

Hoshizaki America, Inc.

Self-Contained Cubelet

Model
C-100BAE-AD



“A Superior Degree
of Reliability”

www.hoshizaki.com

SERVICE MANUAL



Number: 73158
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IMPORTANT

Only qualified service technicians should install, service, or maintain this icemaker. No service or maintenance should be undertaken until the technician has thoroughly read this Service Manual. Failure to service and maintain the equipment in accordance with this manual may adversely affect safety, performance, and warranty coverage.

HOSHIZAKI provides this manual primarily to assist qualified service technicians in the service and maintenance of the icemaker.

Should the reader have any questions or concerns which have not been satisfactorily addressed, please call, write, or send an e-mail message to the HOSHIZAKI Technical Support Department for assistance.

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NOTE: To expedite assistance, all correspondence/communication **MUST** include the following information:

- Model Number _____
- Serial Number _____
- Complete and detailed explanation of the problem.

Important Safety Information

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, or damage to the unit.

⚠ WARNING Indicates a hazardous situation which could result in death or serious injury.

CAUTION Indicates a situation which could result in damage to the unit.

IMPORTANT Indicates important information about the use and care of the unit.

⚠ WARNING

This icemaker should be destined only to the use for which it has been expressly conceived. Any other use should be considered improper and therefore dangerous. The manufacturer cannot be held responsible for eventual damage caused by improper, incorrect, and unreasonable use.

To reduce the risk of death, electric shock, serious injury, or fire, follow basic precautions including the following:

- This unit requires an independent power supply. See the nameplate for proper voltage and breaker/fuse size. Failure to use a proper breaker or fuse can result in a tripped breaker, blown fuses, or damage to existing wiring. This could lead to heat generation or fire.
- **THIS APPLIANCE MUST BE GROUNDED:** This unit is equipped with a 3-prong grounding plug to reduce the risk of potential shock hazards. It must be plugged into a properly grounded wall outlet. If the outlet is a 2-prong outlet, it is your personal responsibility to have a qualified electrician replace it with a properly grounded 3-prong outlet. Do not remove the ground prong from the power cord and do not use an adapter plug.
- Do not use an extension cord.
- Make sure the power switch is off before plugging in or unplugging the unit to reduce the risk of electric shock.
- Do not damage the power cord. It should not be altered, jerked, bundled, weighed down, pinched, or tangled. Such actions could result in electric shock or fire. To unplug the unit, be sure to pull the plug, not the cord, and do not jerk the cord.
- To reduce the risk of electric shock, do not touch the plug or power switch with damp hands.
- Do not place fingers or any other objects into the ice discharge opening.
- This unit should be disassembled or repaired only by qualified service personnel to reduce the risk of electric shock, injury, or fire.
- Do not make any alterations to the unit. Alterations could result in electric shock, injury, fire, or damage to the unit.

IMPORTANT

This manual should be read carefully before the icemaker is serviced or maintenance operations are performed. Only qualified service technicians should install, service, and maintain the icemaker. Read the warnings contained in this booklet carefully as they give important information regarding safety. Please retain this booklet for any further reference that may be necessary.

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I. Specifications

A. Icemaker

1. C-100BAE-AD

AC SUPPLY VOLTAGE	115/60/1		
AMPERAGE	4.0 A		
MINIMUM CIRCUIT AMPACITY	15 A		
MAXIMUM FUSE SIZE	15 A		
APPROXIMATE ICE PRODUCTION	Ambient	WATER TEMP. (°F)	
PER 24 HR.	Temp.(°F)	50	70
lbs./day (kg/day)	70	*92 (42)	89 (40)
Reference without *marks	80	81 (37)	71 (32)
	90	66 (30)	*64 (29)
	100	55 (25)	54 (24)
		90	84 (38)
			66 (30)
			57 (26)
			*49 (22)
SHAPE OF ICE	Cubelet		
ICE QUALITY	Approx. 90%		
APPROXIMATE STORAGE CAPACITY	29 lbs. (13 kg) [Bin Control Setting 22 lbs. (10.0 kg)]		
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F	
ELECTRIC W (kWH/100 lbs.)	314 (11.8)	307 (8.0)	
WATER gal./24HR (gal./100 lbs.)	7.6 (12)	11.0 (12)	
EXTERIOR DIMENSIONS (WxDxH)	14.9" x 22.6" x 31.5"	(378 x 575 x 800mm)	
EXTERIOR FINISH	Stainless steel, Galvanized Steel (Rear)		
WEIGHT	Net 104 lbs. (47 kg), Shipping 115 lbs. (52 kg) without pallet		
CONNECTIONS - ELECTRIC	Cord Connection		
- WATER SUPPLY	Inlet 1/2" FPT		
- DRAIN	Outlet 1/2" FPT		
ICE MAKING SYSTEM	Auger type		
HARVESTING SYSTEM	Direct Drive Auger (80W Gear Motor)		
ICE MAKING WATER CONTROL	Mechanical float valve		
COOLING WATER CONTROL	N/A		
BIN CONTROL SYSTEM	Thermostat		
COMPRESSOR	Hermetic, Model QA51K13GAU6		
CONDENSER	Air-cooled, Fin and tube type		
EVAPORATOR	Copper Tube on Cylinder		
REFRIGERANT CONTROL	Capillary Tube		
REFRIGERANT CHARGE	R134a 3.5 oz. (100 g)		
DESIGN PRESSURE	High 240 PSIG, Low 120 PSIG		
P.C. BOARD CIRCUIT PROTECTION	N/A		
COMPRESSOR PROTECTION	Auto-reset Overload Protector		
GEAR MOTOR PROTECTION	Manual reset Circuit Breaker		
LOW WATER PROTECTION	Suction Temperature Safety		
ACCESSORIES - SUPPLIED	Ice Scoop; 3/8" male flare Water Inlet fitting		
- REQUIRED	N/A		
OPERATING CONDITIONS	VOLTAGE RANGE	104 - 127 V	
	AMBIENT TEMP.	45 - 100° F	
	WATER SUPPLY TEMP.	45 - 95° F	
	WATER SUPPLY PRESSURE	7 - 113 PSIG	
AGENCY	UL OUTDOOR APPROVED, cUL ETL		

Note: We reserve the right to make changes in specifications and design without prior notice.

II. General Information

A. Construction

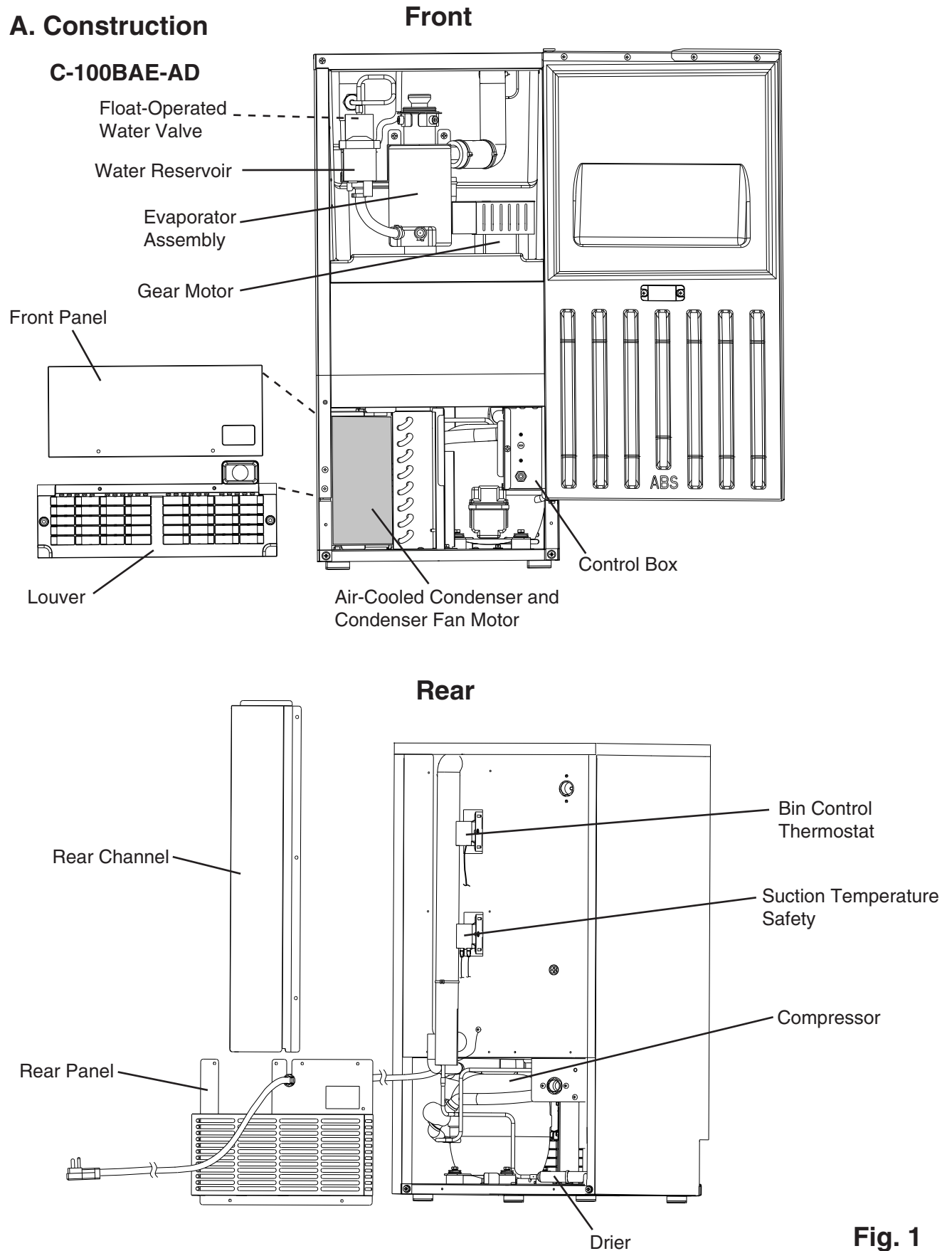


Fig. 1

B. Ice Making Unit

1. C-100BAE-AD

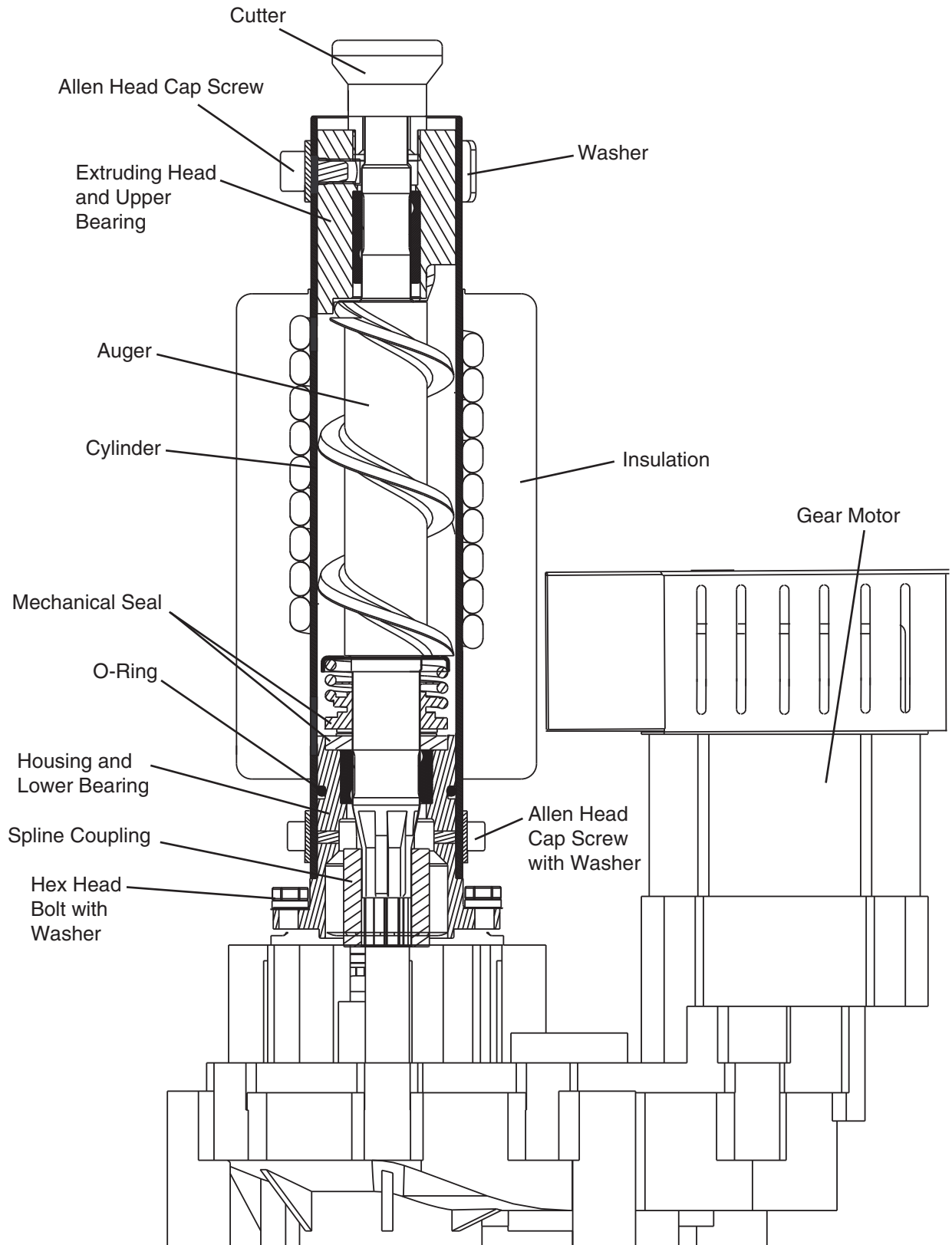


Fig. 2

C. Sequence of Operation

This icemaker utilizes a thermostatic bin control to switch the gear motor, fan motor, and compressor on and off as needed. It utilizes a float-operated water valve in the water reservoir. After the power switch is placed in the "ON" position, the sequence is as follows:

1. Freeze Cycle

GM, FMS, CR, and Comp energize. As the water in the evaporator cools, ice starts forming within 4 to 6 minutes. This time frame depends on the inlet water and ambient temperature conditions.

The float-operated water valve allows water into the reservoir as needed to continue the ice making process. This continues until BC shuts the icemaker down or power is turned off to the unit.

2. Shutdown

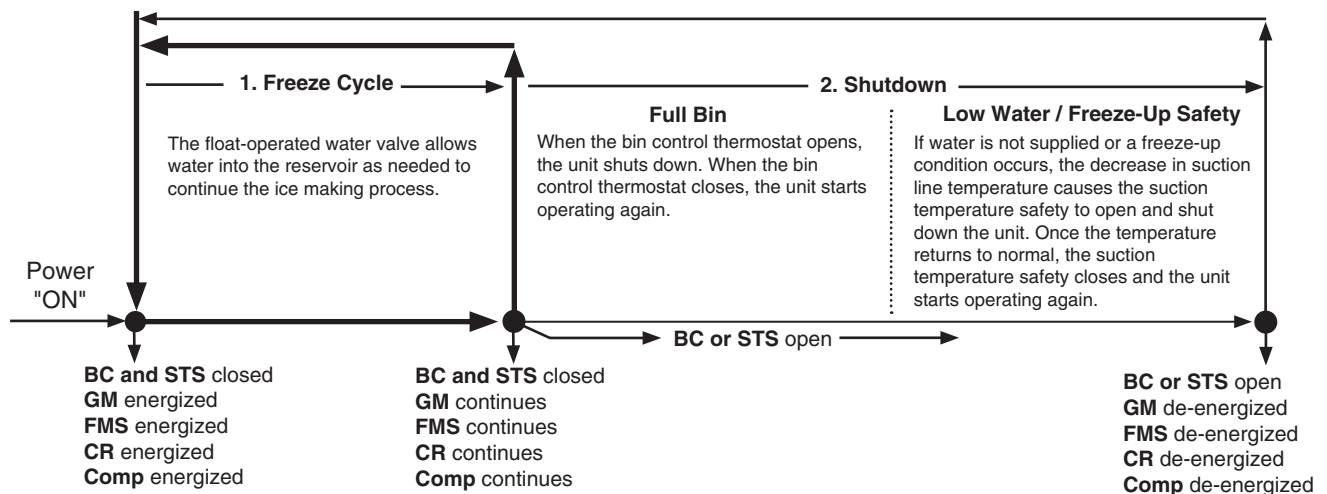
a) Full Bin

When BC opens, GM, FMS, CR, and Comp de-energize. When BC closes, the unit starts operating again.

b) Low Water / Freeze-Up Safety

If the water supply is interrupted or a freeze-up condition occurs, the decrease in suction line temperature causes STS to open and GM, FMS, CR, and Comp de-energize. Once the temperature returns to normal, STS closes and the unit starts operating again. For cut-out/cut-in temperatures, see "III.C.2.b) Low Water / Freeze-Up Safety."

C-100BAE-AD Sequence Flow Chart and Component Operation



Legend: **BC**—bin control thermostat; **Comp**—compressor; **CR**—compressor relay; **FMS**—self-contained fan motor; **GM**—gear motor; **STS**—suction temperature safety

III. Technical Information

A. Water Circuit and Refrigeration Circuit

C-100BAE-AD

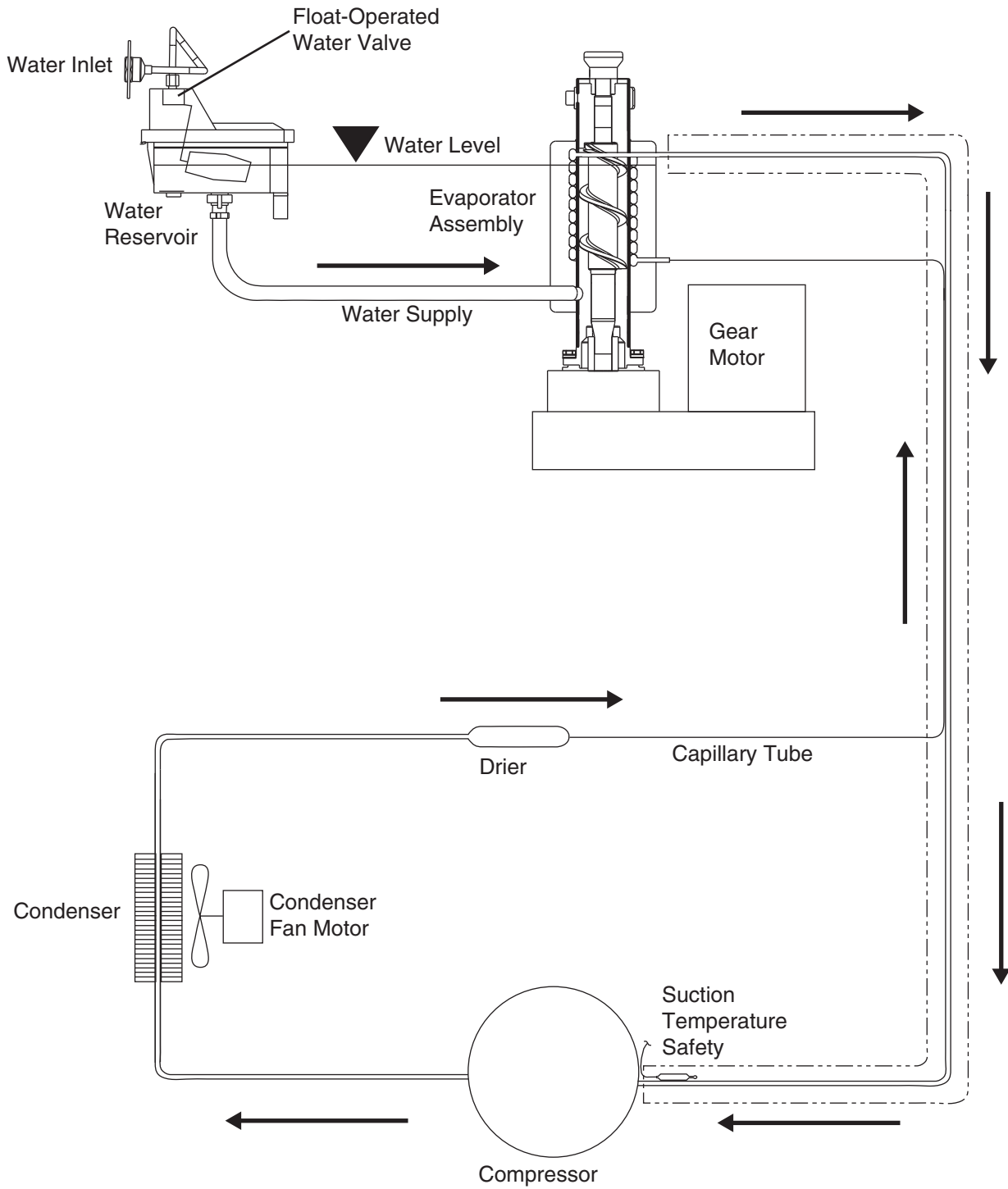
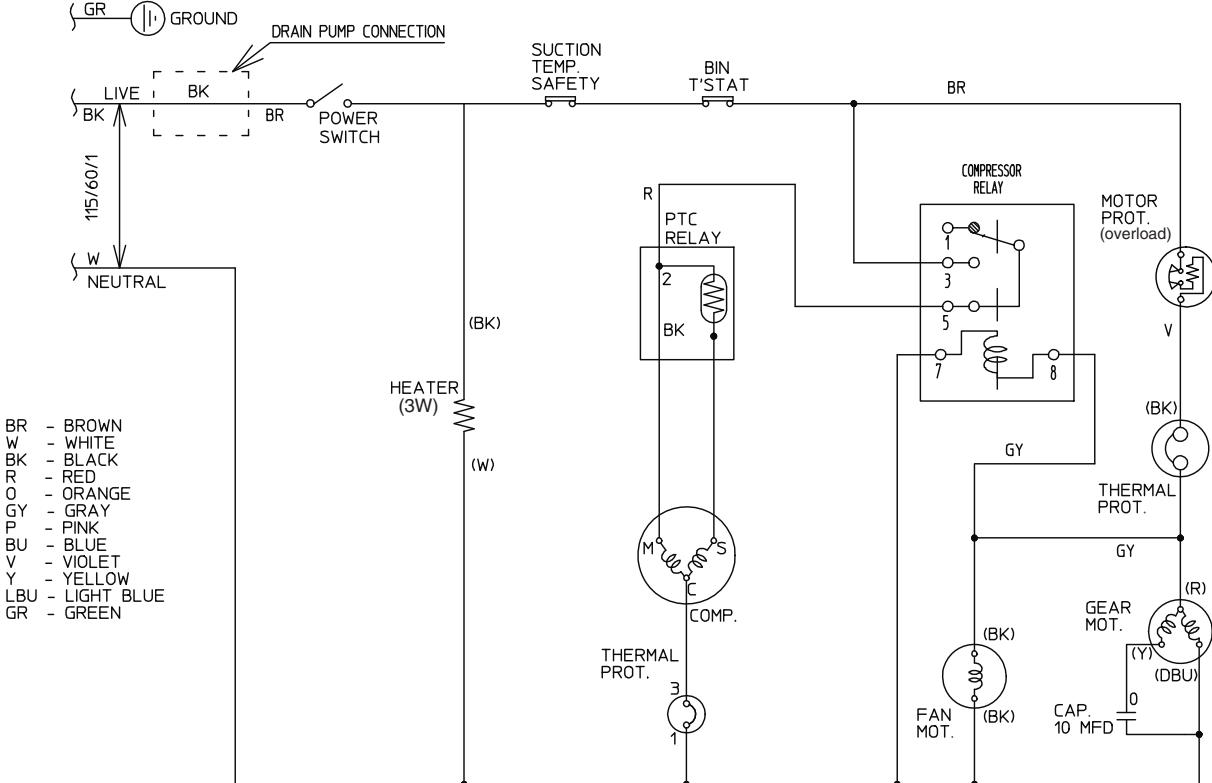


Fig. 3

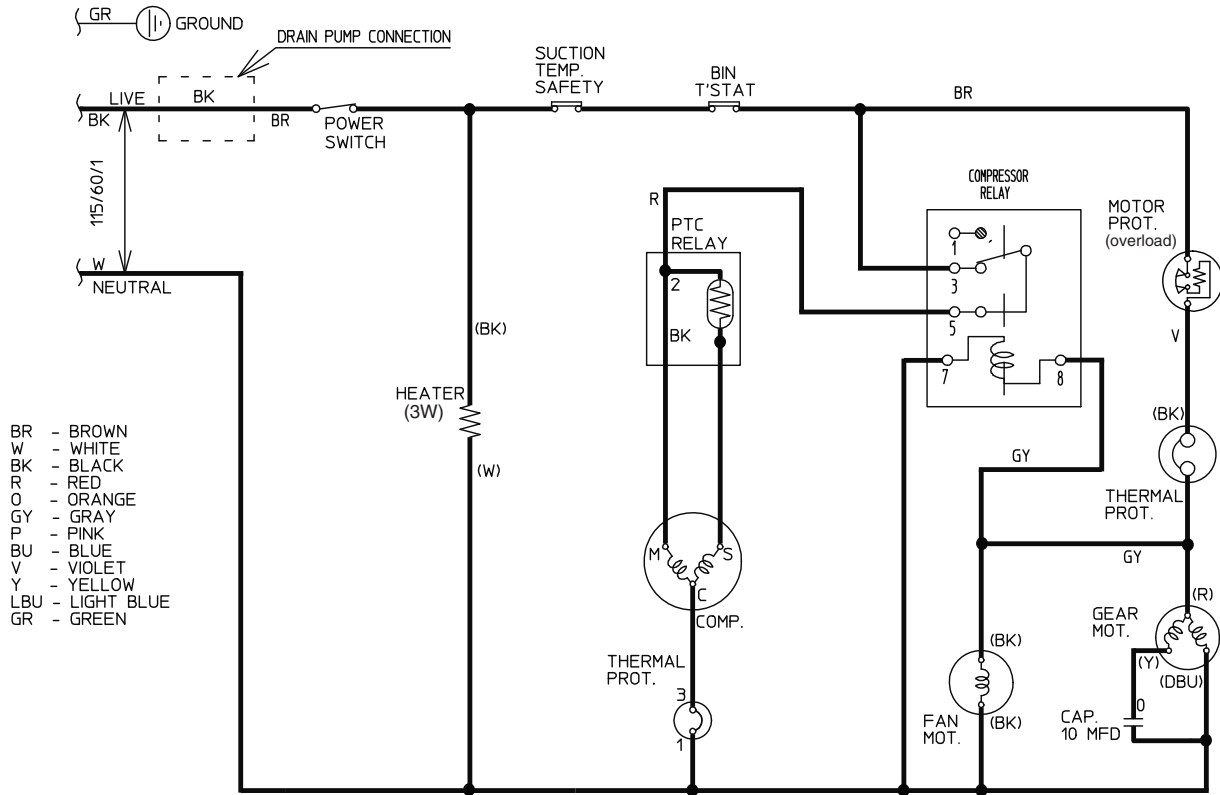
B. Wiring Diagram



C. Sequence of Electrical Circuit

1. Freeze Cycle

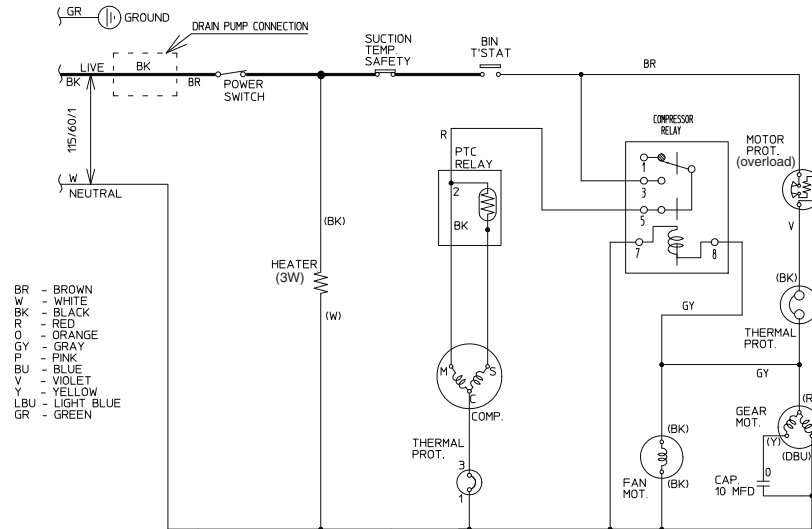
At startup, the gear motor, fan motor, compressor relay, and compressor energize.



2. Shutdown

a) Full Bin

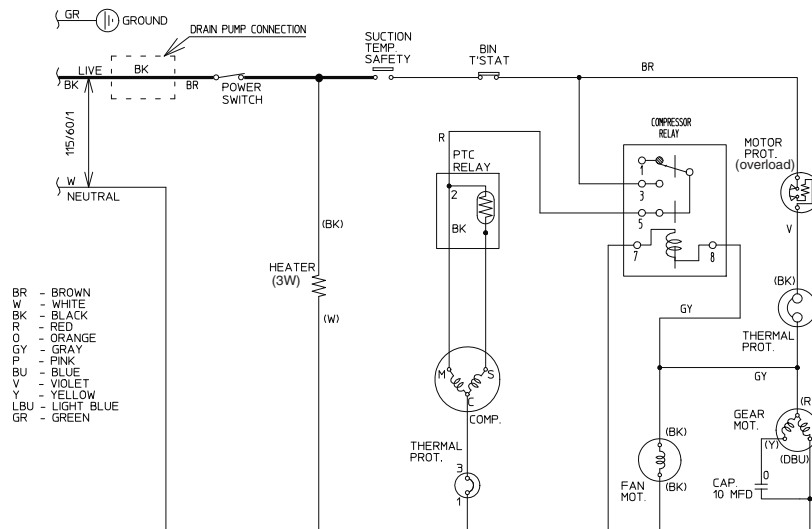
When the bin control thermostat opens, the gear motor, fan motor, compressor relay, and compressor de-energize.



b) Low Water / Freeze-Up Safety

If the water supply is interrupted or a freeze-up condition occurs, the decrease in suction line temperature causes the suction temperature safety to open and shut down the unit. See the table below for suction temperature safety cut-out/cut-in temperatures.

Suction Temperature Safety	
Cut-out	23.9°F±2.7°F (-4.5°C±1.5°C)
Cut-in	29.0°F±2.7°F (-1.5°C±1.5°C)



C-100BAE-AD

D. Performance Data

1. C-100BAE-AD

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (°F/°C)	WATER TEMP. (°F/°C)					
		50/10		70/21		90/32	
	70/21	92	<u>42</u>	89	<u>40</u>	84	<u>38</u>
	80/27	81	<u>37</u>	71	<u>32</u>	66	<u>30</u>
	90/32	66	<u>30</u>	64	<u>29</u>	57	<u>26</u>
lbs./day <u>kg./day</u>	100/38	55	<u>25</u>	54	<u>24</u>	49	<u>22</u>
APPROXIMATE ELECTRIC CONSUMPTION	70/21	307		308		309	
	80/27	310		311		312	
	90/32	313		314		316	
watts	100/38	317		319		320	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	7	<u>0.03</u>	5	<u>0.02</u>	6	<u>0.02</u>
	80/27	8	<u>0.03</u>	8	<u>0.03</u>	7	<u>0.03</u>
	90/32	9	<u>0.03</u>	9	<u>0.03</u>	8	<u>0.08</u>
gal./day <u>m³/day</u>	100/38	11	<u>0.04</u>	11	<u>0.04</u>	10	<u>0.04</u>
Evaporator Outlet	70/21	-5		-5		-5	
	80/27	-5		-2		-2	
	90/32	-2		-2		1	
	100/38	1		1		1	
HEAD PRESSURE	70/21	115	<u>8.1</u>	165	<u>11.6</u>	183	<u>12.9</u>
	80/27	115	<u>8.1</u>	165	<u>11.6</u>	183	<u>12.9</u>
	90/32	115	<u>8.1</u>	165	<u>11.6</u>	183	<u>12.9</u>
PSIG <u>kg/cm²G</u>	100/38	115	<u>8.1</u>	165	<u>11.6</u>	183	<u>12.9</u>
SUCTION PRESSURE	70/21	12	<u>0.8</u>	17	<u>1.2</u>	19	<u>1.3</u>
	80/27	12	<u>0.8</u>	17	<u>1.2</u>	19	<u>1.3</u>
	90/32	12	<u>0.8</u>	17	<u>1.2</u>	19	<u>1.3</u>
PSIG <u>kg/cm²G</u>	100/38	12	<u>0.8</u>	17	<u>1.2</u>	19	<u>1.3</u>

TOTAL HEAT OF REJECTION FROM CONDENSER 1850 BTU/h [AT 90°F (32°C) / WT 70°F (21°C)]

Note:

1. The data not in bold should be used for reference only.
2. We reserve the right to make changes in specifications and design without prior notice.

IV. Service Diagnosis

⚠ WARNING

1. This unit should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
2. Risk of electric shock. Use extreme caution and exercise safe electrical troubleshooting practices when diagnosing the unit.
3. Moving parts (e.g. fan blade) can crush and cut. Keep hands clear.
4. **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after the unit is serviced. Make sure that none have fallen into the storage bin.

A. Diagnostic Procedure

This diagnostic procedure is a sequence check that allows you to diagnose the electrical system and components. Before proceeding, check for correct installation, proper voltage per unit nameplate, and adequate water supply.

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Remove the front panel and louver. Remove the screws securing the control box, then gently pull the box out. Remove the control box cover.
- 3) Plug the unit back in. Place the power switch in the "ON" position.

⚠ WARNING

1. Risk of electric shock. Use extreme caution and exercise safe electrical troubleshooting practices when diagnosing the unit.
2. Moving parts (e.g. fan blade) can crush and cut. Keep hands clear.

- 4) **Freeze Cycle** – The gear motor, fan motor, compressor relay, and compressor energize. Ice production begins 4 to 6 minutes after the compressor starts depending on ambient and water conditions. **Diagnosis:** Check that the gear motor, fan motor, and compressor start. If not, check the power switch, suction temperature safety (for suction temperature safety cut-out/cut-in temperatures, see "III.C.2.b) Low Water / Freeze-Up Safety"), bin control thermostat assembly (including heater), gear motor protector (overload), gear motor thermal protector, gear motor windings, gear motor capacitor, voltage to the fan motor, voltage on the compressor relay, PTC relay, voltage on the compressor terminals, compressor windings, and compressor thermal protector. If the gear motor starts, but the auger does not turn, check the spline coupling between the auger and the gear motor.
- 5) **Shutdown (bin full)** – The bin fills and activates the bin control thermostat. The gear motor, fan motor, compressor relay, and compressor de-energize. **Diagnosis:** When the icemaker is running, hold ice in contact with the bulb. If the components fail to de-energize, check the bin control thermostat.

- 6) **Shutdown (low water / freeze-up safety)** – As ice is produced, the water level in the reservoir drops. As it drops, the float lowers and manually opens the water valve. If water is not supplied or a freeze-up condition occurs, the decrease in suction line temperature causes the suction temperature safety to open and shut down the unit. Once the temperature returns to normal, the suction temperature safety closes and the unit starts operating again. (For suction temperature safety cut-out/cut-in temperatures, see "III.C.2.b) Low Water / Freeze-Up Safety.") **Diagnosis:** Check that the float lowers and that water then enters the reservoir. If not, check the water supply, filters, float, and water valve.
- 7) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 8) Make any repairs necessary, then replace the removed parts in the reverse order of which they were removed. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 9) Plug the unit back in. Move the power switch to the "ON" position to start the automatic icemaking process.

B. Ice Production Check

To check production, prepare a bucket or pan to catch the ice and a set of scales to weigh the ice. After the unit has operated for 10 to 20 minutes, catch the ice production for 10 minutes. Weigh the ice to establish the batch weight. Multiply the batch weight by 144 for the total production in 24 hours. When confirming production or diagnosing low production, see "III. D. Performance Data" for typical production information.

C. Diagnostic Charts

1. No Ice Production

Problem	Possible Cause	Remedy	
[1] The icemaker will not start.	a) Power Supply	1. Off, blown fuse, or tripped breaker.	1. Turn on, replace, or reset.
		2. Power cord unplugged.	2. Plug into outlet.
		3. Loose connection.	3. Tighten.
		4. Bad contacts.	4. Check for continuity and replace.
		5. Not within specifications.	5. Refer to nameplate and correct.
	b) Power Switch (Control Box)	1. "OFF" position.	1. Move to "ON" position.
		2. Bad contacts.	2. Check for continuity and replace.
	c) Suction Temperature Safety (Low Water / Freeze-Up Safety)	1. Open due to water supply cut-off or evaporator freeze-up.	1. Supply water or check gear motor operation.
		2. Bad contacts.	2. Check for continuity and replace.
	d) Bin Control Thermostat Assembly (with integrated heater)	1. Open with bin filled with ice.	1. Remove ice.
		2. Ambient temperature too cool.	2. Increase ambient temperature.
		3. Bulb out of position.	3. Place in position.
		4. Bad contacts.	4. Check for continuity and replace. See "V.F. Removal and Replacement of Bin Control Thermostat Assembly."
		5. Bad thermostat heater.	5. Check and replace. See "V.F. Removal and Replacement of Bin Control Thermostat Assembly."
	e) Gear Motor Protector (Overload)	1. Tripped.	1. Check supply voltage, gear motor amperage, gear motor bearings, and auger bearings (see "V.C.1. Upper Bearing Wear Check").
	f) Gear Motor Thermal Protector	1. Open.	1. Check gear motor bearings, auger bearings (see "V.C.1. Upper Bearing Wear Check"), and supply voltage.

Problem	Possible Cause		Remedy
[2] Gear motor starts, but compressor will not start or operates intermittently.	a) Power Supply	1. Not within specifications.	1. Refer to nameplate and correct.
	b) Compressor Relay	1. Open coil.	1. Replace.
		2. Open contacts.	2. Replace.
	c) PTC Relay	1. Bad contacts.	1. Check for continuity and replace.
		2. Coil winding opened.	2. Replace.
		3. Loose connections.	3. Tighten.
	d) Compressor	1. Wiring to compressor.	1. Check for loose connection or open, and replace.
		2. Loose connections.	2. Tighten.
		3. Motor winding opened or grounded.	3. Replace compressor.
		4. Compressor locked and motor protector open.	4. Replace compressor.
[3] Compressor starts, but gear motor will not start.	a) Gear Motor	1. Open windings.	1. Replace gear motor.
		2. Locked bearings	2. Replace gear motor.
[4] Gear motor and compressor start, but no ice is produced.	a) Water Supply	1. Water supply off or pressure too low. (suction temperature safety cycling open and closed)	1. Restore water supply or get recommended pressure (10 to 113 PSIG).
	b) Refrigerant Line	1. Gas leaks.	1. Check for leaks with a leak detector. Repair leak, replace drier and charge with refrigerant. See "V.A. Service for Refrigerant Lines."
		2. Refrigerant line clogged.	2. Replace the clogged component.
	c) Gear Motor	1. Spline coupling or gear broken and auger not turning.	1. Replace spline coupling or gear motor.

2. Low Ice Production

Problem	Possible Cause	Remedy	
[1] Low ice production.	a) Bin Control Thermostat Assembly (with integrated heater)	1. Ambient temperature too cool.	1. Increase ambient temperature.
		2. Bulb out of position.	2. Place in position.
	b) High-Side Pressure Too High	1. Dirty condenser.	1. Clean.
		2. Ambient temperature too warm.	2. Reduce temperature.
		3. Bad fan motor.	3. Check and replace.
	c) Refrigerant Line	1. Gas leaks.	1. Check for leaks with a leak detector. Repair leak, replace drier and charge with refrigerant. See "V.A. Service for Refrigerant Lines."
		2. Refrigerant line clogged.	2. Replace the clogged component.
		3. Overcharged.	3. Recharge.
	d) Compressor	1. Faulty thermal protector.	1. Replace thermal protector.
		2. Inefficient compressor.	2. Replace compressor.

3. Other

Problem	Possible Cause	Remedy	
[1] Abnormal noise.	a) Fan Motor	1. Bearing worn out.	1. Replace.
		2. Fan blade deformed.	2. Replace.
		3. Fan blade does not move freely.	3. Replace.
	b) Compressor	1. Mounting pad out of position.	1. Reinstall.
		2. Bearings worn out or cylinder valve broken.	2. Replace compressor.
	c) Refrigerant Lines	1. Rub or touch lines or other surfaces.	1. Separate.
	d) Auger	1. Bearings or auger worn out.	1. Replace bearings or auger. See "V.C.1. Upper Bearing Wear Check."
	e) Gear Motor	1. Bearing or gear worn out/damaged.	1. Replace.
	f) Evaporator	1. Scale on inside wall of freezing cylinder.	1. Use "SCALE AWAY" or "LIME-A-WAY" solution to clean periodically. See "VI. A. Cleaning and Sanitizing Instructions." If the water is found hard by testing, install a softener.
		2. Low refrigerant pressures.	2. Check charge, check for possible leak, repair, recharge.
		3. Evaporator bad.	3. Replace.

[2] Overflow from reservoir (water does not stop).	a) Water Supply	1. Water pressure too high.	1. Install a pressure reducing valve.
	b) Water Valve	1. Does not close.	1. Clean or replace.
	c) Float	1. Bad.	1. Check for proper operation and replace.
[3] Gear motor protector (overload) trips frequently.	a) Power Supply	1. Not within specifications.	1. Refer to nameplate and correct.
	b) Gear Motor Protector	1. Defective.	1. Check and replace.
	c) Auger	1. Bearings or auger worn out.	1. Replace bearings or auger. See "V.C.1. Upper Bearing Wear Check."
	d) Gear Motor	1. Bearing or gear worn out or damaged.	1. Replace gear motor.
	e) Bin Control Thermostat Assembly (with integrated heater)	1. Bad contacts.	1. Check for continuity and replace. See "V.F. Removal and Replacement of Bin Control Thermostat Assembly."

V. Removal and Replacement of Components

⚠ WARNING

1. This unit should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
2. Move the power switch to the "OFF" position and unplug the unit from the electrical outlet before servicing.
3. **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after the unit is serviced. Make sure that none have fallen into the storage bin.

A. Service for Refrigerant Lines

⚠ WARNING

1. Repairs requiring the refrigeration circuit to be opened must be performed by properly trained and EPA-certified service personnel.
2. Always recover the refrigerant and store it in an approved container. Do not discharge the refrigerant into the atmosphere.
3. Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). **DO NOT** use R-134a as a mixture with pressurized air for leak testing.

IMPORTANT

1. The Polyol Ester (POE) oils used in R-134a units can absorb moisture quickly. Therefore it is important to prevent moisture from entering the system when replacing or servicing parts.
2. Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.
3. Do not leave the system open for longer than 15 minutes when replacing or servicing parts.

1. Refrigerant Recovery

No refrigerant access valves are provided on this unit. Using proper refrigerant practices, utilize a temporary tap line valve on the high side to recover the refrigerant. Store the refrigerant in an approved container. Do not discharge the refrigerant into the atmosphere.

After recovery is complete, replace the tap line valve with a proper, permanent access valve.

2. Brazing

⚠ WARNING

1. To reduce the risk of fire, do not do any debrazing or brazing inside the storage bin area.
2. R-134a itself is not flammable at atmospheric pressure and temperatures up to 212°F (100°C).
3. R-134a itself is not explosive or poisonous. However, when exposed to high temperatures (open flames), R-134a can be decomposed to form hydrofluoric acid and carbonyl fluoride both of which are hazardous.
4. Do not use silver alloy or copper alloy containing arsenic.
5. Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). DO NOT use R-134a as a mixture with pressurized air for leak testing.

- 1) Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.
- 2) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.
- 3) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). DO NOT use R-134a as a mixture with pressurized air for leak testing.

3. Evacuation and Recharge (R-134a)

- 1) Attach a vacuum pump to the system.

IMPORTANT

The vacuum level and vacuum pump may be the same as those for current refrigerants. However, the rubber hose and gauge manifold to be used for evacuation and refrigerant charge should be exclusively for POE oils.

- 2) Turn on the vacuum pump, then open the low-side valve on the service manifold. Never allow the oil in the vacuum pump to flow backwards.
- 3) Allow the vacuum pump to pull down to a 29.9" Hg vacuum. Evacuating period depends on pump capacity.
- 4) Close the low-side valve on the service manifold.
- 5) Disconnect the vacuum pump and attach a refrigerant service cylinder to the service manifold. Remember to loosen the connection, and purge the air from the hose. See the nameplate for the required refrigerant charge. Hoshizaki recommends only virgin refrigerant or reclaimed refrigerant which meets the requirements of ARI Standard 700 (latest edition) be used.
- 6) A liquid charge is recommended for charging an R-134a system. Invert the service cylinder and place it on scales. Open the low-side valve on the service manifold.

- 7) Allow the system to charge with liquid until the proper charge weight is met.
- 8) If necessary, use a throttling valve or liquid dispensing device to add any remaining liquid charge with the unit running.
- 9) Close the refrigerant access valve and disconnect the service manifold hose.
- 10) Cap the access valve to prevent a possible leak.

B. Removal and Replacement of Compressor

IMPORTANT

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.

Note: Hoshizaki recommends that compressor starting components are always replaced at the same time as the compressor. Due to the ability of the POE oil in the compressor to absorb moisture quickly, the compressor must not be opened more than 15 minutes for replacement or service. Do not mix lubricants of different compressors even if both are charged with R-134a, except when they use the same lubricant.

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Remove the rear panel, front panel, and louver. Remove the bolts securing the control box, then gently slide the box out of the way.
- 3) Recover the refrigerant and store it in an approved container. See "V.A. Service for Refrigerant Lines."
- 4) Remove the terminal cover on the compressor and disconnect the compressor wiring.
- 5) Remove the discharge and suction pipes.
- 6) Remove the hold-down bolts, washers, and rubber grommets.
- 7) Remove the compressor.
- 8) Attach the rubber grommets of the prior compressor to the new compressor.
- 9) Place the compressor in position and secure it using the bolts and washers.
- 10) Remove the drier, then place the new drier in position.
- 11) Remove the plugs from the suction, discharge, and process pipes.
- 12) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG. See "V.A.2. Brazing."
- 13) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). DO NOT use R-134a as a mixture with pressurized air for leak testing.
- 14) Evacuate the system, and charge it with refrigerant. See "V.A.3. Evacuation and Recharge (R-134a)." See the nameplate for the required refrigerant charge.

- 15) Connect the terminals and replace the terminal cover in its correct position.
- 16) Replace the control box, louver, and panels in their correct positions.
- 17) Plug the unit back in. Move the power switch to the "ON" position.

C. Removal and Replacement of Evaporator Assembly Components

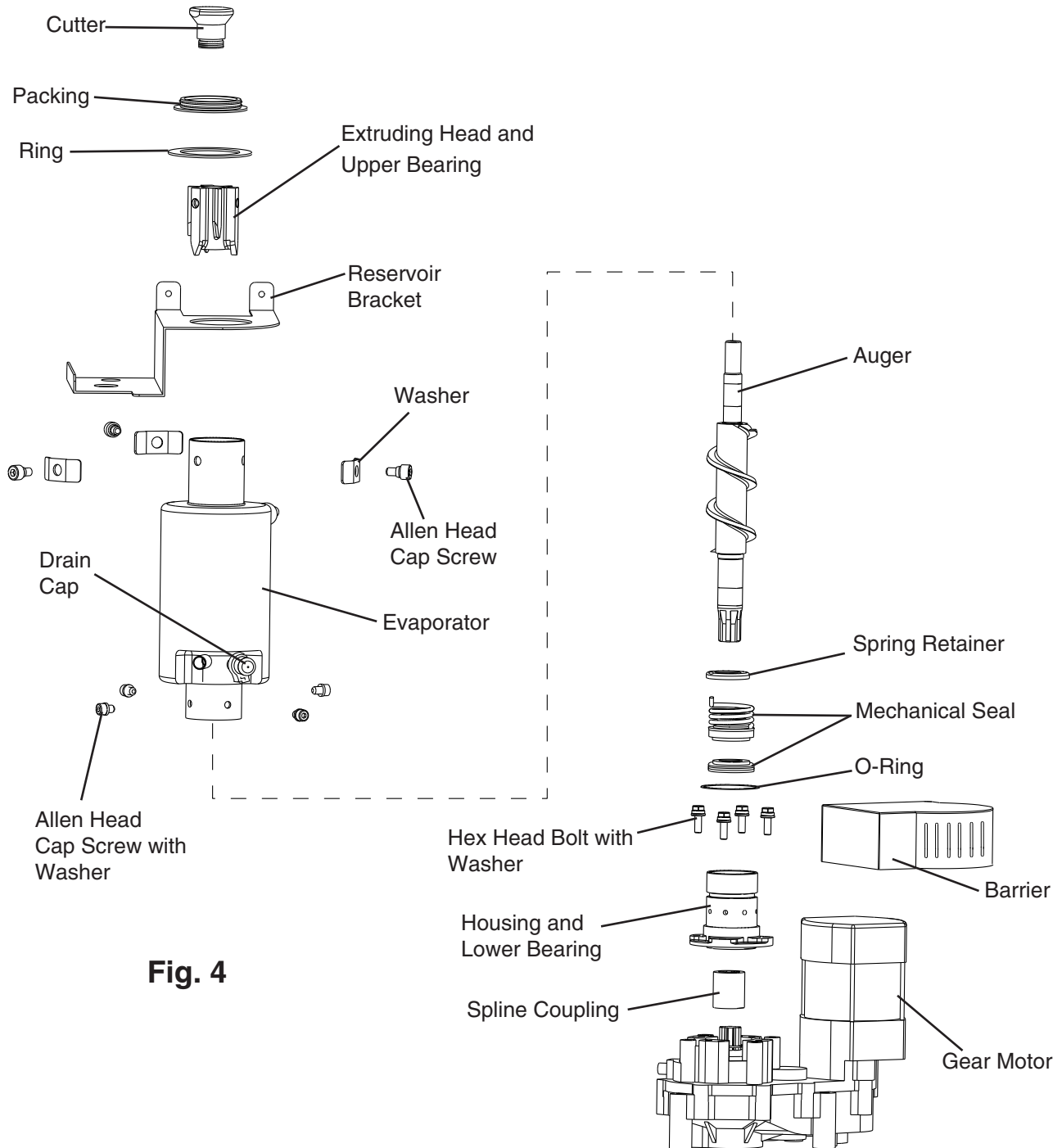


Fig. 4

1. Upper Bearing Wear Check

To ensure that the bearing inside the extruding head does not exceed the wear tolerance of .02", follow the instructions below.

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Remove all ice from the storage bin.
- 3) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.

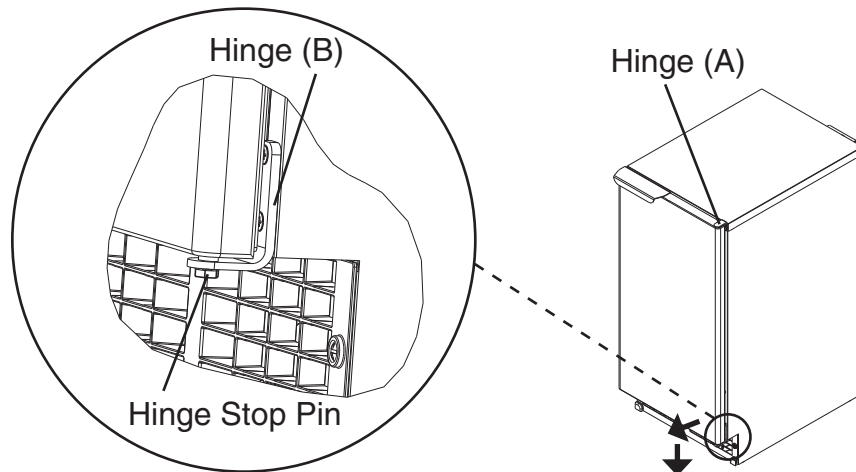


Fig. 5

- 4) Remove the 2 screws securing the top panel and lift it off.
- 5) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.

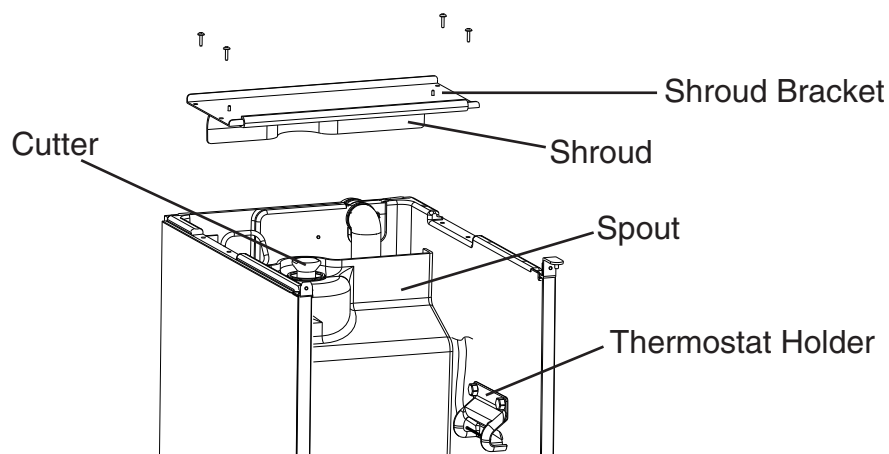


Fig. 6

- 6) Remove the cutter.
- 7) Grasp the top of the auger and move the auger towards you and then try to insert a .02" round stock or pin gauge in between the back side of the auger shaft and the bearing surface. See Fig. 7. Check several locations around the auger shaft. If the gauge goes between the shaft and the bearing at any point or if the bearing is scratched or cracked, both the top bearing in the extruding head and the lower bearing in the housing should be replaced. Instructions for removing the extruding head and housing are located later in this procedure.

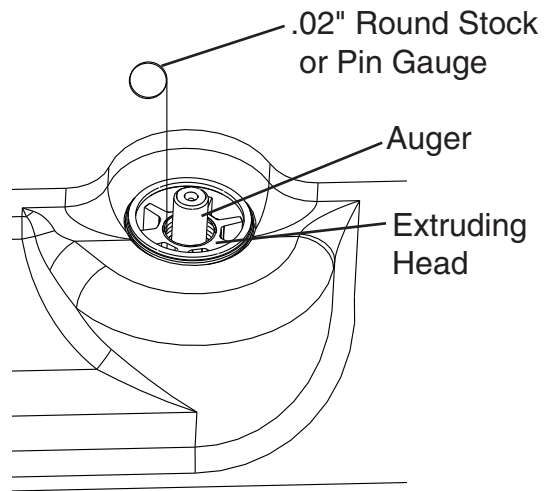


Fig. 7

Note: Replacing the bearing requires a bearing press adaptor. If one is not available, replace the entire extruding head and housing.

- 8) Replace the removed parts in the reverse order of which they were removed. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 9) Plug the unit back in. Move the power switch to the "ON" position.

2. Removal and Replacement of Extruding Head

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.
- 4) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.
- 5) Remove the 2 screws securing the top panel and lift it off.
- 6) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout.
- 9) Remove the clamp securing the drain cap to the evaporator, then pull off the drain cap to drain the water from the reservoir and evaporator assembly.
- 10) After the water has drained, replace the drain cap in its correct position.
- 11) Remove the cutter, packing, and ring.
- 12) Remove the allen head cap screws securing the extruding head, then lift off the extruding head.

- 13) Place the new extruding head in place and tighten down the allen head cap screws.
- 14) Replace the removed parts in the reverse order of which they were removed. Before replacing the spout, open the water supply line shut-off valve and check for water leaks. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 15) Plug the unit back in. Move the power switch to the "ON" position.

3. Removal and Replacement of Auger

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.
- 4) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.
- 5) Remove the 2 screws securing the top panel and lift it off.
- 6) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout.
- 9) Remove the clamp securing the drain cap to the evaporator, then pull off the drain cap to drain the water from the reservoir and evaporator assembly.
- 10) After the water has drained, replace the drain cap in its correct position.
- 11) Remove the packing and ring.
- 12) Remove the allen head cap screws securing the extruding head. Grasp the cutter and carefully lift out the cutter and extruding head. Grasp the top of the auger and carefully lift out the auger.
- 13) When pulling out the auger, the upper part of the mechanical seal should come out with it. The mechanical seal consists of two parts. One moves along with the auger, and the other is fixed on the lower housing. Inspect the part of the mechanical seal that came out with the auger. If the contact surface on the bottom of the seal is worn, cracked or scratched, the mechanical seal may cause water leaks and both the upper and lower parts of the mechanical seal should be replaced. Instructions for removing the mechanical seal are located later in this procedure.
- 14) Remove the mechanical seal from the old auger and place it on the new auger.
- 15) Install the new auger.
- 16) Replace the removed parts in the reverse order of which they were removed. Before replacing the spout, open the water supply line shut-off valve and check for water leaks. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 17) Plug the unit back in. Move the power switch to the "ON" position.

4. Removal and Replacement of Evaporator

⚠ WARNING

To reduce the risk of fire, do not do any debrazing or brazing inside the storage bin area.

IMPORTANT

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.
- 4) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.
- 5) Remove the 2 screws securing the top panel and lift it off.
- 6) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout.
- 9) Remove the rear panel and rear channel.
- 10) Remove the clamp securing the drain cap to the evaporator, then pull off the drain cap to drain the water from the reservoir and evaporator assembly. Keep the drain cap and clamp for use on the new evaporator.
- 11) Disconnect the water hose between the water reservoir and evaporator.
- 12) Remove the packing and ring.
- 13) Remove the allen head cap screws securing the extruding head. Grasp the cutter and carefully lift out the cutter and extruding head. Grasp the top of the auger and carefully lift out the auger.
- 14) Remove the wing nut securing the water reservoir to the reservoir bracket.
- 15) Loosen the inlet fitting on the top of the water reservoir and then remove the reservoir.
- 16) Remove the 2 screws securing the reservoir bracket, then remove the reservoir bracket.
- 17) Recover the refrigerant and store it in an approved container. See "V.A. Service for Refrigerant Lines."

- 18) To reduce the risk of fire, do not do any debrazing or brazing inside the icemaker cabinet. Disconnect the capillary tube at the drier and the suction line at the back of the machine.
- 19) Remove the allen head cap screws securing the evaporator to the lower housing.
- 20) Lift out the evaporator assembly.
- 21) With the evaporator assembly out of the icemaker, remove the copper piping from the old evaporator and install it on the new evaporator.
- 22) Inspect the mechanical seal and O-ring prior to installing the new evaporator. The mechanical seal consists of two parts. One moves along with the auger, and the other is fixed on the lower housing. If the contact surfaces of these two parts are worn, cracked or scratched, the mechanical seal may cause water leaks and should be replaced. Instructions for removing the mechanical seal and lower housing are located later in this procedure.
- 23) Make sure the lower mechanical seal and the O-ring are in place, then place the evaporator assembly in position. Secure the evaporator to the lower housing using the allen head cap screws.
- 24) Remove the drier, then place the new drier in position.
- 25) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG. See "V.A.2. Brazing."
- 26) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). DO NOT use R-134a as a mixture with pressurized air for leak testing.
- 27) Evacuate the system, and charge it with refrigerant. See "V.A.3. Evacuation and Recharge (R-134a)." See the nameplate for the required refrigerant charge.
- 28) Replace the removed parts in the reverse order of which they were removed. Before replacing the spout, open the water supply line shut-off valve and check for water leaks. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 29) Plug the unit back in. Move the power switch to the "ON" position.

5. Removal and Replacement of Mechanical Seal and Lower Housing

5a. Mechanical Seal

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.
- 4) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.
- 5) Remove the 2 screws securing the top panel and lift it off.

- 6) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout.
- 9) Remove the clamp securing the drain cap to the evaporator, then pull off the drain cap to drain the water from the reservoir and evaporator assembly.
- 10) After the water has drained, replace the drain cap in its correct position.
- 11) Remove the packing and ring.
- 12) Remove the allen head cap screws securing the extruding head. Grasp the cutter and carefully lift out the cutter and extruding head. Grasp the top of the auger and carefully lift out the auger.
- 13) Disconnect the hose from the water reservoir, then remove the wing nut securing the water reservoir to the reservoir bracket.
- 14) Loosen the inlet fitting on the top of the water reservoir and then remove the reservoir.
- 15) Remove the 2 screws securing the reservoir bracket, then remove the reservoir bracket.
- 16) Remove the allen head cap screws securing the evaporator to the lower housing.
- 17) Raise the evaporator up to access the lower housing.
- 18) The mechanical seal consists of two parts. One moves along with the auger, and the other is fixed on the lower housing. If the contact surfaces of these two parts are worn, cracked or scratched, the mechanical seal may cause water leaks and should be replaced.
- 19) Remove the mechanical seal from the housing. If only replacing the mechanical seal, proceed to step 22.

CAUTION

To help prevent water leaks, be careful not to damage the surfaces of the O-ring or mechanical seal.

5b. Lower Housing

- 20) Remove the O-ring and the bolts securing the housing to the gear motor and remove the housing from the gear motor. If inspection of the upper bearing inside the extruding head (see "V.C.1. Upper Bearing Wear Check") indicates that it is out of tolerance, replace both it and the bearing inside the lower housing.
Note: Replacing the bearing requires a bearing press adaptor. If one is not available, replace the entire extruding head and housing.
- 21) Install the O-ring and mount the lower housing onto the gear motor.
- 22) Install the lower part of the mechanical seal onto the lower housing.
- 23) Lower the evaporator down and secure it to the lower housing.
- 24) Install the auger assembly with the upper part of the mechanical seal attached.

- 25) Replace the removed parts in the reverse order of which they were removed. Before replacing the spout, open the water supply line shut-off valve and check for water leaks. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 26) Plug the unit back in. Move the power switch to the "ON" position.

6. Removal and Replacement of Gear Motor

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.
- 4) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.
- 5) Remove the 2 screws securing the top panel and lift it off.
- 6) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout.
- 9) Disconnect the hose from the water reservoir, then remove the wing nut securing the water reservoir to the reservoir bracket.
- 10) Loosen the inlet fitting on the top of the water reservoir and then remove the reservoir.
- 11) Remove the 2 screws securing the reservoir bracket.
- 12) Remove the bolts securing the lower housing to the gear motor. Lift the evaporator up slightly.
- 13) Remove the bolts securing the gear motor.
- 14) Disconnect the gear motor wires. Note the wire-tied sheathing covering the connections and the orientation of the sheathing with the ends facing down. Wire-tie the sheathing into place in the same manner when making the connections to the new gear motor.
- 15) Remove the gear motor.
- 16) Attach the spline coupling from the old gear motor to the new gear motor.
- 17) Replace the removed parts in the reverse order of which they were removed. Make sure the sheathing is correctly wire-tied into place over the wire connections. Before replacing the spout, open the water supply line shut-off valve and check for water leaks. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 18) Plug the unit back in. Move the power switch to the "ON" position.

D. Removal and Replacement of Fan Motor

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Remove the rear panel, front panel, and louver. Remove the bolts securing the control box, then gently slide the box out.
- 3) Remove the control box cover, then disconnect the fan motor wires.
- 4) Loosen the rear bolt on the fan motor bracket and remove the front bolt. Slide out the fan motor bracket and fan motor.
- 5) Install the new fan motor onto the bracket and install the blade onto the fan motor. Install the fan motor assembly into the unit. Connect the fan motor wires, then replace the removed parts in the reverse order of which they were removed.
- 6) Replace the louver and panels in their correct positions.
- 7) Plug the unit back in. Move the power switch to the "ON" position.

E. Removal and Replacement of Water Reservoir

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.
- 4) Remove the slope by bending its center carefully and releasing it from the 2 slope shafts. See Fig. 8.
- 5) Remove the scoop. Remove the 2 thumbscrews securing the scoop holder, then remove the holder.
- 6) Remove the 2 thumbscrews securing the shroud, then remove the shroud.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout by pulling it up over the cutter and pulling it forward.
- 9) Disconnect the hose from the water reservoir. Remove the wing nut securing the reservoir to the bracket.
- 10) Loosen the inlet fitting on the top of the reservoir and then remove the reservoir.
- 11) Install the new reservoir and reconnect the hose.
- 12) Replace the removed parts in the reverse order of which they were removed. Before replacing the spout, open the water supply line shut-off valve and check for water leaks. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 13) Plug the unit back in. Move the power switch to the "ON" position.

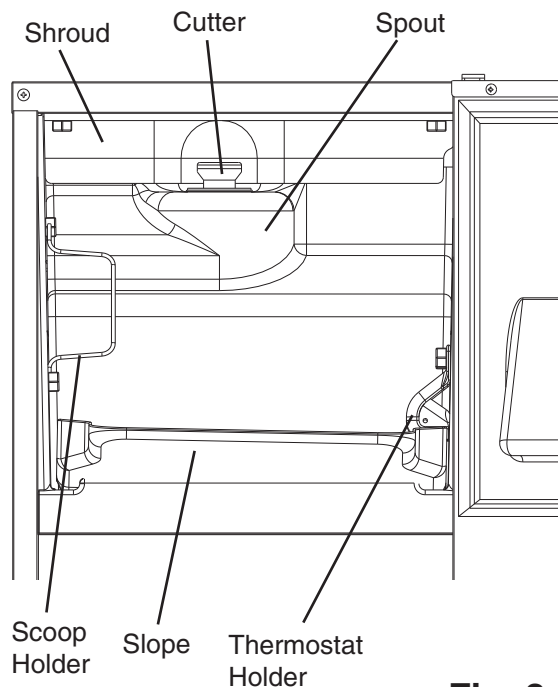


Fig. 8

F. Removal and Replacement of Bin Control Thermostat Assembly

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly and gently remove the door from hinge (A). See Fig. 5.
- 3) Remove the 2 screws securing the top panel and lift it off.
- 4) Remove the 4 screws securing the shroud bracket, then lift off the shroud bracket and shroud. See Fig. 6.
- 5) Remove the rear channel.
- 6) Remove the thermostat holder from the storage bin, and remove the bin control thermostat bulb from the holder.
- 7) Disconnect the thermostat wires. Disconnect the thermostat heater wires. Remove the bin control thermostat assembly from the unit.
- 8) Install the new bin control thermostat assembly in the reverse order of the removal procedure.
- 9) Replace the removed parts in the reverse order of which they were removed. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 10) Plug the unit back in. Move the power switch to the "ON" position.

VI. Cleaning and Maintenance

⚠ WARNING

1. **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after any cleaning or maintenance is done to the unit. Make sure that none have fallen into the storage bin.
2. The storage bin is for ice use only. Do not store anything else in the storage bin.
3. Keep the area around the icemaker clean. Dirt, dust, or insects in the unit could cause electrical damage to the equipment or harm to individuals.
4. Do not place fingers or any other objects into the ice discharge opening.

A. Cleaning and Sanitizing Instructions

HOSHIZAKI recommends cleaning and sanitizing this unit at least twice a year. More frequent cleaning and sanitizing, however, may be required in some existing water conditions.

⚠ WARNING

1. To prevent injury to individuals and damage to the icemaker, do not use ammonia type cleaners.
2. Carefully follow any instructions provided with the bottles of cleaning and sanitizing solution.
3. Always wear liquid-proof gloves and goggles to prevent the cleaning and sanitizing solutions from coming into contact with skin or eyes.
4. After cleaning, do not use ice made from the cleaning and sanitizing solutions. Be careful not to leave any solution in the storage bin.

1. Cleaning Solution

IMPORTANT

For safety and maximum effectiveness, use the solution immediately after dilution.

Dilute 1.6 fl. oz. (47 ml or 3.2 tbs) of recommended cleaner Hoshizaki "Scale Away" or "LIME-A-WAY" (Economics Laboratory, Inc.) with 1 qt (1 l) of warm water. This is a minimum amount. Make more solution if necessary.

2. Cleaning Procedure

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove all ice from the storage bin.

- 4) Remove the slope by bending its center carefully and releasing it from the 2 slope shafts. See Fig. 9.
- 5) Remove the scoop. Remove the 2 thumbscrews securing the scoop holder, then remove the holder.
- 6) Remove the 2 thumbscrews securing the shroud, then remove the shroud.
- 7) Remove the 2 thumbscrews securing the thermostat holder.
- 8) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout by pulling it up over the cutter and pulling it forward.
- 9) Remove the clamp securing the drain cap to the evaporator, then pull off the drain cap to drain the water from the reservoir and evaporator assembly. See Fig. 10.
- 10) After the water has drained, replace the drain cap in its correct position.
- 11) Remove the reservoir cover. Pour the cleaning solution into the reservoir until the solution starts to overflow into the drain pan. Replace the reservoir cover in its correct position.
 Note: If there is excess scale on the extruding head, fill the reservoir as described above, then use a clamp on the reservoir hose between the reservoir and evaporator assembly to block flow. Pour additional cleaning fluid over the extruding head until the evaporator assembly is completely full.
- 12) Allow the icemaker to sit for about 10 minutes before operation. If you placed a clamp on the reservoir hose in step 11, remove it before operation.
- 13) Replace the spout and shroud in their correct positions.

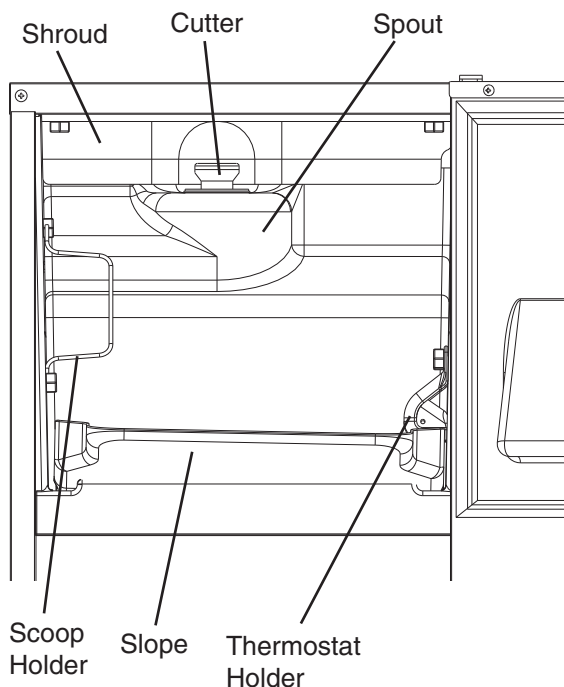


Fig. 9

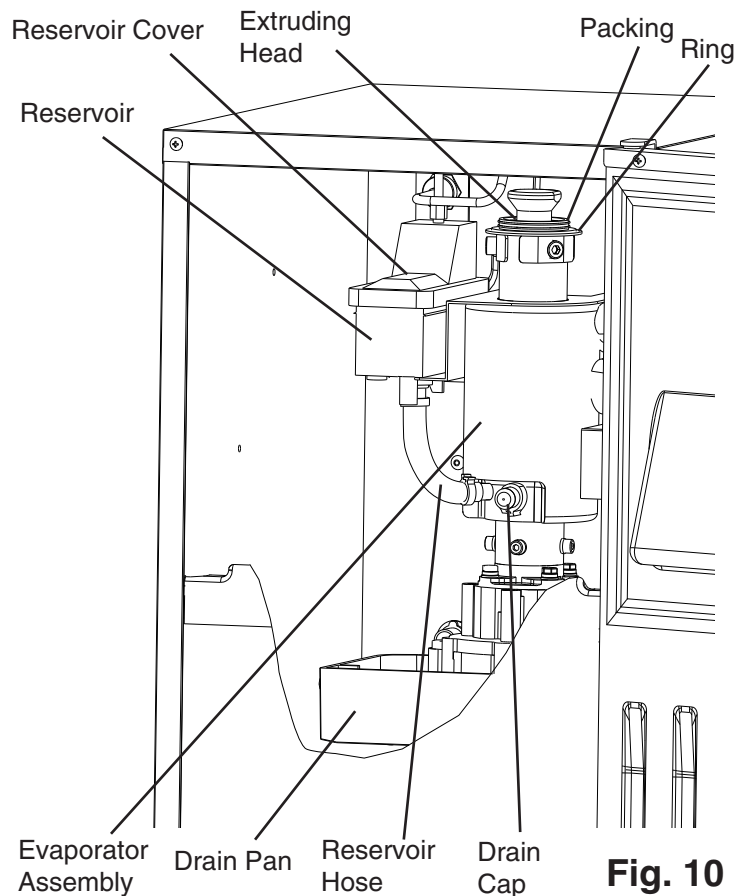


Fig. 10

- 14) Plug the unit back in. Move the power switch to the "ON" position.
- 15) Allow the unit to make ice using the solution. When ice stops coming out, move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 16) Remove the shroud and spout.
- 17) Remove the drain cap to drain any remaining solution.
- 18) After all of the solution has drained, replace the drain cap in its correct position.
- 19) Remove the reservoir cover. Using a clean container, pour water into the reservoir until it starts to overflow into the drain pan. Replace the reservoir cover in its correct position.
- 20) Remove the drain cap to drain the water.
Note: If you do not sanitize the icemaker, go to step 14 in "5. Sanitizing Procedure - Final."
- 21) After the water has drained, replace the drain cap in its correct position.

3. Sanitizing Solution

IMPORTANT

For safety and maximum effectiveness, use the solution immediately after dilution.

Dilute 1.25 fl. oz. (37 ml or 2.5 tbs) of a 5.25% sodium hypochlorite solution (chlorine bleach) with 2.5 gallons (9.5 l) of warm water. This is a minimum amount. Make more solution if necessary.

Using a chlorine test strip or other method, confirm that you have a concentration of about 200 ppm.

4. Sanitizing Procedure - Initial

- 1) Remove the reservoir cover. Pour the sanitizing solution into the reservoir until the solution starts to overflow into the drain pan. Replace the reservoir cover in its correct position.
- 2) Remove the packing and ring.
- 3) Pour some of the sanitizing solution into a separate, clean container. Use this sanitizing solution and a clean cloth to wipe down the slope, scoop, scoop holder, shroud, spout, packing, ring, door gasket, and door liner.
- 4) Rinse the parts thoroughly with clean water.
- 5) Replace the ring, packing, spout, and shroud in their correct positions.
- 6) Make sure at least 10 minutes have elapsed since you poured the sanitizing solution into the reservoir, then plug the unit back in. Move the power switch to the "ON" position.
- 7) Allow the unit to make ice using the solution. When ice stops coming out, move the power switch to the "OFF" position and unplug the unit from the electrical outlet.

5. Sanitizing Procedure - Final

- 1) Remove the shroud and spout.
- 2) Remove the drain cap to drain any remaining solution.
- 3) After all of the solution has drained, replace the drain cap in its correct position.
- 4) Remove the reservoir cover. Pour the sanitizing solution into the reservoir until the solution starts to overflow into the drain pan.
- 5) Allow the icemaker to sit for about 10 minutes before operation.
- 6) Replace the spout and shroud in their correct positions.
- 7) Plug the unit back in. Move the power switch to the "ON" position.
- 8) Allow the unit to make ice using the solution. When ice stops coming out, move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 9) Remove the shroud and spout.
- 10) Remove the drain cap to drain any remaining solution.
- 11) After all of the solution has drained, replace the drain cap in its correct position.
- 12) Remove the reservoir cover. Using a clean container, pour water into the reservoir until it starts to overflow into the drain pan. Replace the reservoir cover in its correct position.
- 13) Remove the drain cap to drain the water.
- 14) After all of the water has drained, replace the drain cap and all other removed parts in their correct positions. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 15) Open the water supply line shut-off valve.
- 16) Plug the unit back in. Move the power switch to the "ON" position and allow the icemaker to run.
- 17) After 30 minutes, move the power switch to the "OFF" position. Unplug the unit.
- 18) Pour warm water into the storage bin to melt all of the ice, then clean the storage bin with the sanitizing solution. Rinse thoroughly after cleaning.
- 19) Plug the unit back in. Move the power switch to the "ON" position to start the automatic icemaking process.

B. Maintenance

IMPORTANT

1. This icemaker must be maintained individually, referring to the instruction manual and labels provided with the icemaker.
2. To achieve optimum icemaker performance, the following parts require periodic inspection and maintenance by a qualified service technician:
 - Extruding Head and Upper Bearing
 - Housing and Lower Bearing
 - Evaporator Cylinder
 - Auger
 - Gear Motor
 - Mechanical Seal

These parts should be inspected at least once a year or every 10,000 hours of operation. Their service life, however, depends on water quality and environment. More frequent inspection and maintenance are recommended in bad or severe water conditions.

Replacement of the following consumable parts is recommended if wear exceeds factory recommendations:

- Upper Bearing
- Lower Bearing
- Mechanical Seal

Consult with your local distributor about inspection and maintenance service. To obtain the name and phone number of your local distributor, call Hoshizaki Technical Support at 1-800-233-1940 in the USA.

1. Stainless Steel Exterior

To prevent corrosion, wipe the exterior occasionally with a clean and soft cloth. Use a damp cloth containing a neutral cleaner to wipe off oil or dirt build up.

2. Storage Bin and Scoop

- Wash your hands before removing ice. Use the plastic scoop provided.
- The storage bin is for ice use only. Do not store anything else in the storage bin.
- Clean the scoop and the storage bin liner using a neutral cleaner. Rinse thoroughly after cleaning.

3. Condenser

Check the condenser once a year, and clean if required by following the steps below. More frequent cleaning may be required depending on location.

⚠ WARNING

1. Move the power switch to the "OFF" position and unplug the unit from the electrical outlet before cleaning the condenser.
2. Condenser fins are sharp. Use care when cleaning.

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Remove the 2 screws securing the front panel, then remove the panel. See Fig. 11.
- 3) Remove the 2 screws securing the louver, then remove the louver.
- 4) Use a brush attachment on a vacuum cleaner to gently clean the condenser fins. Do not use too much force, otherwise the fins could be damaged.
- 5) Replace the louver and front panel in their correct positions. Ensure that the screws are securely in place.

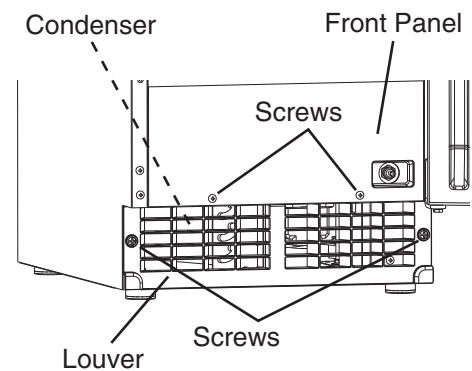


Fig. 11

- 6) Plug the unit back in. Move the power switch to the "ON" position to start the automatic icemaking process.

C. Preparing the Icemaker for Long Storage

CAUTION

When the icemaker is not used for two or three days under normal conditions, it is sufficient to only move the power switch to the "OFF" position. When storing the icemaker for extended time or in sub-freezing temperatures, turn the water off and drain out all water from the water lines and remove the ice from the storage bin. The storage bin should be cleaned and dried. Drain the icemaker water hose using compressed air or carbon dioxide to prevent damage at sub-freezing temperatures.

- 1) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 2) Remove all ice from the storage bin.
- 3) Remove the slope by bending its center carefully and releasing it from the 2 slope shafts. See Fig. 9.
- 4) Remove the scoop. Remove the 2 thumbscrews securing the scoop holder, then remove the holder.
- 5) Remove the 2 thumbscrews securing the shroud, then remove the shroud.
- 6) Remove the 2 thumbscrews securing the thermostat holder.
- 7) Gently lift the thermostat and thermostat holder up out of the way, then remove the spout by pulling it up slightly and pulling it forward.
- 8) Close the water supply line shut-off valve.
- 9) Open the water supply line drain valve.
- 10) Remove the clamp securing the drain cap to the evaporator, then pull off the drain cap to drain the water from the reservoir and evaporator. See Fig. 10.

- 11) After all of the water has drained, replace the drain cap and all other removed parts in their correct positions. Ensure all components, fasteners, and thumbscrews are securely in place. Make sure that none have fallen into the storage bin.
- 12) From the water supply line drain valve, blow the water supply line out using compressed air or carbon dioxide.
- 13) Close the water supply line drain valve.
- 14) Clean the storage bin by using a neutral cleaner. Rinse thoroughly after cleaning.