

KitchenAid

TECHNICAL EDUCATION

OUTDOOR AUTOMATIC ICE MAKER



Model KUIO15NNLS

JOB AID 4317309

FORWARD

This KitchenAid Job Aid, “Outdoor Automatic Ice Maker,” (Part No. 4317309), provides the technician with information on the installation, operation, and service of the Outdoor Automatic Ice Maker. It is to be used as a training Job Aid and Service Manual. For specific information on the model being serviced, refer to the “Use and Care Guide,” or “Wiring Diagram” provided with the ice maker.

The Wiring Diagram and Strip Circuits used in this Job Aid are typical and should be used for training purposes only. Always use the Wiring Diagram supplied with the product when servicing the unit.

GOALS AND OBJECTIVES

The goal of this Job Aid is to provide detailed information that will enable the service technician to properly diagnose malfunctions and repair the KitchenAid Outdoor Automatic Ice Maker.

The objectives of this Job Aid are to:

- Understand and follow proper safety precautions.
- Successfully troubleshoot and diagnose malfunctions.
- Successfully perform necessary repairs.
- Successfully return the ice maker to its proper operational status.

WHIRLPOOL CORPORATION assumes no responsibility for any repairs made on our products by anyone other than Authorized Service Technicians.

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GENERAL SAFETY FIRST

Your safety and the safety of others is very important.

We have provided many important safety messages in this Job Aid and on the appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word “DANGER” or “WARNING.” These words mean:

! DANGER

You can be killed or seriously injured if you don’t immediately follow instructions.

! WARNING

You can be killed or seriously injured if you don’t follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

ELECTRICAL POWER SUPPLY & GROUNDING REQUIREMENTS

! WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

! WARNING



Electrical Shock Hazard

Plug into a grounded 3-prong outlet.

Do not remove ground prong.

Do not use an adapter.

Do not use an extension cord.

Failure to follow these instructions can result in death, fire, or electrical shock.

⚠ WARNING



Electrical Shock Hazard

Connect green ground wire to ground screw.

Failure to do so can result in death or electrical shock.

IMPORTANT

Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an antistatic wrist strap. Connect the wrist strap to the green ground connection point, or to an unpainted metal surface in the appliance.

- OR -

- Touch your finger repeatedly to a green ground connection point, or to an unpainted metal surface in the appliance.
- Before removing the part from its package, touch the antistatic bag to a green ground connection point, or to an unpainted metal surface in the appliance.
- Avoid touching electronic parts, or terminal contacts. Handle the electronic control assembly by the edges only.
- When repackaging the failed electronic control assembly in an antistatic bag, observe the previous instructions.

KITCHENAID MODEL & SERIAL NUMBER DESIGNATIONS

MODEL NUMBER

MODEL NUMBER	K	UI	O	15	NN	L	S	0
INTERNATIONAL SALES IND. OR MARKETING CHANNEL IF PRESENT								
PRODUCT GROUP								
K = KITCHENAID								
PRODUCT IDENTIFICATION								
UI = UNDERCOUNTER ICE MAKER								
MERCHANDISING SCHEME								
O = OUTDOOR								
CAPACITY / SIZE / SERIES / CONFIGURATION								
15 = 15" WIDE								
FEATURES								
NN = NON-PUMP, NON-REVERSIBLE DOOR								
YEAR OF INTRODUCTION								
L = 2002								
COLOR CODE								
S = STAINLESS STEEL								
ENGINEERING CHANGE (NUMERIC)								

SERIAL NUMBER

SERIAL NUMBER	EH	P	04	54321
DIVISION RESPONSIBILITY				
E = EVANSVILLE, IN / SOURCED				
YEAR OF PRODUCTION				
P = 2003, R = 2004				
WEEK OF PRODUCTION				
04 = 4th WEEK				
PRODUCT SEQUENCE NUMBER				

MODEL & SERIAL NUMBER LABEL AND WIRING DIAGRAM LOCATIONS

The Model/Serial Number label and Wiring Diagram locations are shown below.

Model & Serial Number Label Location



Wiring Diagram Location (On Rear Of Front Panel)



SPECIFICATIONS

AC Power Supply 104 To 127 VAC, 60 Hz
 Amperage 3.4A (5 Minute Freeze @ 104°F/WT 80°F)
 Minimum Circuit Capacity 15 Amps
 Maximum Fuse Size 15 Amps
 Ice Production Per 24 Hr. (Approximate)

Ambient Temp (°F/°C)	Water Temperature (°F/°C)		
	50/10	70/21	90/32
70/21	51 lbs. (23 kg)	46 lbs. (21 kg)	43 lbs. (19 kg)
80/27	47 lbs. (22 kg)	40 lbs. (18 kg)	38 lbs. (17 kg)
90/32	46 lbs. (21 kg)	35 lbs. (16 kg)	32 lbs. (14 kg)
100/38	40 lbs. (18 kg)	34 lbs. (15 kg)	29 lbs. (13 kg)

Ice Shape Top Hat
 Ice Production Per Cycle 24 pcs, 0.595 lbs. (0.27 kg)
 Storage Capacity (Approximate) 28 lbs. (12.7 kg)
 Bin Control Setting 22 lbs. (10.0 kg)
 Exterior Dimensions (W x D x H) 14.9" x 22.6" x 33.5" (378 x 575 x 850mm)
 Exterior Finish Stainless Steel, Plastic, Galvanized Steel (Rear)
 Net Weight 88 lbs. (40 kg)
 Cube Control System Thermistor & Electronic Control
 Harvesting Control System Hot Gas & Thermistor
 Ice Making Water Control Electronic Control
 Bin Control System Thermostat
 Refrigerant R134a
 Ambient Temperature 45 To 100°F
 Water Supply Pressure 7 To 113 PSIG

Electrical Consumption

Ambient Temp (°F/°C)	Water Temperature (°F/°C)		
	50/10	70/21	90/32
70/21	222 Watts	228 Watts	235 Watts
80/27	227 Watts	237 Watts	242 Watts
90/32	228 Watts	244 Watts	250 Watts
100/38	237 Watts	246 Watts	255 Watts

Water Consumption (Per 24 Hrs.)

Ambient Temp (°F/°C)	Water Temperature (°F/°C)		
	50/10	70/21	90/32
70/21	44 Gal.	38 Gal.	33 Gal.
80/27	39 Gal.	31 Gal.	27 Gal.
90/32	38 Gal.	24 Gal.	20 Gal.
100/38	31 Gal.	23 Gal.	16 Gal.

Harvest Cycle Time

Ambient Temp (°F/°C)	Water Temperature (°F/°C)		
	50/10	70/21	90/32
70/21	3.1 min.	2.0 min.	2.0 min.
80/27	3.0 min.	2.0 min.	2.0 min.
90/32	3.0 min.	2.4 min.	2.0 min.
100/38	3.0 min.	2.0 min.	2.1 min.

Freeze Cycle Time

Ambient Temp (°F/°C)	Water Temperature (°F/°C)		
	50/10	70/21	90/32
70/21	16 min.	19 min.	23 min.
80/27	18 min.	21 min.	26 min.
90/32	19 min.	24 min.	29 min.
100/38	25 min.	29 min.	33 min.

OUTDOOR ICE MAKER WARRANTY

Length of Warranty	KitchenAid will pay:
One-Year Full Warranty From date of Purchase	For one year from date of purchase, when this icemaker is operated and maintained according to instructions attached to or furnished with the product, KitchenAid will pay for Factory Specified Parts and Repair Labor to correct defects in materials or workmanship. Service must be provided by a Service Company designated by KitchenAid
Five-Year Warranty on Sealed System Second through Fifth Year from Date of Purchase	For five years from the date of purchase, when this icemaker is operated and maintained according to instructions attached or furnished with product, KitchenAid will pay for Factory Specified Parts and labor to correct defects in materials or workmanship on the sealed system (compressor, evaporator, condenser, dryer/strainer, and connecting tubing).
KitchenAid Will Not Pay For:	
<p>A. Installation of your icemaker or damage caused by improper installation or failure to comply with local code requirements.</p> <p>B. Shipping, pickup and delivery, removal or re-installation, as your icemaker is designed to be repaired in the home.</p> <p>C. Damage to the icemaker, floor, cabinets, or plumbing as a result of failure to winterize the product prior to exposure to temperatures below 35 degrees Fahrenheit.</p> <p>D. Service calls to:</p> <ol style="list-style-type: none"> 1. Correct the installation of your KitchenAid icemaker. 2. Instruct you how to use your KitchenAid icemaker. 3. Replace house fuses or to correct house wiring. 4. Perform normal maintenance, including periodic replacement of seals, fittings, etc. <p>E. Repairs when your icemaker is used in other than normal, single-family household use.</p> <p>F. Damage to your icemaker caused by negligence, accident, misuse, fire, flood, acts of God, or use of products, including cleaning products, not approved by KitchenAid or KitchenAid Canada.</p> <p>G. Repairs to parts or system resulting from unauthorized modifications to your icemaker.</p> <p>H. In Canada, travel or transportation expenses for customers who reside in remote areas.</p> <p>I. Replacement parts or repair labor costs for units operated outside the United States and Canada.</p> <p>J. Any labor costs during limited warranty period.</p> <p>K. Deterioration of your icemaker due to normal wear and tear.</p>	

KitchenAid and KitchenAid Canada Shall Not be Liable for Incidental or Consequential Damages. Any implied warranty of merchantability or fitness for a particular purpose is limited in duration to the length of this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so these exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state or province to province.

Outside the United States and Canada, a different warranty may apply. For details, please contact your authorized KitchenAid icemaker dealer.

If you need customer or technical assistance, first see the "Troubleshooting" section of the book. After checking "Troubleshooting", additional help can be found by calling the KitchenAid Customer Interaction Center at 1-800-422-1230, from anywhere in the U.S.A. , and 1-800-807-6777, from anywhere in Canada.

KitchenAid Home Appliances
2000 N M-63
Benton Harbor, MI 49022

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INSTALLATION INFORMATION

ELECTRICAL SUPPLY REQUIREMENTS

WARNING



Electrical Shock Hazard

Plug into a grounded 3 prong outlet.

Do not remove ground prong.

Do not use an adapter.

Do not use an extension cord.

Failure to follow these instructions can result in death, fire, or electrical shock.

Before you move the ice maker into its final location, it is important to make sure you have the proper electrical connection:

- A 115 Volt, 60 Hz, AC only 15 ampere electrical supply, properly grounded in accordance with the National Electrical Code and local codes and ordinances, is required.
- It is recommended that a separate circuit, serving only the ice maker, be provided. Use a receptacle which cannot be turned off by a switch or pull chain.

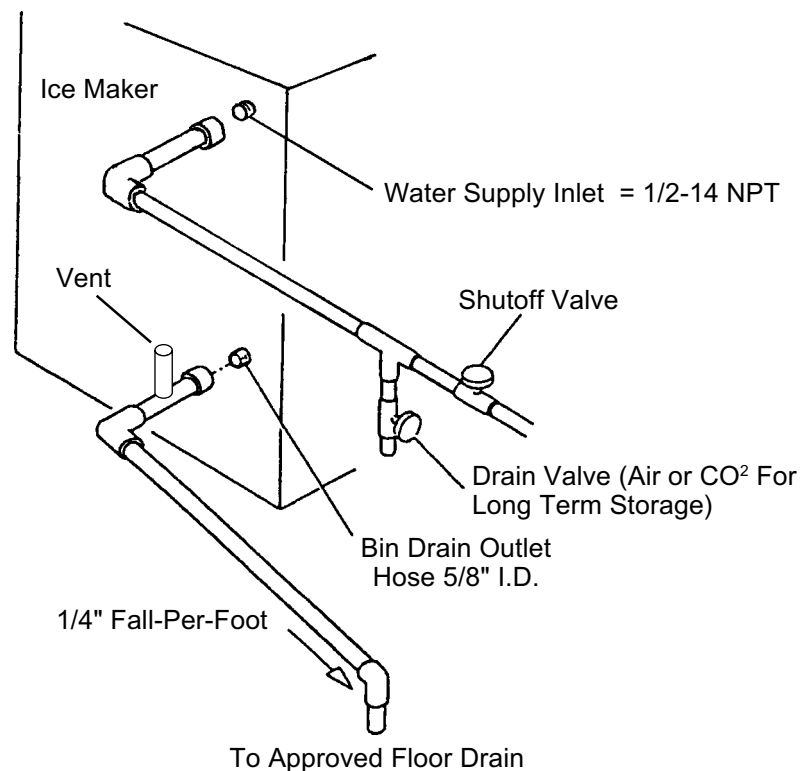
Recommended Grounding Method

For personal safety, this appliance must be grounded. This appliance is equipped with a power supply cord having a 3-prong grounding plug. To minimize possible shock hazard, the cord must be plugged into a mating, 3- prong, grounding-type wall receptacle, grounded in accordance with the National Electrical Code and local codes and ordinances. If a mating wall receptacle is not available, it is the personal responsibility of the customer to have a properly grounded, 3-prong wall receptacle installed by a qualified electrician.

WATER SUPPLY AND DRAIN CONNECTIONS

CAUTION: To prevent damage to the freezer mechanism, do not operate this ice maker when the water supply is OFF, or if the pressure is below 10 PSIG (0.7 bar), the recommended water pressure. Stop the ice maker until proper water pressure is resumed.

- The water supply inlet is 1/2-14 NPT and must only be connected to a potable water supply.
- A water supply line shut-off valve and drain valve must be installed.
- Water supply pressure should be a minimum of 10 PSIG (0.7 bar), and a maximum of 113 PSIG (7.5 bar). If the pressure exceeds 113 PSIG (7.5 bar), use a pressure reducing valve.
- The drain outlet hose is 5/8" (16mm) I.D. and internally connected with a 2/3" (17mm) O.D. drain outlet.
- The drain must be 1/4" fall-per-foot (2 cm fall-per-meter) on horizontal runs for optimum flow.
- Keep a 2 vertical inch (5 vertical cm) air gap or more between the drain pipe end and the sink.
- The drain pipe must be used to prevent a backflow into the storage bin.
- This ice maker should be installed in accordance with applicable national, state, and local regulations.



THEORY OF OPERATION

THE CONTROLS

ICE MAKING CONTROL

The freeze and harvest cycles are controlled by a thermistor and an electronic control.

The electronic controller uses a thermistor that is attached to the top of the evaporator to monitor the evaporator temperature. When the thermistor signals 28°F (-2°C), the control begins to count down 10 minutes. The electronic control then switches the contacts of relays X1 and X2, which stops the pump and fan motors, and energizes the hot gas and water valves. This completes the freeze cycle, and starts the harvest cycle.

HARVEST CONTROL

The ice cubes formed inside the ice making cells are released by hot gas warming the evaporator. When a small portion of the ice melts on the ice making cells interior, the ice drops down the ice guide into the storage bin.

When the evaporator is warmed further (to approximately 45°F / 7°C), the thermistor senses the temperature rise, and the electronic controller begins to count down 50 seconds. The controller then switches the contacts of the relays, which starts the pump and fan motors, and de-energizes the hot gas and water valves. This completes the harvest cycle, and starts the freeze cycle. The harvest and freeze cycles will continue until the bin is full of ice and the bin thermostat is satisfied.

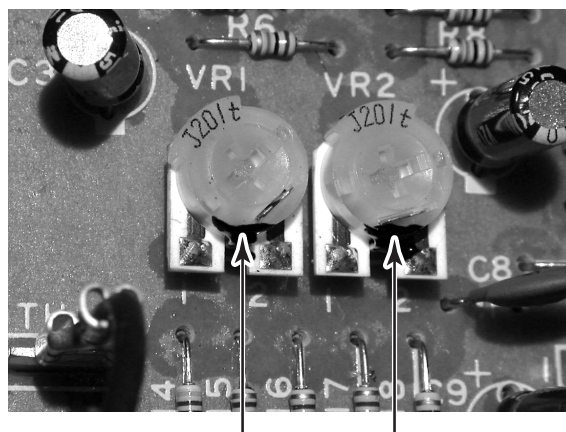
At low temperature conditions where the harvest cycle exceeds 3 minutes, the water valve will de-energize after 3 minutes.

At the initial start, or after a power failure, the ice maker will begin in the harvest cycle, because the compressor is under a “no load” condition (hot gas valve is energized). During this time, any ice that is present on the evaporator will be removed.

In the initial cycle at startup, or after shutdown for bin control, water is supplied for 80 seconds. The water valve de-energizes approximately 30 seconds after the freeze cycle starts.

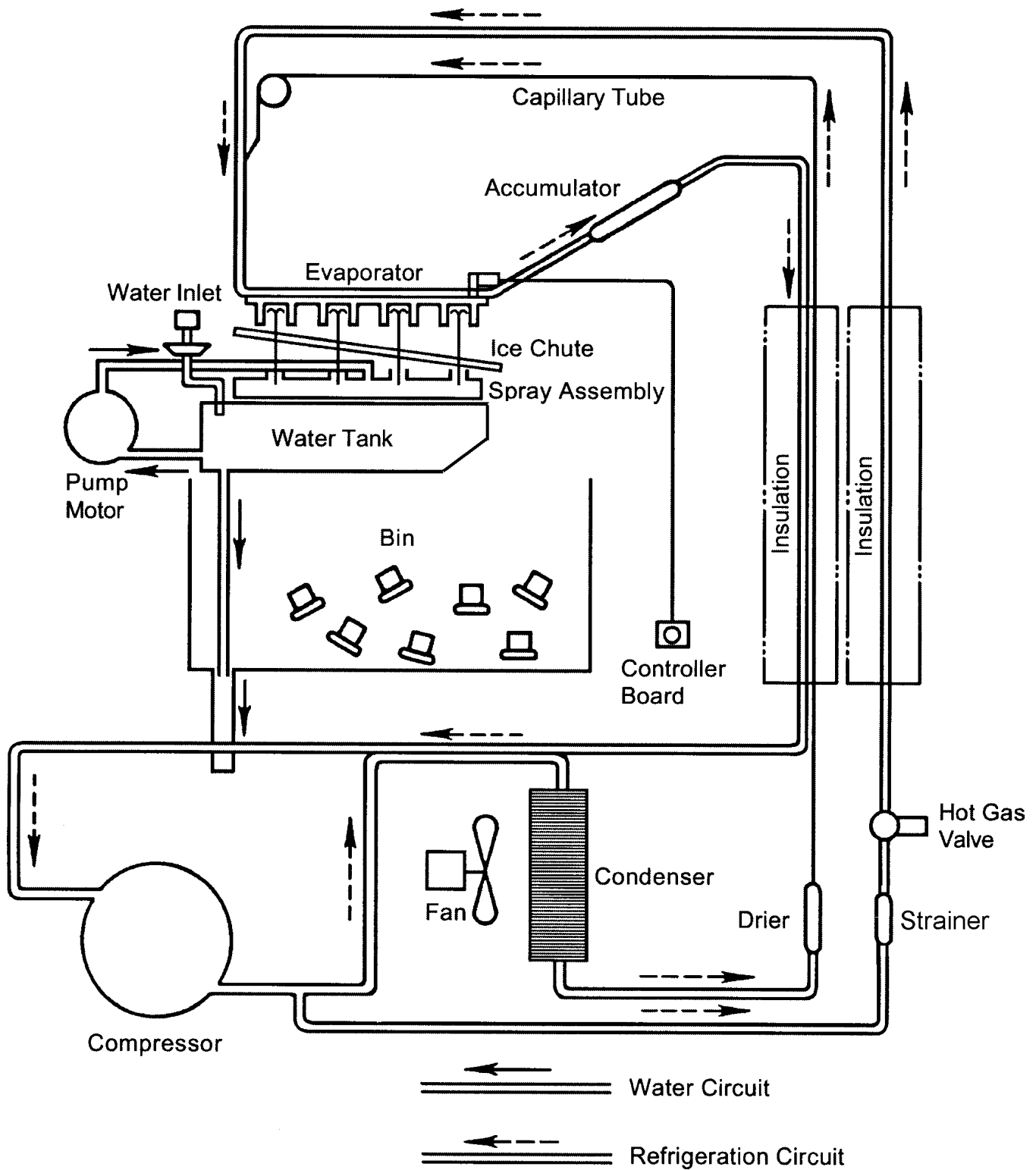
NO ADJUSTMENT

The thermistor and electronic control are factory adjusted to produce constant ice all year, and are not affected by changes in the ambient and water temperatures. No adjustment is required for any frequency 50/60Hz or ambient temperature from 45 to 100°F.



No Adjustment.
Controls Are Sealed.
If Seals Are Broken,
Replace Control.

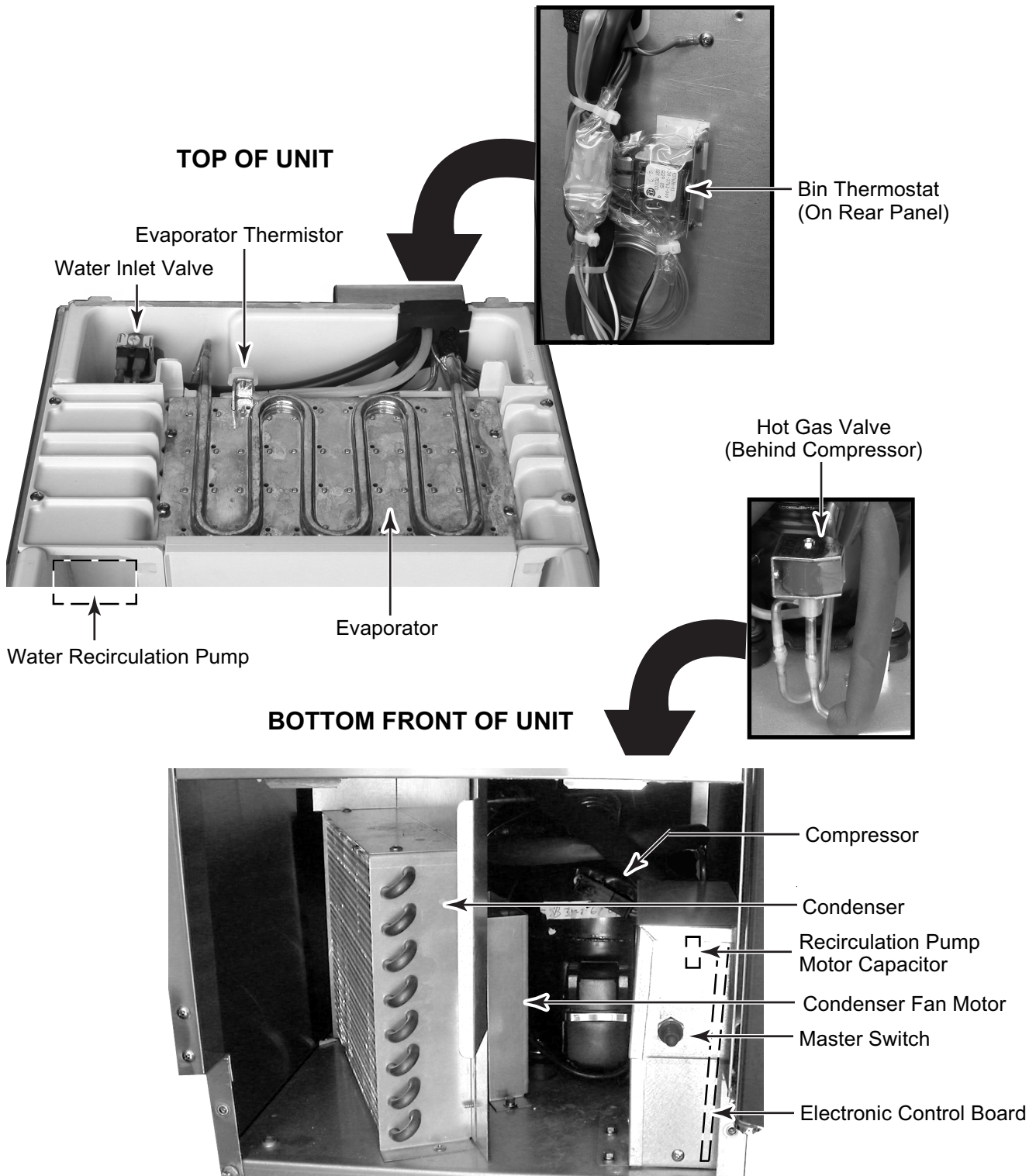
WATER AND REFRIGERANT CIRCUIT



COMPONENT ACCESS

This section instructs you on how to service each component inside the Outdoor Automatic Ice Maker. The components and their locations are shown below.

COMPONENT LOCATIONS



REMOVING THE WATER INLET VALVE

⚠ WARNING



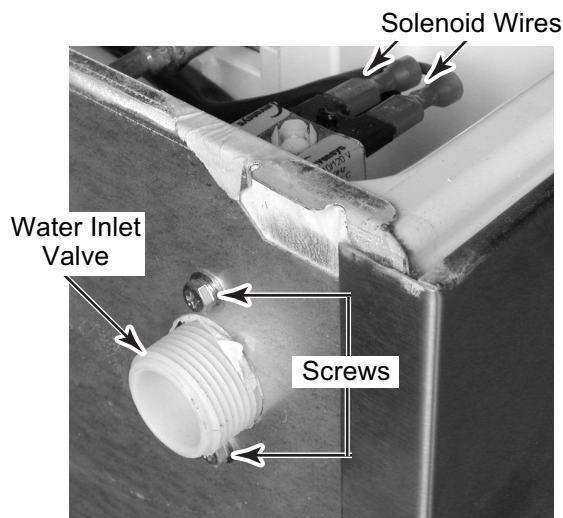
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Remove the ice from the storage bin.
7. Remove the ice maker door and the top cover (see page 4-22 for the procedures).
8. Remove the two screws from the water inlet valve.
9. Disconnect the two wires from the water inlet valve solenoid terminals.

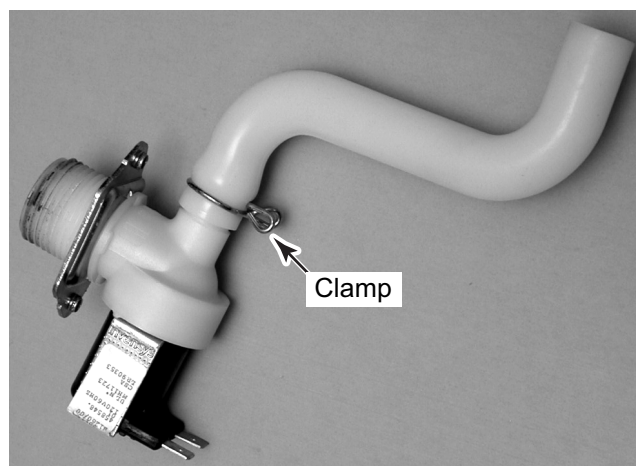


10. Lift the water inlet valve, release the inlet fill tube from the molded retainer, and remove them from the ice maker.



Inlet Fill Tube In Retainer

11. Remove the clamp from the inlet fill tube and remove the tube from the water inlet valve.



REASSEMBLY NOTES:

- When you reconnect the inlet fill tube to the water inlet valve, be sure to position it, as shown in the photo above.
- When you reinstall the water inlet valve and inlet fill tube in the ice maker, be sure to fit the tube inside the molded retainer, as shown at the top of the page.

REMOVING THE EVAPORATOR

⚠ WARNING



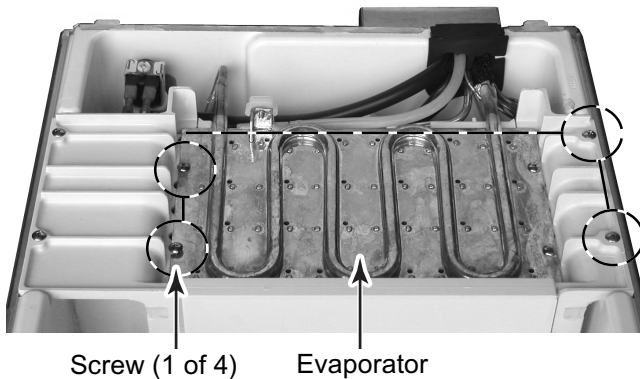
Electrical Shock Hazard

Disconnect power before servicing.

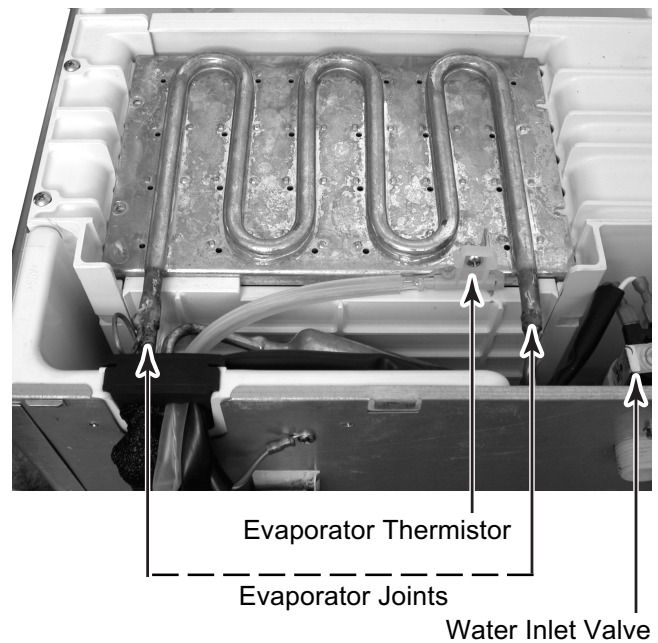
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the top cover (see page 4-22 for the procedure).
9. Remove the four screws from the evaporator.



10. Remove the water inlet valve solenoid wires from the terminals and move them out of the way.
11. Remove the evaporator thermistor screw and remove the thermistor from the evaporator. NOTE: You will need to replace the thermistor and rebond it to the new evaporator using the sealant provided with the new thermistor.
12. Protect the area surrounding the two evaporator joints.



13. Access the sealed system and discharge the refrigerant into an approved recovery system.
14. Unbrazed the two evaporator joints from the sealed system and remove the evaporator.

REMOVING THE WATER RECIRCULATION PUMP

⚠ WARNING



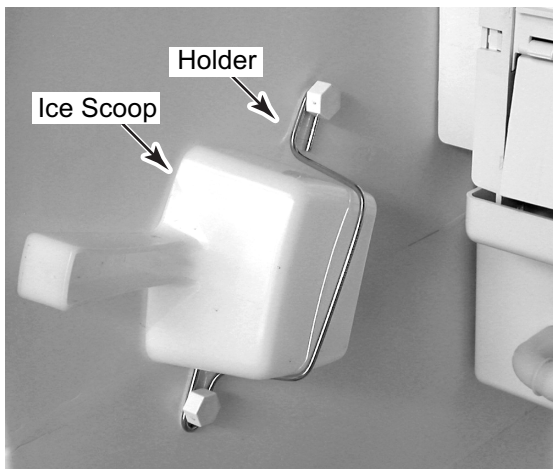
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the top cover (see page 4-22 for the procedure).
9. Remove the ice scoop from its holder.
10. Remove the hex screws from the holder and remove the holder from the unit.

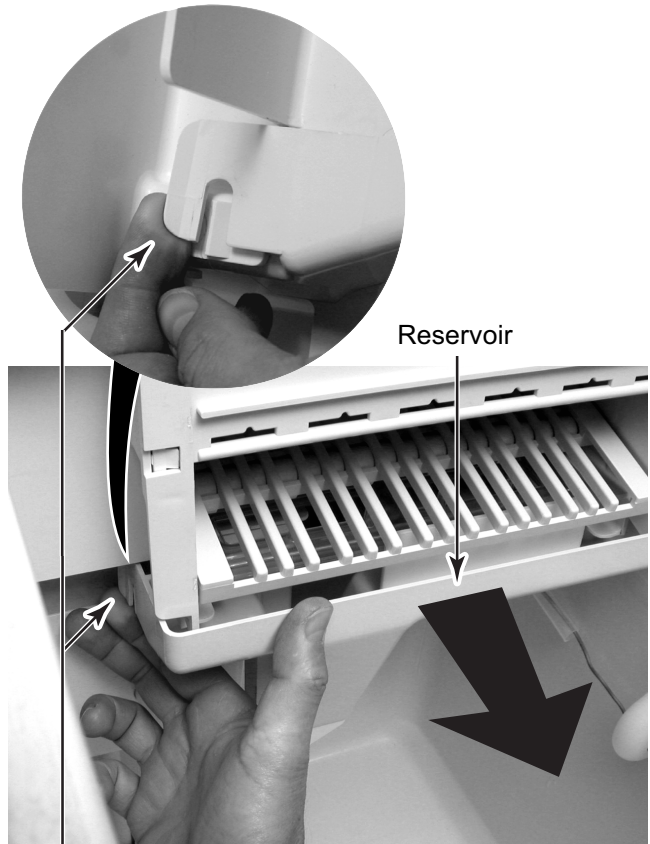


11. Squeeze the locking tabs on the tube clip and remove the tube from the water reservoir.
12. Pull the other end of the tube off the water recirculation pump.



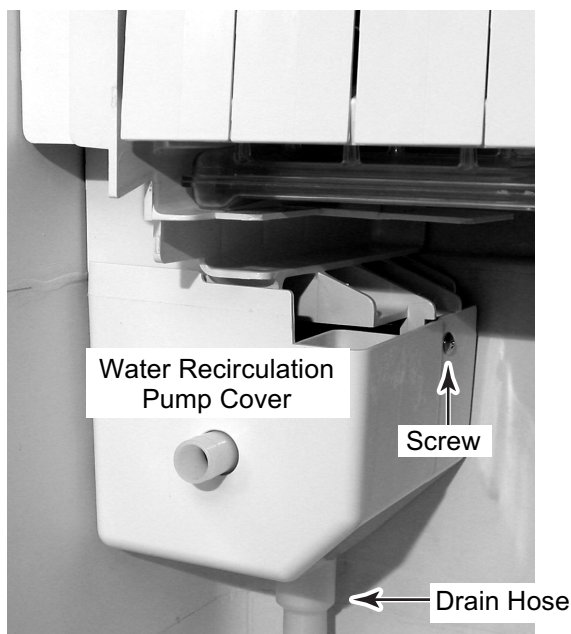
90° Tube Clip

13. Push out on the left and right locking tabs and pull the water reservoir out of the unit.

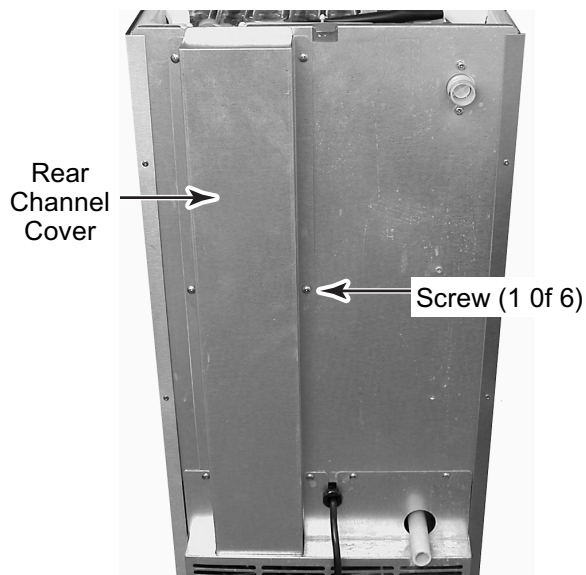


Push Locking Tab Out (On Each Side)

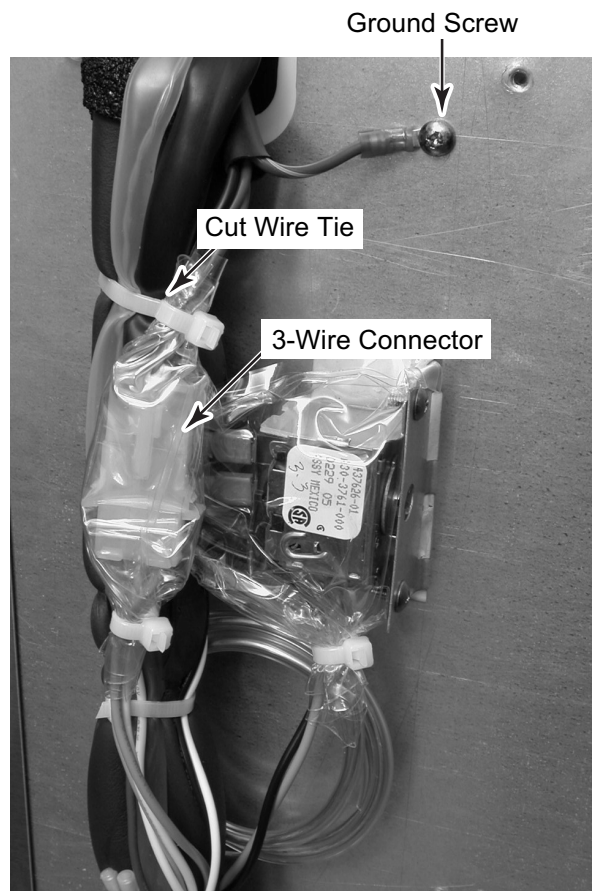
14. Remove the screw from the right side of the water recirculation pump cover. Grasp the drain hose at the bottom of the cover, then pull down and forward, and remove the cover from the unit.



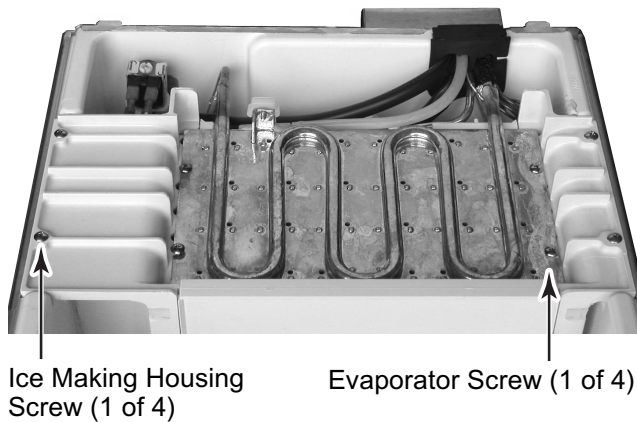
15. Remove the six screws from the rear channel cover and remove the cover from the ice maker.



16. Disconnect the recirculation pump 3-wire connector.
17. Cut the indicated wire tie.
18. Remove the green ground wire screw.

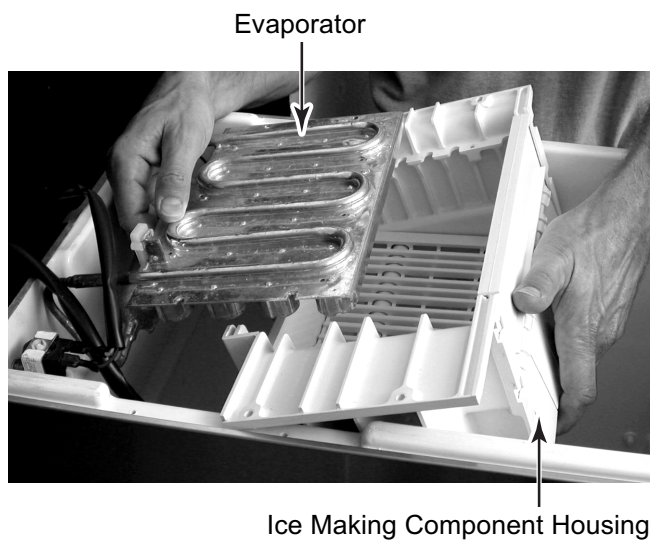


19. Remove the four evaporator screws and the four ice making housing screws.



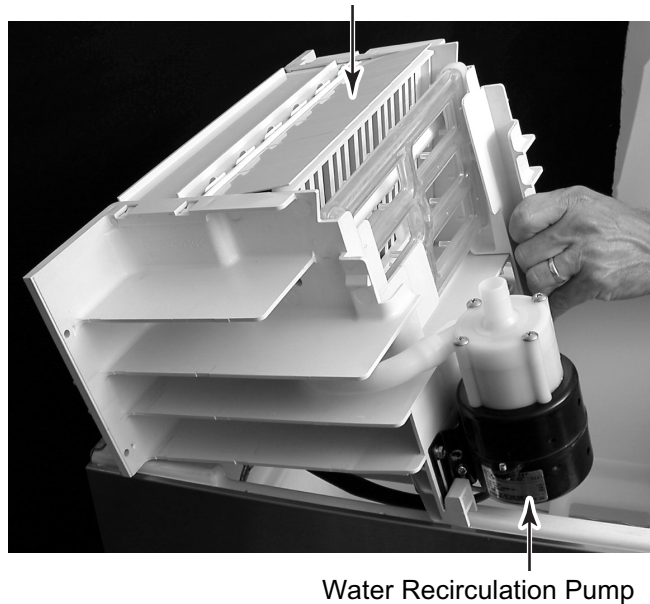
Continued on the next page.

20. Lift the rear of the evaporator and the front of the ice making component housing, then slide the housing under the evaporator toward the front of the unit until the housing clears the evaporator.

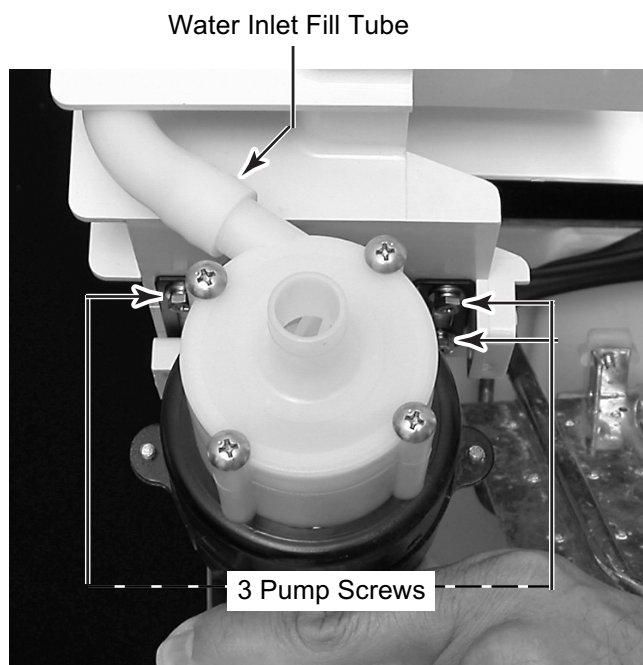


21. Rotate the ice making component housing so you can easily access the recirculation pump mounting screws.

Rotate Housing Over Evaporator



22. Use a 9/32" socket or a phillips screwdriver, and remove the recirculation pump mounting screws.
23. Disconnect the end of the water inlet fill tube from the recirculation pump and remove the pump.



⚠ WARNING



Electrical Shock Hazard

Connect green ground wire to ground screw.

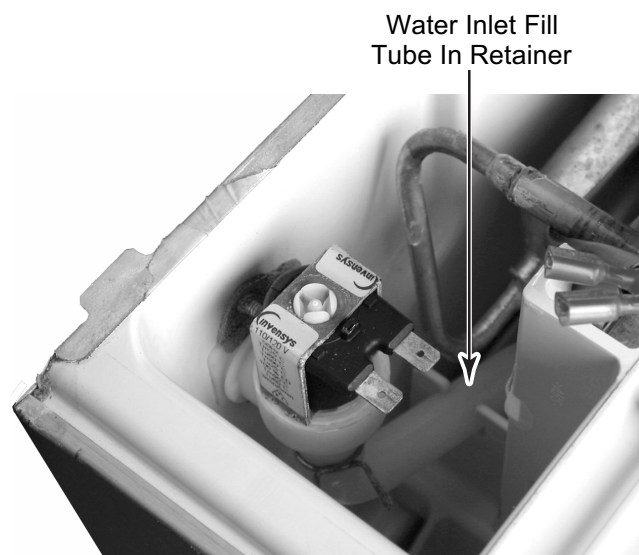
Failure to do so can result in death or electrical shock.

Perform the following steps to reinstall the water recirculation pump:

1. Connect the end of the water inlet fill tube to the recirculation pump.
2. Mount the recirculation pump to the unit with its three 9/32" mounting screws.
3. Reinstall the ice making component housing and evaporator in their proper locations and install the screws.
4. Connect the recirculation pump 3-wire connector.
5. Install a wire tie around the 3-wire connector.
6. Reinstall the green ground wire with its mounting screw.

REASSEMBLY NOTES:

- Be sure to route the water recirculation pump wire cable toward the back of the unit and behind the water inlet fill tube.
- Be sure to fit the water inlet fill tube inside the molded retainer, as shown below.



REMOVING THE EVAPORATOR THERMISTOR

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

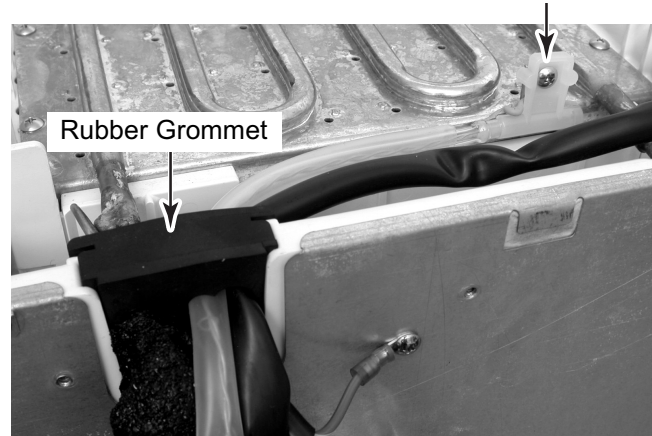
Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the top cover (see page 4-22 for the procedure).

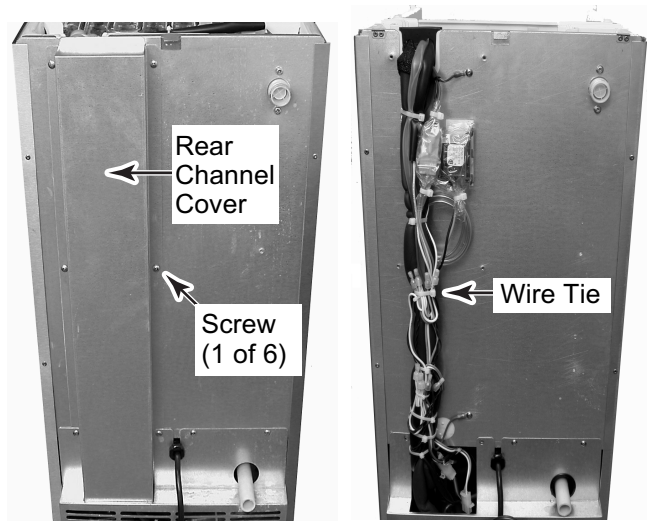
IMPORTANT: You will need to install and rebond a new evaporator thermistor if the old thermistor is loose, or is removed from the evaporator. Make sure that you have the new thermistor available prior to removing the old one. The correct sealant is provided with the new thermistor. The ice maker will not operate properly if the wrong sealant is used. Do not use silicone sealant; it will insulate the thermistor, affecting its operation.

9. Remove the screw from the evaporator thermistor mounting bracket, and break the bracket loose from the evaporator.
10. Remove the rubber grommet and remove the evaporator thermistor wires from the grommet.

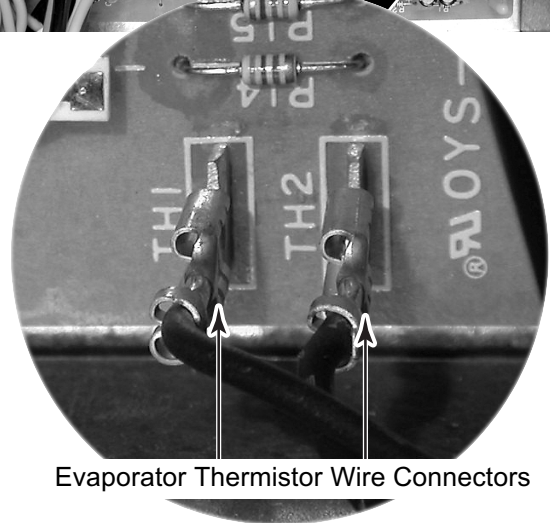
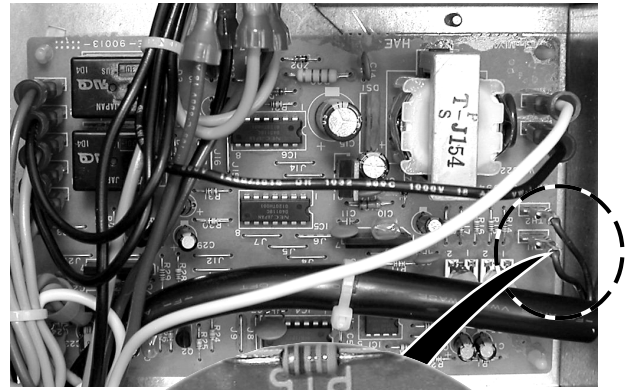
Evaporator Thermistor Bracket & Screw



11. Remove the six screws from the rear channel cover and remove the cover from the ice maker.
12. Cut the wire ties from the evaporator thermistor wire down to the control board.



13. Disconnect the two evaporator thermistor wire connectors from the electronic control board terminals TH1 and TH2, and remove the evaporator thermistor. NOTE: Refer to page 4-14 for the procedure for accessing the electronic control board.



REMOVING THE BIN THERMOSTAT

⚠ WARNING



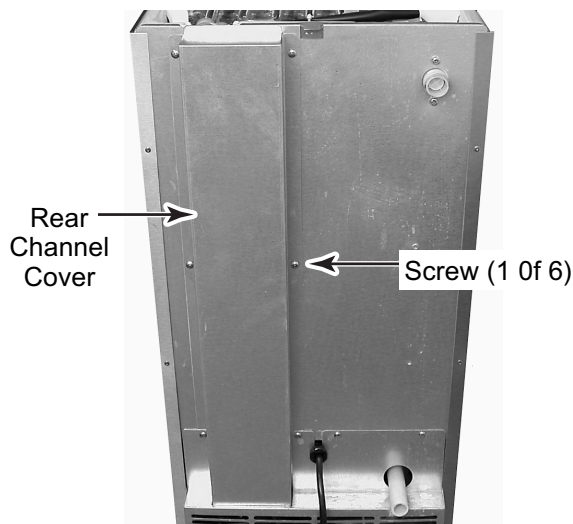
Electrical Shock Hazard

Disconnect power before servicing.

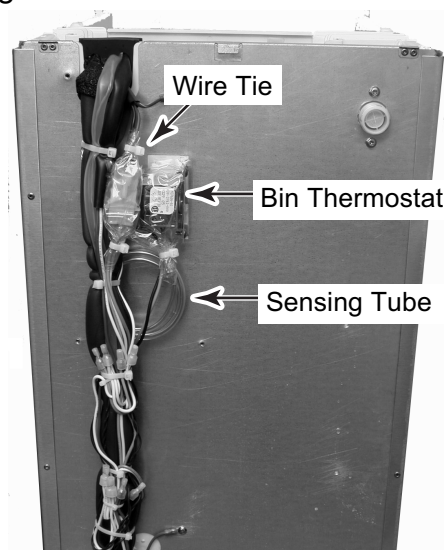
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

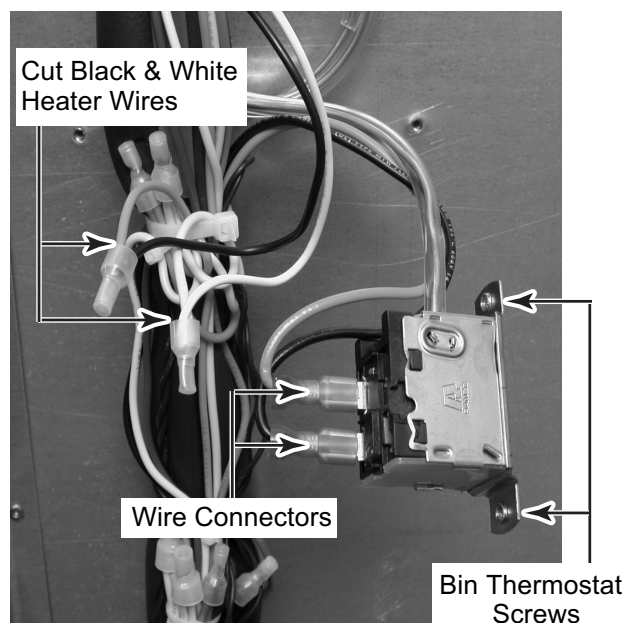
1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the top cover (see page 4-22 for the procedure).
9. Remove the six screws from the rear channel cover and remove the cover from the ice maker.



10. Remove the two screws from the bin thermostat bracket and remove the thermostat.
11. Cut the wire tie from around the plastic bag and bin thermostat wires and remove the bag.

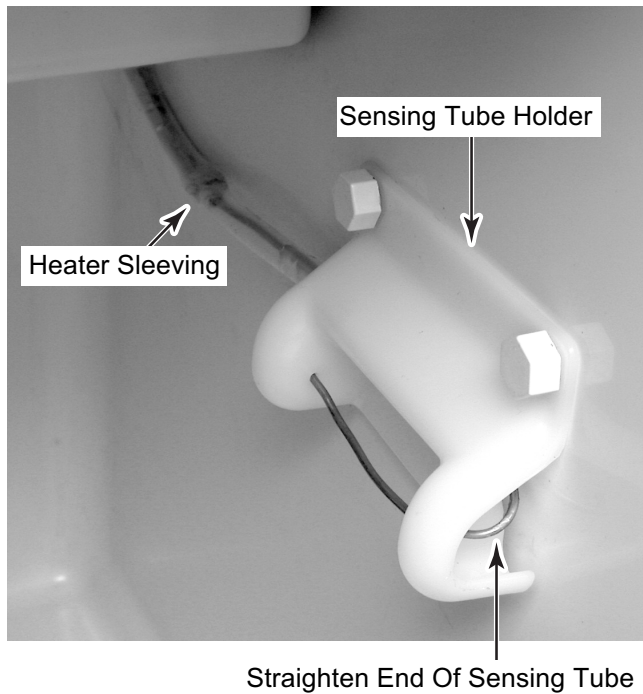


12. Disconnect the two wires from the bin thermostat terminals.
13. Cut the black and white heater wires from the harness. **IMPORTANT:** When reconnecting the wires to the harness, make sure that you position the open end of the wire connectors facing down to prevent moisture from becoming trapped.



NOTE: Before you remove the bin thermostat sensing tube in the next step, note the way it is routed.

14. From inside the ice maker, straighten the end of the sensing tube, and pull it out of the holder.



15. Pull the sensing tube and heater out of the rear of the unit, and remove the bin thermostat.

REASSEMBLY NOTE: When you reinstall the sensing tube and heater from the new bin thermostat, make sure that you keep the sleeving at the same location inside the ice maker as the old sensing tube and heater.

REMOVING THE HOT GAS VALVE AND SOLENOID

⚠ WARNING



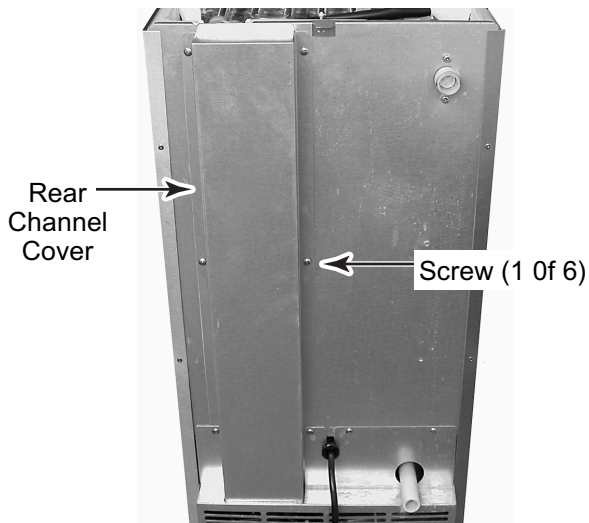
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

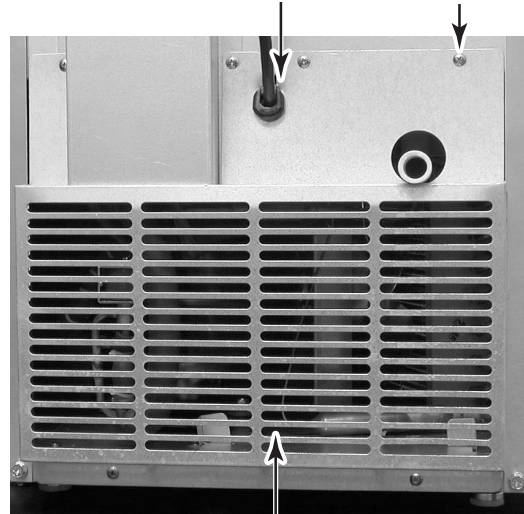
Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the top cover (see page 4-22 for the procedure).
9. Remove the six screws from the rear channel cover and remove the cover from the ice maker.



10. Remove the six screws from the unit compartment cover, remove the cover, and pull the power cord and strain relief out of the u-channel.

Power Cord & Strain Relief Screw (1 Of 6)

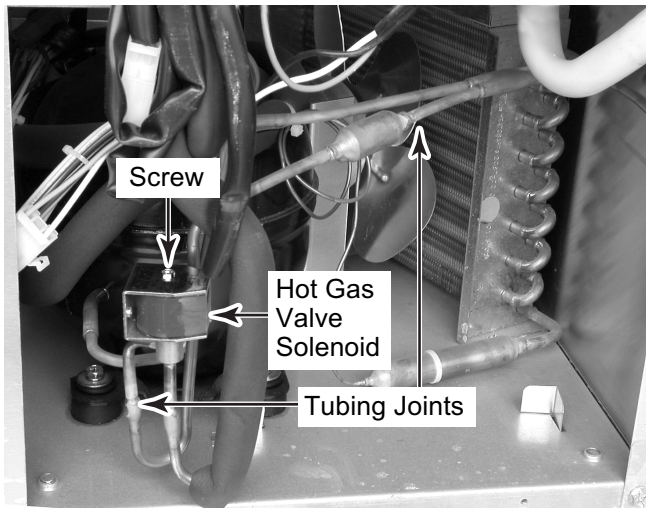


Unit Compartment Cover

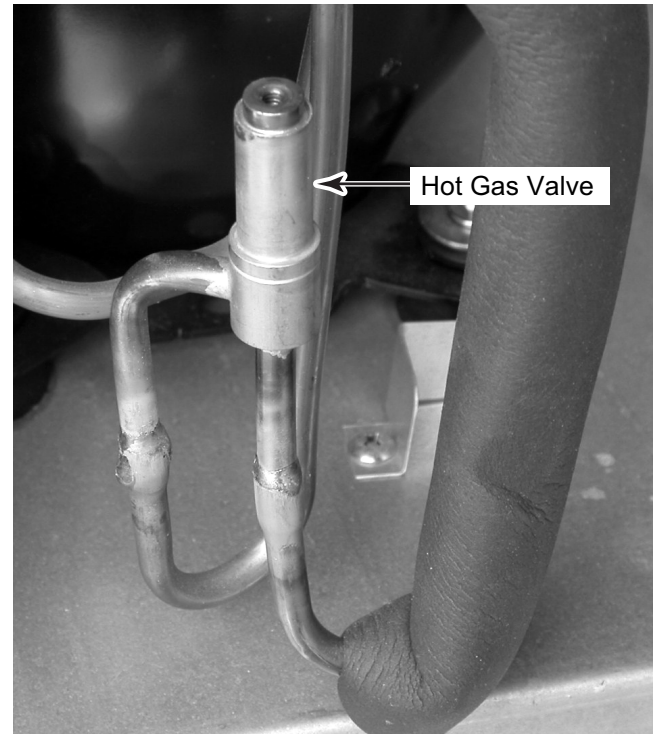
11. **To remove the hot gas valve solenoid:**
 - a) Disconnect the solenoid 2-wire connector from the harness. Cut any wire ties from around the solenoid wires.



- b) Remove the 7mm hex-head screw from the solenoid and lift the solenoid off the hot gas valve.



- c) Access the sealed system and discharge the refrigerant into an approved recovery system.
- d) Unbrazed the hot gas valve from the sealed system (see the photo in the left column for the joints to braze).



12. To remove the hot gas valve:

- a) Remove the hot gas valve solenoid (see step 11 for the procedure).
- b) Shield the tubing insulation.

REASSEMBLY NOTE: When installing the new hot gas valve, use a generous amount of thermal heat trap paste between the valve and tubing joints to protect the valve when brazing.

REMOVING THE MASTER SWITCH, RECIRCULATION PUMP MOTOR CAPACITOR, AND ELECTRONIC CONTROL BOARD

⚠ WARNING



Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Remove the screws from the lower front panel and grille assembly and remove the assembly.



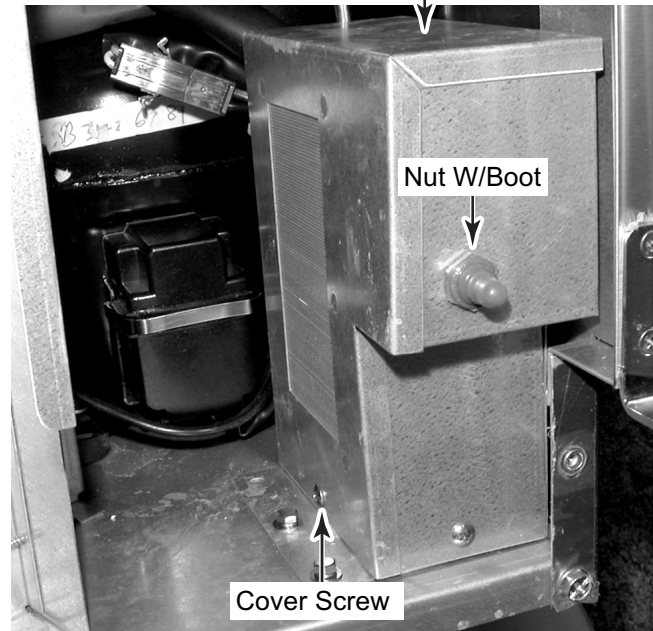
Front Panel &
Grille Assembly

3. Remove the screw from the electronic control board cover and remove the cover (see the photo at the top of the next column).

4. To remove the master switch:

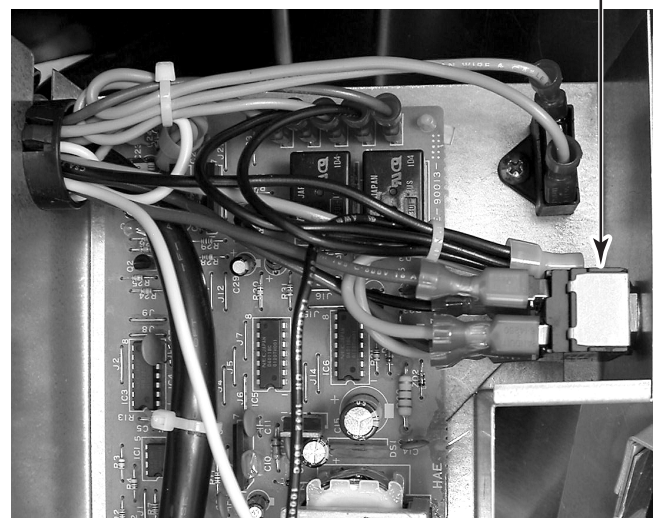
- a) Remove the hex nut w/boot from the master switch.

Electronic Control Board Cover



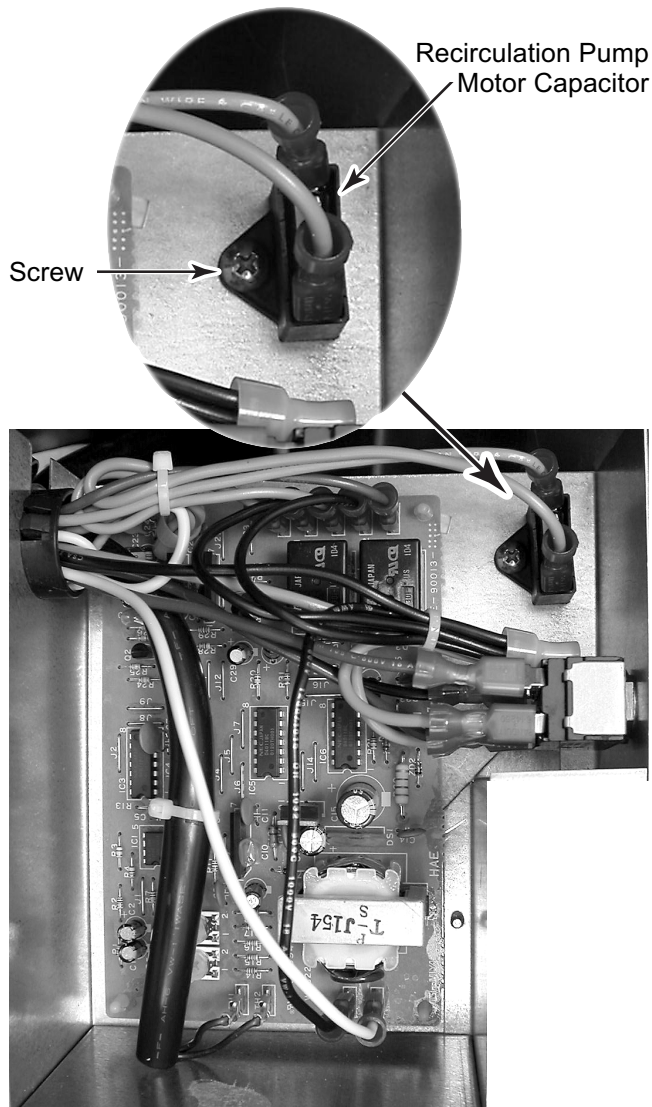
- b) Disconnect the five wires from the master switch terminals and remove the switch from the enclosure. NOTE: If necessary, see the switch wiring on page 5-3.

Master Switch



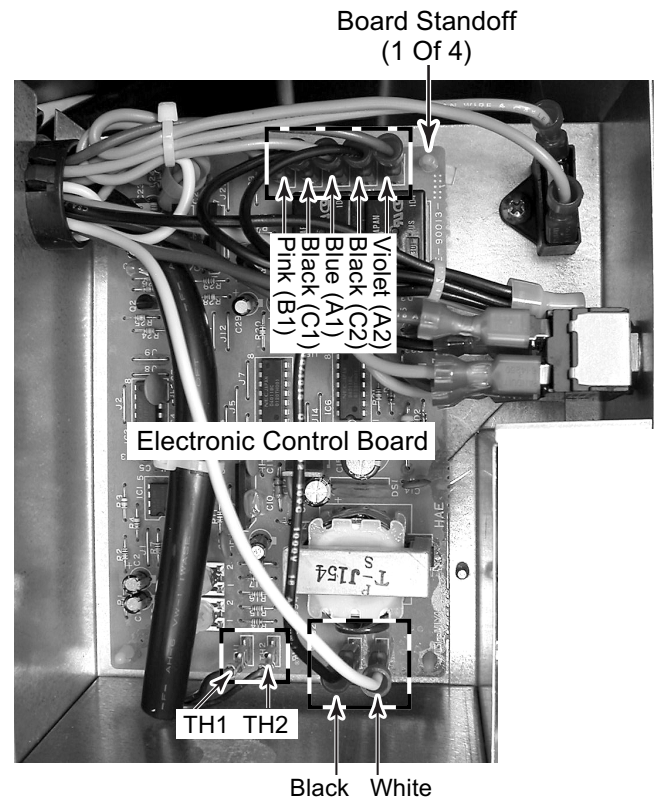
5. **To remove the recirculation pump motor capacitor:**

- a) Disconnect the two wire connectors from the capacitor terminals.
- b) Remove the mounting screw from the capacitor and remove the capacitor from the enclosure.



6. **To remove the electronic control board:**

- a) Disconnect the wire connectors from the electronic control board terminals.
- b) Squeeze the locking tab on each standoff while you pull the board off the standoffs.



REMOVING THE CONDENSER FAN MOTOR

! WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

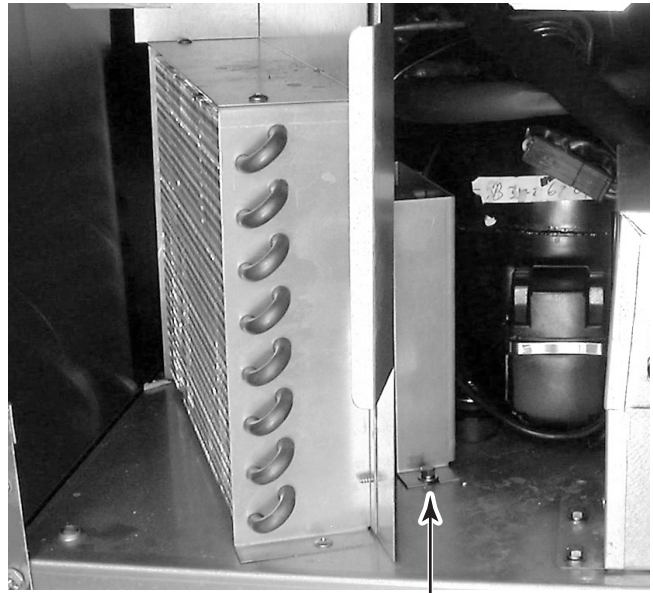
Failure to do so can result in death or electrical shock.

1. Unplug ice maker or disconnect power.
2. Remove the screws from the lower front panel and grille assembly and remove the assembly.



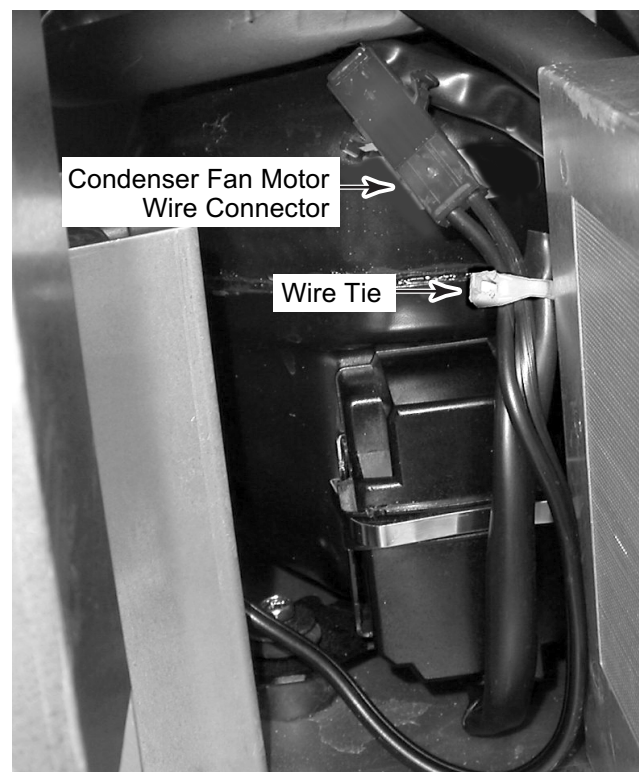
Front Panel & Grille Assembly

3. Remove the two 8mm hex head bolts from the condenser fan motor bracket.



Condenser Fan Motor
Bracket Bolts (1 of 2)

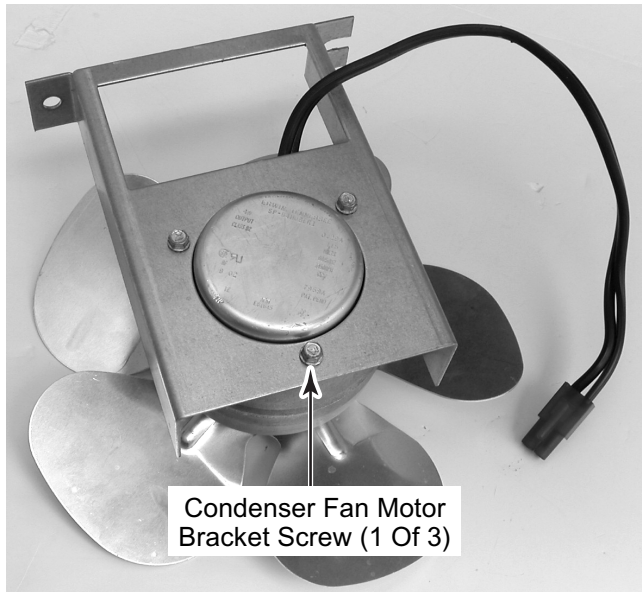
4. Cut the wire tie, disconnect the 2-wire condenser fan motor connector, and remove the fan motor.



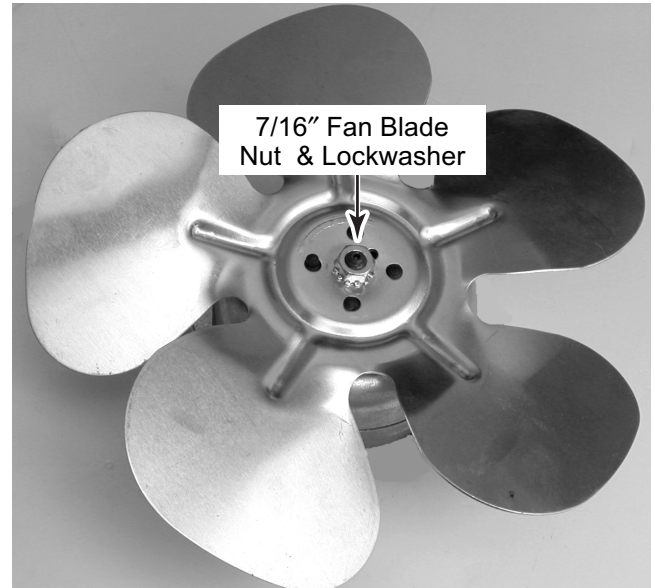
Condenser Fan Motor
Wire Connector

Wire Tie

5. Remove the three 1/4" hex-head screws from the condenser fan motor and remove the motor from the bracket.



6. Remove the 7/16" nut and lockwasher from the condenser fan motor shaft and remove the fan blade from the motor.



REMOVING THE CONDENSER

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

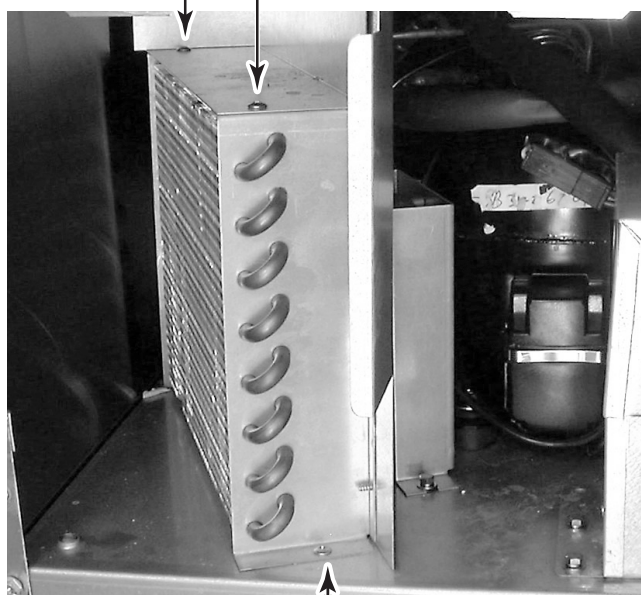
1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the screws from the lower front panel and grille assembly and remove the assembly.



Front Panel & Grille Assembly

9. Remove the two screws from the condenser flanges.
10. Remove the two screws from the top condenser bracket.

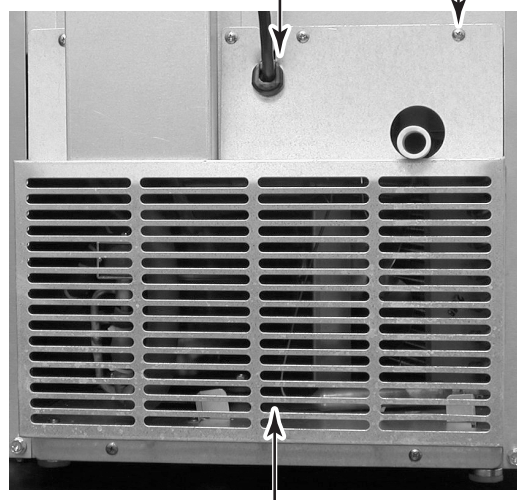
Top Condenser Bracket Screws



Condenser Flange Screws (1 of 2)

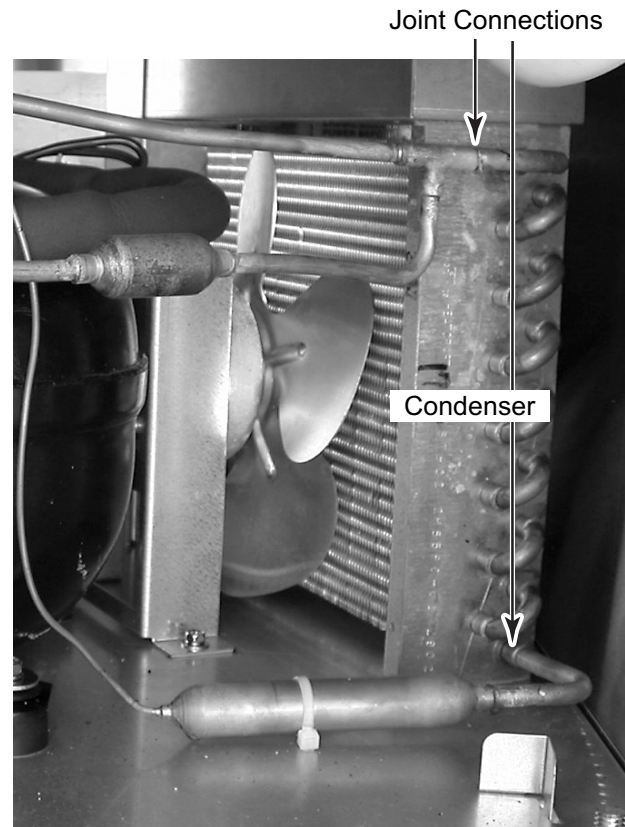
11. Remove the six screws from the unit compartment cover, remove the cover, and pull the power cord and strain relief out of the u-channel.

Power Cord & Strain Relief Screw (1 of 6)



Unit Compartment Cover

12. Access the sealed system and discharge the refrigerant into an approved recovery system.
13. Unbraid the two condenser joints from the sealed system and remove the condenser.



REMOVING THE COMPRESSOR

! WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

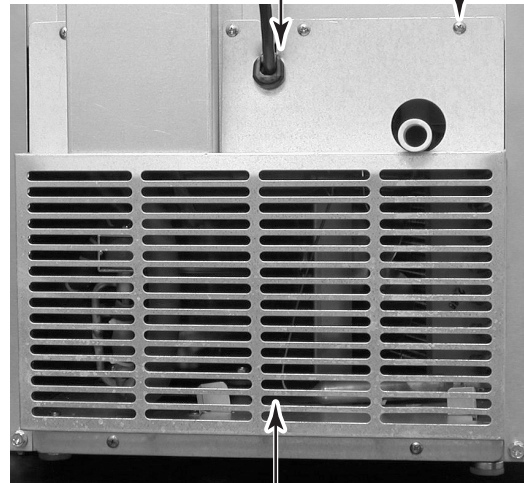
1. Unplug ice maker or disconnect power.
2. Turn off the water supply to the ice maker.
3. Move the ice maker to gain access to the rear of the unit.
4. Disconnect the drain outlet hose from the ice maker.
5. Disconnect the water inlet line from the ice maker.
6. Open the ice maker door.
7. Remove the ice from the storage bin.
8. Remove the screws from the lower front panel and grille assembly and remove the assembly.



Front Panel & Grille Assembly

9. Remove the six screws from the unit compartment cover, remove the cover, and pull the power cord and strain relief out of the u-channel.

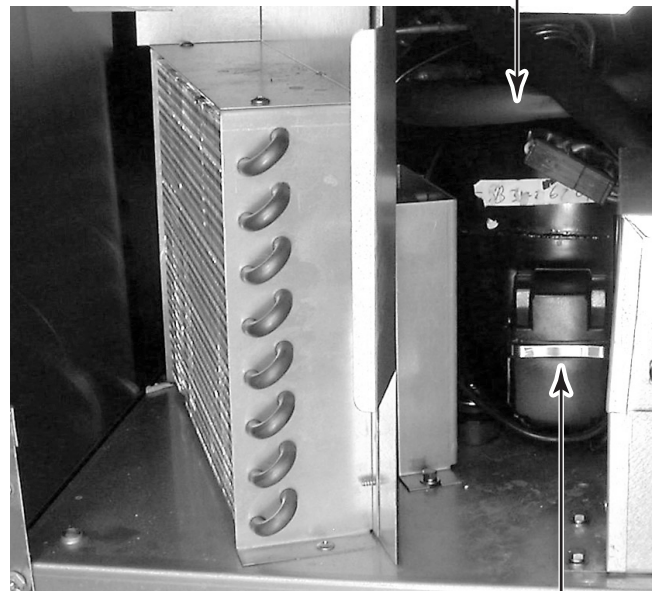
Power Cord & Strain Relief Screw (1 Of 6)



Unit Compartment Cover

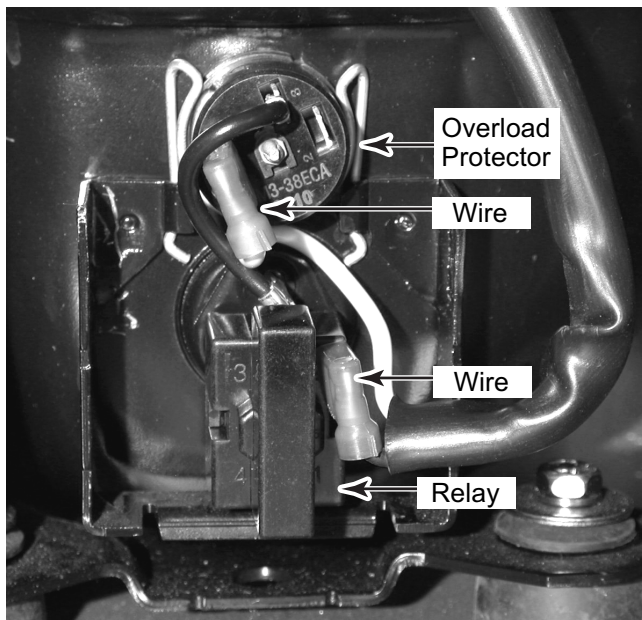
10. Push in on the front sides of the terminal cover clip and unhook it from the compressor slots, then remove the terminal cover.

Compressor

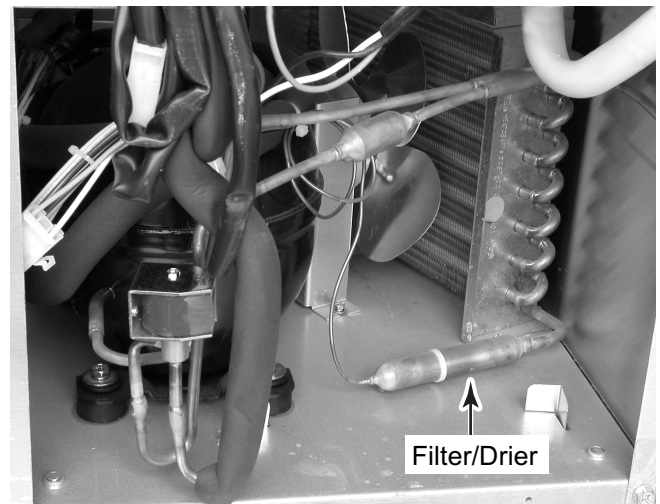
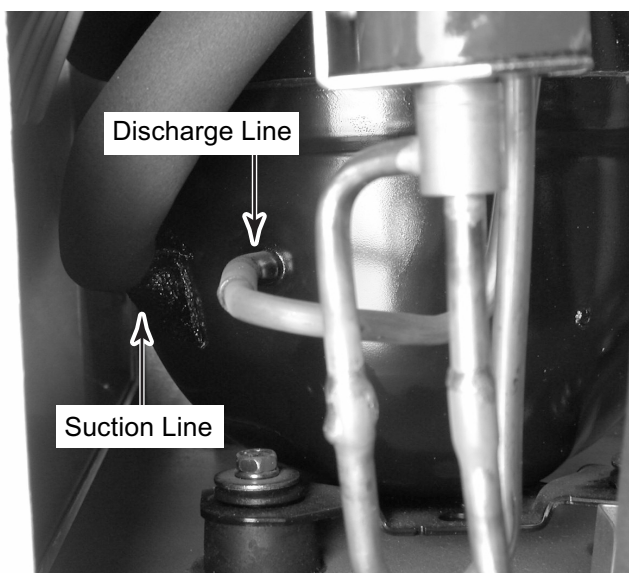


Terminal Cover Clip

11. Remove the wire connectors from the relay and the overload protector.
12. Pull the relay and the overload protector from the compressor pins.



13. Access the sealed system and discharge the refrigerant into an approved recovery system.
14. Cut the suction and discharge lines.
15. Cut the filter/drier (see the photo at the top of the next column) from the system (do not use a torch to remove the filter/drier).



16. Remove the four compressor mounting screws from the rubber isolators and remove the compressor from the unit.



Compressor Screws
(1 Of 4)

REMOVING THE DOOR, DOOR GASKET, AND TOP COVER

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

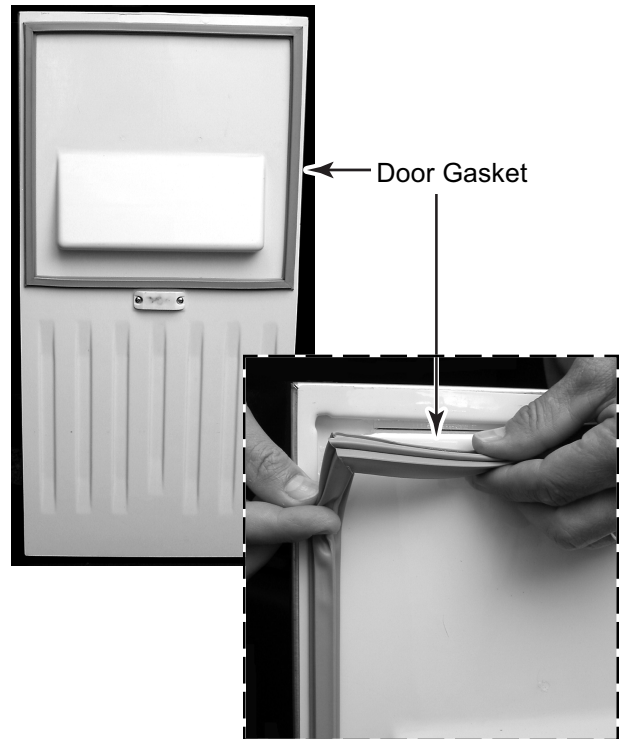
1. Unplug ice maker or disconnect power.
2. **To remove the ice maker door:**
 - a) Remove the 3/8" hex-head hinge pin from the bottom hinge.



Hinge Pin

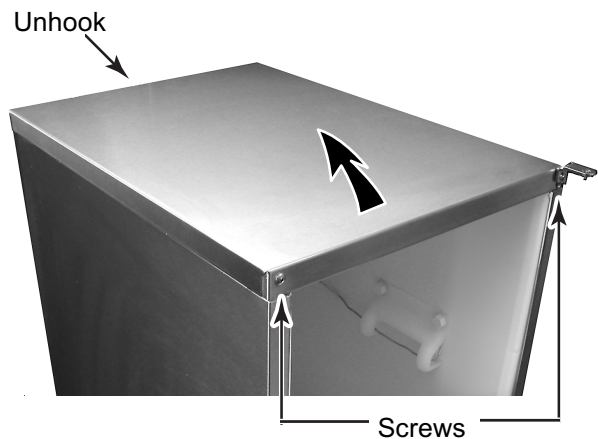
- b) Pull the bottom of the door out and remove the door from the cabinet.

3. **To remove the door gasket,** grasp the gasket, and pull it out of the door channel.



Door Gasket

4. **To remove the top cover:**
 - a) Remove the two screws from the front of the cover.
 - b) Lift the front of the cover, unhook the rear edge from the clip, and remove the cover.



Unhook

Screws

COMPONENT TESTING

Before testing any of the components, perform the following checks:

- Control failure can be the result of corrosion on connectors. Therefore, disconnecting and reconnecting wires will be necessary throughout test procedures.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms-per-volt DC, or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough.
- Resistance checks must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.



⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

WATER INLET VALVE SOLENOID



Refer to page 4-2 for the procedure for servicing the water inlet valve.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 100 scale.
3. Touch the ohmmeter test leads to the water inlet valve solenoid terminals. The meter should indicate between 900 and 1400 Ω .

WATER RECIRCULATION PUMP



Refer to page 4-4 for the procedure for servicing the water recirculation pump.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 100 scale.
3. Touch the ohmmeter test leads to the indicated water recirculation pump wire connector pins. The meter should indicate as follows:

Black & Red Wires = 290 to 325 Ω .

Black & Blue Wires = 210 to 230 Ω .



⚠ WARNING

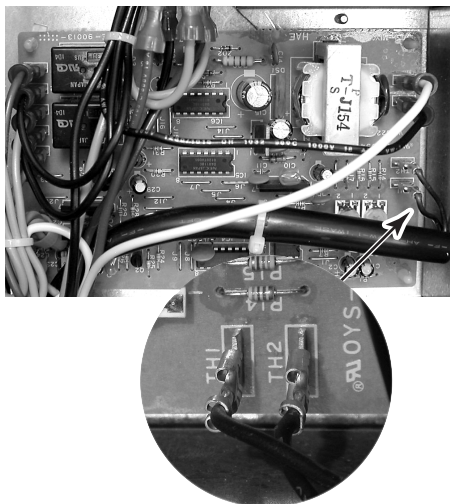
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

EVAPORATOR THERMISTOR



Refer to page 4-8 for the procedure for servicing the evaporator thermistor.

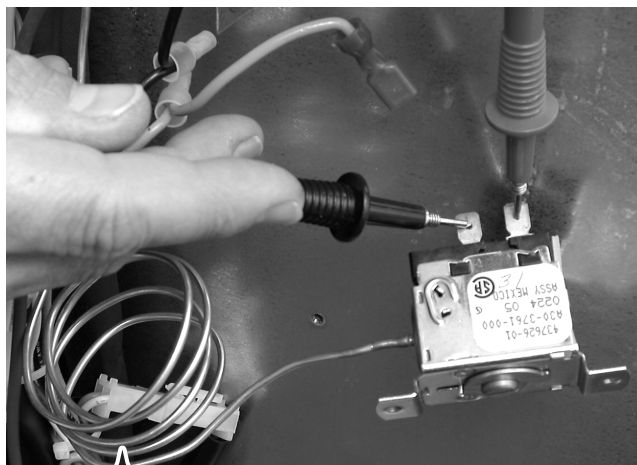
1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the appropriate scale.
3. Disconnect the wire from electronic control board terminal TH1 or TH2.

NOTE: If the evaporator thermistor fails, it will normally fail completely open or shorted. Use the chart below to check for the approximate resistance at a given temperature.

4. Touch the ohmmeter test leads to the two evaporator thermistor connectors. The meter should indicate as shown in the following chart.

Sensor Temperature °F (°C)	Resistance Ω
0 (-18)	12,467 - 14,933
10 (-12)	9,373 - 11,227
32 (0)	5,500 - 6,500
50 (10)	3,550 - 4,250
70 (21)	2,275 - 2,725
90 (32)	1,547 - 1,853

BIN THERMOSTAT



Sensor

Refer to page 4-10 for the procedure for servicing the bin thermostat.

NOTE: The bin thermostat is fragile and should be handled with care.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 1K scale.
3. Disconnect the wires from the bin thermostat terminals.
4. Touch the ohmmeter test leads to the two bin thermostat terminals. The meter should indicate continuity (0 Ω) at room temperature.



⚠ WARNING

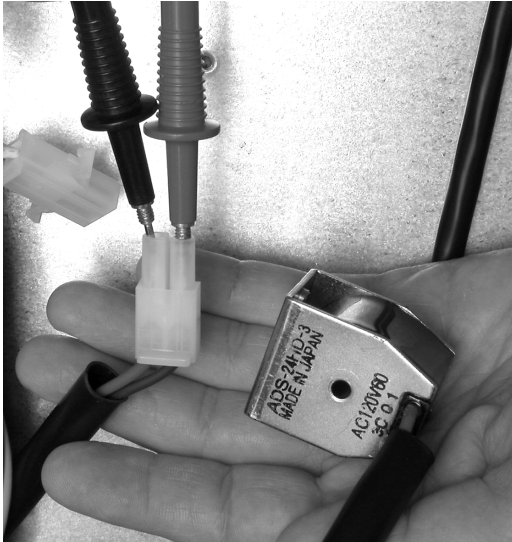
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

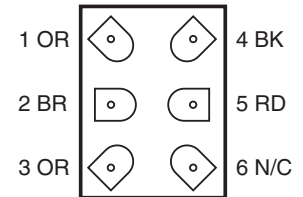
HOT GAS VALVE SOLENOID



Refer to page 4-12 for the procedure for servicing the hot gas valve solenoid.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 1 scale.
3. Touch the ohmmeter test leads to the pins of the hot gas valve solenoid 2-wire connector. The meter should indicate between 240 and 300 Ω .

MASTER SWITCH



Refer to page 4-14 for the procedure for servicing the master switch.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 1 scale.
3. Disconnect the wires from the terminals of the master switch.
4. Touch the ohmmeter test leads to the following master switch terminals (the terminal numbers are on the side of the case). When the switch is in the indicated position, as shown on the cover, the meter should read:

Centered Position: All connections are an open circuit (infinite):

Ice Position:

Pins 1 and 2 = closed circuit (0 Ω).

Pins 4 and 5 = closed circuit (0 Ω).

Wash Position:

Pins 2 and 3 = closed circuit (0 Ω).



⚠ WARNING

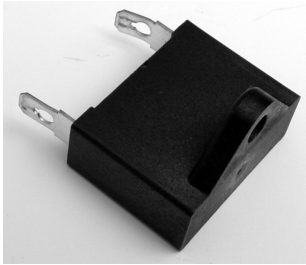
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

RECIRCULATION PUMP MOTOR CAPACITOR



Refer to page 4-14 for the procedure for servicing the recirculation pump motor capacitor.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 10K scale.
3. Touch the ohmmeter test leads to the capacitor terminals. The meter should deflect momentarily, and then move to infinity. To repeat the test, reverse the ohmmeter test leads. The result should be the same if the capacitor is good.

CONDENSER FAN MOTOR



Refer to page 4-16 for the procedure for servicing the condenser fan motor.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 1 scale.
3. Touch the ohmmeter test leads to the pins of the condenser fan motor 2-wire connector. The meter should indicate between 45 and 65 Ω .



⚠ WARNING

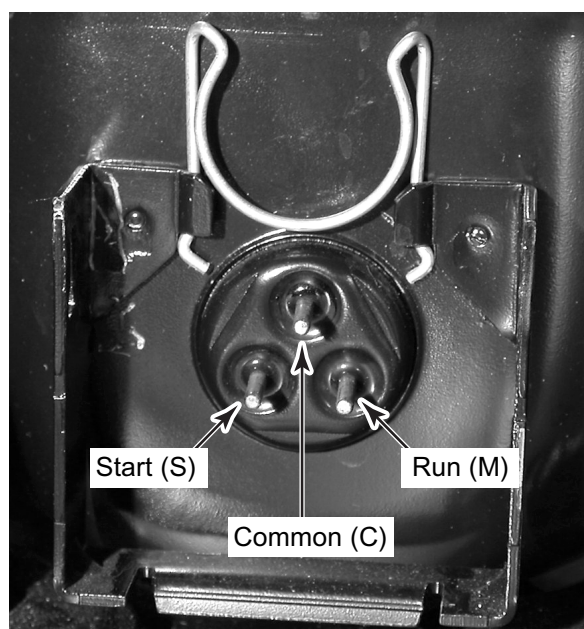
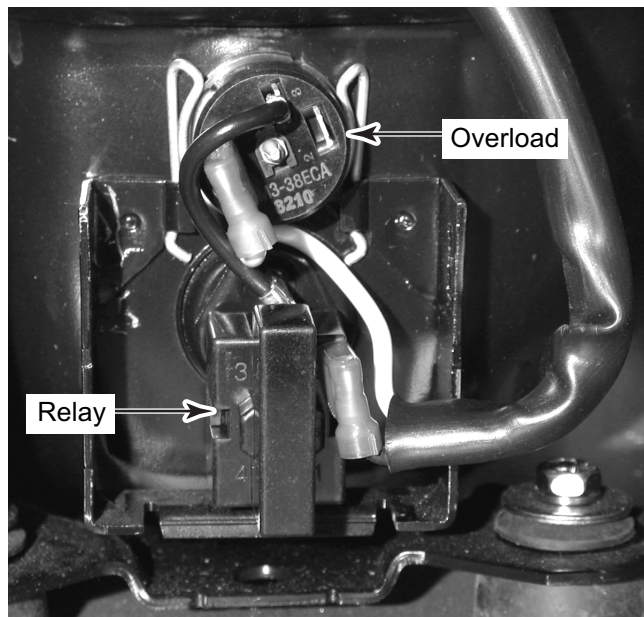
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

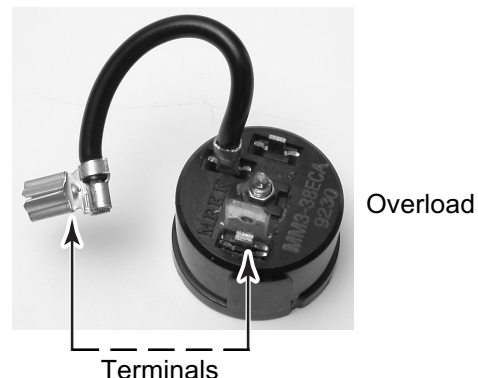
Failure to do so can result in death or electrical shock.

COMPRESSOR, OVERLOAD, & RELAY

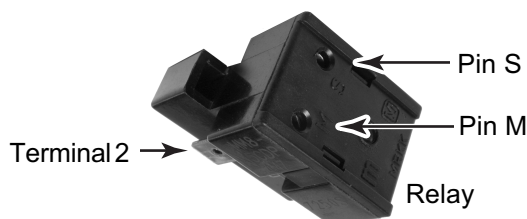


Refer to page 4-20 for the procedure for servicing the compressor, overload, and relay.

1. Unplug ice maker or disconnect power.
2. Set the ohmmeter to the R x 1 scale.
3. **To test the compressor windings:**
 - a) Touch one of the ohmmeter test leads to the Common (C) pin, and the other lead to the Start (S) pin. The meter should indicate between 8 and 11 Ω .
 - b) Touch one of the ohmmeter test leads to the Common (C) pin, and the other lead to the Run (M) pin. The meter should indicate between 2 and 3 Ω .
4. **To test the overload**, touch the ohmmeter test leads to the terminals. The meter should indicate a closed circuit (0 Ω).



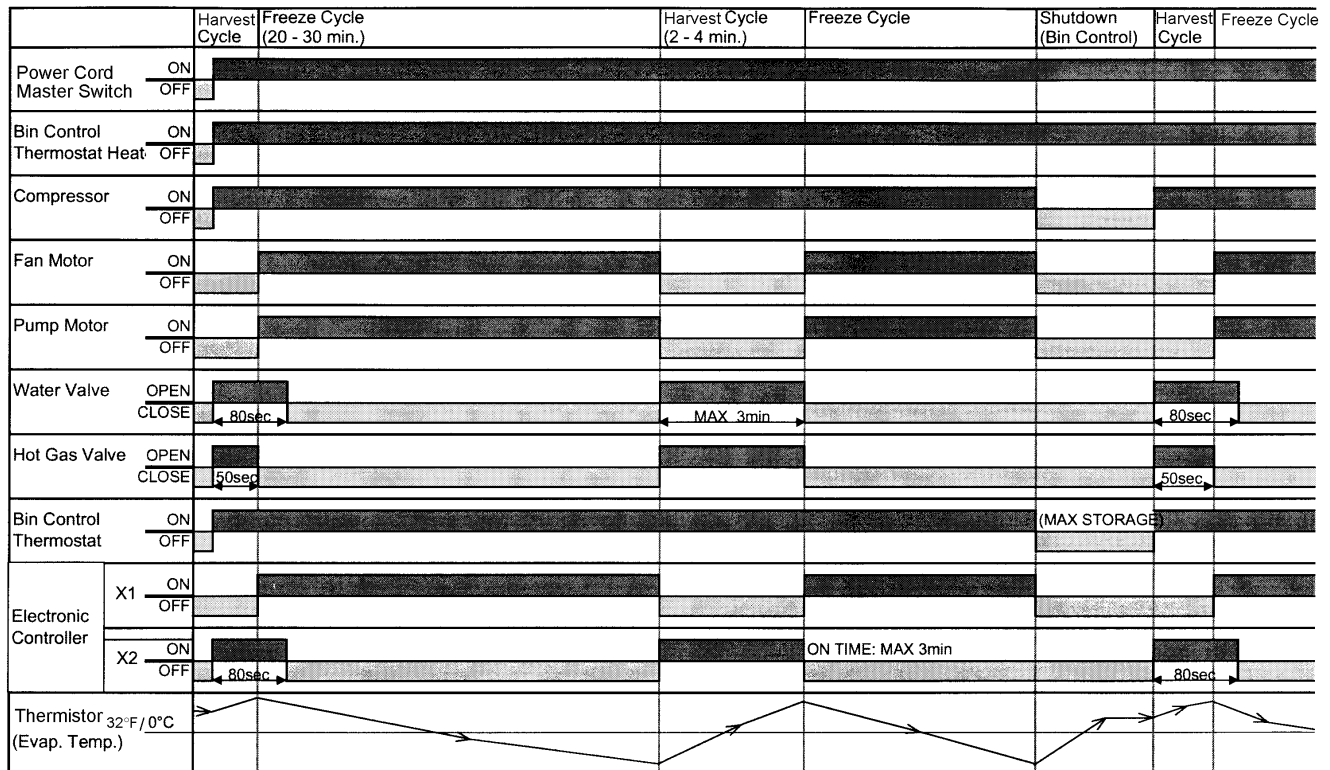
5. **To test the relay**, touch the ohmmeter test leads to the following test points:
Terminal 2 to pin M = 0 Ω .
Terminal 2 to pin S = 4.3 Ω



— NOTES —

DIAGNOSIS & TROUBLESHOOTING

TIMING CHART



TROUBLESHOOTING CHART

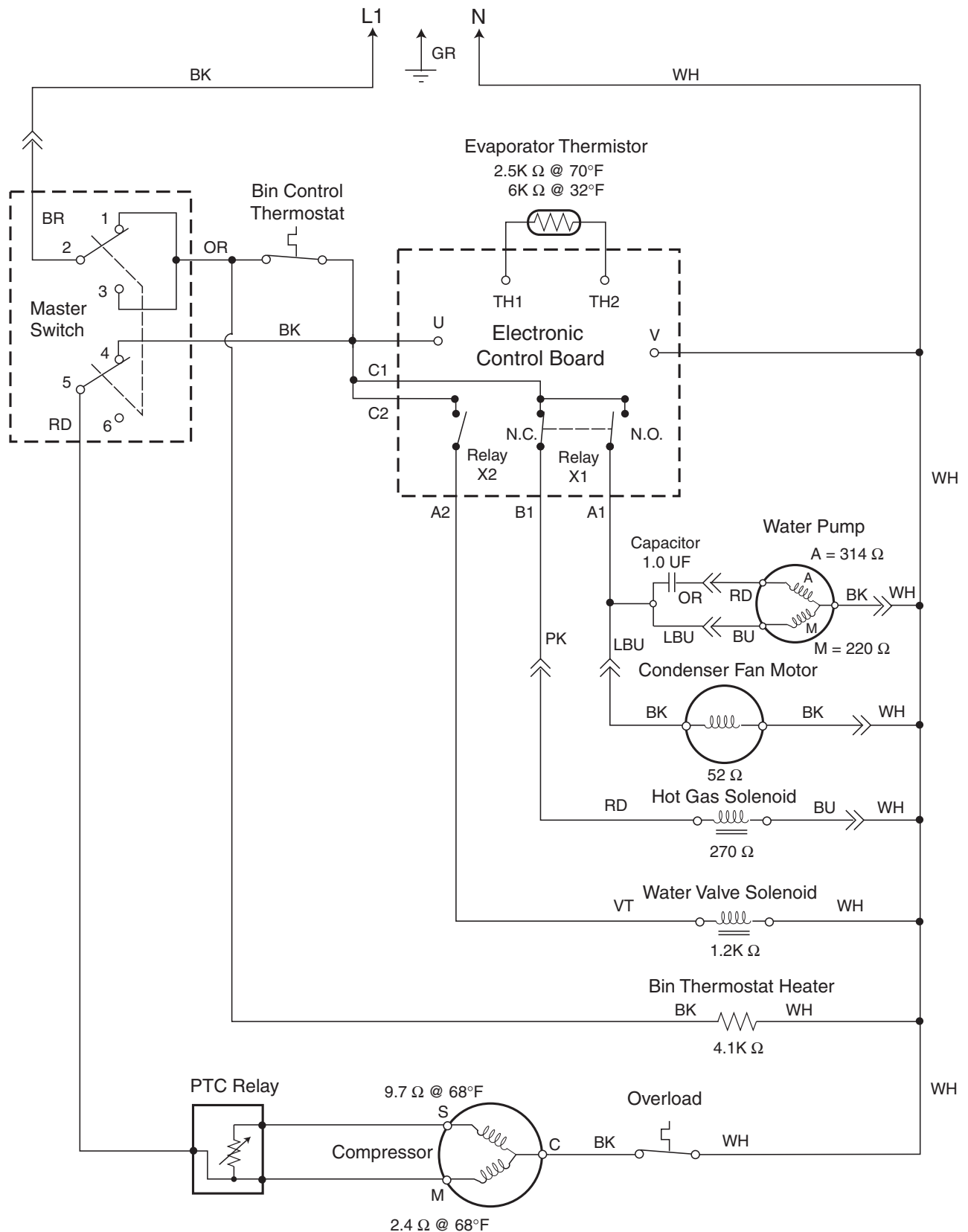
PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
[1] The icemaker will not start	a) Power Cord	1. Loose connections	1. Tighten
		2. Open circuit-damaged	2. Repair or replace
	b) Master Switch	1. "OFF" position	1. Move to "ICE" position
		2. Loose connections	2. Tighten
		3. Open contacts	3. Check for continuity and replace
	c) Supply Voltage	1. Too low	1. Contact a qualified electrician to correct problem
		2. Power supply shared with other equipment	2. Contact a qualified electrician to correct problem
	d) Bin Control Thermostat	1. Ambient temperature too cool	1. Do not operate below 45°F / 7°C
		2. Open contacts	2. Check for continuity and replace (see page 5-2)
	e) Bin Thermostat Heater	1. Open circuit Low ambient temperature	1. Check for continuity and replace
[2] Compressor will not start	a) Compressor	1. Wiring to Compressor	1. Check for loose connection or open, and replace (see page 5-5)
		2. Coil winding opened	2. Check for continuity between terminals and replace (see page 5-5)
	b) Overload	1. Open contacts	1. Check for continuity and replace (see page 5-5)
	c) Relay	1. Open contacts	1. Check for continuity and replace (see page 5-5)
[3] Fan Motor or Pump Motor will not run	a) Wiring	1. Loose connections or broken wire	1. Repair or replace
	b) Fan Motor, Pump Motor	1. Coil winding opened	1. Replace
	c) Fan Blade	1. Fan blade bound	1. Check and repair
	d) Pump Motor Impeller	1. Defective or bound impeller	1. Replace or clean
	e) Pump Motor Capacitor	1. Defective	1. Replace
	f) Electronic Controller	1. Defective	1. Replace
[4] Harvest cycle time is too long	a) Thermistor	1. Out of position or loose attachment	1. Refer to "Removing The Evaporator Thermistor" (see page 4-8)
		2. Loose connections	2. Repair
	b) Electronic Controller	1. Defective	1. Replace
[5] Hot Gas Valve will not open	a) Wiring	1. Loose connectors or broken wire	1. Repair or replace
	b) Hot Gas Valve	1. Coil winding opened	1. Replace

PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
[6] Will not fill with water	a) Water Supply	1. Shut-off Valve or Water Tap closed	1. Open
	b) Water Valve	1. Filter clogged 2. Coil winding opened	1. Repair or replace water valve 2. Replace
[7] Water continues to be supplied in freeze cycle	a) Water Valve	1. Diaphragm does not close	1. Check for water filling with icemaker off
	b) Electronic Controller	1. Defective	1. Replace
[8] No water comes from Water Tank	a) Wiring to Pump Motor	1. Loose connectors or broken wire	1. Repair or replace
	b) Pump Motor	1. Coil winding opened	1. Replace
	c) Pump Motor Impeller	1. Defective or bound impeller	1. Replace or clean
	d) Pump Motor Capacitor	1. Defective	1. Replace
	e) Water Recirculation System	1. Water leaks	1. Check connections for water leaks and repair
		2. Clogged	2. Clean system (see page 8-1)
	f) Water Supply Line	1. Water pressure too low and water level in Water Tank too low	1. Check for recommended pressure
[9] All components run but no ice is produced	a) Water Recirculation System	1. Water leaks	1. Check connections for water leaks and repair
		2. Clogged	2. Clean system (see page 8-1)
	b) Nozzle	1. Clogged	1. Clean system (see page 8-1)
		2. Misaligned Nozzle and Water Tank	2. Place in correct position
	c) Refrigerant Circuit	1. Refrigerant leak or restriction	1. Check with a leak detector. Repair & recharge. Replace refrigerant drier.
		2. Undercharged	2. Check for leaks and recharge
		3. Air or moisture trapped	3. Replace drier, and recharge
	d) Compressor	1. Defective valve	1. Replace Compressor
[10] Large-hole cubes	e) Hot Gas Valve	1. Continues to open in freeze cycle	1. Check and replace
	f) Water Valve	1. Stuck open	1. Replace
	a) Ambient temperature	1. Low	1. No problem. Low ambient temperature results in ice cubes with slightly larger diameter holes.
	b) Electronic Controller	1. Built-in timer does not count 10 min	1. Replace

PROBLEM	CHECK	POSSIBLE CAUSE	REMEDY
[11] Cloudy cubes	a) Water Quality	1. High hardness or contains impurities	1. Install a water filter or scale treatment
	b) Nozzle	1. Clogged	1. Clean system (see page 8-1)
		2. Misaligned Nozzle and Water Tank	2. Place in correct position
	c) Water Recirculation System	1. Scaled up	1. Clean or remove scale
		2. Water leaks	2. Check connections for water leaks and repair
[12] Freeze cycle time is too long	a) Ambient temperature	1. Too high (freeze cycle will be extremely long at more than 40°C / 104°F)	1. Check for recommended ambient temperature
	b) Condenser inlet / outlet	1. Blocked. Bad air circulation greatly reduces ice production capacity	1. Clean condenser
	c) Thermistor	1. Out of position or loose attachment	1. Refer to "Removing The Evaporator Thermistor" (see page 4-8)
		2. Leads short-circuit	2. Check continuity (see page 5-2)
	d) Refrigerant Circuit	1. Refrigerant leak or restriction	1. Check with a leak detector. Repair & recharge. Replace the refrigerant drier.
		2. Undercharged	2. Check for leaks and recharge
	e) Fan Motor	1. See [3]	
[13] Icemaker will not stop when Bin is filled with ice	f) Condenser	1. Blocked	1. Clean
	a) Bin Control Thermostat	1. Fused contacts	1. Replace
[14] Abnormal Ice	a) Nozzle	1. Clogged	1. Clean system (see page 8-1)
		2. Misaligned Nozzle and Water Tank	2. Place in correct position
	b) Pump Motor	1. Bearing worn	1. Replace
	c) Pump Motor Impeller	1. Defective or bound impeller	1. Replace or clean
	d) Compressor	1. Inefficient.	1. Replace
	e) Refrigerant Circuit	1. Leak or restriction	1. Repair
[15] Some cells on the evaporator form no ice	a) Nozzle	1. Clogged	1. Clean system (see page 8-1)
		2. Misaligned Nozzle and Water Tank	2. Place in correct position

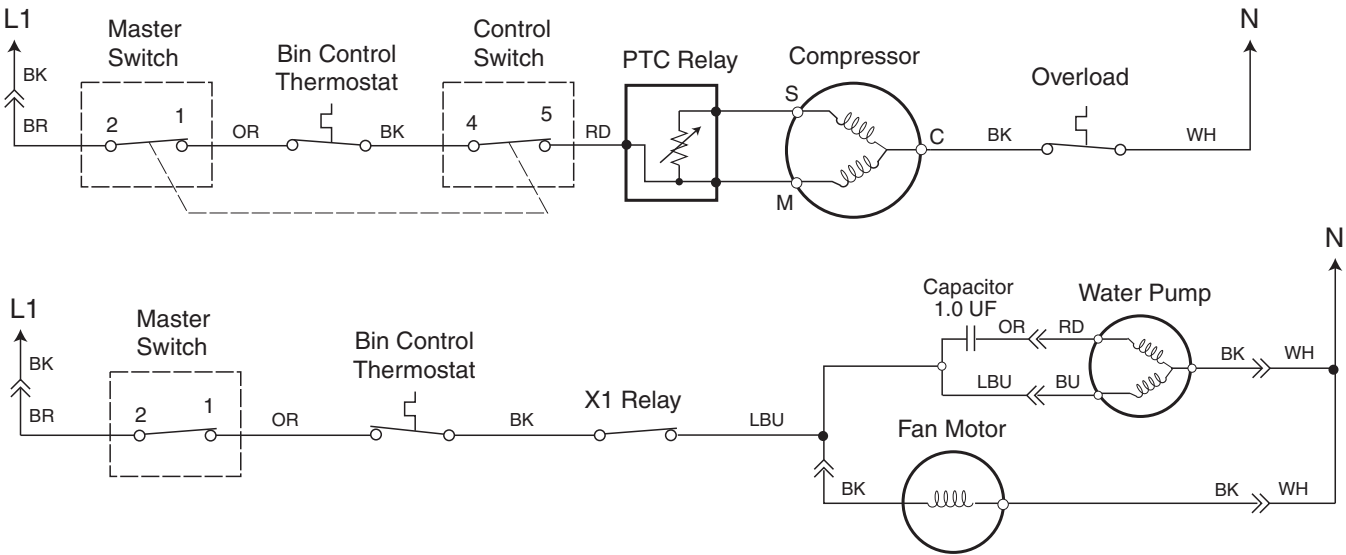
WIRING DIAGRAM & STRIP CIRCUITS

WIRING DIAGRAM

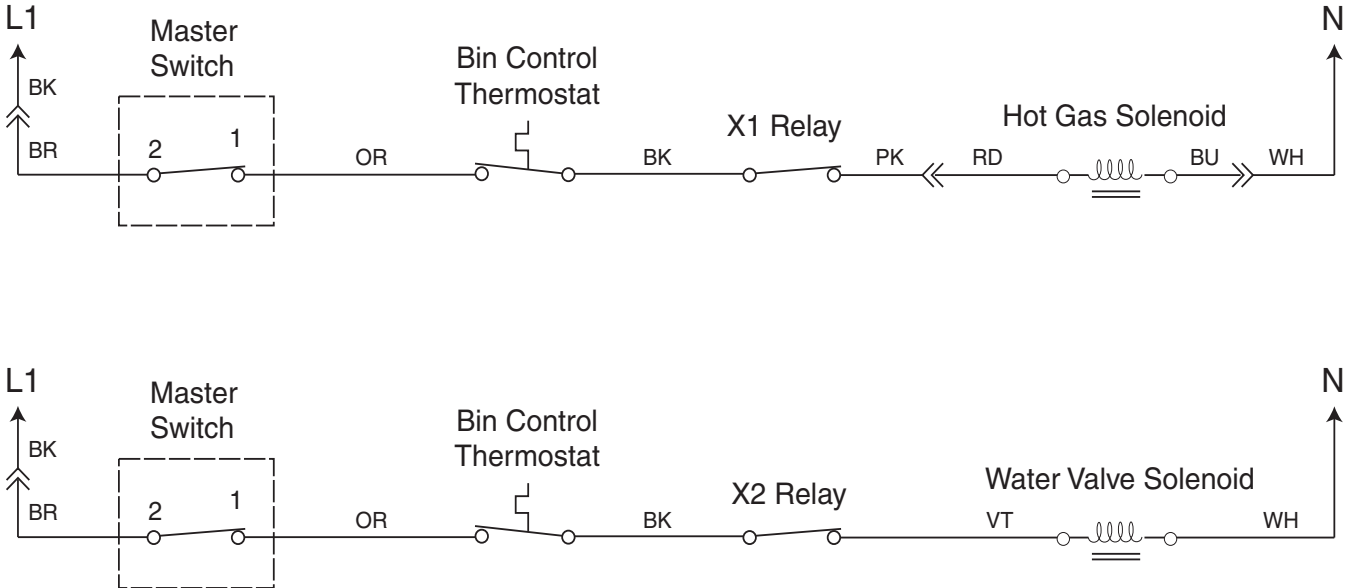


STRIP CIRCUITS

ICE MAKING MODE



HARVEST MODE



TECH TIPS

CLEANING THE ICE MAKER

! WARNING



Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

NOTES:

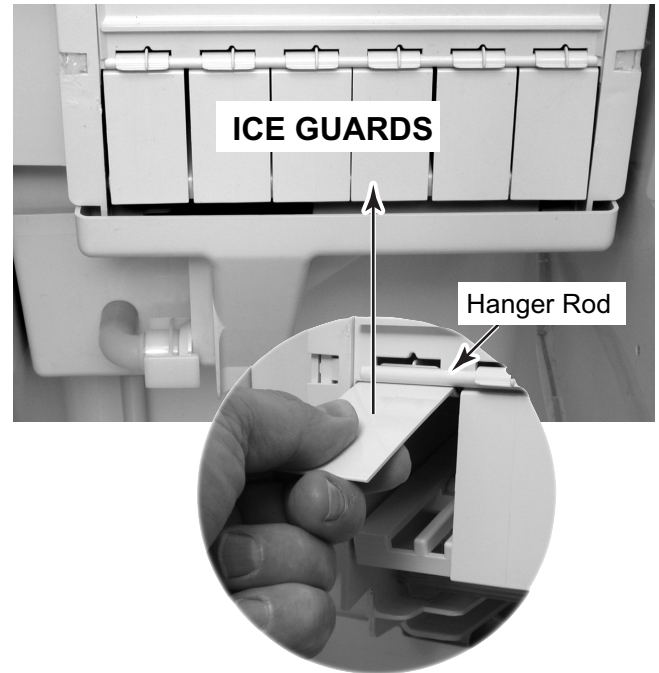
- KitchenAid recommends cleaning the ice maker at least once a year. More frequent cleaning may be required in areas that contain heavy amounts of minerals in the water supply.
- To prevent damage to the ice maker, do not use ammonia or abrasive-type cleaners. Use only LIME-A-WAY® Cleaner (see step 9 on page 8-2).
- Always wear rubber gloves when handling cleaning solutions.

ROUTINE CLEANING

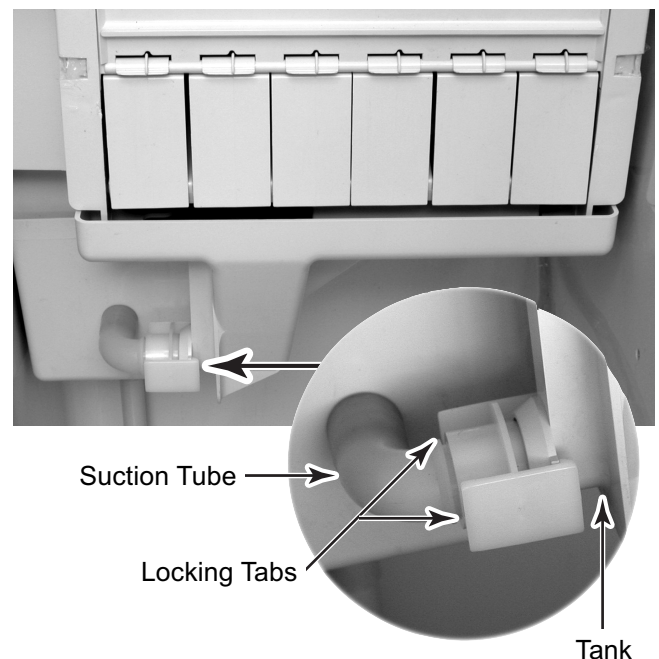
1. Set the master switch to OFF and turn off the water supply to the ice maker.
2. Unplug the ice maker or disconnect power.
3. Open the ice maker door.
4. Remove the ice from the storage bin.
5. Remove the ice scoop and its holder.

® Economics Laboratory, Inc.

6. Push in on each of the ice guards and unhook them from the hanger rod.

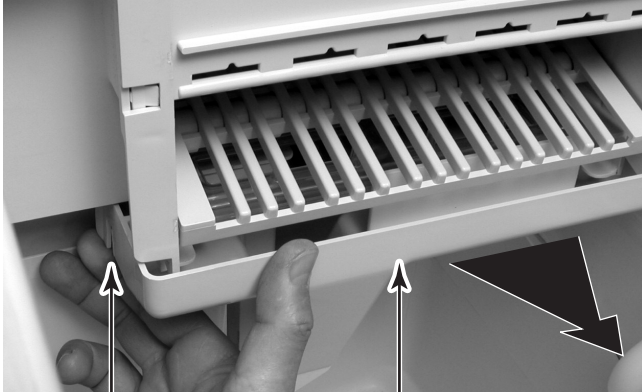


7. Squeeze the locking tabs on the suction tube to release them and disconnect the tube from the water tank. Drain the water from the tank.



Continued on the next page.

8. Pull out on the left and right locking tabs, and pull the reservoir out of the unit. Empty the reservoir, and then reinstall it.
9. Dilute approximately 5 oz. (148 ml) of LIME-A-WAY® cleaner with 1 gallon (3.8 lit.) of water.
10. Slowly pour the cleaning solution into the reservoir.



Pull Out

Reservoir

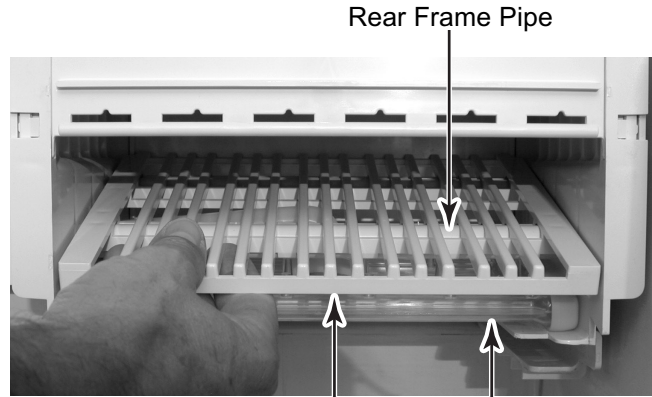
11. Position the master switch to the WASH position.
12. After circulating the cleaning solution for 30 minutes, position the master switch to OFF.
13. Remove the reservoir and drain it, then reinstall it in the unit.
14. Turn on the water to the ice maker.
15. Position the master switch to the WASH position and allow the water to circulate for 5 minutes.
16. Position the master switch to OFF and immediately back to WASH and allow the system to rinse.
17. Repeat steps 15 and 16 three times to completely rinse the system.



CLEANING THE SPRAY ASSEMBLY

NOTE: If the ice maker spray assembly requires further cleaning, perform the following steps.

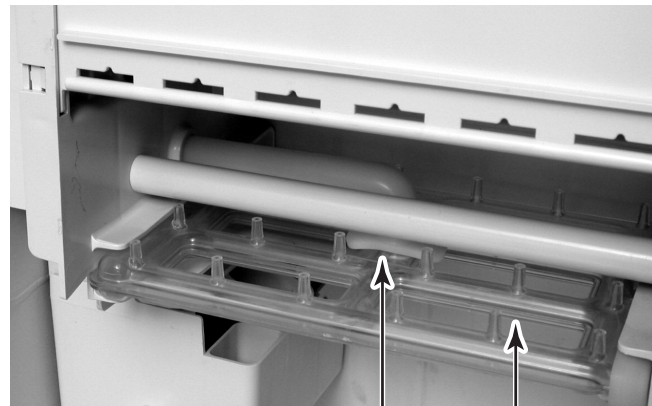
1. Lift the ice chute off the front and rear frame pipes and remove the chute from the unit.



Ice Chute

Front Frame Pipe

2. Pull the end of the discharge tube off the spray assembly nozzle.



Discharge Tube

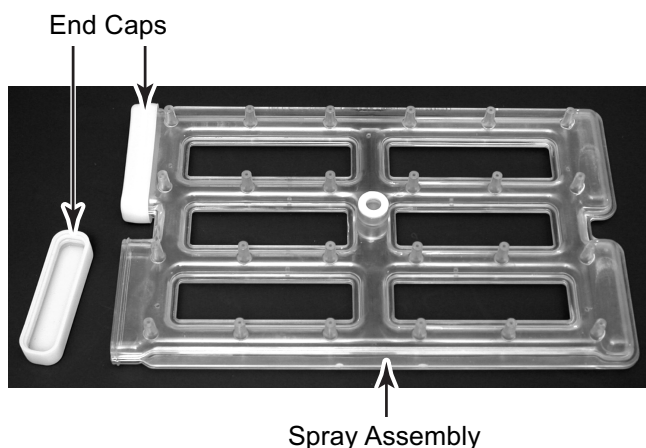
Spray Assembly

3. Pull the spray assembly out of the unit.



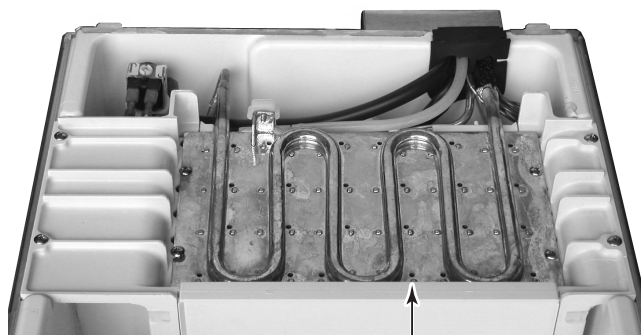
Spray Assembly

4. Remove the two end caps from the spray assembly.



5. Dilute approximately 5 oz. (148 ml) of LIME-A-WAY® cleaner with 1 gallon (3.8 lit.) of water.
6. Clean the caps and spray assembly. If the spray nozzles are clogged, use a wire to remove the clog, or use a suitable wire brush.
7. Thoroughly rinse the spray assembly with clean water.
8. Reinstall the two caps on the spray nozzle assembly.
9. Reassemble the ice making components.

NOTE: During normal operation, if ice is sticking to the evaporator plate, check the “weep” holes in the top of the plate. The holes must be open to allow ice to drop.



— NOTES —

— NOTES —

— NOTES —

PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION SOURCES

IN THE UNITED STATES:

FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL:

FOR WHIRLPOOL PRODUCTS: 1-800-253-1301

FOR KITCHENAID PRODUCTS: 1-800-422-1230

FOR ROPER PRODUCTS: 1-800-447-6737

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER'S HOME CALL:

THE TECHNICAL ASSISTANCE LINE: 1-800-253-2870

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FOR LITERATURE ORDERS:

PHONE: 1-800-851-4605

FOR TECHNICAL INFORMATION AND SERVICE POINTERS:

www.servicematters.com

IN CANADA:

FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL:

1-800-461-5681

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