NO:	73109
ISSUED:	DEC. 23, 1998
REVISED:	JAN. 13, 2004

HOSHIZAKI
CUBELET ICE DISPENSER

MODEL
DCM-230FE

SERVICE MANUAL

FOREWORD

IMPORTANT

Only qualified service technicians should attempt to service or maintain this icemaker. No service or maintenance should be undertaken until the technician has thoroughly read this Service Manual.

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

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

HOSHIZAKI AMERICA, INC.
618 Highway 74 South
Peachtree City, GA 30269

Attn: HOSHIZAKI Technical Support Department

Phone: 1-800-233-1940 Technical Service
(770) 487-2331
Fax: (770) 487-3360

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

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

Please review this manual. It should be read carefully before the icemaker is serviced or maintenance operations are performed. Only qualified service technicians should service and maintain the icemaker. This manual should be made available to the technician prior to service or maintenance.

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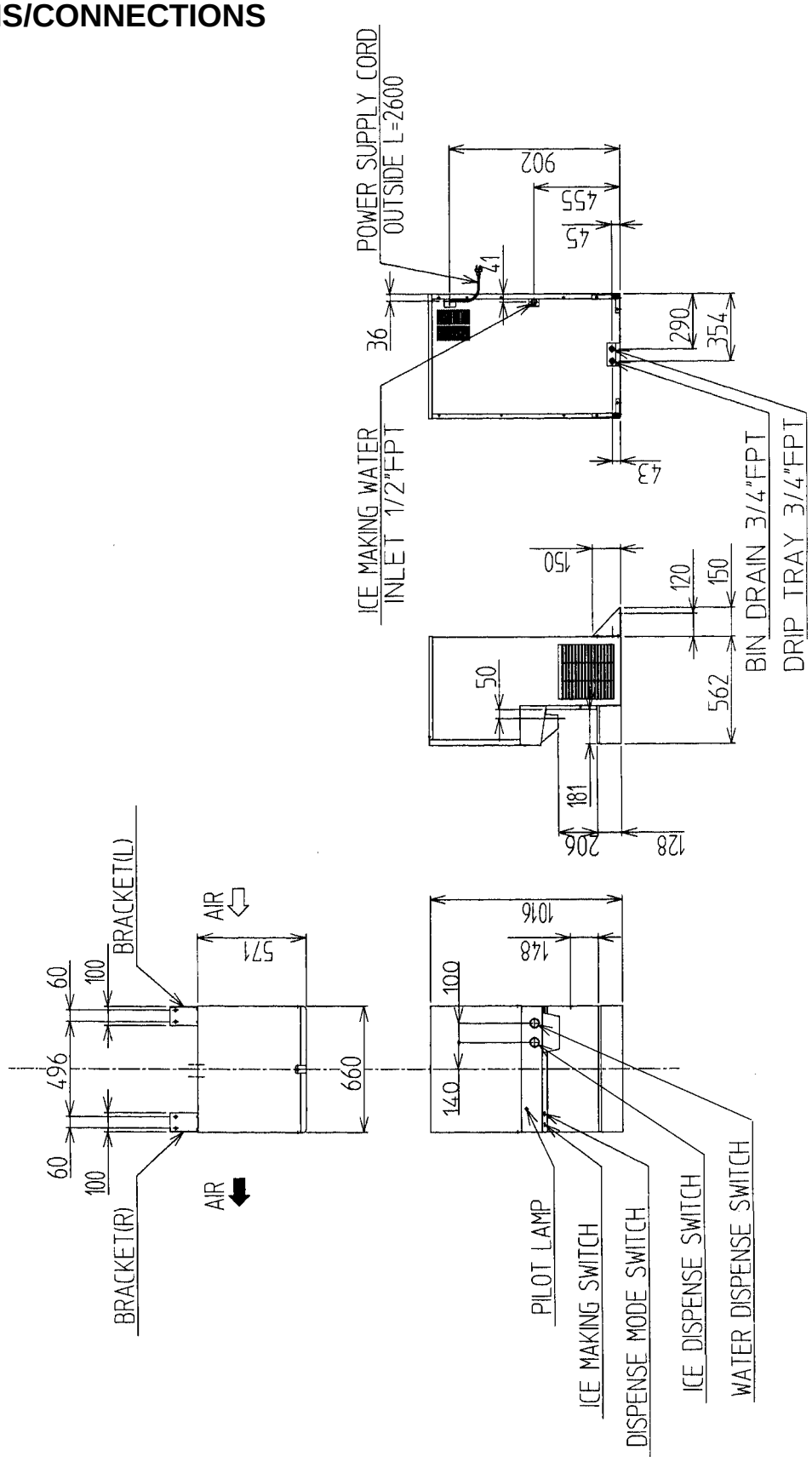
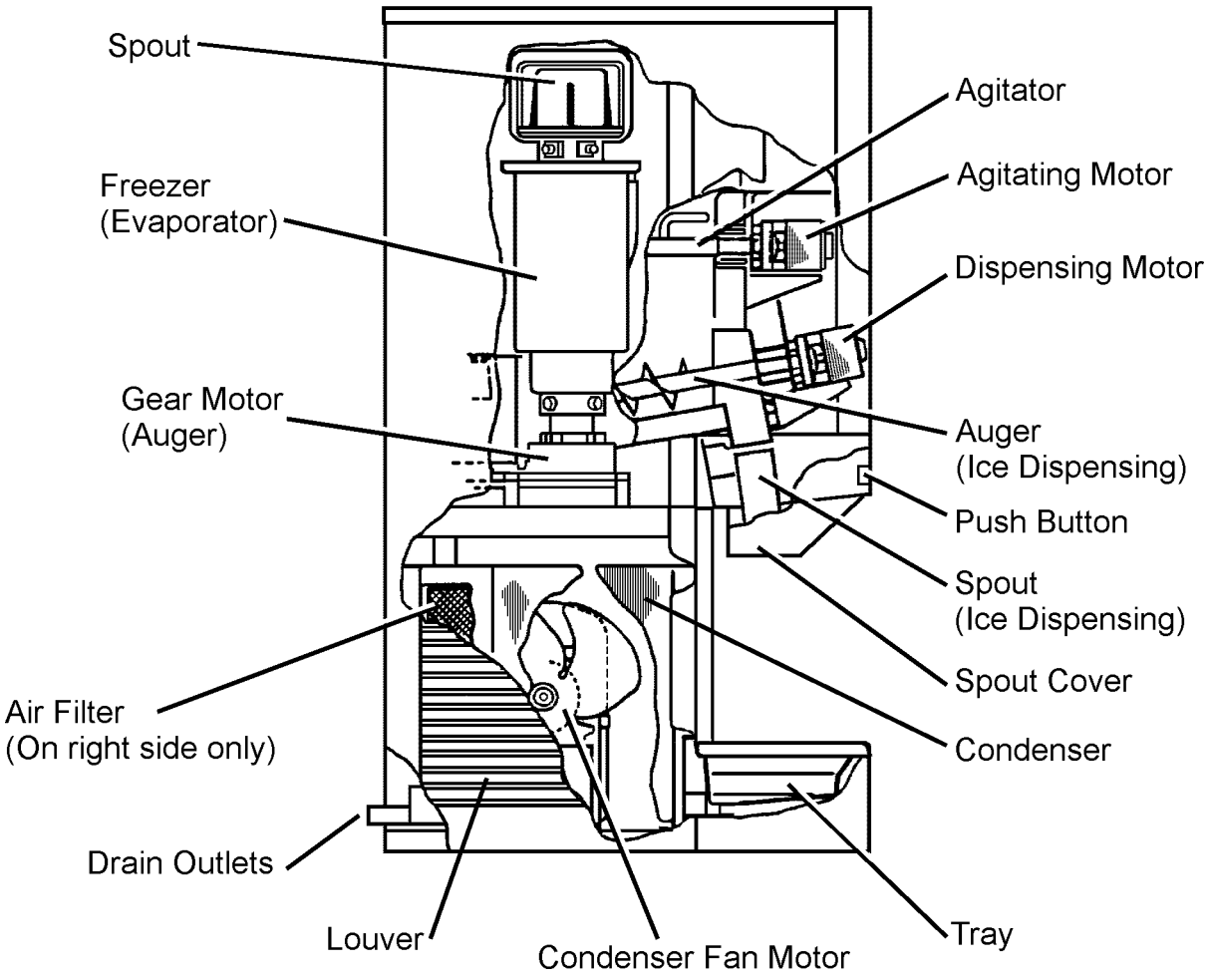
I. GENERAL INFORMATION

1. DIMENSIONS/CONNECTIONS



2. CONSTRUCTION

Hoshizaki Cubelet Ice Dispenser, model DCM-230FE includes Water Supply, Freezer, Condensing, Storage, Dispensing and Control Assemblies.



3. OPERATION - How it works

Water flows from the potable water source through the Water Supply Line Shut-off Valve, enters at the Water Inlet fitting and into the Water Reservoir. The Water Reservoir functions to maintain a constant water level inside the Freezer Assembly. Water from the Water Reservoir enters at the bottom of the Freezer. Heat is removed by the refrigeration process and ice forms inside the Freezer.

A stainless steel Auger, located inside the Freezer, is direct-driven by the Gear Motor, and the rotating Auger carries the ice upward to the end of the Auger, where excess water is pressed out of the ice, as the ice is extruded and broken into cubelet ice (compressed ice) and then pushed out into the Ice Storage Bin through the Ice Spout.

Turning on the Power Switch on the Control Box starts the automatic and continuous icemaking process. When the Ice Storage Bin is filled with ice, the Bin Control Switch, located on the top of the Storage Bin, shuts off the icemaking process. As the ice is removed from the Storage Bin, the Bin Control Switch resets automatically and restarts the icemaking process.

Moving the Dispense Mode Switch to the “PORTION” position gives the user a portion-controlled mode, resulting in dispensing a certain amount of ice (See “IV. 2. CONTROLS AND ADJUSTMENTS”) when the Push Button is pressed. Moving the switch to the “CONTINUOUS” position, gives a continuous dispensing mode, resulting in dispensing ice while the Push Button is being pressed.

The Agitator in the Storage Bin keeps the ice from clustering so that the ice can move easily through the Spout and prevents the formation of an ice block.

4. TIMER BOARD

[a] SOLID-STATE CONTROL

1) A HOSHIZAKI exclusive solid-state control is employed in the DCM-230FE cubelet ice dispenser. This control includes a microprocessor (LSI) developed by HOSHIZAKI.

2) A Printed Circuit Board (hereafter called “Timer Board”) includes a stable and high quality control system.

3) No adjustment is required.

[b] TIMER BOARD

CAUTION

1. Fragile, handle very carefully.

2. A timer board contains CMOS (Complementary Metal-Oxide Semiconductor) integrated circuits, which are susceptible to failure due to static discharge. It is especially important to use an antistatic wrist strap when handling or replacing the board.

3. Do not touch the electronic devices on the board or the back of the board to prevent damage to the board.

4. Do not change wiring and connections. Especially, never misconnect K1, K2, K3 and K4.

5. Do not fix the electronic devices or parts on the board in the field. Always replace the whole board assembly when it goes bad.

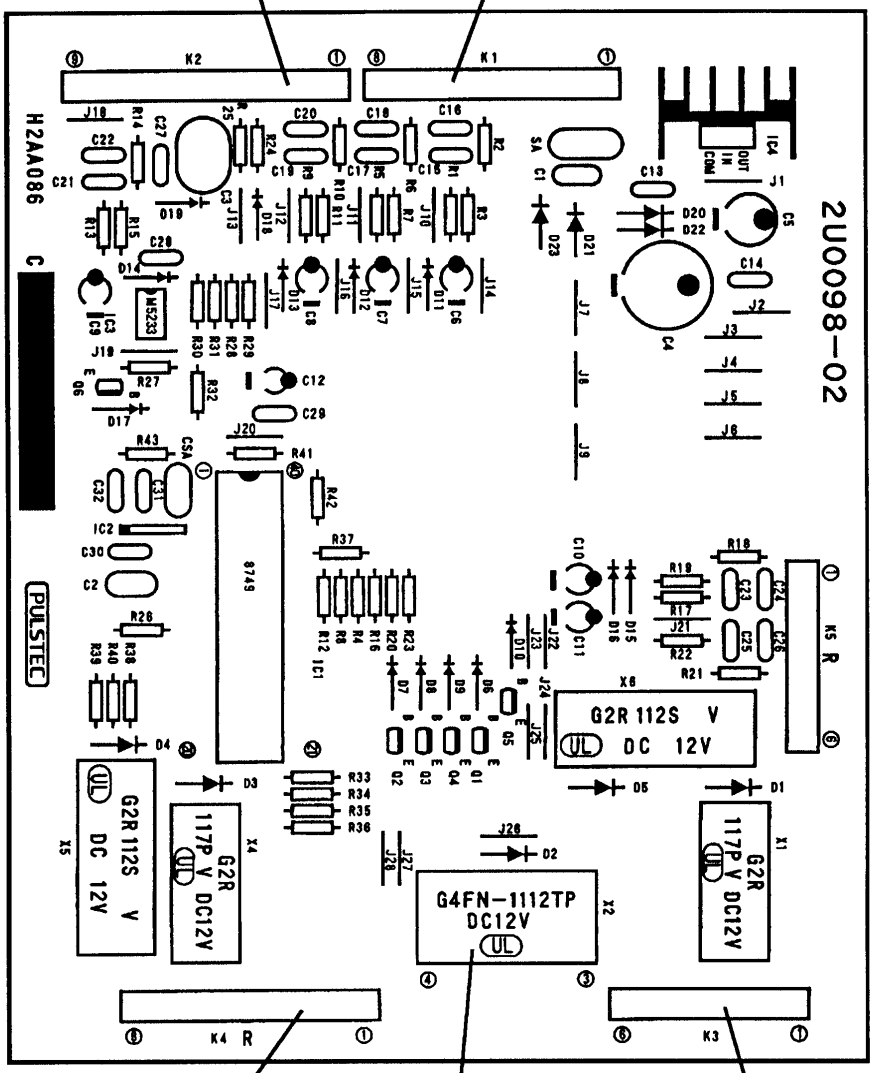
A timer board, Part Code 2U0098-02 (Model H2AA086C03), is used for DCM-230FE.

Connector K2

#1,2 Thermal Switch
#3,4 Variable Resistor
#6,7 Ice Switch (continuous)

Connector K1

#1,2 Power
#3,4 Bin Controlled Circuit
#7,8 Ice Switch (portion controlled)
[Does not apply on DCM-230FE]



Connector K4

#1,2 X2 Relay Coil
#5,6 X4 Relay (Agitating Motor)
#7,8 X5 Relay (Dispensing Motor) (Solenoid)

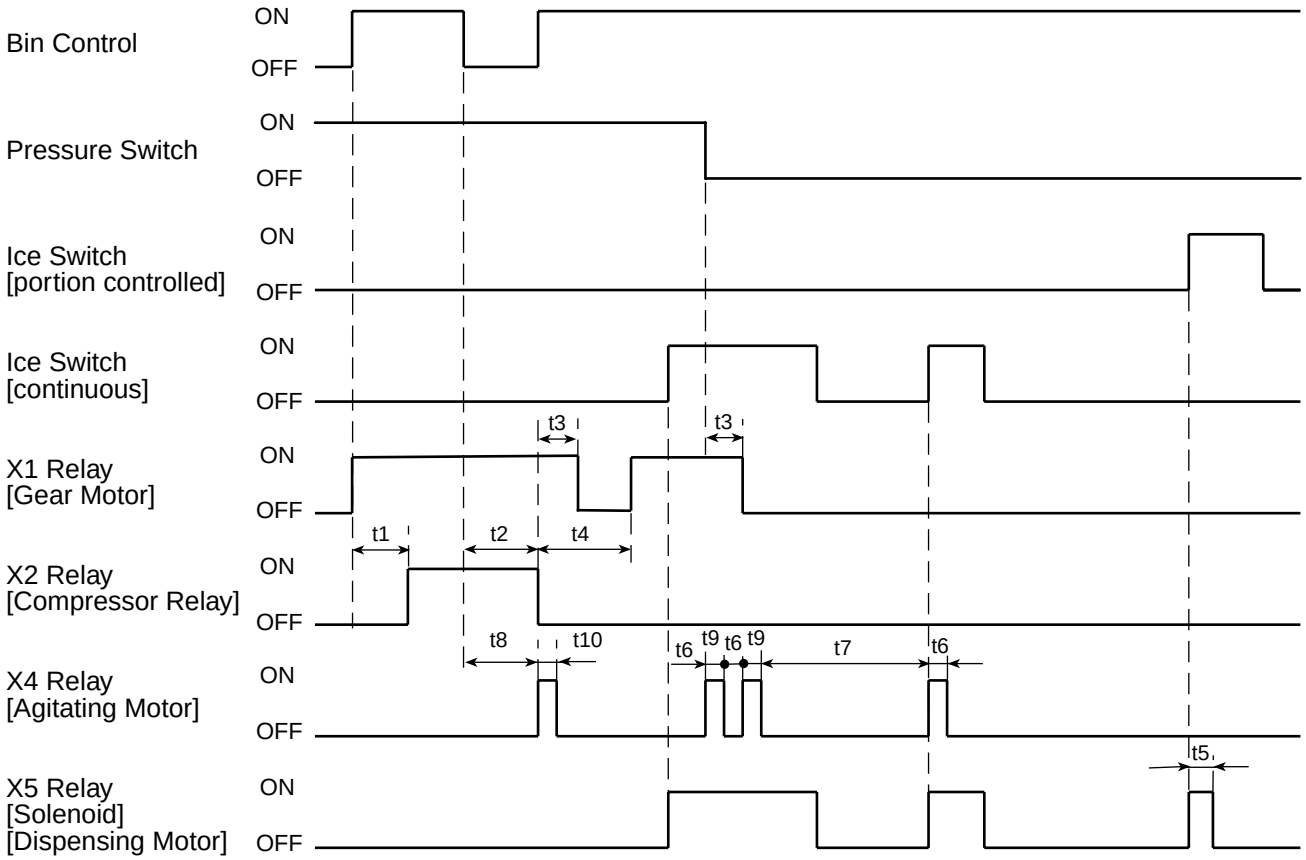
X2 Relay

(Comp. Relay)
(Fan Motor)

Connector K3

#2,3 X1 Relay (Gear Motor)

[c] SEQUENCE



MARK	ITEM		TIME
t1	X2 Relay ON-delay Time		60 sec.
t2	X2 Relay OFF-delay Time		90 sec.
t3	X1 Relay OFF-delay Time		60 sec.
t4	X1 Relay Restart-delay Time		120 sec.
t5	X5 Relay ON Time	Minimum	0.6 sec.
		Maximum	20 sec.
t6	X4 Relay Anti-restart Time		12 sec.
t7	X4 Relay Anti-reset Time		20 sec.
t8	X4 Relay ON-delay Time		90 sec.
t9	X4 Relay ON Time (after completing t6)		0.6 sec.
t10	X4 Relay ON Time (after completing t8)		0.6 sec.

Functions of Relays

1) X1
   - makes just when the Bin Control Circuit closes.
   - breaks t3 sec. after X2 breaks following the t2 sec. delay since the Bin Control Circuit opens.
   - will not make for t4 sec. after X2 breaks, even if the Bin Control Circuit closes.

2) X2
   - makes t1 sec. after the Bin Control Circuit closes.
   - breaks t2 sec. after the Bin Control Circuit opens.
   - will not make while the Pressure Switch is OFF, whether the Bin Control Circuit is ON or OFF.

3) X4
   - makes for t10 sec. after the t8 sec. delay since the Bin Control Circuit closes.
   - makes for t9 sec. after the t6 sec. delay since X5 is made by switching ON the Ice Switch (portion controlled) or Ice Switch (continuous).
   - makes just when X5 is made by switching ON the Ice Switch (portion controlled) or Ice Switch (continuous), after t7 min. has passed since X4 breaks.

4) X5
   - makes for t5 sec. after the Ice Switch (portion controlled) is switched ON.
   - is ON while the Ice Switch (continuous) is ON.

II. INSTALLATION INSTRUCTIONS

WARNING

The installation must be carried out by qualified personnel, in accordance with current regulations, according to the manufacturer's instructions.

1. UNPACKING

WARNING

Children should not be allowed in reach of the packaging elements (plastic bags and expanded polystyrene) as they are potential sources of danger.

CAUTION

1. Remove shipping carton, tape(s) and packing. If packing material is left in the ice dispenser, it will not work properly.

2. Ensure all components, fasteners and thumbscrews are securely in place.

1) After removing the packaging, make sure that the ice dispenser is in good condition. If in doubt, please do not use the equipment but apply to professionally qualified personnel.

2) Remove the Upper Front, Top and Side Panels to prevent damage when installing the ice dispenser. See Fig. 1.

3) Remove the package of accessories, and check the contents:

a) Installation Kit

Inlet Hose	1
Outlet Hose	2
1/2-3/4 Nipple	1
3/4-3/4 Nipple	2
b) Bracket	2
c) Fuse	3

4) Check for 10A, 1A and 0.5A spare fuses.

5) Remove the protective plastic film from the panels. If the ice dispenser is exposed to the sun or to heat, remove the film after the ice dispenser cools.

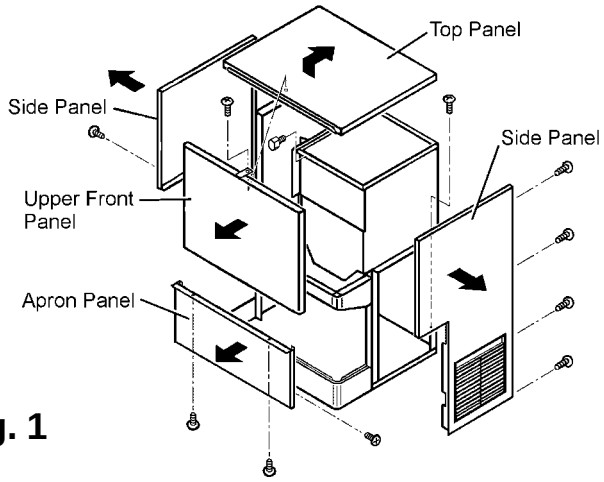


Fig. 1

Upper Front Panel: Remove the screws. Pull the bottom toward you.

Top Panel: Remove the Thumbscrew. Lift up the front and push away.

Apron/Side Panel: Remove the screws and pull toward you.

2. LOCATION

IMPORTANT

1. This ice dispenser is not intended for outdoor use. Normal operating ambient temperature should be within +5°C to +40°C. Normal operating water temperature should be within +5°C to +35°C. Operation of the ice dispenser, for extended periods, outside of these normal temperature ranges may affect production capacity.

2. The ice dispenser should not be located next to ovens, grills or other high heat producing equipment.

3. The location should provide a firm and level foundation for the equipment at normal counter top height.

4. Allow 15 cm clearance at rear, sides and top for proper air circulation and ease of maintenance and/or service should they be required.

5. This appliance is not suitable for installation in an area where a water jet could be used and where dripping is not allowed.

6. Do not place anything on top of the ice dispenser or in front of the Louver.

3. INSTALLATION

- Incorrect installation can cause harm to people, animals or things, for which the manufacturer cannot be held responsible.

1) Position the ice dispenser in the selected permanent site.

2) Level the ice dispenser in both the left-to-right and front-to-rear directions.

4. ELECTRICAL CONNECTION

WARNING

THIS APPLIANCE MUST BE EARTHED

This ice dispenser requires an earth that meets the national and local electrical code requirements. To prevent possible severe electrical shock to individuals or extensive damage to equipment, install a proper earth wire to the ice dispenser. Remove the plug from the mains socket before any maintenance, repairs or cleaning is undertaken.

- This ice dispenser must have a separate power supply or receptacle of proper capacity. See the Nameplate.

- The main control box fuses are rated at 10A, 1A and 0.5A and should only be replaced by a qualified service engineer.

- Usually an electrical permit and services of a licensed electrician are required.

- If the supply cord and the plug should need to be replaced, it should only be done by a qualified service engineer.

For the U.K. and the Republic of Ireland only

- The wires in the mains lead are coloured in accordance with the following code:

  Green & Yellow = Earth
  Blue = Neutral
  Brown = Live

  As the colours of the wire in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

  The wire which is coloured Green-and-Yellow must be connected to the terminal in the plug which is marked with the letter E or by the symbol ⏚ or coloured Green or Green-and-Yellow. The wire which is coloured Blue must be connected to the terminal which is marked with the letter “N” or coloured Black. The wire which is coloured Brown must be

connected to the terminal which is marked with the letter L or coloured Red.

- Should the socket outlets in the installation site not be suitable for the plug supplied with your product, the plug must be removed (cut off if it is moulded on plug) and an appropriate plug fitted.

  If the non-rewirable has been cut from the power supply cord, it must be disposed of. There should be no attempt to reuse it. Inserting such a plug into a socket elsewhere presents a serious risk of electrical shock.

- The non-rewirable plug must never be used without a fuse cover being fitted.

  The correct replacement for the detachable fuse cover is identifiable from the manufacturer's reference number stamped on the plug.

  Supply of replacement fuse covers can be obtained from Hoshizaki Parts/Service Centres.

  Fuses should be rated at 10A and approved to BS 1362.

5. WATER SUPPLY AND DRAIN CONNECTIONS

(For the U.K. only, the connections must be in accordance with current requirements of the Model Water Byelaws 1986 SI No. 1147)

- Only potable water should be used for this ice dispenser.

- Water supply pressure should be minimum 0.5 bar and maximum 8 bar. If the pressure exceeds 8 bar, use a pressure reducing valve. Do NOT throttle back the supply tap.

- A plumbing permit and services of a licensed plumber may be required in some areas.

- The ice dispenser drain is gravity flow, so ensure drainpipe has an adequate pitch or fall.

- Water should drain into an open trap.

1) By means of a suitable spanner or wrench, tighten the 1/2-3/4 Nipple (accessory) into the Rc1/2 fitting on the rear of the ice dispenser as indicated. P.T.F.E. tape and/or a suitable sealing compound should be used to obtain a leak free joint.

   Note: Jointing compounds should be approved and suitable for potable water use.

2) Attach angled end of white flexible inlet hose (accessory) to free end of 1/2-3/4 Nipple ensuring rubber sealing washer is correctly positioned. Hand tighten sufficiently to provide leak free joint.

3) Attach the other end of inlet hose to the water tap, noting washer is correctly positioned before hand tightening as above.

4) Attach grey flexible outlet hoses (accessory) to the R3/4 fittings on the rear bottom of the ice dispenser, confirming fitment of rubber washers before finally hand tightening the joints. These pipes can be cut to length as necessary to suit position of main drain.

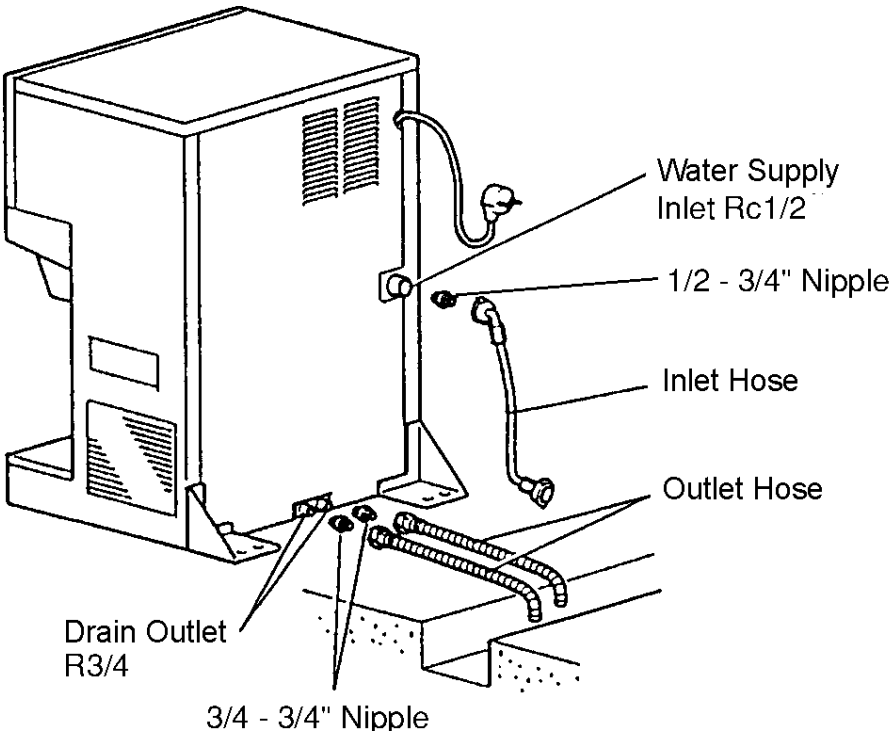


Fig. 2

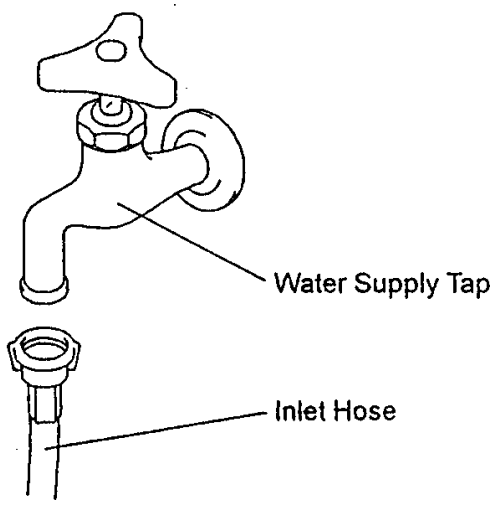


Fig. 3

III. OPERATING INSTRUCTIONS

WARNING

1. This ice dispenser is designed to produce and store edible ice. To keep the ice dispenser hygienic:
   - Wash your hands before removing ice.
   - Keep the Grille in the Tray clean. Clean it by using a neutral cleaner and rinse thoroughly.

2. The use of any electrical equipment involves the observance of some fundamental rules. In particular:
   - Instances of high humidity and moisture increase the risk of electrical short circuits and potential electrical shocks. If in doubt, disconnect the ice dispenser.
   - Do not pull the power cord in order to disconnect the ice dispenser from the feed network.
   - This appliance is not suitable for unsupervised use by young children, aged or infirm persons.

3. All parts are factory-adjusted. Improper adjustments may result in failure.

4. If the unit is turned off, wait for at least 3 minutes before restarting the ice dispenser to prevent damage to the Compressor.

5. Dispensing no ice for more than 5 or 6 hours could result in spouting wet ice or making ice bridge. Turn off the Control Switch, and remove ice from the Storage Bin within 2 hours. Soggy and sticky ice should be removed continuously as produced.

1. START UP

1) Clean the Storage Bin

2) Open the Water Supply Line Shut-off Valve.

3) Plug in the ice dispenser.

4) Remove the Front Panel.

5) Turn on the Power Switch on the Control Box.

CAUTION

Be sure that the Control Switch, located at the bottom of the Middle Front Panel, is moved to the “ICE” position. Verify that the Manual Drain Valve at the bottom right of the Middle Front Panel is closed.

6) Replace the Front Panel in its correct position.

7) Check that water flows into the Water Supply and the Freezer Assembly:

- Water flows into the Reservoir through the Water Valve.
- Water flows into the Freezer bottom through the Feeder Tubing.
- The Float Switch trips to shut off or close the Water Valve.

8) Check the water supply and drain connections for water leaks.

9) After the Water Valve has closed, the Gear Motor starts first, then the Compressor, and an automatic and continuous icemaking process starts.

10) In a few minutes, cubelet ice is extruded into the Storage Bin.

11) Check for abnormal noise from the Compressor, Fan Motor or Gear Motor after 30 minutes of running.

12) Move the Dispense Mode Switch, located at the bottom of the Middle Front Panel, to the “PORTION” or “CONTINUOUS” position.

13) Press the Push Button to dispense ice, and the dispensing mechanism will operate.

14) Press the Push Button to dispense water, and the Water Valve will open.

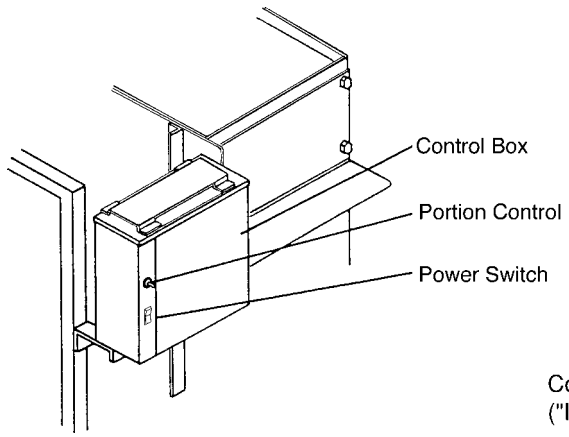


Fig. 4

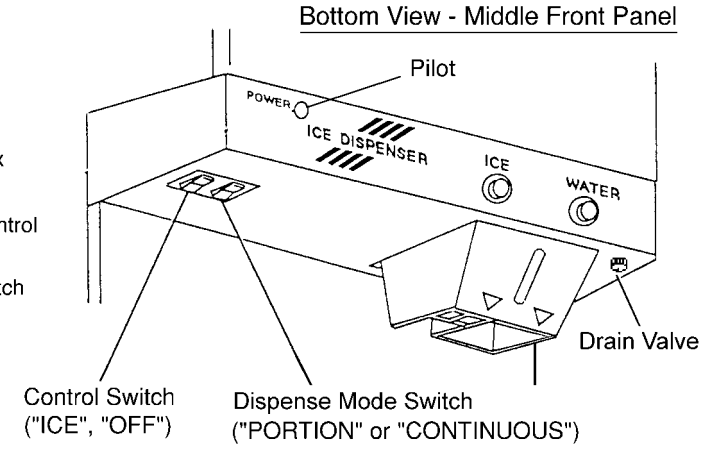


Fig. 5

IMPORTANT

1. Check the conditions and quality of the ice production.

2. Do not use ice produced in the trial run. It might be contaminated with foreign matter in the water circuit. Discard or flush down the drain.

2. CONTROLS AND ADJUSTMENTS - Portion Control

- The Portion Control is located on the Control Box to control the amount of ice dispensed. If adjustment is desired, please contact an authorized Hoshizaki service company.

- The numbers on the label indicate dispensing time (sec.).

- About 35g of ice is dispensed per second.

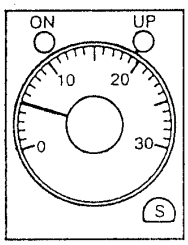


Fig. 6

Note: The Portion Control is factory-adjusted at the minimum dispensing time [0.6 sec. (about 21g)].

3. PREPARING THE ICE DISPENSER FOR LONG STORAGE

IMPORTANT

Ensure all components, fasteners and thumbscrews are securely in place after any maintenance or cleaning is done to the equipment.

WARNING

When shutting off the ice dispenser for an extended time, drain out all water from the water line and remove the ice from the Storage Bin. The Storage Bin should be cleaned and dried. Drain the ice dispenser to prevent damage to the water supply line at sub-freezing temperatures, using air or carbon dioxide. Shut off the ice dispenser until the proper ambient temperature is resumed.

1) Close the Water Supply Line Shut-off Valve.

2) Move the Change Switch, located on the bottom of the Middle Front Panel, to the "CONTINUOUS" position.

3) Press the Push Button to dispense ice, and remove all ice from the Storage Bin.

4) Open the Drain Valve at the bottom of the Middle Front Panel.

5) Remove the Upper Front Panel.

6) Turn off the Power Switch.

7) Replace the Upper Front Panel in its correct position, and close the Drain Valve at the bottom of the Middle Front Panel.

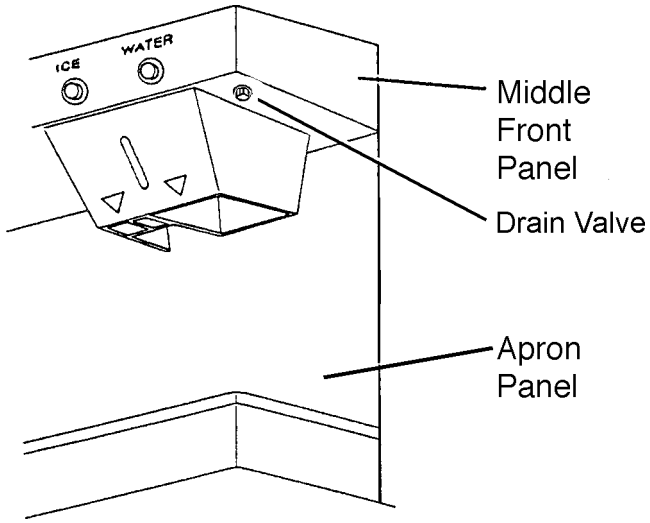


Fig. 7

IMPORTANT

Before operating the dispenser next time, check that the Drain Valve at the bottom of the Middle Front Panel and the Water Supply Line Drain Valve are closed, and open the Water Supply Line Shut-off Valve.

Note: When shutting off the ice dispenser at sub-freezing temperatures, run the ice dispenser, with the Water Supply Line Shut-off Valve closed, and blow out the water inlet line, by using air pressure.

IV. MAINTENANCE

IMPORTANT

Ensure all components, fasteners and thumbscrews are securely in place after any maintenance or cleaning is done to the equipment.

WARNING

1. Before carrying out any cleaning or maintenance operations, unplug the ice dispenser from the electrical supply network.

2. A trained service person should check and clean the Condenser at least once a year.

3. This appliance must not be cleaned by use of a water jet.

1. PERIODIC CLEANING

[1] Drain Pan and Grille

Wipe every day with a soft cloth containing lukewarm water.

[2] Exterior

Wipe the Exterior with a soft cloth containing lukewarm water with a neutral cleaner. Wipe off the cleaner thoroughly with a wet cloth.

[3] Air Filter - See Fig. 8.

A plastic mesh air filter removes dirt or dust from the air and keeps the Condenser from getting clogged. As the filter becomes clogged, the ice dispenser's performance will be reduced. Check the filter at least twice a month. When clogged, use warm water and a neutral cleaner to wash the filter.

1) Remove the screw, push down the Lock and take off the Louver.
   Note: Do not put your hand inside the machine compartment.

2) Remove the Air Filter by pushing it down.

3) Clean the Air Filter by using a vacuum cleaner. When severely clogged, use warm water and a neutral cleaner to wash the Air Filter.

4) Rinse and dry the Air Filter thoroughly, and place it in position.

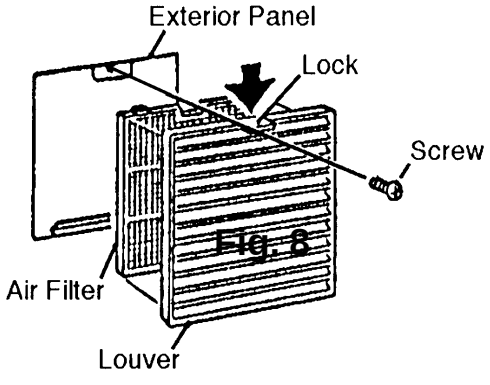


Fig. 8

2. CLEANING OF WATER SYSTEM

WARNING

1. Clean and sanitize the ice dispenser Water System at least twice a year, by using a recommended cleaner and sanitizer.

2. To prevent injury to individuals, do not use any ammonia type cleaners.

3. Always wear liquid-proof gloves for safe handling of the cleaning and sanitizing solution, to prevent irritation in case of contact with skin.

[a] WATER SYSTEM

1) Close the Water Supply Line Shut-off Valve.

2) Prepare approximately 6 lit. of cleaning solution. (A commercial cleaning agent is available at a refrigeration and air-conditioning supply store. Use it according to the instructions on its label.)

3) Move the Change Switch, located at the bottom left of the Middle Front Panel, to the “CONTINUOUS” position.

4) Press the Push Button to dispense ice, and remove all ice from the Storage Bin.

5) Remove the Front Panel and the Top Panel, and turn off the Power Switch.

6) Open the Drain Valve, located at the bottom of the Middle Front Panel on the right side, to drain the water system.

7) Shut off the Drain Valve.

8) Remove the Water Valve above the Reservoir, and pour in the cleaning solution using a funnel. Be careful not to overfill.

9) Wait for 10 minutes before starting the icemaking process. Then turn on the Power Switch. Run the ice dispenser until it stops automatically.

Note: This ice dispenser will not run without the Front Panel.
Replace the Top Panel and the Front Panel in their correct positions.

10) Turn on the Power Switch and drain the water system. See 6) and 7).

11) Pour water into the Reservoir to rinse the cleaning solution, and drain the water system. See 6) and 7).

12) Dilute approximately 0.03 lit. of a 5.25% Sodium Hypochlorite Solution with 6 lit. of water.

13) Pour the sanitizing solution into the Reservoir. Be careful not to overfill.

14) Wait for 10 minutes before starting the icemaking process. Turn on the Power Switch. Run the ice dispenser until it stops automatically.

15) Turn off the Power Switch and drain the water system. See 6) and 7).

16) Rinse out the sanitizing solution. See 11).

17) Replace the Water Valve, the Top Panel and the Front Panel in their correct positions.

Note: Be sure to replace the Water Valve Packing.

18) Open the Water Supply Line Shut-off Valve, turn on the Power Switch, and run the ice dispenser for about 30 minutes.

CAUTION

Do not use ice produced from the cleaning and sanitizing solution. Be sure none remains in the Storage Bin.

[b] STORAGE BIN - Following Cleaning Procedures for Water System

1) Remove the Front Cover of the Storage Bin.

2) Remove the thumbscrews, and move the Agitating Motor and the Dispensing Motor toward you. Then remove the Agitator and the Dispensing Auger. See Fig. 9.

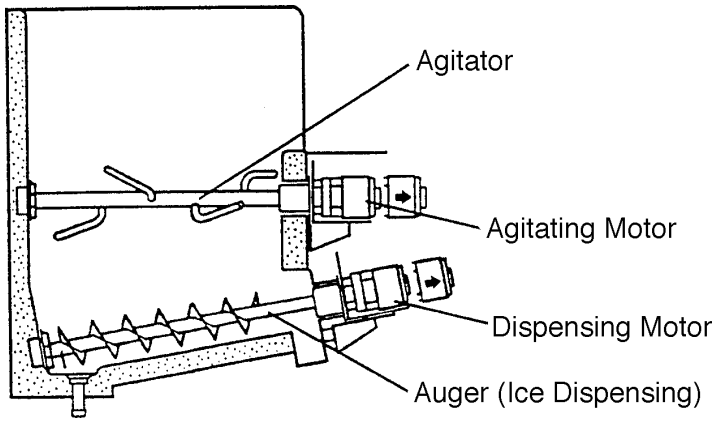


Fig. 9

3) Remove the Bin Control Bracket Assembly. See Fig. 10.

4) Remove the Snap Pin, the Shaft and the Activator.

5) Remove the thumbscrews, the Spout and the Packing. See Fig 11.

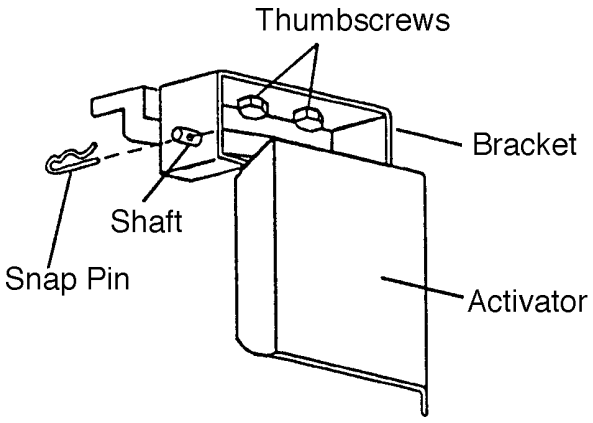


Fig. 10

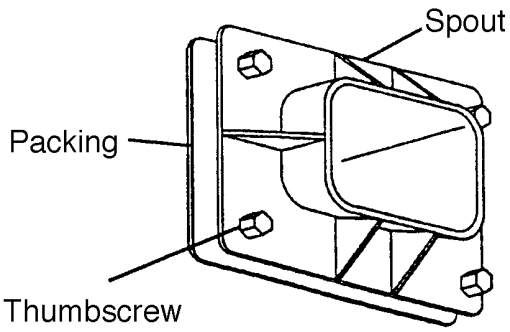


Fig. 11

6) Remove the Spout Cover, black Ice Dispensing Spout and Water Dispensing Nozzle. See Fig. 12.

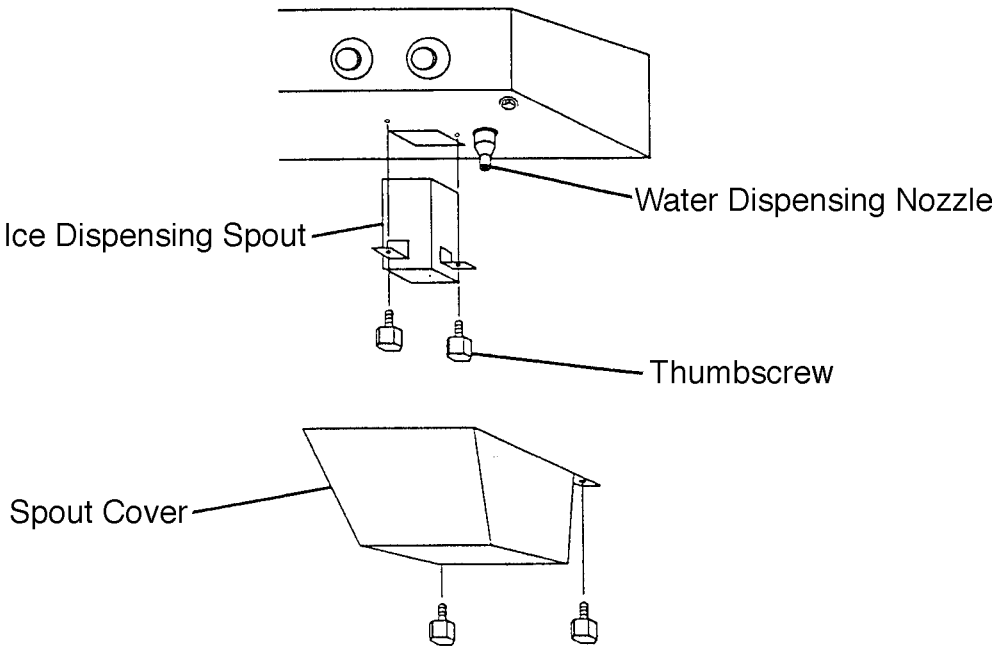


Fig. 12

7) Immerse the Agitator, Dispensing Auger, Bin Control Bracket Assembly, Spout, Packing, Spout Cover, black Ice Dispensing Spout and Water Dispensing Nozzle in the cleaning and sanitizing solutions for about 15 minutes respectively.

8) Rinse these parts thoroughly with clean water.

9) Wipe thoroughly the Shutter located above the Ice Dispensing Spout.

10) Reassemble the Bin Control Bracket Assembly.

11) Replace the Dispensing Auger and Agitator, Bin Control Bracket Assembly, Spout, Packing, black Ice Dispensing Spout, Water Dispensing Nozzle and Spout Cover in their correct positions.

12) Pour warm water into the Storage Bin to melt the ice produced from the cleaning and sanitizing solutions.

13) Clean the storage bin liner, and rinse thoroughly.

14) Replace the Front Cover of the Storage Bin, the Top Panel and the Front Panel in their correct positions.

[c] WATER VALVE

IMPORTANT

If the Filter in the Water Valve becomes clogged with sediment or dirt, the water supply will be stopped and ice cannot be made. Disassemble the Water Valve and clean out the Filter once every two months.

1) Unplug the ice dispenser

2) Close the water supply tap.

3) remove the panels.

4) Remove the Fitting Nut from the Water Valve. Do not lose the Packing.

5) Remove the Filter from the Water Valve, remove sediment or dirt and rinse it with water.

6) Replace the Filter on the Water Valve.

7) Replace the Packing and secure it carefully with the Fitting Nut to prevent leakage.

8) Open the water supply tap.

9) Plug in the ice dispenser.

10) Check for water leaks.

11) Replace the panels in their correct positions.

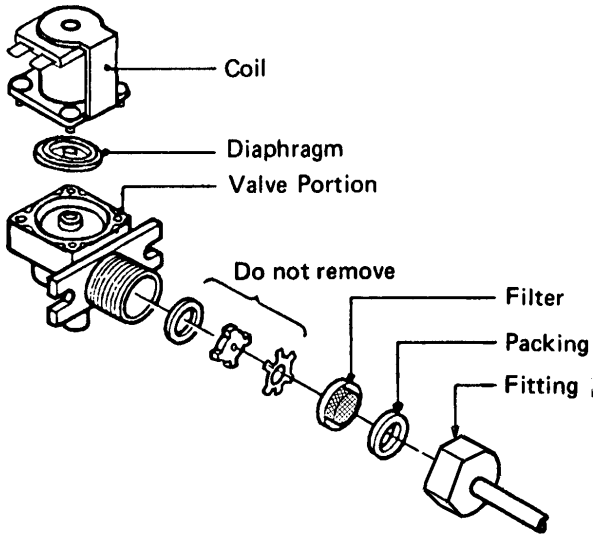
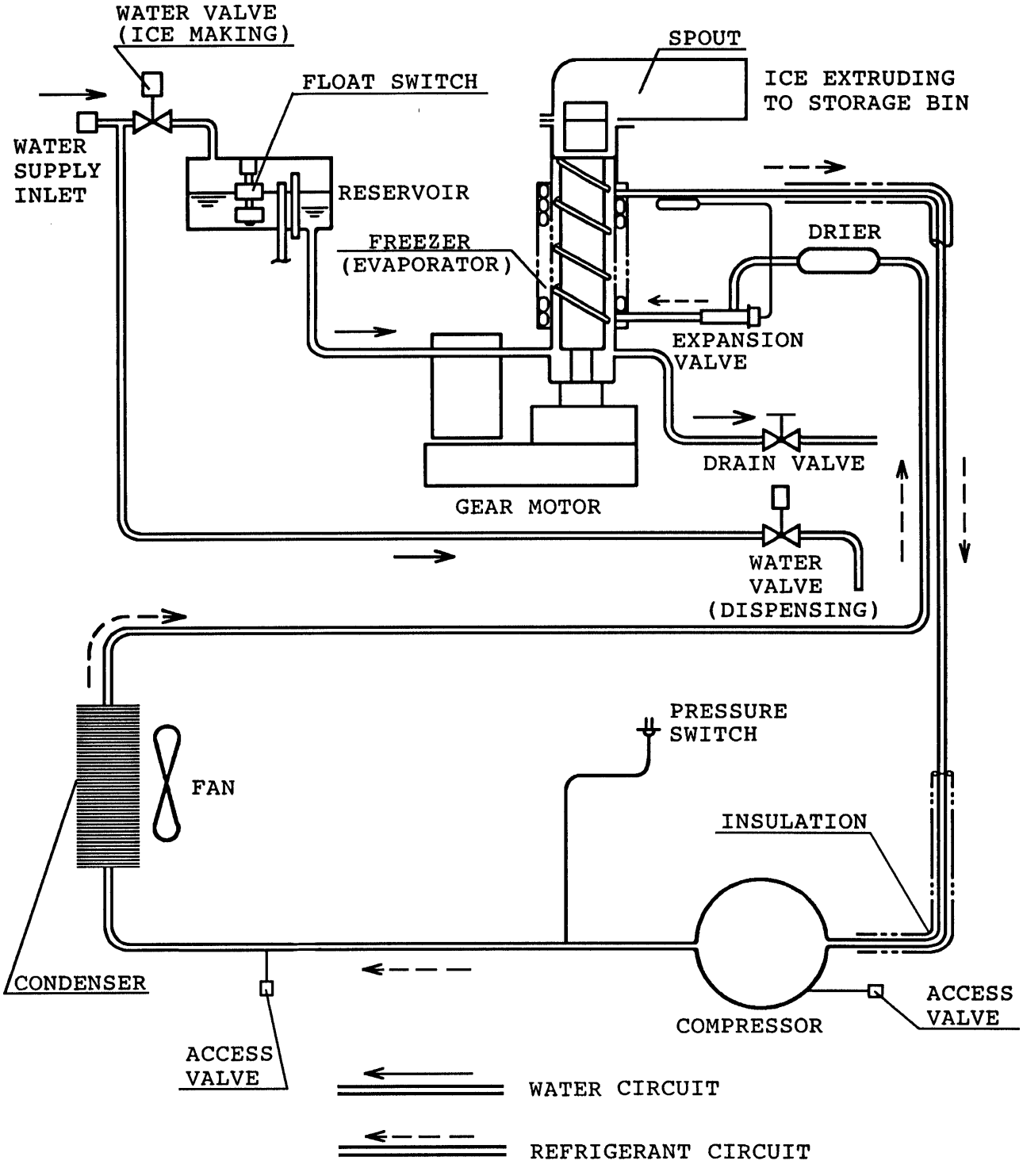


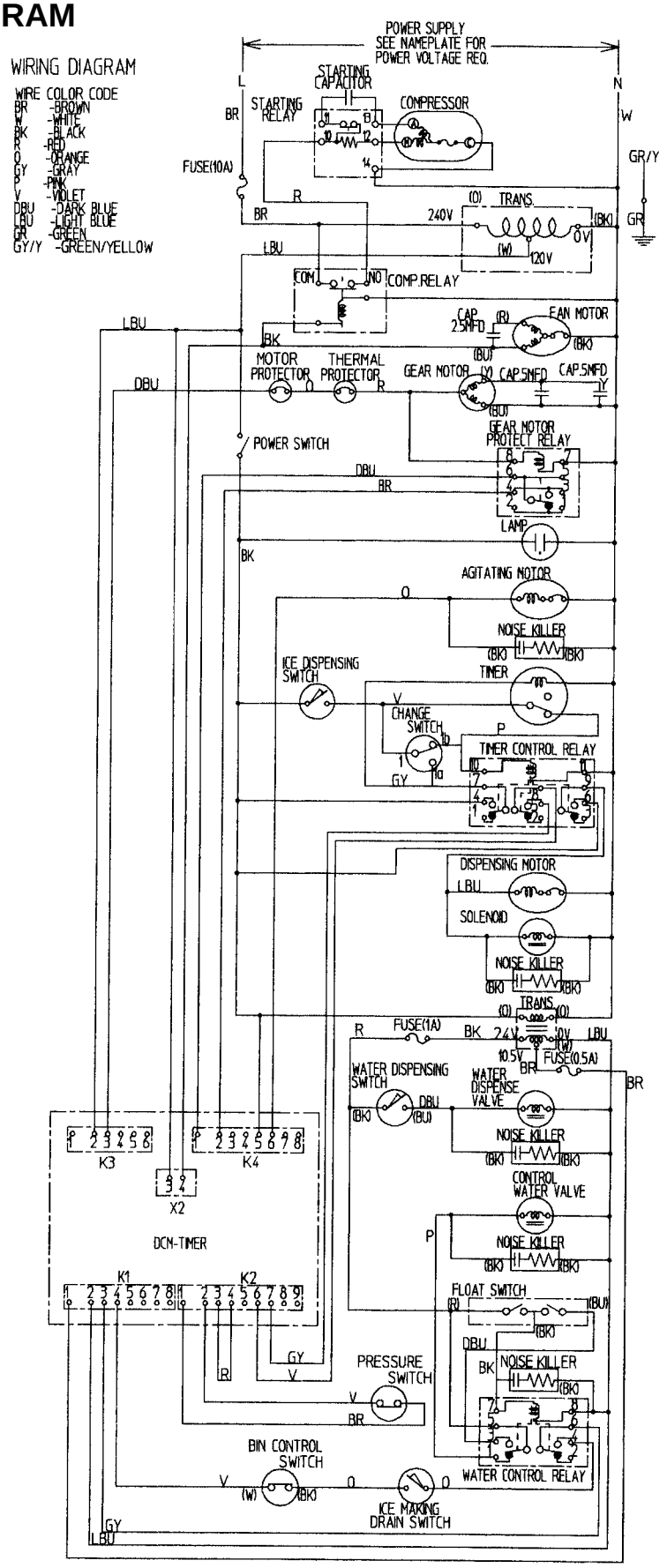
Fig. 13

V. TECHNICAL INFORMATION

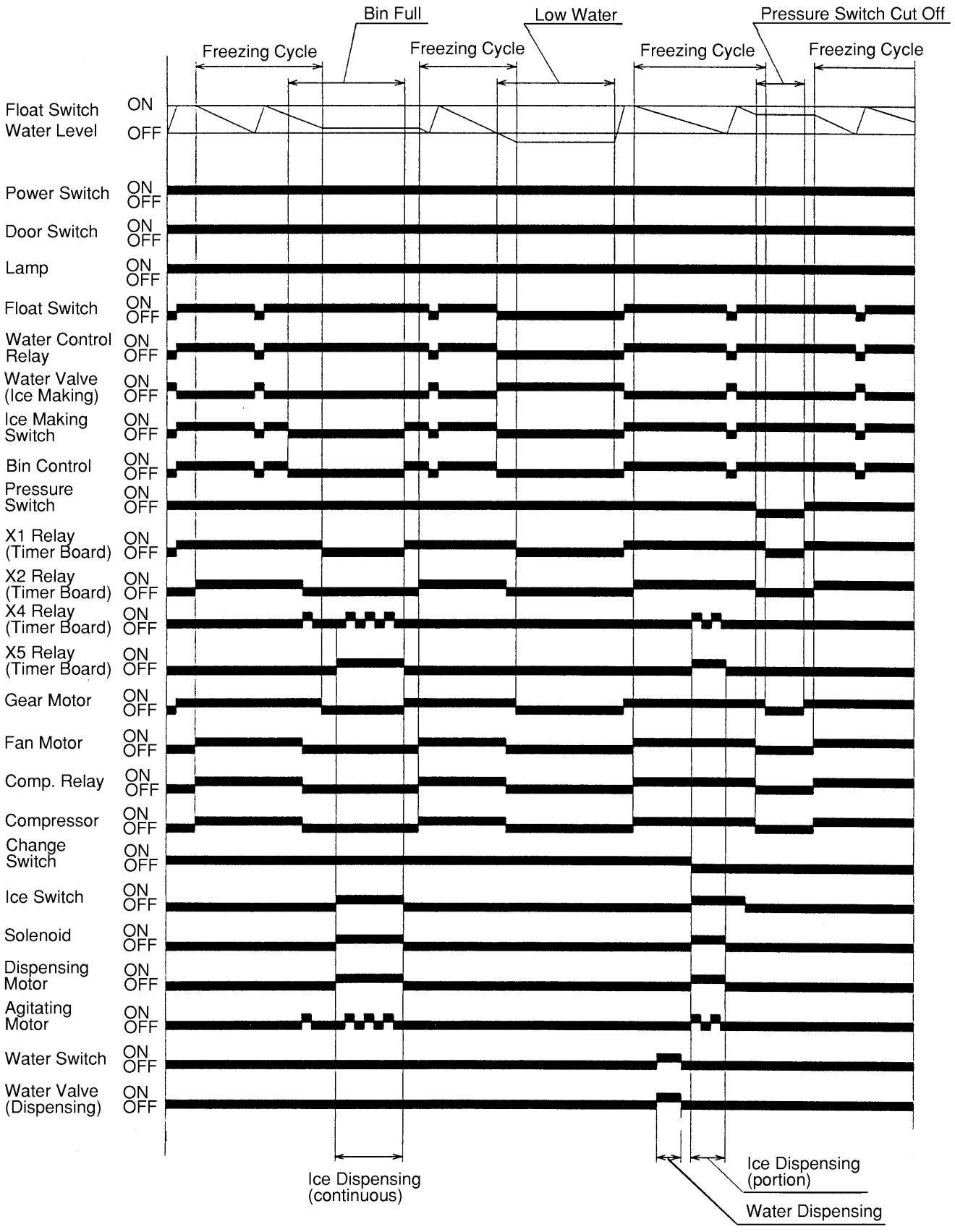
1. WATER CIRCUIT AND REFRIGERANT CIRCUIT



2. WIRING DIAGRAM



3. TIMING CHART



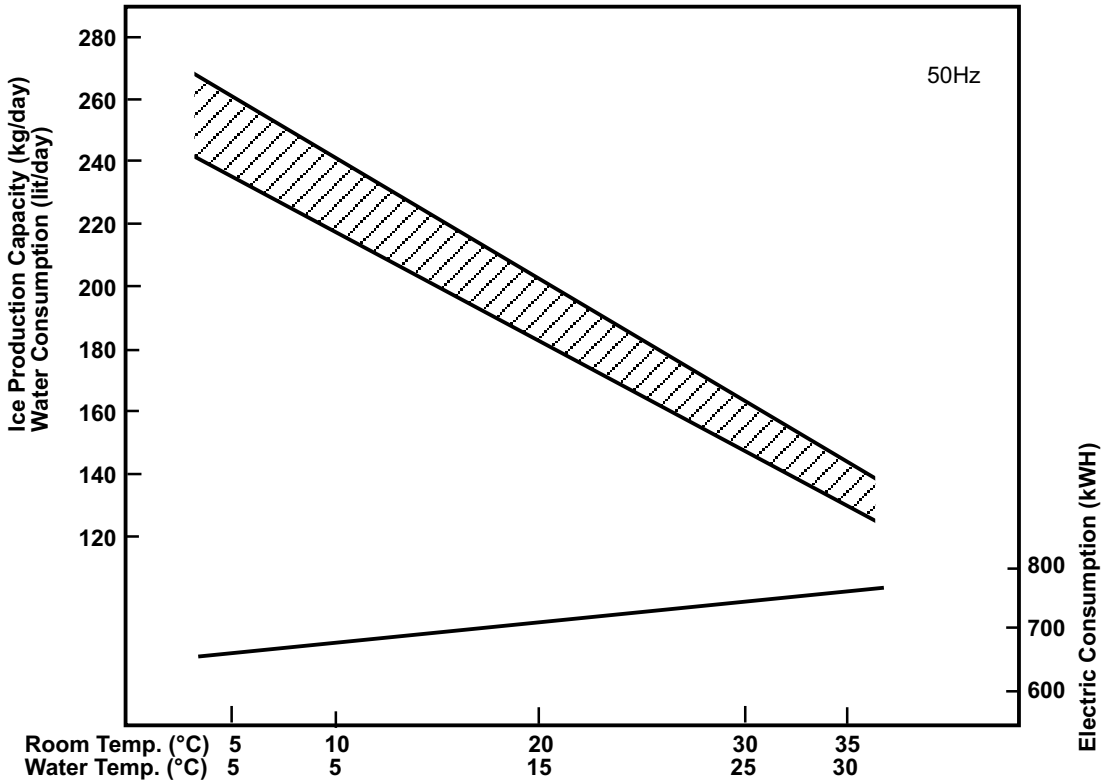
4. SPECIFICATIONS

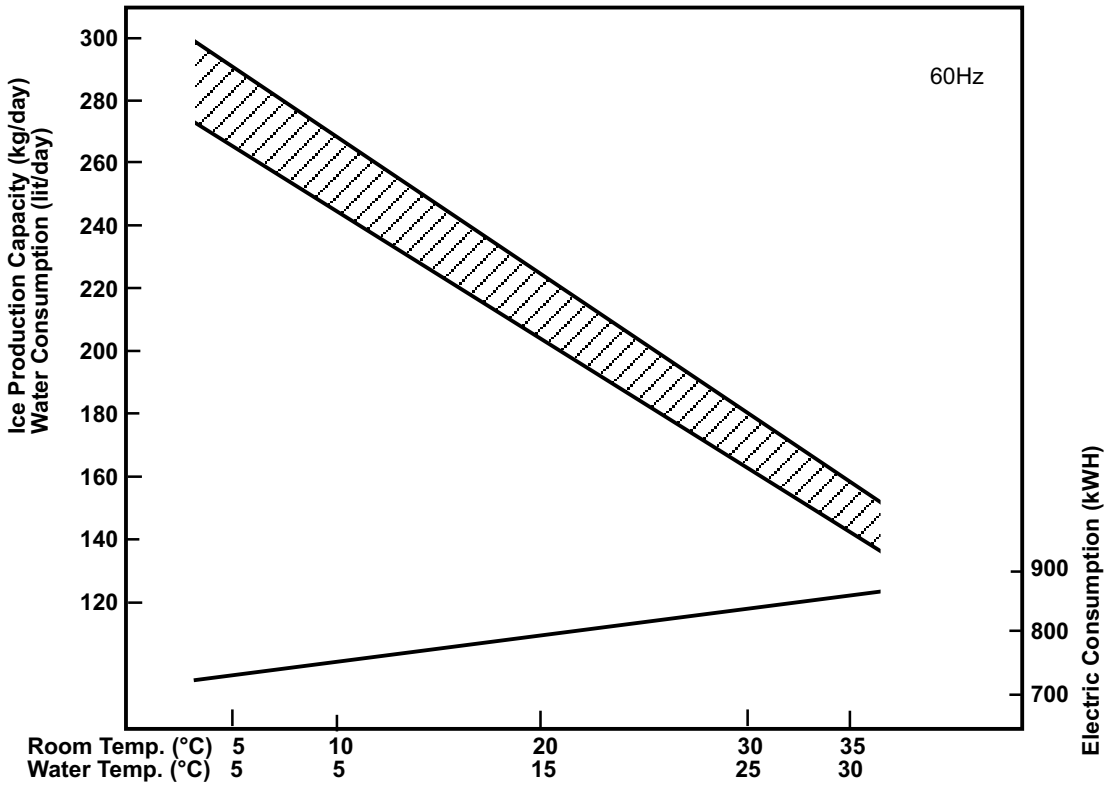
DCM-230FE-UK

AC SUPPLY VOLTAGE	230/50/1	
AMPERAGE	5.3 A (AT 32°/ WT 21°)	
STARTING AMPERAGE	18.6 A	
ELECTRIC CONSUMPTION	815 W (AT 32°/ WT 21°	
POWER FACTOR	67%	
ELECTRIC CAPACITY	1.5kVA	
APPROXIMATE ICE PRODUCTION	230 kg	(AT 10°/WT 10°
PER 24 HR.	190 kg	(AT 21°/WT 15°
	150 kg	(AT 32°/WT 21°
SHAPE OF ICE	Cubelet	
ICE QUALITY	Approx. 90%, Ice (32°/ 21°, Conductivity 200 µs/cm)	
APPROXIMATE STORAGE CAPACITY	18kg	
WATER CONSUMPTION	0.230 m^3	(AT 10°/WT 10°
PER 24 HR.	0.190 m^3	(AT 21°/WT 15°
	0.150 m^3	(AT 32°/WT 21°
EXTERIOR DIMENSIONS (WxDxH)	660mm x 571mm x 1016mm	
EXTERIOR FINISH	Stainless Steel,Galvanized Steel(Rear)	
WEIGHT	Net 108kg	
CONNECTIONS - ELECTRIC	Y-type Connection (with UK Plug)	
- WATER SUPPLY	Inlet 1/2" FPT	
- DRAIN	Drain Pan 3/4" FPT	
	Bin Drain 3/4" FPT	
ICE MAKING SYSTEM	Auger type	
HARVESTING SYSTEM	Direct Driven Auger (125 W Gear Motor)	
ICE MAKING WATER CONTROL	Float Switch	
ICE DISPENSING SYSTEM	Shutter connected to solenoid controlled by Push button	
	(Agitator revolution)	
	Continuous or Portion (1~30sec)	
	Dispensing mode Change Switch	
WATER DISPENSING SYSTEM	Water Valve controlled by Push button	
BIN CONTROL SYSTEM	Mechanical Bin Control (Proximity Sw.)	
COMPRESSOR	Hermetic 495W, Model SC12DL	
CONDENSER	Air-cooled, Fin and tube type	
EVAPORATOR	Copper Tube on Cylinder	
REFRIGERANT CONTROL	Thermostatic Expansion Valve	
REFRIGERANT CHARGE	R-404A, 530g	
MAX OPERATING PRESSURE	2.88 MPa	
ELECTRICAL PROTECTION	Class I Appliance IPX2	
	10A Fuse ,13A Fuse built in UK Plug	
COMPRESSOR PROTECTION	Auto-reset Overload Protector	
GEAR MOTOR PROTECTION	Manual Reset Circuit Breaker	
REFRIGERANT CIRCUIT PROTECTION	Auto-reset High Pressure Control Switch	
LOW WATER PROTECTION	Float Switch and Timer	
PACKAGE DIMENSIONS (WxDxH)	810mm x 680mm x 1152mm	
PACKING WEIGHT	120kg (Gross)	
ACCESSORIES	Mounting Bracket,Inlet and Outlet Hose,Spare Fuse,Nipple	
OPERATING CONDITIONS	VOLTAGE RANGE	Rated Voltage ±10%
	AMBIENT TEMP.	5-40°
	WATER SUPPLY TEMP.	5-35°
	WATER SUPPLY PRESSURE	0.5-8bar (0.05-0.8MPa)

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

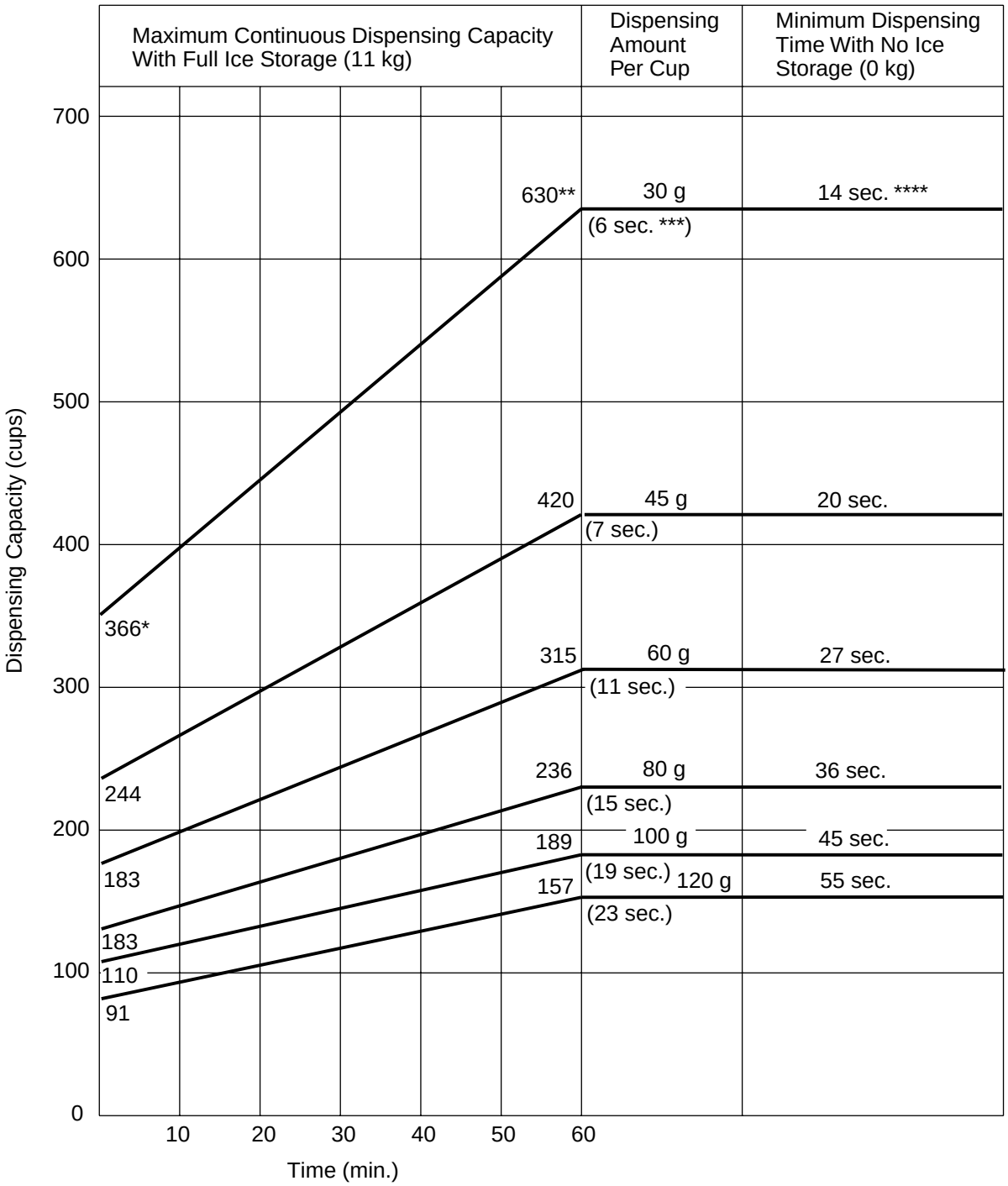
5. PERFORMANCE DATA





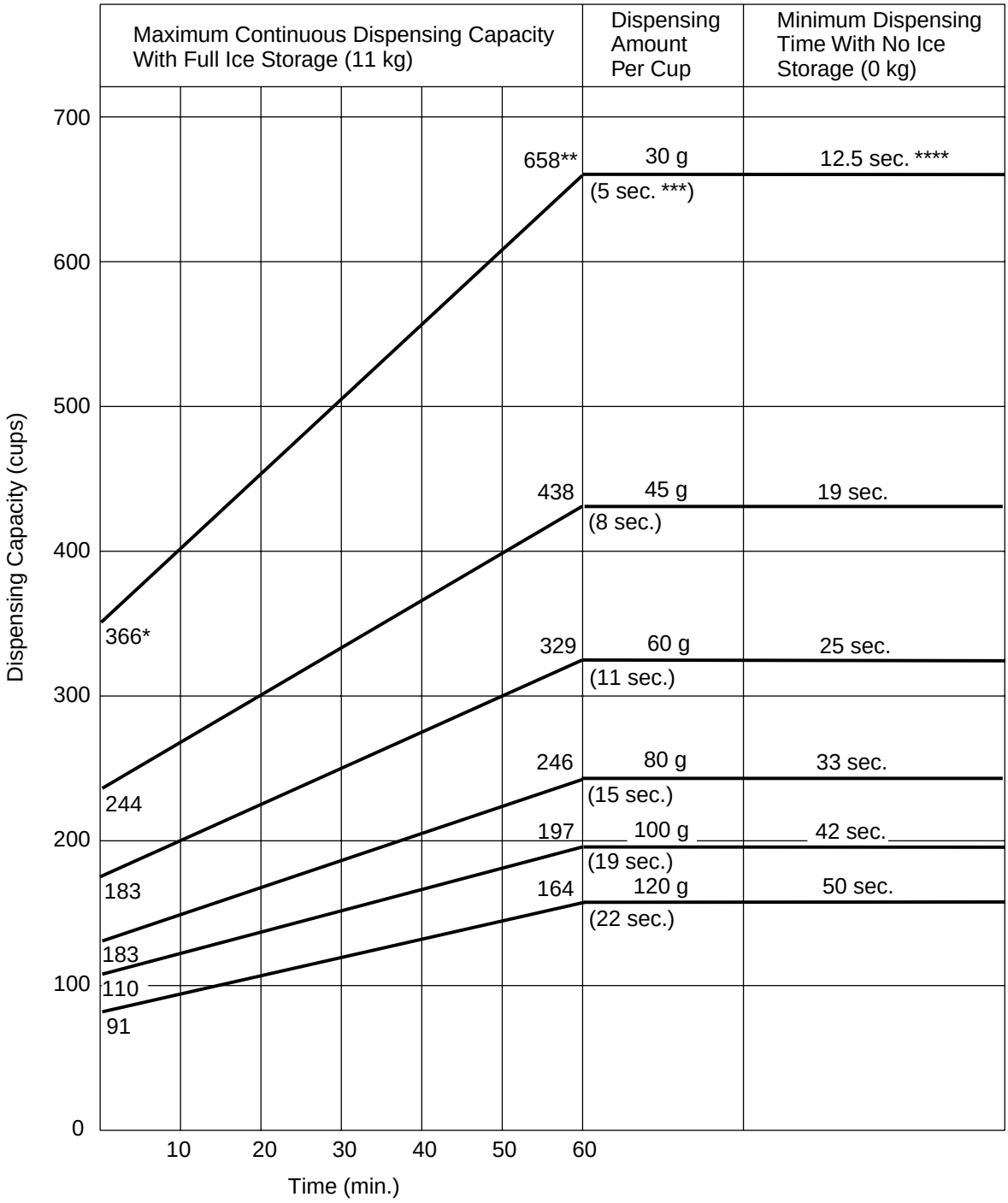
6. ICE DISPENSING CAPACITY

Ice Production: 190 kg/day Storage Capacity: 11 kg
Ambient Temperature: 20°C Water Temperature: 15°C 50Hz



* = Storage Capacity (11000g) / Dispensing Amount Per Cup (30g)
** = {Storage Capacity (11000g) + Ice Production Per Hour (7917g)} / Dispensing Amount Per Cup (30g)
*** = 3600 sec. / Dispensing Capacity (630 cups)
**** = Dispensing Amount Per Cup (30g) / Ice Production Per Second (2.2g)

Ice Production: 210 kg/day Storage Capacity: 11 kg
Ambient Temperature: 20°C Water Temperature: 15°C 60Hz



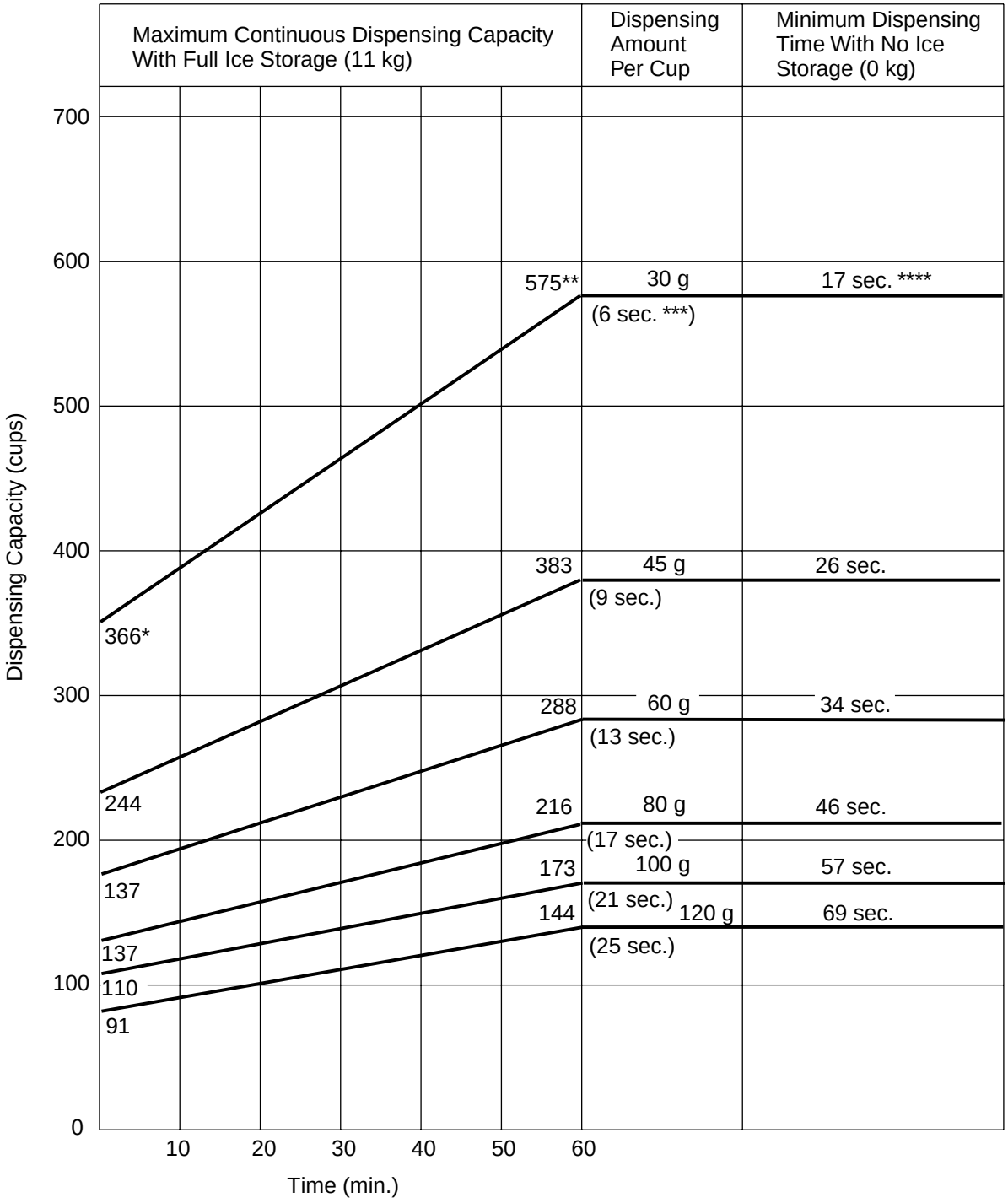
* = Storage Capacity (11000g) / Dispensing Amount Per Cup (30g)

** = {Storage Capacity (11000g) + Ice Production Per Hour (8750g)} / Dispensing Amount Per Cup (30g)

*** = 3600 sec. / Dispensing Capacity (658 cups)

**** = Dispensing Amount Per Cup (30g) / Ice Production Per Second (2.4g)

Ice Production: 150 kg/day Storage Capacity: 11 kg
Ambient Temperature: 30°C Water Temperature: 15°C 50Hz



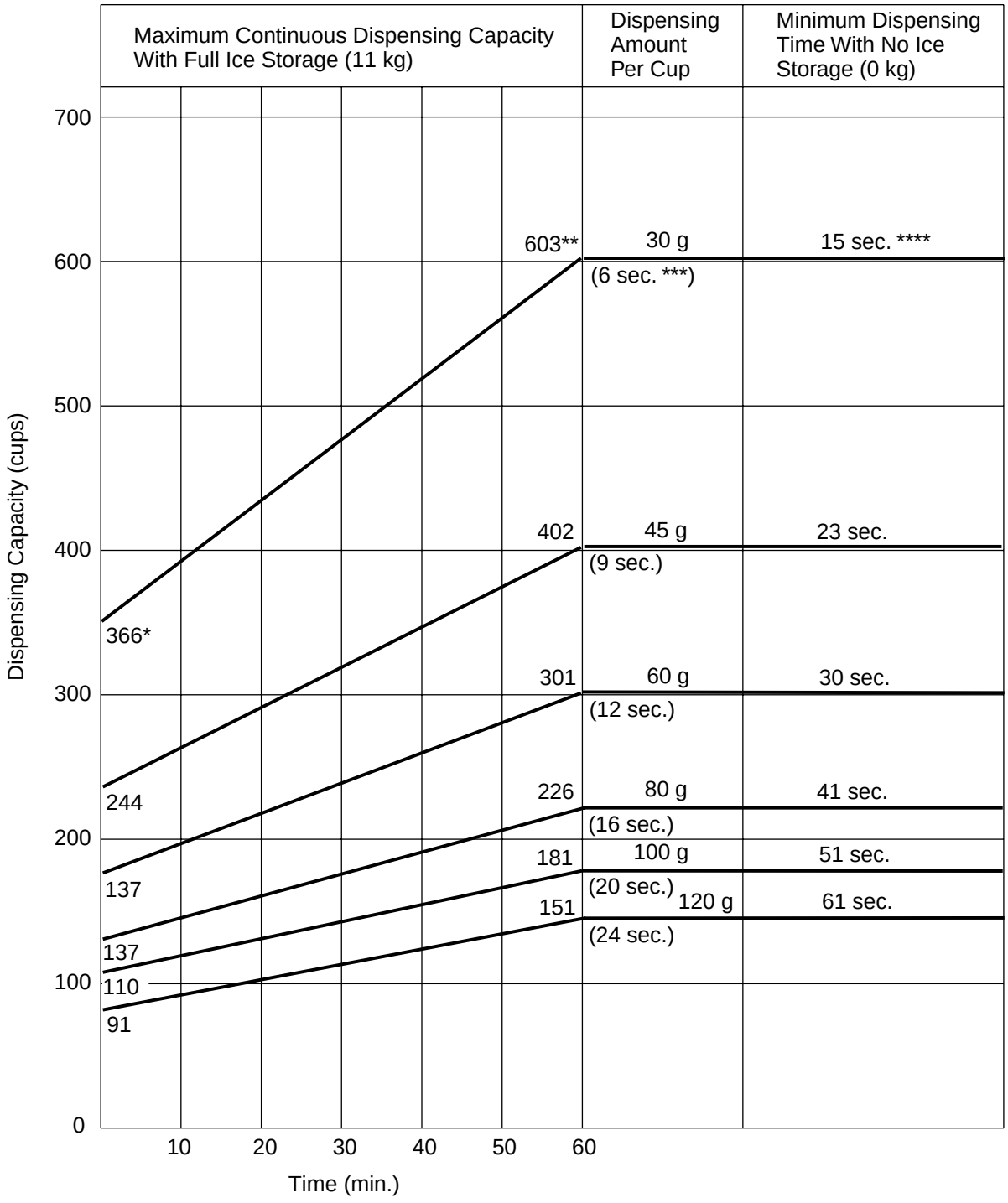
* = Storage Capacity (11000g) / Dispensing Amount Per Cup (30g)

** = {Storage Capacity (11000g) + Ice Production Per Hour (6250g)} / Dispensing Amount Per Cup (30g)

*** = 3600 sec. / Dispensing Capacity (575 cups)

**** = Dispensing Amount Per Cup (30g) / Ice Production Per Second (1.74g)

Ice Production: 170 kg/day Storage Capacity: 11 kg
Ambient Temperature: 30°C Water Temperature: 15°C 60Hz



* = Storage Capacity (11000g) / Dispensing Amount Per Cup (30g)

** = {Storage Capacity (11000g) + Ice Production Per Hour (7083g)} / Dispensing Amount Per Cup (30g)

*** = 3600 sec. / Dispensing Capacity (603 cups)

**** = Dispensing Amount Per Cup (30g) / Ice Production Per Second (1.97g)

VI. SERVICE DIAGNOSIS

PROBLEM	POSSIBLE CAUSE		REMEDY
[1] The ice dispenser will not start.	a) Power Supply	1. OFF position.	1. Move to ON position.
		2. Loose connection.	2. Tighten.
		3. Bad contacts.	3. Check for contintinuity and replace.
		4. Blown fuse.	4. Replace.
	b) Power Switch (Control Box)	1. Off position.	1. Move to ON position.
		2. Bad contacts.	2. Check for continuity and replace.
	c) Fuse (Control Box)	1. Blown out.	1. Check for short circuit and replace.
[2] Ice dispensing operates, but no ice is produced.	a) Water Control Relay	1. Bad contacts.	1. Check for continuity and replace.
		2. Coil winding opened.	2. Replace.
	b) Pressure Switch	1. Bad contacts.	1. Check for continuity and replace.
		2. Loose connections.	2. Tighten.
	c) Compressor	1. Valve seat clogged and water leaking.	1. Clean or replace
[3] Water Valve operates, but no ice is produced.	a) Water Supply Line	1. Water supply tap closed.	1. Open.
		2. Water failure.	2. Wait till water is supplied.
	b) Water Valve	1. Clogged.	1. Clean. See "V. 2. [c] WATER VALVE".
	c) Bin Control	1. Tripped with bin filled with ice.	1. Remove ice.
		2. Out of position.	2. Place in position.
		3. Bad contacts.	3. Check for continuity and replace.
		4. Activator removed.	4. Place in position.
	d) Pressure Switch	1. Bad contacts.	1. Check for continuity and replace.
		2. Loose connections.	2. Tighten.
	e) Ice Making Switch	1. Bad contacts.	1. Check for continuity and replace.
		2. Loose connections.	2. Tighten.
	f) Compressor	1. Will not start.	1. See [4].
[4] Compressor will not start, or operates intermittently.	a) Pressure Switch	1. Dirty Air Filter or Condenser.	1. Clean. See "V. MAINTENANCE".
		2. Ambient or condenser water temperature too warm.	2. Get cooler.
		3. Refrigerant overcharged.	3. Recharge.
		4. Fan not operating.	4. See [7].
		5. Refrigerant line or components clogged.	5. Clean and replace drier.

PROBLEM	POSSIBLE CAUSE		REMEDY
		6. Bad contacts.	6. Check for continuity and replace.
		7. Loose connections.	7. Tighten.
	b) Overload Protector	1. Bad contacts.	1. Check for continuity and replace.
		2. Voltage too low.	2. Get higher voltage.
		3. Refrigerant overcharged,	3. Recharge.
	c) Starter	1. Bad contacts.	1. Check for continuity and replace.
		2. Coil winding opened.	2. Replace.
		3. Loose connections,	3. Tighten.
	d) Starting or Running Capacitor	1. Defective.	1. Replace.
	e) X2 Relay on Timer Board	1. Bad contacts.	1. Check for continuity and replace Timer Board.
		2. Coil winding opened.	2. Replace Timer Board.
	f) Compressor	1. Loose connections.	1. Tighten.
		2. Motor winding opened or earthed.	2. Replace.
	g) Fan Motor	1. Fan not rotating.	1. See [7].
[5] Poor ice production capacity.	a) Condenser	1. Dirty Air Filter or Condenser.	1. See [4] - a)
		2. Bad ventilation.	2. Remove anything blocking vents.
	b) Expansion Valve	1. Low-side pressure or temperature exceeding the limit.	1. Secure the Bulb or replace the whole valve.
	c) Refrigerant Lines	1. Gas leaks.	1. Check for leaks with a leak detector. Reweld leak, replace drier and charge with refrigerant. The amount of refrigerant is marked on Nameplate.
	d) Installation Site	1. Ambient temperature too high.	1. Check ventilation and location, and change as needed.
		2. Less than 15 cm clearance at rear and sides.	2. Allow proper clearance for ventilation.
	e) Inside Wall of Evaporator	1. Scale on inside wall of Freezing Cylinder.	1. Remove Auger. Use a solution of lime removing cleaner to clean periodically. If water is found to surpass the following levels, install a conditioner. Hardness 50ppm Silica 30ppm
	f) Water Supply	1. Water supply interrupted or pressure too low.	1. Check water supply.

PROBLEM		POSSIBLE CAUSE		REMEDY	
[6]	Dispenser will not stop even if Bin is filled with ice.	a) Bin Control	1. Activator does not move freely.	1.	Check and replace.
			2. Contacts fused.	2.	Replace
[7]	Fan Motor will not start, or is not operating.	a) Fan Motor	1. Motor winding opened.	1.	Replace.
			2. Bearing worn out.	2.	Replace.
			3. Wiring to Fan Motor.	3.	Check for loose connections or open, and replace.
			4. Defective Capacitor.	4.	Replace.
			5. Fan blade bound.	5.	Check and replace.
		b) X2 Relay on Timer Board	1. Loose connections,	1.	Tighten.
			2. Defective.	2.	Replace.
[8]	Gear Motor (Ice Making) is not operating.	a) Gear Motor	1. Motor winding opened.	1.	Replace.
		b) X1 Relay on Timer Board	1. Bad contacts.	1.	Check for continuity and replace Timer Board.
			2. Coil winding opened.	2.	Replace Timer Board.
		c) Gear Motor Capacitor	1. Defective.	1.	Replace.
[9]	Auger Shaft worn out.	a) Water	1. Too much impurity.	1.	If wear is excessive, replace.
[10]	Abnormal noise.	a) Fan Motor	1. Bearings worn out.	1.	Replace.
			2. Blade is deformed.	2.	Replace Fan Blade.
			3. Fan blade does not move freely.	3.	Replace.
		b) Compressor	1. Bearings worn out.	1.	Replace.
			2. Mounting pad out of position.	2.	Reinstall.
		c) Refrigerant Lines	1. Rub or touch lines or other surfaces.	1.	Replace.
		d) Gear Motor (Ice Making)	1. Bearing or Gear worn/damaged.	1.	Replace.
		e) Evaporator	1. Low-side pressure too low.	1.	See [5] - b)
			2. Scale on inside wall of Freezing Cylinder.	2.	See [5] - e)
		f) Agitator Motor Dispensing Motor	1. Bearing or Gear worn/damaged.	1.	Replace.
		g) Solenoid (Shutter)	1. Worn out.	1.	Replace.
			2. Foreign matter on Plunger surface.	2.	Clean.
		h) Water Valve	1. Foreign matter on Plunger surface.	1.	Clean.
[11]	Water does not stop.	a) Water Supply	1. Water pressure too high.	1.	If pressure is consistently too high, install a pressure reducing valve.
		b) Water Valve	1. Diaphragm does not close.	1.	Check for water leaks with icemaker OFF. See "V. 2. [c] WATER VALVE".

PROBLEM	POSSIBLE CAUSE		REMEDY
	c) Float Switch	1. Bad contacts.	1. Check for continuity and replace.
	d) Water Control Relay	1. Contacts fused.	1. Replace
		2. Coil winding opened.	2. Replace
[12] No water or poor flow.	a) Water Supply	1. Water failure or pressure too low.	1. Wait til water is supplied, or adjust the pressure range within 0.5 - 8 bar.
		2. Shut-off Valve closed or restricted.	2. Open.
	b) Water Valve	1. Clogged filter.	1. See [3] - b)
		2. Coil winding opened.	2. Replace.
	c) Float Switch	1. Contacts fused.	1. Replace.
		2. Clogged.	2. Clean.
	d) Water Control Relay	1. Bad contacts.	1. Check for continuity and replace.
[13] Much water drains from Evaporator bottom.	a) Mechanical Seal (normally less than 0.5 ml/h)	1. Dirt stuck on seal.	1. Clean.
		2. Seal worn out.	2. Replace.
	b) O-ring	1. Scratched.	1. Replace.
[14] No ice is dispensed with Push Lever pressed.	a) Ice Switch	1. Bad contacts.	1. Check for continuity and replace.
		2. Screws loosened.	2. Fasten.
	b) Solenoid (Shutter)	1. Coil winding opened.	1. Replace.
		2. Worn out.	2. Replace.
		3. Shutter Plate blocked.	3. Unblock.
	c) Change Switch	1. Bad contacts.	1. Check for continuity and replace.
		2. Loose connections.	2. Tighten.
	d) Dispensing Lever	1. Does not touch Ice Switch.	1. Unscrew and adjust Stopper to make Dispensing Lever touch Ice Switch.
[15] Ice in Storage Bin often melts.	a) Drain Bin	1. Clogged.	1. Clean.

VII. REMOVAL AND REPLACEMENT OF COMPONENTS

IMPORTANT

Ensure all components, fasteners and thumbscrews are securely in place after the equipment is serviced.

IMPORTANT

1. The Polyolester (POE) oils used in R-404A units can absorb moisture quickly. Therefore it is important to prevent moisture from entering the system when replacing or servicing parts.
2. Always install a new filter drier every time the sealed refrigeration system is opened.
3. Do not leave the system open for longer than 5 minutes when replacing or servicing parts.

1. SERVICE FOR REFRIGERANT LINES

[a] REFRIGERANT RECOVERY

The icemaker unit is provided with two Refrigerant Access Valves–one on the low-side and one on the high-side line. Using proper refrigerant practices, recover the refrigerant from these two Access Valves and store it in an approved container. Do not discharge the refrigerant into the atmosphere.

[b] EVACUATION AND RECHARGE (R-404A)

1) Attach Charging Hoses, a Service Manifold and a Vacuum Pump to the system. Be sure to connect charging hoses to both High and Low -side Access Valves.

IMPORTANT

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

2) Turn on the Vacuum Pump. Never allow the oil in the Vacuum Pump to flow backward.

3) Allow the Vacuum Pump to pull down to a 760 mm Hg vacuum. Evacuating period depends on pump capacity.

4) Close the Low-side Valve and High-side Valve on the Service Manifold.

5) Disconnect the Vacuum Pump, and attach a Refrigerant Service Cylinder to the High-side line. 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 ARI Standard No. 700-88 be used.

6) A liquid charge is recommended for charging an R-404A system. Invert the service cylinder. Open the High-side, Service Manifold Valve.

7) Allow the system to charge with liquid until the pressures balance.

8) If necessary, add any remaining charge to the system through the Low-side. Use a throttling valve or liquid dispensing device to add the remaining liquid charge through the Low-side access port with the unit running.

9) Close the two Refrigerant Access Valves, and disconnect the Hoses and Service Manifold.

10) Cap the Access Valves to prevent a possible leak.

2. BRAZING

DANGER

1. Refrigerant R-404A itself is not flammable at atmospheric pressure and temperatures up to 80°C.

2. Refrigerant R-404A itself is not explosive or poisonous. However, when exposed to high temperatures (open flames) R-404A can be decomposed to form hydrofluoric acid and carbonyl fluoride both of which are hazardous.

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

4. Do not use silver alloy or copper alloy containing Arsenic.

5. Do not use R-404A as a mixture with pressurized air for leak testing. Refrigerant leaks can be detected by charging the unit with a little refrigerant, raising the pressure with nitrogen and using an electronic leak detector.

Note: All brazing connections inside the bin are clear-paint coated.
Sandpaper the brazing connections before unbrazing the components.
Use a good abrasive cloth to remove coating.

3. REMOVAL AND REPLACEMENT OF COMPRESSOR

IMPORTANT

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

1) Unplug the ice dispenser.

2) Remove the panels.

3) Remove the Terminal Cover on the Compressor, and disconnect the Compressor Wiring.

4) Recover the refrigerant and store it in an approved container.

5) Remove the Discharge, Suction, and Access Pipes from the Compressor using brazing equipment.

WARNING

When repairing a refrigerant system, be careful not to let the burner flame contact the lead wires or insulation.

6) Remove the Hold-down Bolts, and Rubber Grommets.

7) Slide and remove the Compressor. Unpack the new Compressor package. Install the new Compressor.

8) Attach the Rubber Grommets of the prior Compressor.

9) Sandpaper the Suction, Discharge and Access Pipes.

10) Place the Compressor in position, and secure it using the Bolts.

11) Remove plugs from the Suction, Discharge and Process Pipes.

12) Braze the Access, Suction and Discharge lines (Do not change this order), while purging with nitrogen gas flowing at the pressure of 0.02 - 0.03 MPa (0.2 - 0.3 kgf/cm^{2}G).

13) Install the new Drier.

14) Check for leaks using nitrogen gas, 0.98 MPa (10 kgf/cm^{2}G) and soap bubbles.

16) Evacuate the system, and charge it with refrigerant. See the Nameplate for the required refrigerant charge.

15) Connect the Terminals to the Compressor, and replace the Terminal Cover in its correct position.

17) Replace the panels in their correct positions.

18) Plug in the ice dispenser.

4. REMOVAL AND REPLACEMENT OF DRIER

IMPORTANT

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

1) Unplug the ice dispenser.

2) Remove the panels.

3) Recover the refrigerant and store it in an approved container.

4) Remove the Drier using brazing equipment.

5) Install the new Drier, in the direction of the refrigerant flow. Use nitrogen gas at the pressure of 0.02 - 0.03 MPa (0.2 - 0.3 kgf/cm^{2}G) when brazing.

6) Check for leaks using nitrogen gas 0.98 MPa (10 kgf/cm^{2}G) and soap bubbles.

7) Evacuate the system, and charge it with refrigerant. See the Nameplate for the required refrigerant charge.

8) Replace the panels in their correct positions.

9) Plug in the ice dispenser.

5. REMOVAL AND REPLACEMENT OF EXPANSION VALVE

IMPORTANT

Sometimes moisture in the refrigerant circuit exceeds the Drier capacity and freezes up at the Expansion Valve. Always install a new Drier every time the sealed refrigeration system is opened. Do not replace the Drier until after all other repair or replacement has been made.

1) Unplug the ice dispenser.

2) Remove the panels.

3) Recover the refrigerant and store it in an approved container.

4) Remove the Expansion Valve Bulb at the Evaporator outlet.

5) Remove the Expansion Valve Cover, and remove the Expansion Valve using brazing equipment.

6) Braze the new Expansion Valve, with nitrogen gas flowing at the pressure of 0.02 - 0.03 MPa (0.2 - 0.3 kgf/cm^{2}G).

WARNING

1. Do not heat the wall. Place a steel barrier for protection.

2. Always protect the valve body by using a damp cloth to prevent the valve from overheating. Do not braze with the valve body exceeding 120°C.

7) Install the new Drier.

8) Check for leaks using nitrogen gas, 0.98 MPa (10 kgf/cm^{2}G) and soap bubbles.

9) Evacuate the system, and charge it with refrigerant. See the Nameplate for the required refrigerant charge.

10) Attach the Bulb to the suction line. Be sure to secure the Bulb using a band and to insulate it.

11) Place the Expansion Valve Cover in position.

12) Replace the panels in their correct position, and plug in the dispenser.

6. REMOVAL AND REPLACEMENT OF ICE MAKING MECHANISM AND WATER SYSTEM

[a] GEAR MOTOR AND BEARING - LOWER

1) Unplug the ice dispenser.

2) Close the water supply tap.

3) Remove the panels.

4) Open the Drain Valve by rotating the knob, and after draining water, close the Drain Valve.

5) Remove the Auger. (See “1. [g] EVAPORATOR”.)

CAUTION

Be sure to drain out the water in the water line before removing the Auger.

Note: The Gear Motor can be removed without removing any refrigerant piping.

6) Remove the four hexagon bolts securing the Bearing - Lower on the Gear Motor.

7) Cut the Gear Motor leads at the wire connectors.

8) Remove the three hexagon bolts securing the Gear Motor on the Main Frame, lift the Evaporator slightly, and pull out the Gear Motor toward you.

9) Remove the four Socket Head Cap Screws securing the Bearing - Lower to the Evaporator, and pull out the Bearing - Lower.

Note: If the clearance between the Bearing - Lower and the Auger Shaft exceeds 0.5 mm, replace the Bearing with a new one.

CAUTION

1. When assembling the Gear Motor and the Bearing - Lower, be careful not to damage the Bearing - Lower and Extruding Head.

2. Be sure to replace the O-ring with a new one.

Note: Install the Mechanical seal in the accordance with the procedure below. (See “[d] MECHANICAL SEAL”.)

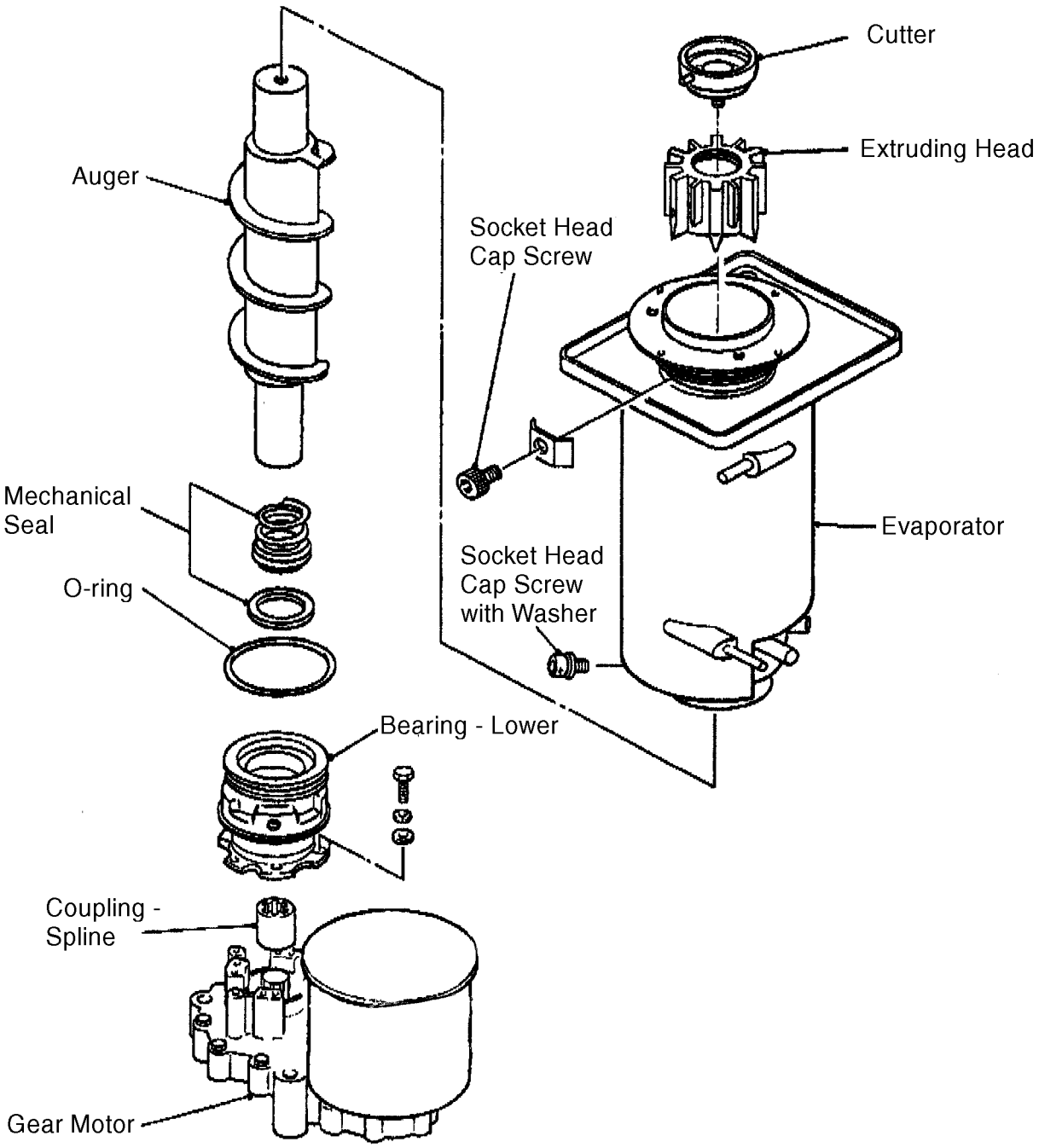

Cutter
Extruding Head
Auger
Socket Head
Cap Screw
Mechanical
Seal
O-ring
Evaporator
Socket Head
Cap Screw
with Washer
Bearing - Lower
Coupling -
Spline
Gear Motor

Fig. 14

10) Install the new Gear Motor. Insert the liner under the Gear Motor, and secure it with the three hexagon bolts.

11) Assemble the removed parts in the reverse order of which they were removed.

12) Open the water supply tap.

13) Plug in the ice dispenser.

14) Check for water leaks.

[b] EXTRUDING HEAD

WARNING

The Extruding Head has an interference-fitted resin bearing that may be worn for years. Inspect it at least once a year or every 10,000 hours of operation, depending on the water quality. Replace the bearing whenever the clearance between the bearing and the Auger Shaft exceeds 0.5 mm.

1) Unplug the ice dispenser.

2) Close the water supply tap.

3) Remove the Panels.

4) Remove the four Thumbscrews securing the Spout, and remove the Spout and the Packing inside the Storage Bin.

5) Remove the three Thumbscrews securing the Chute Head to the top of the Evaporator, and lift off the Chute Head.

6) Remove the Cylinder Packing.

7) Remove the Cutter.

8) Remove the four Socket Head Cap Screws securing the Extruding Head, and lift off the Extruding Head.

9) Install the new Extruding Head.

CAUTION

Always install new Socket Head Cap Screws every time the Extruding Head is replaced.

10) Replace the Cutter, Cylinder Packing, Spouts, Packing and panels in their correct position.

11) Open the water supply tap.

12) Plug in the ice dispenser.

13) Check for water leaks.

WARNING

After assembling the Extruding Head, be sure to check that the Auger does not contact with the inner surface of the Evaporator and there is not any abnormal noise from the Bearing.

[c] AUGER

1) Unplug the ice dispenser.

2) Close the water supply tap.

3) Remove the Extruding Head. (See “[b] EXTRUDING HEAD”.).

4) Open the Drain Valve by rotating the knob , and after draining water, close the Drain Valve.

5) Lift and remove the Auger.

6) Install the new Auger.

7) Assemble the removed parts in the reverse order of which they were removed.

8) Open the water supply tap.

9) Plug in the ice dispenser.

10) Check for water leaks.

[d] MECHANICAL SEAL

1) Unplug the ice dispenser.

2) Close the water supply tap.

3) Remove the Bearing - Lower. (See “[a] GEAR MOTOR AND BEARING - LOWER”.)

Note: The Bellows portion of the Mechanical Seal will be removed together with the Auger.

4) Remove the Floating Seat portion of the Mechanical Seal from the Bearing - Lower.

5) Install the new Mechanical Seal.

WARNING

1. When installing the Mechanical Seal (Bellows portion) onto the Auger, it should be perpendicular to the Auger. Be sure no dirt or foreign matter adheres to the contact surface of the Seal Ring.

2. When installing the Mechanical Seal (Floating Seat portion) in the Bearing - Lower, be sure there is no dirt or foreign matter clinging to the contact surface of the Floating Seat.

6) Assemble the removed parts in the reverse order of with they were removed.

7) Open the water supply tap.

8) Plug in the ice dispenser.

9) Check for water leaks.

[e] WATER VALVE

1) Unplug the ice dispenser.

2) Close the water supply tap.

3) Remove the panels.

4) Disconnect the terminals from the Water Valves.

Note: The Water Valves are located behind the Control Box and on the right side of the Middle Front Panel.

5) Loosen the Fitting Nuts on the Water Valve Inlets, and remove the Water Valves. Do not lose the Packings inside the Fitting Nuts.

6) Install the new Water Valves.

7) Assemble the removed parts in the reverse order of which they were removed.

8) Open the water supply tap.

9) Plug in the ice dispenser.

10) Check for water leaks.

11) Replace the panels in their correct position.

[f] FLOAT SWITCH

WARNING

1. Fragile, handle very carefully.

2. If the Float Switch works poorly because of scale or other foreign matter, install a filter or softener in the water supply line.

1) Unplug the ice dispenser.

2) Close the water supply tap.

3) Remove the Panels.

4) Open the Drain Valve by rotating the knob , and after draining water, close the Drain Valve.

5) Cut the Float Switch leads at the wire connectors.

6) Turn the unfasten the flanged top, and remove the Float Switch.

7) Install the new Float Switch.

8) Assemble the removed parts in the reverse order of which they were removed.

9) Open the water supply tap.

10) Plug in the ice dispenser.

7. REMOVAL AND REPLACEMENT OF ELECTRICAL SYSTEM

[a] BIN CONTROL (PROXIMITY SWITCH)

1) Unplug the ice dispenser.

2) Remove the Front Panel and Top Panel.

   Note: The Proximity Switch is located on the outside of the Bin Top Panel.

3) Cut the leads at the wire connectors.

4) Remove the Switch Cover and the Proximity Switch.

5) Install the new Proximity Switch.

6) Replace the Switch Cover in its correct position.

7) Connect the leads of the Proximity Switch.

8) Plug in the ice dispenser.

9) To check the Bin Control operation, move the paddle located on the inside of the Bin Top Panel. The Compressor should stop 90 sec. later, and the Gear Motor 150 sec. later.

10) Replace the panels in their correct position.

[b] STARTER

1) Unplug the ice dispenser.

2) Remove the Apron Panel.

3) Remove the terminal cover of Compressor.

4) Disconnect the terminals from the Starter.

5) Remove the Starter.

6) Install the new Starter.

WARNING

The Starter is position-sensitive. Install it so that the arrow indication of the Starter can point upward. Failing to install it in this way will cause abnormal operation and adversely affect the Compressor operation as well.

7) Connect the terminals.

8) Assemble the removed parts in the reverse order of which they were removed.

9) Plug in the ice dispenser.

[c] ELECTRICAL COMPONENTS

The following table shows the location of the electrical components. Be sure to unplug the ice dispenser before replacing the components.

COMPONENT	LOCATION
Run Capacitor (Gear Motor)	Control Box
Start Capacitor (Compressor)	Compressor
Motor Protector (Compressor)	Terminal Box of Compressor
Starter	Compressor
Protector (Gear Motor)	Control Box
Capacitor (Gear Motor)	Control Box
Capacitor (Fan Motor)	Fan Motor)
Power Switch	Control Box
Relays	Control Box
Lamp	Left side of Middle Front Panel
Transformer	Control Box
Fuses	Control Box
Timer	Control Box
Water Switch	Right side of Middle Front Panel
Ice Switch	Right side of Middle Front Panel
Portion Control	Control Box
Change Switch	Left side of Middle Front Panel
Ice Making Switch	Left side of Middle Front Panel

8. REMOVAL AND REPLACEMENT OF DISPENSING SYSTEM

[a] AGITATOR

1) Unplug the ice dispenser.
2) Remove the Front Panel.
3) Remove the Bin Front Panel.
4) Remove the Thumbscrews and pull off the Gear Motor Bracket.

   Note: Hold the Agitator not to drop it when pulling off the Gear Motor Bracket.
5) Replace the Agitator with the new one.
6) Assemble the removed parts in the reverse order of which they were removed.
7) Plug in the ice dispenser.

[b] AGITATOR GEAR MOTOR

1) Unplug the ice dispenser.
2) Remove the Front Panel.
3) Remove the Bin Front Panel.
4) Remove the Thumbscrews and pull off the Gear Motor Bracket.

   Note: Hold the Agitator not to drop it when pulling off the Gear Motor Bracket.
5) Remove the Packing, three flat head screws and Plastic Guide.
6) Remove the four flat head screws and the Gear Motor.
7) Install the new Gear Motor.
8) Assemble the removed parts in the reverse order of which they were removed.
9) Plug in the ice dispenser.

[c] DISPENSING AUGER

Same procedure as “[a] AGITATOR”

9. BEFORE CALLING A SERVICE AGENT

If the ice dispenser does not work properly or does not work at all, before calling for service, check that:

- The power is supplied to the unit.
- The water is turned on.
- The Air Filter is clean.

For further assistance or advice, contact your local Hoshizaki service agent.

10. WARRANTY

Hoshizaki warrants to the original owner/user that all Hoshizaki branded products shall be free of defects in material and/or workmanship for the duration of the “warranty period”. The warranty shall be effective for two years from the date of installation in EU countries, but only one year in other countries.

Hoshizaki’s liability under the terms of the warranty are limited and shall exclude routine servicing, cleaning, essential maintenance and/or repairs occasioned by misuse and installations not in accordance with Hoshizaki guidelines.

Warranty repairs should be completed by an approved Hoshizaki dealer or service agency using genuine Hoshizaki components.

To obtain full details of your warranty and approved service agency, please contact your dealer/supplier, or the nearest Hoshizaki office. Alternatively, contact Customer Care in the U.K.

U.K.	U.S.	Japan	Asia/Pacific
TEL: (44) 1223-210055 FAX: (44) 1223-210056	TEL: 1-800-233-1940 (770) 487-2331 FAX: (770) 487-3360	TEL: 011-81-562-97-2111	TEL: 81-562-97-2119 FAX: 81-562-97-1675