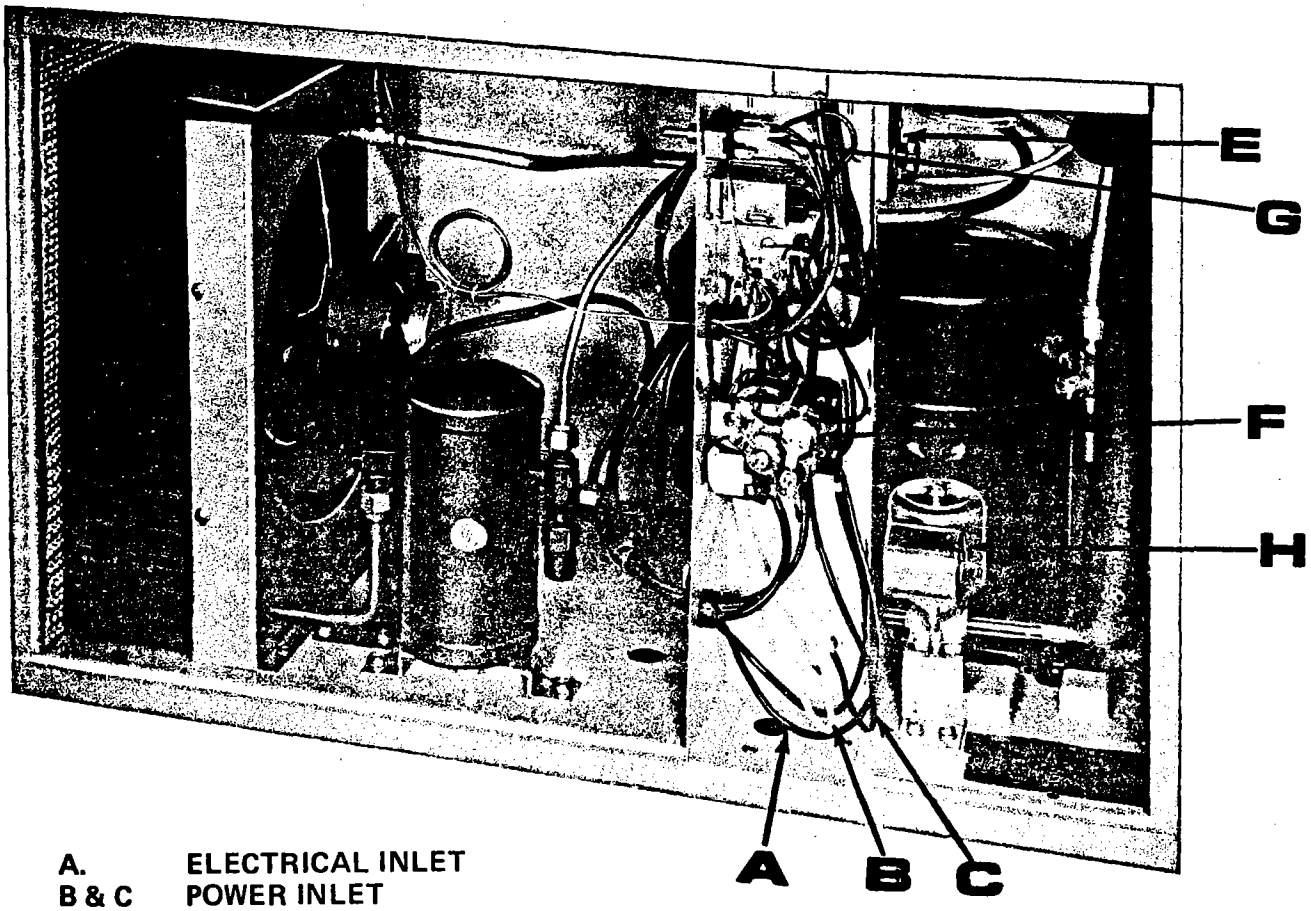
To replace the auger assembly, insert assembly back into bin. Be sure the two pins at the bottom of the auger assembly slide into the two holes in the bracket at the bottom of bin.

Install the drive assembly and ice chute extension in reverse order as removed.

REMOVING AUGER ASSEMBLY

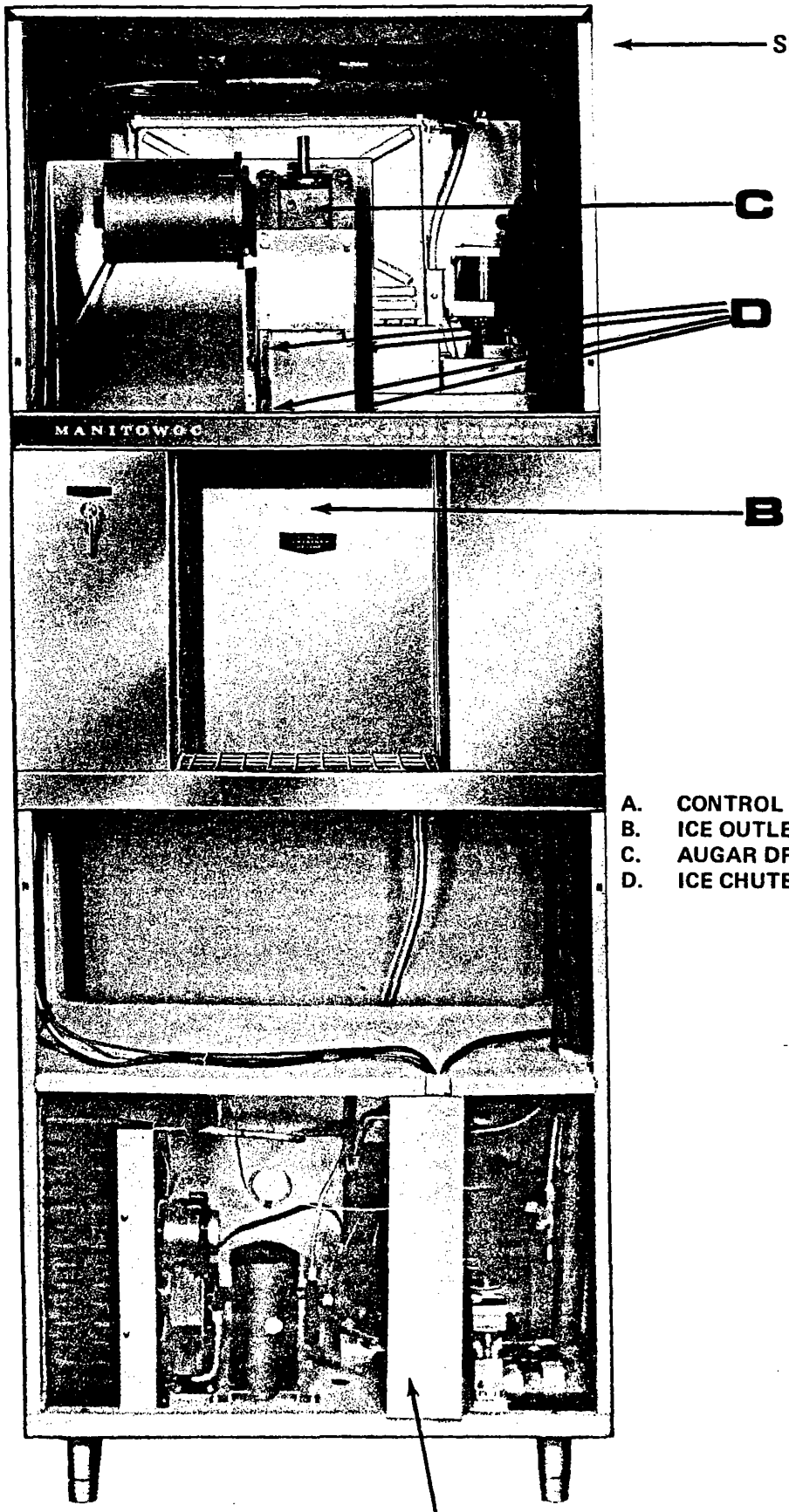
To remove auger drive assembly proceed as follows:

1. Disconnect power supply and remove top front panel.
2. Disconnect drive motor electrical leads.
3. Remove the two bolts marked "B" in Fig. 5 from gear drive.
4. Remove the four mounting bolts holding the gear drive to the mounting bracket.
5. Lift the drive assembly up and out of dispenser.
6. Replace drive assembly in reverse order.



A.	ELECTRICAL INLET
B & C	POWER INLET
E.	PRESSURE CONTROL
F.	TIMER
G.	ON–OFF TOGGLE SWITCH
H.	SOLENOID VALVE (HOT GAS)

FIG. 1



A. CONTROL PANEL
B. ICE OUTLET
C. AUGAR DRIVE ASSEMBLY
D. ICE CHUTE EXTENSION BOLTS

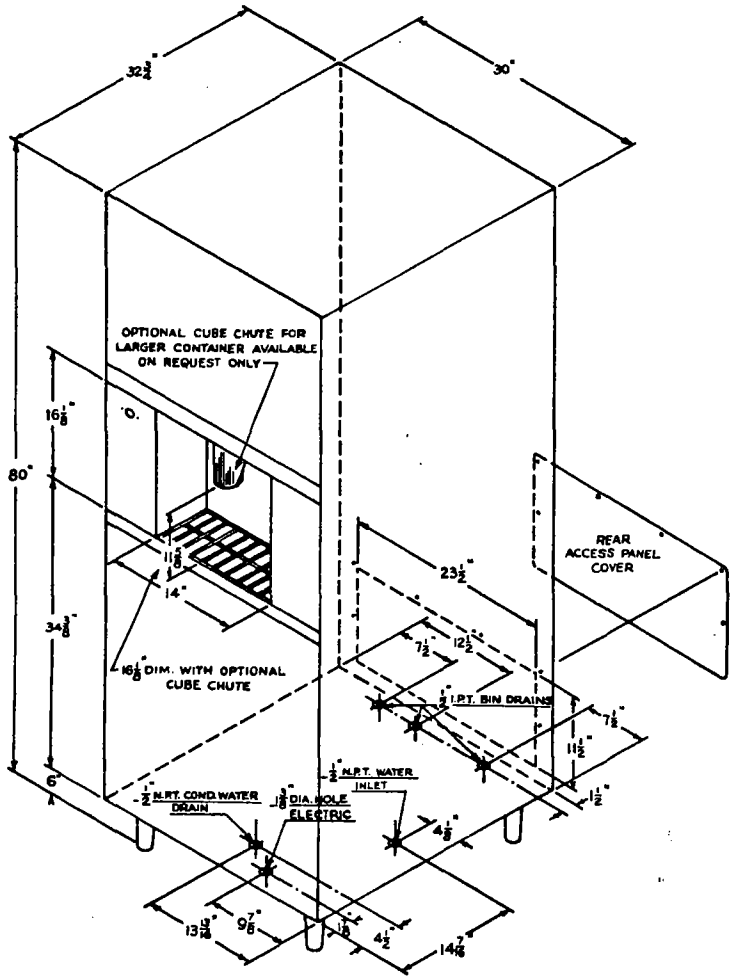
FIG. 2

A300 SERIES

ICE CUBER DISPENSER COMBINATION

SPECIFICATIONS

ICE PRODUCTION	Up to 340 lbs. per 24 hours
BIN CAPACITY	275 lbs.
ICE SIZE	Dice 7/8" Cube
HEIGHT — with 6" legs	80 inches
WIDTH	30 inches
DEPTH	32¾ inches
APPROX. SHIPPING WEIGHT	461 lbs.
COMPRESSOR	1/2 H.P.
ELEC. CHARACTERISTICS	115-60 cy. single phase (AC)
AUGER	4 inch
FINISH	Fawn Baked Enamel Front Panel Walnut Grained Vinyl



MODEL NUMBERS

AM-0311A Push button ice control — Air Cooled

AM-0312A Key Ice Control — Air Cooled

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AM-0322W Key ice control — Water Cooled

AM-0323W Push button ice and water — Water Cooled

Fig. 3

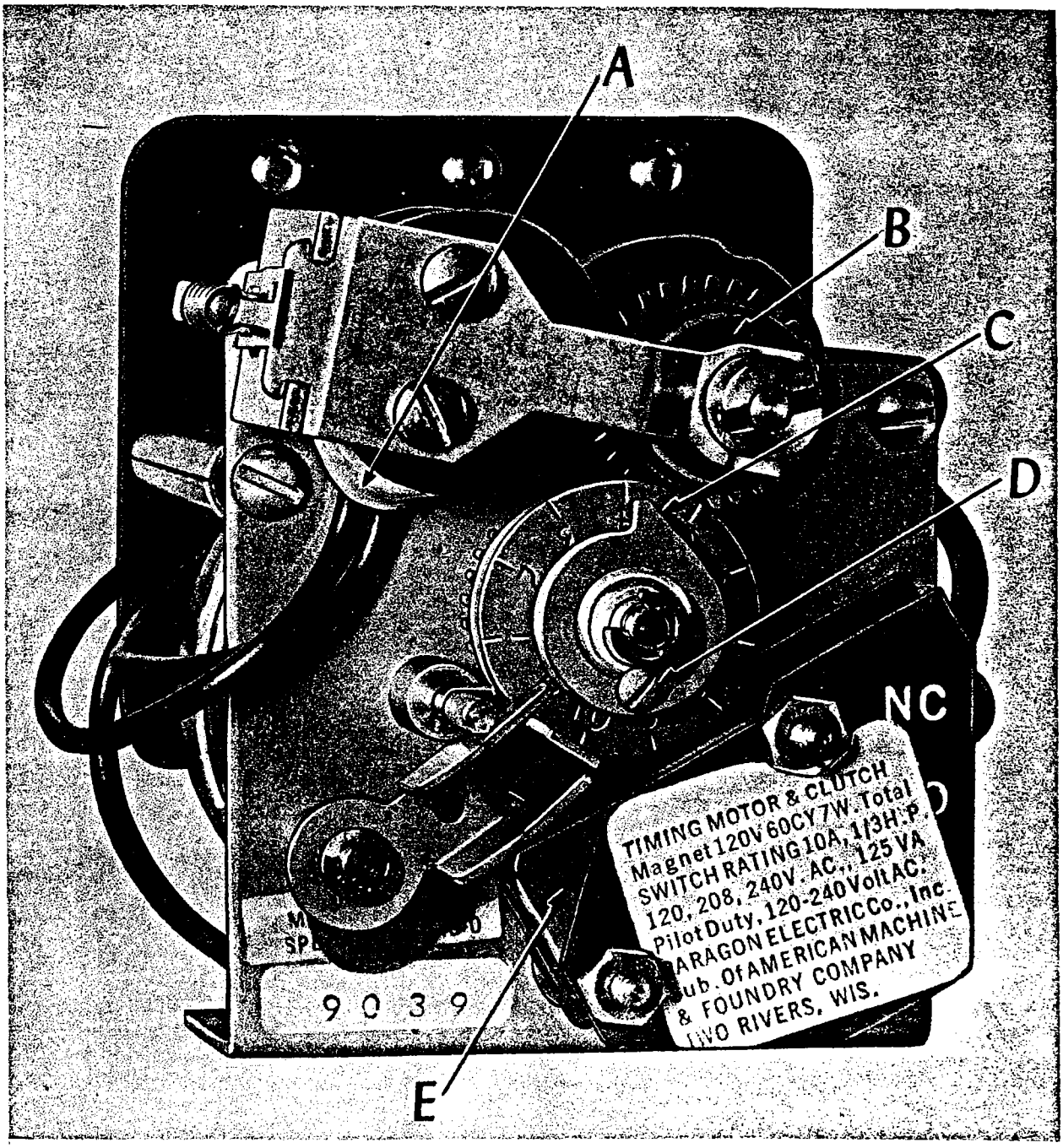
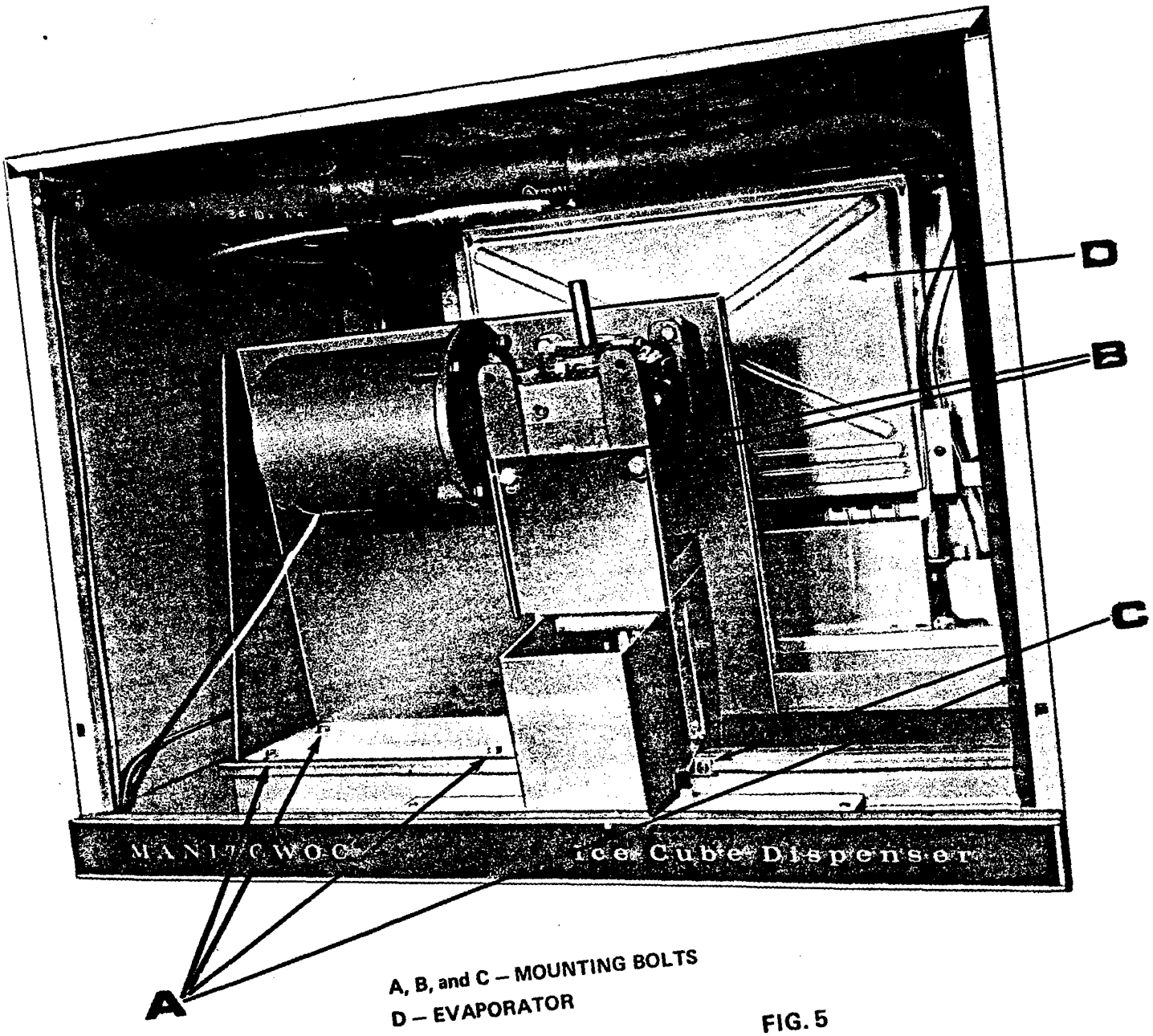


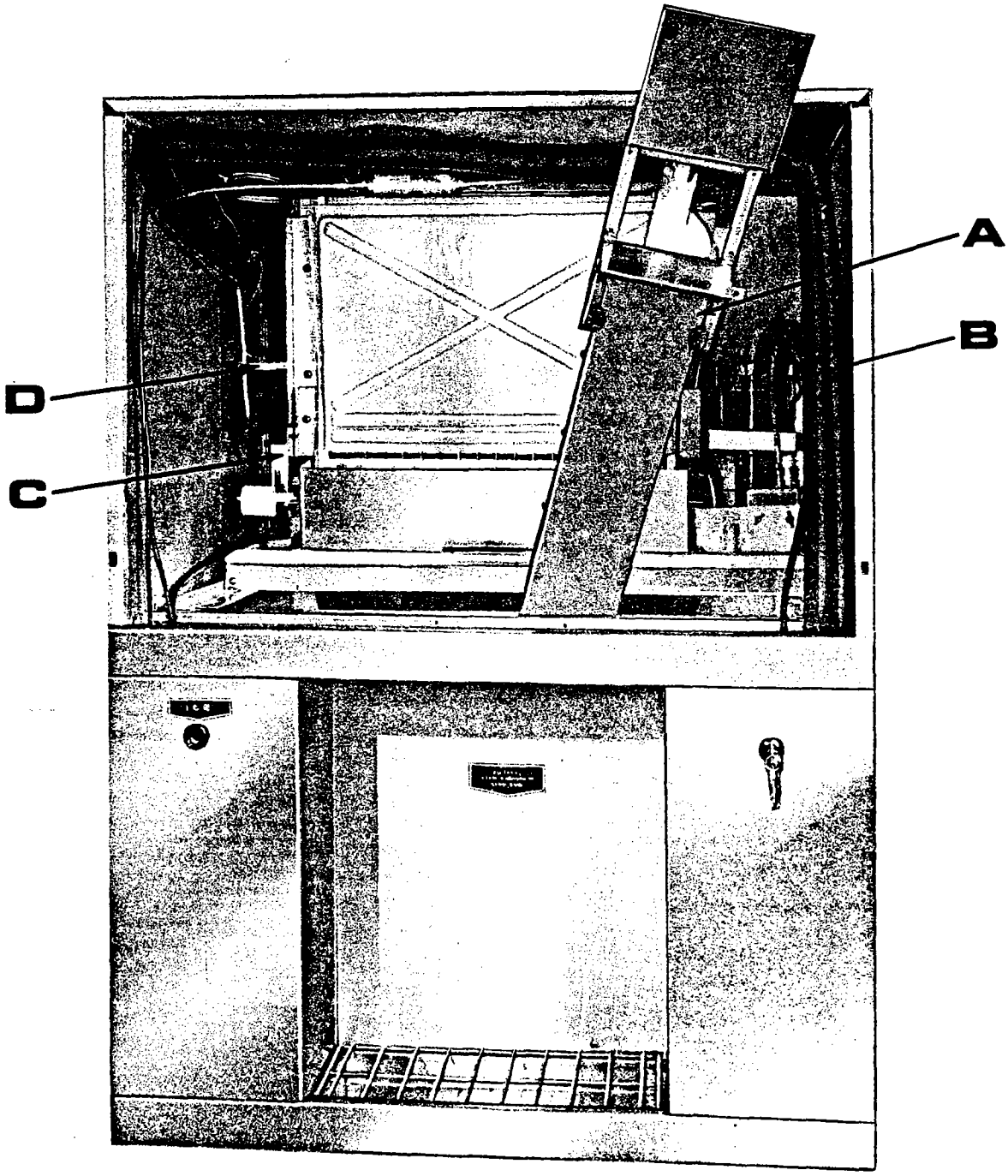
FIG. 4

A. CLUTCH COIL
B. CLUTCH
C. TIMER SETTING
D. TIMER SETTING LOCK SCREW
E. MICRO SWITCH



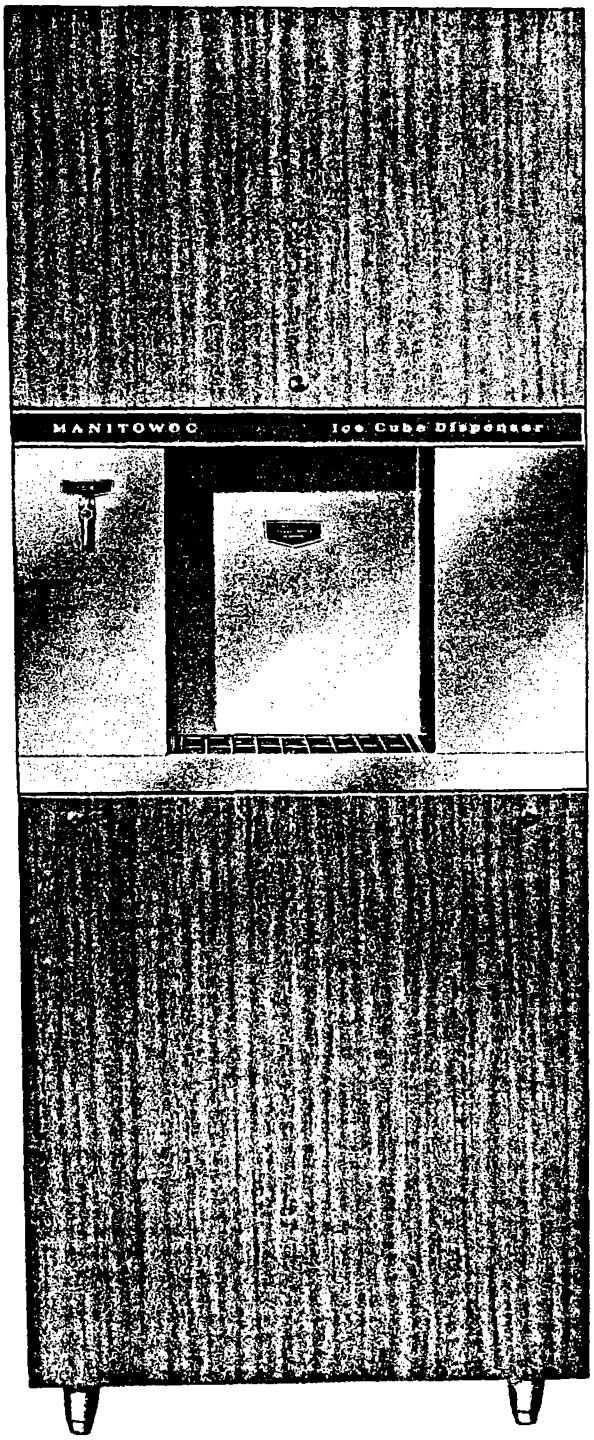
A, B, and C – MOUNTING BOLTS
D – EVAPORATOR

FIG. 5



A. AUGAR ASSEMBLY
B. WATER PUMP
C. BIN SWITCH
D. EXPANSION VALVE

FIG. 6



DISPENSER INSTALLED

CLEANING INSTRUCTIONS

IN PLACE CLEANING

To clean the ice cuber water system without removing the components proceed as follows. NOTE – This is only recommended in locations where impurity build-up is not heavy.

1. Remove ice cuber front panel.
2. Shut off ice cuber.
3. Remove ice from bin.
4. Shut off water supply and remove water from water sump.
5. Pour one bottle of ice machine cleaner into sump and turn supply water on.
6. Place toggle switch to water pump position and circulate cleaner for about 30 minutes.
7. After cleaning, shut machine off and remove cleaner. Flush water system thoroughly.
8. Clean ice storage bin with ice machine cleaner also.

DISASSEMBLING WATER SYSTEM FOR CLEANING

1. Shut machine off.
2. Remove splash curtain, water pump and water distributor.
3. Disassemble distributor as indicated in Fig. 7.
4. Disassemble water pump as follows: A. Turn pump over and remove the 6 brass thumb screws. B. Hold and depress impeller. Rotate plastic thumb nut counter-clockwise. C. Remove screws and pump housing. Pump is now ready for cleaning. D. Reassemble in reverse order as removed.

Scrub all parts removed using a nylon scouring pad, brushes, and a cleaning solution such as LIME-A-WAY from Economics Laboratory, In., Calgon Ice Machine Cleaner, or Boss Brand Milk Stone Cleaner from Northern Laboratories. Rinse all parts with clear water.

It is recommended that the ice be removed from the storage bin before scrubbing the base and evaporator assembly. Rinse with clear water. Check to see that overflow or drain hole in the base is clear and that water drains through freely.

Reassemble unit. To sanitize unit, mix ONE TEASPOON OF SODIUM HYPOCHLORITE IN ONE GALLON OF WATER. Pour solution into sump, then turn toggle switch to the left to start water pump.

Keep pouring solution into sump until system has enough to keep pump primed. After one minute, turn off pump and remove solution from water sump. Repeat with clear water before turning switch back to the ice making position. Make visual inspection for leaks and operation before replacing the front panel.

SPECIFICATIONS

CUBER MODEL				AM-0321W AM-0322W AM-0323W 300 Series Water Cooled 60 Cycle			AM-0311A AM-0312A AM-0313A 300 Series Air Cooled 60 Cycle	
Compressor Model				RSN20050-1AA			RSN20050-1AA	
Compressor Voltage				115V-60Cy-1Ph			115V-60Cy-1Ph	
Winding Resistance Common to Run				.6 OHMs			.6 OHMs	
Winding Resistance Common to Start				3.8 OHMs			3.8 OHMs	
Start Capacitor Rating				189-210MFD220V			189-210MFD220V	
Fan Motor Model				MORRILL			MORRILL	
Fan Motor Amps							1.00	
Fan Motor Watts							9 Watt	
Fan Motor Volts							115 Volts	
Fan Winding Resistance							28 OHMs	
Solenoid Valve Volts				115V			115V	
Solenoid Valve Winding Resistance				49 OHMs			49 OHMs	
Hartell Water Pump Winding Resistance				9.5 OHMs			9.5 OHMs	
Hartell Water Pump Amperage				1.8 Amps			1.8 Amps	
Refrigerant Charge – R-12				36 ozs.			36 ozs.	
Normal machine amperage				19.4 Amps			18.4 Amps	
Room Temperature		70	90	110	70	90	110	
HEAD PRESSURE	Maximum	120	120	120	130	160	200	
	Minimum				105	125	170	
SUCTION PRESSURE	Maximum	18	19	20	18	19	21	
	Minimum	9	10	10	9	10	11	

ICE PRODUCTION – lbs. per 24 hours

DICE CUBE – 7/8"				
MODELS	INCOMING WATER TEMP.	ROOM TEMPERATURE		
		70°	80°	90°
AM-0311A AM-0312A AM-0313A	50° 70° 90°	340 300 260	320 280 240	295 260 220
AM-0321W AM-0322W AM-0323W	50° 70° 90°	340 310 280	325 285 255	295 260 230

SERVICE AND PARTS PROCEDURES

Order and Pricing Procedure

All replacement parts for the Manitowoc ice machine equipment are to be ordered directly from the factory; however, any distributors or dealers who may be interested in stocking replacement parts for the machines they sell, in order to provide their customers with a prompt and efficient service, may purchase these parts with the understanding that, any time they feel they have parts they no longer need or feel they no longer want to carry replacement parts, they are to notify the factory's Parts Department as to which parts they wish to return.

Upon receipt of this listing, we will immediately send them written authorization to return these parts; and upon receipt of these parts, full credit will be issued. There will be no charge for restocking these parts. Of course, credit can only be issued if the parts are returned in a new and unused condition.

When placing your order, be sure to do as follows:

1. Print name and address plainly.
2. If special routing is requested, please show the name of the carrier.
3. Indicate quantity desired, print catalogue part number plainly and print name as shown in the catalogue.
4. Indicate model and serial number of the unit. The complete serial number is needed.
5. If uncertain as to the proper part number, please give a complete description or sketch of the part and the location of the part which is needed.
6. Check to see that all required information is contained in your order to facilitate prompt shipment.

All replacement parts are shipped from the factory on a f.o.b. Manitowoc basis. It is company policy to bill for all field replacement parts, according to terms as specified by our Credit Department.

All parts orders will be honored by the factory and will be billed according to our parts list schedules.

Parts which are covered by our warranty policy are to be returned to the factory for credit, transportation charges prepaid. Upon receipt of these parts here at the factory, they will be inspected; and if they are found to be defective, in material and workmanship, under normal use and service, credit will be issued.

Transportation companies are responsible for damage in transit as all shipments are tendered to them in good condition; and our responsibility ceases upon receipt of a signed bill of lading from the carrier. If the shipment arrives in a damaged condition or is short, the delivering carrier should be notified immediately.

Return of Defective Parts

All defective parts returned to the factory, transportation prepaid, must be tagged with a return material tag properly filled in. It is especially important

that the cabinet serial number be secured and recorded on the tag, securing as much information as possible about the nature of the defect to prevent any delays in issuing credit. All parts should be returned as they are removed from the cabinet and not mutilated or tampered with. The return material tags are provided on a no-charge basis by the factory upon receipt of your request.

Our warranty and protection plan does not apply to cabinets that are not registered; therefore, it is necessary that, upon completion of the installation of the cabinet, the registration card be signed on the date of installation and mailed promptly to the factory Service Department in order for the cabinet to be registered.

Return of Hermetically-Sealed Units

Extreme care should be used in servicing the hermetically-sealed mechanism. It is important that the trouble be correctly determined before the unit is changed. Be sure it is not the control, relay, or overload causing the trouble. The defect must be listed on the return material tag.

The inoperative assembly should be returned to the factory, freight prepaid, making certain that all service valves and tubing are sealed properly so as not to let in dirt, air, or moisture into the system. After inspection of the returned hermetic mechanism, if it has been determined that the reason for failure is the result of defective workmanship and material, credit will be issued.If a returned hermetic mechanism if found, after inspection, not to be defective, it will be returned to the sender, along with the necessary charges to cover the inspection, handling, and freight. Credit will not be allowed for defective mechanisms damaged from improper packaging or handling.

Return of Complete Machines

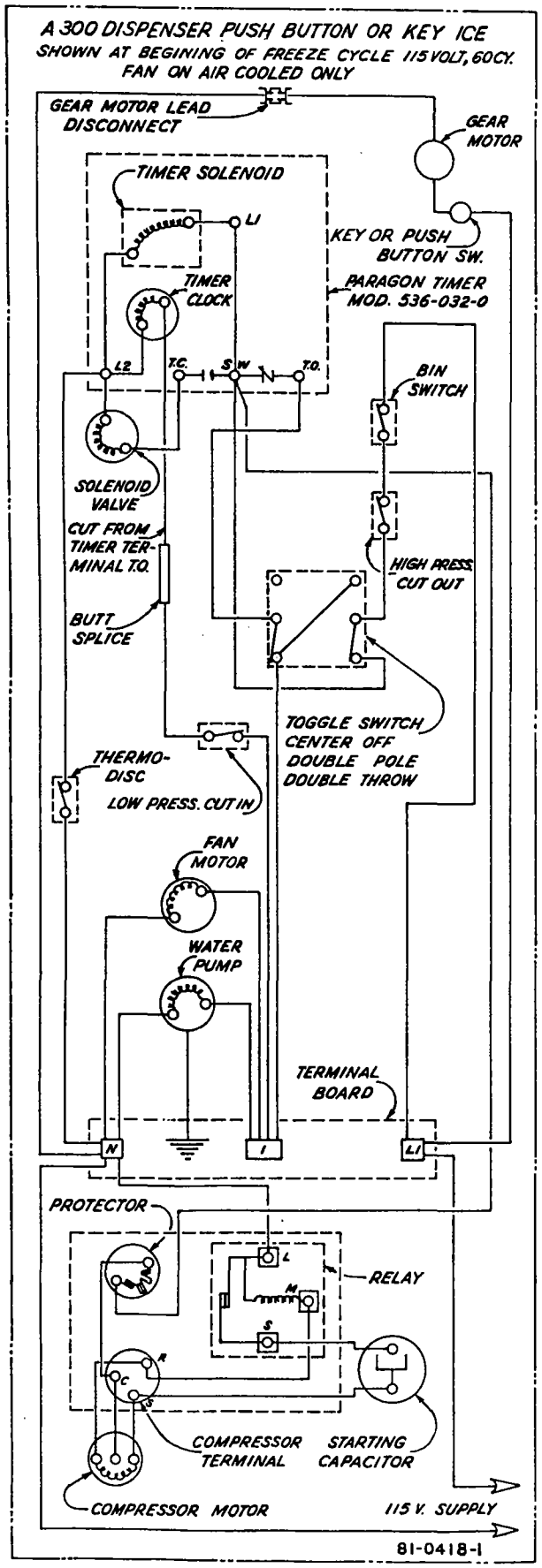
No complete machines may be shipped back to the factory for repairs without first securing prior permission from the factory. If an unauthorized shipment is received at the factory, it will be refused by our warehouse and immediately returned to the sender. Upon receipt of your request to return a cabinet, if we feel that your request is legitimate, you will be sent an authorized return label authorizing you to return this cabinet to the factory freight prepaid.

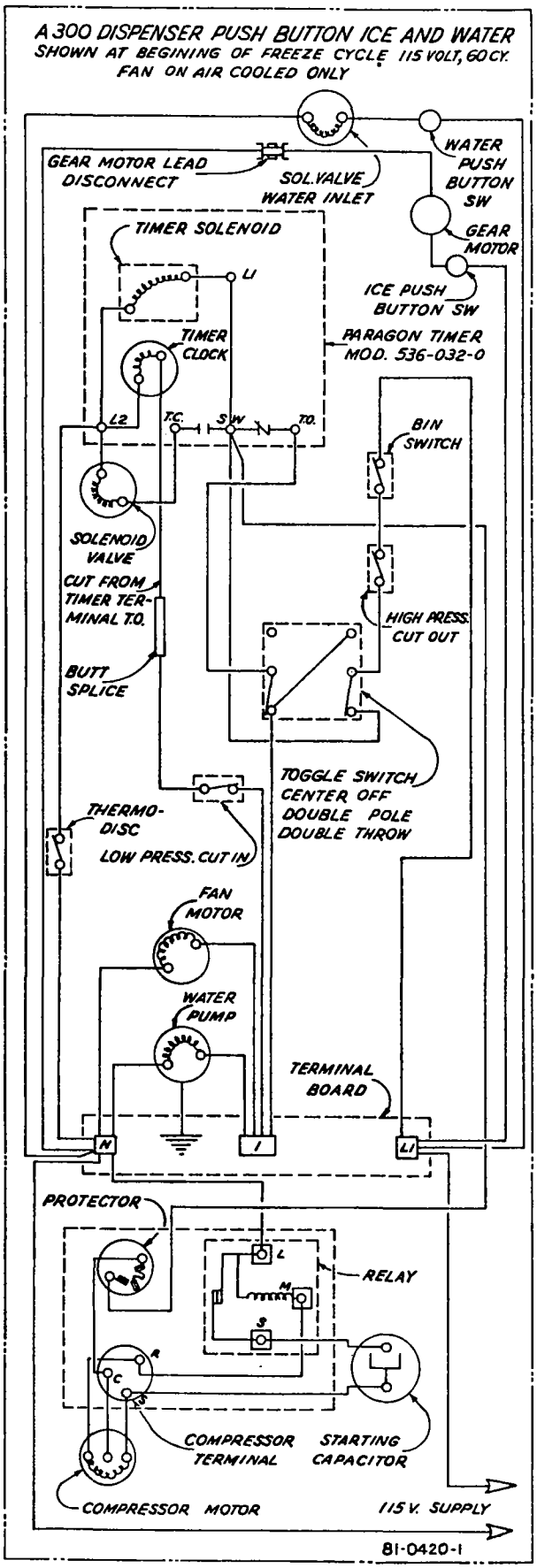
Service and Labor Charges

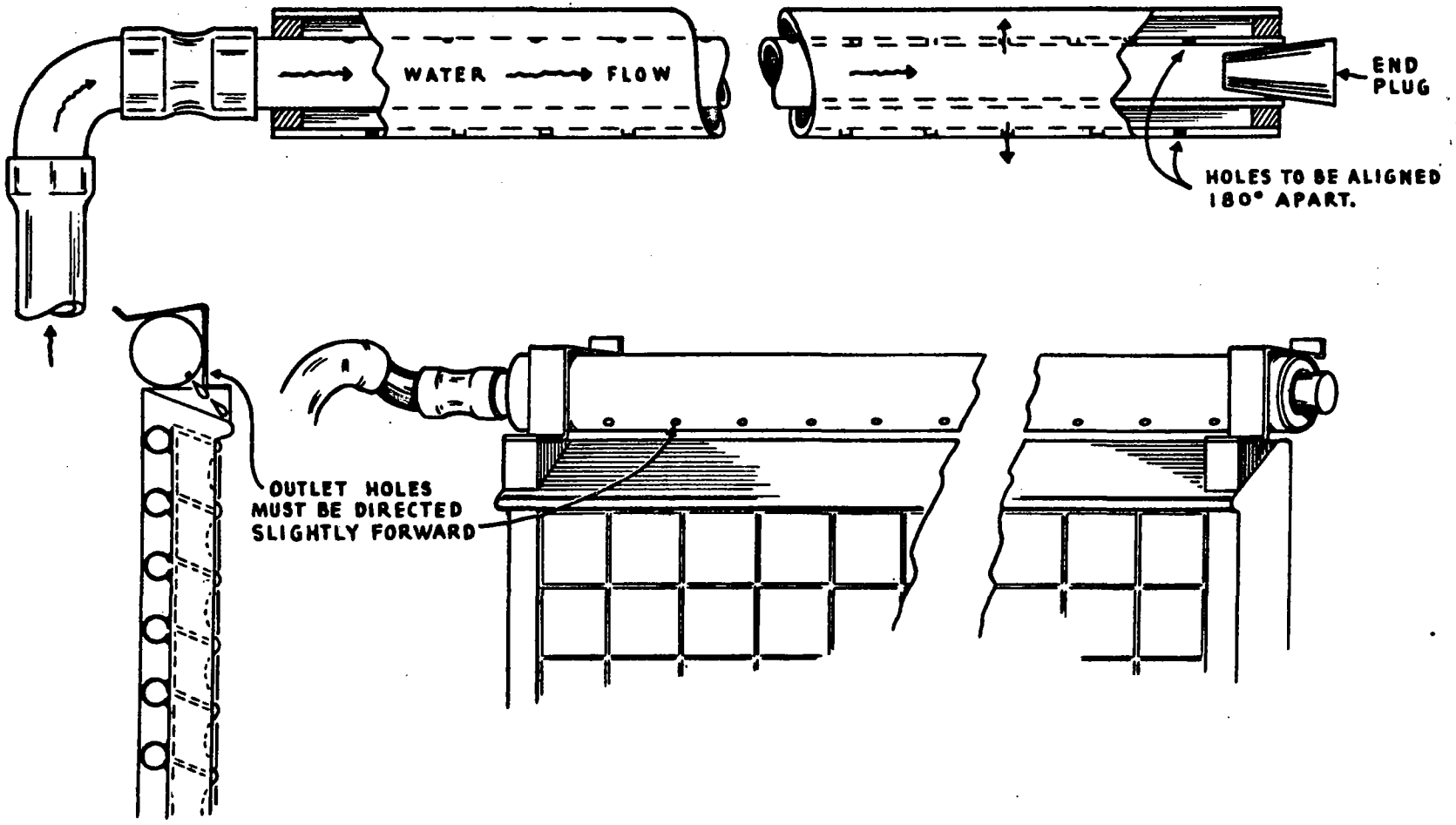
In accordance with our warranty and protection plan, which is included in each cabinet, this protection plan provided is available only through distributors and dealers who will be solely responsible for service and labor charges.

SERVICE ANALYSIS

COMPLAINT	CAUSE	CORRECTIVE MEASURES
Slow Harvest	Contaminated or limed water system	Clean water system
	Low Ambient (air cooled models)	Must be above 50^0 F
	Water valve set too low	Adjust water valve to 125 PSIG head pressure
	Leaking water valve (water cooled models)	Replace water Valve
High head pressure	Air in system	Evacuate and recharge
	Defective water valve (water cooled models)	Replace water valve
	Defective fan (air cooled model)	Replace fan
	Water valve not properly adjusted	Adjust water valve
	Contaminated air cooled condenser	Clean condenser
	Defective expansion valve	Replace
High suction pressure	Contaminated condenser	Clean
	Defective fan	Replace fan
	Defective water valve (water cooled models)	Replace or adjust water valve
	Moisture in system	Replace drier, evacuate, and recharge
Low suction pressure	Shortage of refrigerant	Locate leak and repair
	Moisture in system	Replace drier, evacuate system
	Ambient too low for operation	Must be above 50^0 F.
Unit noisy	Fan shroud touching fan blades	Adjust fan mounting brackets
Ice maker will not stop when full of ice	Damper door not properly adjusted	Adjust damper door
	Defective damper door micro switch	Replace damper door micro switch
Time clock will not operate	Ranco pressure control not closing	Replace control
Time clock will not actuate harvest	Timer micro defective	Replace micro switch
	Thermo disc is not closed	Check thermo disc
Small cube bridge	Ranco pressure control not opening	Replace control
	Leak in refrigeration system	Locate leak, repair, evacuate, and recharge
Machine will not cycle into harvest	Defective time clock clutch coil	Replace
	Defective time clock micro switch	Replace, or tighten on suction line
	Defective thermo disc or thermo disc loose on suction line	
	Defective pressure control	Replace
	Moisture in refrigerant system	Replace drier
Will not dispense ice	Power off	Check main switch, fuses and wiring
	Defective push button or key switch	Check and replace if necessary
	Motor defective	Replace
	Gear drive defective	Replace
Drive motor operates but auger doesn't	Belt slipping	Replace
	Drive chain broken	Replace
Water will not operate	Defective solenoid	Replace
	Power off	Check power at water switch
	Water line plugged	Check and clean
	Defective switch	Replace


A 300 DISPENSER PUSH BUTTON OR KEY ICE
SHOWN AT BEGINING OF FREEZE CYCLE 115 VOLT, 60CY.
FAN ON AIR COOLED ONLY
GEAR MOTOR LEAD DISCONNECT
GEAR MOTOR
TIMER SOLENOID
L1
KEY OR PUSH BUTTON SW.
TIMER CLOCK
PARAGON TIMER MOD. 536-032-0
L2
T.C.
SW
T.O.
BIN SWITCH
SOLENOID VALVE
CUT FROM TIMER TERMINAL T.O.
HIGH PRESS. CUT OUT
BUTT SPLICE
TOGGLE SWITCH CENTER OFF DOUBLE POLE DOUBLE THROW
THERMO-DISC
LOW PRESS. CUT IN
FAN MOTOR
WATER PUMP
TERMINAL BOARD
N
1
L1
PROTECTOR
RELAY
L
M
S
R
C
S
COMPRESSOR TERMINAL
STARTING CAPACITOR
COMPRESSOR MOTOR
115 V. SUPPLY
81-0418-1


A 300 DISPENSER PUSH BUTTON ICE AND WATER
SHOWN AT BEGINING OF FREEZE CYCLE 115 VOLT, 60CY.
FAN ON AIR COOLED ONLY
WATER PUSH BUTTON SW
GEAR MOTOR LEAD DISCONNECT
SOL. VALVE WATER INLET
GEAR MOTOR
TIMER SOLENOID
L1
ICE PUSH BUTTON SW
TIMER CLOCK
PARAGON TIMER MOD. 536-032-0
L2
T.C.
SW
T.O.
BIN SWITCH
SOLENOID VALVE
CUT FROM TIMER TERMINAL T.O.
HIGH PRESS. CUT OUT
BUTT SPLICE
TOGGLE SWITCH CENTER OFF DOUBLE POLE DOUBLE THROW
THERMO-DISC
LOW PRESS. CUT IN
FAN MOTOR
WATER PUMP
TERMINAL BOARD
N
1
L1
PROTECTOR
RELAY
L
M
S
R
C
S
COMPRESSOR TERMINAL
STARTING CAPACITOR
COMPRESSOR MOTOR
115 V. SUPPLY
81-0420-1



WATER SYSTEM SKETCH

Fig. 7

Ice Machine and Bin Warranty

From the date of original installation, we do hereby warrant each new Ice Machine and Bin to be free from defects in material and workmanship, under normal use and service, for a period of one year, and four additional years on the hermetic motor compressor in the Ice Machine.

Our obligation under this warranty is limited solely to correcting or replacing without charge at the factory in Manitowoc, Wisconsin any part or parts of this equipment which shall have been returned, transportation prepaid, and which our examination discloses to our satisfaction to be defective.

This warranty does not apply to any equipment that has been damaged by flood, fire, or suffered abuse, misuse, neglect or accident, or to any Ice Machine which has been altered so as to affect performance or reliability, except where such alteration has been accomplished with our prior written consent.

We further limit this warranty in that we shall not be held liable under this contract for any special, indirect, or consequential damages whatsoever resulting from any defect in material and workmanship which interferes with the normal use and service of such Ice Machine and Bin.

This warranty is a complete and exclusive statement of all terms of the agreement between the Manitowoc Equipment Works and the owner of the equipment, and all representations of the parties. This agreement shall not be varied, supplemented, qualified or interpreted by any prior course of dealing between the parties or by any usage of the trade.

Sales are made on the express understanding that there are no express or implied warranties other than the express warranty herein contained and that there are no implied warranties that the goods shall be merchantable or fit for a particular purpose other than the expressed one year and five year warranty set forth above.

To validate this warranty, the registration card must be signed on the date of installation and mailed promptly to the Manitowoc Equipment Works, Manitowoc, Wisconsin.

DEALER _____

_____

_____

INSTALLATION DATE _____

MANITOWOC EQUIPMENT WORKS
Div. of THE MANITOWOC COMPANY
500 South 16th Street
Manitowoc, Wisconsin 54220

Form 80-0032-1
ALL