REMCOR®

SPIRAL ICE ICEMAKER–DISPENSER

MODEL NUMBER: SID350A/35S
SID350W/35S,
SID350A/35S-B
SID350W/35S-B

Operator's Manual

Part No. 91626
Revision Date: May 12, 2014
Revision: C

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION
This Manual must be read and understood before installing or operating this equipment

PRINTED IN U.S.A

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Manufactured Under One or More of the Following Patent Numbers:
3,211,336, 3,274,792, 3,393,839 , 3,517,860, 3,739,842, 4,215,803, 4,227,377, 4,300,3594,346,824
Canadian Patent Numbers912,514 (10/72), 936,855 (11,73), 4,429,543, 4,921,149
Other Patents Pending

SAFETY PRECAUTIONS

Always disconnect power to the dispenser before servicing or cleaning.

Never place hands inside of hopper or gate area without disconnecting power to the dispenser. Agitator rotation occurs automatically when the dispenser is energized!

This ice dispenser has been specifically designed to provide protection against personal injury and eliminates contamination of ice. To insure continued protection and sanitation, observe the following

ALWAYS be sure the removable lid is properly installed to prevent unauthorized access to the hopper interior and possible contamination of ice.

ALWAYS be sure the upper and lower front panels are securely fastened.

ALWAYS keep area around the dispenser clean of ice cubes.

IMPORTANT INSTALLATION NOTICE

An Everpure Model 9320-42, System IV Model DB900, or equal, icemaker quality water treatment unit MUST BE INSTALLED in the water supply line to the icemaker. Failure to do so may result in poor quality ice, low production output and may cause premature failure of icemaker evaporator and void the extended evaporator warranty.

This icemaker is provided with a stainless steel evaporator, designed to last the life of the product. However, some of the chemicals in treated and untreated water, specifically chlorine and sulfur (sulfide), have the ability to attack stainless steel and cause premature failure. An initial investment in proper water treatment will pay for itself in increased production, quality and long life of the product.

DESCRIPTION

The REMCOR S.I.D. (Spiral Icemaker Dispenser) is a unique, self-contained, counter-top style unit which automatically makes hard, clear cube-quality ice and stores it in a sealed hopper for sanitary dispensing. The ice is made by a new, patented process on a spiral shaped stainless steel evaporator and produces tube cube quality ice on the outside of the tubes. There are no augers, no compressing of flaked ice, no bearings and no high gear motor loads in the icemaking process. The unit has been designed to be simple, yet effective, to provide many years of trouble free operation.

Table 1. Specifications

Compressor:	**HP 1/2**
Refrigerant:	R-22 1 lb.
Pressure Controls Setting:	High: 400 Psig Low: 10 Psig
Voltage:	115 / 1 / 60
Amps:	16 Amps
Circuit Ampacity:	20 Amps
Fuse Size:	20 Amps
Ice Storage Capacity:	35 lbs.
Ice Making Capacity:	Up to 350 lbs./24 hours
Shipping Weight:	170 lbs.

Ice Making Capacity Per 24 hr / lb at Given Conditions

Table 2. Icemaker Capacities (lbs./day)
Water Temperature °F

AIR TEMP. °F	40	50	60	70	80
60	391	372	355	342	318
70	356	334	321	310	301
80	316	303	295	281	270
90	290	267	259	241	241

UNPACKING

1. With the unit upright carefully remove the shipping carton. Inspect for shipping damage and report any such damage to the shipper immediately.
2. Unscrew and remove the top cover of the unit.
3. Remove shipping tape from storage hopper and agitator in storage hopper.

INSTALLATION

LOCATION

Locate the icemaker dispenser indoors in a well ventilated area. Avoid exposure to direct sunlight and/or heat caused by radiation. Ambient room temperature must be in the range of 60° to 90° F. Do not install unit in an enclosed area where heat build-up could be a problem. Note: Air flow direction and spacing required to Figure 1.

Consult Figure 1A and 1B for utility connection locations.

Consult Figure 2 for dimensions for mounting unit to the counter with the hardware provided. Note that the unit must be level for proper operation.

The unit must be sealed to the counter. The template drawing (Figure 2) indicates the openings which must be cut in the counter. Locate the desired position for the unit then mark the outline dimensions and cut-out locations using the template drawing cut openings in counter.

Apply a continuous bead of NSF listed silastic sealant (DOW 732 or equal) approximately 1/4" inside of the unit outline dimensions, and around all openings. Then position the eater of the counter within the outline dimensions. All excess sealant must be wiped away immediately.

PLUMBING

Connect the icemaker to a cold, potable water source, suitable for drinking. This water source must comply with the basic plumbing code of the Building Officials and Code Administrators International Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration. Do not install unit on a water softener line. It is recommended that a hand shut-off valve and strainer be used on the incoming supply line. (See Figure 2 for size and location.) For proper operation of the incoming water supply pressure must be in the range of 30-90 PSIG. Install a pressure regulating valve if above this range!

IMPORTANT: To insure proper icemaker operation and also to reduce the frequency of water-related service problems, a water filter should be installed. REMCOR recommends the use of one of the following basic systems.

1. Everpure inc.
   660 N. Blackhawk drive
   Westmont, IL 60559
   (708) 654-4000

   Insurice Twin System #9320-42

2. System IV
   16632 Burke Lane
   Huntington Beach, CA 92647

   Basic Water System #B1000

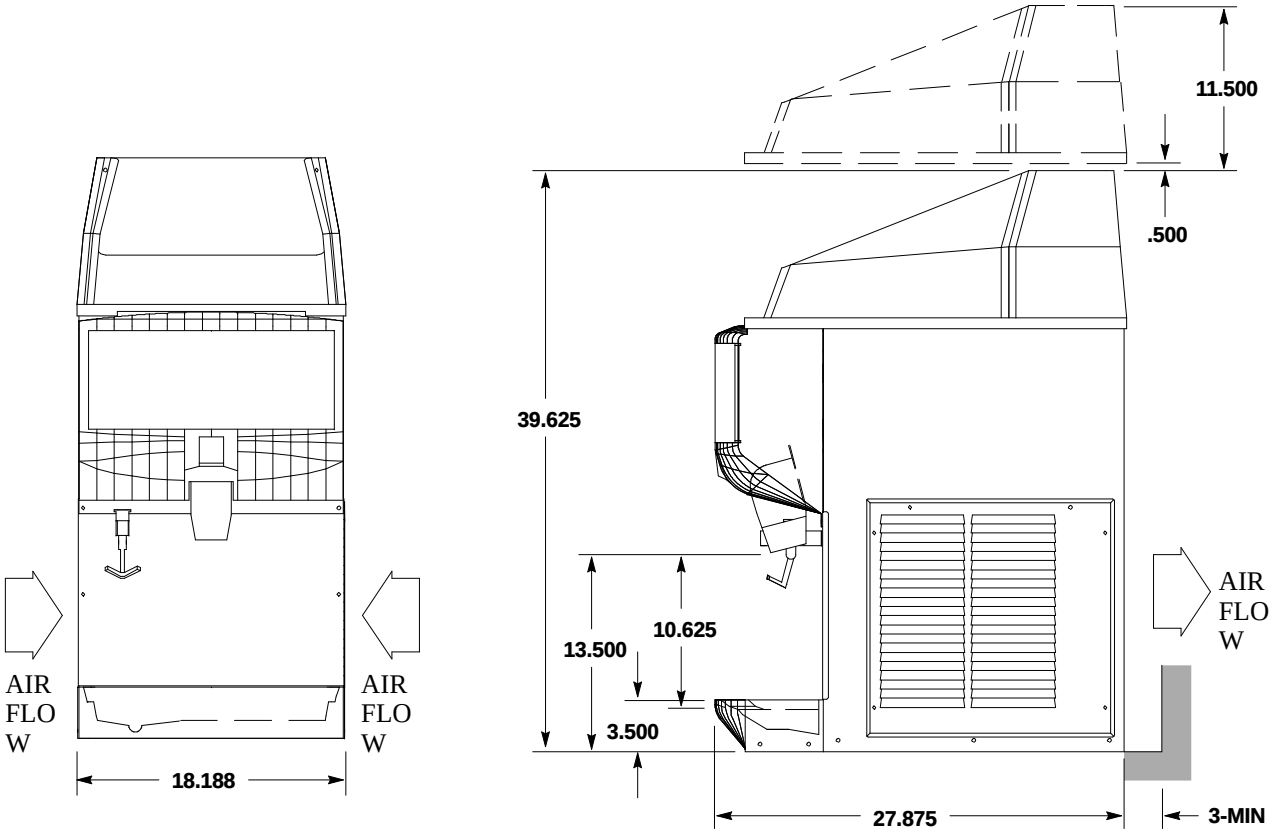
For specific recommendations on these filter systems for your local water conditions, consult with a distributor in your area or contact the filter manufacturer.
Connect separate drain lines to all drain connections. See Figure 2 for size and location. These lines must pitch downward to and open drain and must contain no traps, or improper drainage will result. Separate, not joined drain lines are required to prevent back flow.

NOTE: In areas where consistently warm water temperatures are encountered, the use of a pre-cooler in the water line is recommended to maximize the ice production of this unit.

ELECTRICAL

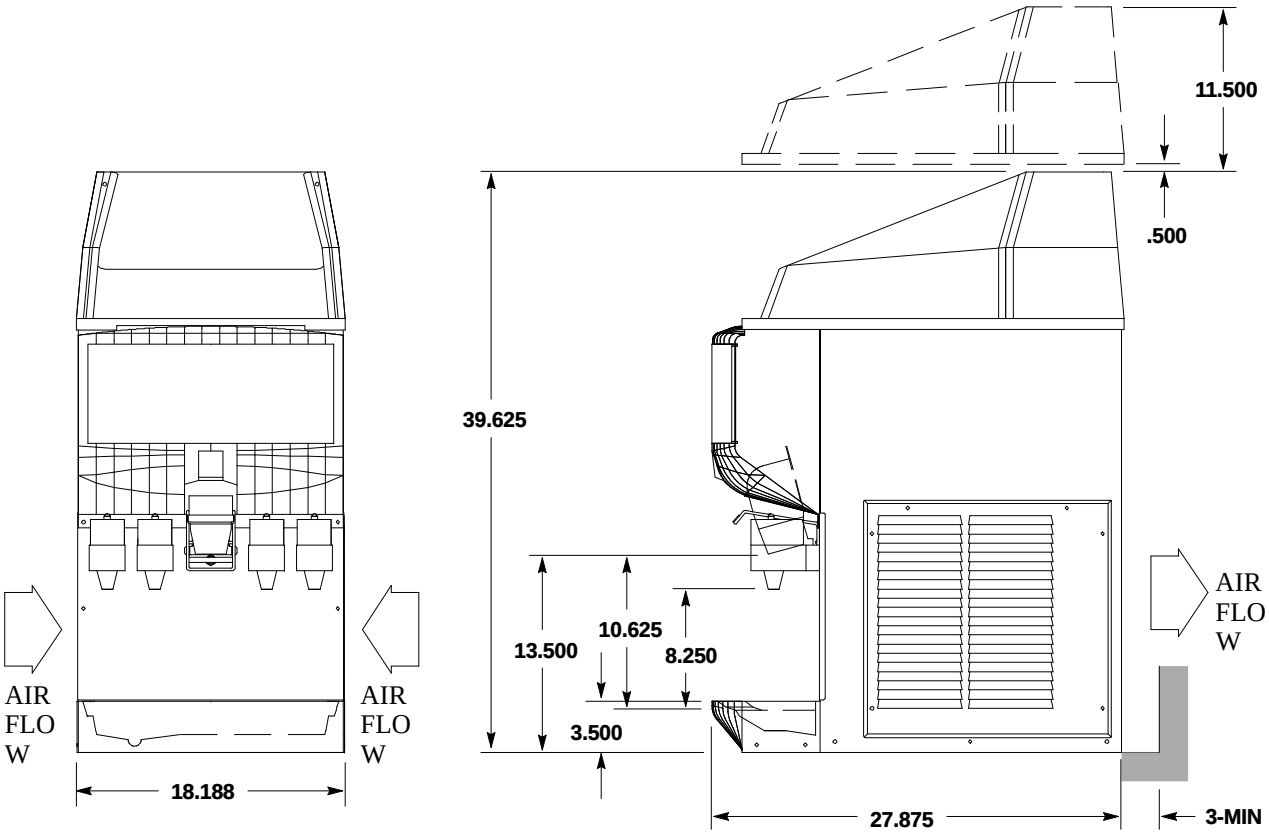
This unit is supplied with a 2 wire-with ground 6 foot long conductor and suitable plug for a standard 115 volt 20 amp circuit receptacle. This cord exits the unit through the base and should be routed per the National Electric Code.

WARNING: Only qualified personnel should service internal components or electrical wiring.



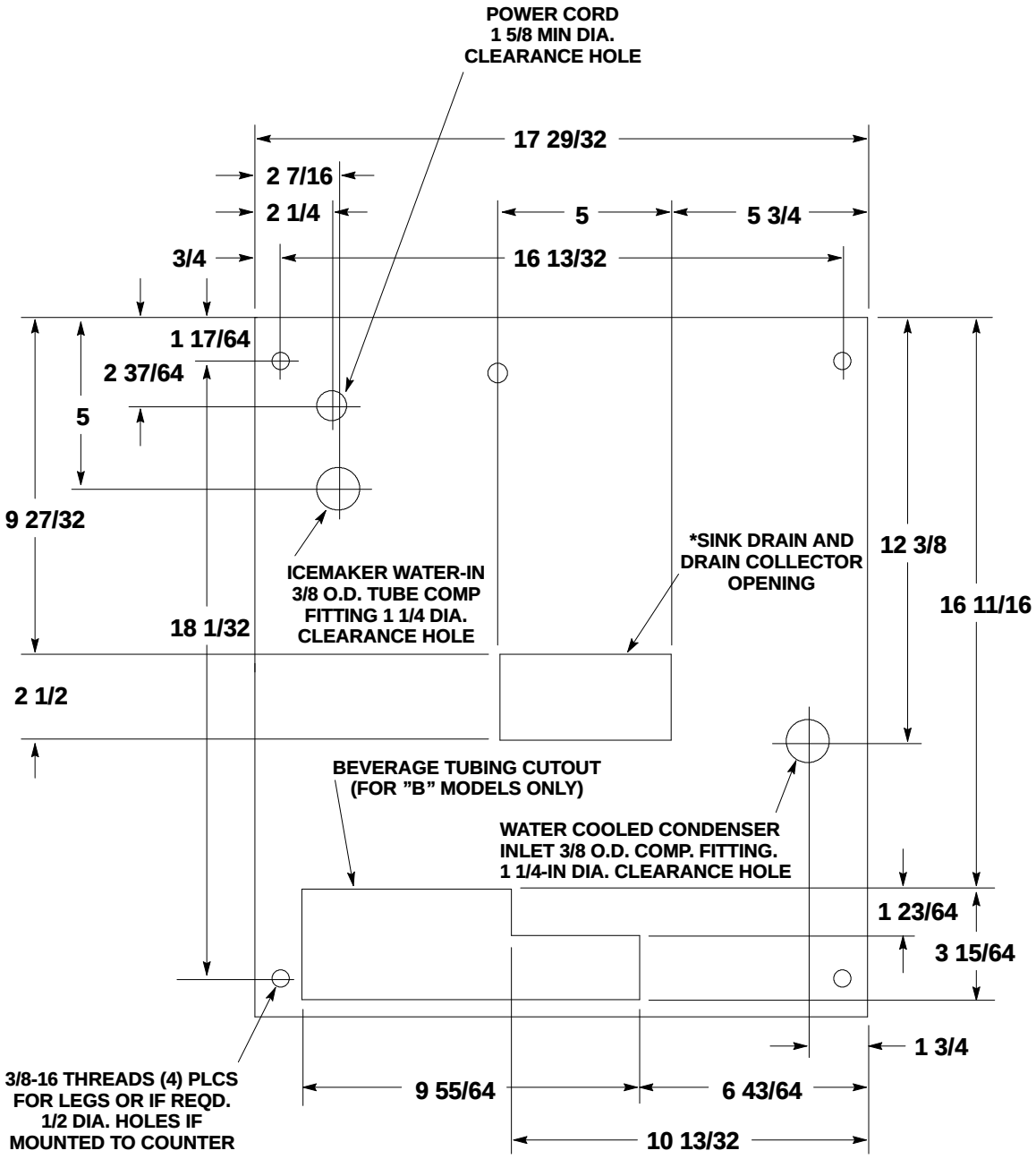
1. Minimum 3" clearance must be provided at the rear of unit. (air flow out)
2. Inlet air flow may only be restricted on one side. (at least one side must be open for proper performance)
3. Minimum top clearance must be 11.500.

FIGURE 1. SID 350 / 35S



1. Minimum 3" clearance must be provided at the rear of unit. (air flow out)
2. Inlet air flow may only be restricted on one side. (at least one side must be open for proper performance)
3. Minimum top clearance must be 11.500.

FIGURE 2. SID 350 / 35S-B



***NOTE:**
DRAIN COLLECTOR REQUIRES
1-IN BARB BY MPT;
1-IN I.D. PLASTIC TUBING

FIGURE 3. MOUNTING TEMPLATE SID 350A/35, SID 350W/35, SID 350A/35S-B, SID 350W / 35S-B

BEVERAGE SYSTEM

"B" models contain beverage faucets only and must be supplied with cold product from any remote cold plate or refrigerated soda factory.

Installation

1. Locate the required openings in the counter top for the beverage lines as shown in Figure 2.
2. Carefully pull the beverage tubes through the bottom opening in the unit and through the clearance opening in the counter.
3. Connect the beverage system product lines as indicated in Figure 3. This work should be done by a qualified service person. Note that the hoses are marked with numbers 1 - 4 for syrup connections and "CW" for carbonated water connection.

START UP

1. Remove front and side service panels and connect the water supply to the water valve.
2. Turn on water to icemaker. Depress fill switch to fill evaporator with water before starting unit.
3. Put the stop/rum switch in the "run" position. Observe that the icemaker goes through proper icemaking and harvest cycle. If unit malfunctions, consult troubleshooting section.

NOTE: Do to meltage loss because of warm storage hopper, it will take longer to fill the hopper the first time than when the icemaker has been operating continuously.

4. Depress the vend switch. Check that both the gate solenoid and agitator motor are energized simultaneously to lift the gas slid and rotate the agitator in the storage hopper, respectively. If either component malfunctions, consult the troubleshooting section.
5. For beverage units, start up the beverage system and adjust the faucets to the proper brix. Contact your local syrup distributor for complete information on the beverage system.
6. The bin thermostat is calibrated at an atmospheric pressure equivalent at 500 feet above sea level. For locations at higher elevations, it may be necessary to re-adjust these controls. Consult the maintenance / adjustment procedures section.

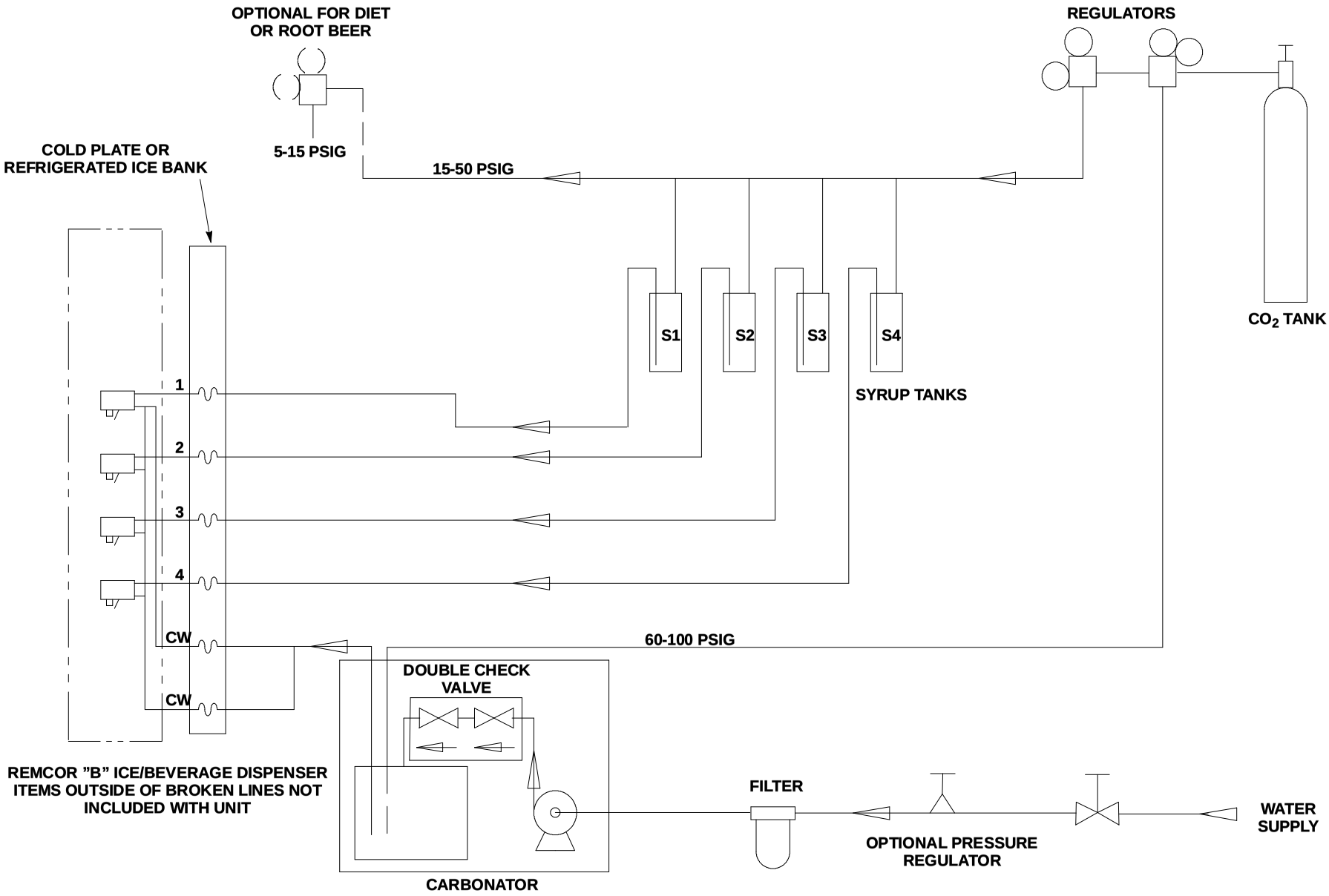


FIGURE 4. BEVERAGE SYSTEM SCHEMATIC "-B" MODELS

OPERATING INSTRUCTIONS

A temperature sensing control bulb, located in the storage hopper, starts and stop the icemaking process (compressor) in response to the ice level in the hopper. With this ice level control "calling" for ice (hopper ice level is low), the total cycle timer is energized. This timer, in turn, energizes the harvest timer for its' respective "on" times. The chart below details this sequence of events.

Table 3. CONTROLLER

TIME	TOTAL CYCLE TIME	HARVEST TIME	ACTION
Start - 35 seconds	X		1. Hot gas solenoid valve open.
35 - 570 seconds			
35 - 65 seconds		X	1. Harvest motor one. 2. Water fill valve on. 3. Agitator motor on.
65 - 570 seconds (air-cooled) 65 - 510 seconds (water-cooled)		X	1. Harvest motor and agitator motors off. 2. Water fill valve off.
35 - 570 seconds (air-cooled) 35 - 510 seconds (water-cooled)	X		1. Hot gas solenoid valve closed.

At the 35 second point in the cycle, the host gas solenoid valve closes and ice begins to form on the stainless steel tubing coils of the evaporator. Ice will continue to form on these coils for the remainder of the cycle time. At the end of the icemaking cycle, the total cycle timer (repeat starts sht harvest portion of the cycle again.

When ice contacts the control bulb in the storage hopper, the control switches the compressor off. This control (thermostat) also switches off power to the total cycle timer. With power de-energized, the timer resets itself to the "start" portion of the cycle. Therefore, the unit will always start with the hot gas/harvest portion of the ice making cycle to ensure that the evaporator is cleared of any remaining ice.

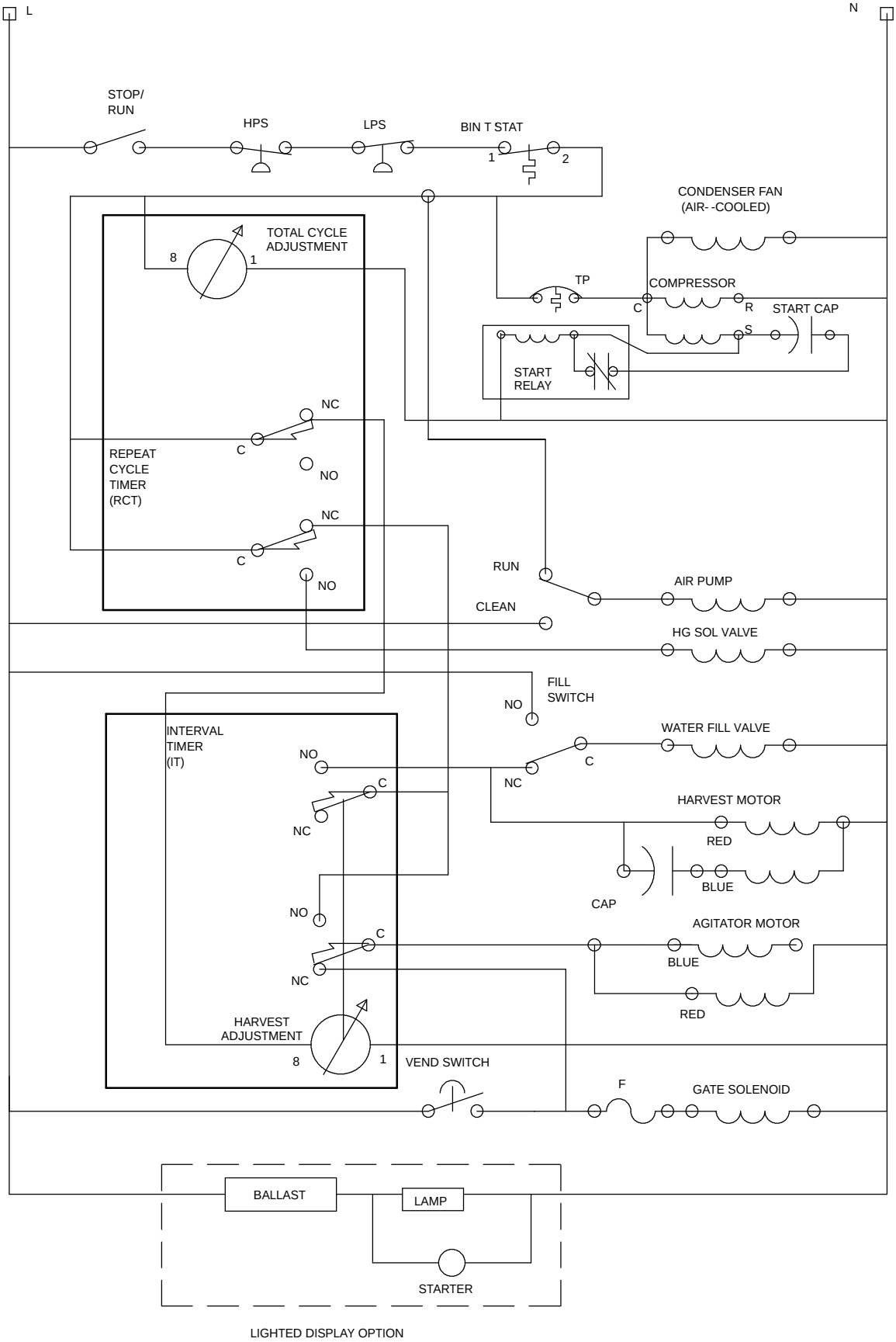


FIGURE 5. SID 350/35 115/1/ 60 HZ SCHEMATIC

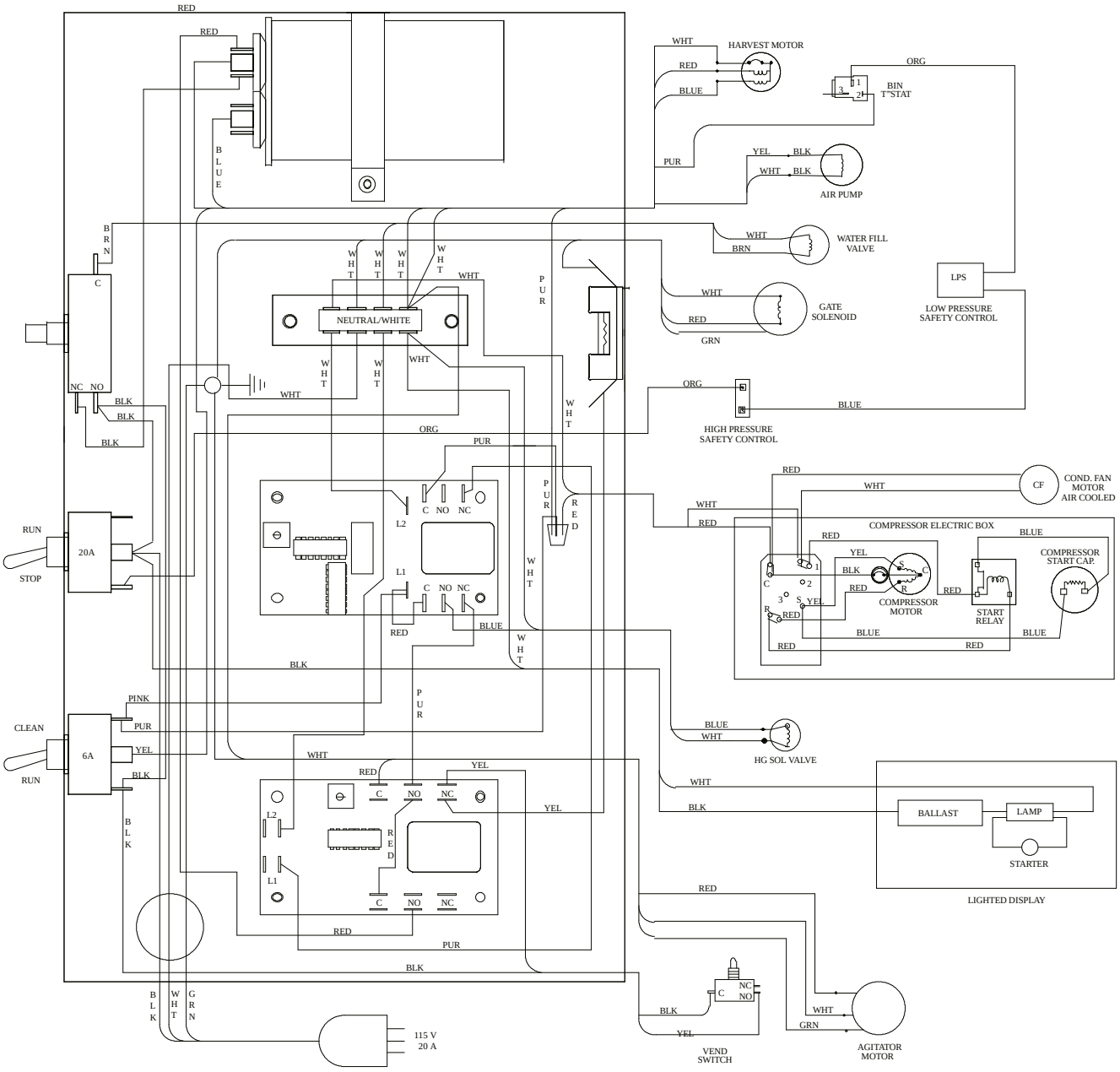


FIGURE 6. SID 350/35 115/1/60 HZ WIRING

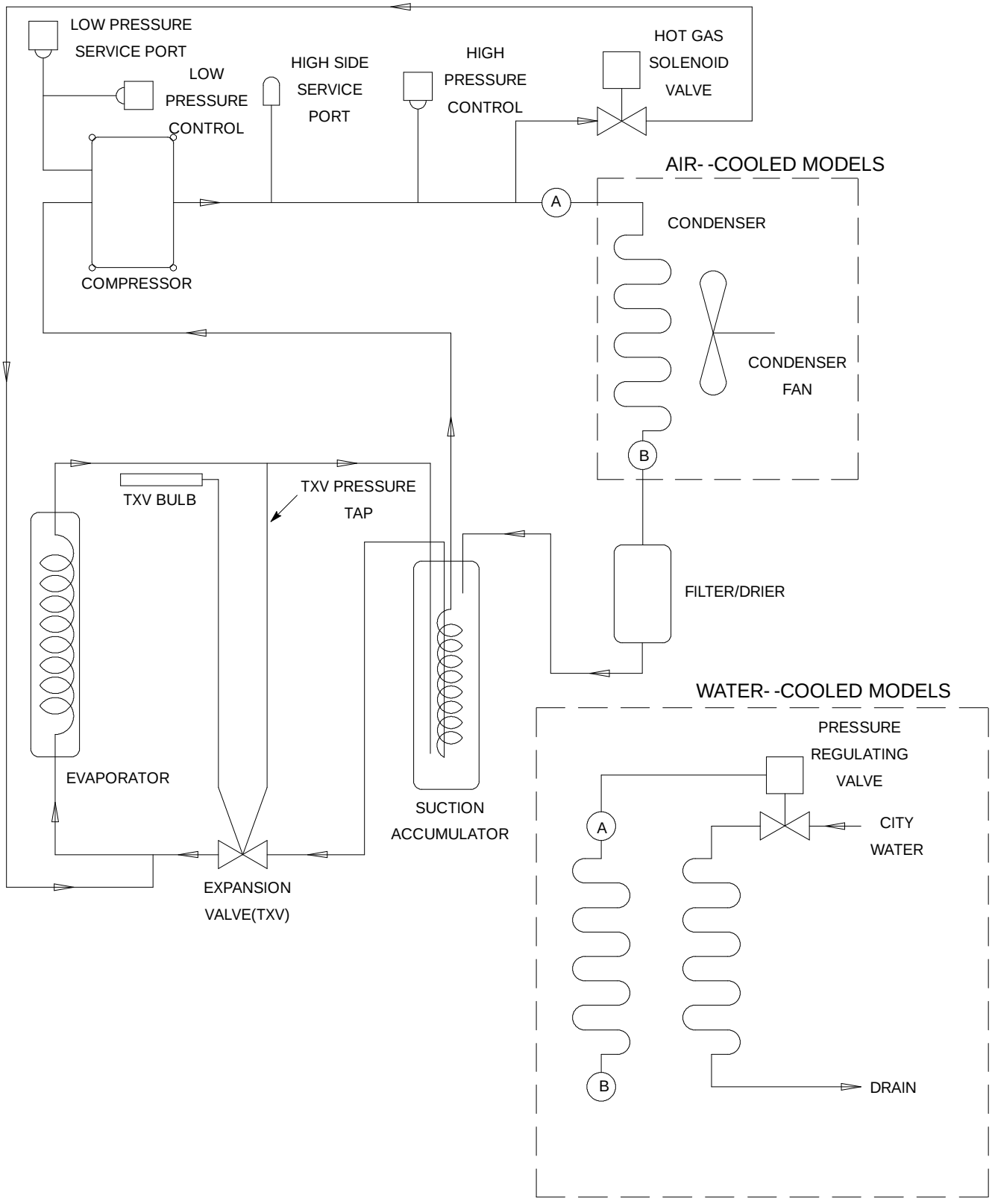


FIGURE 7. REFRIGERATION SCHEMATIC

MAINTENANCE

It is recommended that the air cooled condenser be cleaned every 3 months or sooner depending on the operating environment for proper refrigeration system performance, Check that this condenser is free of dirt/foreign material that could cause air flow blockage.

cleaning of the icemaker is recommended on a regular basis not only for sanitary reasons but also to maintain the performance of the unit. Build-up of lime and scale can hinder icemaking production rates and interfere with proper dispensing of the ice. See the cleaning section for the recommended procedure.

Periodically, check the vending area sink for proper water drainage. Remove any foreign material from the sink to prevent drain blockage.

CLEANING INSTRUCTIONS

IMPORTANT: The icemaker should be cleaned at a minimum of 3 month intervals or more frequently depending on local water conditions. The storage hopper interior should be cleaned at least once a month.

WARNING: Do no use metal scrapers, sharp objects or abrasives on the surface of the storage hopper, as damage may result. Do not use solvents or other cleaning agents as they may attack the plastic surface. Use only the recommended chemicals and solutions for both the icemaker and hopper

Icemaker Section

1. Remove top cover, lower front panel and right side access panel.
2. Put toe stop/run switch in the "stop" position at the end of the harvest cycle. An alternate method would be to stop the unit during the icemaking cycle and allow ice in the evaporator to melt by waiting for at least 1 hour before beginning the cleaning procedure. The flush switch can be depressed to bring in warmer water to help the melting process.

WARNING: Electrical power is on to unit during icemaker cleaning mode. To avoid possible injury, do not reach into hopper or into icemaker nozzle. Do not contact exposed electrical wiring and components.

3. Plug icemaker drain line located in the drain collector at condenser fan motor. (1-1/4 OD hose).
4. Fill icemaker drain hose with water by pushing fill switch.
5. Add 4 oz. of Virginia Ice Machine Cleaner (or equivalent) through the evaporator outlet.

WARNING: Virginia Ice Machine Cleaner (or equivalent is a mild acid. Normal care should be taken - keep out of eyes and cuts. Read warnings on package before using. Do not operate unit in the cleaning mode without the ice drop cover in place. There may be some overflow of cleaning solution through the evaporator vent tube during the cleaning cycle.

6. Seal the evaporator outlet with plastic lug provided with the unit.
7. Push fill switch and fill evaporator (when fluid flows out of evaporator through vent tube) let go of fill switch.
8. Put the clean/run switch in the "clean" position. Allow unit to run in the cleaning mode for at least 30 minutes.

9. Open drain line. To avoid splash, drain the drain line to a separate container.
10. Push fill switch and hold for 6 minutes to flush solution out of evaporator. Drain line should be in the drain collector.
11. Plug drain line.
12. Push fill switch and hold for 1 minute to flush solution out of vent line
13. Open drain line. Put clean/run switch in the "run" position. Remove plug from evaporator.
14. Put the stop/run switch in the "run" position and allow unit to run through at least 3 complete icemaking and harvest cycles, and until ice is free of "sweet" taste.

CAUTION: If unit fails to harvest, put the stop/run switch in the "stop" position and flush the evaporator with hot water to melt remaining ice and repeat steps 10, 11, 12 and 13 to clean out remaining solution.

15. Dispense all ice out of storage hopper and discard.

Dispenser Section

1. turn off main electrical power supply to machine.
2. Remove agitator assembly from storage hoper and wash and rinse it thoroughly.
3. Wash down all inside surfaces of the ice storage area including the top cover with a mild detergent solution and rinse thoroughly to remove all traces of detergent.
4. Replace agitator.
5. Sanitize the inside of the hopper and agitator with a solution of 1 ounce of household bleach in 2 gallons of water. (200 PPM)
6. Replace the agitator disk. Sanitize as described in Step 5.
7. Remove Ice Chute cover as follows:
   A. Flex sides outward to disengage lower pins.
   B. Lift Ice Chute cover to disengage upper pins.
   C. Lower Ice Chute cover down out of unit. Note: it may be helpful to twist cover slightly.
8. With brush provided clean the inside of the ice chute with a mild detergent solution and rinse thoroughly to remove all traces of detergent.
9. Reverse steps above to reassemble ice chute.
10. Sanitize as described in Step 5.
11. Turn on the electrical power supply. The icemaker is ready for normal operation.

BEVERAGE SYSTEM

1. Remove faucet spouts, wash in mild detergent, rinse and replace.
2. Disconnect electrical power to the carbonator. Shut off the water supply and close the CO_2 regulator to the carbonator.

3. Disconnect the syrup tanks from the system.

4. Energize the beverage faucets to purge the remaining soda in the system.

5. Use a clean 5 gallon tank for each of the following.

   A. **Cleaning tank** - fill with hot (120° - 140°) potable water.

   B. **Sanitation Tank** - Fill with a chlorine sanitizing solution in the strength of 1/2 ounce of household bleach (sodium hypochlorite) to 1 gallon of cold (ambient) potable water (200 PPM).

6. Repeat the following procedure on each of the units' syrup product lines:

   A. Connect the cleaning tank to the syrup line to be sanitized and to the CO_2 system.

   B. Energize the beverage faucet until the liquid dispensed is free of any syrup.

   C. Disconnect the cleaning tank and hook-up the sanitizing tank to the syrup line and CO_2 system.

   D. Energize the beverage faucet until the chlorine sanitizing solution is dispensed through the faucet. Flush at least 2 cups of liquid to insure that the sanitizing solution has filled the entire length of the syrup lines. Allow sanitizing solution to remain in product line for 15 minutes before processing.

   E. Disconnect the sanitizing tank. Hook-up the product tank to the syrup line and to the CO_2 system.

   F. Energize the faucet to flush the sanitizing solution from the syrup line and faucet. Continue to draw on the faucet until only syrup is dispensed.

7. Repeat Step 2 in reverse order to turn on the carbonator. Dispense at lease 1 cup of beverage from each faucet. Check taste. Continue to flush if needed, to obtain a satisfactory tasting drink.

MAINTENANCE AND ADJUSTMENTS

THERMOSTAT ALTITUDE ADJUSTMENT

Bin Stat

IMPORTANT: Adjust the bin t'stat setting only if storage hopper overfill is a problem.

1. Remove the top plastic cover.
2. The adjustment screw is located at the right upper rear corner of the unit behind the hopper-evaporator partition.
3. For altitudes up to 6000 ft., turn the adjustment screw COUNTERCLOCKWISE as follows:

ELEVATION (FT.)	CCW TURN
2000	1/13
4000	1/6
6000	1/4

4. For altitudes above 6000 ft., consult the factory.

ICE PRODUCTION ADJUSTMENT

1. Remove the top cover and lower front panel.
2. Collect and weigh the ice produced during the harvest cycle. The amount of ice harvested should be 1.9 to 2.1 pounds.
   A. Put the stop/run switch in the "stop" position. (if the unit is in the icemaking cycle, stop the unit at the end of the harvest cycle.
3. If ice weight is not in the 1.9 to 2.1 pound range, make adjustments by adding or subtracting time to the total cycle time. More time = more ice.
4. Return unit to normal icemaking mode and repeat steps 2 and 3 until proper amount of ice delivered per cycle.

CLEARING EVAPORATOR FREEZE-UP

WARNING: To prevent possible injury, do not stick fingers or hand into icemaker nozzle or hopper with power applied to unit.

1. Remove four (4) screws and remove the hopper cover.
2. Put the stop/run switch in the "stop" position.
3. Close the water supply valve to the icemaker.
4. Drain evaporator by disconnecting the water inlet tube at the bottom of the evaporator, when empty reconnect water inlet.

5. Pour hot water into the evaporator ice exit opening. it will be necessary to use either a funnel or a container with a spout. Fill the evaporator completely.

6. Drain the evaporator. Repeat steps 5 and 6 as required to insure that all of the ice in the evaporator is melted.

7. Open the water supply valve and refill evaporator.

8. Consult the toubleshooting guide to determine cause of freeze-up before putting unit back in service.

SERVICE PROCEDURES

High Pressure Control

The high pressure control is factory set at 400 PSIG. To check the setting, install a refrigeration discharge pressure gauge on the service port located on the compressor discharge line. Remove the front and right side panels to access this port and high pressure control. Disconnect the electrical power to the condenser fan motor leads in the control box. Run the icemaker to determine the control cut-out point. Adjust if necessary. this control is manual reset type; the reset lever is located behind the low pressure control next to the electric box on top of the high pressure control. Push in to reset. If the icemaker will not run after the control has been reset (with the refrigerant pressure less than 350 PSIG), replace the control. The adjustment screw is located on the top of the control.

Bin Thermostat

1. The bin thermostat is located in the upper right rear corner of the unit under the cabinet flange.

2. To adjust the thermostat, remove the top plastic cover from the unit. The adjustment screw is located on the top of the bin t ŝtat and is accessible through the hole in the cabinet flange. The factory setting is 35° F cut-out / 41° F cut-in. Before adjusting, check that the adjustment screw is turned clockwise to the stop position (CCW adjustment will raise the cut-out/cut-in temperatures).

WARNING: Electrical power is on for the service procedure in item 3. Avoid contact with uninsulated parts in the control box.

3. The thermostat sensing bulb is located in the ice storage hopper on the upper left side wall. With the adjustment screw in the full cold position and no ice contacting the sensing bulb, check that the thermostat is closed (terminals 1 and 2). With ice contacting the t ŝtat bulb, terminals 1 and 2 should be open to perform this check, use a voltmeter connected between t ŝtat #2 and neutral to determine the correct operation.

4. To replace a defective thermostat, disconnect electrical power to the unit. Remove the sensing bulb from the storage hopper (2 thumbscrews). Remove the t ŝtat from under the flange (2 screws) by disconnecting the two electrical leads. Install the new control, being careful not to kink the capillary tubing (sensing bulb) when routing it to the storage hopper.

Condenser (air cooled)

The condenser should only have to be replaced if it has been physically damaged to the point that repair is not practical. Use a fine comb to straighten bent/pushed-in areas. If replacement if necessary, the following equipment is required: vacuum pump, refrigeration manifold with gauges, brazing equipment and various hand tools. The replacement procedure has two steps: CABINET REMOVAL and CONDENSER REPLACEMENT.

Cabinet Removal

1. Remove ice from the hopper and all panels and plastic parts.
2. Disconnect electrical power to the unit.
3. Release refrigerant charge from the system through ports into an appropriate container/reclaim system.
4. Disconnect harness from gate solenoid (upper front) and dispenser push button switch.
5. Disconnect harness from the bin t'stat and air pump. Make sure that the harness is not secure to the cabinet.
6. Remove clear hoses from the discharge and suction of the air pump.
7. Remove the pins from behind the front cabinet flanges at the sink.
8. Remove sink.
9. Remove bracket mounting evaporator assembly to the cabinet.
10. Loosen two (2) 1/4 x 20 hex head screws securing the evaporator mounting bracket to the base. Tilt evaporator assembly towards the back to remove the evaporator ice chute from the hopper partition.
11. Remove partition (4 screws).
12. Remove screw securing cabinet to the base.
13. Lift the cabinet.

Condenser Replacement (air-cooled)

1. Remove screws mounting condenser shroud from the base and condenser.
2. Remove screws mounting condenser to the base.
3. Unbraze refrigerant lines from inlet and outlet of condenser.
4. Replace condenser.
5. It is also recommended to replace the filter drier.
6. After brazing, perform leak test of the new brazing joints.
7. Evacuate the system.
8. Charge the system to the name plate specification (1 lb. of r-22).
9. Install cabinet - Use reverse order of step 1.
10. Run the icemaker and check operation pressure in relation to the ambient temperature.
11. Install sink, panels and plastic parts.

Cleaning the Condenser (air cooled)

1. Disconnect power to the unit.
2. Remove the right side and rear panels.
3. Remove all dirt/foreign matter build-up from the condenser fins (fan side). Be careful not to damage the fins. It is recommended that a power vacuum cleaner with a "crevice" tool attachment be used.

Condenser Fan Motor

WARNING: Electrical power is no to the unit fro the following procedure.

1. To check for a defective fan motor, remove the right and front panels.
2. Put the "stop/run" switch in the "stop" position. Verify that the fan blade is free to turn.
3. Put the "stop/run" switch in the "run" position. Refer to the wiring diagram for the following check (a voltmeter is required):
   A. Verify that the high pressure safety control (HPS) is closed and the unit is "calling" for ice (no ice on the bin t stat sensing bulb in hopper).

CAUTION: The fan motor is connected in parallel to the compressor.

4. To replace the fan motor, disconnect the electrical power to the unit. Disconnect the electrical leads in the compressor electric box. Remove the four (4) mounting screws securing the fan motor bracket to the condensing unit assembly base. Remove the complete motor/bracket/fan blade assembly from the unit for ease of the motor replacement.

Expansion Valve TXV

1. To check the TXV, hook-up a refrigeration suction pressure gauge to the appropriate access port.
2. While the icemaker is running, observe the gauge pressure. The nominal suction pressure range during the icemaking cycle is 17 - 35 PSIG. The low pressure safety control LPS "trips" at 10 PSIG. The txv is operating properly if the suction pressure drop no lower than 16 PSIG.

TXV

3. To replace the TXV, the following items are required: vacuum pump, refrigeration manifold with gauges, charging cylinder and various hand tools (wrenches, screwdrivers, etc). The Procedure is as follows.
   A. Disconnect the electrical power from the unit.
   B. Release refrigerant charge from system.
   C. Remove insulation from TXV and sensing bulb.
   D. Disconnect TXV from system (3 flare nut connections) and remove bulb from clamps on suction line.
   E. Install replacement valve being careful to completely insulate TXV and bulb/suction line area.
   F. Evacuate and recharge the system to name plate specifications.

Expansion Valve TXV (Cont'd)

4. Observe that the unit functions normally in both the icemaking and harvest cycle; specifically that suction and discharge pressures are in the range of 37-17 PSIG and 200-280 PSIG.

water fill valve

The water fill valve is located on the condensing unit assembly base, behind the compressor. To check for proper operation, put the "stop/run" switch in the "stop" position. Depress the fill switch and hold. Water should overflow out the evaporator and to the overflow tube and collector drain. If water doesn't flow out the evaporator and to the overflow tube and collector drain. If water doesn't overflow and the water supply has been checked, then the fill valve is defective.

To replace the fill valve:

1. Disconnect electrical power to the unit.
2. Disconnect the electrical wires from the solenoid.
3. Remove the water outlet line from the valve.
4. Remove the two (2) screws securing the valve to the condensing unit assembly base. Remove the valve.
5. With the valve "free", remove the inlet fitting assembly (garden hose).
6. Install the inlet fitting assembly on the new valve. Repeat the above procedure in the reverse order to complete installation of the fill valve.

Compressor

The compressor can exhibit basically two types of malfunctions. It will run but the refrigeration system produces little or no ice. In this case, check the suction and discharge pressures. A high suction pressure (greater than the normal range of 17-35 PSIG) and low discharge pressure (less than the norma range of 200-280 PSIG) indicates an internal valve problem and loss if compression. The second type of failure is characterized b y the fact that the compressor will not run but there is voltage at the terminals. The cause is a defective motor (check for open or grounded windings).

In the case where the compressor is not operating, the electrical system can be checked as follows (a VOM type instrument is required):

1. Remove the front panel and the compressor electric box cover.
2. Put the "stop/run" switch in the "run" position.
3. Verify that there is voltage at the compressor.
4. Disconnect electrical power to the unit.
5. disconnect wires so that continuity can be checked on the compressor electrical components.
6. Check continuity across the following:
    A. Relay coil: If there is none, replace relay.
    B. Compressor C & S - no continuity - replace compressor (open start winding).
    C. Compressor C & R - no continuity - replace compressor (open run winding).
    D. Start capacitor terminals
        a. VOM on RX1 scale - continuity replace capacitor (shorted).

b. VOM on RX100,000 scale - no continuity - replace capacitor (open).

E. Overload (TP) 1 & 3 - no continuity - replace TP (open).

F. Compressor C & shell - continuity replace compressor (grounded motor).

G. Check the continuity of the wires removed and reconnect to the proper terminals.

H. If all of the above tests prove satisfactory and compressor still fails to operate properly, change the start relay as the new relay will eliminate and faulty electrical characteristics, such as improper pick-up or drop-out which cannot be determined by the above tests. If the new relay fails to correct the difficulty, the compressor shall be considered to be inoperative because of internal defects and must be replaced.

To replace the compressor, the following items are needed: vacuum pump, refrigeration manifold with gauges, charging cylinder, brazing equipment and various hand tools. The procedure is as follows:

1. Disconnect electrical power to the unit and remove wires from the compressor terminals.
2. Release refrigerant charge from the system.
3. Unbraze discharge (next to service port) and suction lines.
4. remove mounting bolts (4) and hardware from old compressor.
5. Install new compressor following the above steps in reverse order.
6. Evacuate and recharge system to nameplate specifications.
7. Run icemaker and perform the following items:

   A. Check that suction/discharge pressures are in the normal operating ranges. Nominal discharge pressure 300 PSIG and suction pressure 17-35 PSIG at 70° F ambient air temperature and 50° F water temperature.

   B. Check ice production capacity (see ice thickness adjustment section for procedure).

Hot Gas Valve (HGV)

There are three situations to monitor for determining the proper functioning of the HGV. Install suction and discharge pressure gauges on the access ports removing the front, left and right side panels. First, observe the suction/discharge pressures during the icemaking cycle. the suction pressure (greater than 40 PSIG) range and a low discharge pressure (less than 115 PSIG) indicate a leaking valve set problem and the HGV must be replaced. Secondly, observe the suction pressure during the hot gas portion of the harvest cycle. The minimum suction pressure is 70 PSIG; pressures less then this indicate the HGV is not operating properly and must be replaced. The third situation to analyze is the valve coil. If there is voltage but and audible "click" is not heard at the valve, replace the HGV (defective coil - valve not opening). /The minimum suction pressure would also not be attained in this third case.

To replace the HGV, the following equipment is needed: vacuum pump, refrigeration manifold with gauges, charging cylinder, brazing equipment and various hand tools.
The replacement procedure is as follows:

1. Disconnect electrical power to the unit and the leads to the valve.
2. Release the refrigerant charge from the system.
3. Unbraze the line connections at the valve. Remove the nut that attaches the valve to the mounting bracket.
4. Install new valve.
5. Evacuate and recharge system to name plate specifications.

Cycle Timers

The following procedure is to check for the proper functioning of the cycle timers. (A voltmeter is required):

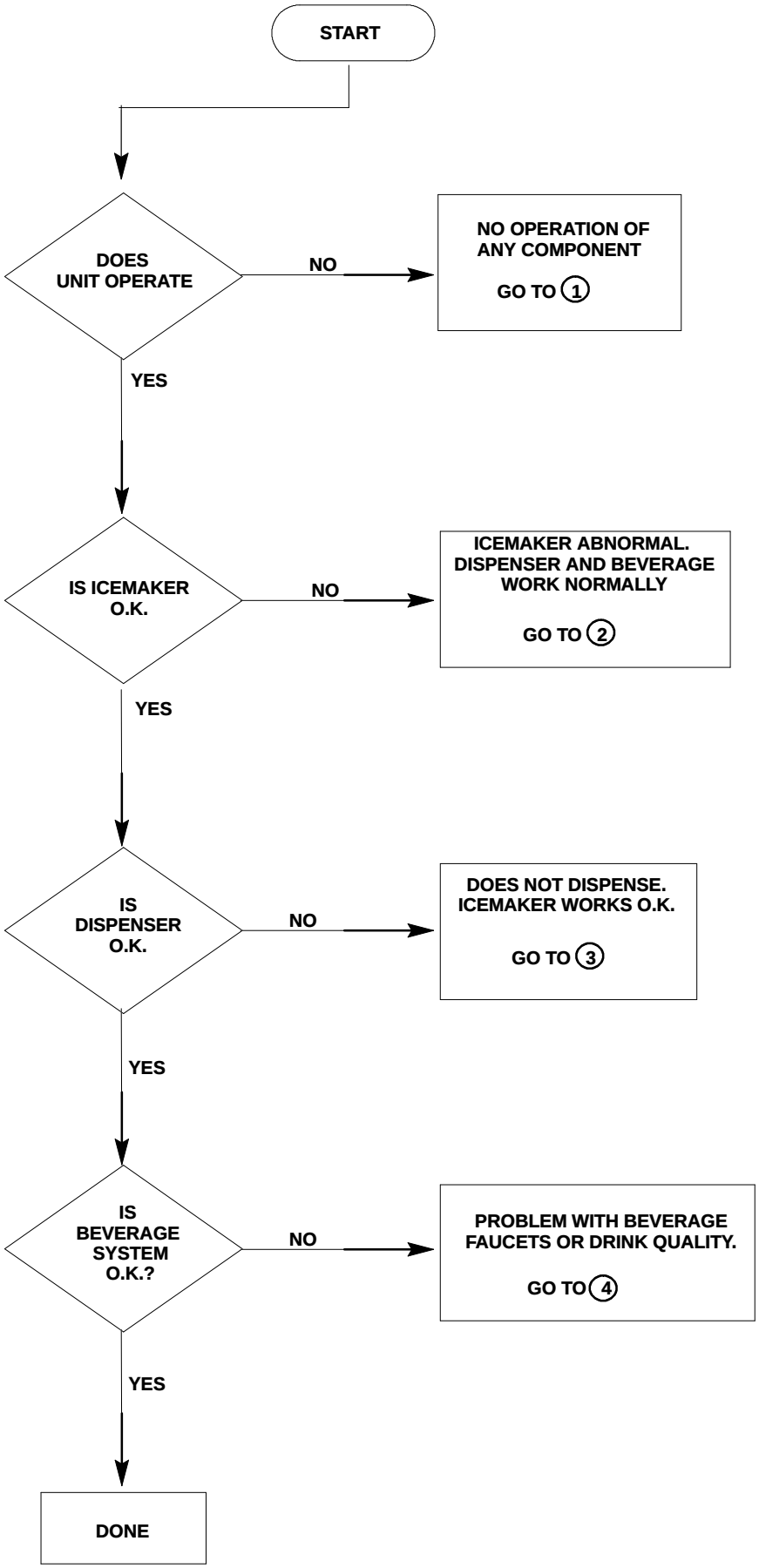
WARNING: Electrical power is on to the unit for this procedure. Avoid the contact with uninsulated parts in the electrical control box.

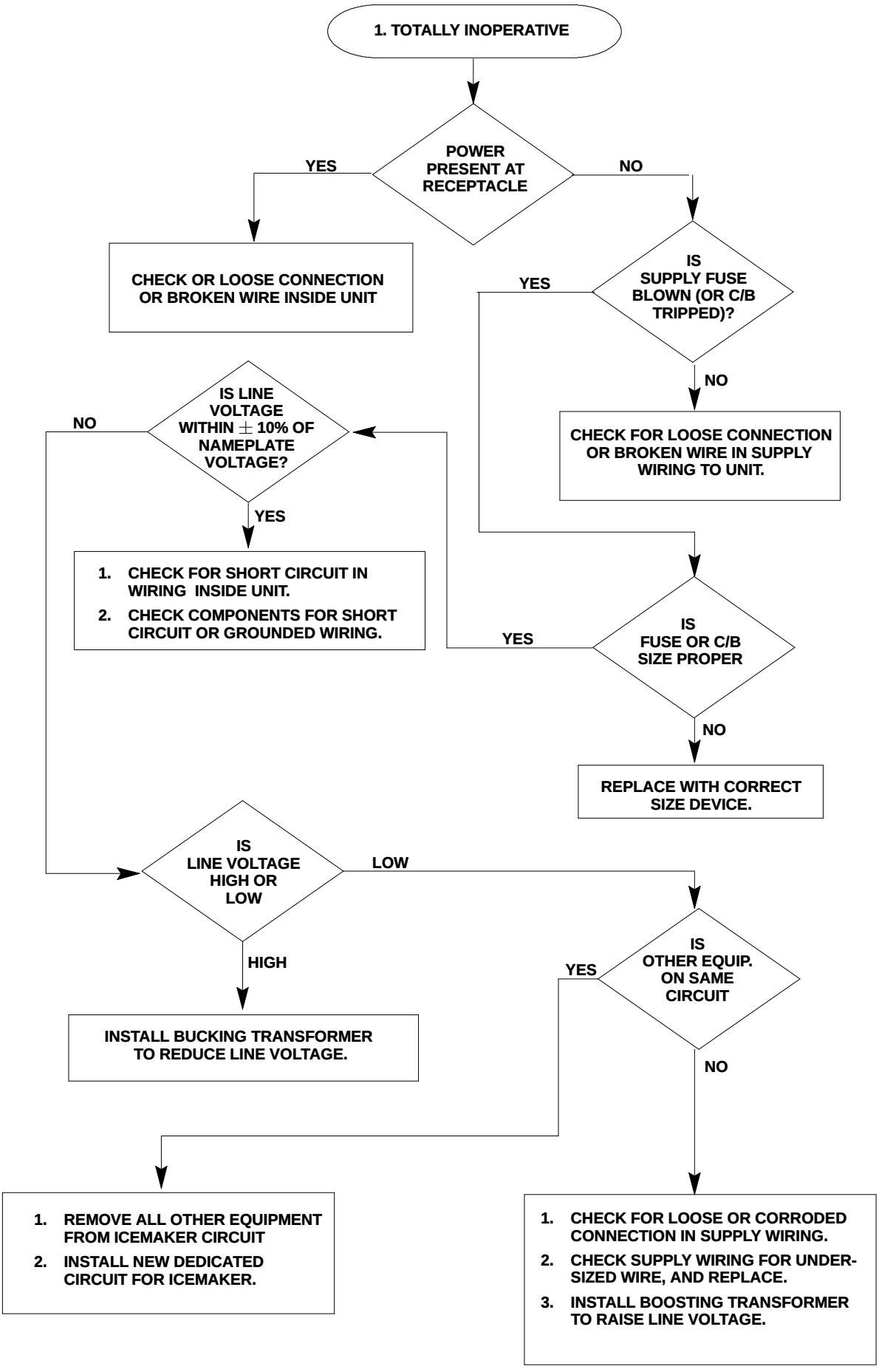
1. Remove the lower front panel and the electrical control box cover.
2. Put the "stop/run" switch in the "stop" position. Allow system pressures to equalize before proceeding.
3. Put the "stop/run" switch in the "run" position. The repeat cycle time (RCT) should immediately start the hot gas cycle (approx. 35 seconds).
   A. If the hot gas valve is not energized, check for voltage between neutral (white on terminal board) and the "NO" terminal (blue wire) of the RCT. If there is voltage, check the hot gas valve. If there is no voltage, replace timer.
4. After completion of the hot gas cycle, check for voltage at the "NC" terminals if the RCT and neutral. If there is no voltage at either or both of these terminals, the timer is defective.
5. If voltage is found in step 4, then check for voltage at the "NO" terminals of the interval timer (IT) and neutral. If there is no voltage at either or both of these terminals, the timer is defective.
   A. The timing range for the interval timer is normally set for 25 to 30 seconds. If voltage is found in step 5, then check the water fill valve, harvest motor and/or agitator motor, depending on which event is not occurring.
6. Upon completion of the events in step 5A, check for voltage at the "NC" terminals of the interval timer. If there is no voltage at either or both of these terminals, the timer is defective.
7. At the completion of the icemaking cycle (8 to 9 minutes), the repeat cycle timer should again initiate the hot gas event. To determine proper timer function, perform the voltage check of step 3A.

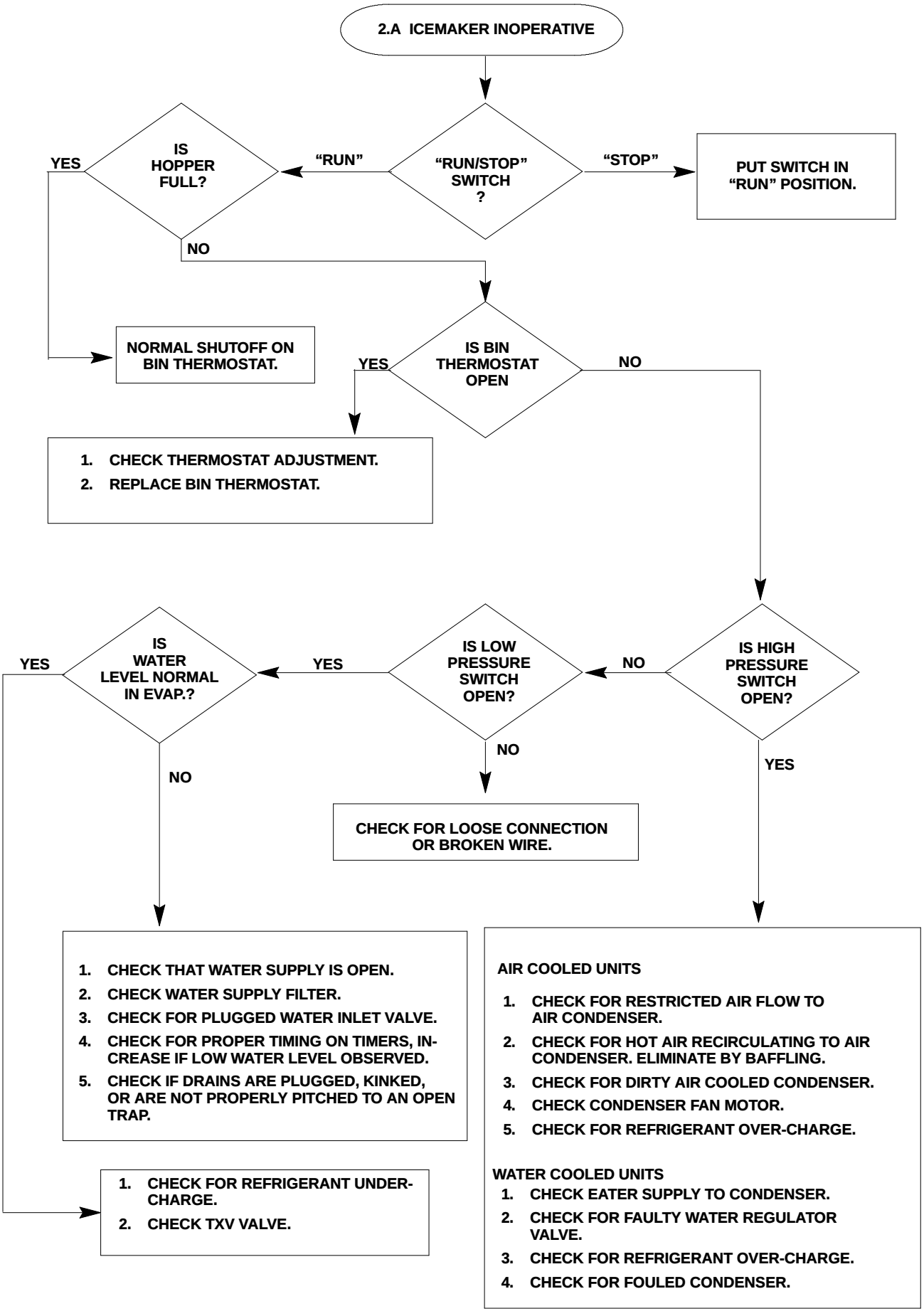
TROUBLESHOOTING GUIDE

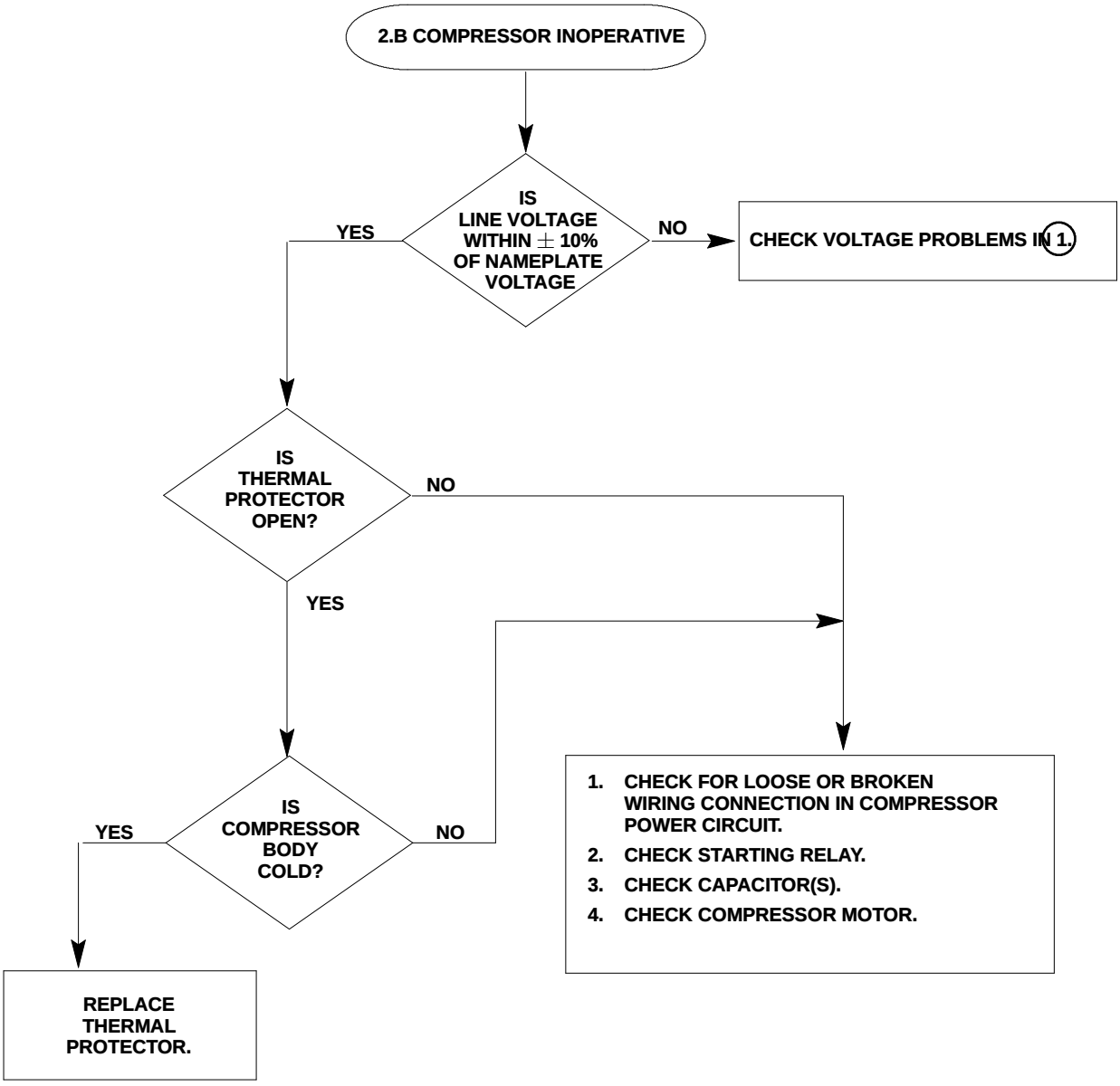
The following pages contain troubleshooting charts designed to aid and experienced service person in diagnosing any operating problems which may be experienced. It is assumed that normal service techniques and skill are familiarly to the person doing the trouble shooting. In order to gain maximum benefit from these charts, please note:

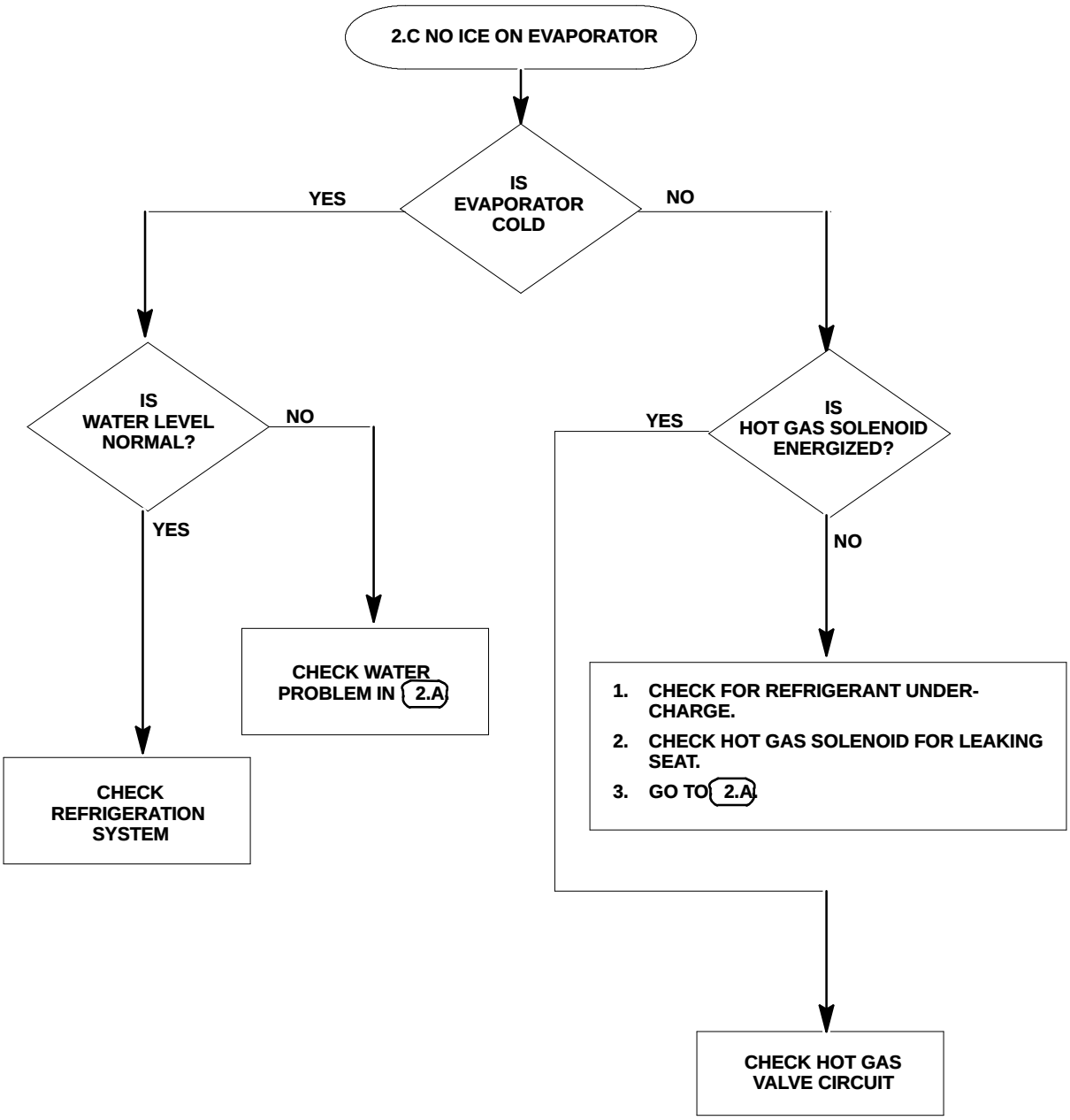
1. Start at the beginning of the chart and supply the appropriate answer to each question.
2. Dot not skip any section, unless instructed to do so. You might miss the solution to your problem.
3. Evaluate the possible problem causes in the sequence in which they are presented. In general, they begin with the most likely or easiest to check, and proceed to the less likely or more complicated.
4. If, after checking all indicated causes, the problem is not resolved, it is recommended that you retry a second time, carefully evaluating the symptoms and modifying your answers as necessary.
5. If you are unable to resolve a problem after several attempts, contact REMCOR customer service for assistance.

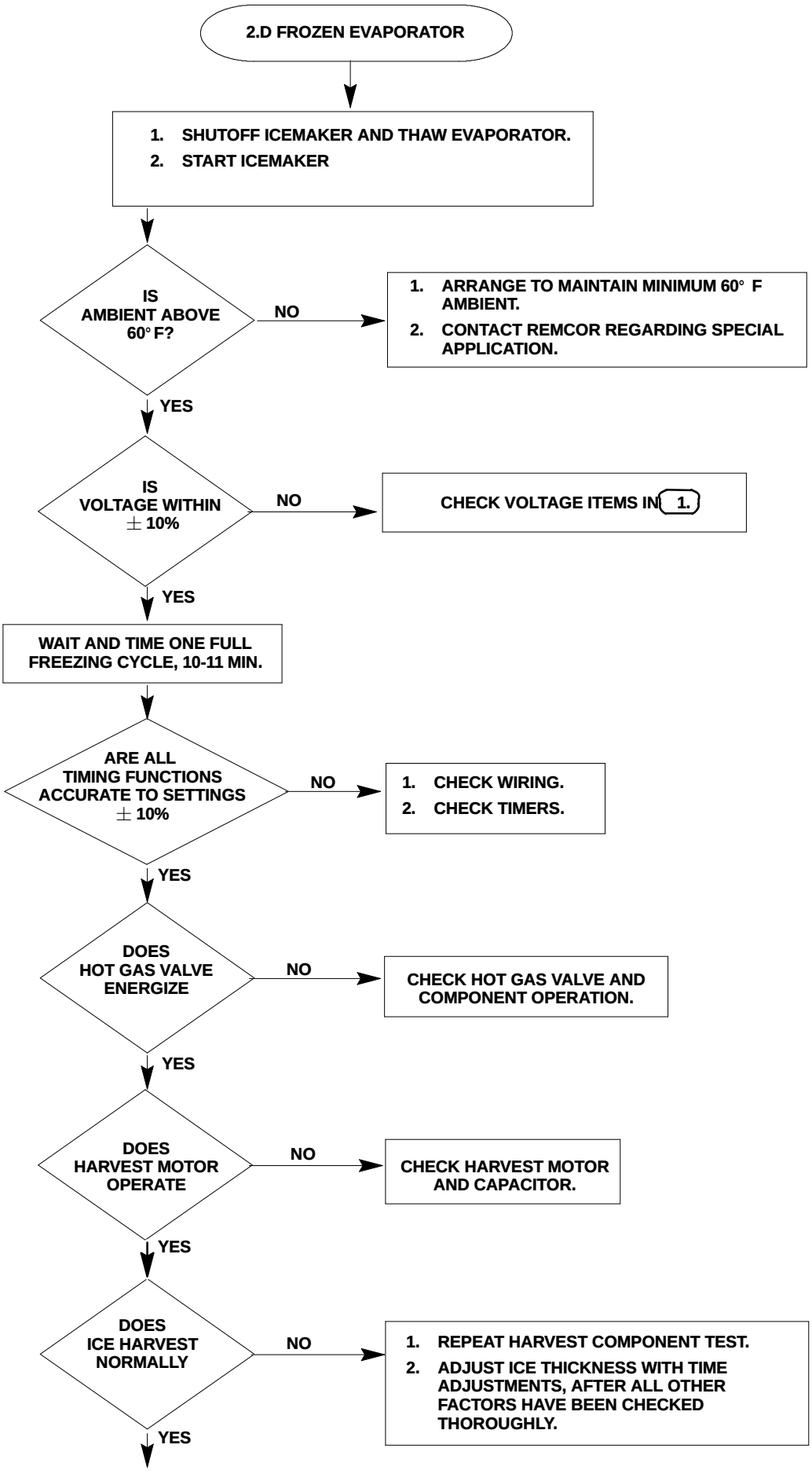

START
DOES UNIT OPERATE
NO
NO OPERATION OF ANY COMPONENT
GO TO 1
YES
IS ICEMAKER O.K.
NO
ICEMAKER ABNORMAL. DISPENSER AND BEVERAGE WORK NORMALLY
GO TO 2
YES
IS DISPENSER O.K.
NO
DOES NOT DISPENSE. ICEMAKER WORKS O.K.
GO TO 3
YES
IS BEVERAGE SYSTEM O.K.?
NO
PROBLEM WITH BEVERAGE FAUCETS OR DRINK QUALITY.
GO TO 4
YES
DONE

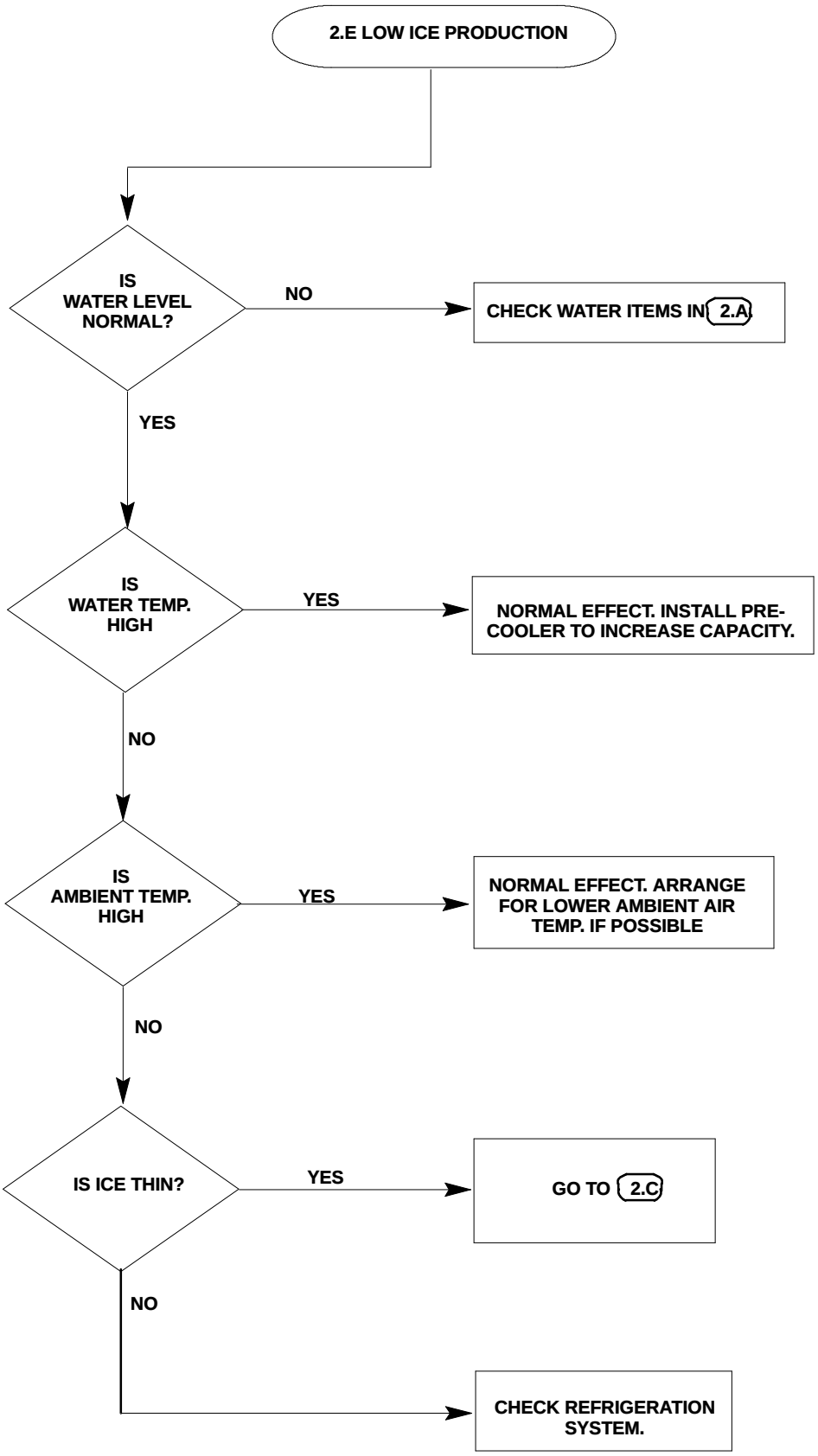

1. TOTALLY INOPERATIVE
POWER PRESENT AT RECEPTACLE
YES
NO
CHECK OR LOOSE CONNECTION OR BROKEN WIRE INSIDE UNIT
IS SUPPLY FUSE BLOWN (OR C/B TRIPPED)?
YES
NO
CHECK FOR LOOSE CONNECTION OR BROKEN WIRE IN SUPPLY WIRING TO UNIT.
IS LINE VOLTAGE WITHIN ± 10% OF NAMEPLATE VOLTAGE?
NO
YES
1. CHECK FOR SHORT CIRCUIT IN WIRING INSIDE UNIT.
2. CHECK COMPONENTS FOR SHORT CIRCUIT OR GROUNDED WIRING.
IS FUSE OR C/B SIZE PROPER
YES
NO
REPLACE WITH CORRECT SIZE DEVICE.
IS LINE VOLTAGE HIGH OR LOW
LOW
HIGH
INSTALL BUCKING TRANSFORMER TO REDUCE LINE VOLTAGE.
IS OTHER EQUIP. ON SAME CIRCUIT
YES
NO
1. REMOVE ALL OTHER EQUIPMENT FROM ICEMAKER CIRCUIT
2. INSTALL NEW DEDICATED CIRCUIT FOR ICEMAKER.
1. CHECK FOR LOOSE OR CORRODED CONNECTION IN SUPPLY WIRING.
2. CHECK SUPPLY WIRING FOR UNDER-SIZED WIRE, AND REPLACE.
3. INSTALL BOOSTING TRANSFORMER TO RAISE LINE VOLTAGE.

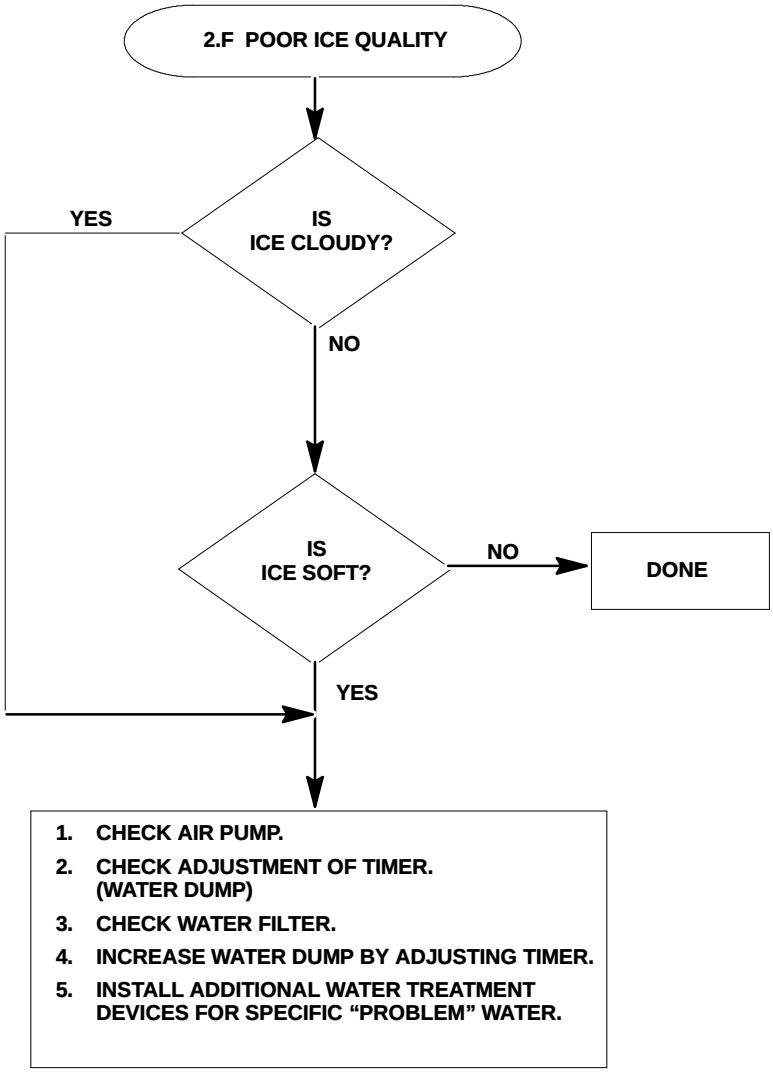

2.A ICEMAKER INOPERATIVE
"RUN/STOP" SWITCH ?
"RUN"
"STOP"
PUT SWITCH IN "RUN" POSITION.
IS HOPPER FULL?
YES
NO
NORMAL SHUTOFF ON BIN THERMOSTAT.
IS BIN THERMOSTAT OPEN
YES
NO
1. CHECK THERMOSTAT ADJUSTMENT.
2. REPLACE BIN THERMOSTAT.
IS HIGH PRESSURE SWITCH OPEN?
NO
YES
IS LOW PRESSURE SWITCH OPEN?
YES
NO
CHECK FOR LOOSE CONNECTION OR BROKEN WIRE.
IS WATER LEVEL NORMAL IN EVAP.?
YES
NO
1. CHECK THAT WATER SUPPLY IS OPEN.
2. CHECK WATER SUPPLY FILTER.
3. CHECK FOR PLUGGED WATER INLET VALVE.
4. CHECK FOR PROPER TIMING ON TIMERS, INCREASE IF LOW WATER LEVEL OBSERVED.
5. CHECK IF DRAINS ARE PLUGGED, KINKED, OR ARE NOT PROPERLY PITCHED TO AN OPEN TRAP.
1. CHECK FOR REFRIGERANT UNDER-CHARGE.
2. CHECK TXV VALVE.
AIR COOLED UNITS
1. CHECK FOR RESTRICTED AIR FLOW TO AIR CONDENSER.
2. CHECK FOR HOT AIR RECIRCULATING TO AIR CONDENSER. ELIMINATE BY BAFFLING.
3. CHECK FOR DIRTY AIR COOLED CONDENSER.
4. CHECK CONDENSER FAN MOTOR.
5. CHECK FOR REFRIGERANT OVER-CHARGE.
WATER COOLED UNITS
1. CHECK EATER SUPPLY TO CONDENSER.
2. CHECK FOR FAULTY WATER REGULATOR VALVE.
3. CHECK FOR REFRIGERANT OVER-CHARGE.
4. CHECK FOR FOULED CONDENSER.

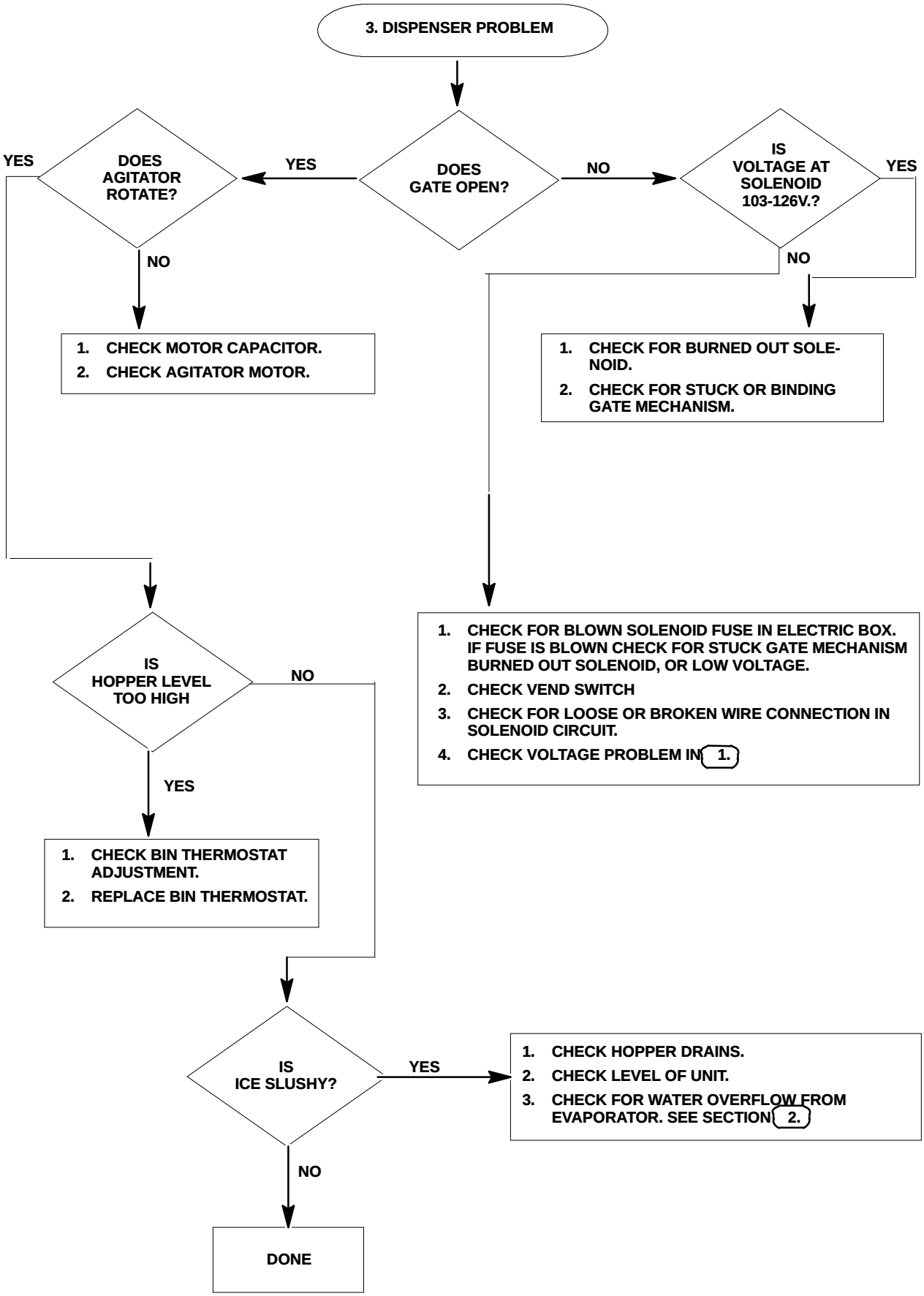

2.B COMPRESSOR INOPERATIVE
IS LINE VOLTAGE WITHIN ± 10% OF NAMEPLATE VOLTAGE
YES
NO
CHECK VOLTAGE PROBLEMS IN 1.
IS THERMAL PROTECTOR OPEN?
NO
YES
IS COMPRESSOR BODY COLD?
YES
NO
1. CHECK FOR LOOSE OR BROKEN WIRING CONNECTION IN COMPRESSOR POWER CIRCUIT.
2. CHECK STARTING RELAY.
3. CHECK CAPACITOR(S).
4. CHECK COMPRESSOR MOTOR.
REPLACE THERMAL PROTECTOR.

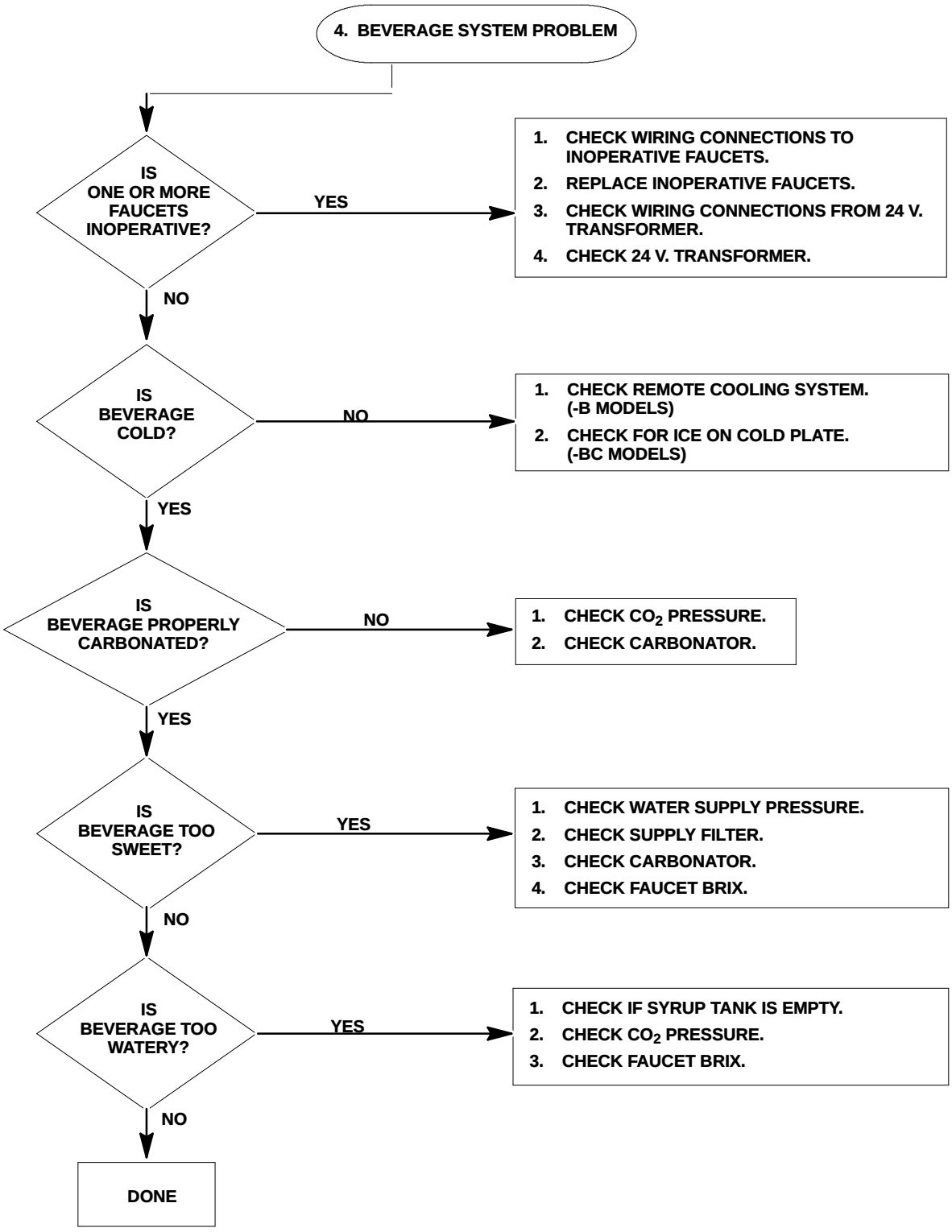

2.C NO ICE ON EVAPORATOR
IS EVAPORATOR COLD
YES
NO
IS WATER LEVEL NORMAL?
NO
YES
CHECK WATER PROBLEM IN 2.A
CHECK REFRIGERATION SYSTEM
IS HOT GAS SOLENOID ENERGIZED?
YES
NO
1. CHECK FOR REFRIGERANT UNDER-CHARGE.
2. CHECK HOT GAS SOLENOID FOR LEAKING SEAT.
3. GO TO 2.A.
CHECK HOT GAS VALVE CIRCUIT


2.D FROZEN EVAPORATOR
1. SHUTOFF ICEMAKER AND THAW EVAPORATOR.
2. START ICEMAKER
IS AMBIENT ABOVE 60° F?
NO
1. ARRANGE TO MAINTAIN MINIMUM 60° F AMBIENT.
2. CONTACT REMCOR REGARDING SPECIAL APPLICATION.
YES
IS VOLTAGE WITHIN ± 10%
NO
CHECK VOLTAGE ITEMS IN 1.
YES
WAIT AND TIME ONE FULL FREEZING CYCLE, 10-11 MIN.
ARE ALL TIMING FUNCTIONS ACCURATE TO SETTINGS ± 10%
NO
1. CHECK WIRING.
2. CHECK TIMERS.
YES
DOES HOT GAS VALVE ENERGIZE
NO
CHECK HOT GAS VALVE AND COMPONENT OPERATION.
YES
DOES HARVEST MOTOR OPERATE
NO
CHECK HARVEST MOTOR AND CAPACITOR.
YES
DOES ICE HARVEST NORMALLY
NO
1. REPEAT HARVEST COMPONENT TEST.
2. ADJUST ICE THICKNESS WITH TIME ADJUSTMENTS, AFTER ALL OTHER FACTORS HAVE BEEN CHECKED THOROUGHLY.
YES


2.E LOW ICE PRODUCTION
IS WATER LEVEL NORMAL?
NO
CHECK WATER ITEMS IN 2.A
YES
IS WATER TEMP. HIGH
YES
NORMAL EFFECT. INSTALL PRE-COOLER TO INCREASE CAPACITY.
NO
IS AMBIENT TEMP. HIGH
YES
NORMAL EFFECT. ARRANGE FOR LOWER AMBIENT AIR TEMP. IF POSSIBLE
NO
IS ICE THIN?
YES
GO TO 2.C
NO
CHECK REFRIGERATION SYSTEM.


2.F POOR ICE QUALITY
IS ICE CLOUDY?
YES
NO
IS ICE SOFT?
NO
DONE
YES
1. CHECK AIR PUMP.
2. CHECK ADJUSTMENT OF TIMER. (WATER DUMP)
3. CHECK WATER FILTER.
4. INCREASE WATER DUMP BY ADJUSTING TIMER.
5. INSTALL ADDITIONAL WATER TREATMENT DEVICES FOR SPECIFIC “PROBLEM” WATER.


3. DISPENSER PROBLEM
DOES GATE OPEN?
YES
NO
DOES AGITATOR ROTATE?
YES
NO
IS VOLTAGE AT SOLENOID 103-126V.?
YES
NO
1. CHECK MOTOR CAPACITOR.
2. CHECK AGITATOR MOTOR.
1. CHECK FOR BURNED OUT SOLENOID.
2. CHECK FOR STUCK OR BINDING GATE MECHANISM.
1. CHECK FOR BLOWN SOLENOID FUSE IN ELECTRIC BOX. IF FUSE IS BLOWN CHECK FOR STUCK GATE MECHANISM BURNED OUT SOLENOID, OR LOW VOLTAGE.
2. CHECK VEND SWITCH
3. CHECK FOR LOOSE OR BROKEN WIRE CONNECTION IN SOLENOID CIRCUIT.
4. CHECK VOLTAGE PROBLEM IN 1.
IS HOPPER LEVEL TOO HIGH
NO
YES
1. CHECK BIN THERMOSTAT ADJUSTMENT.
2. REPLACE BIN THERMOSTAT.
IS ICE SLUSHY?
YES
1. CHECK HOPPER DRAINS.
2. CHECK LEVEL OF UNIT.
3. CHECK FOR WATER OVERFLOW FROM EVAPORATOR. SEE SECTION 2.
NO
DONE


4. BEVERAGE SYSTEM PROBLEM
IS ONE OR MORE FAUCETS INOPERATIVE?
YES
1. CHECK WIRING CONNECTIONS TO INOPERATIVE FAUCETS.
2. REPLACE INOPERATIVE FAUCETS.
3. CHECK WIRING CONNECTIONS FROM 24 V. TRANSFORMER.
4. CHECK 24 V. TRANSFORMER.
NO
IS BEVERAGE COLD?
NO
1. CHECK REMOTE COOLING SYSTEM. (-B MODELS)
2. CHECK FOR ICE ON COLD PLATE. (-BC MODELS)
YES
IS BEVERAGE PROPERLY CARBONATED?
NO
1. CHECK CO_2 PRESSURE.
2. CHECK CARBONATOR.
YES
IS BEVERAGE TOO SWEET?
YES
1. CHECK WATER SUPPLY PRESSURE.
2. CHECK SUPPLY FILTER.
3. CHECK CARBONATOR.
4. CHECK FAUCET BRIX.
NO
IS BEVERAGE TOO WATERY?
YES
1. CHECK IF SYRUP TANK IS EMPTY.
2. CHECK CO_2 PRESSURE.
3. CHECK FAUCET BRIX.
NO
DONE

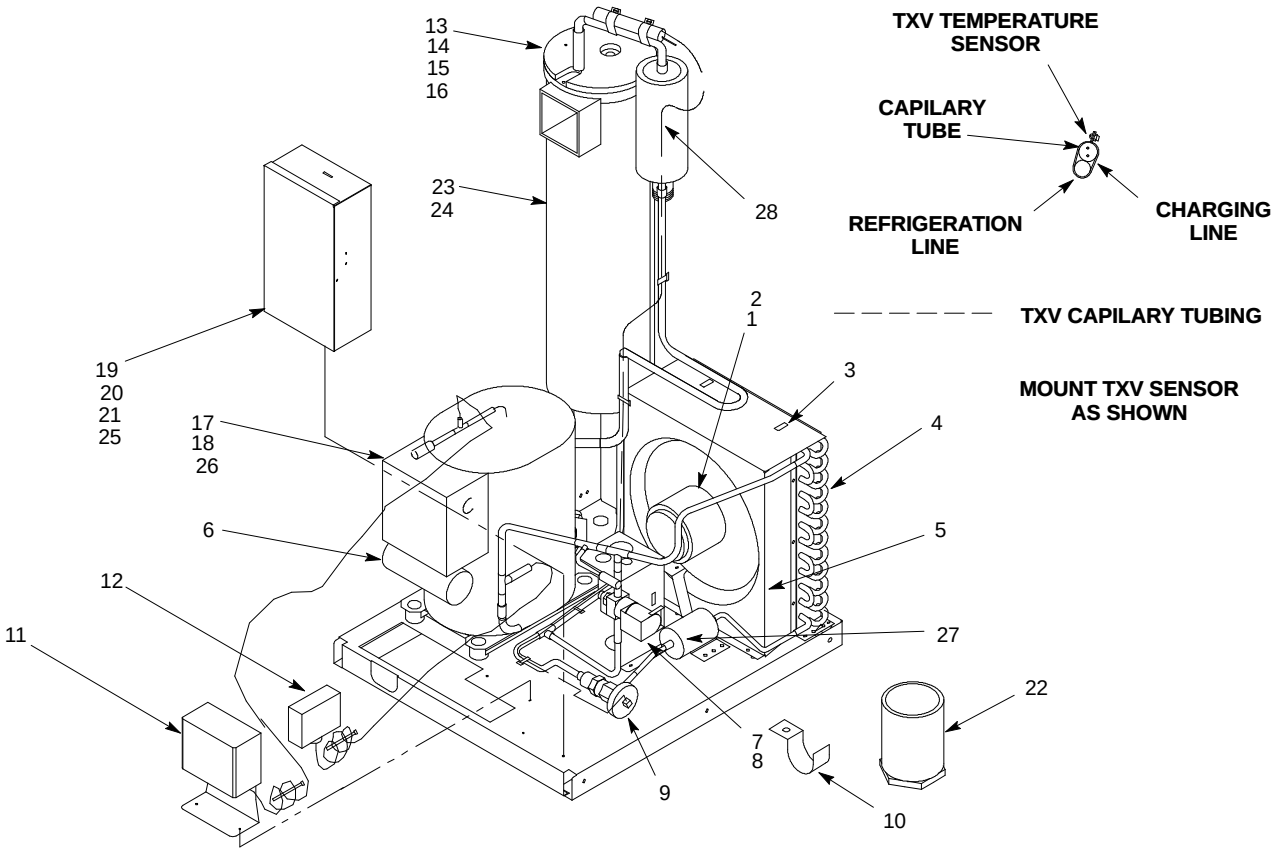


FIGURE 8. SERVICE PARTS LIST CONDENSING UNIT

Item No.	Part No. Air-Cooled	Part No. Water-Cooled	Name
1	31572	-----	Fan Motor
2	31927	-----	Fan Blade
3	70404	-----	Tinnerman Clip
4	60962	60977	Condenser
5	52078	-----	Shroud
6	32778	32778	Capacitor-Start 270-324 MF, 110V
7	32576	32576	Hot Gas Solenoid Coil
8	60734	30734	Hot Gas Valve
9	60948	60948	TXV NIV-1/4-SP R22
10	70577	70577	Clamp
11	60369	60369	Low Pressure Control
12	60501	60501	High Pressure Control
13	51485	51485	Evaporator Shell Foamed
14	50481	50481	Gasket
15	51163	51163	Gasket. Shaft Sea;
16	51422	51422	Gasket. Evaporator
17	32777	32777	Compressor Starting Relay
18	60916	60916	Compressor
19	32719	32719	Electric Box Assembly
20	31924	31924	Timer, Total Cycle
21	31923	31923	Timer, Interval Cycle
22	52011	52011	Drain Assembly, Collector
23	51515	51515	Harvest Bar, Cut
24	60739	60739	Evaporator Coil
25	31673	31673	Capacitor Run, Harvest Motor
26	32779	32779	Overload Protector
27	60204	60623	Drier
28	27130	27130	Accumulator Assembly
29	40785	40785	Water Inlet Valve
30	-----	40122	Water Regulating Valve

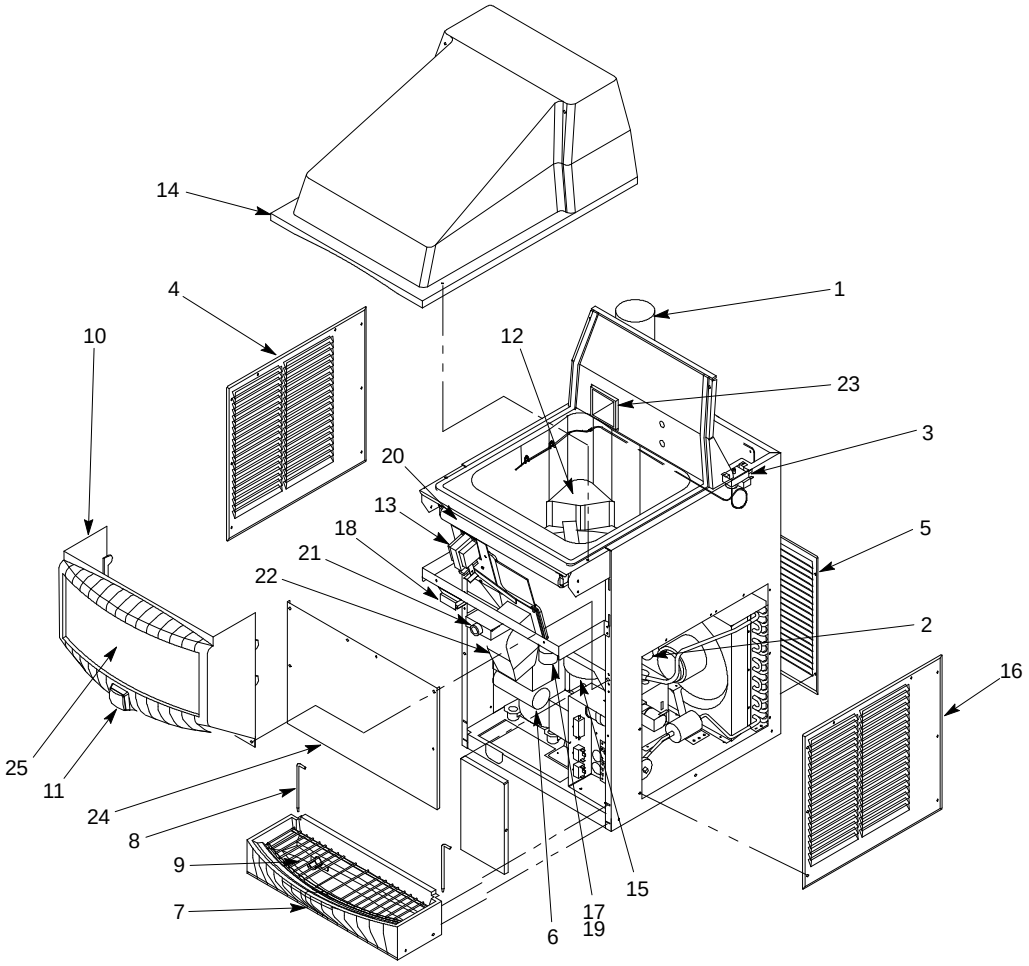


FIGURE 9. CABINET ASSEMBLY EXPLODED VIEW AND SERVICE PARTS

Item No.	Part No.	Name
1	31560	Harvest Motor
2	31568	Air pump
3	31001	Bin thermostat
4	27385	Panel, Access LS
5	27384	Panel, Back Removable
6	32778	Capacitor, Start
7	52009	Sink, Foamed Assy
8	10145	Pin, Sink Extension
9	27412	Grill, sink
10	52070	Merchandiser Assy
11	32838	Dispenser Switch Actuator
12	21517	Agitator
13	31093	Solenoid Assy
14	52005	Cover, Top
15	31106	Agitator Motor
16	27880	Panel, Access RS
17	31620	Starter Fluorescent Light
18	31621	Ballast
19	31619	Base, Fluorescent Starter
20	32746	Fluorescent Light
21	30894	Dispense Switch, Red Button
22	53015	Ice Chute Back Section
	53016	Ice Chute Cover
23	51374	Seal, Evaporator
24	27828	Panel, Lower Front
25	52074	Panel, Plexiglass Clear

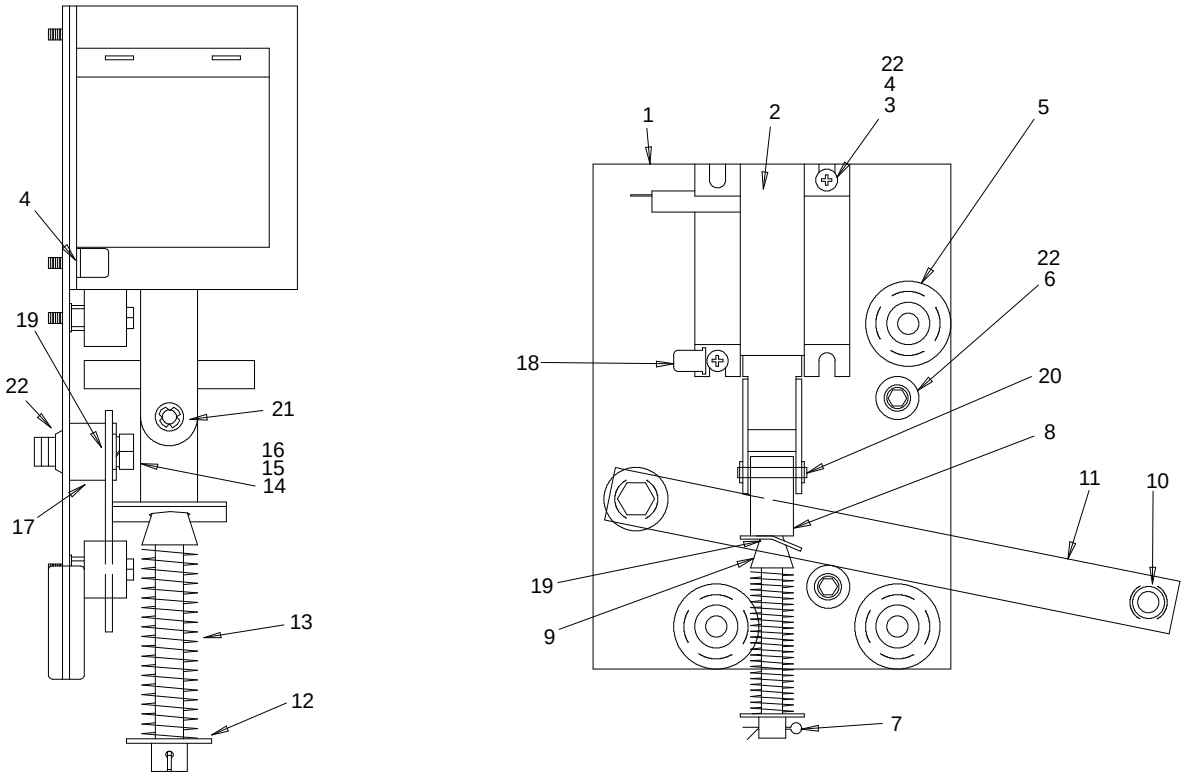


FIGURE 10. SOLENOID ASSEMBLY - EXPLODED VIEW & PARTS LIST

Index No.	Part No.	Qty.	Name
1	21493	1	Solenoid Mounting Plate
2#	31551	1	Solenoid Service Kit
3	70171	2	8–32 x 3/8 Phil Tr HD Screws
4	70121	2	No. 8 Lockwasher
5	50752	3	Isolator
6*	50789	2	Bumper Assembly
7*	70423	1	Cotter Pin
8*	10080	1	Gate Lift Rod
9	10081	1	Gate Lift Rod Bushing
10	50754	1	Gate Arm Bearing
11	21492	1	Gate Lift Arm
12	70043	1	Flatwasher
13*	70422	1	Spring
14	70263	1	1/4-20 x 3/4 Hex Hd Screw
15	70048	1	1/4 Lockwasher
16	70066	1	1/4 Flatwasher
17	10077	1	Pivot Bearing
18	30227	1	1/4 Quick Connect Tab
19	50305	––	Lubricant
20*	21592	1	Solenoid Linkage Pin
21*	70433	2	Retainer Ring
22	51088	––	Loctite
––*	70438	––	Rebuilding Kit

NOTE: * Parts supplied with rebuilding kit.
 # 31551 solenoid supplied with items 20 & 21.

REMCOR®

CORPORATE HEADQUARTERS:

Remcor Incorporated
500 Regency Drive
Glendale Heights, IL 60139
708. 980.6900