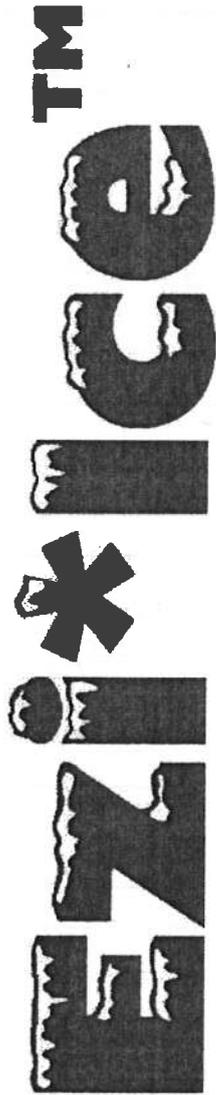


# Service/Part Manual



EI 105

EI 75

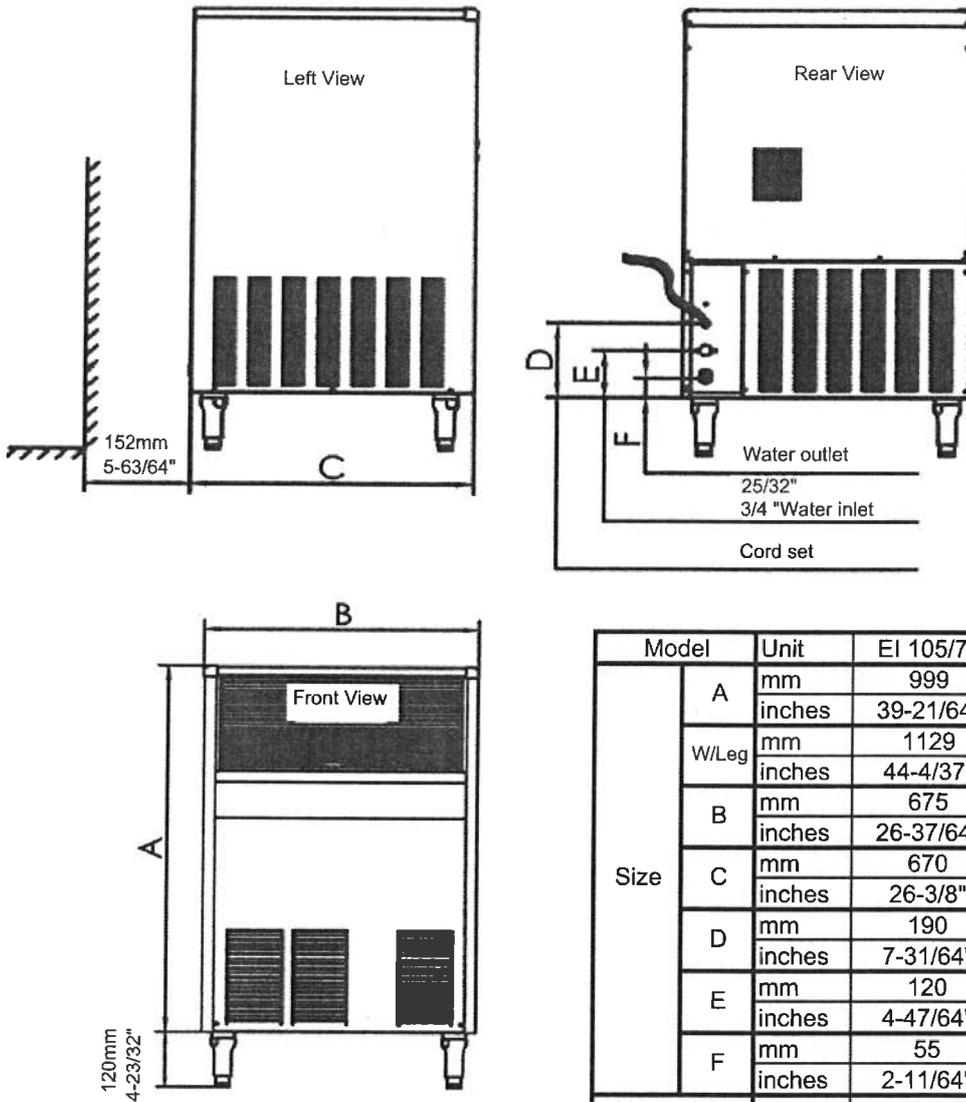
EI 55

EI 45

EI 25

Self-Contained  
Electronic Icemaker

## Specifications



Model		Unit	EI 105/75	EI55/45	EI 25
Size	A	mm	999	735	735
		inches	39-21/64"	28-60/64"	28-60/64"
	W/Leg	mm	1129	865	865
		inches	44-4/37"	34-1/16"	34-1/16"
	B	mm	675	675	478
		inches	26-37/64"	26-37/64"	18-53/64"
	C	mm	670	580	580
		inches	26-3/8"	22-54/64"	22-54/64"
	D	mm	190	190	190
		inches	7-31/64"	7-31/64"	7-31/64"
	E	mm	120	120	120
		inches	4-47/64"	4-47/64"	4-47/64"
F	mm	55	55	55	
	inches	2-11/64"	2-11/64"	2-11/64"	
Net weight		Kg	81/75	52/50	43
Gross weight		Kg	93/87	62/60	52

Model	Cond. Unit	Finish	Bin	Power	Amps	Start Amps	Nr.of wires
			Kg	[V/Hz/ph]	A	A	Ømm <sup>2</sup>
EI105	Air	Powder coating Stainless steel	38	230/50/1	5.3	29	3 X 1.5
EI75					3.8	20	
EI55					3.2	17	
EI45					3.2	17	
EI25					2.2	11	
Model	Comp. HP	Water req.	Amps fuse	Watts	Electric power cons.		
	HP	l/24h	A	W	KWh/24h		
EI105	3/4	240	16	850	16.5		
EI75	1/2	168		670	12		
EI55	3/8	158.4		520	10.5		
EI45	3/8	144		500	10		
EI25	1/4	110		340	6.5		

Notes: EI105/75/55 have half dice model

## Overview and Installation

### A. Introduction

This manual provides the specifications and the step-by-step procedures for the installation, startup and operation, maintenance and cleaning for the **EZI ICE E15** series icemakers.

These icemakers are strictly designed and manufactured by strict control of process. Their ice making systems are thoroughly tested providing the utmost in flexibility to fit the needs of a particular user.

These products are designed in strict accordance with the safety requirement and performance standard.

**Note:**

To retain the safety and performance built into this icemaker, it is important that installation and maintenance be conducted in the manner outlined in this manual.

### B. Unpacking and Inspection

1. Call your authorized **EZI ICE** Distributor or Dealer for proper way of installation
2. Visually inspect the exterior of the packing and pallet. Any severe damage noted should be reported to the delivering carrier and a damage claim form filled in subject to inspection of the contents with the carrier's representative present.
3.
  - a. Cut off the wrapping strip securing the carton box to the wood pallet.
  - b. Unpack the top of the carton and remove the polystyrene protection sheet.
  - c. Pull out the polystyrene posts from the corners and then remove the carton.
4. Remove the front and back panels of the unit and inspect for any interior damage. Notify carrier and distributor of damage and claim for that as stated in step 2 above.
5. Check that refrigerant lines do not rub against or touch other lines or surfaces, and that the fan blade moves freely.
6. Check that the compressor fits snugly onto all its mounting pads.
7. Remove all internal support packing and masking tape.
8. Use clean cloth to wipe the surfaces inside the storage bin and the outside of the cabinet.
9. See data plate on the rear side of the unit and check that local main voltage corresponds with the voltage specified on it.

**Note:** Incorrect voltage supplied to the icemaker will void your parts replacement program.

10. Take the Manufacturer's registration card out from the inside of the material package and fill in all parts including: Model and Serial Number taken from the data plate. Forward the complete self-addressed registration card to **EZI ICE** after service department.
11. If necessary, install the four legs in the leg support of the unit and adjust them to make the unit level..

### C. Location and Levelling

**Warning:** This Ice Maker is designed for indoor installation only. The loss or warranties and claims caused by operation at temperatures exceeding the following limitations will be out of the range of terms of the **EZI ICE** Manufacturer's Limited Warranty.

1. Select installation position.  
Criteria for selection of location include:
  - a. Room temperatures:  
Minimum temperature 10°C (50°F)

Maximum temperature 40°C (100°F).

b. Water inlet temperatures:

Minimum temperature 5°C (40°F);

Maximum temperature 35°C (90°F)

c. Well ventilated location for air cooled ice makers.

d. Working Place: Leave sufficient space helpful to carry out installment and maintenance. Leave at least 15cm (6") space at all sides of the unit to ensure ventilation and condensation effect of the air cooling ice maker.

2. Level the unit in both the left to right and front to rear directions.
3. Guarantee repair will be provided by the authorized distributor where you bought the ice maker. Refer to the Warranty for details. Use standard part for part replacement.

### D. Electrical Connections

See data plate for current requirements to determine wire size to be used for electrical connections.

All **EZI ICE** icemakers require a solid earth wire. All **EZI ICE** ice makers are supplied from the factory completely pre-wired and require only electrical power connections to the wire cord provided at rear of the unit.

Make sure that the ice machine is connected to its own circuit and individually fused (see data plate for fuse size).

The maximum allowable voltage variation should not exceed -10% and + 10% of the data plate rating. Low voltage can cause faulty functioning and may be responsible for serious damage to the overload switch and motor windings.

**Note:** All external wiring should conform to national, state and local standards and regulations.

Check consistency between voltage on the line and the ice maker's data plate before connecting the unit (power supply).

### E. Water Supply and Drain Connections

#### General

When choosing the water supply for the ice maker, consideration should be given to:

- a. Length of run
- b. Water clarity and purity
- c. Adequate water supply pressure

Since water is the most important single ingredient in producing ice you cannot ignore three items listed above.

Water pressure below 1 bar (14psi) may cause malfunction of the ice maker.

Water containing excessive minerals will tend to produce cloudy ice cubes, plus scale build-up on parts of the water system.

#### Water Supply

Water supply-air cooled ice maker

Connect the 3/4" male thread connector of water inlet solenoid valve with supply line connector and install a water supply valve in an accessible position between the water supply line and the unit.

If water contains a high level of impurities, it is advisable to consider the use an appropriate water filter or treatment facility.

### Water Drain

The recommended drain tube is a plastic or flexible tube with 18 mm (3/4") I.D. which runs to an open sewer.

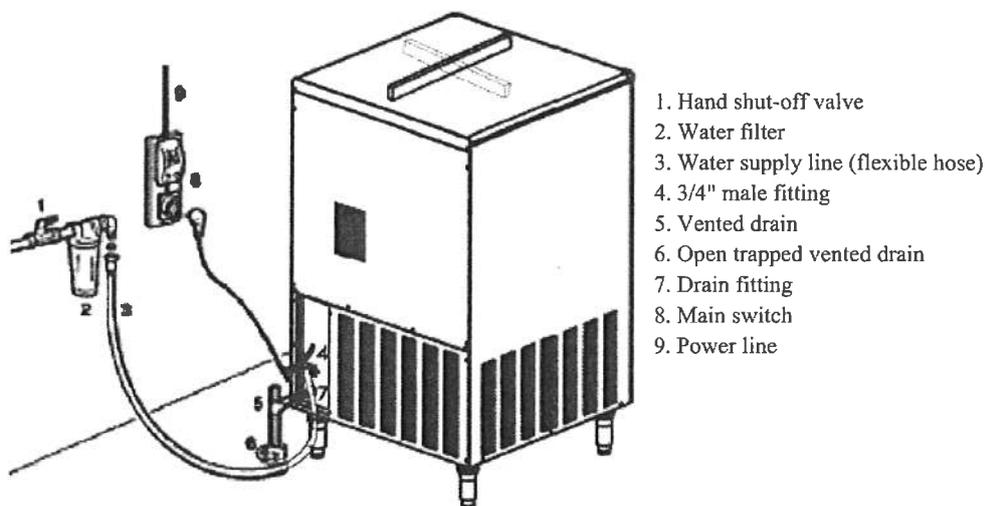
**Note:**

The water supply and the water drain must be installed to conform to the local code. In some case a licensed plumber or a plumbing permit is required.

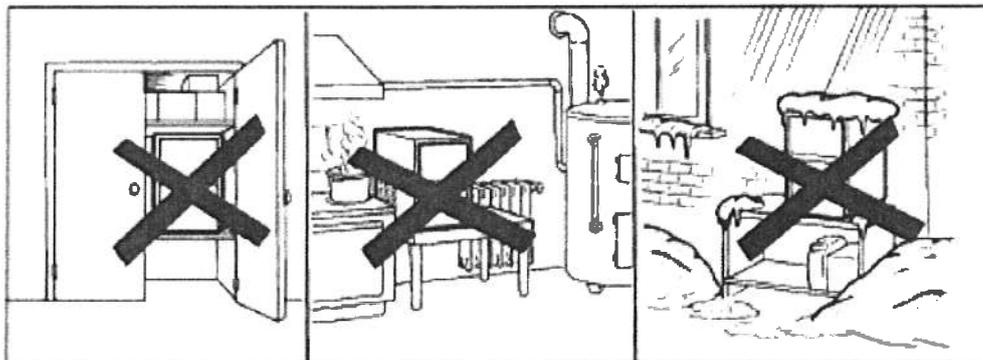
### F. Final Check List

- Is the unit in a room where ambient temperatures are within a Minimum of 10 °C (50°F) even in winter months?
- 2. Is there at least a 15 cm (6") clearance around the unit for proper air circulation?
- 3. Is the unit level? (IMPORTANT)
- 4. Have all the electrical and plumbing connections been made, and is the water supply valve open?
- 5. Has the voltage been tested and checked against the data plate rating?
- 6. Has the water supply pressure been checked to ensure a water pressure of at least 1 bar (14 psi).
- 7. Check all refrigerant lines and conduit lines to guard against come-off by vibrations and possible damage.

- 8. Have the bolts holding the compressor down been checked to ensure that the compressor is snugly fitted onto the mounting pads?
- 9. Have the bin liner and cabinet been wiped clean?
- 10. Has the user been given the Manual and been instructed on the importance of periodic maintenance checks?
- 11. Has the Manufacturer's registration card been filled in properly? Check for correct model and serial number against the serial plate and mail the registration card to the factory.
- 12. Has the user been given the name and the phone number of the authorized Service Agent?



**Warning:** This icemaker is not designed for outdoor installation and will not function in ambient temperatures below 10 °C (50°F) or above 40 °C (100°F). The icemaker will malfunction with water temperatures below 5 °C (40°F) or above 35 °C (90°F).



## Operating Inspection

### Start Up

After having correctly installed the ice maker and completed the plumbing and electrical connections, perform the following "Start-up" procedure.

- A. Connect the main power switch and start the unit.

**Note:**

Every time the unit returns under power after having been switched off, the water supply valve, defrost valve, water pump and the water drain valve get energized for a period of three minutes, thus to admit new water to the machine sump reservoir to fill it up and eventually, to wash-off any dirt that can have deposited in it during the unit off period.

- B. During the cleaning operation, check and see that the incoming water flows through the inlet pipe above the sump reservoir into the drain line.

During the water filling phase the components energized are:

Water inlet solenoid valve  
Defrost solenoid valve  
Water drain solenoid valve  
Water pump

**Note:**

If within three minutes of the water filling phase, the machine sump reservoir does not get filled with water from the inlet pipe, it is advisable to check:

1. The water pressure of the water supply line that must be at least 1 bar (14 psi). Max 5 bar (70 psi).
2. The filtering device installed in the water line that may reduce the water pressure below the minimum value of 1 bar (14 psi).
3. Any clogging situation occurs to the inlet water strainer and/or the flow controller of the inlet valve.

- C. At completion of the water filling phase, the unit passes automatically into the freezing cycle with the start up of: compressor, while water level of the water tank get into the control state. The water pump started to work 40 seconds after the startup of compressor. Fan Motor (air cooled model) is controlled by the temperature sensor of the condenser.

### Operating Inspection

- D. Install, if required, the refrigerant service gauges on both the high pressure side and low pressure side to check exhaust and suction pressures of the compressor. (Only applicable to ice maker with service valve)
- E. Check evaporator and distribute tube is on correctly position, and water can fall over all of the evaporator cell, and also make sure that there is no excessive water spilling out to ice bin.

- F. The ice making process takes place with the water uniformly flowing through the surface of evaporator, and end with the molds getting gradually refrigerated by the heat exchange with the refrigerant flowing into the evaporator serpentine. During the freezing process, when the evaporator temperature falls below an established value, the evaporator temperature sensor supplies a low voltage power signal in order to activate an electronic timer. This one takes over the control of the freezing cycle up to the complete formation of the ice cubes. The electronic components in operation during the ice making cycles are:

Compressor  
Water pump

Fan Motor (air cooled model) is controlled by the temperature sensor of the condenser.

**Note:**

The length of the entire freezing cycle is governed by the temperature sensor installed which is installed on with the evaporator serpentine and the electronic timer (adjustable) installed on the PC board. If room temperature is below 15°C, the ice making cycle will be shorter (about 17-20 Minutes). If room temperature is above 30°C, the ice making cycle will be longer (about 25-30 Minutes).

- G. The defrost cycle takes place with the water inlet and water drain valves simultaneously activated. The electronic components in operation during defrost cycle are:
- Compressor  
Defrost valve  
Water drain valve (controlled by PC board and can be set as 3 models: drain 1 time after 1 / 5 / 10 cycles).  
Fan Motor (air cooled model) is controlled by the temperature sensor of the condenser.

**Note:**

The length of the defrost cycle is automatically controlled by the program of the PC board, depending on the ice required thickness and ambient condition.

- H. Inspection during defrost cycle  
Check if the water drain's operation is normal (if water drain function is set), and that water in the sump reservoir is correctly drained.
- I. Check the texture of ice cubes just released. If it does reach the requirement, some adjustment should be carried out (See adjustment procedure). If the ice cubes are shallow and cloudy, it is possible that the ice maker runs short of water and the quality of the supplied water is not good, requiring the use of an appropriate water filter or treatment unit.
- J. To be sure of the correct operation of ice level control device, use your hand press the ice sliding plate down which seems the bin is full while the ice cube can not go through the ice sliding plate and fall into the ice bin. After 40 seconds, the unit stops with the Bin Full indicator light on the display plate of PC board. Take hand out to allow the resumption of the ice sliding plate. After three minutes, the ice maker resume its ice making cycle.

- K. Remove the refrigerant service gauges (if fitted) and refit the unit panels previous removed after adjustment.
- L. Instruct the user on the general operation of the ice maker and about the cleaning and maintenance.

## Principle of Operation

In the **EZI ICE** ice makers, the water is force to distribute tube by a water pump. After flowing out from a small hole of the distribute tube, the water fall over the evaporator plate. Some of the water will be chilled enough to change form, turn to ice, and stay frozen onto the evaporator cells, other water flows by gravity into the sump.

### **Freezing Cycle**

The refrigerant hot gas discharged out from the compressor reaches the condenser where, being cooled down, condenses into liquid. Flowing into the liquid line it passes through the drier filter, then it goes all the way through the capillary tube where, due to the heat exchanging action, it loses some of its heat content so that its pressure and temperature are lowered as well.

Next the refrigerant enters into the evaporator serpentine (which has a larger I.D. than the capillary) and starts to boil off; this reaction is emphasized by the heat transferred by the flowing water.

The refrigerant then increases in volume and changes entirely into vapor. The refrigerant vapor then passes through the suction accumulator (used to prevent that any small amount of liquid refrigerant may reach the compressor) at the suction line and flow through the suction line. In both the accumulator and the suction line, it exchanges heat with the refrigerant flowing into the capillary tube (warmer), before to be sucked in the compressor and to be re-circulated as hot vapor.

40 seconds before the start of freezing cycle is pre-cooled area, during which the compressor is running, water pump is not running, fan is running (controlled by temperature sensor of condenser) and inlet valve is working (controlled by the water-level sensor in the sump reservoir.)

The freezing cycle is controlled by the evaporator temperature sensor (which has its probe in contact with the evaporator serpentine) that determines the length of its first portion of the cycle.

When the temperature of the evaporator serpentine drops to a pre-set value, the evaporator sensor probe changes its electrical resistance allowing a low voltage current to flow to the PC BOARD which in turn activates an electronic timer. The timer, which is built-in the PC BOARD, is controlled by the evaporator temperature sensor and controls the freezing cycle. The length of the second phase of the freezing cycle is pre-set (can be adjusted by the SIZE electrical potential on PC) and is related to the air temperature.

#### **Note:**

Due to the sensing temperature change of the evaporator sensor, when the electronic timer is working, ice making indicator light on the PC board display-ZB green light will be illuminating at the start of ice making and will be blinking at the start of the second phase.

#### **Note:**

If defrost cycle does not start 45 minutes after the starting of freezing cycle, the unit will automatically identify as freezing overtime and automatically enter into the defrost cycle. If the freezing overtime occurs to the ice maker 10 times in a row (caused by short of refrigerant, abnormal operation of defrost valve, etc.), freezing indicator light-ZB green light will be blinking. However it will not stop automatically. At this time, the user needs to disconnect the unit and contact with after service agent.

During refrigeration cycle, the pressure range of refrigeration high-pressure end:

**EI 105/75: 8.5~17bar (119psi~238psi)**

**EI 55/45/25: 7~11bar (98psi~154psi)**

The pressure of the high-pressure end is controlled by the condensation temperature sensor located at the condenser fin. For air-cooled ice maker, when the condensation temperature sensor is higher than the preset limits of condensation temperature, it will feed back to the PC board which will control the operation of fan.

Contrarily, when the condensation temperature sensor is lower than the preset limits of condensation temperature, it will feed back to the PC board which will control the outage of fan.

#### **Notes:**

If condensation temperature probe sense the temperature is higher than 70°C(160°F), the unit will stop caused by the startup of protection device, while the R1 and R2 red light will be simultaneously illuminating, warning user of too high condensation temperature.

After the condensation temperature is lower than 70°C (160°F), remove the power plug before the unit restart, and plug in the plug after waiting three minutes. After three minutes of water injection, the ice maker is working normally.

Reasons for abnormal operation as follows:

Condenser is clogging

Air temperature is higher than 40°C (100°F)

To avoid abnormal operation and risk of the unit, the user should cut off the power upon one of the above reasons.

At the start of freezing cycle, pressure of refrigeration suction end or low-pressure end rapidly is rapidly reduced to:

**EI 105/75/55/45/25: 0.7~1.8bar (9.8psi~25.2psi)**

The pressure will be gradually reduced as the ice thickness increases. When the ice cube is completely formed in the ice cup, pressure reaches:

**EI 105/75: 0.2~0.8bar (2.8psi~11.2psi)**

**EI 55/45/25: 0.01~0.8bar (0.14psi~11.2psi)**

Overall length of freezing cycle is between 17-25 Minutes.

### **Defrost cycle**

The defrost cycle starts after the completion of second phase of the freezing cycle by electronic time control system.

Refrigerant hot gas exhausted from the compressor flows into the evaporator serpentine through defrost valve.

Refrigerant circulated in the evaporator serpentine heats the evaporator plate to melt the ice cube. ice plate is falling down from the evaporator by gravity and finally fall into the ice bin.

**Note:** Defrost indicator light TB yellow indicator is illuminating at the start of defrost.

After the end of defrost cycle, hot gas valve, drain valve (equipped as per PC board) closed. The unit starts its new ice making cycle.

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## **Operation Features**

### **Ice making cycle**

Average exhaust pressure:

**EI 105/75: 8.5~15bar(119psi~210psi)**

**EI 55/45/25: 8.5~10bar(119psi~140psi)**

Suction pressure at the end of ice making

**EI 105/75: 0.2~0.8bar(2.8psi~11.2psi)**

**EI 55/45/25: 0.01~0.8bar(0.14psi~11.2psi)**

**Refrigerant flow control (throttling) device**

Capillary tube

### **Refrigerant injection quantity**

Refrigerant type: R134a

Injection quantity:

**EI 105/EI75: 450g**

**EI 55: 310g**

**EI 45: 290g**

**EI 25: 260g**

## Components Description

### A. Evaporator Temperature Sensor

The evaporator sensor is located at the outlet of the serpentine. During freezing cycle, the temperature of the evaporator serpentine is converted into electric signal, which is transmitted to the PC board.

The PC board controls the time of the first phase of freezing cycle based on the electric signal received. The time of the second phase is pre-fixed through adjusting the potentiometer according to the ambient temperature and the ice thickness.

### B. Condenser Temperature Sensor

The condenser temperature sensor probe, located in the condenser fins, detects the condenser temperature variations and signals them to the PC board.

**Note:**

In case the condenser temperature probe detects that the condenser temperature is above 70°C (160°F), the PC board will stop the operation of the machine immediately.

### C. Ice Bin Full Controller

The ice full controller is divided into two parts: one part is a magnet injected in the ice slide plate, and the other part is a sensor, which is installed on the plastic frame of the evaporator.

In case the ice chute is not re-set and the magnetism is not sensed by the magnetic sensor within 40 seconds, it means that the ice cubes made in the last freezing cycle cannot drop into the ice storage bin, the ice storage bin is full and the Bin Full BM Red LED indicates.

When the ice in the storage bin is taken out or moved, the ice chute is re-set, the magnetic sensor detects the magnetism, the state of ice bin full is released and enter into the freezing cycle.

**Note:**

If the state of "ice bin full" is released within three minutes, the Bin Full BM Red LED blinks, three minutes later enter into freezing cycle automatically.

If the state of ice bin full is released at the time of more than three minutes, the machine will enter into freezing cycle upon it is started.

### D. Water Level Sensor

The water level sensor is located at the top of the water tank. When water level reaches a certain level during water filling, the magnetic sensor of the water level sensor detects the magnetism and signals it to the PC board. Upon receiving the signal, the PC board powers off the water inlet valve and water filling is stopped.

The water level sensor is installed on the support of water level sensor and can be adjusted.

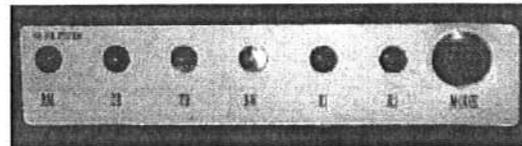
**Note:**

When the water level in the water tank is considered to be too low and cannot supply enough water needed for one freezing cycle, the position of the water level sensor can be adjusted higher.

When the water level in the water tank is considered to be too high and water overflows whenever water is filled, it means that the water level sensor cannot control the water inlet valve, the position of the water level sensor can be adjusted lower. If the position of the water level sensor is adjusted low and the problem is not solved, it means that the water level sensor is failure and should be replaced.

### E. Name and Meaning of LED and Push Button

LED on the over plate of the PC board



BM – Ice bin full light

ZB – Freezing light

TB – Defrosting light

SW – Water level light

R1 – Water-Lacking alarm light

R2 – High temperature alarm light

MODE – State adjustment mode key

The functions of the Mode key:

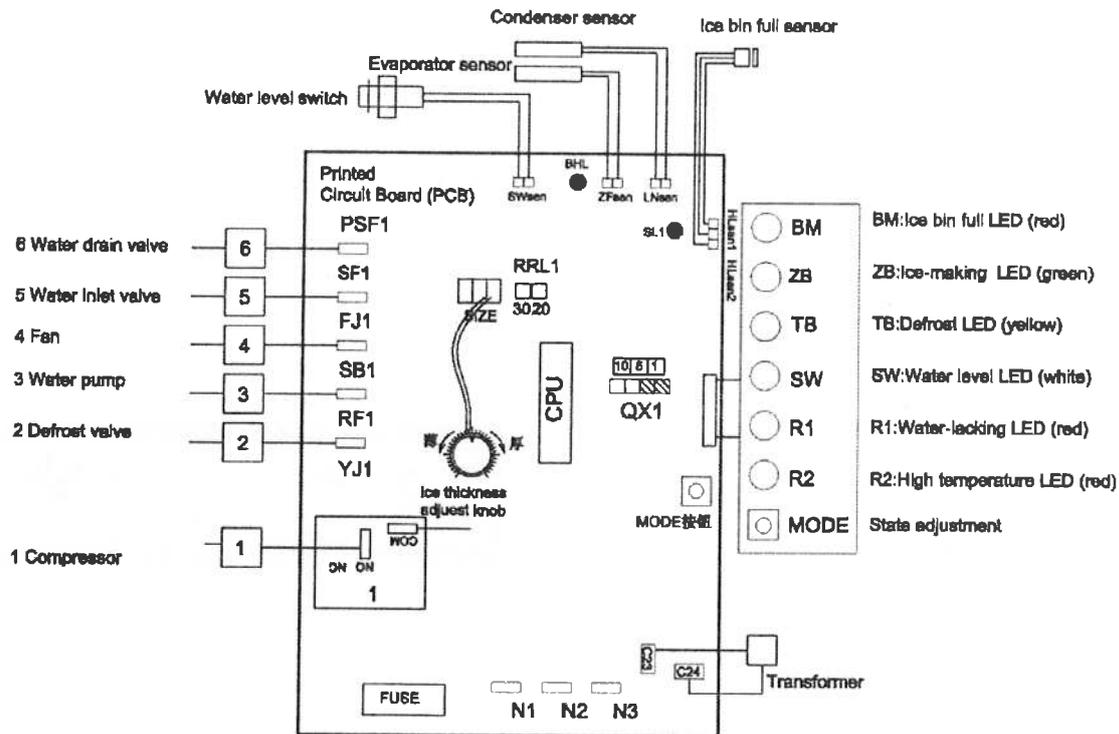
Power up / filling / water / pre-cooling / freezing / defrosting / ice bin full detecting. Press it each time, it enters into the next state.

**Note:** Only professional maintenance personnel are allowed to press the **MODE** key.

### F. PC Board (Data processor)

The PC board, fitted in its plastic box located in the front of the unit, consists of one power-in high voltage transformer, one PC board with both high and low voltage and a display panel connected with the PC board.

The PC board is the brain of the ice maker, through its micro processor, the signals received from the four sensors in order to control the operation of the different electrical components of the ice maker (such as compressor, Fan, defrosting valve, water inlet valve, drain valve, water pump).



**G. Vertical Type Water System**

A combination of a solenoid water inlet valve with a water level sensor is used to control the level of the water into the reservoir/sump. A pump, running continuously, forces the water to the top of the evaporator, where it is distributed through a water tube and then cascades down the evaporator surface by gravity. As it flows across the refrigerated evaporator, some of the water will be chilled enough to change form, turn to ice, and stay frozen onto the evaporator cells. Most of the water returns to the reservoir, to be sucked back into the pump, and re-pumped over the evaporator.

**H. Water pump**

The water pump operates continually throughout the freezing cycle and keeps water flowing continually through the evaporator plate and produces ice cubes.

**Recommendation:**  
The water pump should be checked at least every 3 months.

**I. Water Inlet Solenoid valve - 3/4" Male Fitting**

The water inlet solenoid valve is located on the up and down water support. The incoming water is controlled by the PC board, among which one water flow controller is used to control the water flow incoming the water tank per unit time.

**J. Defrost Solenoid Valve**

The defrosting solenoid valve, located at the hot gas bypass pipe, is consisted of two parts of valve body and coil. During defrosting and water filling phase, operation is controlled by the PC board. During the defrost cycle, the defrost solenoid valve is energized and sucks the push rod of the valve body in order to let the hot gas discharged from the compressor to flow directly into the evaporator pipe to melt the formed ice cubes.

**K. Fan**

The Fan is controlled through the PC board to draw cooling air through the condenser fins, thus lower exhaust temperature of the compressor. Normally it operates at intermittence only during the freezing phase to keep the condenser pressure between two corresponding pressure values.

**L. Compressor**

The hermetic compressor is the heart of the refrigerant system of the ice maker and it is used to circulate and retrieve the refrigerant throughout the entire system.

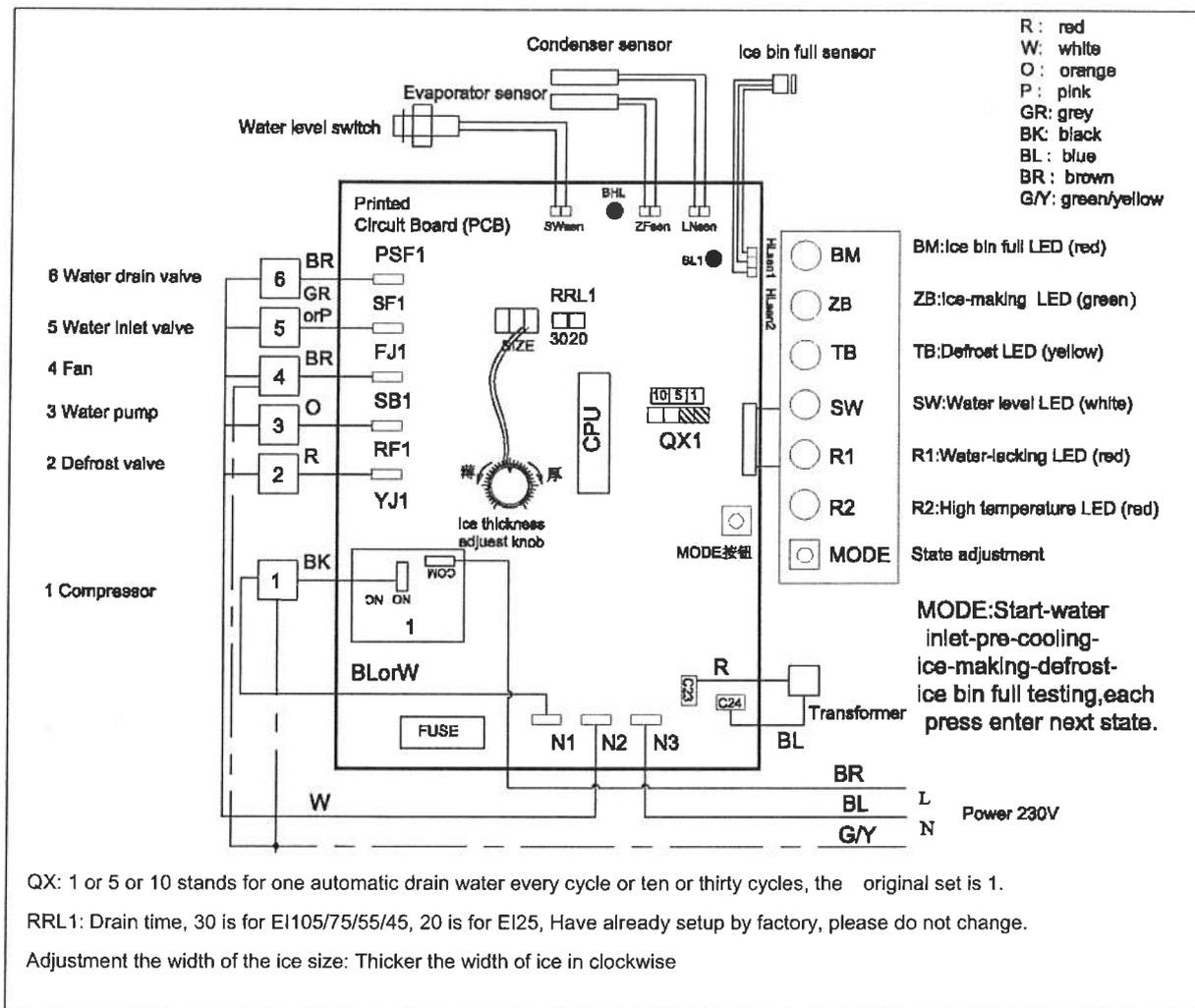
It compresses the low pressure refrigerant vapor causing its temperature to rise and become high pressure hot vapor which is then released through the discharge valve.

**M. Water Drain Solenoid Valve**

The water drain solenoid valve is controlled by the PC board. (drain after 1 / 5/ 10 freeze cycle) Based on the different configuration of the PC board, it starts operating for two minutes so that all remaining water containing minerals in the water tank drains out.

## Circuit Diagram

**EI 105/75/55/45/25**



## Adjustment Procedure

### 1. Ice Cube Thickness Adjustment

The ice-maker is adjusted to the best state at the factory. Usually users do not need to adjust it any more. If it really needs adjustment, adjust the **SIZE** potentiometer on the PC board to change ice cube thickness. To make ice cubes thicker, turn it clockwise. To make ice cubes thinner, turn it counter-clockwise.

**Note:**

If adjust the **SIZE** potentiometer, do not adjust too much, adjust it about 15 degree every time. If ice cube thickness still cannot reach the required thickness after the completion of three cycles, adjust it one more time. Adjust it several times repeatedly, the satisfied ice thickness can be obtained.

### 2. Water Drain Adjustment

The frequency of water drain of the ice-maker should be adjusted based on the water quality. After the short circuit plug-in unit is plugged in the QX plug-in unit of the PC board, water drain once after 1 / 5 / 10 freezing cycles can be selected.

**Recommendation:**

It is recommended that the water drain configuration is set for water drain after 5 freezing cycles to obtain clearer ice cubes and keep the water tank clean.

**Notes:**

PC board has two drain times for different Water reservoir. Do not change factory original setup.

RRL1 – 30s for BL105/75/55/45.

RRL1 – 20s for BL25.

### 3. Water Level Adjustment

The water level in the water tank can be adjusted by the water level sensor to obtain the best water level to achieve the best ice-making effect.

**Note:**

After the support of the water level sensor is adjusted, should fasten the screws.

It is set to the best position at the factory. Do not adjust it unless it is really necessary.

## Maintenance and Cleaning

### A. General

The periods and the procedures for maintenance and cleaning can be changed.

Cleaning, especially, will vary depending upon local water and ambient conditions and the ice volume produced. Each ice maker must be maintained individually in accordance with its particular location requirements.

### B. General System Maintenance Description

The following maintenance should be scheduled at least two times per year on these icemakers.

1. Check and clean the water line strainer.
2. Check that the icemaker is leveled in side to side and in front to rear directions.
3. Use special icemaker cleaning liquid to clean water system, evaporator and ice storage box.

Reference to procedure C (Description of Cleaning), cleaning frequency and procedure should be decided based on the local conditions.

**Note:**

Cleaning should be varied according to the local water quality and the operating condition of each icemaker. Check frequently cleanliness of ice cubes and the components of the water system before and after cleaning to determine the cleaning frequency and procedures needed.

4. When air cooled icemaker stops, use cleaner, small hair brush or non-metal brush to clean condenser. Avoid to damage the condenser and condenser temperature sensor.
5. Check for water leaks and tighten drain line connections. Pour water down bin drain line to be sure that drain line is open and lean.
6. Check size, condition and texture of ice cubes. Perform adjustment of cube size control as required.
7. Check for refrigerant leaks.

### C. Water System Cleaning

1. Remove the front and top panels to gain access either to the control box and to the evaporator.
2. When the defrost cycle is completed, unplug the power plug.

#### Cleaning

3. Prepare cleaning solution special for icemaker in a plastic container.

**Warning:**

Before opening cleaning solution, must check the instruction of the cleaning solution in order to avoid damage.

**Note:**

Cleaning solution for icemaker has corrosivity. In case it sprays on your mouth, it will burn your mouth, care should be taken to avoid cleaning solution to spray. In case cleaning solution sprays on your mouth or eyes, use a lot of water or milk to wash and should go to hospital immediately. When washing the external surface, children are not allowed to close.

Cleaning solution should be kept away from children.

4. Scoop out all the ice cubes stored into the bin in order to prevent them from being contaminated with the cleaning solution, then remove the erect overflow pipe to let water outflow from the water tank (remember to insert the overflow pipe back).
5. Use a brush to take some cleaning solution to dissolve the impurity material on the ice module of the evaporator and clean scale deposit.
6. Plug in the power plug, after 20s, press MODE about 10s, let the machine going to the Cleaning cycle (TB light will blink fast), all cleaning time is about 40 minutes. Cleaning finish, TB light will blink.
7. Then remove the erect overflow pipe (remember to insert the overflow pipe back) to let water outflow from the water tank. Then pour clean water into the water tank. Remove the water distribute tube and the water tank to wash them separately (if necessary).
8. Plug in the power plug again. Follow steps 6 and 7, use clean water to circulate to clean the whole water system. If necessary, clean more than one time.
9. All cleaning finish, press MODE, the icemaker starts freezing cycle.

#### Sanitation

10. Prepare a plastic container, use warm water of 45-50 °C (113°F-122°F) to dilute the cleaning solution.

**Warning:**

Never mix the cleaning with the sanitising solution.

11. Follow procedures of 4-19 to sterilize the water system, but press MODE after cleaning start about 10 minutes ONLY.
12. Reinstall the front plate and the top plate.
13. At completion of the freezing and defrost cycle, make sure of proper texture and cleanness of the ice cubes and that, they do not have any acid taste.

**Note:**

If cloudy and sour ice cubes are available, use hot water to dissolve them and pour them to the safety place appointed in order to avoid eating by mistake which may cause injury.

14. Wipe clean and rinse the inner surfaces of the storage bin.

**Note:**

To prevent the accumulation of undesirable bacterial, it is necessary to sanitize every week the interior of the storage bin.

### Service Diagnosis

Symptom	Possible Cause	Suggested Correction
Unit does not run	<p>Abnormal power supply</p> <p>Blown power in fuse in PC board</p> <p>The machine is stopped abnormally (such as high temperature protection)</p> <p>At the state of ice bin full</p> <p>Water supply abnormal</p>	<p>Check power supply voltage, if no voltage, check power supply line</p> <p>Check power supply voltage, if it is low, contact power supply company</p> <p>Replace the fuse. If the fuse is broken again, check the cause.</p> <p>Press the <b>MODE</b> key on the PC board to reset, the machine starts or starts automatically 2 hours later or unplug the power plug, plug it again three minutes later, the machine starts.</p> <p>Adjust the position of the ice cubes in the storage box to let the ice chute reset and then start the machine</p> <p>See the processing method for water-lacking</p>
Compressor cycles intermittently	<p>Low voltage</p> <p>Non-condensable gas in system</p> <p>Compressor starting device with loose wires</p> <p>Mechanical problem</p>	<p>Check circuit for overloading</p> <p>Check power supply voltage, if it is low, contact power supply company</p> <p>Purge the system</p> <p>Check for loose wires in starting device</p> <p>Replace compressor</p>
Cubes too small	<p>Freezing cycle too short</p> <p>Capillary tube partially restricted</p> <p>Moisture in the system</p> <p>Shortage of water</p> <p>Shortage of refrigerant</p>	<p>Check the PC board setting</p> <p>Purge the system</p> <p>Same as above</p> <p>See the processing method for water-lacking</p> <p>Check for leaks in the refrigerating system &amp; recharge</p>
Cloudy ice	<p>Shortage of water</p> <p>Dirty water supply</p> <p>Accumulated impurities</p>	<p>See the processing method for water-lacking</p> <p>Use water softener or water filter</p> <p>Clean as per cleaning procedure</p>
Shortage of water	<p>Water spilling out through ice chute</p> <p>Water inlet solenoid valve not opening</p> <p>Water leak in water tank</p> <p>Water inlet valve flow control plugged</p> <p>Leak of water drain valve</p>	<p>Tighten the screws on the clamping plate of the PVC pipe to reduce water fitting</p> <p>Check, if damage, replace it</p> <p>Check for the leaking points and repair it. If necessary, replace it.</p> <p>Replace the water inlet valve</p> <p>Check, if damage, replace it</p>

**Service Diagnosis**

Symptom	Possible Cause	Suggested Correction
Irregular cubes size & some cloudy	Some tube openings plugged Shortage of water Unit unlevel	Clean the jet See the processing method for water-lacking Level as required
Decreased ice capacity	Inefficient compressor Leaky water valve or Water tube pipe or small holes of pipe plugged Non-condensable gas in system Bad ventilation Capillary tube partially restricted Defrost valve leaking Shortage of refrigerant Shortage of refrigerant Discharge pressure too high or too low Defrost valve plugged or not opening	Replace compressor Check, if damage, replace it Check, if blocked, unblock it. Purge the system Rotate again or improve ventilation Purge the system Check, if damage, replace it Change filling volume, release slowly As per the mark on the nameplate, purge it. Check for the cause of incorrect discharge pressure Check, if damage, replace it
Unit won't harvest	Inoperative PC board Defrost valve not opening Water inlet solenoid valve not opening	Check, if damage, replace it Check, if damage, replace it Check, if damage, replace it
Incorrect discharge pressure	Inoperative condenser sensor Inoperative PC board	Check, if damage, replace it Check, if damage, replace it
Excessive water in unit base	Water system leaking	Check for the leaking points and repair it. If necessary, replace it.

**Important:**

The machine should be maintained by authorized professional maintenance personnel.

If power supply cord is damaged, it should be replaced by authorized professional maintenance personnel to avoid danger.

### PC board description

This series Ice machine use PC board control unit running, and there is light on PC box will indicate state and alarm information.

#### PC board self-check

Phase	How to work	Description
Power ON		
Indicator light self-check	<p>Press MODE more than 3s after power on, going to indicator light self-check, these lights will be blink 1s circulatory. Press MODE going to load checking or going to freezing cycle without any action.</p>	<p>It is for factory and service check indicator light good or bad.</p>
Load self-check	<p>Press MODE in light checking phase, all load will power on 5s circulatory and relevant light will be blink. Press MODE going to sensor checking or going to freezing cycle without any action.. Load check sequence: Compressor(BM)--Defrost valve(ZB)--Water pump(TB)--Fan motor(SW)--Water inlet valve(R1)--water pump &amp; drain valve(ZB&amp;R2)</p>	<p>It is for factory and service check major part is good or bad.</p>
Sensor self-check	<p>Press MODE in load checking phase will go to sensor checking: Ice bin full sensor: BM light will on or of . Evaporator sensor: ZB light will ON if temperature about 25°C, ZB light will blink if temperature is not 25°C, ZB light blink fast means sensor is bad. Condenser sensor: TB light will ON if temperature about 25°C, TB light will blink if temperature is not 25°C, TB light blink fast means sensor is bad. Water level sensor: SW light will ON when sensor in lower location and SW light will blink on upper location. Ice thickness adjust sensor: R1 light will ON if it is good and R1 will blink if it is bad, and R1&amp;R2 blink fast 2s means it is in middle point.</p>	<p>It is for PC board manufacture and factory and service check sensor.</p>

#### Notes:

The machine should be maintained by authorized professional maintenance personnel. PC board in key part of ice maker, please use genuine service part.

## PC board description

### Indicator light alarm description

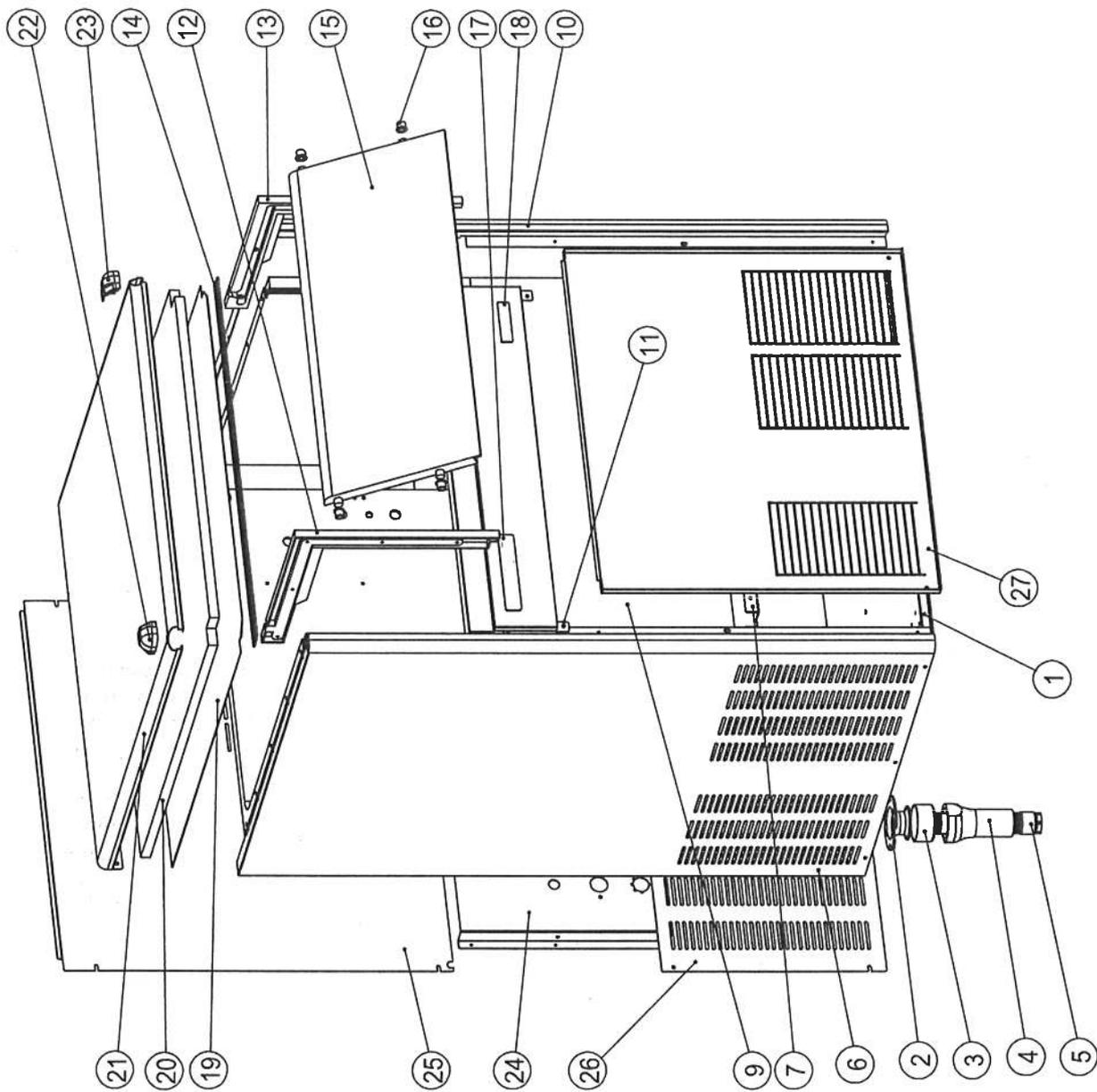
Indicator	Diagnosis	Unit state	Possible reason
ZB+R2 ON	Evaporator temperature is too high in freezing cycle.	Stop	Defrost valve is leakage or can not close.
R1+R2 ON	Condenser sensor failure	Stop	Condenser sensor is bad.
BM+R2 ON	Evaporator sensor failure	Stop	Evaporator sensor is bad.
SW+R2 ON	Water level sensor failure	Stop	1. Water level sensor is bad. 2. Water pump or drain valve and water systems leak.
BM+R1 ON	Ice bin sensor failure	Stop	1. Ice bin sensor is bad. 2. ice lead board is block by ice or can not turn smooth.
R1 ON	Shortage of water	Stop	1. check water supplier 2. Water pump or drain valve and water systems leak.
R2 ON	HI-temperature in condenser	Stop	1. Condenser is too dirty. 2. Fan motor is failure.
TB Blink	ICE BLOCK drop down time too long few times.	Protect stop	1. Ice bin sensor is bad. 2. ice lead board is block by ice or can not turn smooth. 3. Defrost valve can not full open.
TB+R2 ON	Evaporator temperature is too high in freezing cycle twice	Protect stop	1. Water pump or drain valve and water systems leak will cause no ice on evaporator. 2. Defrost valve is leakage or can not close.
ZB+R1 ON	Freezing time is too long 5 times.	ON	Refrigerant leak or defrost valve have small leakage or condenser is dirty.

说明:

1. Protect stop-- It is ice machine self-protection, press MODE or power switch OFF/ON one time can let unit running. And unit will start again 2 hour later if do not have any action.
2. Stop-- Ice machine need repair. (press MODE or power switch OFF/ON one time can let unit running.)

#### Notes:

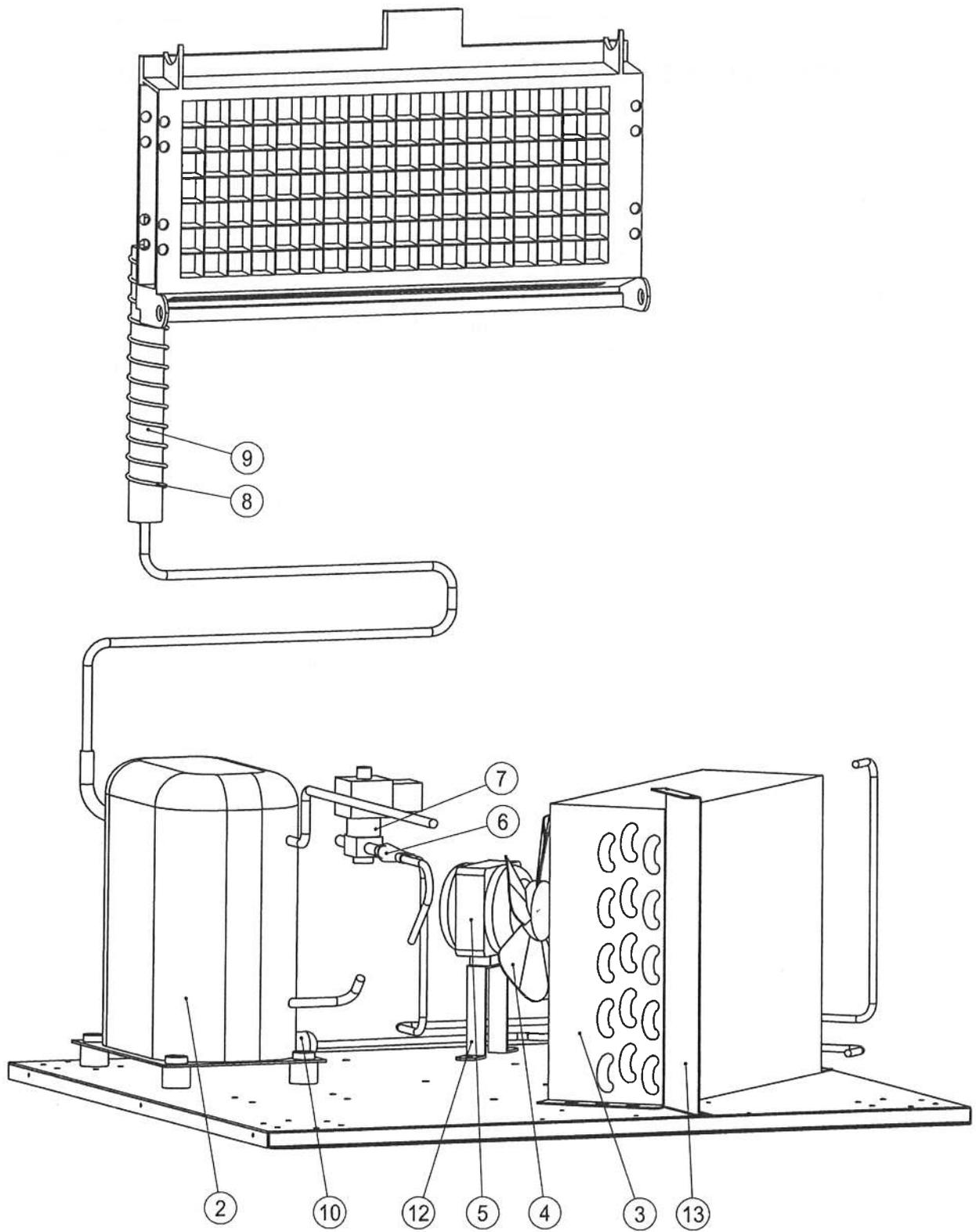
The machine should be maintained by authorized professional maintenance personnel. PC board in key part of ice maker, please use genuine service part.



Frame assembly

### Frame Assembly Component List

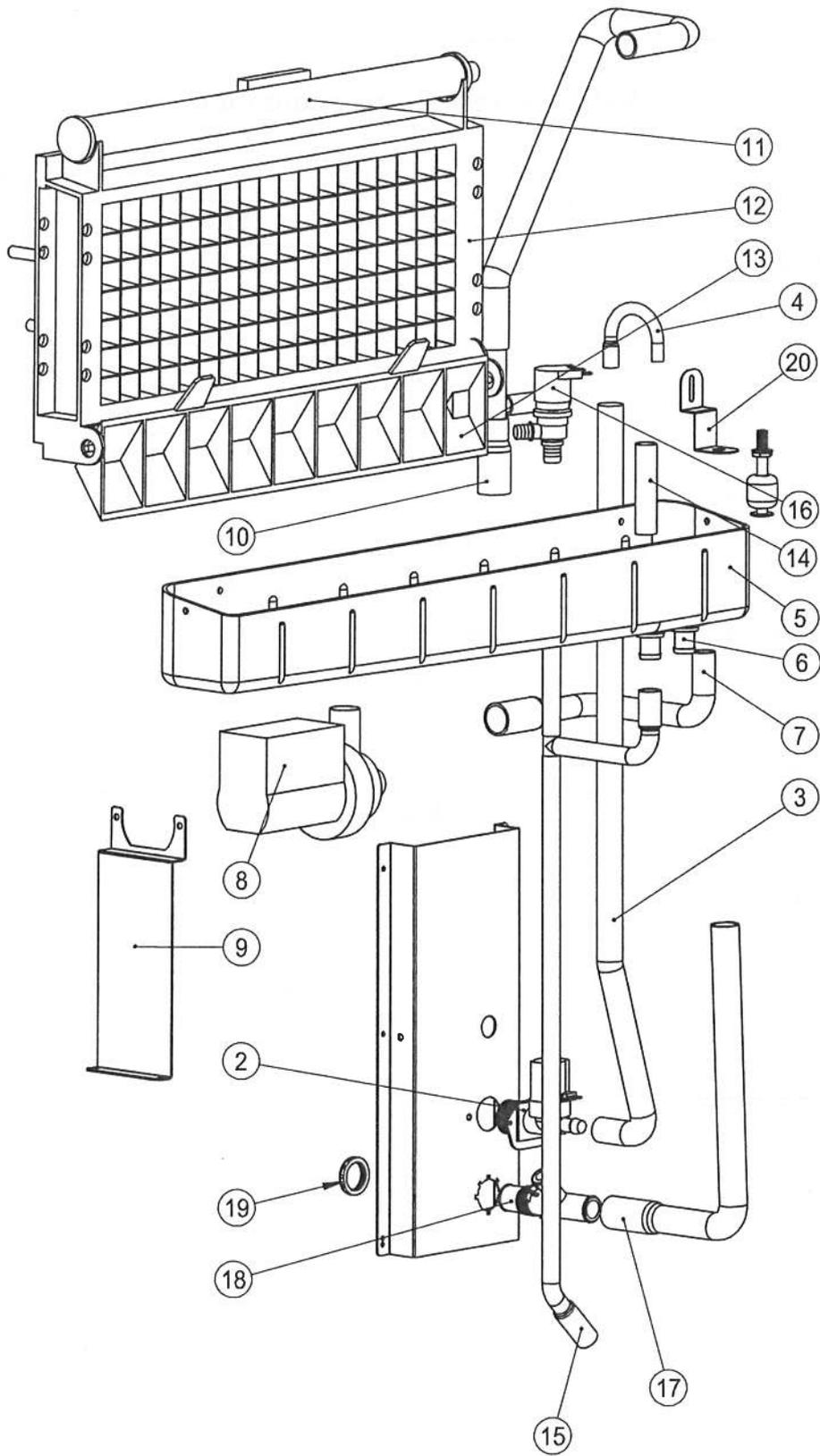
Item	Name	EI105	EI75	EI55	EI45	EI25
1	Bottom plate	99010401		99010403		99010402
2	Leg support	650562 00				
3	Ornamental ring	660516 00				
4	Leg main body	660257 00				
5	Adjustment leg	660258 01				
*	Adjustment leg small	-----		99031301		
6	Left side panel	99010101-01		99010102-01		
	Left side panel-SS	99010101-02		99010102-02		
7	Center spacer	99010501		99010502		99010503
9	Ice foaming bin	99040205	99040206	99040207	99040203	99040204
10	Right side panel	99010001-01		99010002-01		
	Right side panel-SS	99010001-02		99010002-02		
11	Front decorating plate	99010901		99010903		99010902
12	Left slide	99030705		99030703		
13	Right slide	99030706		99030704		
14	Front upper beam	99010801				99010802
15	Door assembly	99901301		99901302		660572 01
16	Door guide roller	660286 00				
17	Brand LOGO	99040152				
18	Model plate	99040131	99040132	99040135	99040134	99040133
19	Ice bin cover	99030901		99030903		99030902
20	Ice bin isolation	99030501		99030503		99030502
21	Top panel	99010606-01		99010605-01		99010604-01
	Top panel-SS	99010606-02		99010605-02		99010604-02
22	Left plastic corner	99030802				
23	Right plastic corner	99030803				
24	Water in-outlet bracket	99011401		99011402		
25	Back plate upper	99010201		99010203		99010202
26	Back plat lower	99011301		99011303		99011302
27	Front panel	99010301-01		99010303-01		99010302-01
	Front panel-SS	99010301-02		99010303-02		99010302-02
	* No mark					



Refrigeration system

### Refrigeration System (air cooled type) Component List

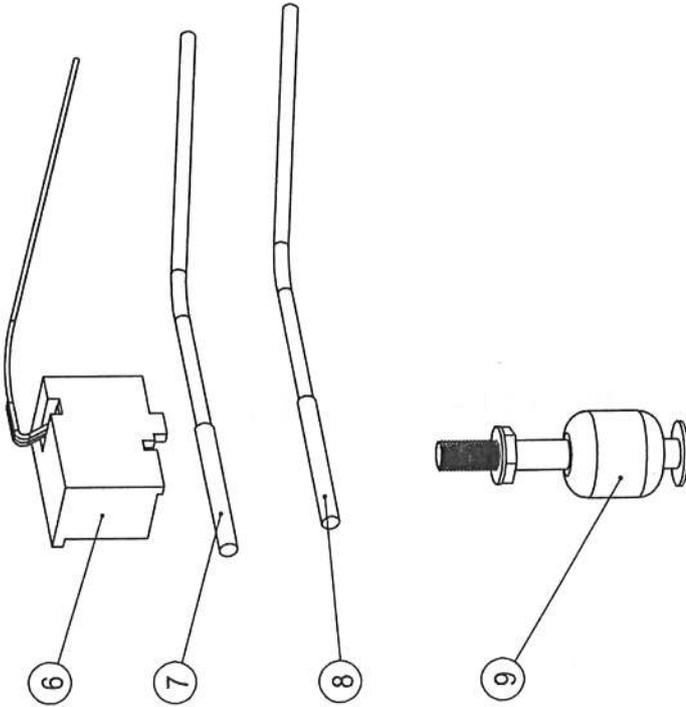
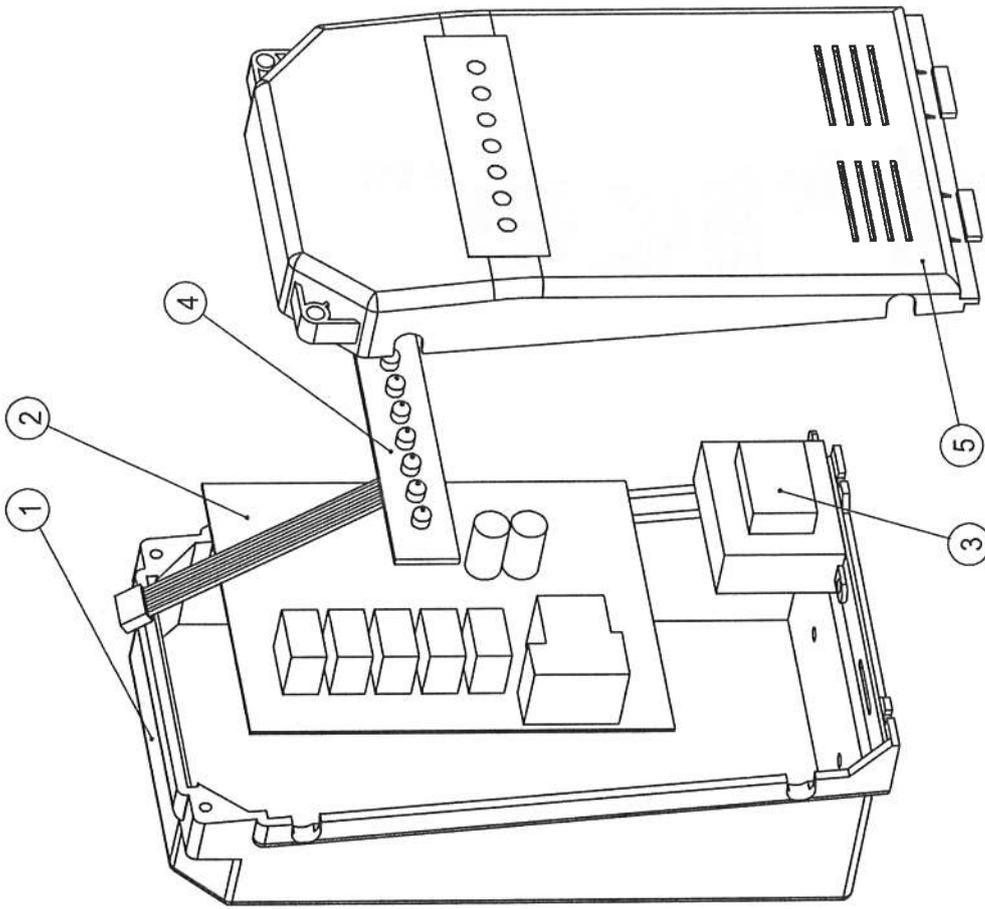
Item	Name	E1105	E175	E155	E145	E125
2	Compressor	670099 17	670099 16	670100 05		670100 04
*	Protector	620058 39	620058 42	620058 69		620058 77
*	Starting relay	620057 44	620057 45	620057 42		620057 31
*	Start capacitor	620167 01		620167 29		620167 01
3	Condenser	620440 00	620405 00	99020701		620420 00
4	Blade	620419 33				620419 32
5	Fan	620419 04	620419 02			
6	Mechanical filter	630020 01		-----		
	Copper tee	-----		650149 00		
7	Defrost valve	99021201			99021202	
8	Capillary tube	232125 02	232129 00	232127 00		232127 00
9	Accumulator	650299 03				650299 02
10	Dry filter	630003 06		630003 05		
12	Fan bracket	620419 64	620419 63	99011502		620419 62
13	Condenser separator	99010701	99010702	-----		
	* No mark					



Water system

### Water system Component List

Item	Name	EI105	EI75	EI55	EI45	EI25
2	Water Inlet valve	650105 00				
3	Water Inlet tube	281900 01				
4	Water Inlet copper tube	99021101				
5	Water sump	99020201				99020202
6	Over flow base	660533 00				
7	PVC tube	99030101		99030102		
8	Water Pump	99020102				
9	Water Pump bracket	99011204		99011205		
10	PVC tube	99030404		99030405	99030406	99030405
11	Water tube	99020601		99020604	99020603	99020602
12	Evaporator	99020501	99020502	99020505	99020504	99020503
13	Ice slide board	99020801		99020804	99020803	99020802
14	Over flow tube	281720 06				
15	PVC tube	99030303		99030304		
16	Discharge valve	99021301				
17	PVC tube	610148 15				
18	Drain T tube	660224 00				
19	Plastic nut	660535 00				
20	Water sensor bracket	99011101				



Notes: Item 1 to 5 will be electrical box assembly(99020450)

# PC Board Control System

Item	Component No.	Name
1	99020410	Electrical box
2	99020402	PC board/PC board
3	99020404	Power transformer
4	99020403	Display (connecting line)
5	99020412	Electrical box cover
6	99020405	Ice bin sensor
7	99020406	Evaporator sensor
8	99020408	Condenser sensor
9	99020407	Water level sensor

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