

# Hoshizaki America, Inc.

## Self-Contained Cubelet

### Models

C-I00BAF-AD

C-I00BAF-ADDS



“A Superior Degree  
of Reliability”

[www.hoshizaki.com](http://www.hoshizaki.com)

## SERVICE MANUAL



Number: 73180  
Issued: 10-6-2010

**IMPORTANT**

Only qualified service technicians should install, service, and maintain the 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, component life, 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.

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## 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 injury or damage resulting from 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 fuse, 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, independent 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, independent 3-prong wall 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 in the "OFF" position before plugging in or unplugging the unit to reduce the risk of electric shock.
- Do not use a unit with a damaged power cord. The power cord 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. C-100BAF-AD, C-100BAF-ADDS

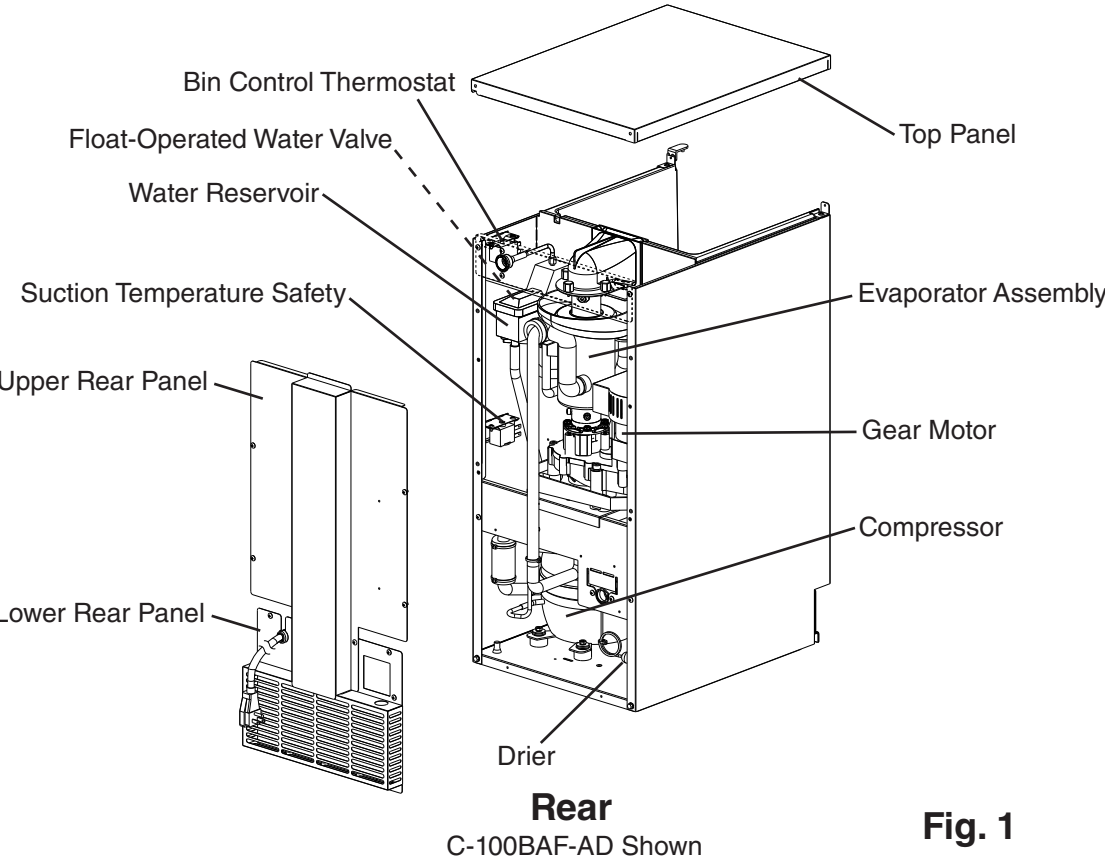
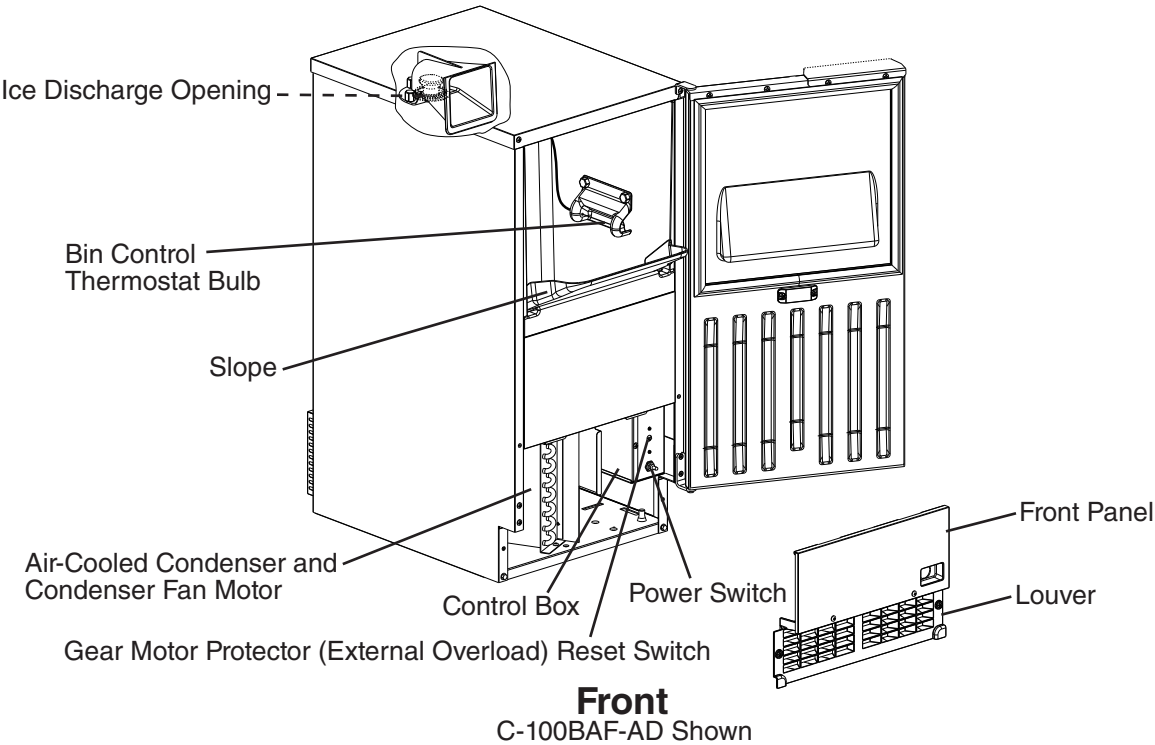
AC SUPPLY VOLTAGE	115/60/1		
AMPERAGE	4.0 A		
MINIMUM CIRCUIT AMPACITY	15 A		
MAXIMUM FUSE SIZE	15 A		
APPROXIMATE ICE PRODUCTION PER 24 HR. lbs./day ( kg/day ) Reference without *marks	Ambient Temp.(°F)	WATER TEMP. (°F)	
		50	70
	70	*92 (42)	89 (40)
	80	81 (37)	71 (32)
	90	66 (30)	*62 (28)
	100	55 (25)	54 (24)
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.)	310 (12.1)	297 (7.7)	
WATER gal./24HR (gal./100 lbs.)	7.7 (12)	11.1 (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 3.17 oz. (90 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; pump adapter hose		
- REQUIRED	N/A		
OPERATING CONDITIONS	VOLTAGE RANGE	104 - 127 V	
	AMBIENT TEMP.	45 - 100° F	
	WATER SUPPLY TEMP.	45 - 90° 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

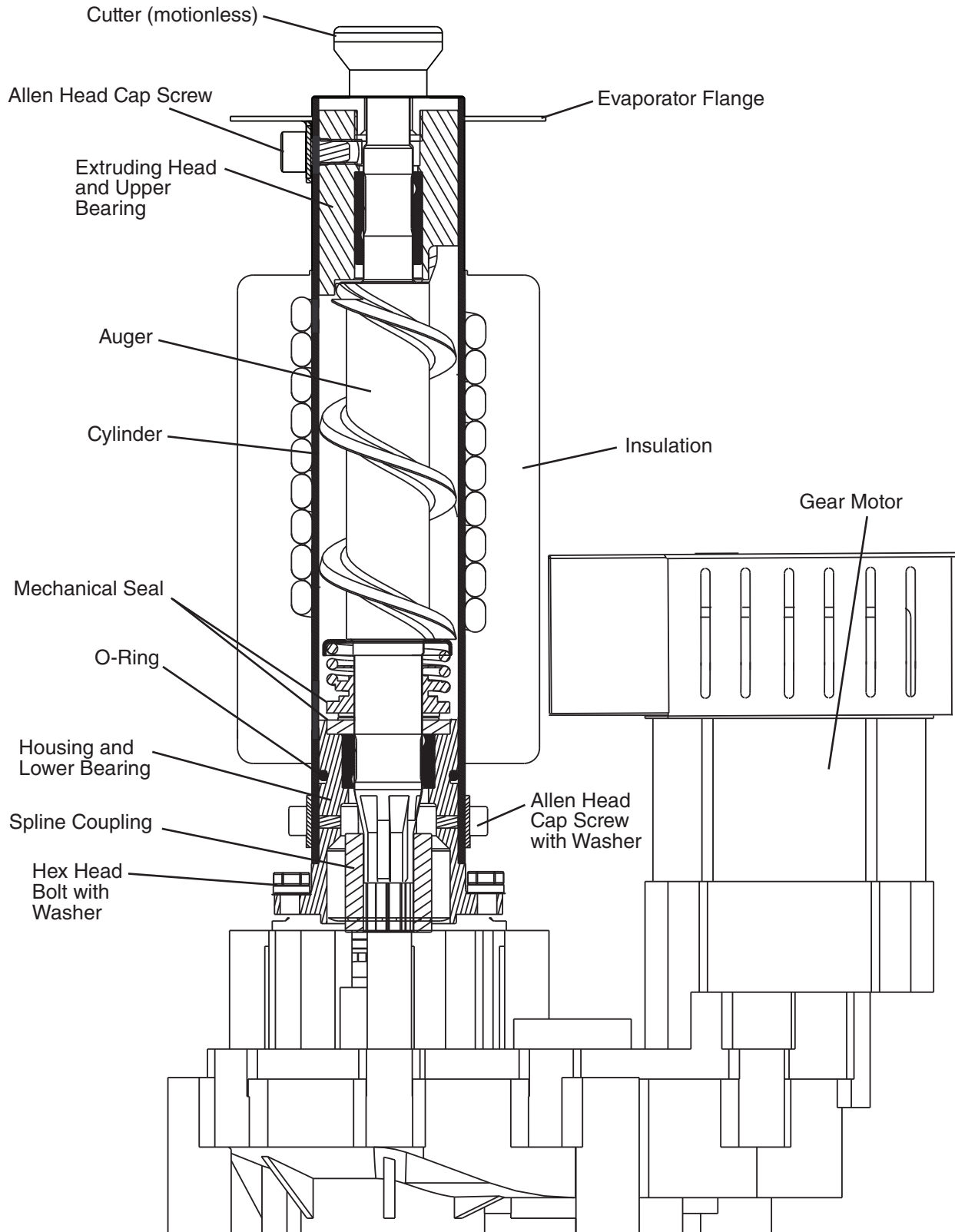
### A. Construction

#### 1. Icemaker



**Fig. 1**

## 2. Ice Making Unit



**Fig. 2**



## B. Sequence of Operation

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

### 1. Freeze Cycle

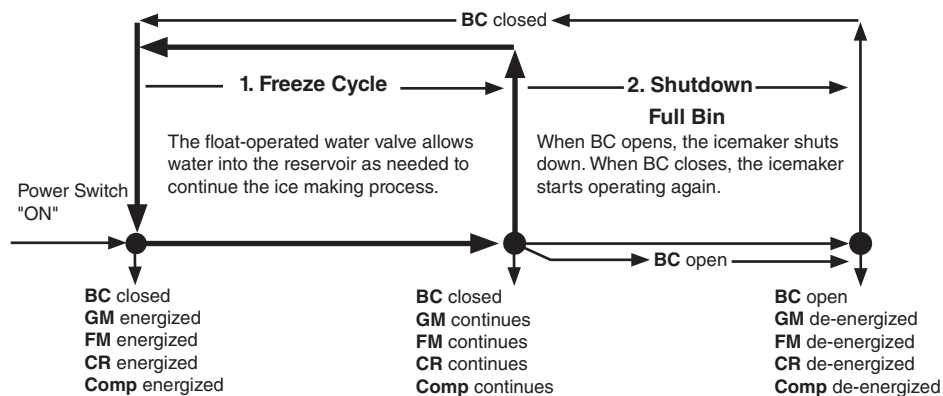
GM, FM, CR, and Comp energize. As the water in the evaporator cools, ice starts forming within 4 to 6 minutes. This time frame depends on the inlet water and ambient temperature conditions.

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

### 2. Bin Control Thermostat Shutdown

Ice fills storage bin to level of BC. When BC opens, GM, FM, CR, and Comp de-energize. When ice level lowers and BC closes, the icemaker starts operating again.

## C-100BAF Series Sequence Flow Chart and Component Operation



Legend: **BC**—bin control thermostat; **Comp**—compressor; **CR**—compressor relay; **FM**—fan motor; **GM**—gear motor

### III. Technical Information

#### A. Water Circuit and Refrigeration Circuit

##### 1. C-100BAF Series

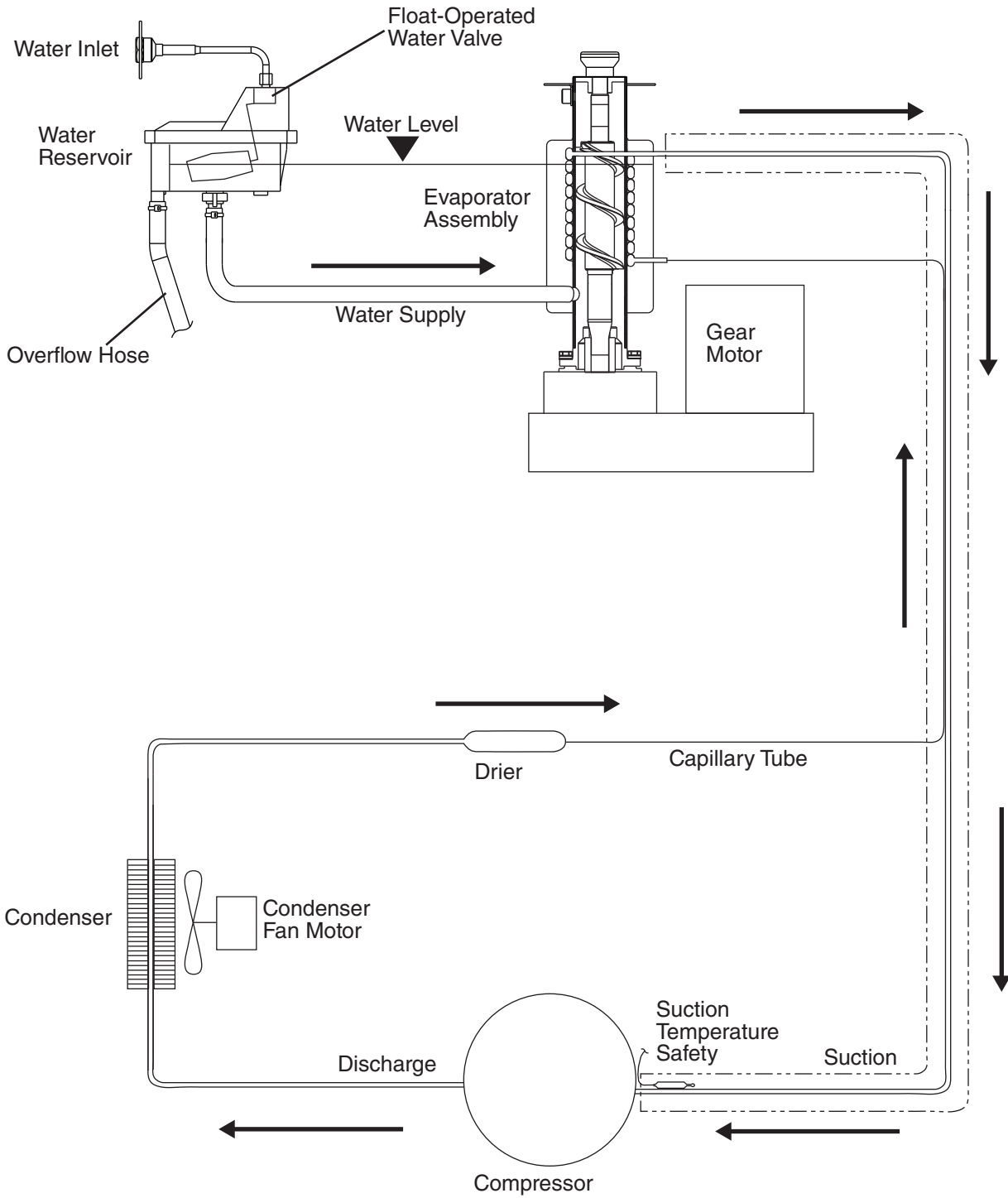
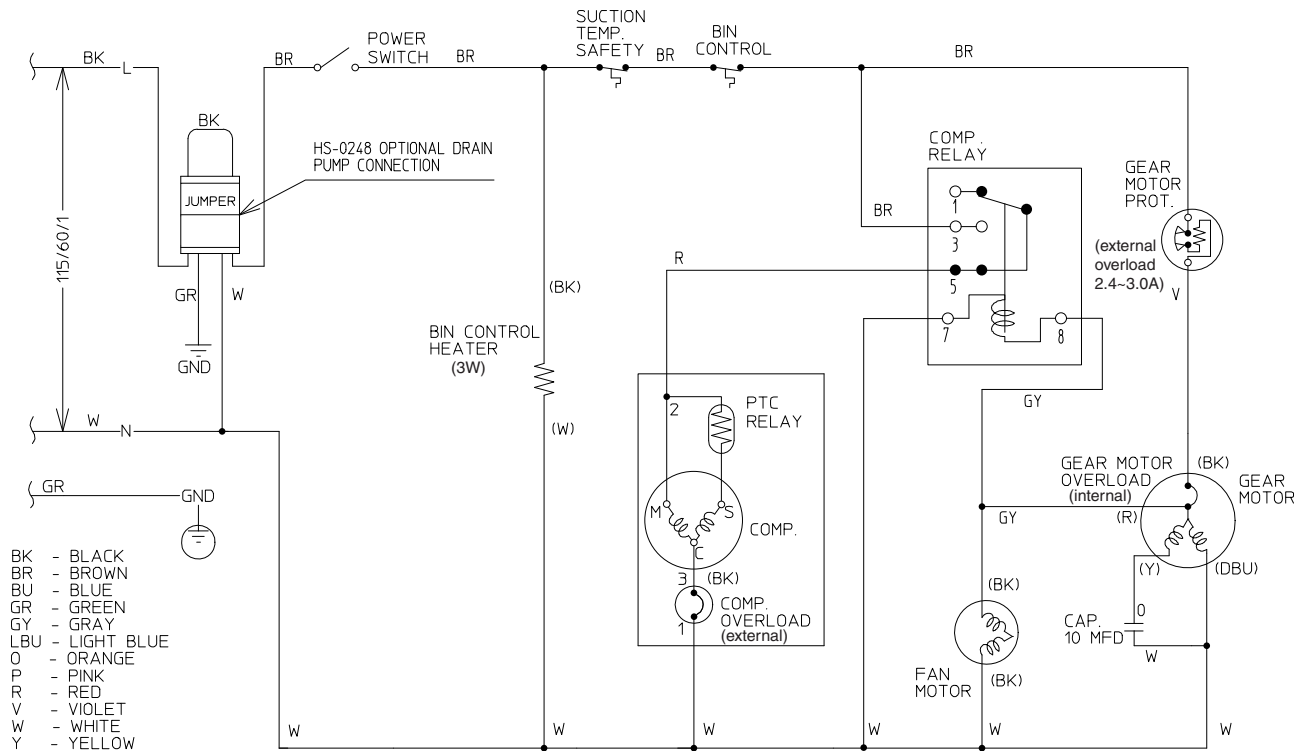


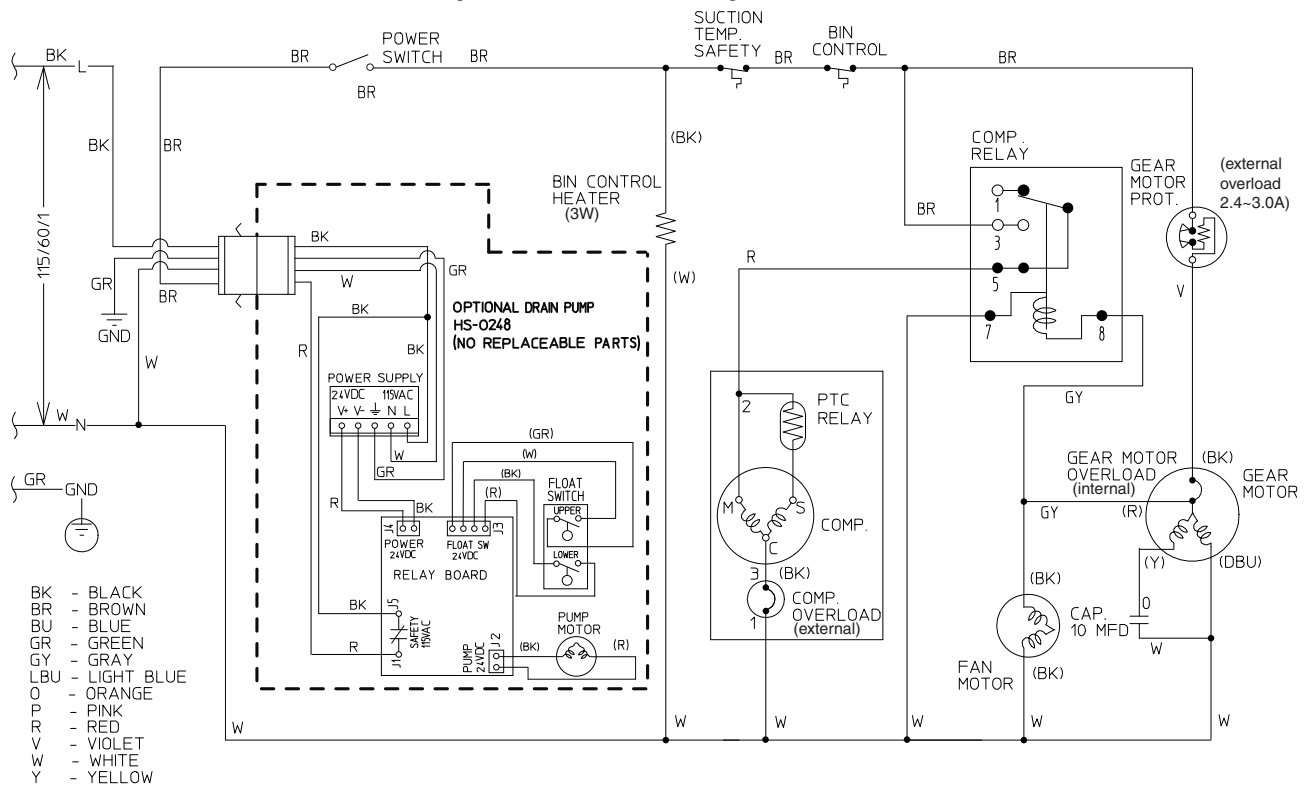
Fig. 3

## B. Wiring Diagram

### 1. C-100BAF Series



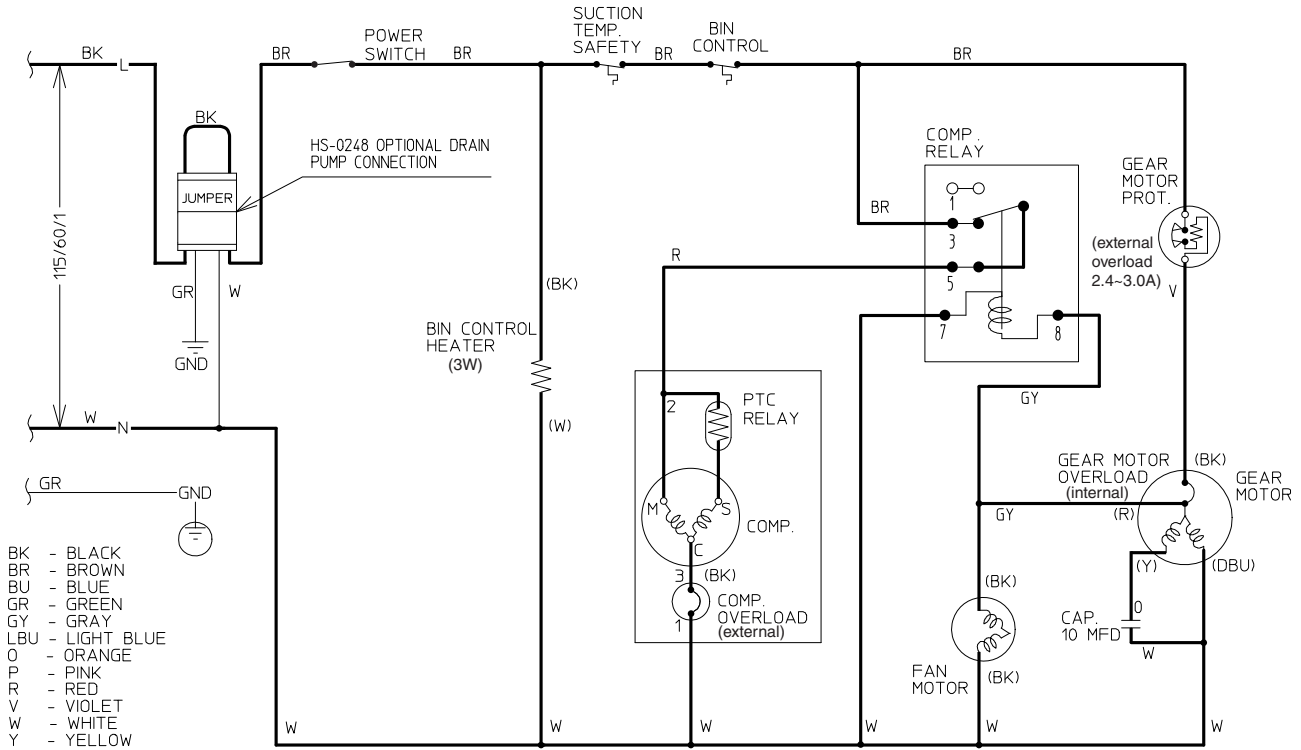
### 2. C-100BAF Series with Optional Drain Pump HS-0248



### 3. Sequence Wiring Diagram

#### a) Freeze Cycle

Power supplied. Gear motor, fan motor, compressor relay, and compressor energize. The float-operated water valve allows water into the reservoir as needed to continue the ice making process.

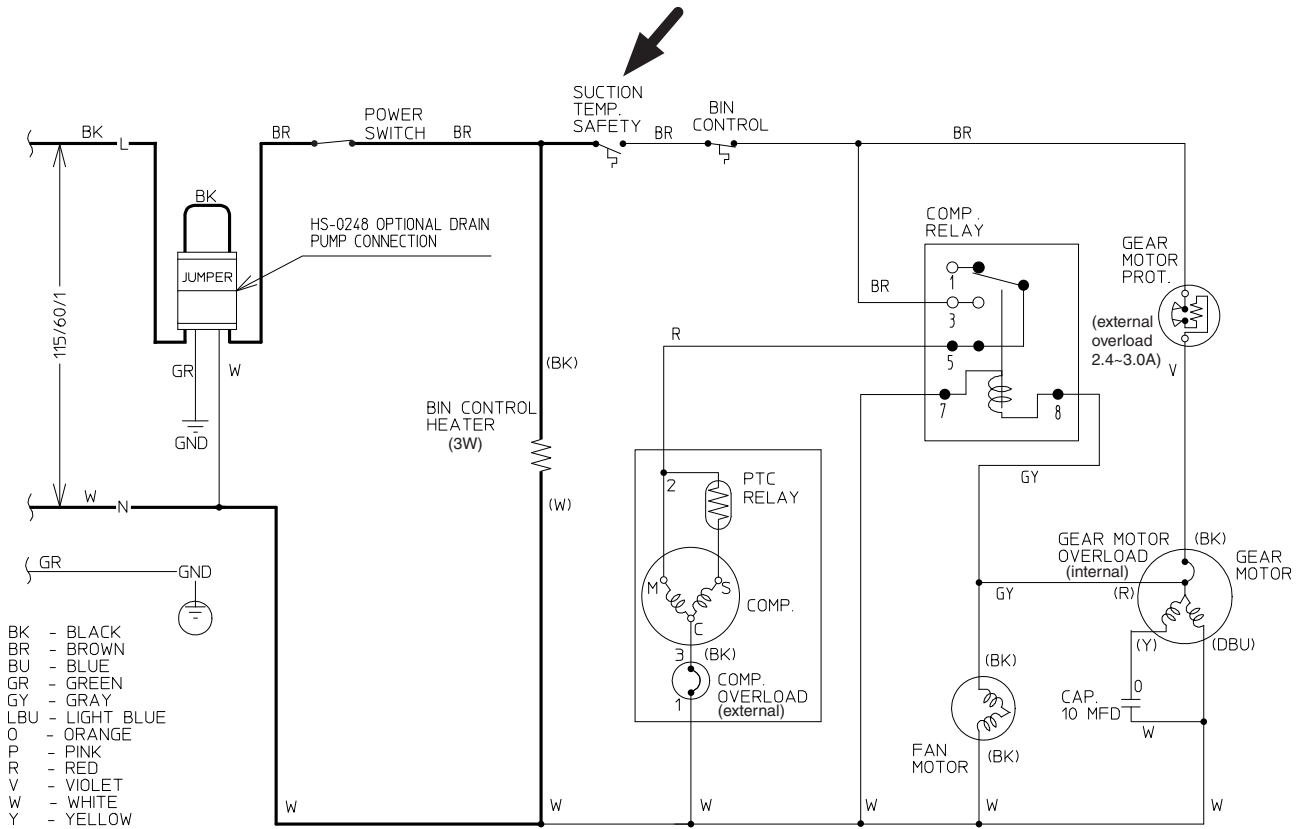




**c) Low Water/Freeze-Up Safety Shutdown**

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 icemaker. 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)

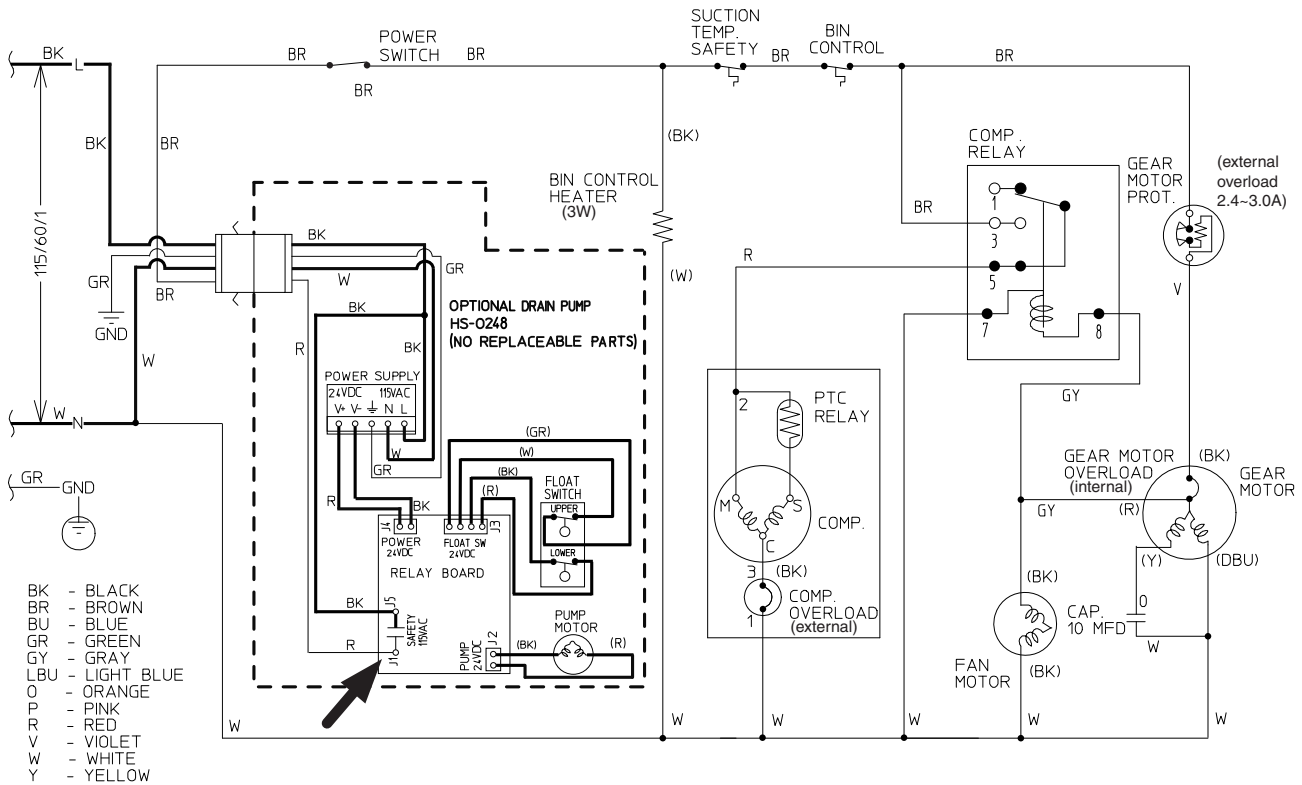




**e) Optional Drain Pump HS-0248 Safety Shutdown**

If the water level in the drain pump reservoir rises high enough to close the drain pump upper float switch, the drain pump safety interrupts power to the icemaker. When the water level lowers enough to open the drain pump upper float switch, power is restored to the icemaker.

The pump motor remains energized as long as the drain pump lower float switch is closed.





## C. Performance Data

### 1. C-100BAF-AD, C-100BAF-ADDS

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (°F/°C)	WATER TEMP. (°F/°C)					
		50/10		70/21		90/32	
	70/21	<b>92</b>	<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>	<b>62</b>	<u>28</u>	57	<u>26</u>
lbs./day <u>kg./day</u>	100/38	55	<u>25</u>	54	<u>24</u>	<b>49</b>	<u>22</u>
APPROXIMATE ELECTRIC CONSUMPTION	70/21	<b>297</b>		308		309	
	80/27	310		310		312	
	90/32	313		<b>310</b>		316	
	watts	100/38		316		<b>316</b>	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	<b>11</b>	<u>0.04</u>	11	<u>0.04</u>	10	<u>0.04</u>
	80/27	10	<u>0.04</u>	9	<u>0.03</u>	8	<u>0.03</u>
	90/32	8	<u>0.03</u>	<b>8</b>	<u>0.03</u>	7	<u>0.08</u>
	gal./day <u>m<sup>3</sup>/day</u>	100/38	7	<u>0.03</u>	6	<u>0.02</u>	<b>6</b>
Evaporator Outlet	70/21	<b>-5</b>		-5		-5	
	80/27	-5		-2		-2	
	90/32	-2		<b>-2</b>		1	
	100/38	1		1		<b>1</b>	
HEAD PRESSURE	70/21	<b>115</b>	<u>8.1</u>	130	<u>9.1</u>	141	<u>9.9</u>
	80/27	126	<u>8.9</u>	149	<u>10.5</u>	156	<u>11.0</u>
	90/32	130	<u>9.1</u>	<b>165</b>	<u>11.6</u>	174	<u>12.2</u>
	PSIG <u>kg/cm<sup>2</sup>G</u>	100/38	129	<u>9.1</u>	167	<u>11.7</u>	<b>183</b>
SUCTION PRESSURE	70/21	<b>12</b>	<u>0.8</u>	13	<u>0.9</u>	15	<u>1.1</u>
	80/27	13	<u>0.9</u>	15	<u>1.1</u>	16	<u>1.1</u>
	90/32	13	<u>0.9</u>	<b>17</b>	<u>1.2</u>	18	<u>1.3</u>
	PSIG <u>kg/cm<sup>2</sup>G</u>	100/38	13	<u>0.9</u>	17	<u>1.2</u>	<b>19</b>

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.

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## 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 practices.
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.
5. Make sure all food zones in the icemaker and storage bin are clean after the unit is serviced. For cleaning procedures, see "VI. Cleaning and Maintenance."

### A. 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 icemaker 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. C. Performance Data" for typical production information.

### B. 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, adequate water supply (minimum of 7 PSIG, maximum of 113 PSIG), and proper voltage per unit nameplate. When checking voltage (115VAC), always choose a white (W) neutral wire to establish a good neutral connection.

- 1) Move the power switch to the "OFF" position, then 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.
- 4) Freeze Cycle – GM, FM, CR, and Comp energize. Ice production begins 4 to 6 minutes after Comp starts depending on ambient and water conditions.  
**Diagnosis:** Check that GM, FM, and Comp start. If not, check the power switch, STS (see "III.B.3.c) Low Water/Freeze-Up Safety Shutdown"), BC assembly (including heater), GM protector (external overload) (see "III.B.3.d) Gear Motor Protector (external overload) Shutdown"), GM thermal protector (internal overload), GM windings, GM capacitor, voltage to FM, voltage on CR, PTC relay, voltage on Comp terminals, Comp windings, and Comp thermal protector (external overload). If optional drain pump HS-0248 is installed, see "IV.D. Optional Drain Pump HS-0248." If GM starts, but the auger does not turn, check the spline coupling between the auger and GM.

- 5) **Shutdown (bin full)** – Ice fills storage bin to level of BC. BC opens. GM, FM, CR, and Comp de-energize. **Diagnosis:** When the icemaker is running, hold ice in contact with BC bulb. If the components fail to de-energize, check BC.
- 6) Move the power switch to the "OFF" position and unplug the unit from the electrical outlet.
- 7) Make any repairs necessary, then replace the removed parts in the reverse order of which they were removed.
- 8) Plug the unit back in. Move the power switch to the "ON" position to start the automatic icemaking process.

Legend: **BC**–bin control thermostat; **Comp**–compressor; **CR**–compressor relay;  
**FM**–fan motor; **GM**–gear motor; **STS**–suction temperature safety

## 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.	1. Check water supply, water filters, water inlet strainer-washer, float, and water valve.
		2. Open due to evaporator freeze-up (gear motor not operating).	2. Check gear motor operation.
		3. Bad contacts.	3. 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 (External Overload) (2.4~3.0A)	1. Tripped.	1. Press switch on control box to reset. Check supply voltage, gear motor amperage, gear motor bearings, and auger bearings (see "V.C.1. Upper Bearing Wear Check"). Check for evaporator freeze-up.

<b>Problem</b>	<b>Possible Cause</b>		<b>Remedy</b>
[1] The icemaker will not start (continued).	f) Gear Motor Internal Overload (Thermal Protector)	1. Open.	1. Allow to cool and reset. Check gear motor bearings, auger bearings (see "V.C.1. Upper Bearing Wear Check"), and supply voltage. Check for evaporator freeze-up.
	g) Optional Drain Pump HS-0248 Safety	1. Open.	1. Check drain pump. See "IV.D. Optional Drain Pump HS-0248."
[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 open.	2. Replace.
		3. Loose connections.	3. Tighten.
	d) External Compressor Overload (Thermal Protector)	1. Open due to clogged condenser coil.	1. Clean condenser coil.
		2. Open due to condenser fan not operating.	2. Check condenser fan for continuity and replace.
		3. Defective.	3. Let compressor cool and allow overload to reset. If overload does not reset, replace overload.
	e) Compressor	1. Wiring to compressor.	1. Check for loose connection or open, and tighten or replace.
2. Motor winding opened or grounded.		2. Replace compressor.	
3. Compressor locked.		3. Replace compressor.	
[3] Compressor starts, but gear motor will not start.	a) Gear Motor	1. Bad gear motor capacitor.	1. Replace capacitor.
		2. Open windings.	2. Replace gear motor.
		3. Locked bearings	3. 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. Check water supply, filters, water inlet strainer-washer, float, and water valve. Get recommended pressure (7 to 113 PSIG).

<b>Problem</b>	<b>Possible Cause</b>		<b>Remedy</b>
[4] Gear motor and compressor start, but no ice is produced (continued).	b) Refrigerant Line	1. Gas leaks.	1. Check for leaks with a leak detector. Recover, repair, replace drier, evacuate, and recharge. See "V.A. Service for Refrigerant Lines."
		2. Refrigerant lines or components restricted.	2. Recover, repair, replace drier, evacuate, and recharge. See "V.A. Service for Refrigerant Lines."
	c) Gear Motor	1. Spline coupling or gear broken and auger not turning.	1. Replace spline coupling or gear motor.
	d) Compressor	1. Defective.	1. See "2.[1]d) Compressor."

## 2. Low Ice Production

<b>Problem</b>	<b>Possible Cause</b>		<b>Remedy</b>
[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.
		3. Bad thermostat heater.	3. Check and replace. See "V.F. Removal and Replacement of Bin Control Thermostat Assembly."
	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. Refrigerant leak/low charge.	1. Check for leaks with a leak detector. Recover, repair, replace drier, evacuate, and recharge. See "V.A. Service for Refrigerant Lines."
		2. Refrigerant lines or components restricted.	2. Recover, repair, replace drier, evacuate, and recharge. See "V.A. Service for Refrigerant Lines."
		3. Overcharged.	3. Recharge.
	d) Compressor	1. Faulty external compressor overload (thermal protector)	1. Replace overload.
		2. Inefficient compressor.	2. Replace compressor.

### 3. Other

Problem	Possible Cause	Remedy	
[1] Abnormal noise.	a) Fan Motor	1. Bearing worn out.	1. Replace fan motor.
		2. Fan blade deformed.	2. Replace fan blade.
		3. Fan blade does not move freely.	3. Replace fan blade and/or fan motor.
	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. Reposition.
	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 evaporator freezing cylinder.	1. Use Hoshizaki "Scale Away" 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 for leaks with a leak detector. Check charge. Recover, repair, replace drier, evacuate, and recharge. See "V.A. Service for Refrigerant Lines."
[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 (external 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."

## D. Optional Drain Pump HS-0248

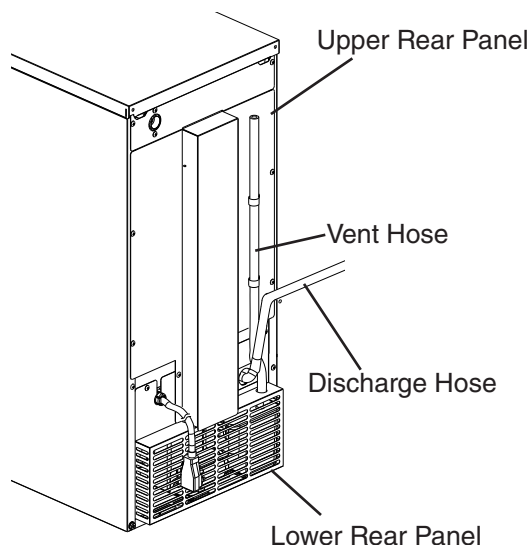
### 1. Overview

As ice melts, water drains from the storage bin into the drain pump reservoir. When the drain pump's lower float switch closes, the pump motor energizes and pumps out the water. If water cannot be pumped out of the drain pump reservoir due to a blocked discharge hose, bad check valve, or bad pump motor, the upper float switch closes as the water level in the pump rises. When the upper float switch closes, this activates the safety. The safety interrupts power to the icemaker until the upper float switch opens. Power is supplied to the pump motor as long as the lower float switch is closed. For schematics, see "III.B.2. C-100BAF Series with Optional Drain Pump HS-0248" and "III.B.3.e) Optional Drain Pump HS-0248 Safety Shutdown."

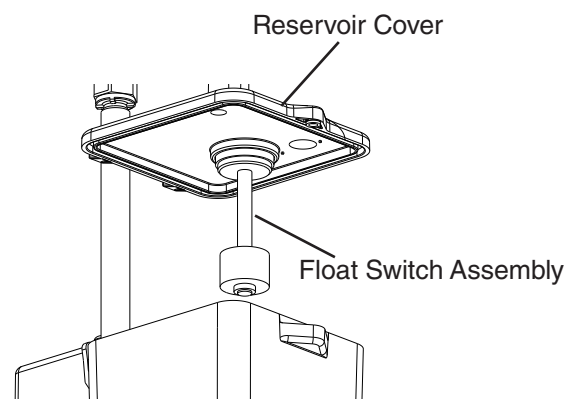
### 2. Float Switch Cleaning

Depending on local water conditions, scale may build up on the float switch. Scale on the switch can cause the float to stick. In this case, the float switch should be cleaned and checked.

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet. **WARNING! Moving the power switch to the "OFF" position does not de-energize the power supply to the pump. The icemaker must be unplugged to de-energize the power supply to the pump.**
- 2) Disconnect the vent hose from the upper rear panel. See Fig. 4.
- 3) Remove the upper rear panel, then the lower rear panel.
- 4) Remove the reservoir cover from the drain pump assembly. See Fig. 5.
- 5) Leave the float switch assembly connected to the float switch cover and leave the float on the shaft. Wipe down the float switch assembly with a mixture of 1 part recommended cleaner Hoshizaki "Scale Away" and 25 parts warm water.
- 6) Rinse the float switch assembly, then replace the reservoir cover in its original position.



**Fig. 4**



**Fig. 5**



- 7) Make sure all hose connections are secure, then reinstall the lower rear panel and upper rear panel in their correct positions. **WARNING! Make sure that there are no wires pinched between the rear covers and icemaker.**
- 8) Resecure the vent hose to the icemaker. **CAUTION! The vent hose must be attached and secured to the icemaker or water damage may occur. Make certain there are no kinks in the vent hose. The drain pump will not operate correctly with a partially blocked vent hose.**
- 9) Plug the icemaker into the electrical outlet.
- 10) Test the drain pump by slowly pouring water into the icemaker's ice storage bin. Approximately 1 pint (500 ml) of water is required to close the lower float switch and activate the drain pump. The drain pump will turn on automatically and pump out the water.
- 11) To test the operation of the drain pump internal safety switch, move the power switch to the "ON" position. Pour another quart (950 ml) of water into the icemaker's ice storage bin, then completely restrict the discharge hose while the drain pump is operating. Pour more water into the icemaker's ice storage bin until the upper float switch closes and the icemaker turns off. The drain pump will continue to operate. Check for leaks. Remove the discharge hose restriction and allow the water to be pumped out normally. Power to the icemaker will be restored when the water in the drain pump returns to a normal level and the upper float switch opens.

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## 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.
4. Make sure all food zones in the icemaker and storage bin are clean after the unit is serviced. For cleaning procedures, see "VI. Cleaning and Maintenance."

## 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.

### CAUTION

1. Do not leave the system open for longer than 15 minutes when replacing or servicing parts. 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. When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

### 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. R-134a itself is not flammable at atmospheric pressure and temperatures up to 212°F (100°C).
2. 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.
3. Do not use silver alloy or copper alloy containing arsenic.
4. 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) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.

### **CAUTION**

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. When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

- 2) 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. Be sure the high-side charging hose is connected to the field-installed high-side access valve.

### **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 high-side valve on the gauge 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 high-side valve on the gauge manifold.
- 5) Disconnect the gauge manifold hose from the vacuum pump and attach it to a refrigerant service cylinder. 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 when charging an R-134a system. Place the service cylinder on the scales; if the service cylinder is not equipped with a dip tube, invert the service cylinder, then place it on the scales. Open the high-side valve on the gauge manifold.
- 7) Allow the system to charge with liquid until the proper charge weight is met.
- 8) Close the high-side valve on the gauge manifold, then close the refrigerant access valve (if applicable). Disconnect the gauge manifold hose.
- 9) Cap the access valve to prevent a possible leak.

## B. Removal and Replacement of Compressor

### CAUTION

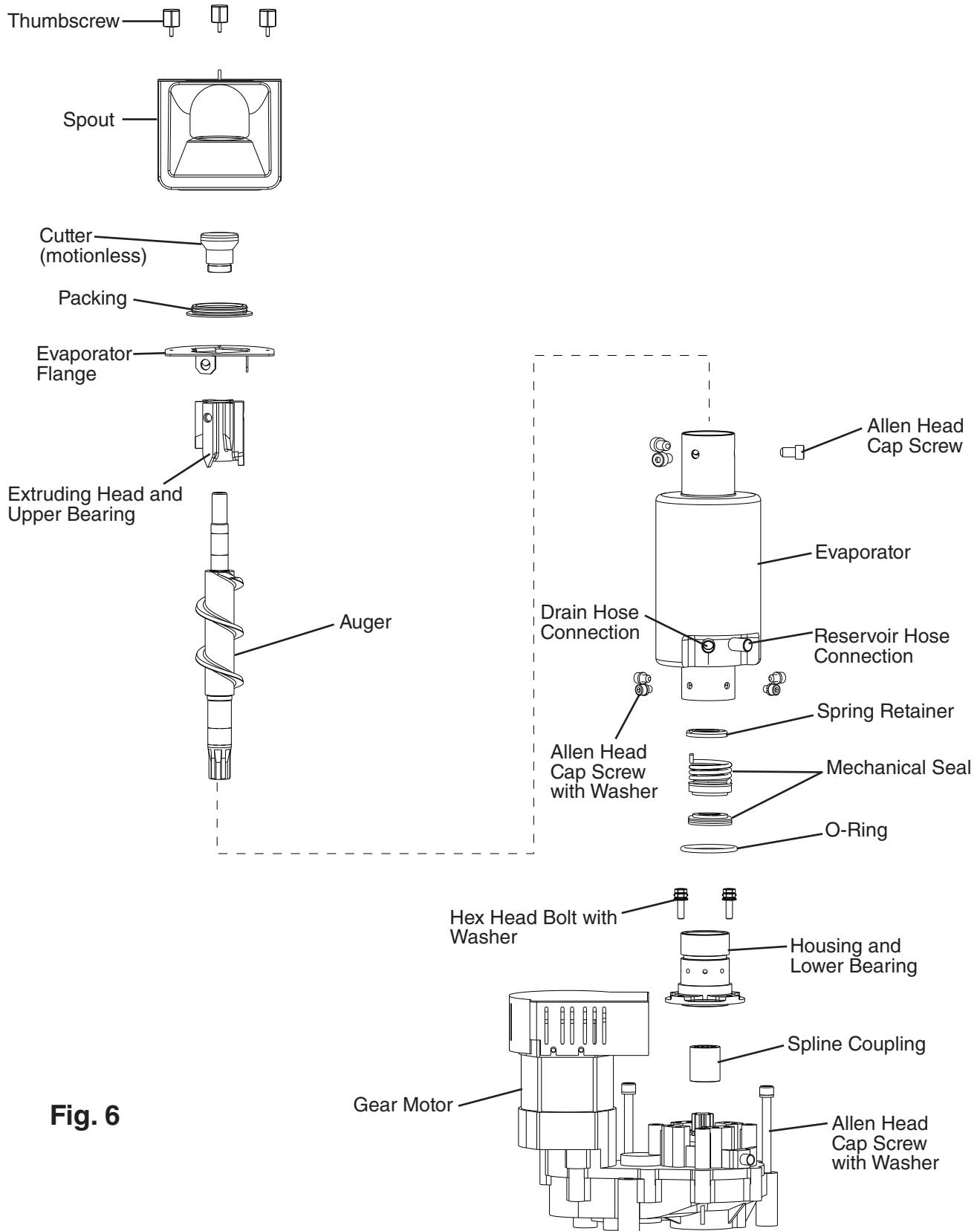
1. Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.
2. When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

Note: Hoshizaki recommends that compressor starting components be 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.

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 2) Remove the upper and lower rear panels, front panel, and louver. See Fig. 1. Remove the screws securing the control box, then gently move the box out of the way.
- 3) Install a temporary tap-line valve on the high side, then recover the refrigerant and store it in an approved container.
- 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) Replace the tap-line valve with a proper, permanent access valve.
- 11) Remove the drier, then place the new drier in position.
- 12) Remove the plugs from the suction, discharge, and process pipes.
- 13) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.
- 14) 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.

- 15) Evacuate the system, then charge it with refrigerant. See the nameplate for the required refrigerant charge.
- 16) Connect the terminals and replace the terminal cover in its correct position.
- 17) Replace the control box, louver, and panels in their correct positions.
- 18) Plug the unit back in. Move the power switch to the "ON" position.

# C. Removal and Replacement of Evaporator Assembly Components

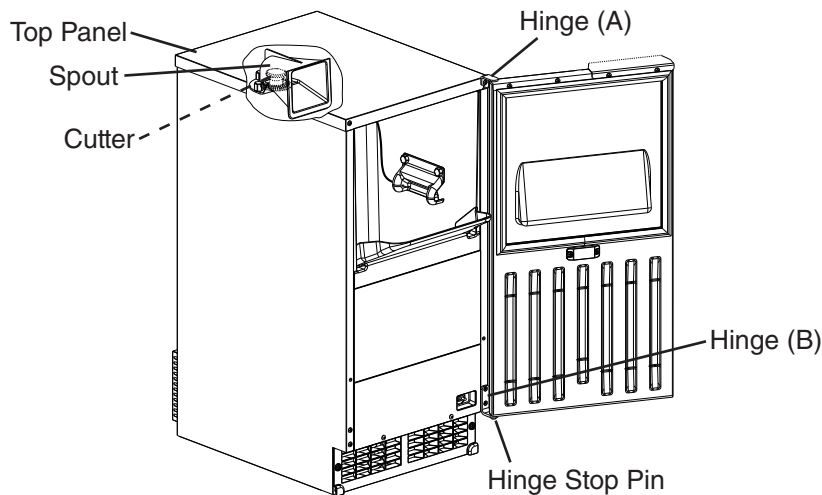


**Fig. 6**

## 1. Upper Bearing Wear Check

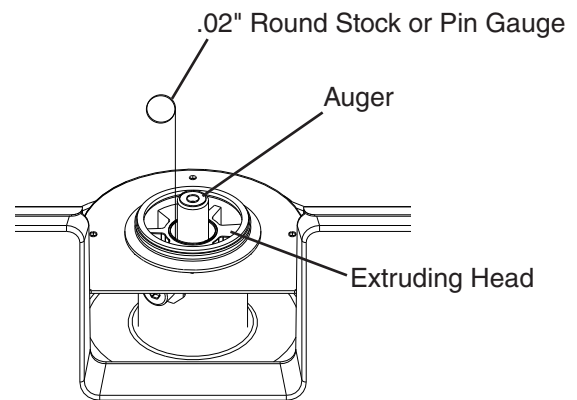
To ensure that the bearing inside the extruding head does not exceed the wear tolerance of .02", follow the instructions below.

- 1) Move the power switch to the "OFF" position, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 4) Remove the top panel.
- 5) Remove the spout.
- 6) Remove the cutter.



**Fig. 7**

- 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. 8. 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.



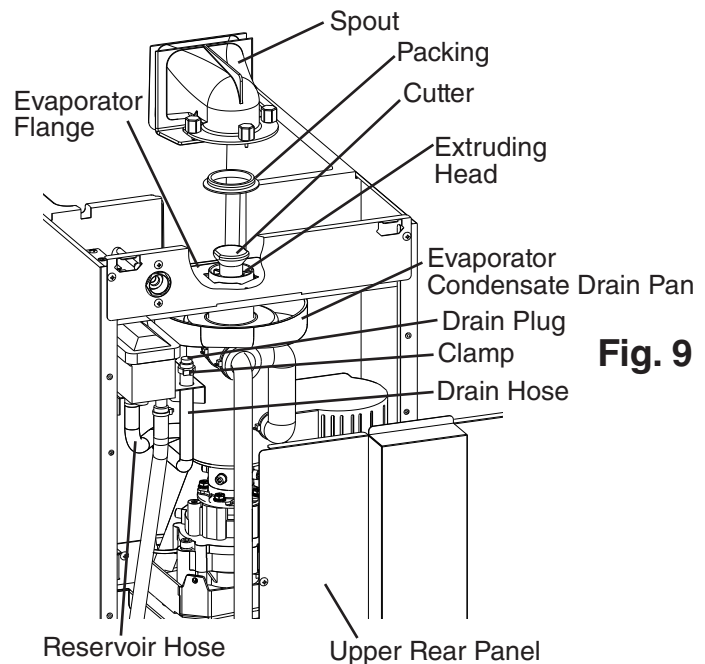
**Fig. 8**

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.
- 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, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 9.
- 8) Remove the clamp securing the drain plug, then lower the drain hose into a container. Remove the drain plug to drain the water from the reservoir and evaporator assembly.
- 9) After all of the water has drained, replace the drain hose, drain plug, and drain clamp in their original positions.
- 10) Remove the cutter and packing.
- 11) Remove the allen head cap screws securing the extruding head and evaporator flange, then lift off.
- 12) Place the evaporator flange and new extruding head in place, then tighten down the allen head cap screws.
- 13) Open the water supply line shut-off valve and check for water leaks. Replace the removed parts in the reverse order of which they were removed.
- 14) Plug the unit back in. Move the power switch to the "ON" position.



**Fig. 9**

## 3. Removal and Replacement of Auger

- 1) Move the power switch to the "OFF" position, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 9.



- 8) Remove the clamp securing the drain plug, then lower the drain hose into a container. Remove the drain plug to drain the water from the reservoir and evaporator assembly.
- 9) After all of the water has drained, replace the drain hose, drain plug, and drain clamp in their original positions.
- 10) Remove the packing.
- 11) Remove the allen head cap screws securing the extruding head and evaporator flange. Remove the evaporator flange, then grasp the cutter and carefully lift out the cutter and extruding head. Grasp the top of the auger and carefully lift out the auger.
- 12) 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.
- 13) Remove the mechanical seal from the old auger and place it on the new auger.
- 14) Install the new auger. Replace the cutter, extruding head, and evaporator flange in their correct positions.
- 15) Open the water supply line shut-off valve and check for water leaks. Replace the removed parts in the reverse order of which they were removed.
- 16) Plug the unit back in. Move the power switch to the "ON" position.

#### 4. Removal and Replacement of Evaporator

##### **CAUTION**

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. When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

- 1) Move the power switch to the "OFF" position, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper and lower rear panels. See Fig. 9.
- 8) Remove the clamp securing the drain plug, then lower the drain hose into a container. Remove the drain plug to drain the water from the reservoir and evaporator assembly.

- 9) Disconnect the drain hose and reservoir hose from the evaporator.
- 10) Remove the packing.
- 11) Remove the allen head cap screws securing the extruding head and evaporator flange. Remove the evaporator flange, then grasp the cutter and carefully lift out the cutter and extruding head. Grasp the top of the auger and carefully lift out the auger. When pulling out the auger, the upper part of the mechanical seal should come out with it.
- 12) Remove the evaporator condensate drain pan.
- 13) Install a temporary tap-line valve on the high side, then recover the refrigerant and store it in an approved container.
- 14) Disconnect the inlet and outlet tubing.
- 15) Remove the allen head cap screws securing the evaporator to the lower housing.
- 16) Lift off the evaporator.
- 17) 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.
- 18) 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.
- 19) Replace the tap-line valve with a proper, permanent access valve.
- 20) Remove the drier, then place the new drier in position.
- 21) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.
- 22) 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.
- 23) Evacuate the system, and charge it with refrigerant. See the nameplate for the required refrigerant charge.
- 24) Reattach and secure the reservoir hose, drain hose, and drain plug.
- 25) Install the auger assembly with the upper part of the mechanical seal attached. Replace the cutter, extruding head, and evaporator flange in their correct positions.
- 26) Open the water supply line shut-off valve and check for water leaks. Replace the removed parts in the reverse order of which they were removed.
- 27) 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, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 9.
- 8) Remove the clamp securing the drain plug, then lower the drain hose into a container. Remove the drain plug to drain the water from the reservoir and evaporator assembly.
- 9) After all of the water has drained, replace the drain hose, drain plug, and drain clamp in their original positions.
- 10) Remove the packing.
- 11) Remove the allen head cap screws securing the extruding head and evaporator flange. Remove the evaporator flange, then grasp the cutter and carefully lift out the cutter and extruding head. Grasp the top of the auger and carefully lift out the auger. When pulling out the auger, the upper part of the mechanical seal should come out with it.
- 12) Remove the allen head cap screws securing the evaporator to the lower housing.
- 13) Raise the evaporator up to access the lower housing.
- 14) 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.
- 15) Remove the mechanical seal from the housing. If only replacing the mechanical seal, proceed to step 18.

#### **CAUTION**

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

### 5b. Lower Housing

- 16) Remove the O-ring and the bolts securing the lower 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.
- 17) Mount the lower housing onto the gear motor, then install the O-ring onto the lower housing.

- 18) Install the lower part of the mechanical seal onto the lower housing.
- 19) Lower the evaporator down and secure it to the lower housing.
- 20) Install the auger assembly with the upper part of the mechanical seal attached. Replace the cutter, extruding head, and evaporator flange in their correct positions.
- 21) Open the water supply line shut-off valve and check for water leaks. Replace the removed parts in the reverse order of which they were removed.
- 22) Plug the unit back in. Move the power switch to the "ON" position.

## **6. Removal and Replacement of Gear Motor**

Note: Hoshizaki recommends that the gear motor capacitor be replaced at the same time as the gear motor.

- 1) Move the power switch to the "OFF" position, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 9.
- 8) Remove the bolts securing the lower housing to the gear motor. Lift the evaporator up slightly.
- 9) Remove the bolts securing the gear motor.
- 10) Disconnect the gear motor wires, then remove the gear motor.
- 11) Attach the spline coupling from the old gear motor to the new gear motor.
- 12) Replace the removed parts in the reverse order of which they were removed. Before replacing the panels and door, open the water supply line shut-off valve and check for water leaks.
- 13) 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, then unplug the unit from the electrical outlet.
- 2) Remove the upper and lower rear panels, front panel, and louver. Remove the screws securing the control box, then gently move 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, then unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) Remove the upper rear panel. See Fig. 9.
- 4) Remove the clamp securing the drain plug, then lower the drain hose into a container. Remove the drain plug to drain the water from the reservoir and evaporator assembly.
- 5) After all of the water has drained, replace the drain hose, drain plug, and drain clamp in their original positions.
- 6) Loosen the inlet fitting on the top of the reservoir.
- 7) Disconnect the hoses from the water reservoir.
- 8) Remove the reservoir bracket and reservoir.
- 9) Remove the reservoir from the reservoir bracket.
- 10) Install the new reservoir onto the reservoir bracket.
- 11) Replace the removed parts in the reverse order of which they were removed. Before replacing the rear panel, open the water supply line shut-off valve and check for water leaks.
- 12) Plug the unit back in. Move the power switch to the "ON" position.

## **F. Removal and Replacement of Bin Control Thermostat Assembly**

- 1) Move the power switch to the "OFF" position, then 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, then gently remove the door from hinge (A). See Fig. 7.
- 3) Remove the top panel.
- 4) Remove the thermostat holder from the storage bin, then remove the bin control thermostat bulb from the holder.
- 5) Disconnect the thermostat wires. Disconnect the thermostat heater wires. Remove the bin control thermostat assembly from the unit.
- 6) Install the new bin control thermostat assembly in the reverse order of the removal procedure.
- 7) Replace the removed parts in the reverse order of which they were removed.
- 8) Plug the unit back in. Move the power switch to the "ON" position.

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## VI. Cleaning and Maintenance

This icemaker must be cleaned and maintained in accordance with the instruction manual and labels provided with the icemaker. Consult with your local distributor about cleaning and maintenance service. To obtain the name and phone number of your local distributor, visit [www.hoshizaki.com](http://www.hoshizaki.com) or call Hoshizaki Technical Support at 1-800-233-1940 in the USA.

### ⚠ WARNING

1. Only qualified service technicians should attempt to service this icemaker.
2. **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.
3. The storage bin is for ice use only. Do not store anything else in the storage bin.
4. 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.
5. 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. Do not use ice made from the cleaning and sanitizing solutions. After cleaning and sanitizing, be careful not to leave any solution in the icemaker.

## 1. Cleaning Solution

### IMPORTANT

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

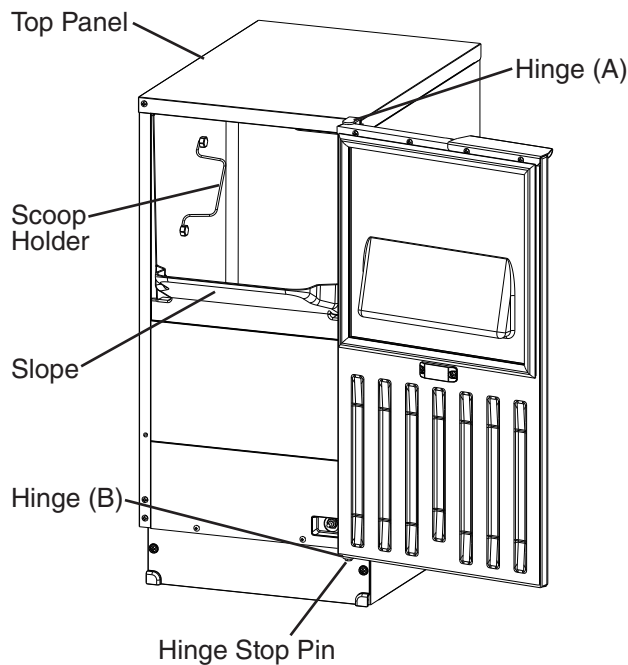
Dilute 1.6 fl. oz. (47 ml or 3.2 tbs) of Hoshizaki "Scale Away" with 1 qt (1 l) of warm water. This is a minimum amount. Make more solution if necessary.

## 2. Cleaning Procedure

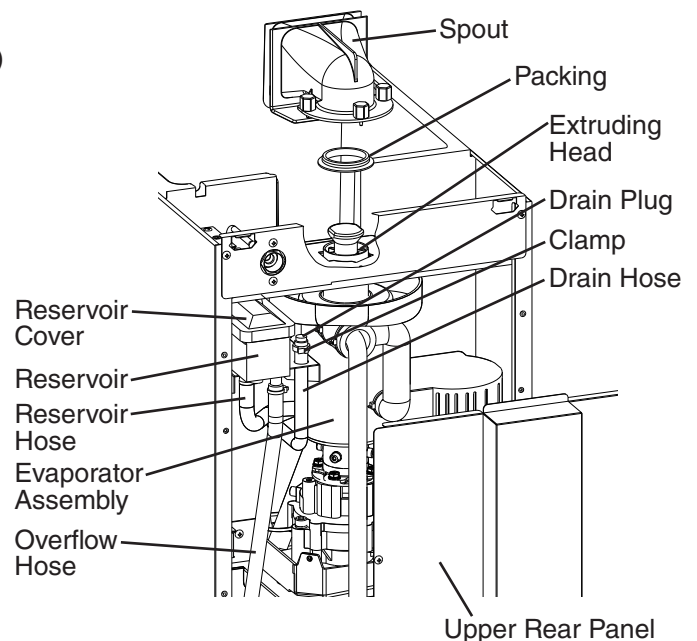
- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.

- 3) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly, then gently remove the door from hinge (A). See Fig. 10.
- 4) Remove the 2 screws securing the top panel, then lift it off.
- 5) Remove all ice from the storage bin.
- 6) Remove the slope from the storage bin by carefully bending it in the center and releasing it from the 2 slope shafts.
- 7) Remove the scoop. Remove the 2 thumbscrews securing the scoop holder, then remove it.
- 8) Remove the screws securing the upper rear panel, then remove it.
- 9) Remove the clamp securing the drain plug, then lower the drain hose into a container. See Fig. 11. Remove the drain plug to drain the water from the reservoir and evaporator assembly.
- 10) After all of the water has drained, replace the drain plug in its correct position.
- 11) Remove the reservoir cover. Pour the cleaning solution into the reservoir until the solution starts to flow through the overflow hose. 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. Remove the thumbscrews securing the spout, then remove the spout. Pour additional cleaning solution over the extruding head until the evaporator assembly is completely full.



**Fig. 10**



**Fig. 11**

- 12) Allow the icemaker to sit for 10 minutes before operation. If you placed a clamp on the reservoir hose in step 11, remove it before operation and replace the spout in its correct position.
- 13) Plug the unit back in. Move the power switch to the "ON" position.
- 14) Allow the unit to make ice using the solution. When ice stops coming out, move the power switch to the "OFF" position. Unplug the unit from the electrical outlet.
- 15) Remove the drain plug to drain any remaining solution.
- 16) After all of the solution has drained, replace the drain plug in its correct position.
- 17) Remove the reservoir cover. Using a clean container, pour water into the reservoir until it starts to flow through the overflow hose. Replace the reservoir cover in its correct position.
- 18) Remove the drain plug to drain the water.  
Note: If you do not sanitize the icemaker, go to step 11 in "Sanitizing Procedure - Final."
- 19) After all of the water has drained, replace the drain plug 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 flow through the overflow hose. Replace the reservoir cover in its correct position.
- 2) Remove the spout and packing.
- 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, spout, and packing.
- 4) Rinse the parts thoroughly with clean water.
- 5) Replace the packing and spout 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. Unplug the unit from the electrical outlet.



## 5. Sanitizing Procedure - Final

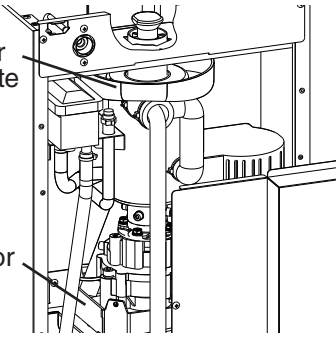
- 1) Remove the drain plug to drain any remaining solution.
- 2) After all of the solution has drained, replace the drain plug in its correct position.
- 3) Remove the reservoir cover. Pour the sanitizing solution into the reservoir until the solution starts to flow through the overflow hose.
- 4) Allow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

## B. Maintenance

The maintenance schedule below is a guideline. More frequent maintenance may be required depending on water quality, the icemaker's environment, and local sanitation regulations.

### ⚠ WARNING

1. Only qualified service technicians should attempt to service this icemaker.
2. Move the power switch to the "OFF" position and unplug the unit from the electrical outlet before servicing.

Maintenance Schedule		
Frequency	Area	Task
Weekly	Scoop	Clean the scoop using a neutral cleaner. Rinse thoroughly after cleaning.
Monthly	External Water Filters	Check for proper pressure and change if necessary.
	Icemaker Exterior	Wipe down with clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off oil or dirt build up. Clean any chlorine staining (rust colored spots) using a non-abrasive cleaner like Zud or Bon Ami.
Every 6 Months	Icemaker and Storage Bin	Clean and sanitize per the cleaning and sanitizing instructions provided in this manual. See "III. A. Cleaning and Sanitizing Instructions."
	Evaporator Condensate Drain Pan and Gear Motor Drain Pan	Wipe down with clean cloth and warm water. <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>Evaporator Condensate Drain Pan</p> <p>Gear Motor Drain Pan</p> </div>  </div>
	Storage Bin Drain	Maintain as outlined in "III.B.1. Storage Bin Drain."
Yearly	Water Supply Inlet	Close the icemaker water supply line shut-off valve and drain the water system. Clean the water supply inlet screen.
	Condenser	Inspect. Clean if necessary. See "III.B.2. Condenser."
	Water Hoses	Inspect the water hoses and clean/replace if necessary.
	Upper Bearing (extruding head)	Check for wear using .02" round stock or pin gauge. Replace both upper bearing and lower bearing if wear exceeds factory recommendations. See the Service Manual for details.
After 3 Years, then Yearly	Upper Bearing (extruding head); Lower Bearing and O-Ring (lower housing); Mechanical Seal; Evaporator Cylinder; Auger	Inspect. Replace both upper bearing and lower bearing if wear exceeds factory recommendations. Replace the mechanical seal if the seal's contact surfaces are worn, cracked, or scratched.

## 1. Storage Bin Drain

In some conditions, slime may build up inside the storage bin drain and prevent water from draining properly. To prevent this buildup, perform the following procedure once every 3 months or as often as necessary for conditions.

- 1) Move the power switch to the "OFF" position.
- 2) Remove all ice from the storage bin.
- 3) Mix a batch of sanitizing solution by diluting 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. Using a chlorine test strip or other method, confirm that you have a concentration of about 200 ppm.
- 4) Slowly pour the sanitizing solution into the storage bin.
- 5) After all of the solution has drained, clean the storage bin liner with a neutral cleaner. Rinse thoroughly with clean water.
- 6) Move the power switch to the "ON" position to start the automatic icemaking process.

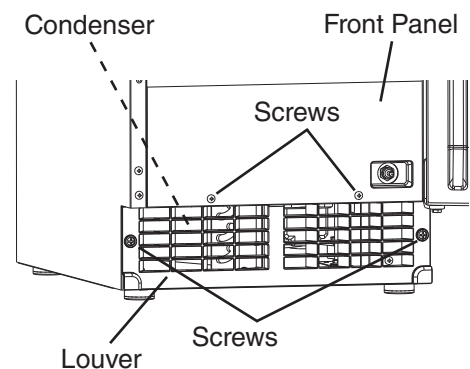
## 2. Condenser

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, then unplug the unit from the electrical outlet.
- 2) Remove the 2 screws securing the front panel, then remove the panel. See Fig. 12.
- 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. 12**

- 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 storing the icemaker for an extended time or in sub-freezing temperatures, follow the instructions below to prevent damage.

When the icemaker is not used for two or three days under normal conditions, it is sufficient to move the power switch to the "OFF" position. When storing the icemaker for an extended time or in sub-freezing temperatures, follow the instructions below.

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 2) Close the water supply line shut-off valve.
- 3) While maintaining a hold on the door, remove the hinge stop pin from hinge (B). Pull out the bottom of the door slightly, then gently remove the door from hinge (A). See Fig. 10.
- 4) Remove the 2 screws securing the top panel, then lift it off.
- 5) Remove all ice from the storage bin.
- 6) Remove the screws securing the upper rear panel, then remove it.
- 7) Remove the clamp securing the drain plug, then lower the drain hose into a container. See Fig. 11. Remove the drain plug to drain the water from the reservoir and evaporator assembly.
- 8) After all of the water has drained, replace the drain hose, drain plug, drain clamp and all other removed parts in their original and correct positions.
- 9) Open the water supply line drain valve.
- 10) From the water supply line drain valve, blow the water supply line out using compressed air or carbon dioxide.
- 11) Close the water supply line drain valve.
- 12) Clean the storage bin by using a neutral cleaner. Rinse thoroughly after cleaning.