Quality Designers & Manufacturers for the Ice Maker Industry

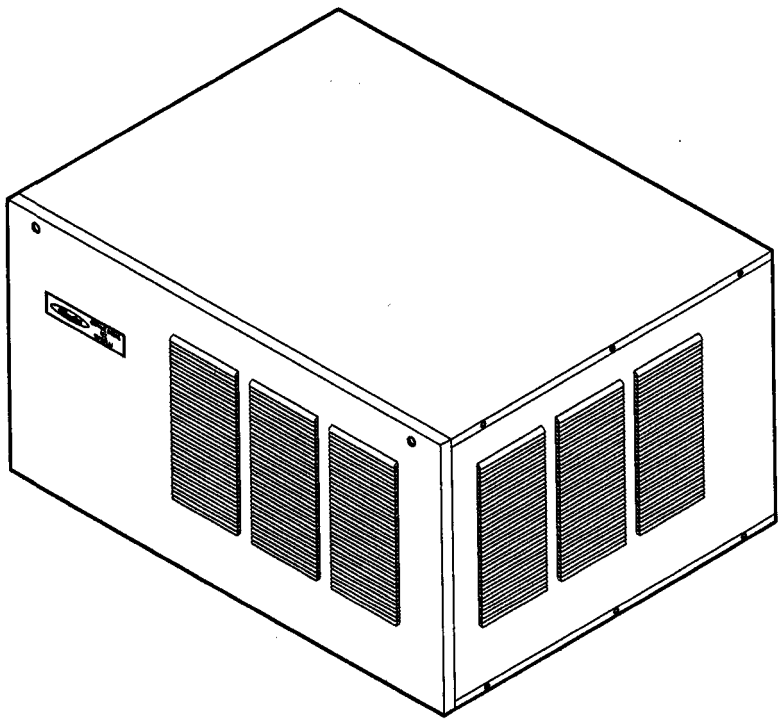
IMI CORNELIUS INC.

MODULAR CUBED ICE MAKER

SERVICE MANUAL

SERIES 300
SERIES 322

with R22 Refrigerant



MANUAL PART NUMBER 16-1951-811 REV "B"

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION

This Service Manual must be read and understood before the installation and operation of this Ice Maker.

04-94

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INTRODUCTION

We have strived to produce a quality product. The design has been kept simple thus insuring trouble-free operation.

This manual has been prepared to assist servicemen and users with information concerning installation, construction and maintenance of the ice making equipment. The problems of the serviceman and user have been given special attention in the development and engineering of our ice makers.

If you encounter a problem which is not covered in this manual, please feel free to write or call. We will be happy to assist you in any way we can.

When writing, please state the model and serial number of the machine.

Address all correspondence to:

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A Product of IMI Cornelius Inc.
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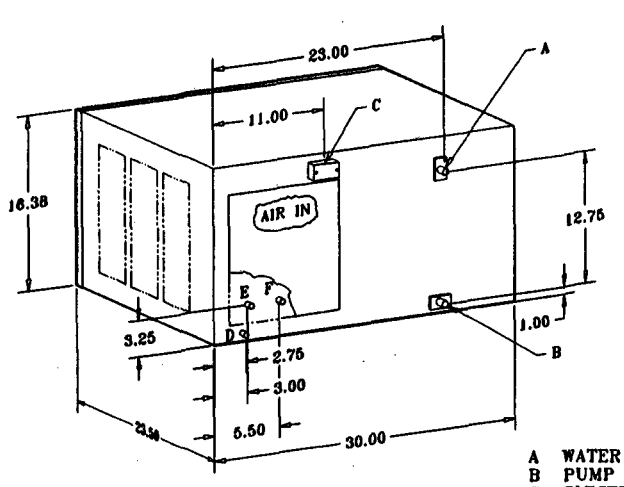
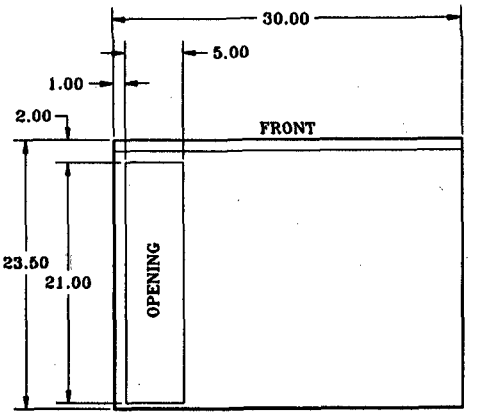
PRINTED IN USA

SPECIFICATIONS

300 SERIES



BACK VIEW



BOTTOM VIEW

A WATER INLET
B PUMP OUT DRAIN
C ELECTRICAL CONNECTION
D CONDENSATE DRAIN
E CONDENSER (WATER OUT)(W/C ONLY)
F CONDENSER (WATER IN)(W/C ONLY)

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ICE PRODUCTION CAPACITY (approximate)

Model Number (Condenser)	Ambient Temp F	Incoming Water Temp F 50°	70°	80°
AC-300-SS-MH (Air Cooled)	70°	243#	227#	216#
	80°	224#	209#	198#
	90°	199#	176#	160#

Model Number (Condenser)	Ambient Temp F	Incoming 50°	Water Temp 70°	F 80°
WC-300-SS-MH (Water Cooled)	70°	225#	206#	193#
	80°	212#	191#	179#
	90°	198#	176#	164#

Net Weight ..... 122 lbs.
Shipping Weight ..... 138 lbs.
Compressor Horsepower 1/3
Refrigerant ..... R-22 16 oz Air Cooled

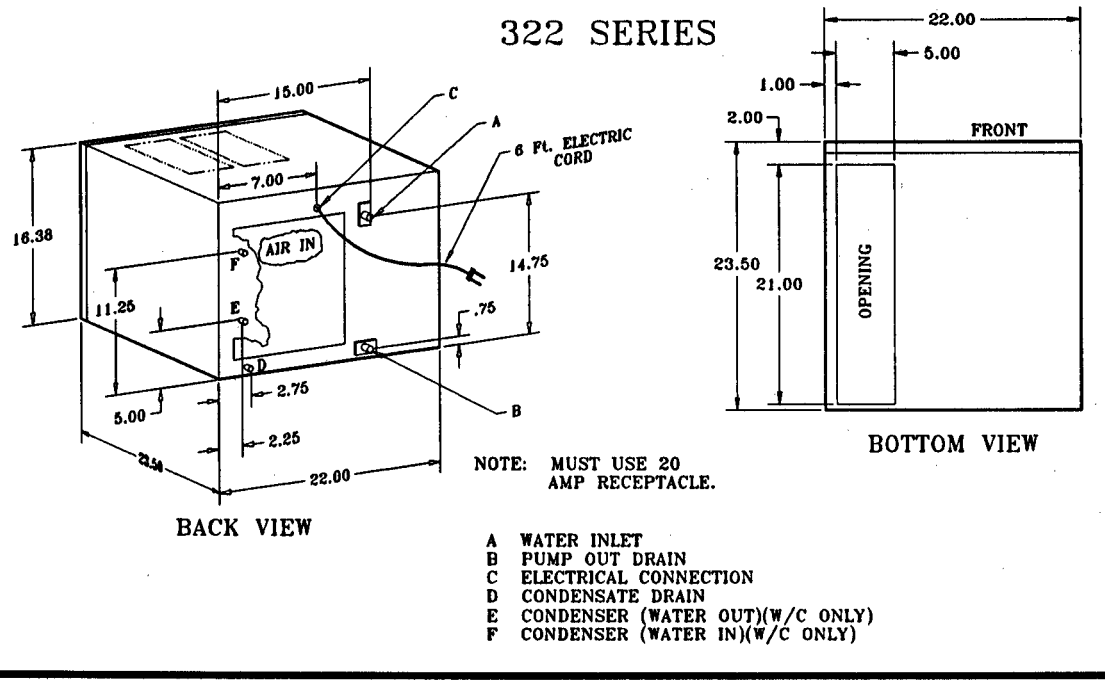
Electrical

Freeze Cycle Amps Draw 8.0
Time Delay Fuse Ratings (amps) 20.0
Minimum Circuit Ampacity (amps) 15.0
Power Supply (Single Phase) 115V-60Hz

Plumbing Connections

Inlet Water Supply ..... Max. Pressure 50 PSI 3/8" SAE MFL Ftg
Bin Drain ..... Through Bin
Waste Water-(from water cooled models) ..... 3/8 in. SAE MFL Fitting
Pump Out Drain Connection ..... 1/2 in. ID Tubing

SPECIFICATIONS



ICE PRODUCTION CAPACITY (approximate)

Model Number (Condenser)	Ambient Temp F	Incoming Water Temp F 50°	70°	80°
AC-322-SS-MH&DM (Air Cooled)	70°	243#	227#	216#
	80°	224#	209#	198#
	90°	199#	176#	160#

Model Number (Condenser)	Ambient Temp F	Incoming Water Temp F 50°	70°	80°
WC-322-SS-DM (Water Cooled)	70°	225#	206#	193#
	80°	212#	191#	179#
	90°	198#	176#	164#

Net Weight ..... 122 lbs.
Shipping Weight ..... 138 lbs.
Compressor Horsepower 1/3
Refrigerant ..... R-22 16 oz air cooled

Electrical

Freeze Cycle Amps Draw 8.0
Time Delay Fuse Ratings (amps) 20.0
Minimum Circuit Ampacity (amps) 20.0
Power Supply (Single Phase) 115V-60Hz; 230V-60Hz

Plumbing Connections

Inlet Water Supply ..... Max. Pressure 50 PSI 3/8" SAE MFL Ftg
Bin Drain ..... Through Bin
Waste Water-(from water cooled models) ..... Two 3/8 in. SAE MFL Fitting
Pump Out Drain Connection ..... 1/2 in. ID Tubing

UNPACKING

1. Uncrate machine and/or bin by removing the staples from around the bottom of cardboard crate and lift off.

2. Remove bolts fastening the crate skid to the bottom of the unit. If auxiliary legs have been purchased for the bin, they should be installed at this time.

LEVELING

1. If legs are used, adjust the leveling legs of the storage bin until the unit is level and all four (4) legs are in solid contact with the floor. Leveling is very important to obtain proper draining and to maintain the proper level in the water pan of the ice cuber.

NOTE: *If the bin is to be installed flush to the floor, the machine must be sealed to the floor with an approved mastic such as Dow R.T.V. #732, 734, or G.E. #102, 108. This is an N.S.F. requirement and is the responsibility of the installer.*

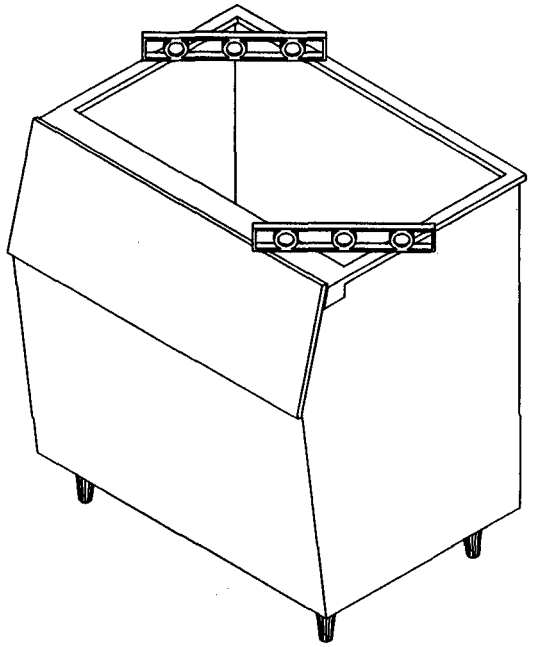


Diagram 1

UNIT LOCATION

1. Allow at least a minimum of six (6) inches at the rear and side of the ice machine for proper air circulation.

2. This unit has been designed to be installed in an indoor location which is clean and which can be adequately ventilated. The air and water temperatures should never exceed 100° F or fall below 50° F. (Temperatures above 100° F will cut the ice making capacity below an economical level. Temperatures below 50° F will cause a malfunction of thermostatic sensors).

3. The unit should be located where air circulation is not restricted. The unit should not be located near a kitchen grill. Air which contains grease vapors will deposit grease on the condenser. The condenser should always be kept clean.

UNIT SET-UP

1. Take off front panel of machine and remove hardware bag and service manual envelope.

2. Mount the ice maker to the top of the ice storage bin or adapter in the proper position over the ice drop opening. The ice maker must then be sealed both on the outside and the inside bottom edges with an approved N.S.F. mastic such as Dow R.T.V. #732, 734, or G.E. R.T.V. #102, 108. This is an N.S.F. requirement and the responsibility of the installer.

3. Remove shipping tape from evaporator curtains.

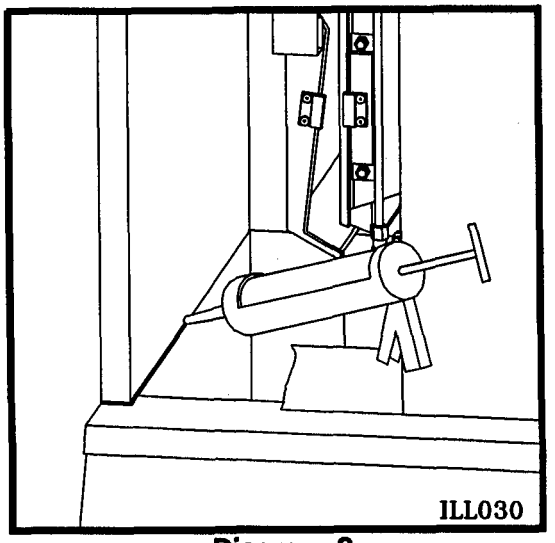


Diagram 2

MAKE ELECTRICAL POWER SUPPLY CONNECTION

Requirements: 115v/60hz 1 ph., 230v/60hz. 1 ph., or 220v 50hz. 1 ph when used.

REFER TO SERIAL PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM TIME DELAY FUSE SIZE.

ALL WIRING MUST CONFORM TO NATIONAL AND LOCAL ELECTRICAL CODES.

MAKE PLUMBING CONNECTIONS

Water supply - (Install per local codes)(See diagram 3)

The water inlet connection to the unit is a 3/8" male flare connection located at the rear of the ice machine.

WARNING: ***If the water pressure exceeds 50 pounds, a water pressure regulator should be installed in the water inlet line between the water shut-off valve and the strainer.***

Install a reducer fitting on the shut-off valve to accommodate the water strainer, which is supplied with each ice machine and MUST be used. Install the water strainer with the arrow in the proper direction of flow and with the clean out plug down. This is very important for cleaning. Connect either 3/8" or 1/2" copper tubing between the water inlet fitting of the ice machine and the water strainer.

For water cooled units, two water inlet connections are provided. One for the ice making (evaporator) section which is located on the back of the machine and is a 3/8" flared connection. The other is for the water cooled condenser.

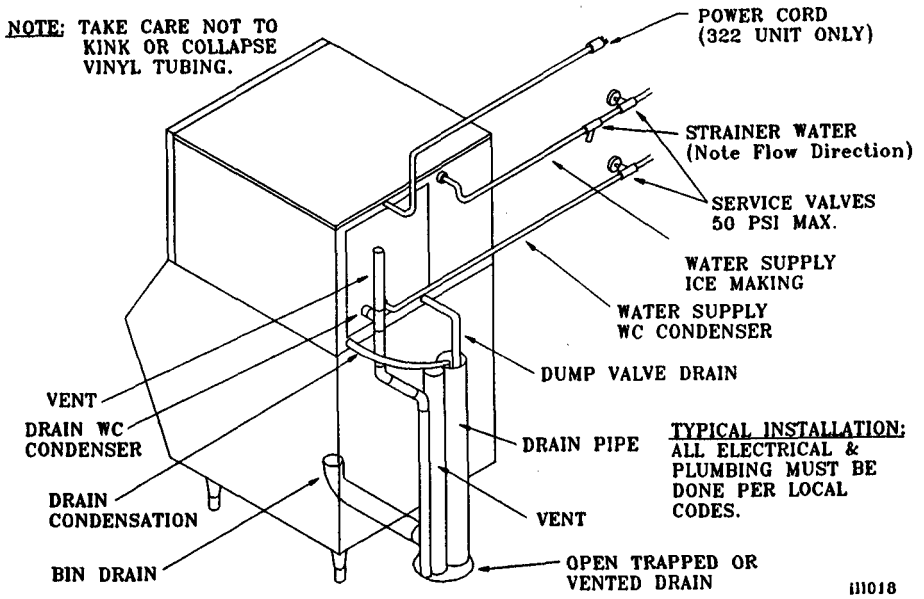


Diagram 3

The reason for the separate water inlet connections is that some installations use a water tower for cooling the water used in the water cooled condenser and some installations use treated water (filtered) for the ice making inlet water connection. Be sure to install water line (incoming) to the 3/8" male flare connection on the back of the unit that supplies water to the water regulating valve inside. The setting of the water regulating valve from the factory should be 200 pounds for R-22 units. **NOTE:** *Always flush out water lines before starting unit. Adjustments, if necessary, should be done at installation.*

DRAIN

Provide a suitable trapped open drain as close as possible to the area where the ice maker is going to be installed. This may be an existing floor or a 1-1/4" trapped open drain. Two separate drain lines are required for air cooled units, one for the storage bin and one for the dump valve drain hose.

An additional separate drain line will be required for water cooled units from the outlet of the condenser coil to the drain. Run all gravity drain lines with a good fall to the open drain.

ALL PLUMBING MUST BE INSTALLED IN ACCORDANCE WITH LOCAL CODES.

NOTE: *In some cases it may be necessary to insulate the water supply line and drain line. Condensate dripping to the floor can cause serious staining of carpets or hardwoods.*

DRAIN CONNECTION INSTALLATION INSTRUCTIONS

Taking care not to kink or collapse vinyl tubing at any point, route tubes to any open, trapped or vented floor drain. Run tubing to drain separately. Do not tee any drain hoses together. Add drain tubing required to reach floor drain.

WATER LEVEL RESERVOIR

The Float Valve is mounted in a fixed position thru it's mounting bracket to maintain the proper water level in the water reservoir. For the 300 & 322 series units the bracket is mounted thru the bottom hole of the bracket.

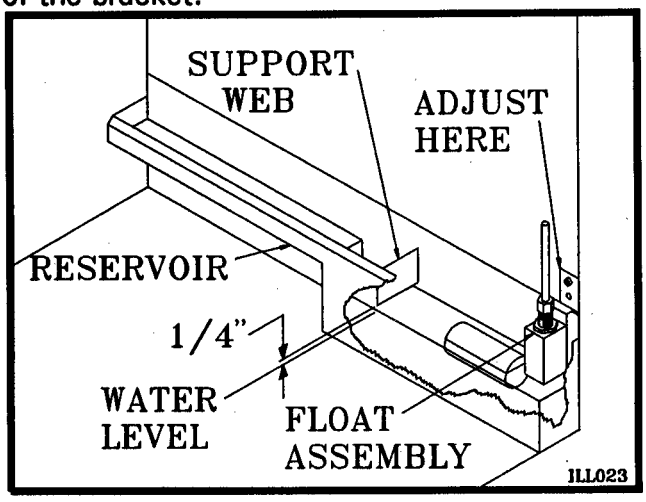


Diagram 4

WARNING: ***Ice maker will not operate properly when water supply temperature is below 50° F or above 100° F. Water supply pressure must not exceed 50 PSI.***

STARTING THE UNIT

After the ice cuber has been unpacked and leveled and all plumbing and electrical connections have been made, start the unit, and check for proper operation.

A cuber has three separate circuits: the water circuit, the refrigerant circuit and the electrical circuit.

1. Start checking the water circuit by making sure that there are not thread or flare joint leaks, either outside the unit or in the compressor section. Next check the water flow over the evaporator and make sure that all holes in the water distributor are open, (See Diagram 5) and that there is no undue splash or loss of water into the ice bin.

Also check to see if the float valve is functioning properly and the correct water level is being maintained. Adjust if necessary.

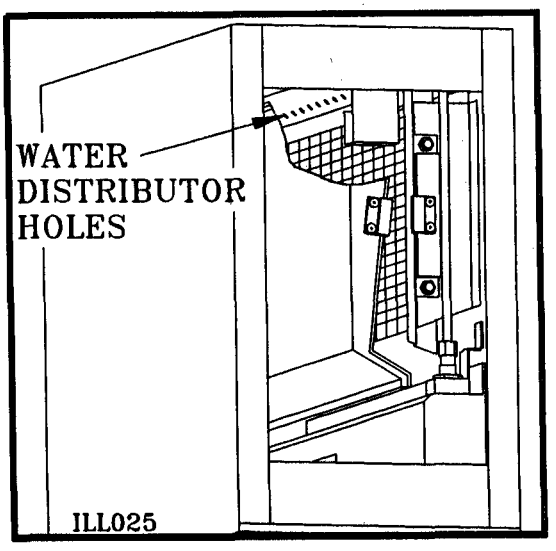


Diagram 5

2. Check the refrigerant circuit by making sure that the condenser fan is running. (This will be evident by air noise.) Is the compressor running? (Feel the casing for vibration.) Is the evaporator getting cold?

3. Check bin-harvest switch operation. (See procedure in manual).

INSTALLATION INSTRUCTIONS FOR MOUNTING ON DRINK DISPENSERS

For mounting ice machine on to an ice/drink dispenser you should have the following items:

2 Slide Brackets
1 Ice Deflector
4 Mounting Screws
1 Slide Stop
1 Top Front Cover (Plastic)
1 Back Stop

1. Uncrate ice machine by removing the staples from around the cardboard crate and lift off.

2. Remove bolts fastening the crate skid to the bottom of the ice machine.

3. Remove top and front of ice machine.

4. Remove evaporator curtain or cover.

5. Install slide stop by inserting the rear mounting screw thru the slide stop into weld nut located on the lower inner left wall and lightly tighten with slide stop rotated upward.

6. Install deflector by inserting the rear mounting screw thru the deflector into upper weld nut and lightly tighten only with deflector rotated upward.

7. Loosen the bottom screws on both the left and right side panels.

8. Turn crate skid upside down and set ice machine on the skid.

9. Align the slots of the slide brackets with the panel bottom mounting screws and insert upward between panel and frame.

10. Securely tighten bottom panel mounting screws.

11. Mount ice machine centered on top of ice/drink dispenser.

12. Rotate slide stop downward and insert a mounting screw thru slide stop into the weld nut and securely tighten both mounting screws.

13. Rotate deflector downward and insert a mount screw thru the deflector and into the weld nut and securely tighten both mounting screws.

14. Reinstall evaporator/curtain or cover and the top of the ice machine.

15. Reinstall ice machine front after completion of installation and check out.

16. Carefully slide the ice machine to the rear until movement stops.

PLEASE NOTE: *This opening will allow front manual filling servicing of ice/drink dispenser if more ice is needed in a given period of time.*

17. Pull the ice machine forward with side handles to normal position.

18. Install black plastic top to cover small front opening between the ice machine and ice/drink dispenser.

CAUTION: *Remember, when installing incoming water, electrical and drain lines, the ice machine will slide back approximately 8 inches. Please compensate for this movement.*

ELECTRICAL CIRCUIT SEQUENCE OF OPERATION

Three colors of L.E.D. lights are mounted on the control board to indicate what is happening in the operation of the unit.

The electrical sequence of operation seen for a normal ice making cycle will be as follows:

NO LIGHTS: Will indicate the unit is in the freeze cycle (compressor, fan motor and water pump "on"; hot gas valve and water dump solenoid "off"). The control board will **delay** the start of the water pump until the evaporator temperature is pulled down to a pre-set point and allows the water pump to start (can be a several minute delay). The control board will then lock the water pump "on", no matter what temperature the evaporator warms up to, when water starts flowing over the evaporator. **BUT**, if the water curtain is opened the pump "lock" is lost, the pump will stop and the evaporator temperature will have to pull down to the pre-set point again. A second adjustable evaporator temperature setting (Bridge Thickness Setting) determines the length of the freeze cycle.

FLASHING RED L.E.D.: After the evaporator temperature has pulled down low enough for the correct amount of ice to be on the evaporator, the RED L.E.D. will begin to flash on and off. If the evaporator temperature stays at or below this temperature for appropriately 30 seconds the control board will start the harvest cycle. The YELLOW L.E.D. will light, the hot gas valve will open, fan motor will stop, water dump solenoid will open and the water pump will continue to run approximately 10 seconds and allow all the water in the evaporator to be pumped down the drain. The RED L.E.D. will flash until the evaporator temperature rises above the bridge thickness setting (one to five flashes). The hot gas valve and the water dump solenoid will remain open until either the ice slab falls and moves the evaporator curtain away form the proximity switch or if approximately five minutes elapses and the control board automatically switches back into the freeze cycle. When the evaporator curtain opens and allows the proximity switch to work, the GREEN L.E.D. will light and the YELLOW L.E.D. will go out switching the unit from harvest to the freeze cycle. If the evaporator curtain is held open, the GREEN L.E.D. will stay on and after approximately 8 seconds have elapsed the unit will shut down.

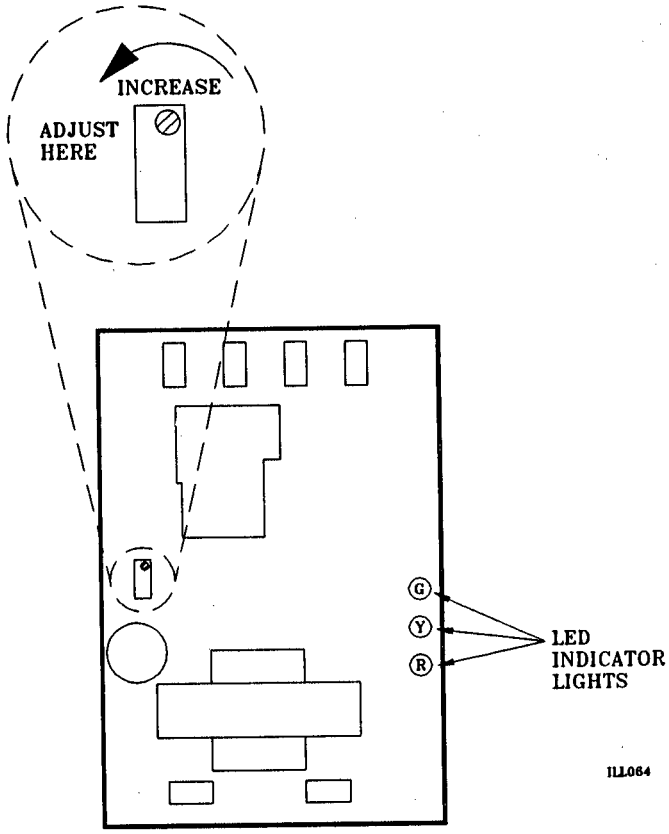


Diagram 6

ADJUSTMENT FOR ICE BRIDGE THICKNESS

An ice bridge connecting all cubes is necessary for a proper harvest of discharge of cubes from the evaporator.

To increase ice bridge thickness carefully turn adjustment screw counter-clockwise no more than one turn at a time. Wait and check thickness before re-adjusting. (See Diagram 6 & 7)

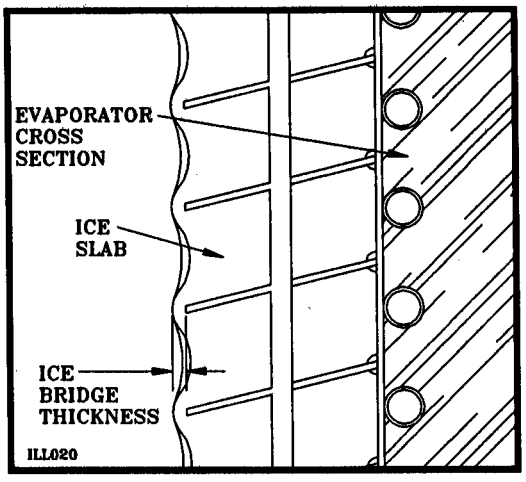


Diagram 7

CHECKOUT PROCEDURE FOR HARVEST BIN SWITCHES

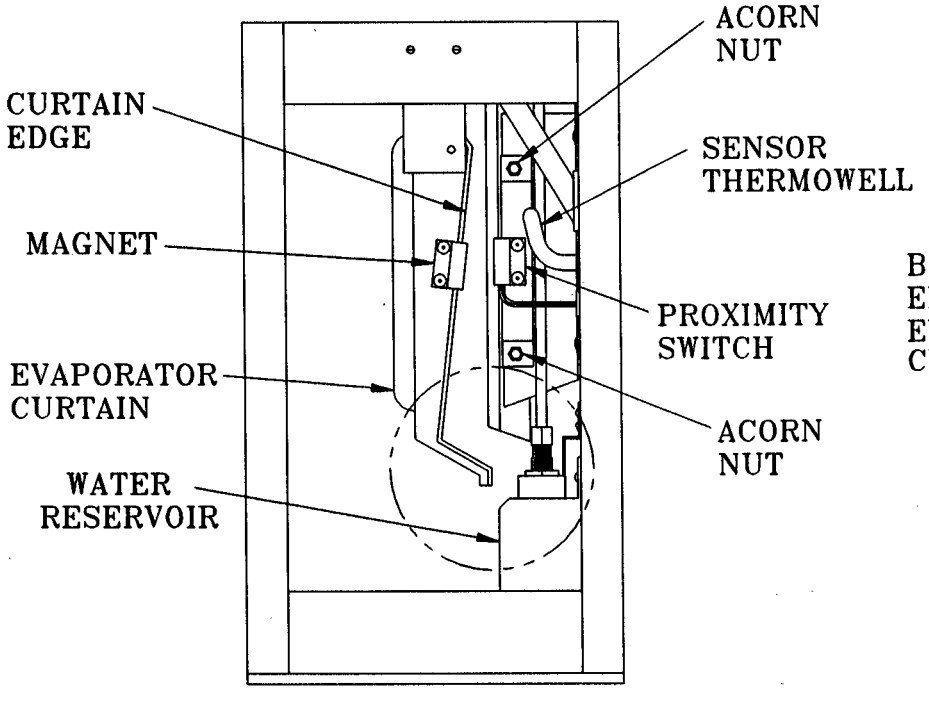
Turn on the ice machine and move the evaporator curtain(s) away from the evaporator(s). The ice machine should then shut-off in approximately 8 seconds. (See detail A & B).

Slowly let the evaporator curtain(s) move back toward the evaporator(s) until the bottom edge of the curtain(s) is at least at the bent edge of the water reservoir or closer to the evaporator. With the curtain(s) at that position, the machine should start. (See detail C).

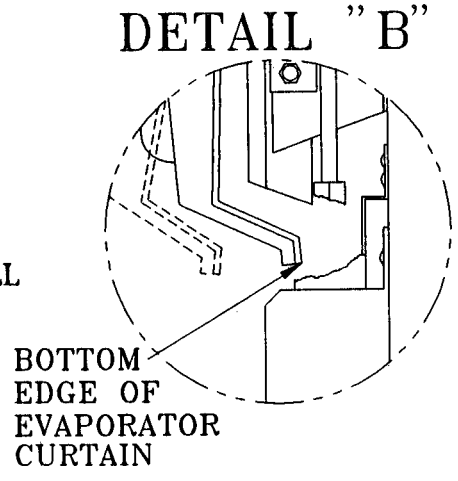
ADJUSTMENT PROCEDURE FOR HARVEST BIN SWITCHES

If adjustment is necessary, loosen acorn nuts and move proximity switch closer to the curtain(s) and make sure the curtain is properly mounted. (See detail A).

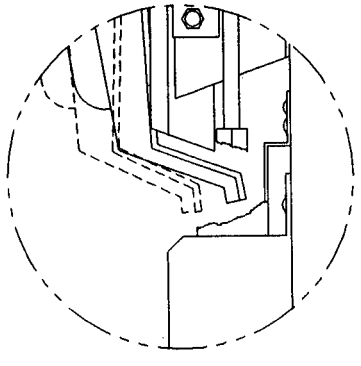
Re-check per above procedure.



DETAIL "A"



DETAIL "B"



DETAIL "C"

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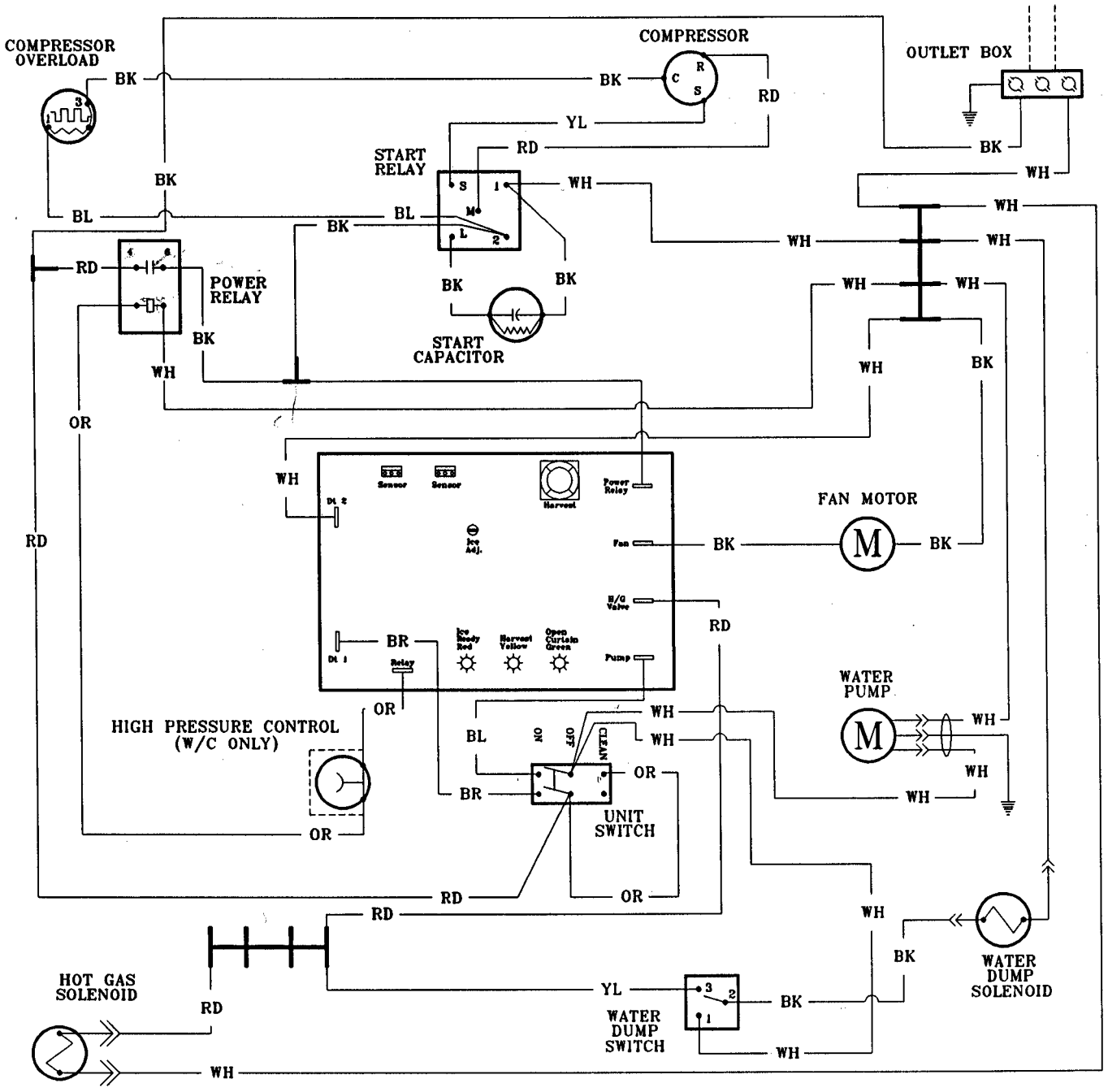
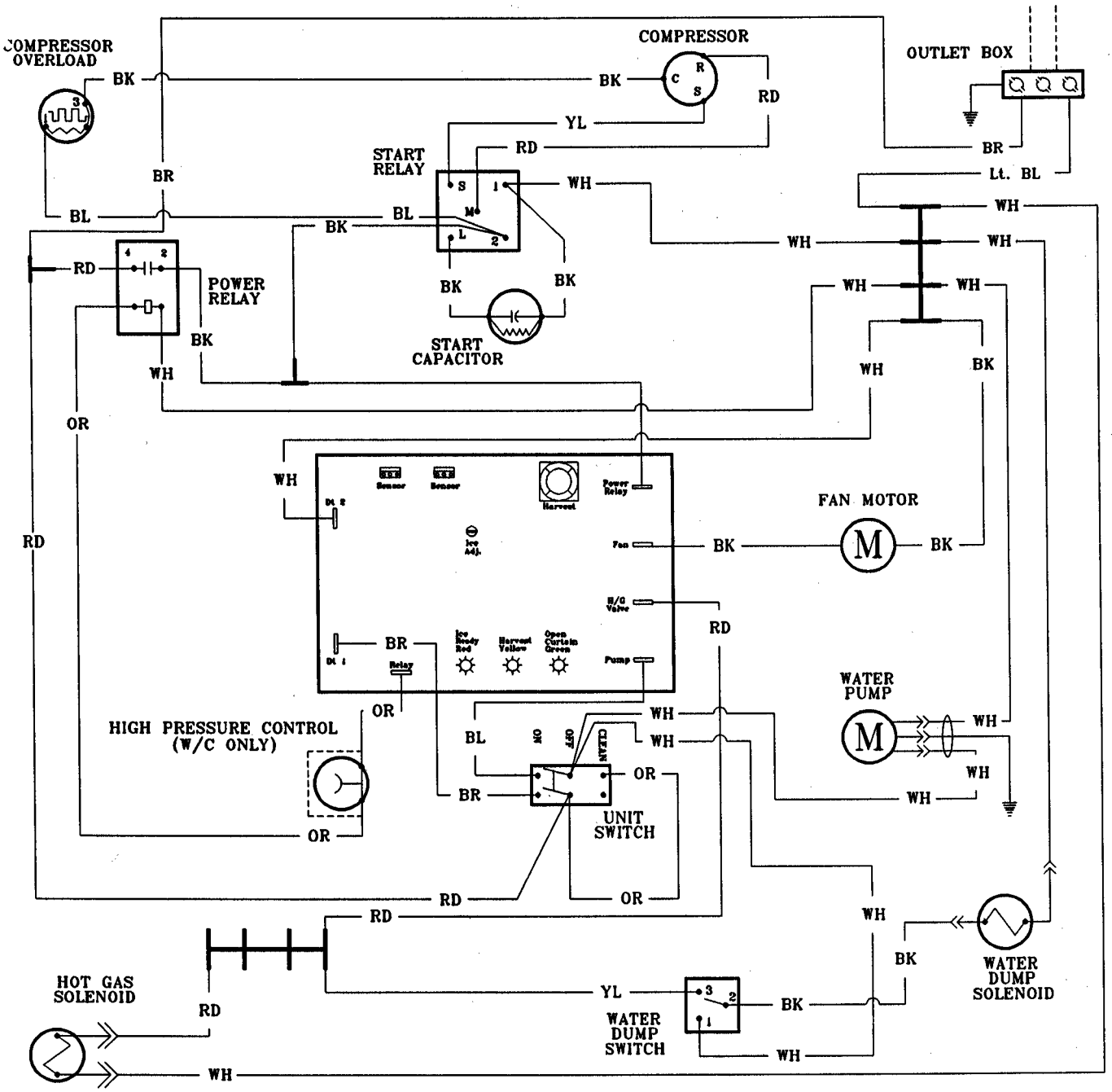


AC/WC-300-MH

115 VOLTS 60 HZ

IMI CORNELIUS INC.

NOTES: The solid state control DELAYS the start of the water pump until the evaporator temperature reaches 20° F.

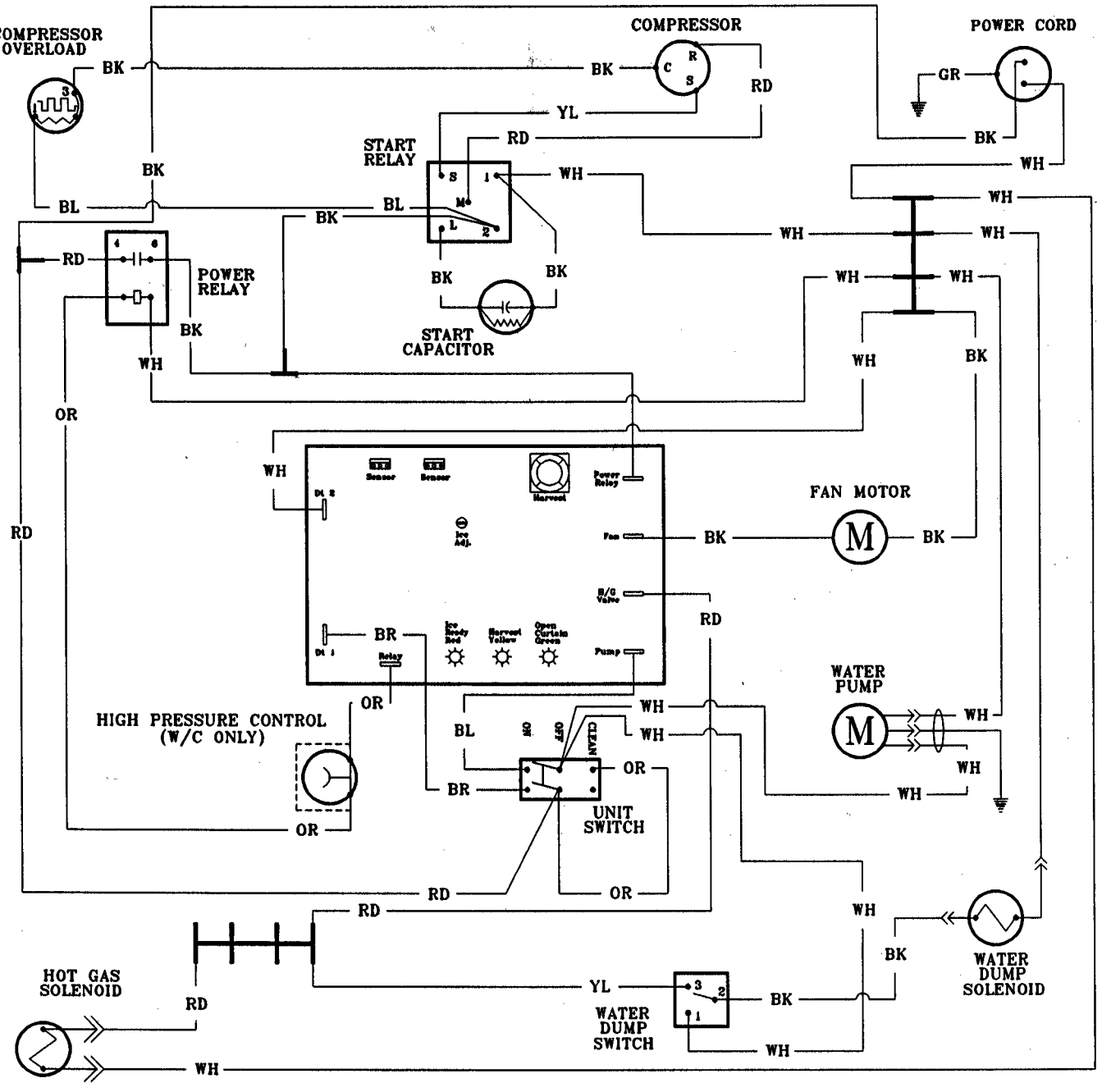


AC/WC-300-50-MH

230 VOLTS 50 HZ

Cornelius
IMI CORNELIUS INC.

NOTES: The solid state control DELAYS the start of the water pump until the evaporator temperature reaches 20° F.

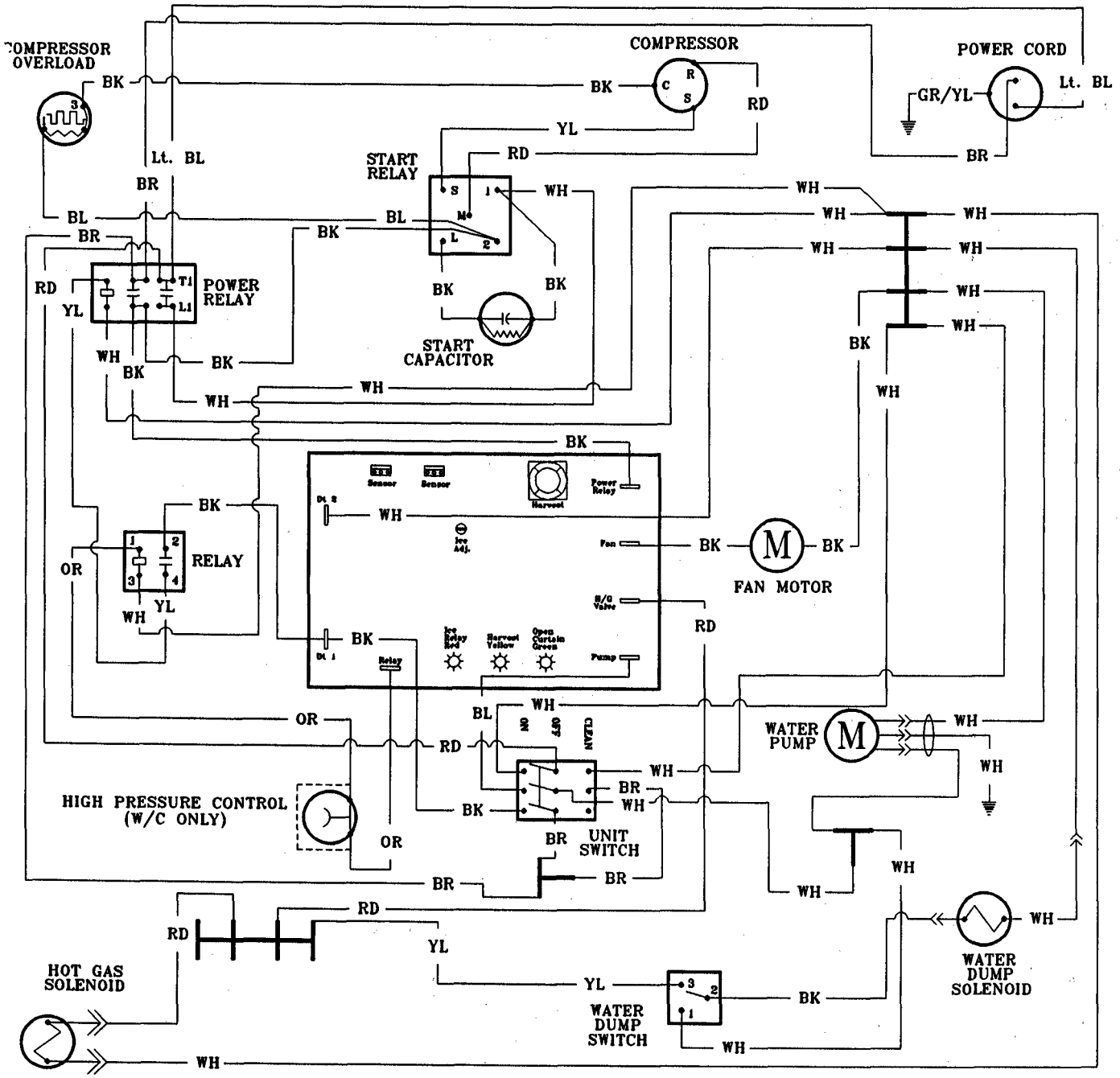


AC/WC-322-DM
AC/WC-322-MH

115 VOLTS 60 HZ

Cornelius
IMI CORNELIUS INC.

NOTES: The solid state control DELAYS the start of the water pump until the evaporator temperature reaches 20° F.



AC/WC-322-DM
AC/WC-322-MH

208/230 VOLTS 60 HZ

IMI CORNELIUS INC.

NOTES: The solid state control DELAYS the start of the water pump until the evaporator temperature reaches 20° F.

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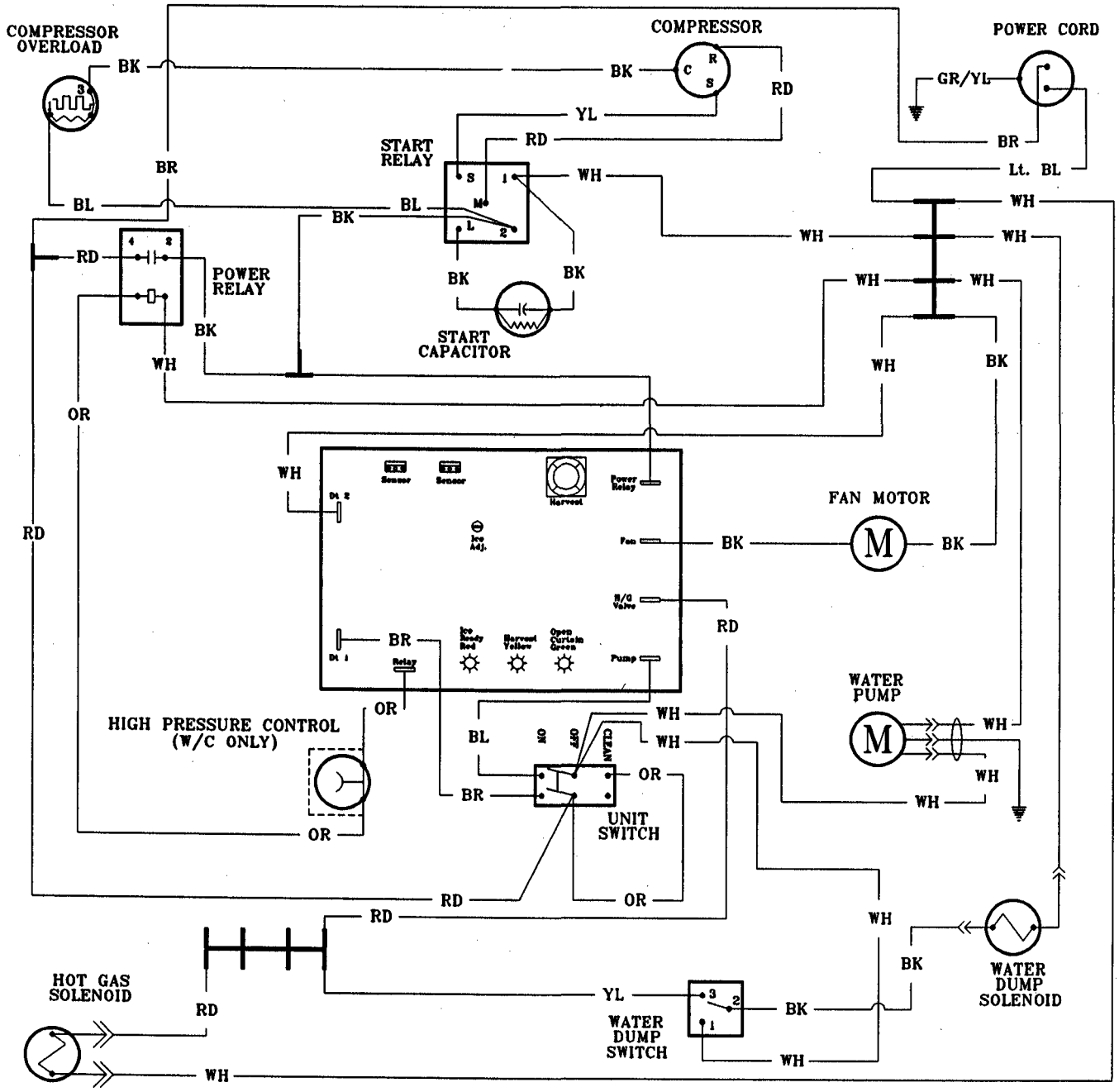

AC/WC-322-50-DM
AC/WC-322-50-MH

230 VOLTS 50 HZ

Cornelius

NOTES: The solid state control DELAYS the start of the water pump until the evaporator temperature reaches 20° F.

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SANITIZING AND CLEANING PROCEDURE

1. Remove front panel to gain access to the on-off-clean switch.

2. Push switch to "clean" and allow the ice on the evaporator to release or melt away.

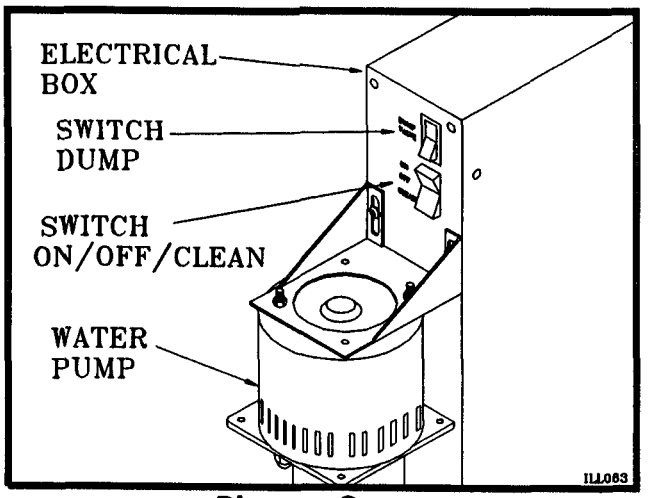

Diagram 8

3. Remove ice from storage bin.

4. If lime scale is present add 2 oz. of "Lime-A-Way" or "Calgon NickelSafe Ice Machine Cleaner" directly into water reservoir. Circulate for no longer than 15 minutes. Depress dump valve switch on side of control box and allow cleaner or sanitizer to drain away. Allow float valve to fill reservoir with clean, fresh water. Circulate for approximately 1 minute. Depress dump valve switch and allow water to drain away. Repeat three times.

CAUTION: *All ice machine cleaner must be flushed out of the system before the sanitizing solution is used in Step 5. The reaction of the two chemicals can cause hazardous gases to be generated.*

5. Pour 1/2 oz. of household bleach into the water reservoir and circulate for 15 minutes to sanitize the circulating water system including the evaporator, pump, distributor and all interconnecting vinyl tubing. Depress dump valve switch on side of control box and allow cleaner or sanitizer to drain away. Allow float valve to fill reservoir with clean, fresh water. Circulate for approximately 1 minute. Depress dump valve switch and allow water to drain away. Repeat three times.

6. Mix a sanitizing solution of 1/2 oz. household bleach to one gallon of water. This mixture will provide 200 ppm chlorine. Using a non-metallic bristle brush, scrub the following:

A. Inside surface of the ice bin including top and door.

B. Inside surface of the ice maker to include evaporator section in the ice machine including the top, front panel and evaporator splash curtain.

C. Make sure splash curtain is correctly positioned.

7. Depress dump valve switch and allow cleaner to drain away. Allow float valve to fill reservoir with clean, fresh water. Circulate for approximately 1 minute. Depress dump valve switch and allow water to drain away. Repeat three times.

8. Push switch from "clean" to "on" position.

9. Replace front panel.

WATER TREATMENT

Depending on the water source for the ice maker, water treatment may be necessary to prevent calcium or lime scale deposits, bad taste and odor, clorine problems, as well as slime growth. If these conditions exist, contact your Cornelius Distributor or Dealer for information on water treatment systems Cornelius offers.

WINTER STORAGE

If the unit is to be stored in an area where the temperature will drop below freezing, it is most important that all water lines be drained to prevent them from freezing and possible rupture.

To blow out the waterline, disconnect the water supply at the cabinet inlet and use air pressure to force the water into the water reservoir pan. This can then be removed from the water pan.

CLEANING THE AIR COOLED CONDENSER COIL

In order to produce at full capacity, the refrigeration condenser must be kept clean. The frequency of cleaning will be determined by surrounding conditions. A good maintenance plan calls for an inspection at least every two months.

CAUTION: *Condenser cooling fins are sharp. Use care when cleaning.*

Clean the air condenser coil from the back of the machine with a vacuum cleaner. Remove all the accumulated dust, lint, and dirt.

TROUBLESHOOTING THE SENSORS

1. Turn off power to machine.
2. Remove the front panel and electrical box cover of the machine.
3. Cut the suspected sensor wire at least six inches from the thermowell in which it is located.
4. Remove the sensor from the thermowell.
5. Carefully separate the wires and strip the insulation off the end.
6. Pack a glass or container with ice and add some water to make an ice water solution. Check the temperature of the ice water with an accurate thermometer. Ice water must be 32° F.
7. Insert the sensor into the ice water and soak for a minimum of two minutes.
8. With a zerod ohmmeter, measure the resistance across the two wires of the sensor lead. It should read 2815 ohms + or -10% (281 ohms) on units built before March 1994; + or - 5% (140 ohms) on units built from March on.

NOTE: *If the above ohm reading is not within the range stated, the sensor is bad and should be replaced.*

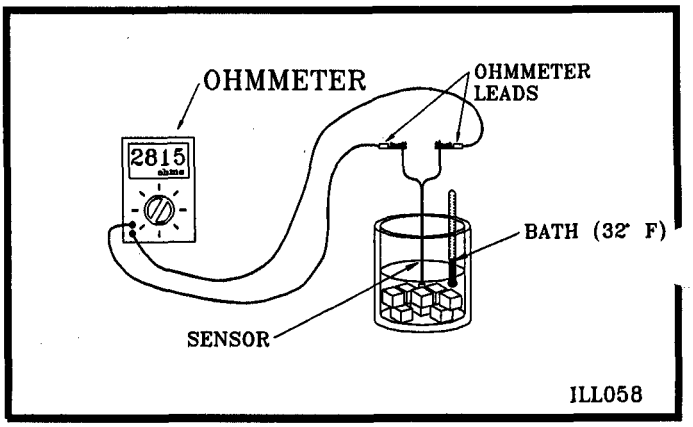

Diagram 9

RECONNECTION OF A GOOD OR REPLACEMENT SENSOR AFTER TROUBLESHOOTING

1. Carefully separate the wires of the sensor leads coming from the solid state control and strip the insulation off the end of each wire.
2. Reconnect the sensor leads and twist the stripped ends tightly. Secure with the proper sized wire nuts.
3. Tape all wire nut connections to insulate connections from each other.

REMOVAL OF SOLID STATE CONTROL FROM MACHINE

CAUTION: *The circuit board is fragile, handle with care.*

1. Turn off power to machine.

2. Remove front panel.

3. Remove electrical box front cover.

4. Disconnect the through wire plug connections from circuit board.

5. Carefully lift any corner of the circuit board while pinching closed the top part of the plastic "stand-off " support with needle nose pliers. The circuit board has to be gradually worked up over all four of the "stand-off" supports. The circuit board will not "pop off" until all supports have been pinched closed and the board is then holding them in that position.

REINSTALLATION OF SOLID STATE CONTROL

1. Align all holes in the circuit board over the plastic stand-off supports.

2. Carefully push downward at all hole locations until board seats on all the stand-off supports. (Sometimes a snap will be heard as this seating takes place.)

3. After the circuit board is seated, carefully connect the wiring to the circuit board.

Part # Corrections/Update Document

Unit Type/Model #	Manual #
Modular Cubed Ice Maker Series AC/WC 300, 322 with R22	161951811

Page	Item	Old Part	Desc.	New Part	Desc.	Agent	Date	Notes
18	12	165595000	FAN BLADE	165595003	FAN BLADE	JLS	01/30/03	
18	37	42297	WATER DUMP SOLENOID VALVE	161456010	WATER DUMP SOLENOID VALVE	JLS	01/30/03	
n/a	n/a			166074000	AIR FILTER KIT	JLS	01/30/03	
n/a	n/a			162964003	COMPRESSOR KIT TECUMSEH	JLS	01/30/03	Kit includes start components. This compressor is used for units starting with serial number DCxxxx through NExxxx.

PARTS LIST

ILL. NO.	DESCRIPTION	PART NO. 322-115V	PART NO. 300-115V	PART NO. 322-230V
		161456037		
1	Control, Circuit Board	~~43641~~	~~43641~~	~~45951~~
2	Switch, On-Off-Clean	161297002	161297002	37356
3	Relay, compressor start	161163001	161163001	
4	Relay, Power	164884004	164884004	40713
5	Capacitor, compressor start	43424	43424	
6	Relay	N/A	N/A	45950
7	Drier	164883000	164883000	164883000
8	Valve, Crankcase pressure reg.	164876001	164876001	164876001
9	Valve, Shrader	20654	20654	20654
	Core, Shrader Valve	21214	21214	21214
	Cap, Shrader Valve	23988	23988	23988
10	Compressor	162964003	162964003	162964008
11	Motor, Fan	161871003	161871003	N/A
12	Blade, Fan	165595000	165595000	N/A
13	Shroud	161890002	161890002	N/A
14	Condenser	161870002	161870002	N/A
15	N/A	N/A	N/A	N/A
16	Pump, Water	41011	41011	39144
17	Valve, Thermo Expansion	161921001	161921001	161921001
18	N/A	N/A	N/A	N/A
19	Valve, Hot Gas	09214	09214	23082
20	Tube, Water Pan to Pump Inlet	165636001	165636002	165636001
21	Cap, reservoir drain	45681	45681	45681
22	Reservoir, Water	~~41448~~	~~41448~~ 631500008	~~41448~~
23	Float and Valve	165681000	165681000	165681000
24	Bracket, Float and Valve	165692001	165692001	165692001
25	N/A	N/A	N/A	N/A
26	Tee	00987	00987	00987
27	N/A	N/A	N/A	N/A
28	Orifice, restrictor	22176	22176	22176
29	Evaporator	45500	45500	45500
30	End Cap	42493	42493	42493
31	Distributor, water	43056	43056	43056
32	Cover, evaporator	45539	45539	45539
33	Bracket, front cover mount	45536	45536	45536
34	Condenser coil, water cooled	01210	01210	01210
35	Valve, water regulating	01211	01211	01211
36	Bracket, back cover mount	38743	38743	38743
37	Valve, water dump solenoid	42297	42297	42781
38	Switch, harvest-bin proximity	45537	45537	45537
39	Plug, dump valve	45880	45880	45880
40	Plug, HGV	45881	45881	45881
41	Cord Asy	161085001	N/A	161085003
42	Handles	161525001	N/A	161525001
43	N/A	N/A	N/A	N/A
44	Motor, compressor cooling	07470	07470	166152002
45	Blade, fan (water cooled)	09355	09355	09355
46	N/A	N/A	N/A	N/A
47	Clip Spring	166037000	166037000	N/A
48	Filter	166038001	166038001	N/A
49	Control, high pressure (water cooled)	165677001	165677001	165677001
50	Kit, evaporator sensor	161456002	161456002	161456002
51	N/A	N/A	N/A	N/A
52	Splash guard	45541	45541	45541
53	Switch, water dump valve	45866	45866	45866

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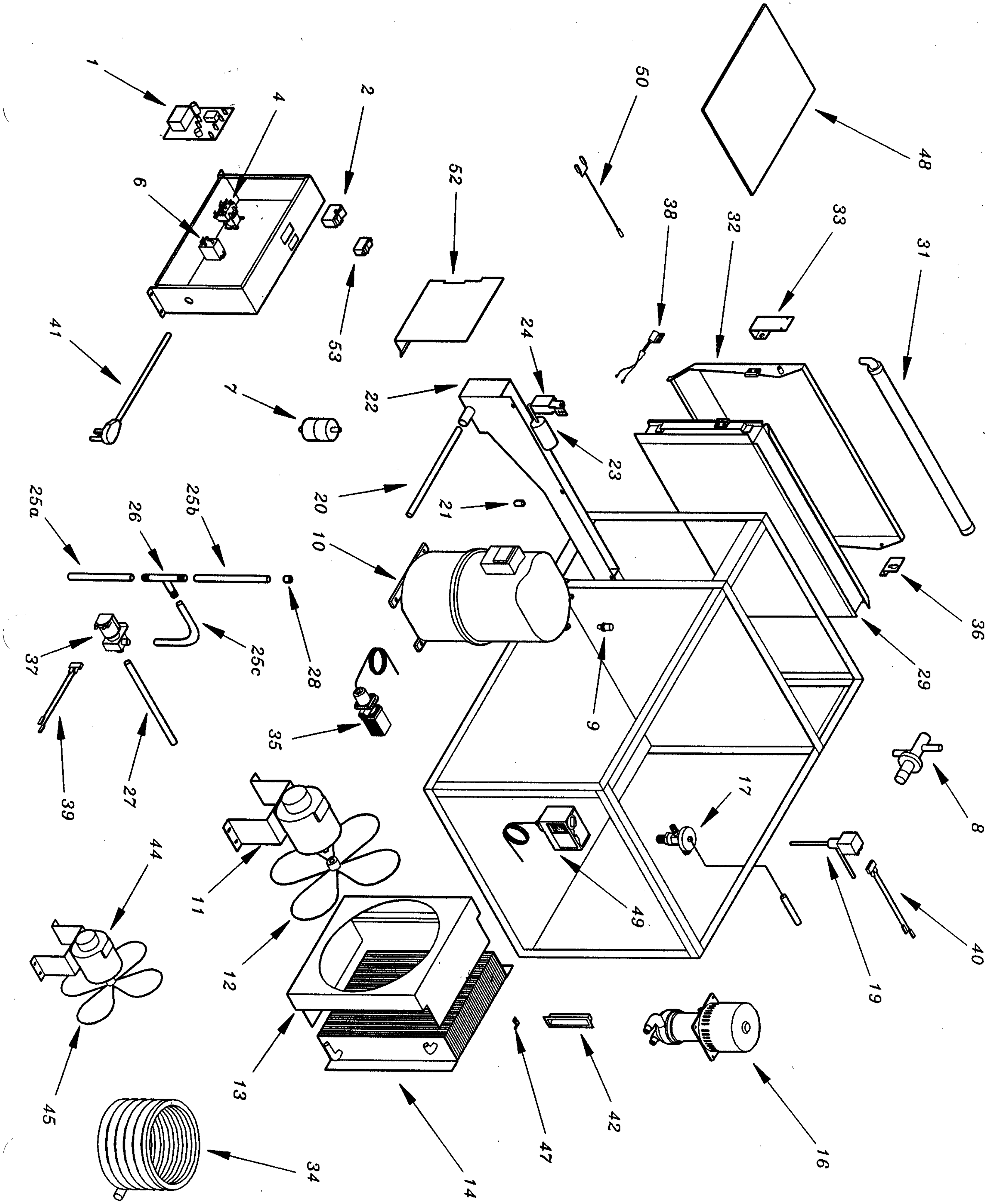
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