

Hoshizaki America, Inc.

Self-Contained Cubelet

Models

C-100BAF

C-100BAF-DS

C-100BAF-AD

C-100BAF-ADDS



“A Superior Degree
of Reliability”

www.hoshizaki.com

SERVICE MANUAL



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⚠ WARNING

Only qualified service technicians should install and service the icemaker. To obtain the name and phone number of your local Hoshizaki Certified Service Representative, visit www.hoshizaki.com. No service should be undertaken until the technician has thoroughly read this Service Manual. Failure to service and maintain the icemaker in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage and may result in costly water damage. Proper installation is the responsibility of the installer. Product failure or property damage due to improper installation is not covered under warranty.

Hoshizaki provides this manual primarily to assist qualified service technicians in the service of the icemaker.

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

Phone: 1-800-233-1940; (770) 487-2331

Fax: 1-800-843-1056; (770) 487-3360

E-mail: techsupport@hoshizaki.com

HOSHIZAKI AMERICA, INC.

618 Highway 74 South

Peachtree City, GA 30269

Attn: Hoshizaki Technical Support Department

Web Site: www.hoshizaki.com

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

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

IMPORTANT

This manual should be read carefully before the icemaker is serviced. Read the warnings and guidelines contained in this booklet carefully as they provide essential information for the continued safe use, service, and maintenance of the icemaker. Retain this booklet for any further reference that may be necessary.

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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, damage to the appliance, or damage to property.

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

NOTICE Indicates a situation which could result in damage to the appliance or property.

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

⚠ 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. Failure to service and maintain the icemaker in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage and may result in costly water damage.

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

- Only qualified service technicians should install and service this icemaker.
- This icemaker must be installed in accordance with applicable national, state, and local codes and regulations.
- This icemaker requires an independent power supply of proper capacity. See the nameplate for electrical specifications. Failure to use an independent power supply of proper capacity can result in a tripped breaker, blown fuse, damage to existing wiring, or component failure. This could lead to heat generation or fire.
- **THIS ICEMAKER MUST BE GROUNDED:** This icemaker is equipped with a NEMA 5-15 three-prong grounding plug  to reduce the risk of potential shock hazards. It must be plugged into a properly grounded, independent 3-prong 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.
- To reduce the risk of electric shock, make sure the power switch is in the "OFF" position before plugging in or unplugging the icemaker.
- To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.
- Do not use an icemaker 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 icemaker, be sure to pull the plug, not the cord, and do not jerk the cord.
- Do not make any alterations to the icemaker. Alterations could result in electric shock, injury, fire, or damage to the icemaker.
- Do not place fingers or any other objects into the ice discharge opening.

⚠ WARNING, continued

- This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Young children should be properly supervised around this appliance.
- Do not climb, stand, or hang on the icemaker or icemaker door or allow children or animals to do so. Serious injury could occur or the icemaker could be damaged.
- Be careful not to pinch fingers when opening and closing the door. Be careful when opening and closing the door when children are in the area.
- Do not use combustible spray or place volatile or flammable substances near the icemaker. They might catch fire.
- Keep the area around the icemaker clean. Dirt, dust, or insects in the icemaker could cause harm to individuals or damage to the icemaker.

NOTICE

- Protect the floor when moving the icemaker to prevent damage to the floor.
- Follow the instructions in this manual carefully to reduce the risk of costly water damage.
- In areas where water damage is a concern, install in a contained area with a floor drain.
- Install the icemaker in a location that stays above freezing. Normal operating ambient temperature must be within 45°F to 100°F (7°C to 38°C).
- If using the optional drain pump (HS-0248), test its operation every time the icemaker is cleaned and sanitized. See "IV.E.2. Drain Pump Check" for details. If the optional drain pump is not operating properly, water could back up and overflow, leading to costly water damage.
- To help ensure that the storage bin drain remains clear, follow the instructions in "VI.C. Storage Bin Drain" once every 3 months or as often as necessary for conditions. If the storage bin drain becomes clogged, water could build up in the bin and overflow, leading to costly water damage.
- If water collects in the bin and will not drain, turn off the icemaker and close the water supply line shut-off valve. Locate and resolve the issue.
- To help protect against unseen water issues, this icemaker features a drip tray and emergency overflow hose. See Fig. 1. If there is water in the drip tray, coming out of the reservoir emergency overflow hose, or seeping from the base of the icemaker, turn off the icemaker and close the water supply line shut-off valve. Locate and resolve the issue. Failure to do so could lead to costly water damage.
- Do not leave the icemaker on during extended periods of non-use, extended absences, or in sub-freezing temperatures. To properly prepare the icemaker for these occasions, follow the instructions in "VII. Preparing the Icemaker for Periods of Non-Use."
- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
- Do not place objects on top of the icemaker.
- The storage bin is for ice use only. Do not store anything else in the storage bin.

I. Specifications

A. C-100BAF

1. Auxiliary Codes A-1 and Earlier

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 33.5" (378 x 575 x 850mm)		
EXTERIOR FINISH	Stainless steel, Galvanized Steel (Rear)		
WEIGHT	Net 108 lbs. (49 kg), Shipping 120 lbs. (54 kg)		
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; Drain Pump Adapter Hose		
- REQUIRED	N/A		
- OPTION	Drain Pump		
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.

A. C-100BAF, continued

2. Auxiliary Codes A-2 and Later

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)	*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.)	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 33.5" (378 x 575 x 850mm)		
EXTERIOR FINISH	Stainless steel, Galvanized Steel (Rear)		
WEIGHT	Net 108 lbs. (49 kg), Shipping 120 lbs. (54 kg)		
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	Float Switch		
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	Float Switch and Timer		
ACCESSORIES - SUPPLIED	Ice Scoop; Drain Pump Adapter Hose		
- REQUIRED	N/A		
- OPTION	Drain Pump		
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.

B. C-100BAF-DS

1. Auxiliary Codes A-1 and Earlier

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)
		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.)	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 33.5" (378 x 575 x 850mm)		
EXTERIOR FINISH	Stainless steel, Galvanized Steel (Rear)		
WEIGHT	Net 108 lbs. (49 kg), Shipping 120 lbs. (54 kg)		
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; Drain Pump Adapter Hose		
- REQUIRED	Wood Overlay and Handle (Not Included)		
- OPTION	Drain Pump		
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.

B. C-100BAF-DS, continued

2. Auxiliary Codes A-2 and Later

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)	*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.)	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 33.5" (378 x 575 x 850mm)		
EXTERIOR FINISH	Stainless steel, Galvanized Steel (Rear)		
WEIGHT	Net 108 lbs. (49 kg), Shipping 120 lbs. (54 kg)		
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	Float Switch		
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	Float Switch and Timer		
ACCESSORIES - SUPPLIED	Ice Scoop; Drain Pump Adapter Hose		
- REQUIRED	Wood Overlay and Handle (Not Included)		
- OPTION	Drain Pump		
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.

C. C-100BAF-AD

1. Auxiliary Codes A-1 and Earlier

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.

C. C-100BAF-AD, continued

2. Auxiliary Codes A-2 and Later

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)	*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.)	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	Float Switch		
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	Float Switch and Timer		
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.

D. C-100BAF-ADDS

1. Auxiliary Codes A-1 and Earlier

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)
		90	84 (38)
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; Drain Pump Adapter Hose		
- REQUIRED	Wood Overlay and Handle (Not Included)		
- OPTION	Drain Pump		
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.

D. C-100BAF-ADDS, continued

2. Auxiliary Codes A-2 and Later

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)	*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.)	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	Float Switch		
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	Float Switch and Timer		
ACCESSORIES - SUPPLIED	Ice Scoop; Drain Pump Adapter Hose		
- REQUIRED	Wood Overlay and Handle (Not Included)		
- OPTION	Drain Pump		
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

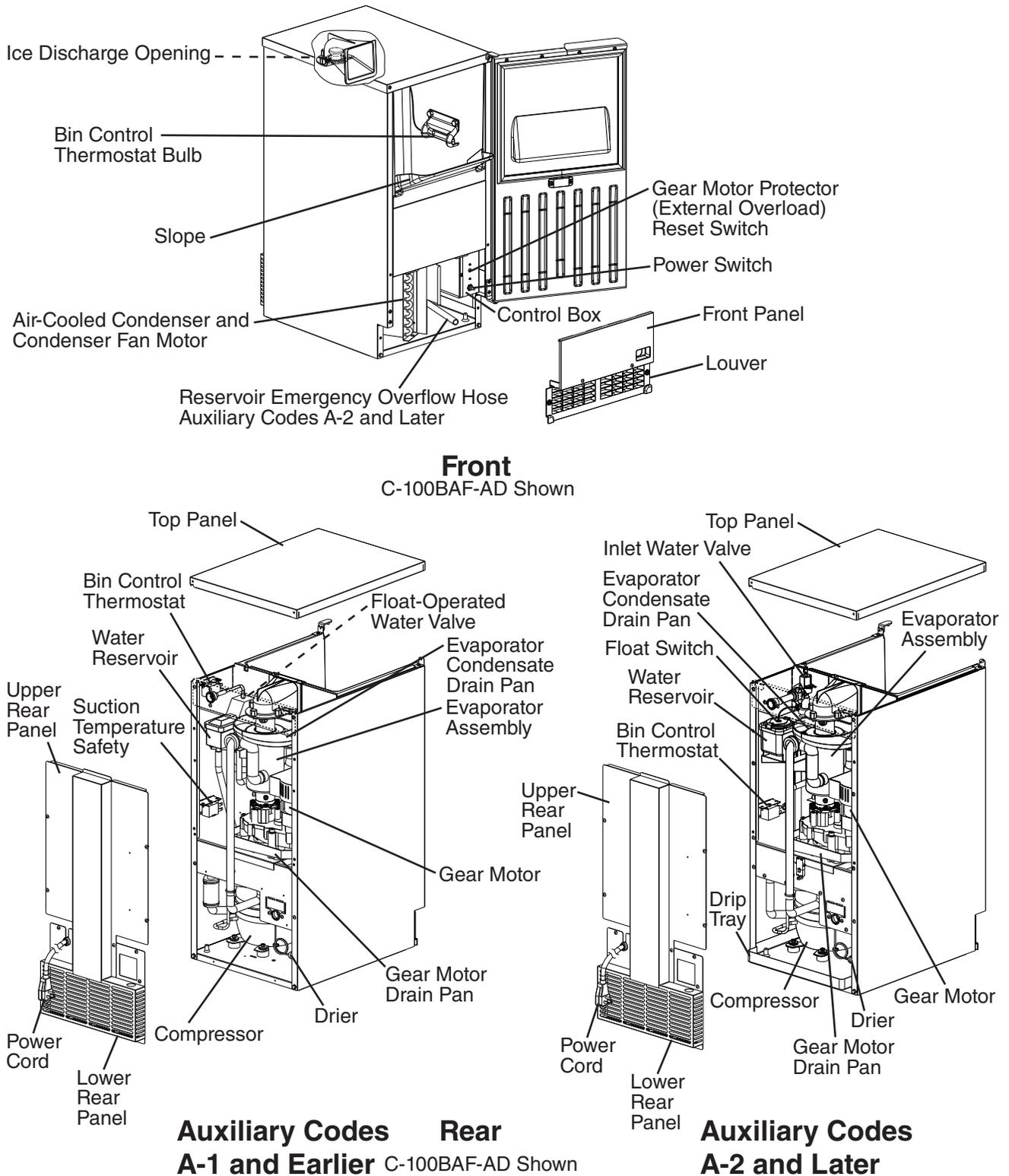


Fig. 1

2. Icemaking Unit

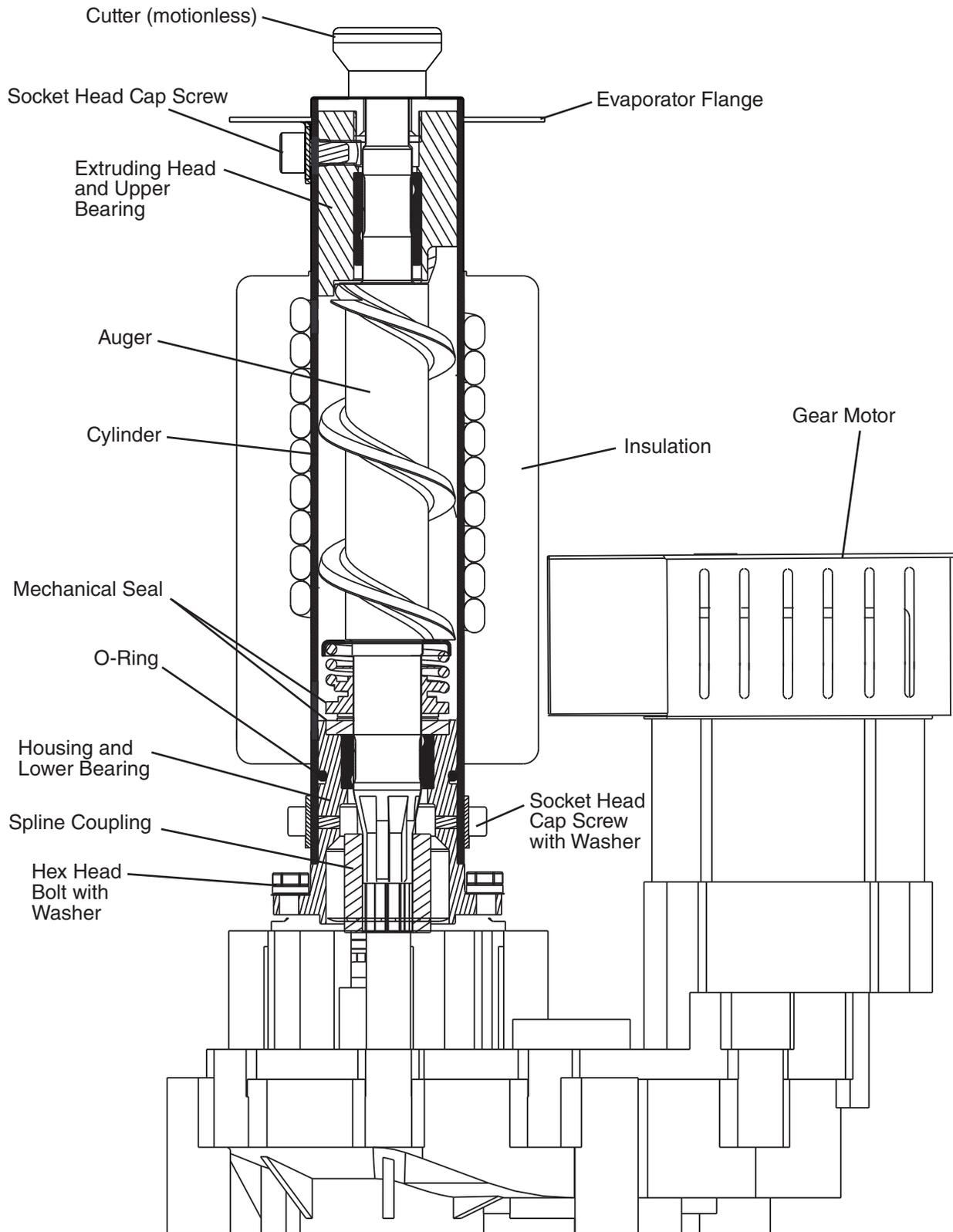


Fig. 2

B. Sequence of Operation

1. Auxiliary Codes A-1 and Earlier

After the power switch is placed in the "ON" position, the steps in the sequence are as outlined below.

a) Freeze Cycle

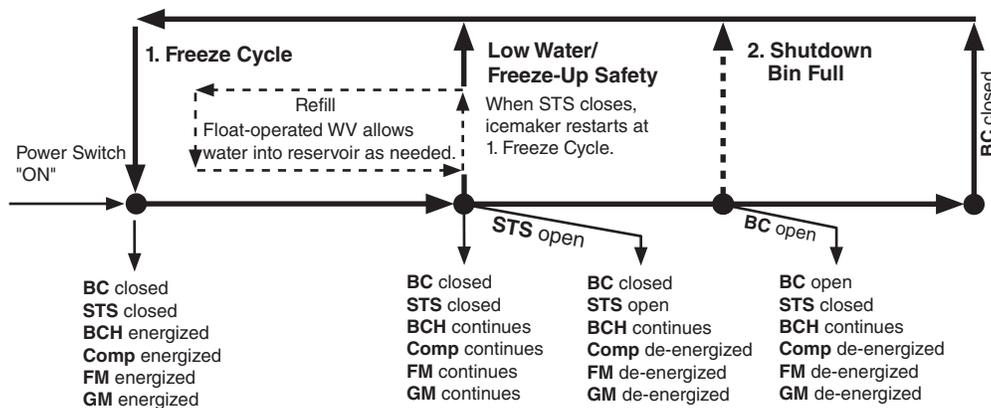
BCH, GM, FM, CR, and Comp energize. **NOTICE!** Some units contain a sticker that states: "The bin control heater has been disconnected. DO NOT reconnect the bin control heater." In this case, leave BCH disconnected or replace BC assembly with 3A2561A03. Ice production starts 4 to 6 minutes after Comp energizes depending on ambient and water conditions. The freeze cycle continues until BC shuts down the icemaker or power is turned off to the icemaker. **Refill:** The float-operated WV allows water into the reservoir as needed to continue the icemaking process. If the water supply is cut off or GM stops during the freeze cycle, the cold evaporator temperature causes STS to open and de-energize all components except BCH and optional drain pump HS-0248.

b) Bin Control Thermostat Shutdown

Ice fills storage bin to level of BC. BC opens within 10 seconds after ice contact. When BC opens, BCH remains energized. 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

(auxiliary codes A-1 and earlier)



Legend: **BC**—bin control thermostat; **BCH**—bin control heater; **Comp**—compressor; **CR**—compressor relay; **FM**—fan motor; **GM**—gear motor; **STS**—suction temperature safety (low water/freeze-up safety); **WV**—inlet water valve

2. Auxiliary Codes A-2 and Later

After the power switch is placed in the "ON" position, the steps in the sequence are as outlined below.

a) Fill Cycle

LF/S and UF/S open, BCH and WV energize. LF/S closes. Nothing happens at this time. Reservoir continues to fill until UF/S closes.

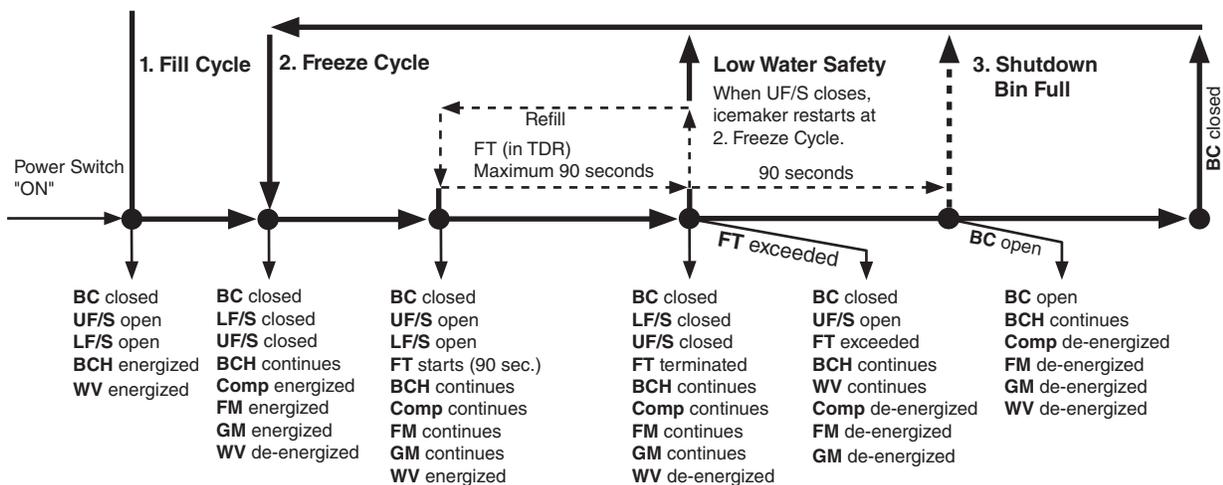
b) Freeze Cycle

UF/S closes. BCH remains energized. WCR, TDR, GM, FM, CR, and Comp energize. WV de-energizes. Ice production starts 4 to 6 minutes after Comp energizes depending on ambient and water conditions. F/S controls WV to refill as needed during the freeze cycle. The freeze cycle continues until BC shuts down the icemaker or power is turned off to the icemaker. **Refill:** As ice is produced, the water level in the reservoir drops and UF/S opens. When UF/S opens, a latching circuit through LF/S and WCR keeps WCR, TDR, GM, FM, CR, and Comp energized. When LF/S opens, WCR de-energizes, cutting power to TDR terminal #5 (O wire) and starting FT. WV energizes. Water fills the reservoir, UF/S closes. WCR energizes, restoring power to TDR terminal #5 (O wire) and resetting FT. WV de-energizes. If UF/S remains open longer than 90 seconds, FT terminates, cutting power to TDR terminal #9 (R wire). GM, FM, CR, and Comp de-energize. WV remains energized until UF/S closes.

c) Bin Control Thermostat Shutdown

Ice fills storage bin to level of BC. BC opens within 10 seconds after ice contact. When BC opens, BCH remains energized. WCR, TDR, 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 (auxiliary codes A-2 and later)



Legend: **BC**—bin control thermostat; **BCH**—bin control heater; **Comp**—compressor; **CR**—compressor relay; **FM**—fan motor; **FT**—90-second fill timer (low water safety; internal to TDR); **GM**—gear motor; **LF/S**—lower float switch; **TDR**—time delay relay; **UF/S**—upper float switch; **WCR**—water control relay; **WV**—inlet water valve

III. Technical Information

A. Water Circuit and Refrigeration Circuit

1. Auxiliary Codes A-1 and Earlier

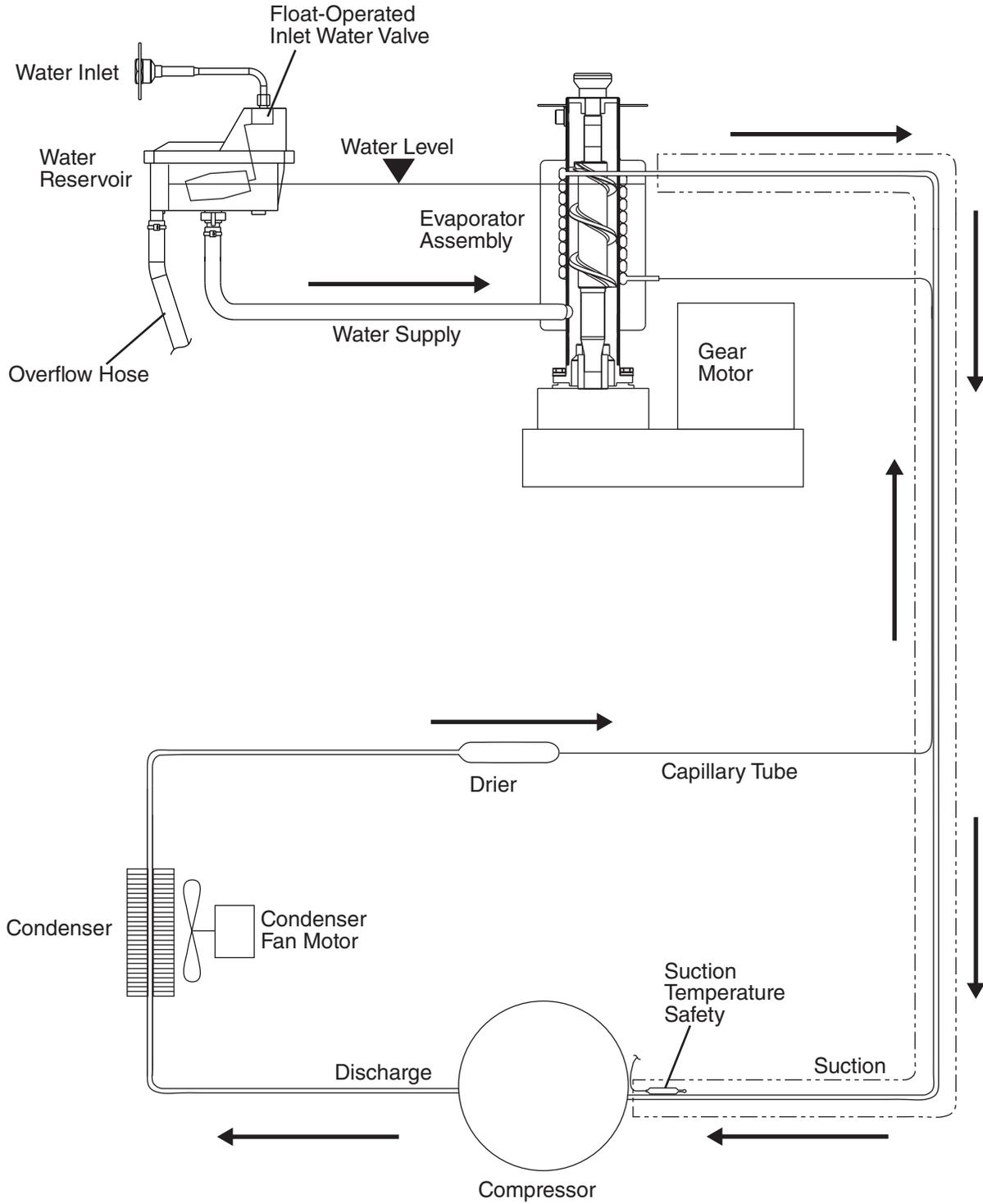


Fig. 3a

2. Auxiliary Codes A-2 and Later

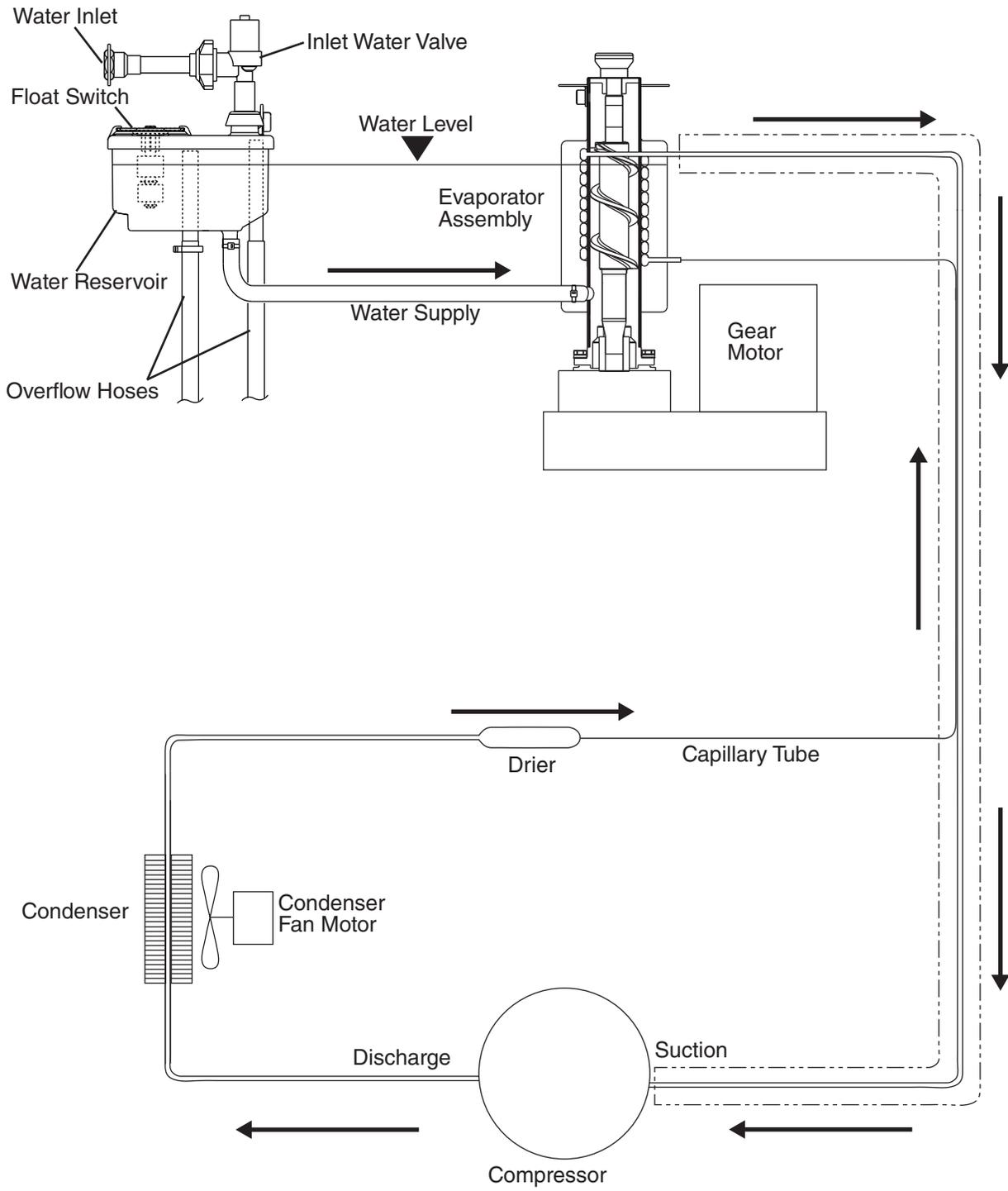
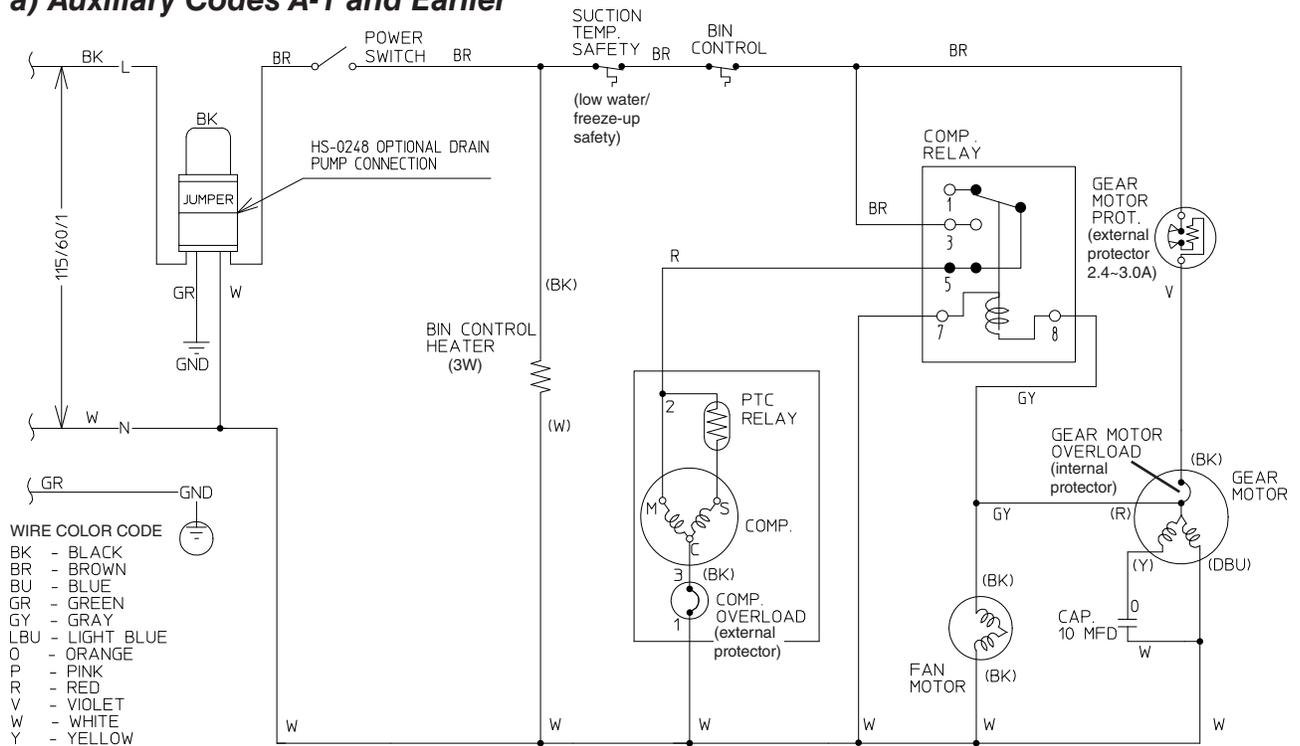


Fig. 3b

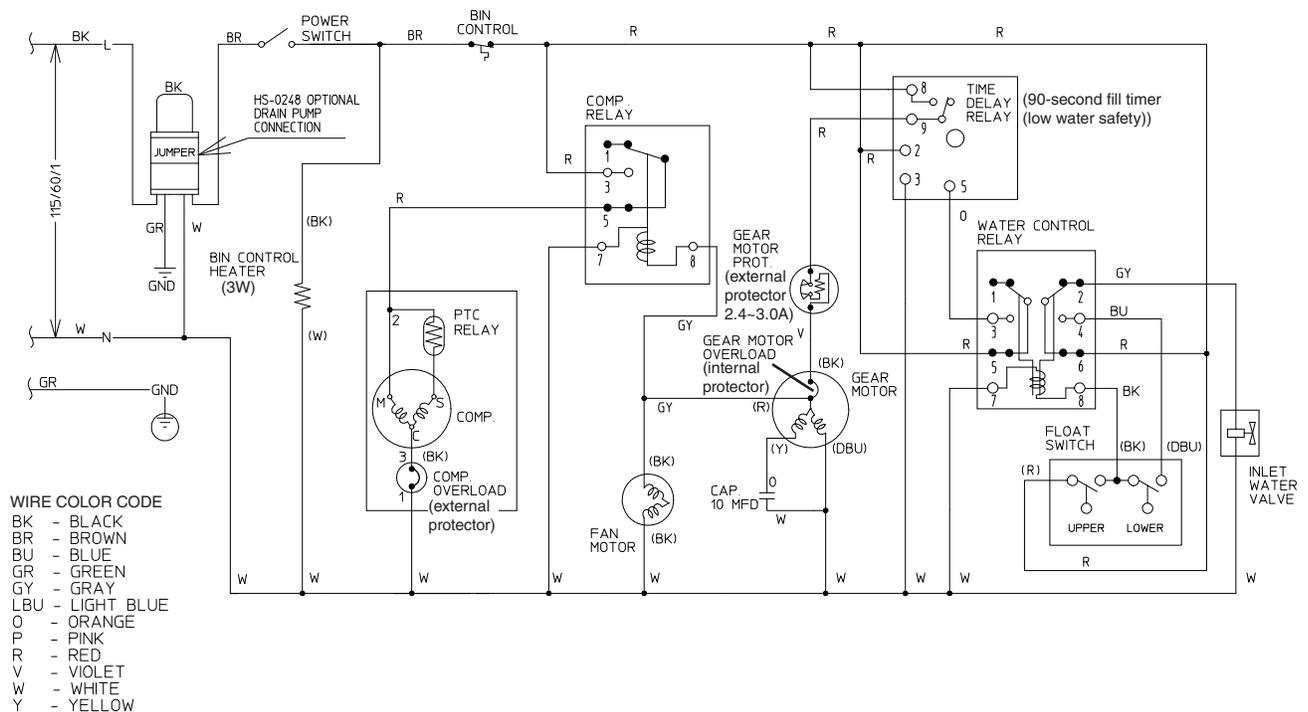
B. Wiring Diagram

1. Icemaker

a) Auxiliary Codes A-1 and Earlier



b) Auxiliary Codes A-2 and Later

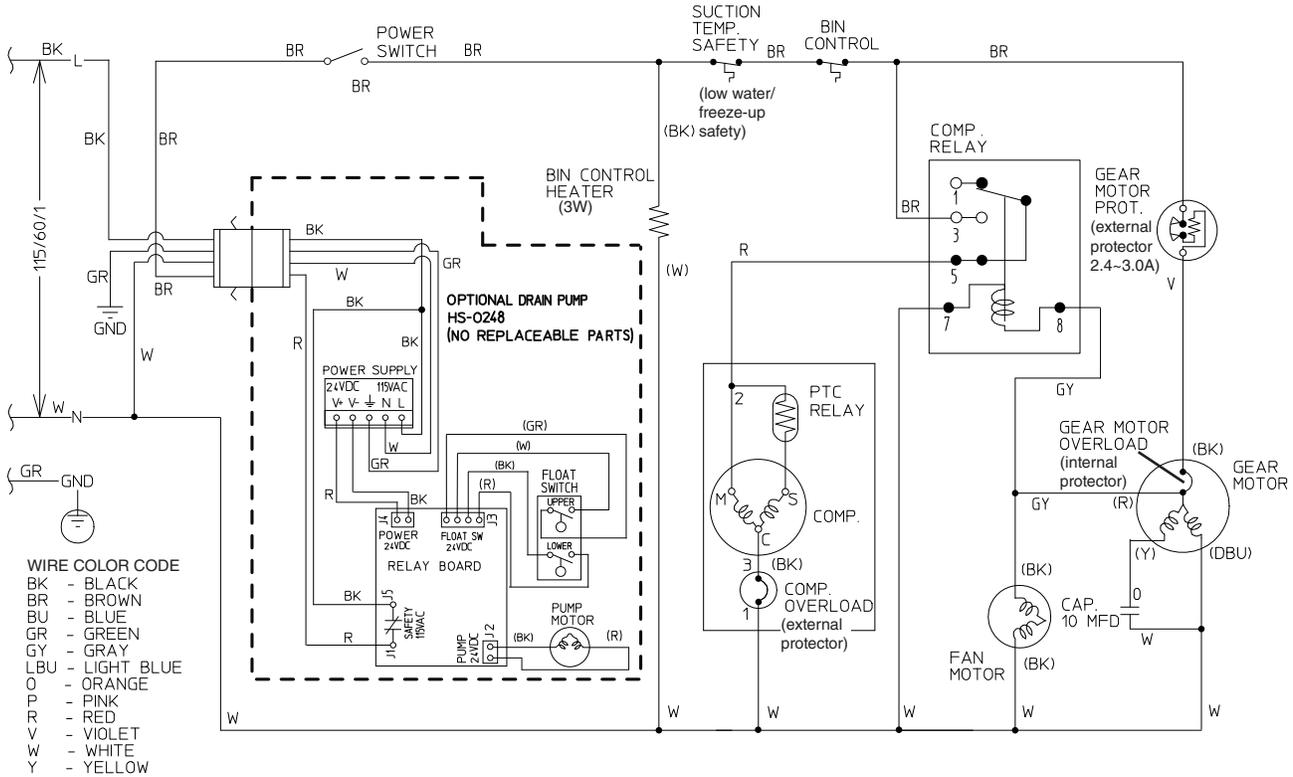


2. Icemaker with Optional Drain Pump HS-0248

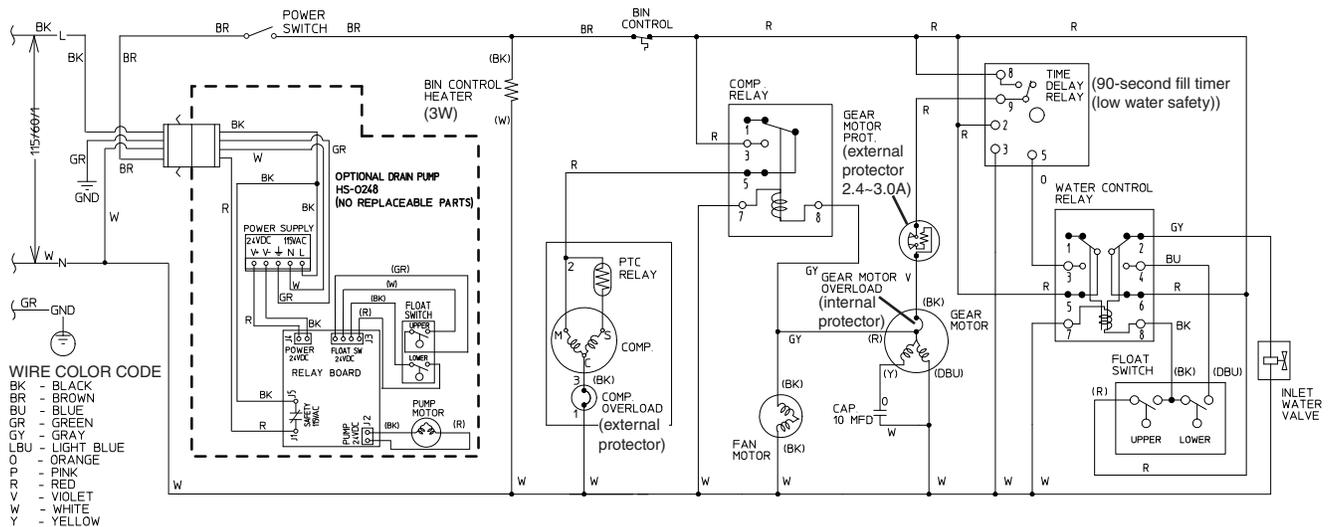
Optional Drain Pump HS-0248 Safety Shutdown: If the water level in the drain pump reservoir rises high enough to close the drain pump upper float switch, the drain pump safety interrupts power to the icemaker. When the water level lowers enough to open the drain pump upper float switch, power is restored to the icemaker. The pump motor remains energized as long as the drain pump lower float switch is closed.

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

a) Auxiliary Codes A-1 and Earlier



b) Auxiliary Codes A-2 and Later



C. Performance Data

1. C-100BAF Series

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>	62	<u>28</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	297		308		309	
	80/27	310		310		312	
	90/32	313		310		316	
watts	100/38	316		316		316	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	11	<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>	8	<u>0.03</u>	7	<u>0.08</u>
gal./day <u>m³/day</u>	100/38	7	<u>0.03</u>	6	<u>0.02</u>	6	<u>0.02</u>
Evaporator Outlet	70/21	23	-5	23	-5	23	-5
	80/27	23	-5	28	-2	28	-2
	90/32	28	-2	28	-2	34	1
°F °C	100/38	34	1	34	1	34	1
HEAD PRESSURE	70/21	115	<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>	165	<u>11.6</u>	174	<u>12.2</u>
PSIG <u>kg/cm²G</u>	100/38	129	<u>9.1</u>	167	<u>11.7</u>	183	<u>12.9</u>
SUCTION PRESSURE	70/21	12	<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>	17	<u>1.2</u>	18	<u>1.3</u>
PSIG <u>kg/cm²G</u>	100/38	13	<u>0.9</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

- This unit should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- Risk of electric shock. Use extreme caution and exercise safe electrical practices.
- Moving parts (e.g., fan blade) can crush and cut. Keep hands clear.
- **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.
- Make sure all food zones in the icemaker and storage bin are clean after the unit is serviced. For cleaning procedures, see "VI.B. Cleaning and Sanitizing Instructions."

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

1. Auxiliary Codes A-1 and Earlier

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 pressure (7 to 113 PSIG), and proper voltage per unit nameplate. When checking voltage (115VAC), always choose a neutral (W 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 all ice from the storage bin.
- 3) Remove the rear panels.
- 4) Remove the front panel and louver. Remove the screws securing the control box, then gently pull out the control box. Remove the control box cover.
- 5) Plug the unit back in. Place the power switch in the "ON" position.

6) **Freeze Cycle** – BCH, GM, FM, CR, and Comp energize. **NOTICE! Some units contain a sticker that states: "The bin control heater has been disconnected. DO NOT reconnect the bin control heater." In this case, leave BCH disconnected or replace BC assembly with 3A2561A03.** Ice production starts 4 to 6 minutes after Comp energizes depending on ambient and water conditions. **Refill:** The float-operated WV allows water into the reservoir as needed to continue the icemaking process. If the water supply is cut off or GM stops during the freeze cycle, the cold evaporator temperature causes STS to open and de-energize all components except BCH and optional drain pump HS-0248.

Diagnosis: Check that GM, FM, and Comp energize. If not, check the power switch, STS, BC assembly, GM external protector, GM windings (check when GM is cool), GM capacitor, voltage to FM, FM windings, fan blade binding, voltage on CR, PTC relay, voltage on Comp external protector, Comp terminals, and Comp windings. If optional drain pump HS-0248 is installed, see "IV.E. Optional Drain Pump HS-0248." If GM starts, but the auger does not turn, check the spline coupling between the auger and GM.

7) **Shutdown (bin full)** – Ice fills storage bin to level of BC. BC opens within 10 seconds after ice contact. BCH remains energized. 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 within 10 seconds, check BC. See "IV.C. Bin Control Check."

Legend: **BC**–bin control thermostat; **Comp**–compressor; **CR**–compressor relay; **FM**–fan motor; **GM**–gear motor; **STS**–suction temperature safety (low water/freeze-up safety)

2. Auxiliary Codes A-2 and Later

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 pressure (7 to 113 PSIG), and proper voltage per unit nameplate. When checking voltage (115VAC), always choose a neutral (W wire) to establish a good neutral connection.

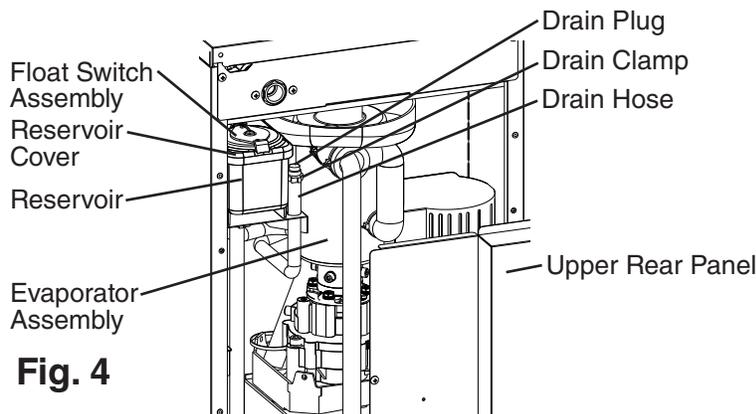
- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 2) Remove all ice from the storage bin.
- 3) Remove the rear panels.
- 4) Remove the clamp securing the drain plug, then lower the drain hose into a container. Remove the drain plug to drain the water from the evaporator assembly and reservoir. See Fig. 4.
- 5) After all of the water has drained, replace the drain hose, drain plug, and drain clamp in their correct positions.
- 6) Remove the front panel and louver. Remove the screws securing the control box, then gently pull out the control box. Remove the control box cover.
- 7) Plug the unit back in. Place the power switch in the "ON" position.
- 8) **Fill Cycle** – LF/S and UF/S open, BCH and WV energize. LF/S closes. Nothing happens at this time. Reservoir continues to fill until UF/S closes.
Diagnosis: Check that WV fills the reservoir. If not, check water supply line shut-off valve, water filters, WV screen, power switch, and BC assembly. See "IV.C. Bin Control Check." Check 115VAC to WV. Check WCR terminal #2 (GY wire) to a neutral (W wire) for 115VAC. If 115VAC is not present, WCR is either energized or bad. If WCR is energized, check F/S. See "IV.D.1. Float Switch Check." If 115VAC is present, check for continuity through WV solenoid. If open, replace WV. Check that UF/S closes when reservoir is full. If not, check F/S. See "IV.D.1. Float Switch Check."
- 9) **Freeze Cycle** – UF/S closes. BCH remains energized. WCR, TDR, GM, FM, CR, and Comp energize. WV de-energizes. Ice production starts 4 to 6 minutes after Comp energizes depending on ambient and water conditions.
Diagnosis: Check that WCR, TDR, GM, FM, CR, and Comp energize and WV de-energizes. If not, check WCR, TDR, GM external protector, GM windings (check when GM is cool), GM capacitor, voltage to FM, FM windings, fan blade binding, voltage on CR, PTC relay, voltage on Comp external protector, Comp terminals, Comp windings, and WV. If optional drain pump HS-0248 is installed, see "IV.E. Optional Drain Pump HS-0248." If GM starts, but the auger does not turn, check the spline coupling between the auger and GM.
- 10) **Refill/Low Water Safety** – As ice is produced, the water level in the reservoir drops and UF/S opens. When UF/S opens, a latching circuit through LF/S and WCR keeps WCR, TDR, GM, FM, CR, and Comp energized. When LF/S opens, WCR de-energizes, cutting power to TDR terminal #5 (O wire) and starting FT. WV energizes. Water fills the reservoir, UF/S closes. WCR energizes, restoring power to TDR terminal #5 (O wire) and resetting FT. WV de-energizes. If UF/S remains open longer than 90 seconds, FT terminates, cutting power to TDR terminal #9 (R wire). GM, FM, CR, and Comp de-energize. WV remains energized until UF/S closes.

Diagnosis – Check that UF/S and LF/S open, WCR de-energizes, and WV energizes. If UF/S and/or LF/S do not open, see "IV.D. Float Switch Check and Cleaning." If WV does not energize, check WCR terminal #2 (GY wire) to a neutral (W wire) for 115VAC. If 115VAC is not present, replace WCR. If 115VAC is present, check for continuity through WV solenoid. If open, replace WV. After LF/S opens, check that TDR terminal #9 (R wire) has power and GM, FM, CR, and Comp remain energized until UF/S closes or FT terminates. If not, check TDR. Check that WCR energizes and WV de-energizes when reservoir is full. If not, check WCR, UF/S, and WV. See "IV.D. Float Switch Check and Cleaning."

- 11) **Shutdown (bin full)** – Ice fills storage bin to level of BC. BC opens within 10 seconds after ice contact. BCH remains energized. WCR, TDR, 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 within 10 seconds, check BC. See "IV.C. Bin Control Check."

Legend: **BC**–bin control thermostat; **BCH**–bin control heater; **Comp**–compressor; **CR**–compressor relay; **FM**–fan motor; **F/S**–float switch; **FT**–90-second fill timer (low water safety; internal to TDR); **GM**–gear motor; **LF/S**–lower float switch; **TDR**–time delay relay; **UF/S**–upper float switch; **WCR**–water control relay; **WV**–inlet water valve



C. Bin Control Check

- 1) Move the power switch to the "ON" position to start the automatic icemaking process.
- 2) To confirm BC operation, hold ice in contact with BC bulb. If the icemaker does not shut down within 10 seconds, BC must be adjusted. For BC thermostat location, see Fig. 1. Installations at higher altitude locations are more likely to require adjustment. If BC will not shut down the unit even after being adjusted, replace BC. **NOTICE! Some units contain a sticker that states: "The bin control heater has been disconnected. DO NOT reconnect the bin control heater." In this case, leave BCH disconnected or replace BC assembly with 3A2561A03.**

Legend: **BC**–bin control thermostat

D. Float Switch Check and Cleaning (auxiliary codes A-2 and later)

1. Float Switch Check

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 2) Remove the upper rear panel. See Fig. 4.
- 3) 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 evaporator assembly and reservoir.
- 4) After all of the water has drained, replace the drain hose, drain plug, and drain clamp in their correct positions.
- 5) Remove the front panel and louver. Remove the screws securing the control box, then gently pull out the control box. Remove the control box cover.
- 6) At WCR, check continuity between terminal #8 common (BK wire) and terminal #6 UF/S (R wire). Next, check continuity between terminal #8 common (BK wire) and terminal #4 LF/S (BU wire). If both are open, continue to step 7. If either are closed, follow the steps in "IV.D.2. Float Switch Cleaning." After cleaning F/S, check UF/S and LF/S again. Replace if necessary.
- 7) Plug the unit into the electrical outlet, then move the power switch to the "ON" position and let the reservoir fill.
- 8) Once the reservoir is full and GM starts, move the power switch to the "OFF" position.
- 9) Unplug the unit from the electrical outlet.
- 10) At WCR, check continuity between terminal #8 common (BK wire) and terminal #6 UF/S (R wire). Next, check continuity between terminal #8 common (BK wire) and terminal #4 LF/S (BU wire). If both are closed, continue to step 11. If either are open, follow the steps in "IV.D.2. Float Switch Cleaning." After cleaning F/S, check UF/S and LF/S again. Replace if necessary.
- 11) Make sure F/S wires are properly connected to WCR, then replace the control box cover and control box in their correct positions.
- 12) Replace the removed parts and panels in the reverse order of which they were removed.
- 13) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

Legend: **GM**—gear motor; **LF/S**—lower float switch; **UF/S**—upper float switch; **WCR**—water control relay

2. Float Switch Cleaning

Depending on local water conditions, scale may build up on F/S. Scale on F/S can cause inconsistent operation of UF/S and LF/S. In this case, F/S should be cleaned and checked.

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 2) Remove the upper rear panel. See Fig. 4.
- 3) Remove F/S assembly from the reservoir cover.
- 4) Wipe down F/S assembly with a mixture of 1 part Hoshizaki "Scale Away" and 25 parts warm water. Rinse the assembly thoroughly with clean water.
- 5) While not necessary, the floats can be removed from the shaft during cleaning. If you remove them, note that the blue float is on top (UF/S) and the white float is on bottom (LF/S). See Fig. 5. The floats must be installed with the magnets inside them towards the top of the switch. Installing the floats upside down will affect the timing of F/S operation.
- 6) Rinse F/S assembly thoroughly with clean water and replace in its correct position.
- 7) Replace the upper rear panel in its correct position.
- 8) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

Legend: **F/S**—float switch; **LF/S**—lower float switch; **UF/S**—upper float switch

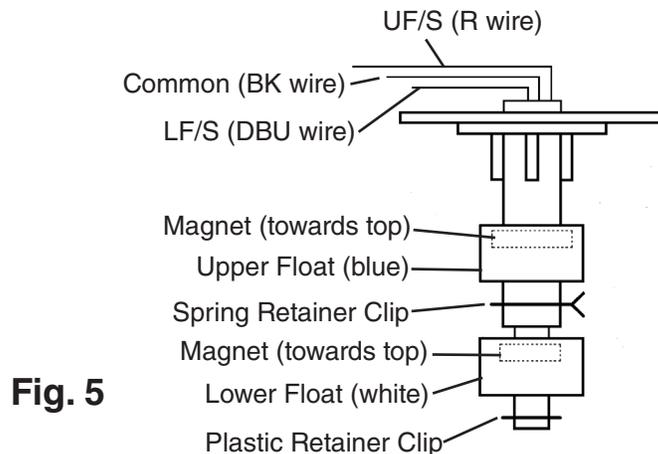


Fig. 5

E. Optional Drain Pump HS-0248

1. Overview

As ice melts, water drains from the storage bin into DP. When DP's LF/S closes, DP energizes and pumps out the water. If water cannot be pumped out of DP due to a blocked discharge hose, bad check valve, or bad DP motor, the water level rises and UF/S closes. When UF/S closes, DP safety activates and unit shuts down. DP safety interrupts power to icemaker components until UF/S opens. Power is supplied to DP motor as long as LF/S is closed.

For schematics, see "III.B.2. Icemaker with Optional Drain Pump HS-0248."

NOTICE

- If you remove DP from the icemaker and/or remove the reservoir cover, be sure to follow all instructions below. Failure to do so may result in costly water damage.
- DP has an external or internal check valve. If DP contains an internal check valve, do not install an external check valve and vice versa. See Fig. 6.

Legend: **DP**—drain pump; **LF/S**—lower float switch; **UF/S**—upper float switch

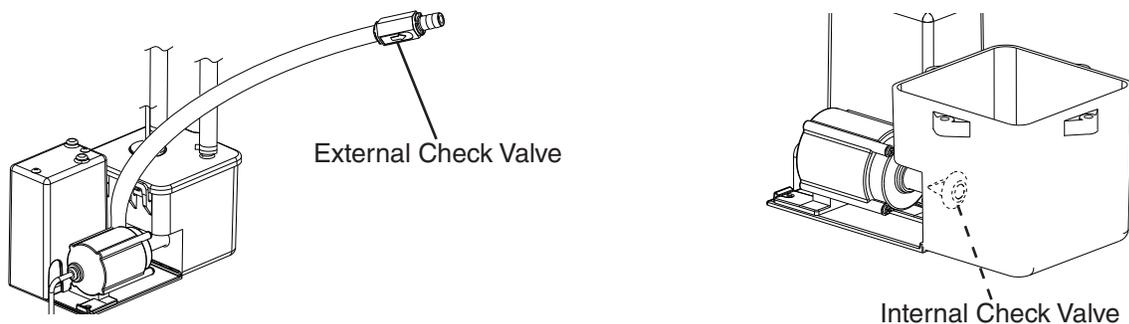


Fig. 6

2. Drain Pump Check

If the optional DP (HS-0248) is installed, test its operation at least twice a year as outlined below. Note that DP has power even when the power switch is in the "OFF" position.

NOTICE

If DP is not primed or is otherwise not operating properly, it will adversely affect performance, component life, and warranty coverage and may result in costly water damage.

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet. **WARNING! To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.**
- 2) Remove all ice from the storage bin.
- 3) Plug the unit back in.
- 4) Slowly pour 16 to 24 oz. (500 to 750 ml) of water over the storage bin drain hole in the storage bin.

- 5) If water pumps out properly and DP then de-energizes, proceed to step 6. If water does not pump out properly and/or DP does not de-energize, follow the steps below to prime DP.

Priming Instructions

- a. Disconnect the icemaker's power cord from the electrical outlet, then reconnect to the electrical outlet. **WARNING! To reduce the risk of electric shock, do not touch the power cord with damp hands.**
 - b. Slowly pour another 16 to 24 oz. (500 to 750 ml) of water over the storage bin drain hole in the storage bin. If not already energized, DP should energize.
 - c. Confirm that water is discharged through the discharge hose. DP should then de-energize. If not, repeat steps a through c until water is discharged through the discharge hose and DP de-energizes. DP is primed when DP de-energizes.
 - d. If water now pumps out properly and DP de-energizes, proceed to step 6. If water still does not pump out properly and/or DP does not de-energize, follow the steps in "IV.E.3. Float Switch Cleaning" before proceeding.
- 6) Move the power switch to the "ON" position.
- 7) Pour another 16 to 24 oz. (500 to 750 ml) of water into the icemaker's ice storage bin, then completely restrict the discharge hose while DP is operating. See Fig. 7. Pour more water into the icemaker's ice storage bin until the icemaker turns off. DP will continue to operate. Check for leaks.
- 8) 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 DP returns to a normal level.
- 9) If the icemaker fails to turn off with the discharge hose restricted or the pump fails to pump out the water, follow the steps in "IV.E.3. Float Switch Cleaning".

Legend: **DP**—drain pump

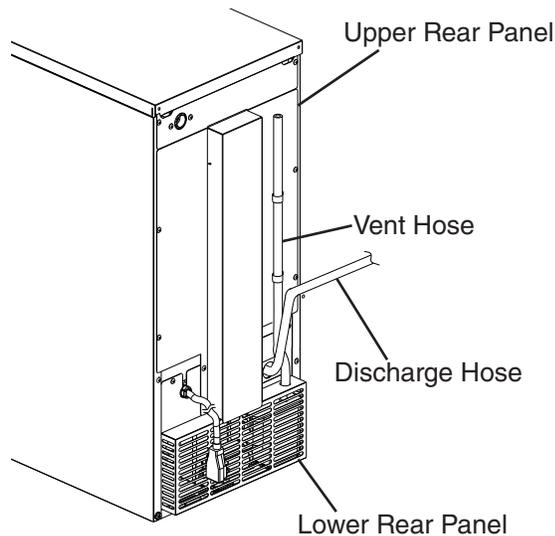


Fig. 7

3. Float Switch Cleaning

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

- 1) Move the power switch to the "OFF" position, then unplug the icemaker from the electrical outlet. **WARNING! Moving the power switch to the "OFF" position does not de-energize the power supply to DP. The icemaker must be unplugged to de-energize the power supply to DP.**
 - 2) Disconnect the vent hose from the upper rear panel. See Fig. 7.
 - 3) Remove the rear panels.
 - 4) Remove the reservoir cover from DP assembly. See Fig. 8.
 - 5) Leave F/S assembly connected to the reservoir cover and leave the float on the shaft. Wipe down F/S assembly and reservoir with a mixture of 1 part recommended cleaner Hoshizaki "Scale Away" and 25 parts warm water.
 - 6) Rinse F/S assembly and reservoir.
 - 7) Clean the mating surfaces of the reservoir cover and reservoir. Place silicone caulk around the perimeter of the reservoir cover where it contacts the reservoir, then replace the reservoir cover in its original position. Smooth the silicone caulk. **NOTICE! The reservoir cover must be properly sealed with silicone caulk or costly water damage may occur.**
 - 8) 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 covers and icemaker.**
 - 9) Resecure the vent hose to the icemaker. **NOTICE! The vent hose must be attached and secured to the icemaker or costly water damage may occur. Make certain there are no kinks in the vent hose. DP will not operate correctly with a partially blocked vent hose.**
 - 10) Follow the steps in "IV.E.2. Drain Pump Check" to check the drain pump.
- Legend: **DP**–drain pump; **F/S**–float switch

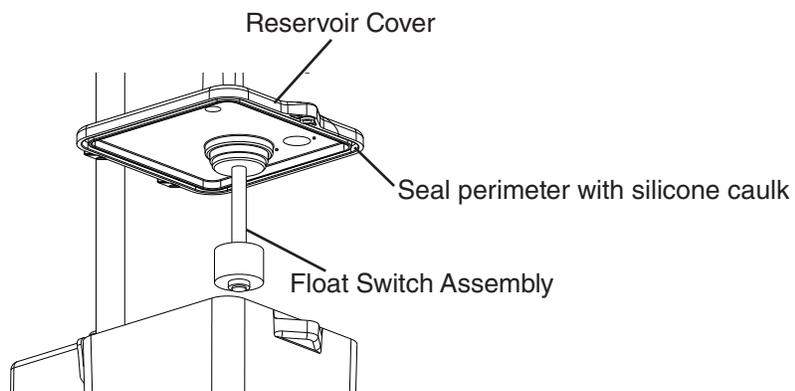


Fig. 8

F. Diagnostic Charts

The diagnostic charts below list possible reasons for problems with ice production and shutdown. Before consulting the diagnostic charts, check for correct installation, proper voltage per unit nameplate, and adequate water supply.

1. Auxiliary Codes A-1 and Earlier

No Ice Production - Possible Cause	
Startup	
1. Power Supply	a) Unplugged, off, blown fuse, or tripped breaker. b) Not within specifications.
2. Power Switch	a) "OFF" position. b) Bad contacts.
3. Bin Control Thermostat Assembly (with integrated heater) NOTICE! Some units contain a sticker that states: "The bin control heater has been disconnected. DO NOT reconnect the bin control heater." In this case, leave the bin control heater disconnected or replace the bin control thermostat assembly with 3A2561A03.	a) Open with bin filled with ice. b) Ambient temperature too cool. c) Out of position. d) Out of adjustment. See "IV.C. Bin Control Check." e) Bad contacts. f) Bad thermostat heater (if applicable).
4. Optional Drain Pump HS-0248 Safety	a) Open.
Freeze Cycle	
1. Water Supply	a) Water supply off or improper water pressure. b) External water filters clogged.
2. Gear Motor	a) Gear motor external protector (2.4~3.0A) tripped. b) Gear motor internal protector open or windings open. c) Bad gear motor capacitor. d) Locked bearings. e) Spline coupling or gear broken and auger not turning.
3. Suction Temperature Safety (Low Water/Freeze-Up Safety)	a) Open due to water supply cut-off. b) Open due to evaporator freeze-up (gear motor not operating). c) Bad contacts.
4. Fan Motor	a) Motor winding open. b) Bearing worn out or locked rotor. c) Fan blade does not move freely.
5. Compressor Relay	a) Open coil. b) Open contacts.
6. Compressor	a) Compressor external protector open or defective. b) Motor winding open. c) PTC relay contacts bad or coil winding open. d) Inefficient.

7. Evaporator	a) Dirty.
	b) Damaged or defective.
8. Condenser	a) Dirty.
9. Refrigerant	a) Low charge or overcharged.
	b) Refrigerant lines or components restricted.
10. Water System	a) Water leaks.
Shutdown	
1. Bin Control Thermostat Assembly (with integrated heater) NOTICE! Some units contain a sticker that states: "The bin control heater has been disconnected. DO NOT reconnect the bin control heater." In this case, leave the bin control heater disconnected or replace the bin control thermostat assembly with 3A2561A03.	a) Out of position.
	b) Out of adjustment. See "IV.C. Bin Control Check."

2. Auxiliary Codes A-2 and Later

No Ice Production - Possible Cause	
Startup	
1. Power Supply	a) Unplugged, off, blown fuse, or tripped breaker. b) Not within specifications.
2. Power Switch	a) "OFF" position. b) Bad contacts.
3. Bin Control Thermostat Assembly (with integrated heater)	a) Open with bin filled with ice. b) Ambient temperature too cool. c) Out of position. d) Out of adjustment. See "IV.C. Bin Control Check." e) Bad contacts. f) Bad thermostat heater.
4. Optional Drain Pump HS-0248 Safety	a) Drain pump's upper float switch closed.
Fill Cycle and Refill Cycle	
1. Water Supply	a) Water supply off or improper water pressure. b) External water filters clogged.
2. Water Control Relay	a) Energized and not allowing water valve to energize. b) Defective.
3. Inlet Water Valve	a) Screen or orifice clogged. b) Coil winding open.
4. Float Switch See "IV.D. Float Switch Check and Cleaning"	a) Float does not move freely. b) Defective.
Freeze Cycle	
1. Water Control Relay	a) Open.
2. Time Delay Relay	a) Defective.
3. Gear Motor	a) Gear motor external protector (2.4~3.0A) tripped. b) Gear motor internal protector open or windings open. c) Bad gear motor capacitor. d) Locked bearings. e) Spline coupling or gear broken and auger not turning.
4. Fan Motor	a) Motor winding open. b) Bearing worn out or locked rotor. c) Fan blade does not move freely.
5. Compressor Relay	a) Open coil. b) Open contacts.
6. Compressor	a) Compressor external protector open or defective. b) Motor winding open. c) PTC relay contacts bad or coil winding open. d) Inefficient.
7. Evaporator	a) Dirty. b) Damaged or defective.
8. Condenser	a) Dirty.

9. Refrigerant	a) Low charge or overcharged.
	b) Refrigerant lines or components restricted.
10. Water System	a) Water leaks.
Shutdown	
1. Bin Control Thermostat Assembly (with integrated heater)	a) Out of position.
	b) Out of adjustment. See "IV.C. Bin Control Check."

V. Removal and Replacement of Components

WARNING

- This unit should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet before servicing.
- **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.
- Make sure all food zones in the icemaker and storage bin are clean after the unit is serviced. For cleaning procedures, see "VI.B. Cleaning and Sanitizing Instructions."

A. Service for Refrigerant Lines

WARNING

- Repairs requiring the refrigeration circuit to be opened must be performed by properly trained and EPA-certified service personnel.
- 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.

NOTICE

- Always recover the refrigerant and store it in an approved container. Do not discharge the refrigerant into the atmosphere.
- 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.
- 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.
- 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

- R-134a itself is not flammable at atmospheric pressure and temperatures up to 212°F (100°C).
- 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.
- Do not use silver alloy or copper alloy containing arsenic.
- 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.

NOTICE

- 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.
- 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.

NOTICE

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 must 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. Important Notes for Component Replacement

<i>NOTICE</i>	
When replacing a component listed below, see the notes to help ensure proper operation.	

Component	Notes
Compressor	Install a new drier and PTC relay.
Evaporator Assembly Components. See Fig. 9.	
Upper and Lower Bearings	Inspect the upper bearing for wear. See "V.C.1. Upper Bearing Wear Check." Replace if necessary. When replacing the upper bearing it is advised to also change the lower bearing at the same time.
Evaporator	<ul style="list-style-type: none"> • Install a new drier. • Inspect the mechanical seal and O-ring prior to installing the new evaporator. If worn, cracked, or scratched, the mechanical seal should also be replaced.
Gear Motor	Install a new gear motor capacitor.

C. Removal and Replacement of Evaporator Assembly Components

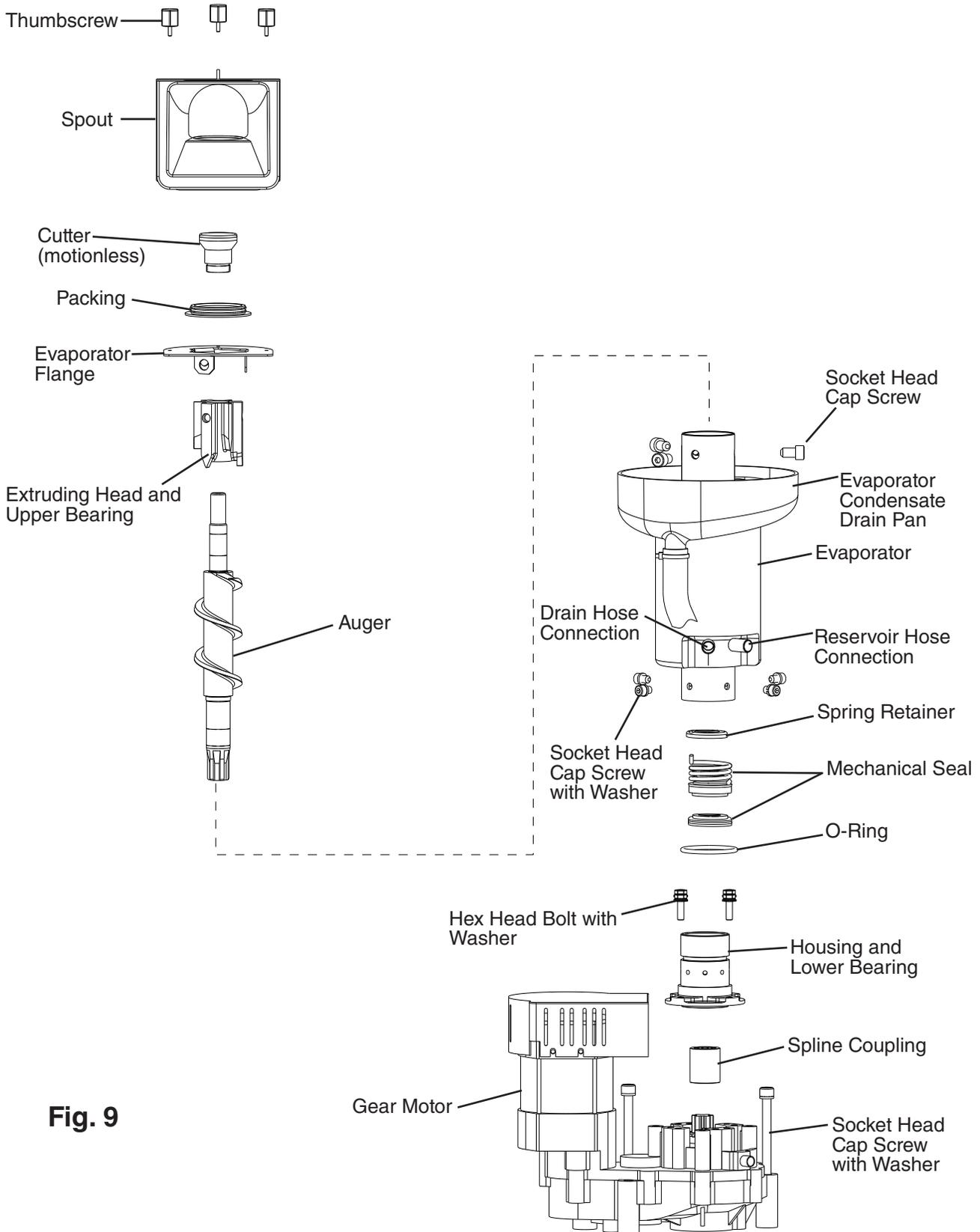


Fig. 9

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. 10.
- 4) Remove the top panel.
- 5) Remove the spout.
- 6) Remove the cutter.

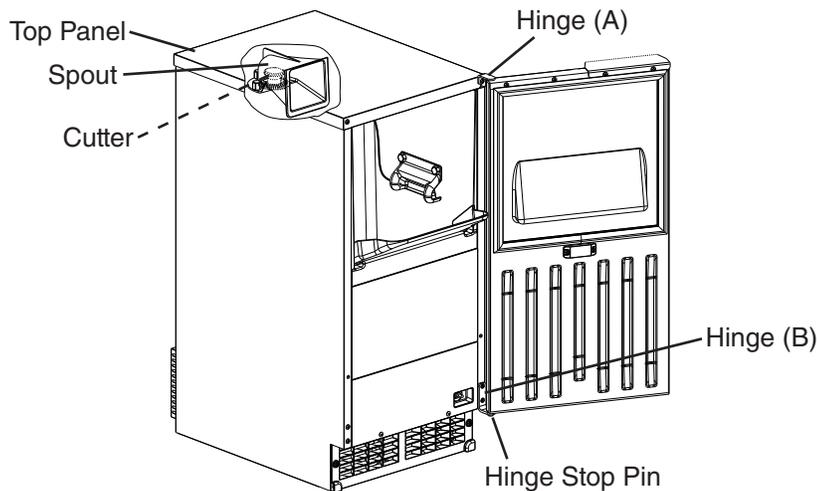


Fig. 10

- 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. 11. 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.

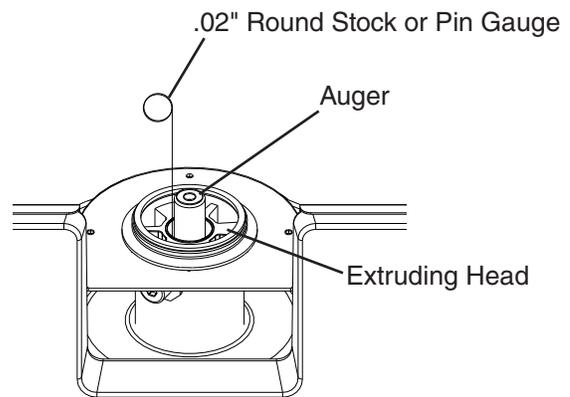


Fig. 11

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 and panels in the reverse order of which they were removed.
- 9) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

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. 10.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 12.
- 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 socket 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 socket head cap screws.
- 13) Open the water supply line shut-off valve and check for water leaks.
- 14) Plug the unit into the electrical outlet, then move the power switch to the "ON" position.
- 15) Allow the icemaker to operate until the gear motor starts. Check for water leaks.
- 16) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 17) Replace the removed parts and panels in the reverse order of which they were removed.
- 18) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

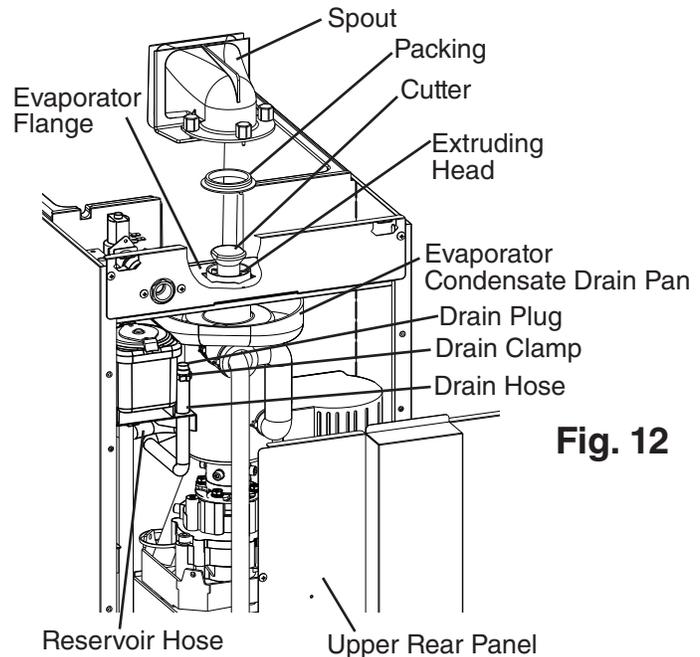


Fig. 12

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. 10.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 12.
- 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 socket 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.
- 16) Plug the unit into the electrical outlet, then move the power switch to the "ON" position.
- 17) Allow the icemaker to operate until the gear motor starts. Check for water leaks.
- 18) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 19) Replace the removed parts and panels in the reverse order of which they were removed.
- 20) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

4. Removal and Replacement of Evaporator

NOTICE

- 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.
- 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. 10.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the rear panels.
- 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. See Fig. 12.
- 9) Disconnect the drain hose and reservoir hose from the evaporator.
- 10) Remove the packing.
- 11) Remove the socket 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 socket 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 socket 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, then 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.
- 27) Plug the unit into the electrical outlet, then move the power switch to the "ON" position.
- 28) Allow the icemaker to operate until the gear motor starts. Check for water leaks.
- 29) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 30) Replace the removed parts and panels in the reverse order of which they were removed.
- 31) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

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. 10.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 12.
- 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 socket 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 socket 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. **NOTICE! 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.
- 22) Plug the unit into the electrical outlet, then move the power switch to the "ON" position.
- 23) Allow the icemaker to operate until the gear motor starts. Check for water leaks.
- 24) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 25) Replace the removed parts and panels in the reverse order of which they were removed.
- 26) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

6. Removal and Replacement of Gear Motor

IMPORTANT! 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. 10.
- 5) Remove the top panel.
- 6) Remove the spout.
- 7) Remove the upper rear panel. See Fig. 12.
- 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 bolts securing the lower housing to the gear motor. Lift the evaporator up slightly.
- 11) Remove the bolts securing the gear motor.
- 12) Disconnect the gear motor wires, then remove the gear motor.
- 13) Attach the spline coupling from the old gear motor to the new gear motor.
- 14) Install the new gear motor and reconnect the electrical wires.
- 15) Open the water supply line shut-off valve and check for water leaks.
- 16) Plug the unit into the electrical outlet, then move the power switch to the "ON" position.
- 17) Allow the icemaker to operate until the gear motor starts. Check for water leaks.
- 18) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 19) Replace the removed parts and panels in the reverse order of which they were removed.
- 20) Plug the unit into the electrical outlet, then move the power switch to the "ON" position to start the automatic icemaking process.

VI. Maintenance

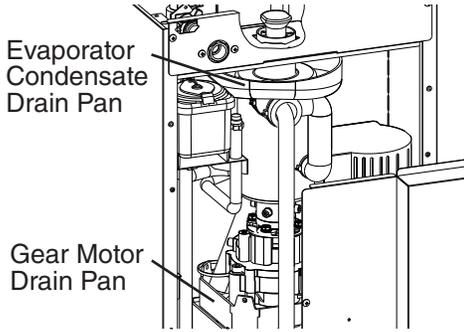
This icemaker must be maintained in accordance with the instruction manual and labels provided with the icemaker. Consult with your local Hoshizaki Certified Service Representative about maintenance service.

WARNING

- Only qualified service technicians should service this icemaker.
- Failure to install, operate, and maintain the equipment in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage.
- Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet before servicing.
- To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.
- **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after any maintenance is done to the unit. Make sure that none have fallen into the storage bin.
- Do not place fingers or any other objects into the ice discharge opening.
- After service, make sure that there are no wires pinched between the panels and icemaker. Make sure you do not damage or pinch the water supply line, drain line, or power cord.

A. Maintenance Schedule

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.

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 3 Months	Storage Bin Drain	Maintain as outlined in "VI.C. Storage Bin Drain."
Every 6 Months	Icemaker and Storage Bin	Clean and sanitize per the cleaning and sanitizing instructions provided in this manual. See "VI.B. Cleaning and Sanitizing Instructions."
	Evaporator Condensate Drain Pan and Gear Motor Drain Pan	Wipe down with clean cloth and warm water.  <p>The diagram shows a cross-section of the icemaker's internal assembly. Two drain pans are highlighted with leader lines: the 'Evaporator Condensate Drain Pan' is located at the top, and the 'Gear Motor Drain Pan' is located at the bottom, near the motor and auger mechanism.</p>
	Optional Drain Pump (HS-0248)	Test as outlined in "IV.E.2. Drain Pump Check."
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 "VI.D. 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 "V.C.1. Upper Bearing Wear Check."
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.

B. Cleaning and Sanitizing Instructions

1. Auxiliary Codes A-1 and Earlier

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

⚠ WARNING

- To prevent injury to individuals and damage to the icemaker, do not use ammonia type cleaners.
- Carefully follow any instructions provided with the bottles of cleaning and sanitizing solution.
- Always wear liquid-proof gloves and goggles to prevent the cleaning and sanitizing solutions from coming into contact with skin or eyes.
- 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.

a) Cleaning Solution

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

b) Cleaning Procedure

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet. **WARNING! To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.**
- 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. 13.

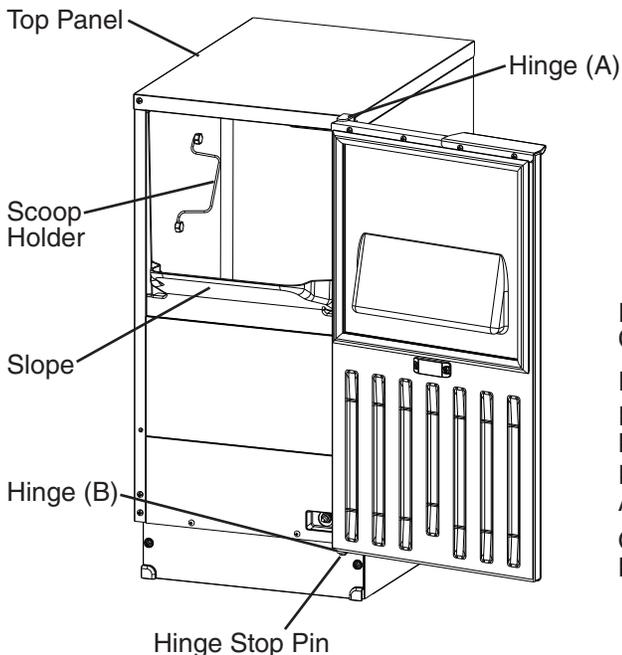


Fig. 13

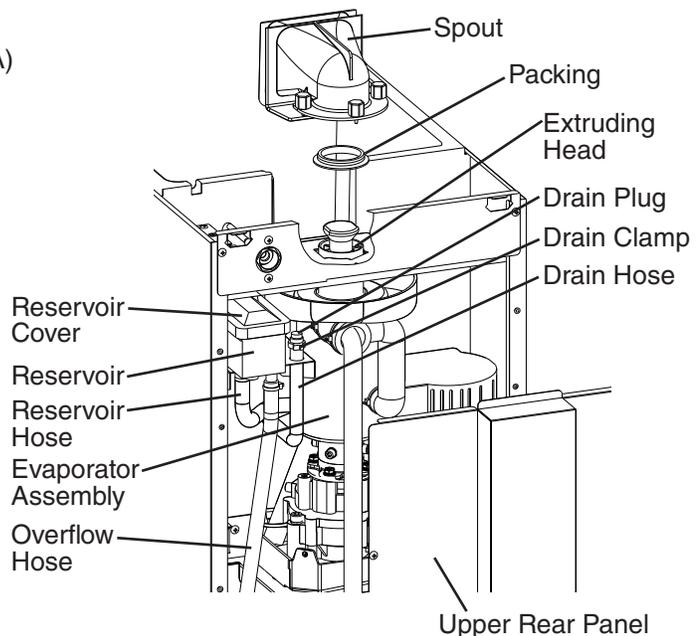


Fig. 14

- 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. 14. 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.
- 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.

c) Sanitizing Solution

Dilute 1.25 fl. oz. (37 ml or 2.5 tbs) of a 5.25% sodium hypochlorite solution (chlorine bleach) with 2.5 gal. (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. **IMPORTANT! For safety and maximum effectiveness, use the solution immediately after dilution.**

d) 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.

e) 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.

2. Auxiliary Codes A-2 and Later

This icemaker must be cleaned and sanitized at least twice a year. More frequent cleaning and sanitizing may be required in some water conditions.

⚠ WARNING

- To prevent injury to individuals and damage to the icemaker, do not use ammonia type cleaners.
- Carefully follow any instructions provided with the bottles of cleaning and sanitizing solution.
- Always wear liquid-proof gloves and goggles to prevent the cleaning and sanitizing solutions from coming into contact with skin or eyes.
- 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.

a) Cleaning Solution

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

b) Cleaning Procedure

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet. **WARNING! To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.**
- 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. 15.
- 4) Remove the 2 screws securing the top panel, then lift it off.

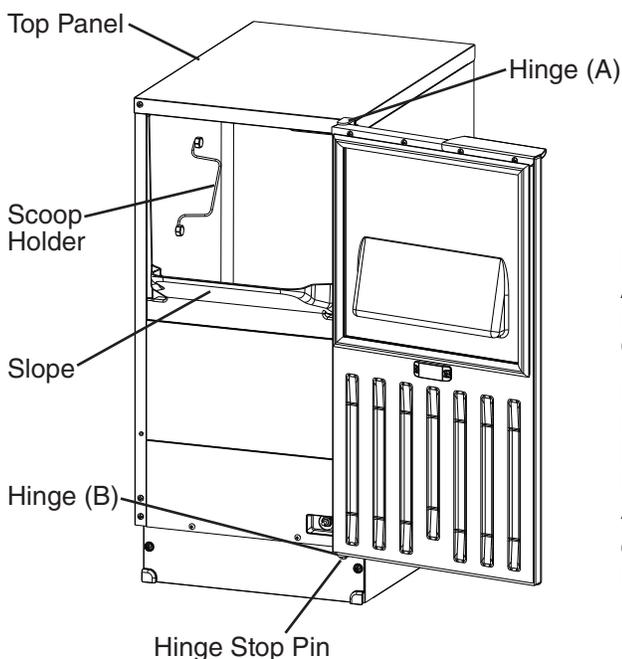


Fig. 15

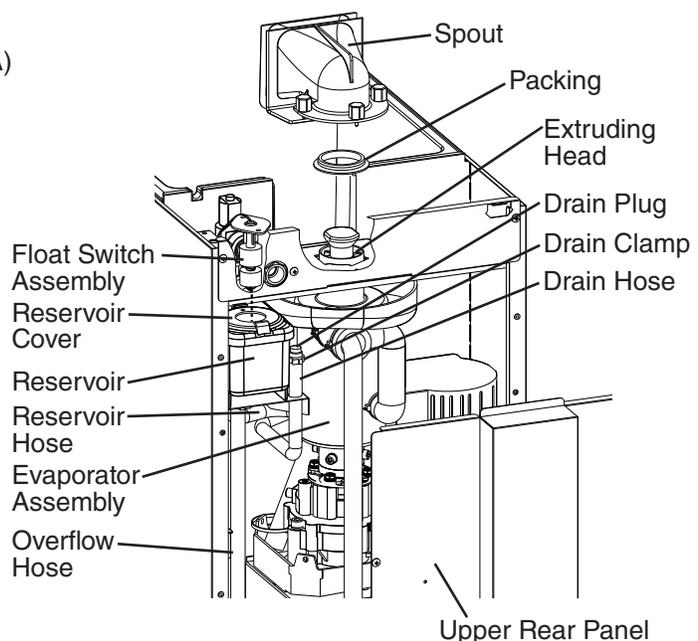


Fig. 16

- 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. 16. Remove the drain plug to drain the water from the evaporator assembly and reservoir.
- 10) After all of the water has drained, replace the drain plug in its correct position.
- 11) Remove the spout. Pour the cleaning solution over the extruding head until the evaporator assembly and the reservoir are full and the solution starts to flow through the overflow hose. Replace the spout in its correct position.
Note: If there is excess scale on the extruding head, fill the evaporator assembly and reservoir as described above, then use a clamp on the reservoir hose between the evaporator assembly and reservoir to block flow. Pour additional cleaning solution over the extruding head until the evaporator assembly is completely full. Replace the spout in its correct position.
- 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.
- 13) In bad or severe water conditions, clean the float switch assembly as described below. Otherwise, continue to step 14.
 - a. Remove the float switch assembly from the reservoir cover.
 - b. Wipe down the float switch assembly with the cleaning solution.
 - c. Rinse the float switch assembly thoroughly with clean water.
 - d. Replace the float switch assembly in its correct position.
- 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. Unplug the unit from the electrical outlet.
- 16) Remove the drain plug to drain any remaining solution.
- 17) After all of the solution has drained, replace the drain plug in its correct position.
Note: If you do not sanitize the icemaker, go to step 9 in "IV.B.5. Sanitizing Procedure - Final."
- 18) Remove the spout. Using a clean container, pour water over the extruding head until the water starts to flow through the overflow hose.
- 19) Remove the drain plug to drain the water.
- 20) After all of the water has drained, replace the drain plug in its correct position.

c) Sanitizing Solution

Dilute 1.25 fl. oz. (37 ml or 2.5 tbs) of a 5.25% sodium hypochlorite solution (chlorine bleach) with 2.5 gal. (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. **IMPORTANT! For safety and maximum effectiveness, use the solution immediately after dilution.**

d) Sanitizing Procedure - Initial

- 1) Remove the spout if not already removed. Pour the sanitizing solution over the extruding head until the evaporator assembly and the reservoir are full and the solution starts to flow through the overflow hose.
- 2) Remove the 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 evaporator assembly, 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.

e) 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 spout. Pour the sanitizing solution over the extruding head until the solution starts to flow through the overflow hose. Replace the spout in its correct position.
- 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 spout. Using a clean container, pour water over the extruding head until the water starts to flow through the overflow hose. Replace the spout 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.
- 13) Plug the unit back in. Move the power switch to the "ON" position and allow the icemaker to run. Check for leaks.
- 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.

C. 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.

NOTICE
If the storage bin drain becomes clogged, water could build up in the bin and overflow, leading to costly water damage.

- 1) Move the power switch to the "OFF" position. **WARNING! To reduce the risk of electric shock, do not touch the power switch with damp hands.**
- 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 gal. (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.

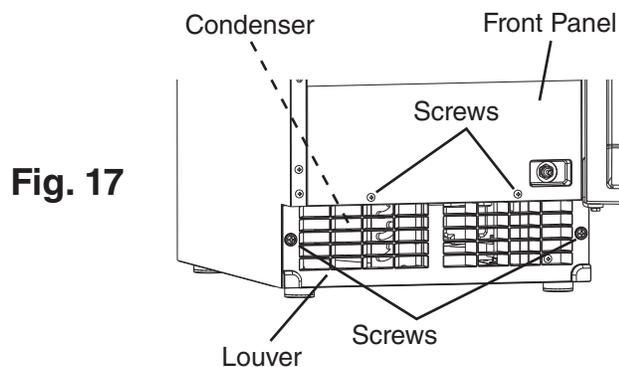
D. Condenser

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

- Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet before cleaning the condenser.
- To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.
- 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. 17.
- 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.
- 6) Plug the unit back in. Move the power switch to the "ON" position to start the automatic icemaking process.



VII. Preparing the Icemaker for Periods of Non-Use

During extended periods of non-use, extended absences, or in sub-freezing temperatures, follow the instructions below. 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.

⚠ WARNING

Only qualified service technicians should service this icemaker.

NOTICE

During extended periods of non-use, extended absences, or in sub-freezing temperatures, follow the instructions below to reduce the risk of costly water damage.

- 1) Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet. **WARNING! To reduce the risk of electric shock, do not touch the power switch or plug with damp hands.**
- 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. 15.
- 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. 16. Remove the drain plug to drain the water from the evaporator assembly and reservoir.
- 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) **Auxiliary Codes A-1 and Earlier:** Skip to step 11.
Auxiliary Codes A-2 and Later: Plug the unit back in. Move the power switch to the "ON" position.
- 11) From the water supply line drain valve, blow the water supply line out using compressed air or carbon dioxide.
- 12) **Auxiliary Codes A-1 and Earlier:** Skip to step 13.
Auxiliary Codes A-2 and Later: Move the power switch to the "OFF" position, then unplug the unit from the electrical outlet.
- 13) Close the water supply line drain valve.
- 14) Clean the storage bin by using a neutral cleaner. Rinse thoroughly after cleaning.

VIII. Disposal

This unit contains refrigerant and must be disposed of in accordance with applicable national, state, and local codes and regulations. Refrigerant must be recovered by properly certified service personnel.