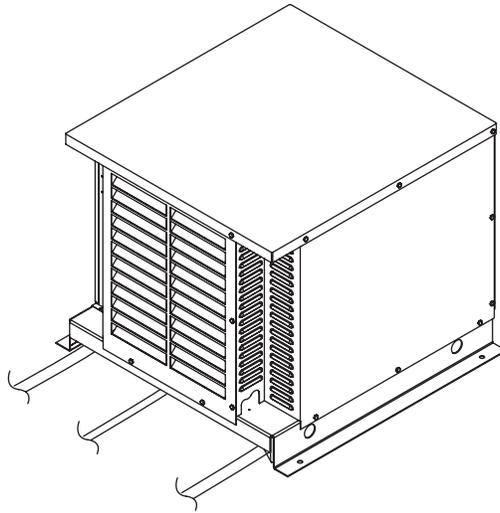


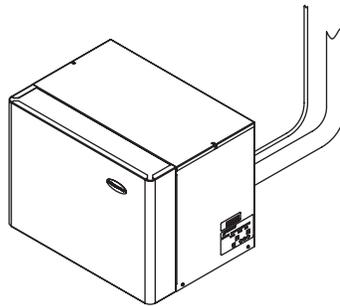
MC825 Series Icemaker with Remote Condensing Unit

Order parts online
www.follettice.com

Installation, Operation and Service Manual



Remote condensing unit



Evaporator unit

**Following installation, please forward this manual
to the appropriate operations person.**

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Follett Corporation Equipment Return Policy

Follett equipment may be returned for credit under the following conditions:

1. The equipment is new and unused.
2. A return authorization number has been issued by customer service within 30 days after shipment.
3. Follett receives the equipment at the factory in Easton, PA within 30 days after the issuance of the return authorization number.
4. The equipment must be returned in Follett packaging. If the packaging has been damaged or discarded, Follett will forward, at the customer's expense, new packaging.

Note: Return freight charges are the responsibility of the customer. If equipment is returned and is damaged because of improper packaging, Follett Corporation will not be held responsible.

Credit will be issued when:
The equipment has been inspected by Follett and deemed suitable to be returned to stock.

Note: A 15% restocking charge will be deducted from the credit. If the cost to return the product to stock exceeds 15%, the actual cost will be deducted.

Welcome to Follett

Follett icemakers enjoy a well-deserved reputation for excellent performance, long-term reliability and outstanding after-the-sale support. To ensure that this icemaker delivers that same degree of service, we ask that you take a moment to review this manual before beginning the installation. Should you have any questions or require technical help at any point, please call our technical service group, (800) 523-9361 or (610) 252-7301.

Before you begin

After uncrating and removing all packing material, inspect the equipment for concealed shipping damage. If damage is found, notify the shipper immediately and contact Follett Corporation so that we can help in the filing of a claim, if necessary.



Important cautions

Ice is slippery. Maintain counters and floors around dispenser in a clean and ice-free condition.

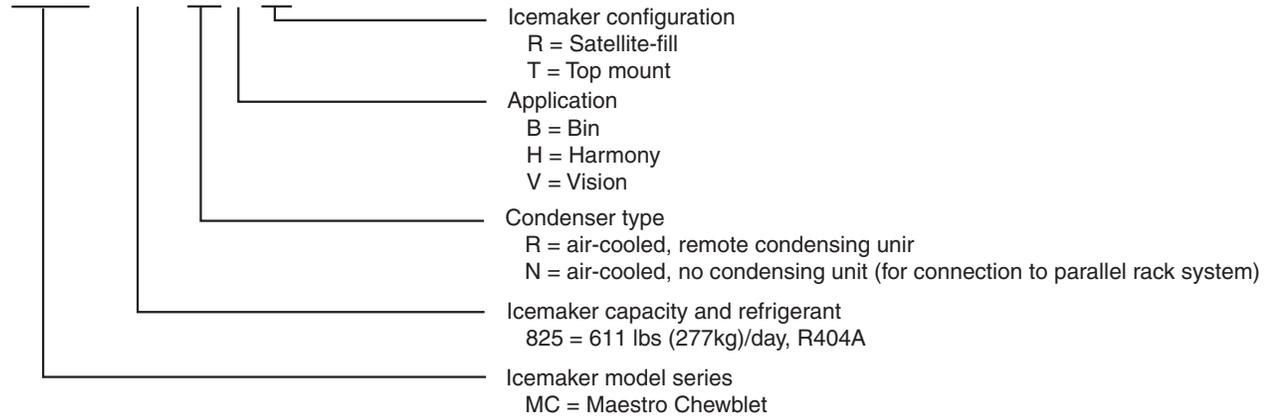
Ice is food. Follow recommended cleaning instructions to maintain cleanliness of delivered ice.

Should local codes require a hard-wired connection and/or shielded wiring, eliminate the cord(s) and plug(s) and follow the appropriate field wiring diagram on the following page.

Always disconnect power before cleaning dispenser.

Failure to remove all sanitizing solution may result in health hazard.

MC825RVR



Specifications

Electrical

Separate circuit and equipment ground required.

Evaporator unit

Standard electrical – 120V, 60Hz, 1 phase. Max. fuse – 15 amps

Condenser unit

Standard electrical – 220V, 60Hz, 1 phase. Max. fuse – 30 amps
Minimum circuit ampacity – 17.6 amps

Evaporator plumbing

Water – 3/8" push-in water inlet

Drain – 3/4" MPT

Note: Drains should be hard-piped and insulated. Maintain at least 1/4" per foot (1cm per 31cm run) slope on drain line run.

Refrigeration

Liquid line – 3/8"

Suction line – 5/8"

Note: A rack system requires a reserve capacity of 8000 BTU/hr at 2°F (-17°C) evaporator temperature.

Weight

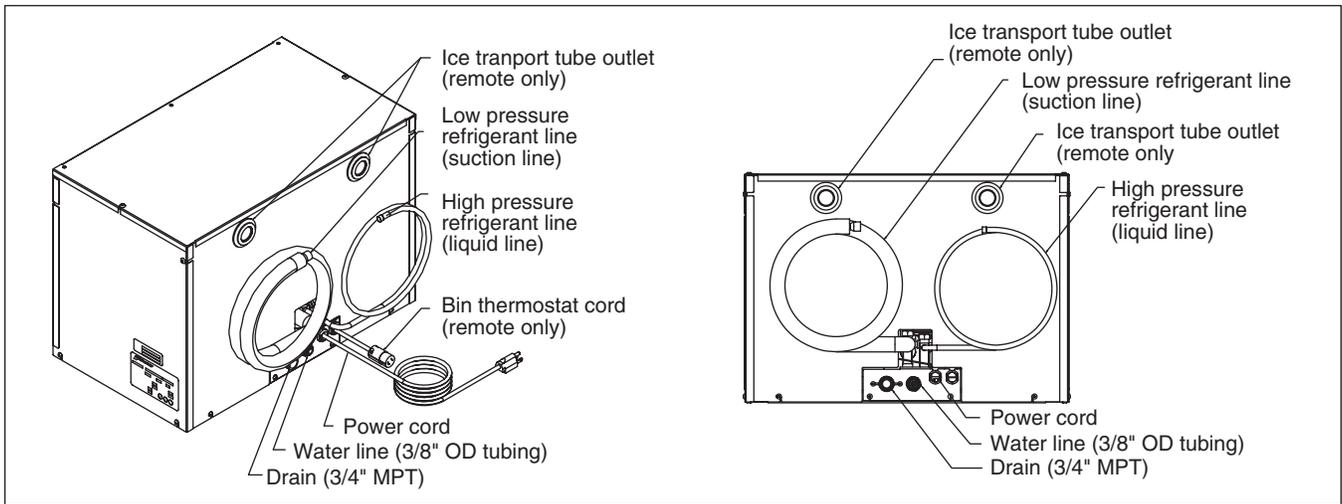
Evaporator unit

130 lbs (59kg)

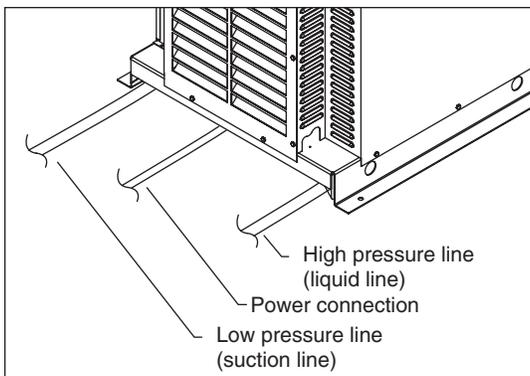
Condenser unit

265 lbs (102kg)

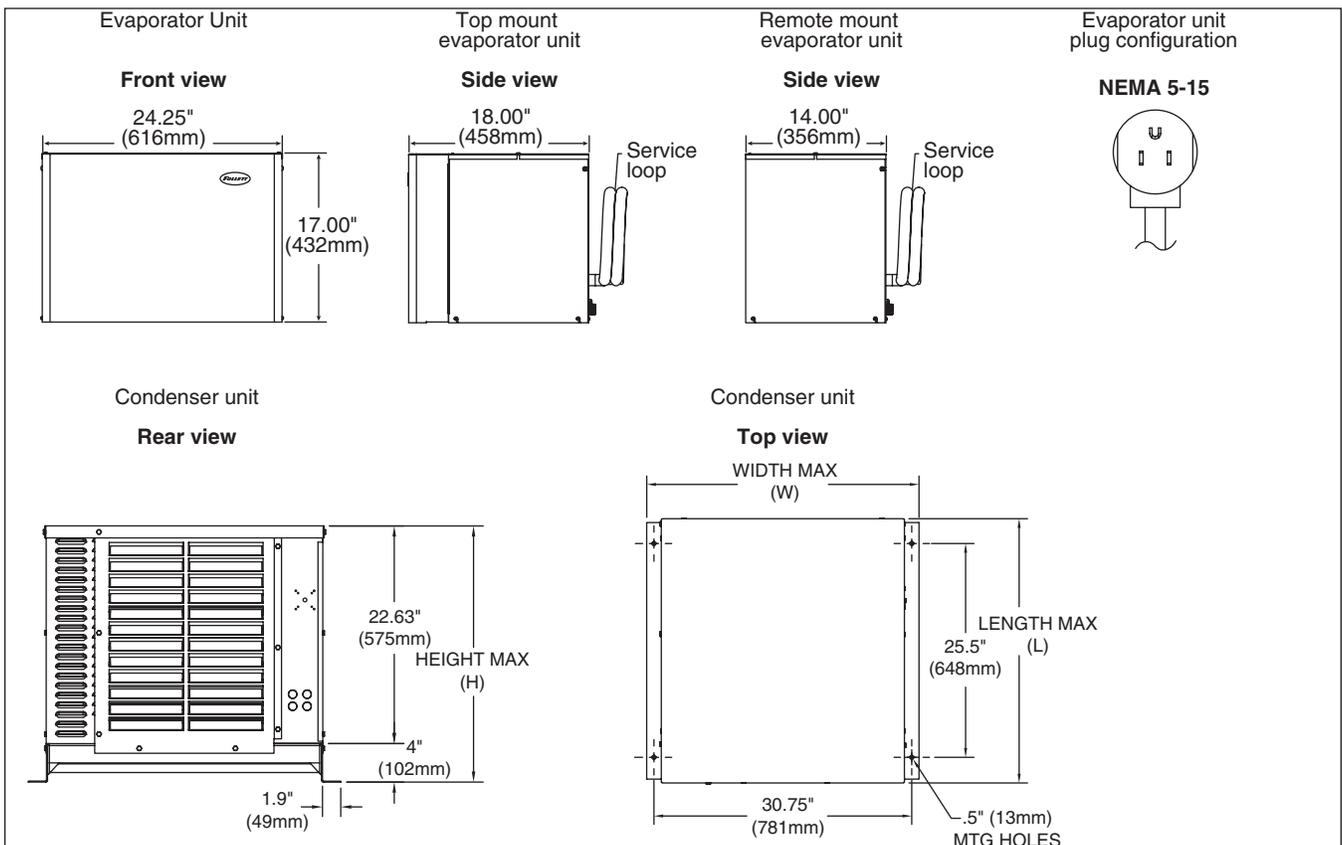
Evaporator connections



Condenser connections



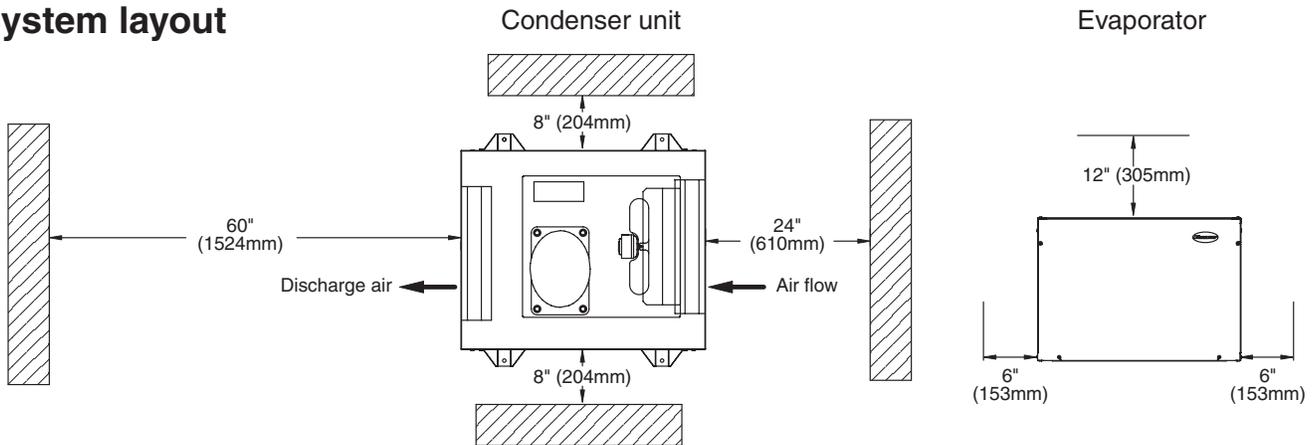
System details



Installation

Icemaker performance is very sensitive to the quality of installation. To ensure proper performance, ease of service and warranty coverage, it is critical that you follow the requirements detailed in this manual. If you cannot meet these requirements or have questions, call our technical service group immediately at (800) 523-9361 or (610) 252-7301.

System layout



Clearances

Installation Specifications

Outdoor ambient temperature range: $-20^{\circ}\text{F} - 130^{\circ}\text{F}$
 $(-29^{\circ}\text{C} - 54.4^{\circ}\text{C})$.

Indoor ambient temperature range: $50^{\circ}\text{F} - 90^{\circ}\text{F}$
 $(10^{\circ}\text{C} - 32^{\circ}\text{C})$.

Installations with condenser unit above indoor unit require a suction line S-trap at the bottom of the rise.

Installation with condenser unit elevations above 20 ft (6.1m) require an additional S-trap at the midpoint of the rise.

Maximum line rise must not exceed 35 ft (10.7m).

Maximum line set length must not exceed 100 feet (30.5m).

Max line drop must not exceed 15 ft (4.6m).

Note: The service loop is not included when calculating the length, rise or drop of the tubing run.

Water pressure 10 psi – 70 psi.

Water temperature $50^{\circ}\text{F} - 90^{\circ}\text{F}$ ($10^{\circ}\text{C} - 32^{\circ}\text{C}$).

Install condenser unit

Mount condenser unit

1. Level unit.
2. Securely attach base of unit using holes found in base plate.

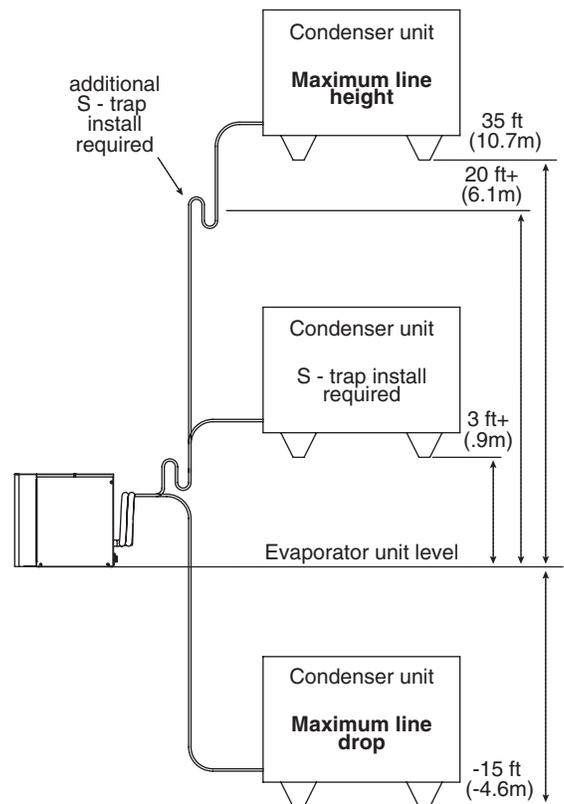
Electrical connection

Refer to wiring schematic located in condenser unit electrical box.

Note: Electric disconnects required within 10 ft (3m) for all hard-wired connections.

Note: Install in accordance with NEC and local electrical codes.

Refrigeration line elevation specifications



Install evaporator unit

Installation overview

The evaporator is designed to be installed in the following applications:

1. Ice storage and transport bins, top-mount (Fig. 1.1).
2. VU155 or VU300 series ice and beverage dispensers (Fig. 1.2).

Installation checklist

The following are used for all installation applications:

- Locate and level unit
- Routing and mounting ice transport tubes
- Routing and mounting bin thermostat
- Plumbing for water
- Plumbing for drain
- Routing and connecting refrigerant lines
- Start up and testing

Installing to Ice storage and transport bins, top-mount

Mount evaporator unit

1. Verify bin top is level.

Note: Do **NOT** weld or permanently attach evaporator unit. Removal may be necessary for service.

2. Position icemaker on bin.
 - a) If new storage bin and icemaker, position icemaker with connections facing rear of bin.
 - b) If using existing bin, place supplied gasket 2.5" (64mm) from front of bin. Position icemaker with utility connections facing rear of bin.

Routing and mounting ice transport tubes

1. Remove icemaker top panel and louvered side panel.
2. Remove transport tubes. Route tubes from inside bin, through gasket and connect to evaporator port (Fig 2).
3. Tighten hose clamp to secure tubes to ports.

Routing and mounting bin thermostat

1. Insert thermostat through clamps on transport tube as shown (Fig. 3).

Plumb for water and drain

1. Connect drain to 3/4" MPT fitting in rear of unit.
2. Connect potable water supply (plastic or copper tubing) to 3/8" push-in connector in rear of unit.

Fig. 1

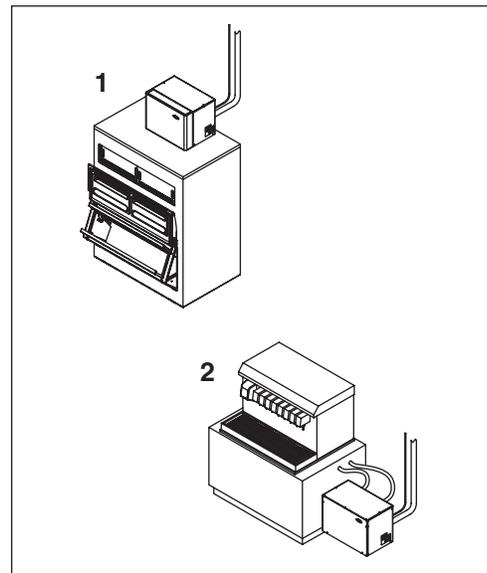


Fig. 2

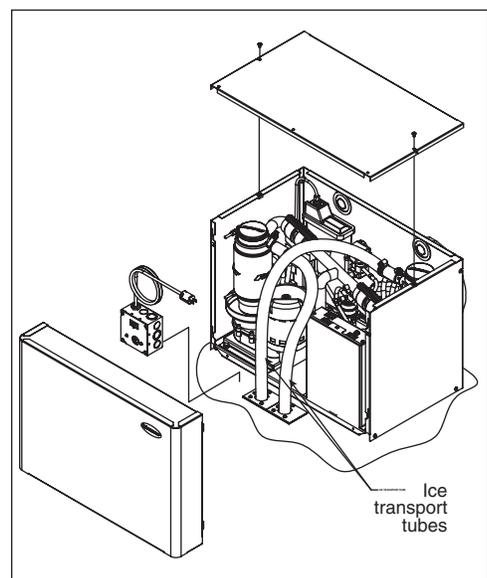
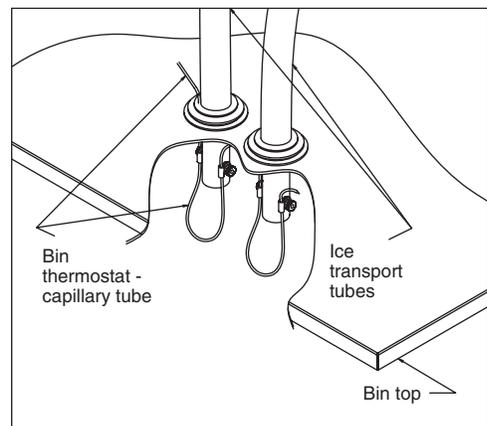


Fig. 3



Installing to VU155 or VU300 series ice and beverage dispensers

Mount evaporator unit

Note: Locate unit within 20 ft (6.1m) of dispenser.

1. Level unit.
2. Securely attach base of unit using holes found in base plate.

Note: Do **NOT** weld or permanently attach evaporator unit. Removal may be necessary for service.

3. Remove front panel of evaporator unit.

Routing and mounting ice transport tubes (Fig. 4).

Incorrect ice transport tube installation can result in wet ice and dispensing problems. Follow guidelines below to ensure correct installation. Call factory for assistance if you are unable to meet these requirements.

Note: If connecting an MC825 evaporator unit to a manually filled VU155 or VU300 series dispenser consult dispenser manual for proper transport tube mounting in dispenser manual or contact Follett technical service.

1. Push one end of the supplied ice transport tube(s) through hole(s) provided in side of dispenser.
2. Route tube into ice tube bracket inside dispenser and engage bracket tabs in holes located in end of ice transport tube(s) (Fig. 5).

Fig. 4

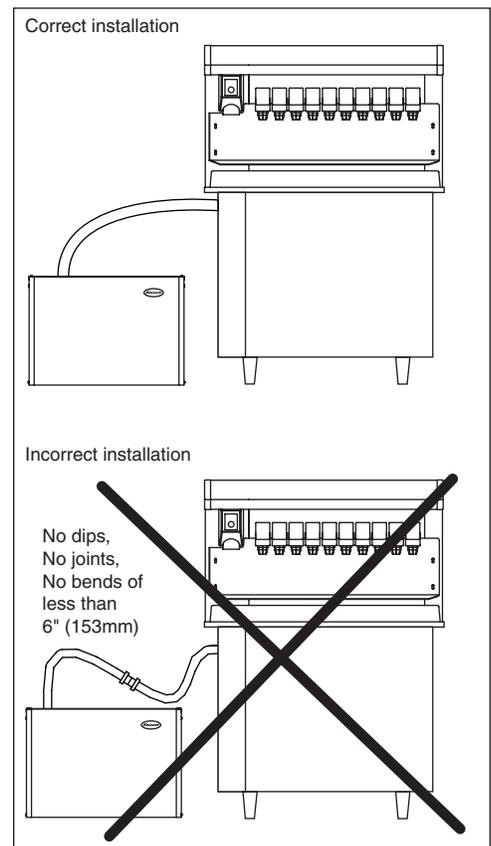


Fig. 5 – Ice tube retainer bracket

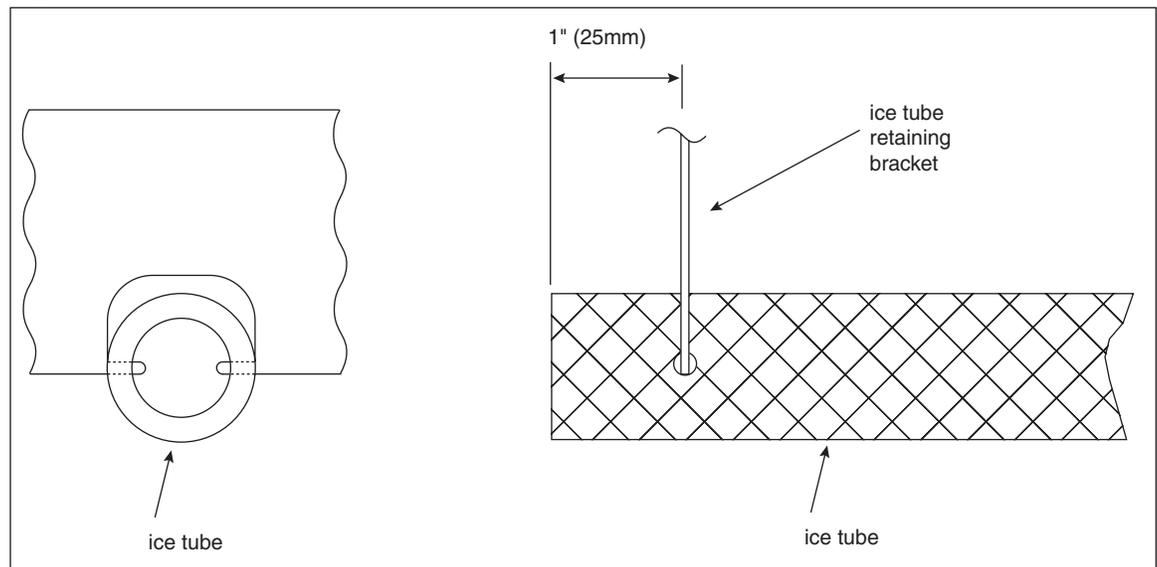
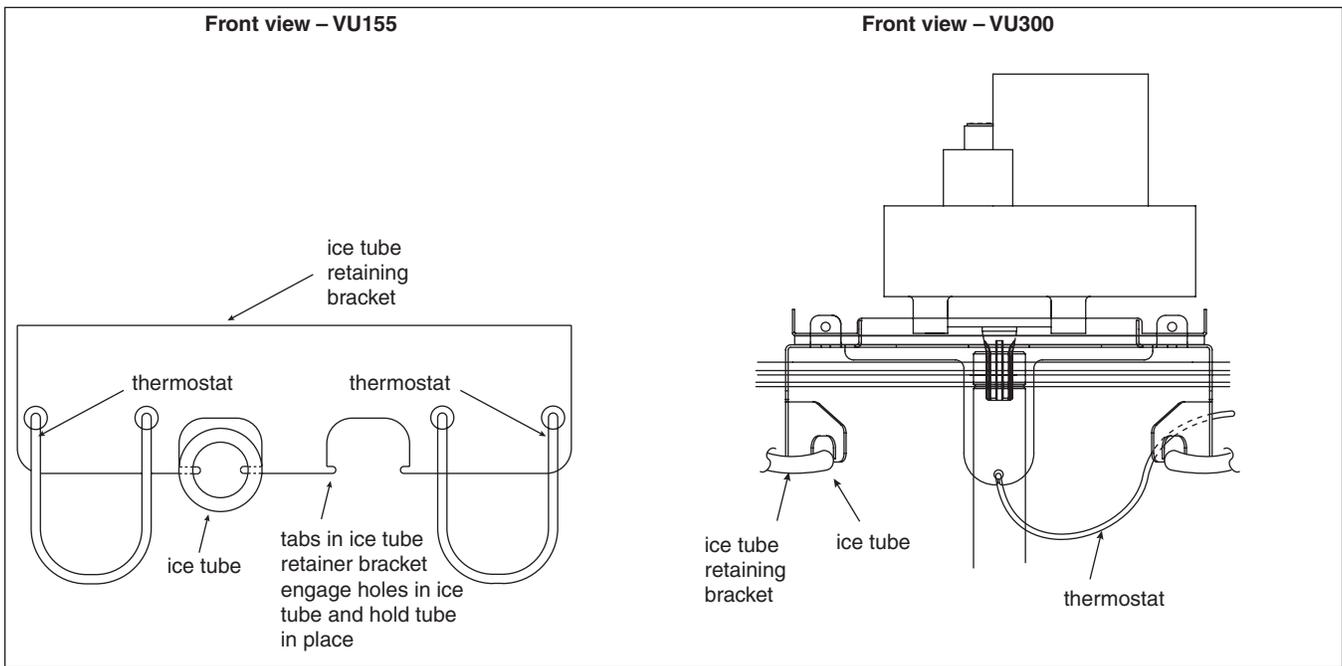


Fig. 6 – Bin thermostat capillary tube mounting



3. Verify bin thermostat capillary tube is mounted correctly (Fig. 6).
4. Run tube from dispenser to icemaker, and cut to length.

Note: Tubes may **NOT** have dips, may **NOT** have bends of less than 6" (153mm) radius, and may **NOT** have splices/joints.
5. Cut insulation off tube where tube enters grommet.
6. Slide end of tube without insulation through grommet and run to evaporator port.
7. Install a section of insulation on tube from grommet to evaporator port.
8. Slip supplied hose clamp over free end of tube.
9. Pull insulation back from free end of tube.
10. Push tube on evaporator port.
11. Position clamp behind lip on evaporator port and tighten clamp.
12. Connect bin thermostat twist-lock cord to dispenser plug.

Install refrigeration line

Note: The installer of the refrigeration line set must be USA Government-Environmental Protection Agency (EPA) certified in proper refrigerant handling and servicing procedures.

A qualified person must perform all roof or wall penetration.

Do not form unwanted traps in refrigeration lines. A service loop is not considered an oil trap.

Never coil excess refrigeration tubing.

The compressor oil rapidly absorbs moisture. Minimize the exposure of the refrigeration system by not releasing the condenser unit or evaporator unit holding charge until all line connections are finished and the system is ready for evacuation.

To prevent oxidation of the copper, purge line set and condenser unit with dry nitrogen while brazing.

For lines longer than fifty feet, add one additional pound of R404A refrigerant for every 25 feet of line run up to 100 feet (see refrigeration charge table). Consult factory for line runs beyond 100 feet.

It is recommended that both liquid and suction lines are run and insulated together for the first 15 feet from the condensing unit. This protects the system from sub-cooling loss and/or liquid slugging the compressor.

1. Make line set run from the condenser unit to the evaporator unit in accordance with all specifications found in the Installation specifications section.
2. Braze all connections. Do not overheat shut off valves on condenser unit or evaporator unit.
3. Pressurize line sets and check for leaks.
4. Bleed off line set.
5. Open the liquid line valve and suction line valves on evaporator unit.
6. Energize liquid line solenoid valve. Valve can be energized by supplying electrical power to evaporator unit and filling float reservoir and evaporators with water. Do **NOT** connect power to condensing unit until evacuation is complete and vacuum has been broken with R404A refrigerant.
7. Open the liquid line valve, then the suction line valve on the condenser unit.
8. Evacuate refrigeration system to 500 microns or less. Verify system holds vacuum for 30 minutes with the pump off and the system isolated.
9. Add 8 lbs R404A to refrigeration system for up to 50 ft (15.2m) line length. See chart below for line length longer than 50 ft (15.2m)

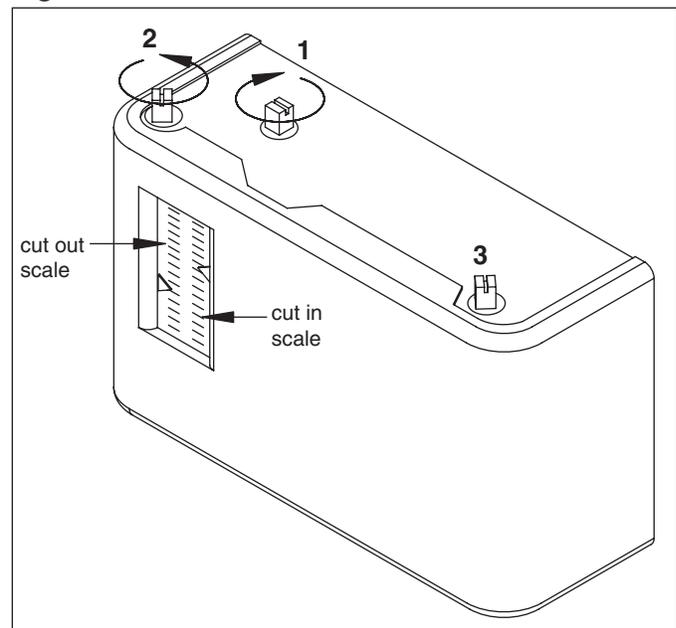
R404A icemaker charge specifications		
Model	Line Run	Charge
825	0 – 50 ft (0 – 15.2m)	8 lbs (3.6kg)
	50 – 75 ft (15.2 – 22.9m)	9 lbs (4.1kg)
	75 – 100 ft (22.9 – 30.5m)	10 lbs (4.5kg)
	100 ft+ (30.5m+)	Consult factory

10. Insulate entire suction line including shut off valves to prevent condensation.
11. Adjust the condenser unit low pressure control set points to a cut-in of 30psig and a cut-out of 10psi.

Pressure adjustment

1. Turn cut-in adjusting screw (Fig. 7.1) clockwise until indicator points to 30psig on cut-in scale. Cut-in **MUST** be adjusted first.
2. Turn cut-out adjusting screw (Fig. 7.2) counter clockwise until indicator points to 10psig on cut-out scale.
3. Do **NOT** adjust high pressure cut-out adjusting screw (Fig. 7.3). Control is preset to cut-out at 450psig.

Fig. 7



Startup and test

1. Plug evaporator unit in.
2. Turn dispenser power ON if applicable.
3. Turn condenser unit power ON.
4. Check to make sure unit makes ice.
5. Put a piece of ice on bin thermostat and verify that the evaporator unit shuts OFF.
6. Restart icemaker.

Operation

Preventive maintenance

Periodic cleaning of Follett's icemaker system is required to ensure peak performance and delivery of clean, sanitary ice. The recommended cleaning procedures that follow should be performed at least as frequently as recommended and more often if environmental conditions dictate.

Cleaning of the icemaker system, in most cases, should be performed by your facility's maintenance staff or a Follett authorized service agent. Regardless of who performs the cleaning, it is the operator's responsibility to see that this cleaning is performed according to the schedule below. Service problems resulting from lack of preventive maintenance will not be covered under the Follett warranty.

Weekly exterior evaporator unit care

The exterior may be cleaned with a stainless cleaner such as 3M Stainless Steel Cleaner & Polish or equivalent.

Recommended monthly cleaning of condenser (air-cooled icemaker only)

Solution A – Sanitizing solution:

Prepare 1 gallon (3.8L) of 200ppm 5.25% Sodium Hypochlorite solution (mix 1 oz household bleach to 2 gallons water) or equivalent. Solution temperature must be at least 120 F (48.9°C).

Solution B – Ice machine solution:

Following manufacturer's instructions, prepare one 7oz packet of Follett SafeCLEAN™ Ice Machine Cleaner or equivalent. Solution temperature must be at least 120 F (48.9°C).

1. Remove evaporator unit panels required to gain access to water reservoir components (Fig. 7) and electrical control box (Fig. 8).
2. Turn compressor switch OFF (Fig. 8.3).
3. Dispense all ice from dispenser.
4. Shut OFF water valve.
5. Drain water from reservoir through float/evaporator drain line (Fig. 7.1). Reinsert hose into hose clip (Fig. 7.3).
6. Remove water reservoir lid and fill reservoir (Fig. 7.2) with Solution B.
7. Restart icemaker and allow gearmotor to run with the compressor off for 15 minutes.
8. While waiting 15 minutes, follow step 8a through 8c.
 - a) Remove ice compression nozzles (Fig. 9.1). Soak in Solution B.
 - b) Descale drain pans (Fig. 9.2) by grasping firmly and gently bending up and down. Vacuum residue out.
 - c) Inspect all drain lines. Clean as necessary with Solution B.
9. Turn bin signal switch (Fig. 8.1) on electrical box of icemaker OFF.
10. Drain Solution B through float/evaporator drain line (Fig. 7.1). Rinse evaporator by filling reservoir (Fig. 7.2) with potable water and draining evaporator through float/evaporator drain line (Fig. 7.1) three times. Reinsert hose to hose clip and plug into end of drain line (Fig. 7.1).
11. Connect ice transport tubes (Fig. 9.3) directly to evaporator outlet ports (without ice compression nozzle) (Fig. 9.4).

Note: If bin will not be cleaned at this time place a large pan in the storage area to catch ice or connect a separate ice transport tube to evaporators and divert ice into a separate container.

Fig. 8

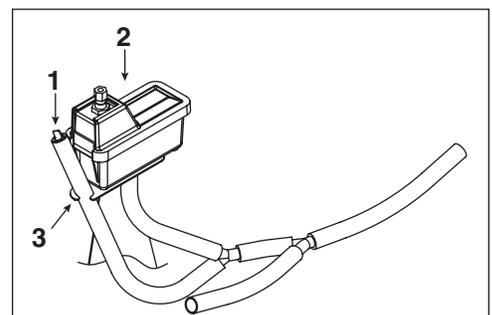
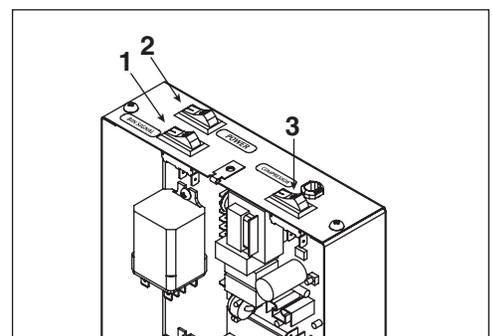
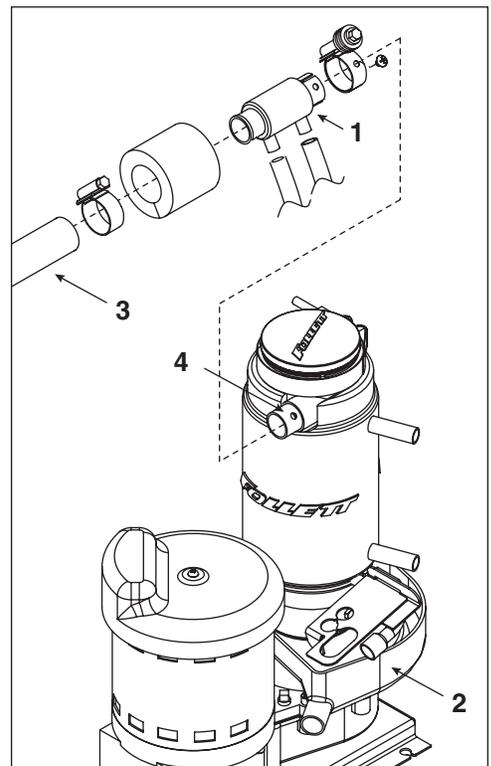


Fig. 9



12. Fill reservoir (Fig. 7.2) with Solution A.
13. Turn bin signal switch (Fig. 8.1) on electrical box of icemaker ON (to allow gearmotor to run).
14. Wait 10 minutes. Turn compressor switch ON (Fig. 8.3).
15. Keep reservoir (Fig. 7.2) full of Solution A while making ice for 20 minutes.
16. Turn compressor switch OFF (Fig. 8.3).
17. Rinse ice compression nozzles (Fig. 9.1) with water and reinstall.
18. Drain any remaining sanitizing solution from reservoir through float/evaporator drain line (Fig. 7.1).
19. Fill reservoir (Fig. 7.2) with 120°F (49°C) water. Empty water through float/evaporator drain line (Fig. 7.1). Repeat 3 times.
20. Turn ON water to icemaker.
21. Turn compressor switch ON (Fig. 9.3).
22. Replace reservoir cover and any panels removed to clean icemaker.
23. Make ice for 15 minutes to flush any remaining solution from system (remote icemakers with long transport tubes may take longer to flush out). Discard this and all ice made during sanitizing.
24. Replace float reservoir lid and evaporator unit panels.

Fig. 10



Service

Condenser unit operation

The condensing unit is weatherproof and equipped to operate in ambient temperatures from -20°F – 130°F (-29°C – 54.4°C). A dual pressure control provides compressor protection from excessive head pressures, pumps the refrigeration system down and shuts the condensing unit off when the solenoid valve on the evaporator unit is closed.

Low ambient operation: Reliable operation at low ambient temperature is achieved with a pumpdown cycle, a crankcase heater and a head pressure control valve. As the ambient temperature falls and the head pressure decreases the valve maintains a minimum head pressure of 215 psi by bypassing discharge gas around the condenser to the receiver to increase the pressure at the condenser outlet. This backs liquid refrigerant up in the condenser to reduce the area available for condensing which increases the head pressure to maintain the 215 psi set point. A check valve is installed in the liquid line between the receiver and the condenser to prevent liquid migration from the receiver to the condenser during the off cycle. The crankcase heater works in conjunction with a continuous pumpdown cycle to prevent accumulation of liquid refrigerant in the compressor oil during the off cycle. This prevents compressor damage due to a flooded compressor start. The low pressure control will start the condensing unit anytime the low side pressure rises above the 30 psi set point and pump the refrigerant out until the pressure falls to 10 psi. The crankcase heater, which is energized whenever the condensing unit has power, keeps the compressor oil warmer than the coldest location in the system. This minimizes off cycle refrigerant migration. If power to the condensing unit is interrupted after the system is charged the compressor should not be started unless the crankcase heater has been energized for at least four hours immediately prior to compressor startup. However the compressor can safely be started during the refrigeration system charging process (without the warm-up period) once sufficient refrigerant is in the system to maintain a positive pressure on the suction side of the compressor.

Evaporator unit operation

Follett's icemaker consists of four distinct functional systems:

1. Refrigeration system
2. Electrical control system
3. Water system
4. Harvesting system

These four systems work together to accomplish the production and harvesting of ice. A problem in any one of these systems will result in improper operation of the entire ice production cycle. When troubleshooting the icemaker, it is important to analyze the entire system operation to determine which system is not functioning properly, then pinpoint the component within that system that is malfunctioning. Determine what corrective action must be taken before making any adjustments or replacing any components.

The icemaking process

The Follett icemaker uses a stainless steel jacketed evaporator and operates on a continuous freezing cycle. Water is supplied to the evaporator from the water reservoir where the water level is controlled by a float valve. This valve also shuts off the water supply when the icemaker is not running.

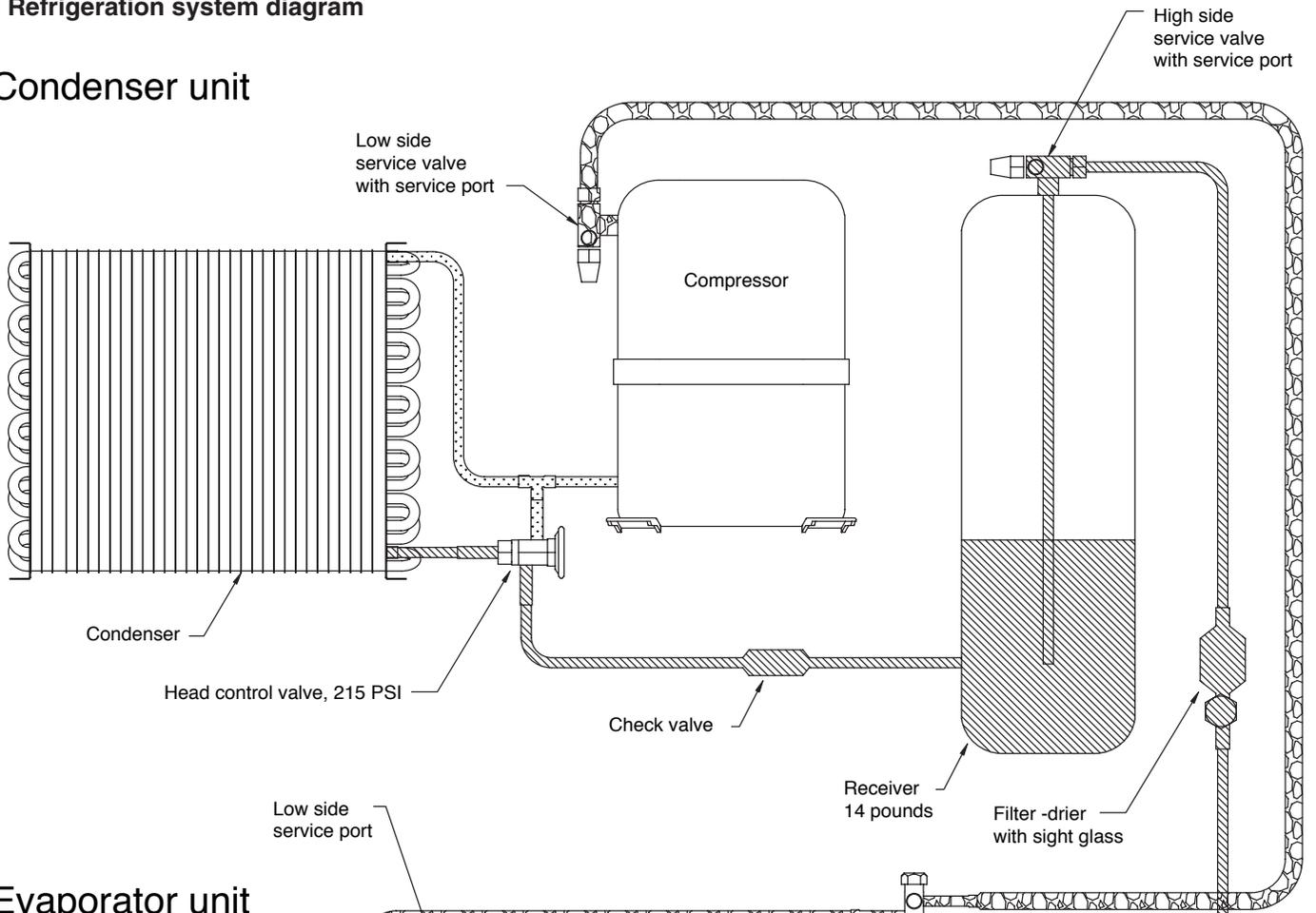
When the icemaker is running, a layer of ice forms on the interior surface of the evaporator. This ice is continuously removed by a slowly rotating (12 RPM) auger. The auger carries the ice upward into the cavity formed by the top bearing housing and the compression loop, where it is compressed to remove excess water. When the ice reaches the desired hardness it rotates within the cavity and is forced through a discharge port and compression nozzle and into the ice transport tube. The discharge tube and compression nozzle are slightly restricted to further compress the ice and produce the desired hardness. As the formation of ice continues, ice in the transport tube is pushed through the tube to the storage compartment in the ice dispenser or ice storage bin.

A solid state control board located in the electrical box of the icemaker controls the normal operation of the icemaker and monitors gearmotor torque. This control board will shut down the icemaker should an over-torque condition occur. It is very important that you familiarize yourself with the operational sequences detailed in this manual before attempting to service the icemaker.

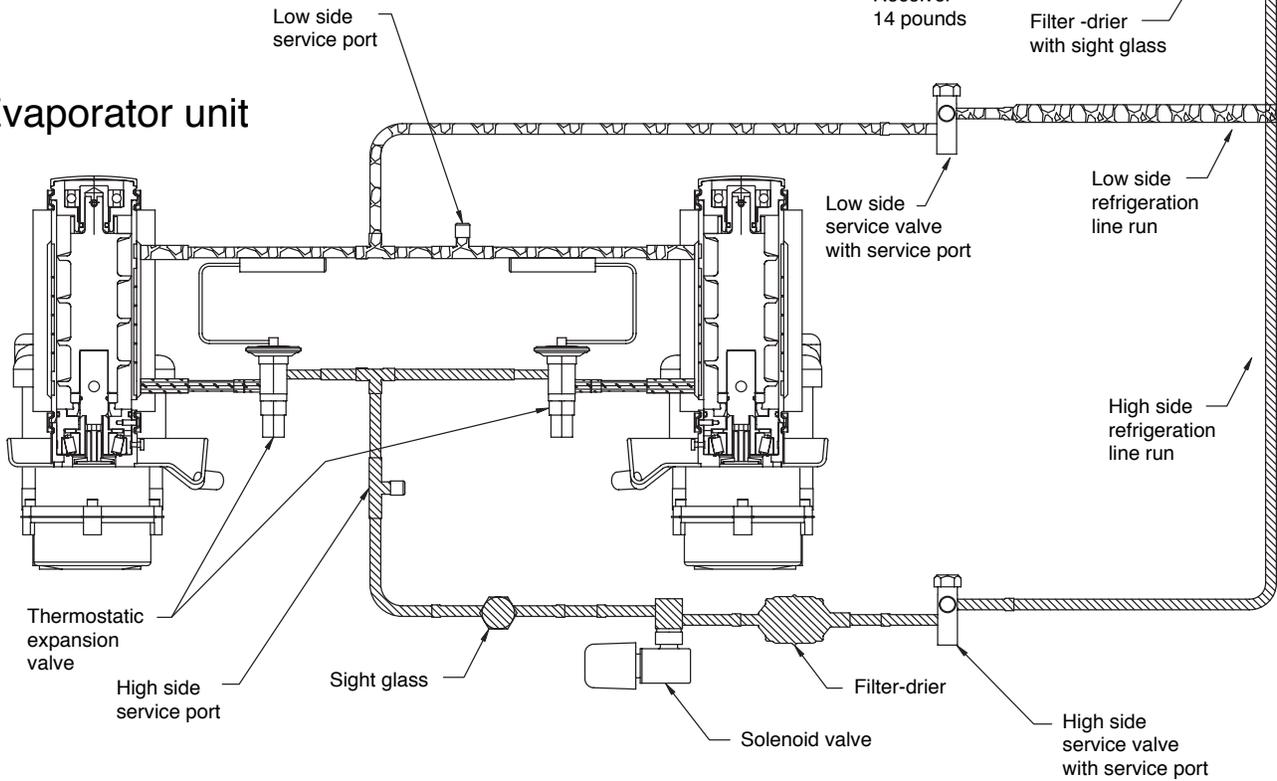
Technical specifications

Refrigeration system diagram

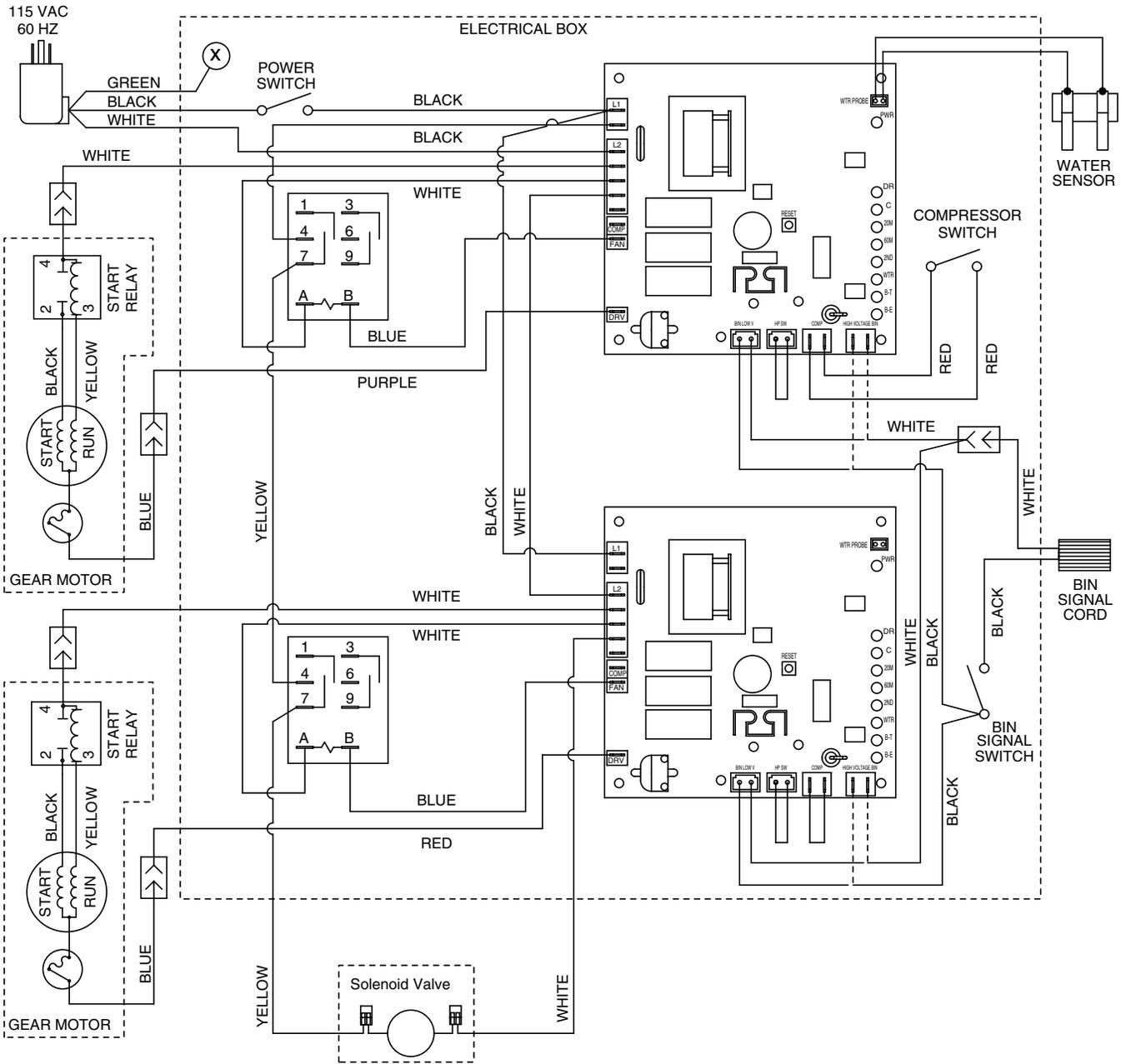
Condenser unit



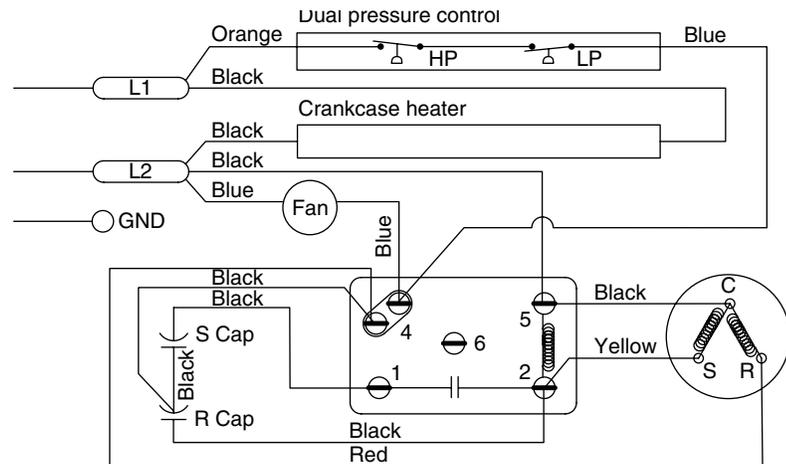
Evaporator unit



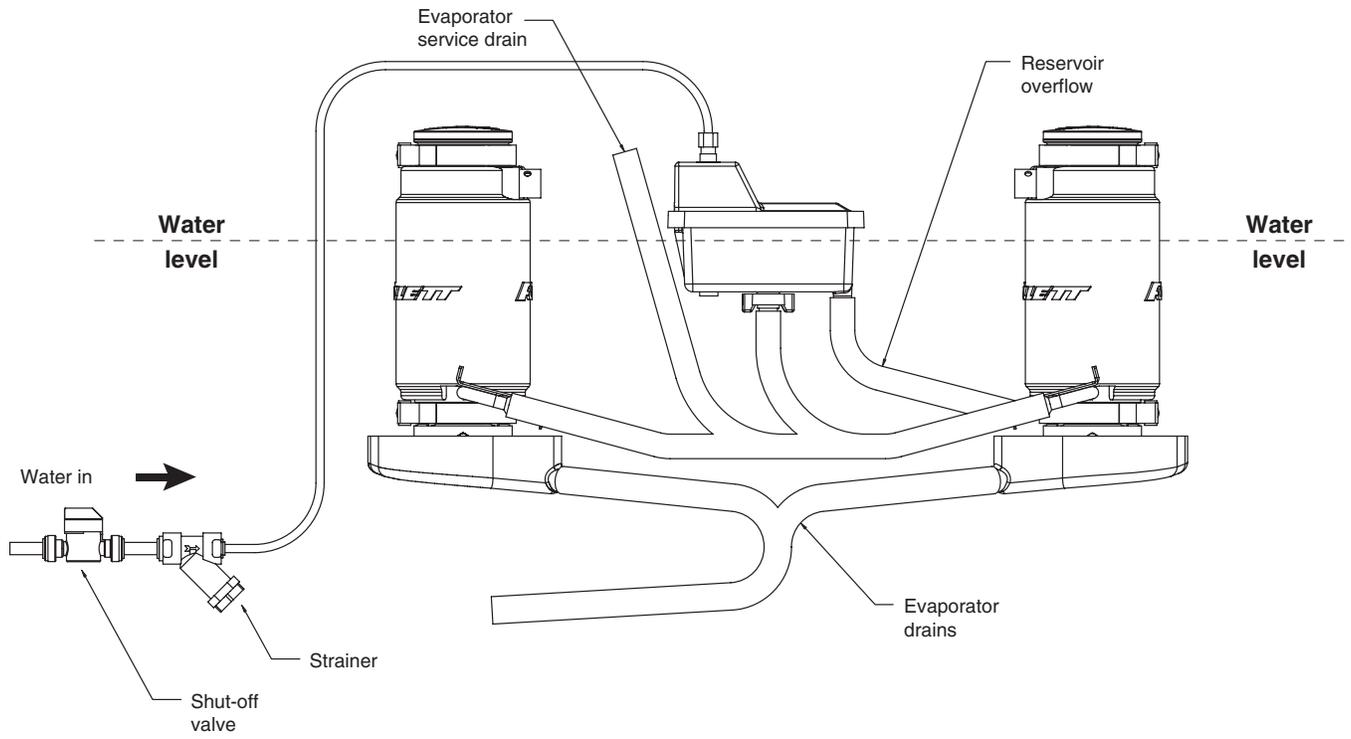
Evaporator unit wiring diagram



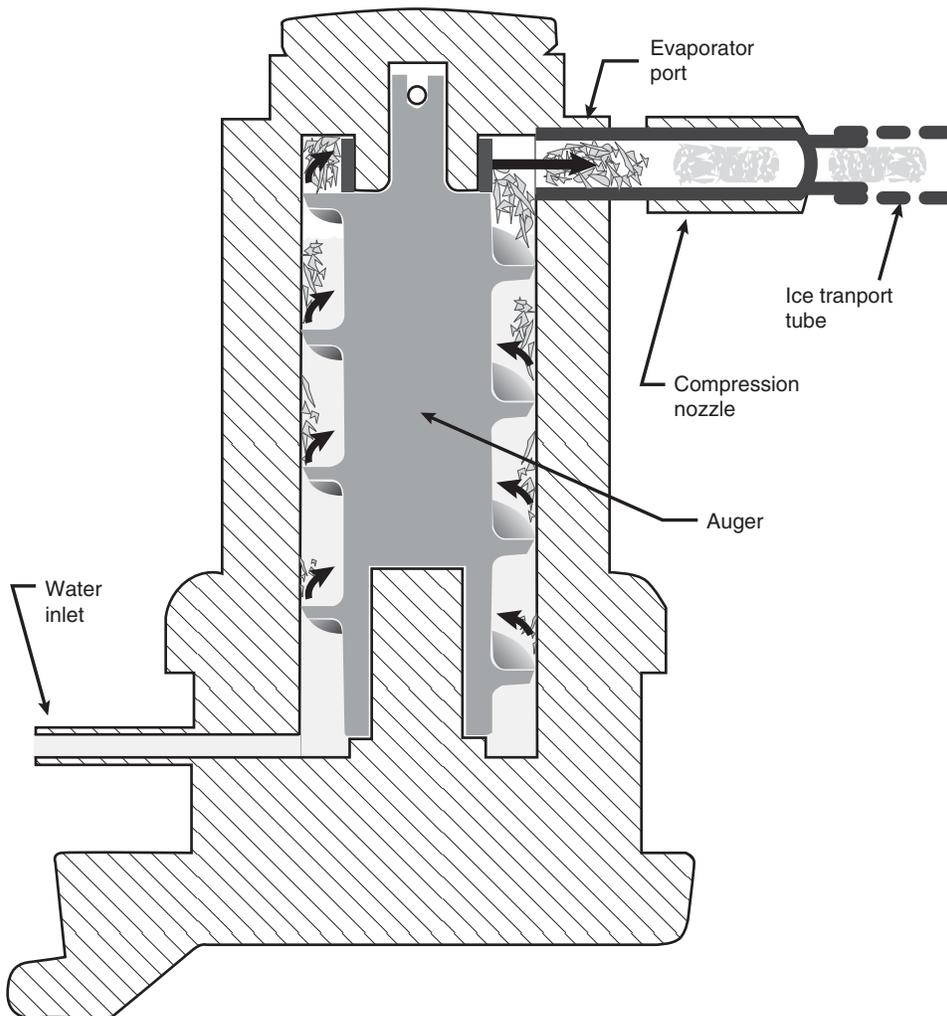
Condensing unit wiring diagram



Water system diagram



Harvest system diagram



Refrigeration charges

R404A icemaker charge specifications		
Model	Line Run	Charge
825	0 – 50 ft (0 – 15.2m)	8 lbs (3.6kg)
	50 – 75 ft (15.2 – 22.9m)	9 lbs (4.1kg)
	75 – 100 ft (22.9 – 30.5m)	10 lbs (4.5kg)
	100 ft+ (30.5m+)	Consult factory

Refrigeration replacement requirements

Non-contaminated refrigerant removed from any Follett refrigeration system can be recycled and returned to the same system after completing repairs. Recycled refrigerant must be stored in a clean, approved storage container. If additional refrigerant is required, virgin or reclaimed refrigerant that meets ARI standard 700-88 must be used.

In the event of system contamination (for example, a compressor burn out, refrigerant leak, presence of non-condensibles or moisture), the system must be repaired, evacuated and recharged using virgin or reclaimed refrigerant that meets ARI standard 700-88.

Follett Corporation does not approve of recovered refrigerants. Improper refrigeration servicing procedures will void the factory warranty.

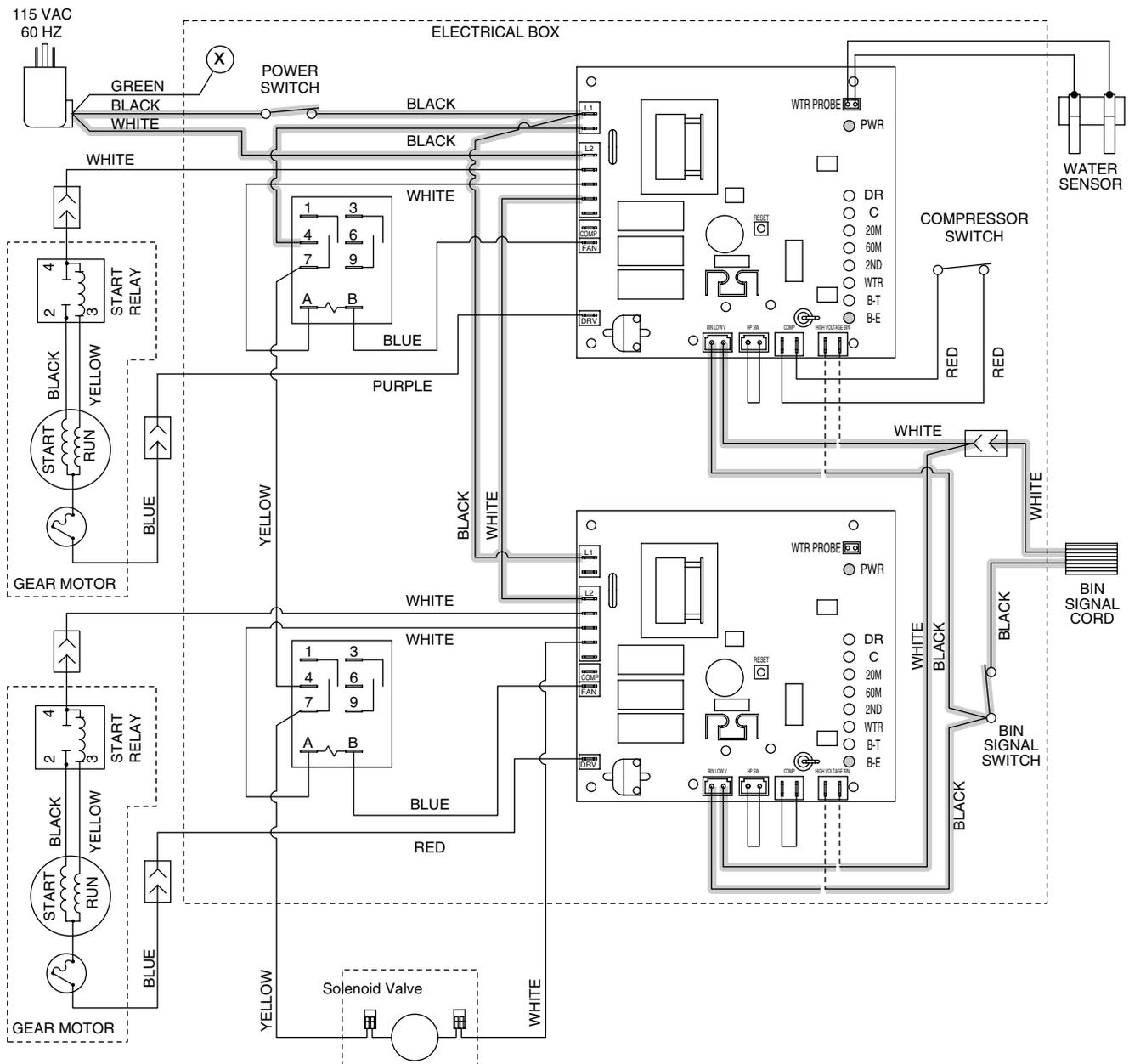
Evaporator unit electrical control system operation

The wiring diagrams which follow illustrate the circuitry of Follett icemakers used with ice dispensers. Both normal operation of the icemaker (Stages 1 – 6) and non-normal diagnostic sequences showing torque out (Stages 7 – 9) for use in troubleshooting icemaker problems are shown.

Normal operation – Stage 1 – Start-up

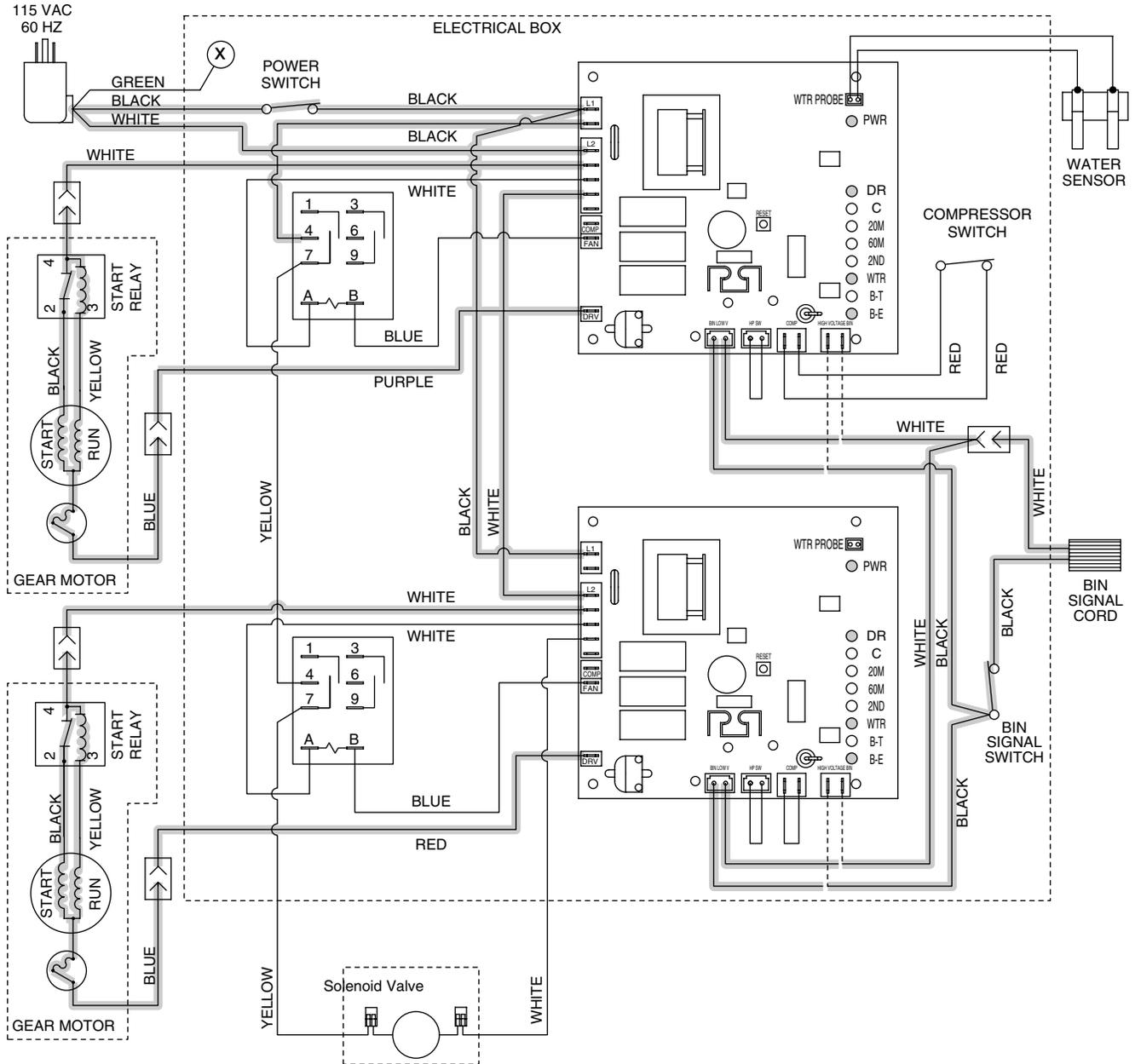
Power is supplied to L1 on the control boards. The ice level control in the storage bin is closed completing the circuit between the terminals of the low voltage bin signal connection*. The control boards will now go through the start-up sequence. Less than 30 seconds will elapse as the water sensor located in the float reservoir checks for water in the reservoir. The Bin Empty LED (B-E) will be on.

*The high voltage bin signal connection is used on all Follett ice dispenser applications. The high voltage terminals respond to applied voltage of 24 to 240 volts from the dispenser.



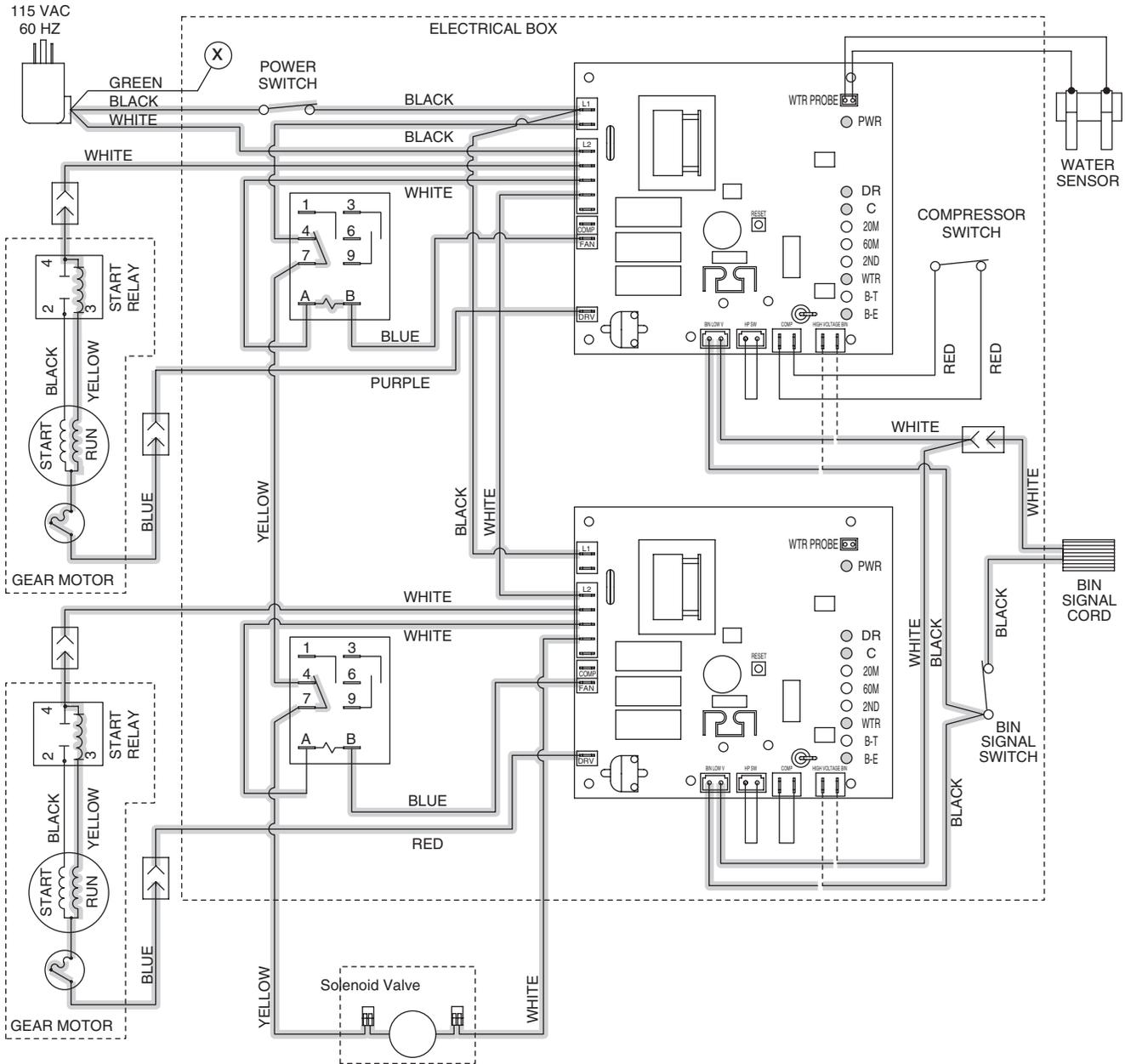
Normal operation – Stage 2 – Gearmotor start

The water sensor verifies water in the float. The Water OK LEDs (WTR) comes on. At the same time, the gearmotors come on, lighting the Drive LEDs (DR). The gearmotor start windings are energized through a current relay. The B-E and WTR LED remain on.



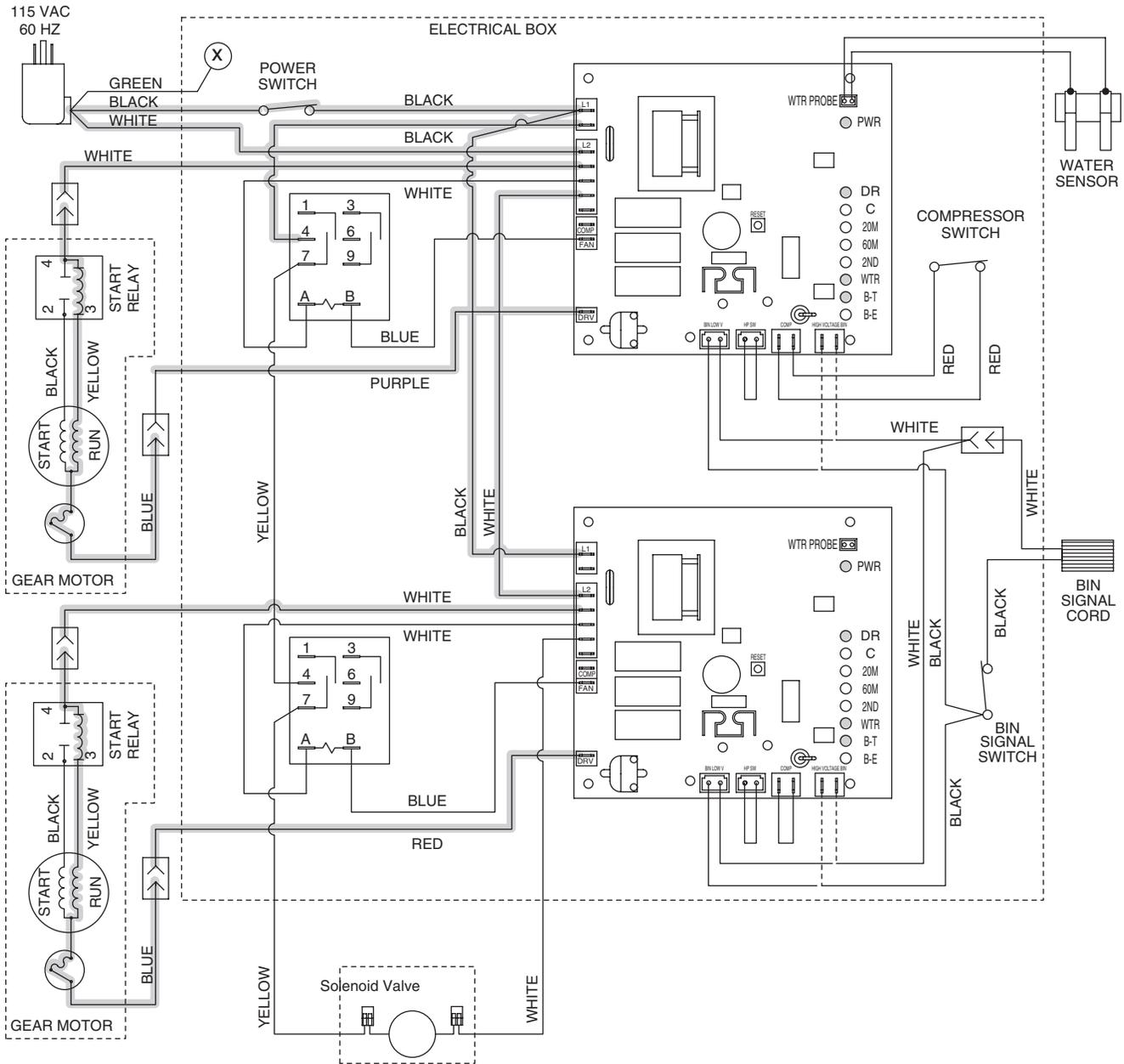
Normal operation – Stage 3 – Refrigeration start

Seconds later the C LEDs come on and the coils of both of the relays are energized, closing their normally open contacts. This completes the circuit to the coil of the liquid line solenoid valve. The valve opens increasing the pressure in the suction line. The low-pressure control then starts the condensing unit. As the gearmotors reach normal speed the current relays re-open, dropping out their start windings. The icemaker is now in normal icemaking mode.



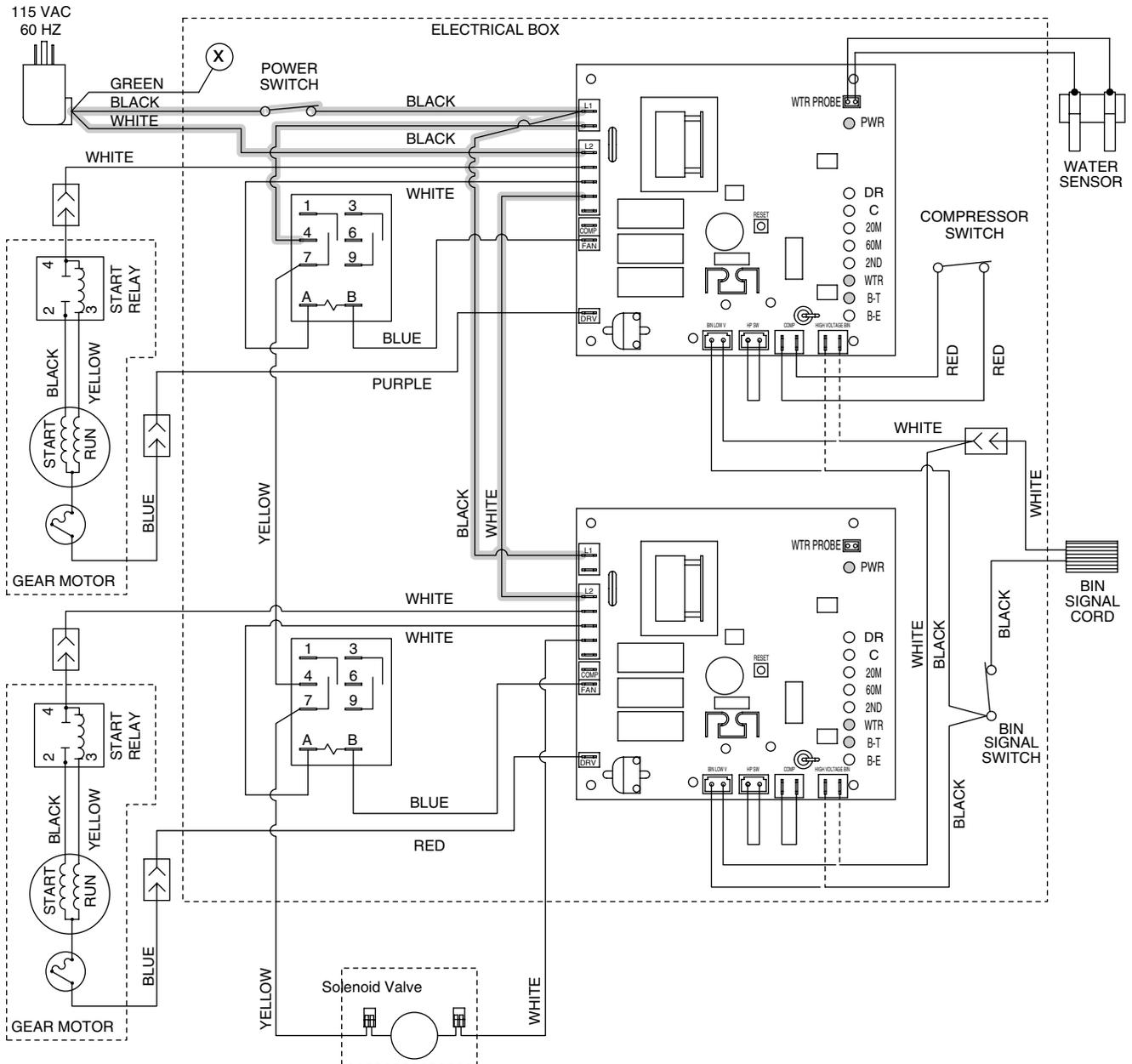
Normal operation – Stage 4 – Ice bin full

The ice level control opens, the B-E LED goes out. After a 10 second delay the LEDs (C), go off de-energizing the relays which closes the liquid line solenoid valve. The refrigeration system will pump down and turn off by the low pressure control. (Should the ice level control not remain open for 10 seconds, the icemaker will continue to run.) The BT LEDs come on. The gearmotors continue to run for 60 seconds. The purpose of this function is to drive the remaining ice out of the evaporator and to boil off any refrigerant remaining in the evaporator.



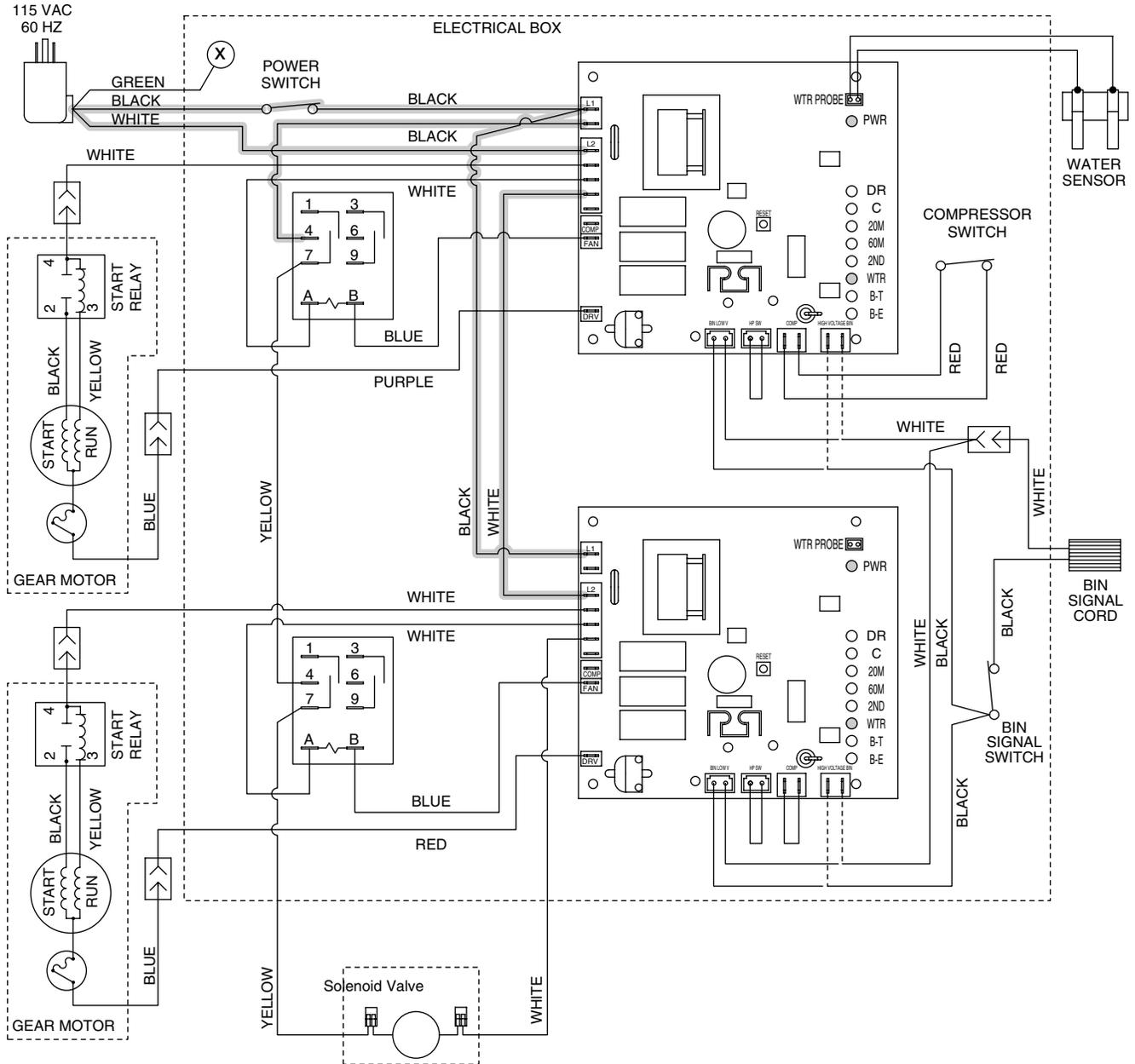
Normal operation – Stage 5 – Off cycle time delay

The B-T LEDs will remain on for 20 minutes. The icemaker will not start while the B-T LEDs are on. To restart the icemaker for troubleshooting purposes, depress both reset buttons to clear the control boards.



Normal operation – Stage 6 – Off cycle

When the dwell time of 20 minutes has expired, the B-T LEDs go off. The icemaker will go through the normal start-up sequence when the bin level control signals for ice. The WTR LED will remain on as long as the water sensor in the float reservoir senses water.



Diagnostic sequence – motor over-current condition

If either of the circuit boards senses a current over 3 amps, five things happen:

1. The DR LED goes out, the DRV terminal is de-energized and the gearmotor shuts down.
2. The C LED goes out, the FAN terminal is de-energized, cutting power to the coil of the relay.
3. The relay contacts open, cutting power to the coil of the solenoid valve and the condensing unit pumps down.
4. The condensing unit shuts off on the low pressure control.
5. The 20M LED is turned on.

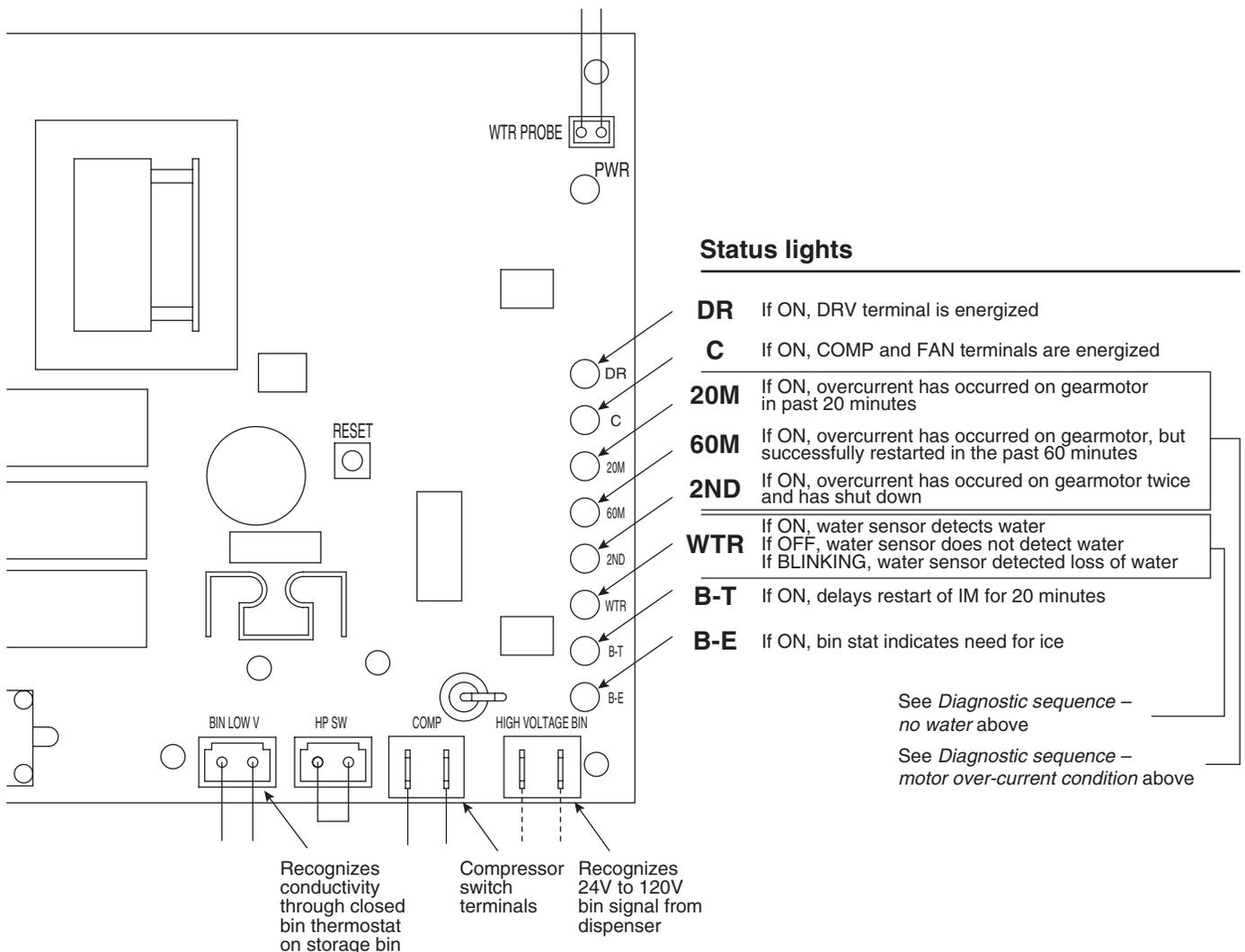
After 20 minutes the 20M light is turned OFF and the machine goes through the normal start-up described above. If the restart is successful, the 60M light is turned ON and remains ON for 60 minutes. This alerts the user to a problem in the drive system. If the icemaker runs without an overcurrent condition during the 60 minute period the 60M LED will go out and the icemaker will continue normal operation. If the restart is unsuccessful, or if the board detects another 3 amp current during the 60 minute period, the 2ND light is turned ON and the machine shuts down and can only be started by pressing the reset button.

Diagnostic sequence – no water

If the water level in the float reservoir drops too low, three things happen:

1. The WTR light is turned OFF.
2. The ice machine shuts down.
3. The BT light turns ON.

If water is restored, the WTR light will flash, the BT light will turn OFF after 20 minutes, and the machine goes through the normal start-up described above. The flashing light can be cleared by pressing the reset button.



Service procedures

Evaporator disassembly (Fig. 11)

1. Disconnect power to icemaker and shut off water to icemaker.
3. Drain evaporator and float tank.
4. Disconnect plastic tubing from evaporator water inlet, drain pan stub, compression nozzle tubing and reservoir overflow tubing from secured clip.
5. Disconnect ice transport tube from compression nozzle.
6. Remove nut and upper vee band coupling from top of evaporator.
7. Lift top bearing assembly straight up with a slight rotating motion and remove.
8. Remove ice compression loop located at top of auger.
9. Lift auger straight up and out of evaporator.
10. Remove nut and lower vee band coupling from bottom of evaporator.
11. Lift evaporator to clear bottom bearing assembly.
12. Loosen hex head bolt in side of mounting base with 5/16 wrench and lift lower bearing assembly.
13. Remove condensate shield.
14. Remove 4 Allen head machine screws holding mounting base to gearbox.
15. If replacing evaporator, remove compression nozzle from evaporator port.

Evaporator reassembly (Fig. 11)

1. Clean gearmotor boss, output shaft and shaft well.
2. Install drain pan and evaporator mounting base.
3. Fill gearmotor shaft well with food-grade grease.
4. Install condensate shield and seat against gearmotor boss.
5. Install bearing O ring in groove in evaporator mounting base.
6. Lower bottom bearing assembly into evaporator mounting base.
7. While maintaining a slight downward pressure on bottom bearing assembly, tighten hex head bolt with a 5/16 wrench.
8. Position evaporator over lower bearing assembly and align grooves with pins in bearing assembly.
9. Install vee band clamp and nut and tighten to 70 in/lb.
10. Place auger in center of evaporator and rotate to mate with drive pin.
11. Install ice compression loop, orienting loop.
12. Install upper bearing and seal assembly, rotating bearing to slip pin into auger slot.
13. Install upper vee band clamp and nut and tighten to 70 in/lb.
14. If evaporator was replaced, reinstall compression nozzle on new evaporator.

Gearmotor replacement

1. Disassemble evaporator as described above.
2. Disconnect the wire connectors.
3. Remove 4 screws holding gearmotor mounting plate to base of icemaker and lift gearbox and motor clear of icemaker (Fig. 12.1).
4. Remove machine screws holding mounting plate to motor (Fig. 12.2).
5. Install new motor in reverse order.

Fig. 11

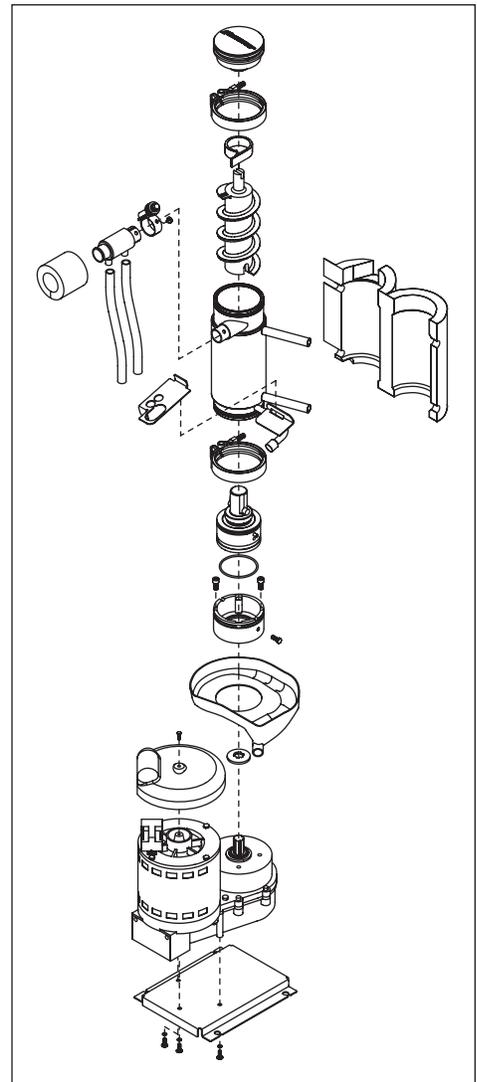
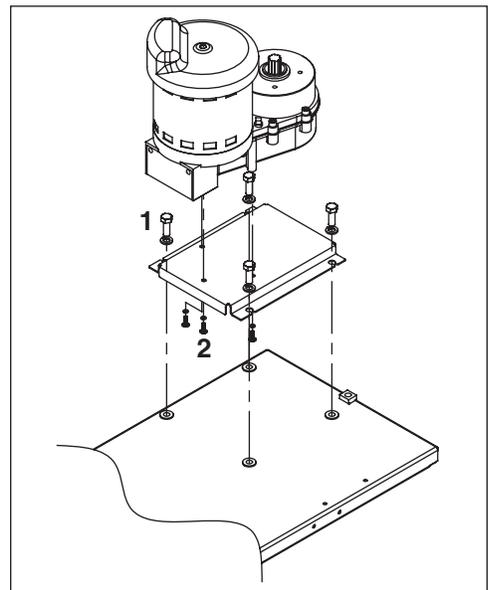


Fig. 12



Troubleshooting

Problem: No ice production – evaporator gearmotors not running or only one gearmotor running

Step 1: Check circuit board LEDs on evaporator units.

Indicator	Possible cause	Corrective action
Power LEDs (PWR) not on.	No power to evaporator unit.	Check that unit is plugged in, circuit breakers are on.
Bin signal LEDs (BE) not on.	1. Defective bin thermostat 2. Dispenser bin signal switches turned off.	1. Check ice level control. 2. Return to on position
Water OK LED (WTR) on primary board not on.	1. No water in float reservoir 2. Sensor incorrectly installed. 3. Sensor defective.	1. Check water supply to reservoir. 2. Check that both sensor probes are in the reservoir water. 3. Test sensor by jumping out sensor connection on board
Bin timer (BT) LEDs on.	Normal shutdown on bin thermostat.	Allow 20 minutes to make sure icemaker restarts.
Bin timer (BT) LED on and water OK LED (WTR) on primary board flashing.	Plugged water filter or water strainer.	Verify integrity of water supply.
Drive LEDs (DRV) lit on both boards.	1. No output on drive terminal (DRV) 2. Inoperative gearmotor.	1. Replace control board. 2. Test/replace gearmotor.
20M, 60M or 2ND LED lit.	Icemaker tripping on overload protection.	Refer to torque-out troubleshooting.

Problem: No ice production – both gearmotors are running

Step 1: Check circuit board LEDs on evaporator units

Evaporators are iced up, no ice production	1. Float reservoir empty. 2. Air bubble in water supply line, water in reservoir but not in evaporators.	1. Check for defective water sensor (WTR LED remains on when float reservoir is empty). 2. Purge air from line.
No compressor LED (C) on primary board.	Compressor switch in off position.	Turn switch to on.
Both compressor LEDs (C) are lit, suction line not cold.	1. No power on fan terminals (FAN) on either control board. 2. Contacts 4 & 7 on either relay not closing when fan terminals (FAN) are energized. 3. Defective liquid line solenoid valve/coil.	1. Replace defective board 2. Replace defective relay. 3. Replace valve and/or coil.

Step 2: Check outdoor condensing unit

Condensing unit not running.	<ol style="list-style-type: none"> 1. No power to unit. 2. Low pressure control defective, or incorrectly set. 3. Refrigerant leak. 	<ol style="list-style-type: none"> 1. Check that circuit breakers/disconnect are on. 2. Check control, adjust or replace. 3. Identify and repair leak.
Compressor not running.	<ol style="list-style-type: none"> 1. Defective starting relay. 2. Defective starting capacitor. 3. Defective run capacitor 4. Defective compressor. 	<ol style="list-style-type: none"> 1. Replace relay. 2. Replace capacitor. 3. Replace capacitor. 4. Replace compressor.

Problem: Low ice production

Step 1: Check evaporator unit

Bubbles in sight glass and/or incorrect system pressures.	<ol style="list-style-type: none"> 1. Mineral build-up on evaporator surface. 2. Dirty condenser coil. 3. Restricted airflow to condenser. 4. High outdoor temperature. 5. Defective condenser fan. 6. Low refrigerant charge. 7. Insufficient refrigerant charge for low ambient operation. 8. Defective head pressure control valve. 9. Inefficient compressor. 10. Faulty expansion valve(s). 	<ol style="list-style-type: none"> 1. Clean evaporator with liquid icemaker cleaner. 2. Clean condenser. 3. Remove obstruction. 4. Verify ice production capacity. 5. Replace condenser fan. 6. Check for leaks; repair, evacuate, and re-charge refrigeration system. 7. Check system charge. 8. Replace head pressure control valve. 9. Replace compressor. 10. Replace expansion valve.
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Problem: Outdoor unit cycles frequently during off cycle

Step 1: Check evaporator unit

Suction pressure rises during off cycle.	<ol style="list-style-type: none"> 1. Leaking liquid line solenoid valve. 2. Excessive leak back through compressor valves. 	<ol style="list-style-type: none"> 1. Replace solenoid valve. 2. Replace compressor
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Problem: Outdoor unit cycles intermittently during run cycle

Step 1: Check condensing unit

Check system pressures.	<ol style="list-style-type: none"> 1. Low refrigerant charge. 2. Low pressure control defective, or incorrectly set. 3. Tripping head pressure control. 	<ol style="list-style-type: none"> 1. Check for leaks; repair, evacuate, and re-charge refrigeration system. 2. Check control, adjust or replace. 3. Clean condenser, check fan motor
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Problem: evaporator unit leaks water

Step 1: Check evaporator unit

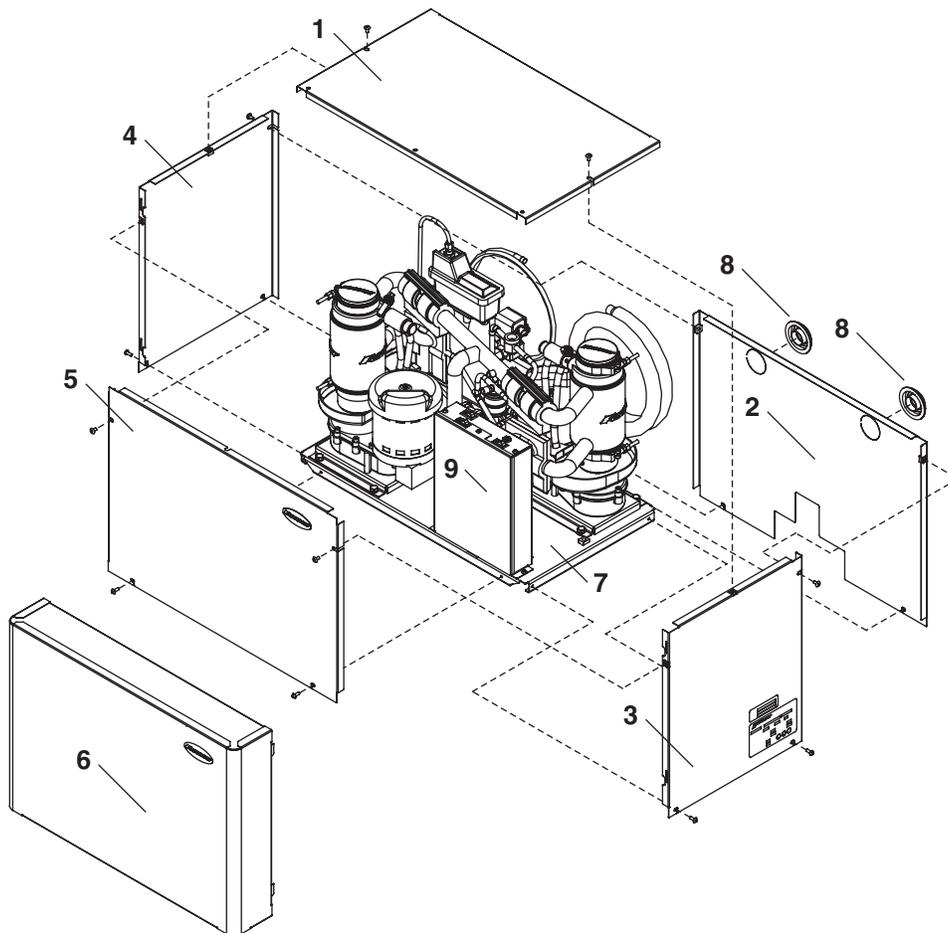
Water overflowing evaporator drain pans.	<ol style="list-style-type: none"> 1. Drain lines clogged. 2. Float level in reservoir set incorrectly or valve defective. 3. Ice transport tubes not insulated. 	<ol style="list-style-type: none"> 1. Clear drain lines. 2. Adjust float or replace reservoir assembly. 3. Insulate tubes.
Water leaking from bottom of evaporator	O ring seal is broken.	Replace bearing housing O ring.

Problem: Torque out

20M LED comes on at startup.	<ol style="list-style-type: none"> 1. Gearmotor does not run, draws approximately 7 to 8 amps. 2. Gearmotor does not run, draws approximately 13 to 14 amps. 3. Gearmotor runs briefly, draws approximately 10 to 11 amps. 	<ol style="list-style-type: none"> 1. Gearmotor starting relay is defective. Replace relay. 2. Gearmotor is locked. Replace gearmotor. 3. Gearmotor starting relay is defective. Replace relay.
Icemaker makes ice then 20M LED comes on.	<ol style="list-style-type: none"> 1. Mineral build-up on evaporator surface. 2. Kink in ice transport tube. 3. Ice transport tube ruptured internally. 4. Worn evaporator bearings. 5. Bin level control remains in closed position. 6. Bin thermostat capillary tube incorrectly mounted. 	<ol style="list-style-type: none"> 1. Clean evaporator with liquid icemaker cleaner. 2. Eliminate kink and check that tube routing complies with installation guidelines. 3. Replace ice transport tube. 4. Inspect bearings for roughness, binding – replace if necessary. 5. Replace ice level control. 6. Ensure that ice contacts capillary tube before backing up in ice transport tube. Refer to dispenser manual for proper mounting.

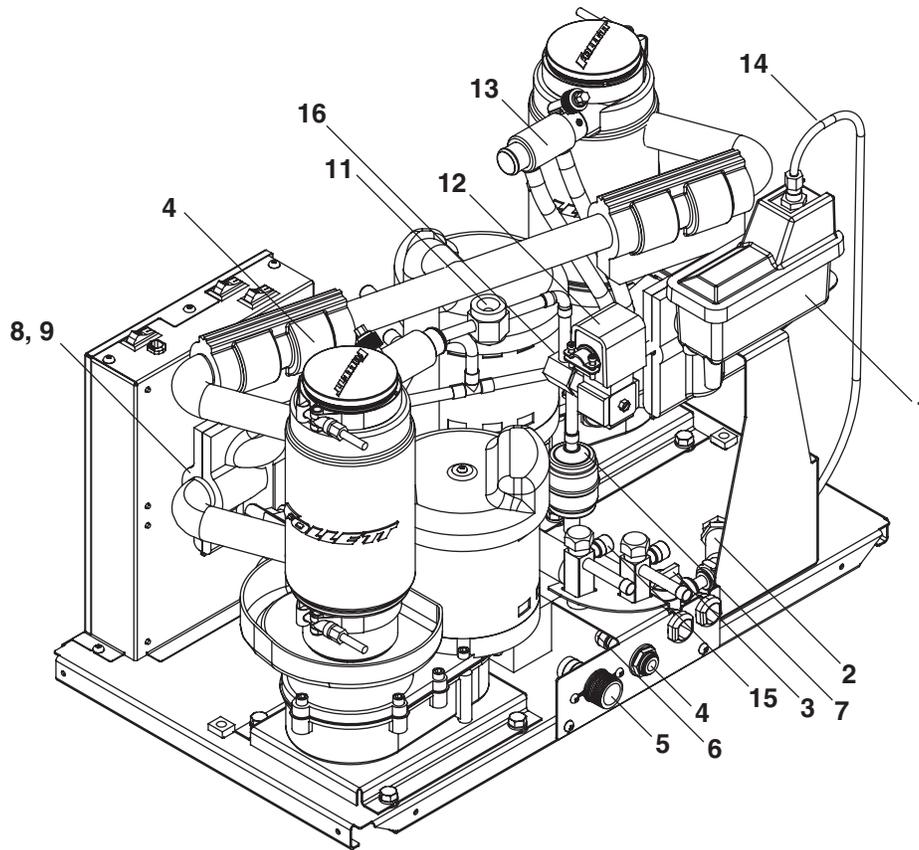
Replacement parts

Panels



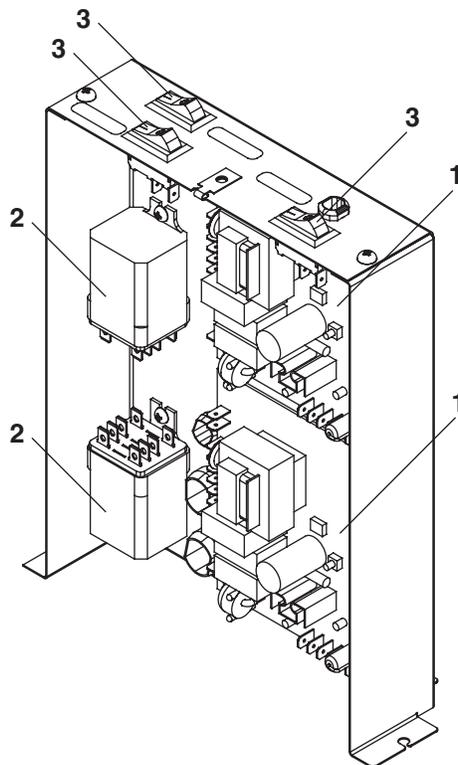
Reference #	Description	Part #
1	Cover, top	00110452
2	Panel, rear	00110460
3	Panel, right side	00110478
4	Panel, left side	00110486
5	Panel, front, remote	00110494
6	Panel, front, top mount	00110502
7	Base, evaporator unit	00110510
8	Grommet, ice	501921
9	Cover, electrical box	00110528

Evaporator unit



Reference #	Description	Part #
1	Float & reservoir	500504
2	Strainer, water	502920
3	Valve, water shut off	502921
Not shown	Clip, shut off valve	502922
4	Fitting, water inlet	502924
5	Fitting, drain	00109728
6	Elbow, water	502925
7	Filter drier	502724
8	Expansion valve	502726
9	Insulation, TXV	502830
10	Insulation, TXV bulb	00106534
11	Sight glass	00107045
12	Coil, solenoid valve	00112847
13	Ice compression nozzle	502220
14	Reservoir water line	502079
15	Service valve	00107060
Not shown	Evaporator water feed line	501191
Not shown	Y fitting, water feed line	00110536
Not shown	Drain line, evaporator	501966
Not shown	Elbow, drain line	501753
Not shown	Tee, drain line	501754
16	Solenoid valve	00107052

Control box



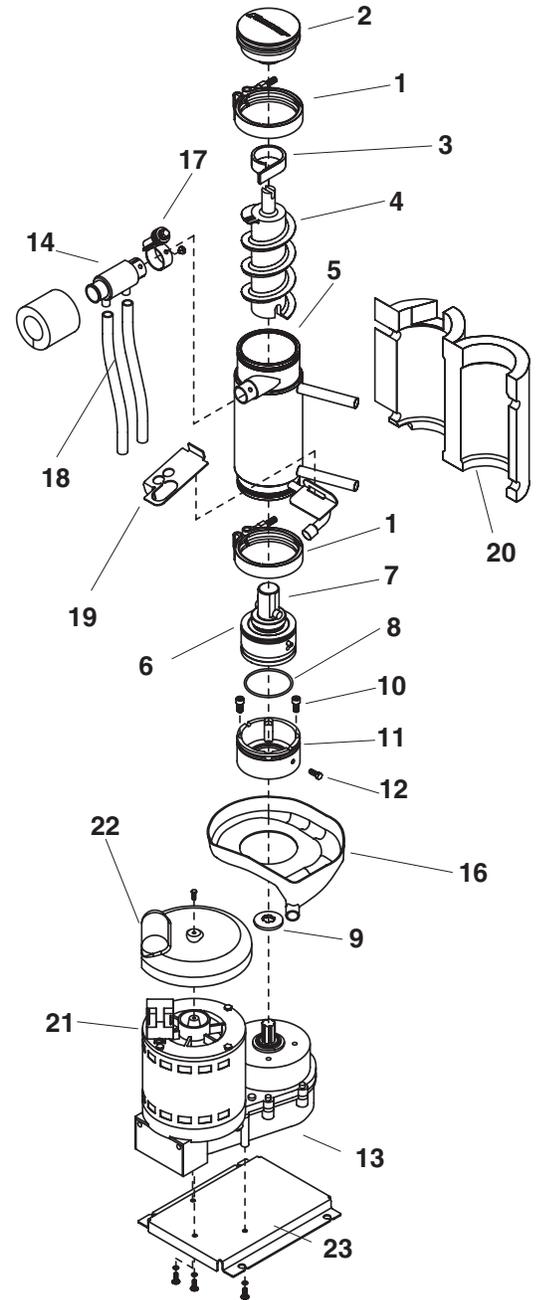
Reference #	Description	Part #
1	Control board	00106690
2	Relay	501369
3	Switch rocker	502209

Miscellaneous

Description	Part #	
Not shown	Transport tube, 10 ft (3m), for units with remote I/M	502522
Not shown	Transport tube, 20 ft (6.1m), for units with remote I/M	502523
Not shown	Transport tube (sold by the foot)	500366
Not shown	Transport tube insulation (sold by the foot)	501176
Not shown	Follett QC4-FL4S water filter system (includes FL4S primary cartridge and head, coarse pre-filter and head, pressure gauge, flushing valve; assembled and installed on mounting bracket)	AFSYSTEMFL43
Not shown	Follett FL4S primary replacement cartridge	AFCARTFL4S
Not shown	Everpure coarse pre-filter cartridge	AFPRECART

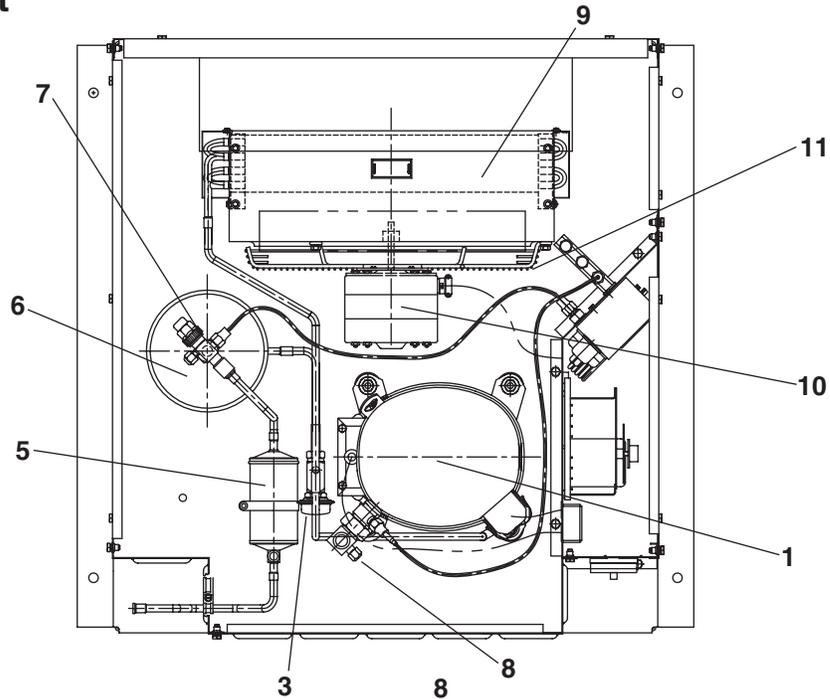
Evaporator

Reference #	Description	Part #
1	Coupling, vee band, includes nut	502735
2	Bearing assembly, top	502736
3	Loop, ice compression, beveled	502110
4	Auger	502737
5	Evaporator (includes insulation jacket, 502740)	502725
6	O ring, bearing housing	500496
7	Bearing assembly, bottom (includes O rings and condensate shield)	502738
8	O ring, mounting base	501063
9	Shield, condensate	500744
10	Screw, Allen 1/4 20 x 1/2 (set of 4)	501080
11	Mounting base, evap. (includes 501063)	502733
12	Bolt, mounting base	502227
13	Gearbox & motor assembly	502730
14	Compression nozzle, with double drain	502220
16	Drain pan, evaporator	502727
17	Clamp, compression nozzle and screw	502226
18	Tubing, compression nozzle drain(s) (sold by foot)	500680
19	Bracket, drain hose	502739
20	Insulation jacket, evaporator	502740
21	Relay, start, gearmotor	502742
22	Drip cover, gearmotor	502744
23	Mounting base, gearbox	502729
All above	Evaporator & gearmotor assembly	502743
Not shown	Grease, Chevron SRI-2, 14oz	501111
Not shown	Oil, gearmotor (pint)	502775

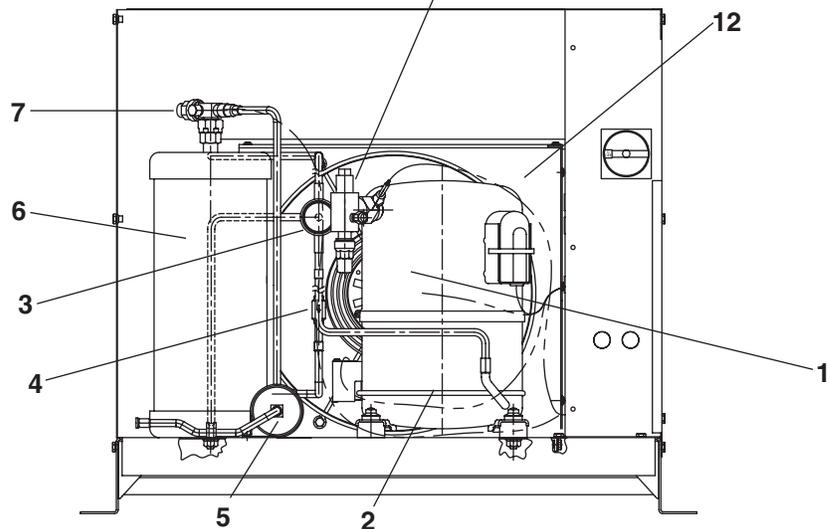


Condensing unit

Top View



Side View



Reference #	Description	Part #
1	Compressor	00110544
Not shown	Starting capacitor	00110569
Not shown	Run capacitor	00110577
Not shown	Starting relay	00110585
2	Crankcase heater	00123042
3	Head pressure control valve	00110619
4	Check valve	00110650
5	Filter drier/sight glass	00123059
6	Receiver	00110627
7	Receiver service valve	00110692
8	Service valve, suction line	00110643
9	Condenser	00110668
10	Condenser fan motor	00110601
Not shown	Condenser fan blade	00123067
11	Condenser fan guard	00123075
12	Shroud	00120170