

# ICE CREAM MACHINE MANUAL



Please read this Manual carefully before trying to operate the machine.

## 一、 Technical Data Soft Ice Cream Machine Series

Par Model	Main Power	Rate Power (kW)	Refrigerant/fil l	output /L/H	Dimensions (mm)	N.W. (kg)
ET-BQL-808	220V/50Hz /60Hz	1.7kW	R22/R404A /0.9kg	11-16kg 18-25L	518×740×780	108
ET-BQL-838	220V/50Hz /60Hz	1.7kW	R22/R404A /1kg	11-16kg 18-25L	518×740×1310	135
ET-BQL-S22	220V/50Hz /60Hz	1.7kW	R22/R404A /1kg	11-16kg 18-25L	540×770×1480	145

Note:

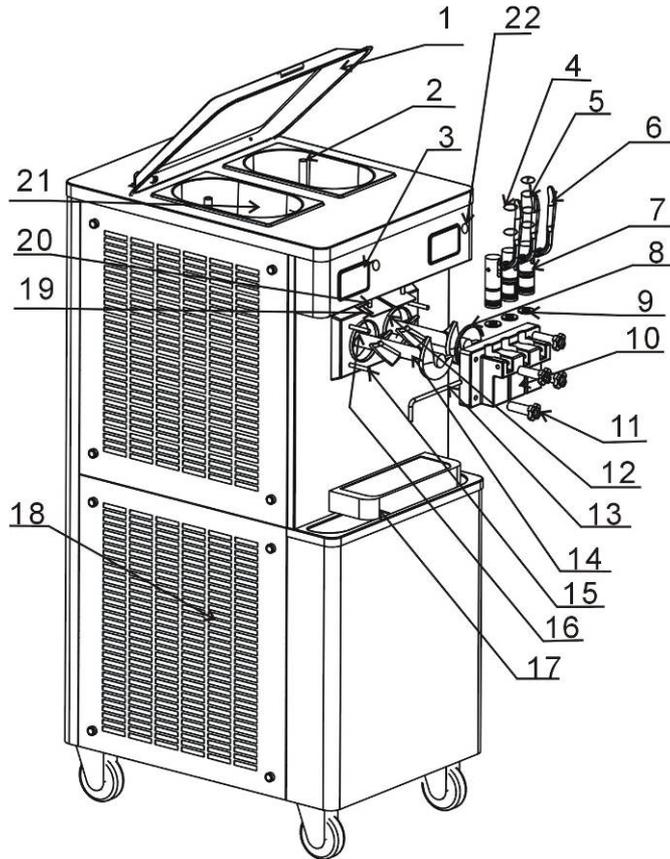
1. The output is measured under the 25°C environmental tem.and 7°C. feed stock tem.
2. Output of cups per hour is based on 60-70 grams .
3. Either R134A or R404A refrigerant can be used for all machines.

## 2. constructure

- |                          |                               |                       |
|--------------------------|-------------------------------|-----------------------|
| 1. Top Cover             | 2.Expansion Tube              | 3.Control Panel       |
| 4. Piston Ring           | 5.Anti-cross-talk Piston Ring | 6.SS Handle           |
| 7. Piston                | 8.Discharge Block-Drum Ring   | 9.Star Ring           |
| 10. Discharge Block Body | 11. Plastic Nut               | 12.Plastic Deco-plate |

- 13. Cross Bar
- 14. Stirer Shaft
- 15. Discharge Block Bolt
- 16. Stirer Drum
- 17. Receive Plate
- 18. Hot Air Exhaust
- 19. Proximity Switch Plate
- 20. Proximity Switch Pusher
- 21. Feed Basin
- 22. Electronic Lock Switch

Structure:



### 3. Precautions

#### Electricity

- Install the earthing device
- According to the National Security Standard for electrical equipment.
- Only use the feed line, method of wiring and equipment in conformity

Confirm the plug is properly inserted to the socket



Loose connection between plug and socket, the connection may heat up and cause fire.



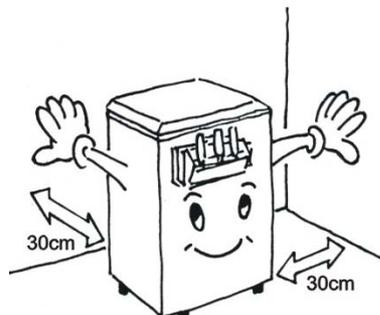
Do not connect a long cable between the plug of power cord and the socket, or the cable may be overheated and cause fire, shock and other accidents.

with the National Security Standard for electrical equipment.

- Be sure installing a short and leakage protective device on the feed line.

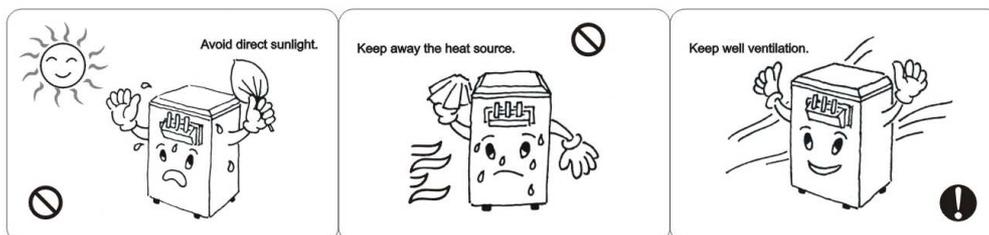
### Hygiene

- To use the machine without strict disinfection may pollute the food which will be dangerous to your health.
- Always keep the machine in clean conditions. Remove the deteriorated material immediately away from the machine.
- washing and disinfecting procedure must strictly follow this Manual.



### Installation

- The machine should be installed on a dry and firm floor. Do not install the machine tilted. Any heat source over 70°C must be kept at least 50cm away from the machine. Keep the machine away from rain and direct sunlight.
- Leave a space no less than 30cm on both sides of the machine for proper ventilation. To ensure heat dissipation, leave a space at least 1.5m from the hot air exhaust outlet. Do not leave any object which may be sucked by air flow, such as a plastic bag, near the hot air exhaust outlet.



### Connect to Main Power

- The power socket must have an earth line or just connect the machine metal case to the earth.
- Power Specifications:
  - Single Phase: 240V/50Hz, Voltage Fluctuation: 198V-240V
- connection area of the power conductor must be not less than 2.5 m<sup>2</sup> or the line may be overloaded, the voltage dropped down which may impair or even damage the machine.

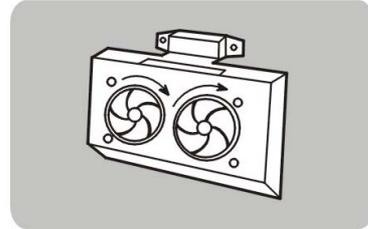
### Cautions:

- To avoid any adverse effect from vibration which is unavoidable during transportation, on arrival of the machine, **leave it for 24 hours before trying to run it for the first time.**
- The temperature of the feed stock must be between 7 °C ~40 °C . If the temperature is out of the range, it will damage the machine.
- To avoid the refrigerant being impaired, you should wipe off dust from the hot air exhaust outlet regularly.
  - it is prohibited to use only one drum or add one drum with ice cream pulp for the machine of double drum models and the other drum with other material pulp (except for machines with double-compressor set).

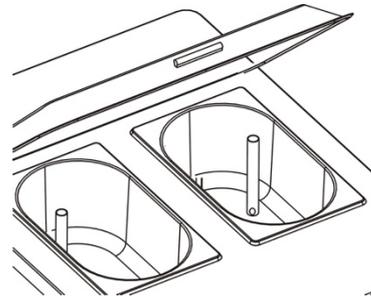
### 4. Operation

#### Production

1. Insert two expansion tubes into each feed basin respectively.
2. Pour the prepared ice cream pulp into the feed basin. The pulp flows to the stirrer drum via the lower hole of the expansion tube.



3. Wait for about 2 minutes until the ice cream pulp has flowed into the drum. Push on PRODUCE key to start the machine. The stirrer motor starts first and then the fans of compressor and condenser will be started in 30 seconds. At this moment the hot air flows from the outlet of the condenser and the temperature in the drum drops down quickly. The ice cream is ready to discharge in 15 to 20 minutes. At this moment if you want to stop production, just push the STOP key.



4. Any time when you pull one of the handle of the discharge block, the related stirrer stops and the ice cream flows out of the discharge hole. The discharge hole on left and right is related to the stirrer drum on left and right and the ice cream discharged is of single color. The discharge hole in the middle is the mixture from both left and right drums and is of rainbow color.

Caution: The pulp level in the stirrer drum is dropping while ice cream is discharging. If only little remains in the drum, abnormal

noise can be heard and the stirrer shaft may be damaged. You should check if the lower hole of the expansion tube is chocked up.

5. The machine will stop automatically when the ice cream reaches the preset hardness. The OVERLOAD indicator is on. The machine will restart about 5 minutes automatically. If you want to continue production when the OVERLOAD is on, just push OVERLOAD RESET key or pull any one of the handle at the discharge block (The model A11 does not have auto reset function).

Caution:1. If you do not discharge the ice cream when it reaches the preset hardness, do not push the OVERLOAD RESET and PRODUCE keys frequently, or the machine may be damaged.  
2. when the stirrer drum discharges a large quantity ice cream from the soft ice cream machine, you must await a few minutes after refrigerating.

#### 6. Hardness Setting

The principle of adjustment of hardness of ice cream is based on the fact that the load of stirrer motor increases with the current. The control circuit reacts when the current reaches a certain point and stops the machine. Hardness has been properly set in the factory before delivery. If you have special recipe for ice cream, it may be readjusted according to your particular needs.

Depending on the machine model, there are two methods for hardness adjustment:

- 1) The models with step adjuster. For purpose of hardness adjustment, you have to open the side panel of the machine to access the step adjuster located at the electrical box.
  - a. If the machine does not stop when the ice cream reaches the required hardness, push the adjuster to a softer step until machine stops.
  - b. if the machine stops because of overloading and the ice cream is not hard enough, you should push the adjuster to a harder step, when the ice cream reaches the required harness it will stop production.
  - c. the machine must be allowed to run in one minute before you try to push the adjuster to the next step, or the effect of the adjustment will be

impaired.

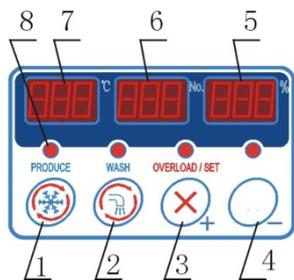
d. The hardness adjuster has 9 steps and the hardness increases in numeric order.

2) The models with hardness adjustment on control panel. Press the set  for more than 2 seconds, the number on the display flashes continually. The system for hardness adjustment is now in set mode. Press +, the figure increases; press —, the figure decreases; there are 1 to 15 steps available for adjustment. The number 15 is the hardest and 1 is the softest. After the required number has been selected, press PRODUCE or WASH key to save the adjustment and withdraw from the set mode.

### 7. Operation of Different Type of Control Panel

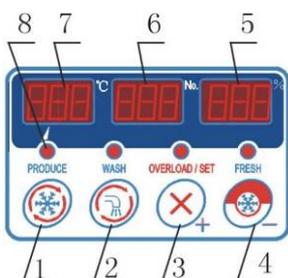
Our ice cream machine series is accommodated with different type of control Panel. Please identify which control Panel is used for your particular machine model.

#### A. The model with 3 displays but without precooling



1. PRODUCE/STOP key
2. WASH/STOP key
3. OVERLOAD RESET/HARDNESS SET/+ key
4. - key
5. STEP/TIME display
6. COUNTER display
7. Ice Cream Tem. display
8. LED indicator

#### B. The model with 3 displays



1. PRODUCE/STOP key
2. WASH/STOP key
3. OVERLOAD RESET / HARDNESS SET / +

key

4. STEP、TEMPETURE—/ Keep Fresh 、  
PRECOOLING ON-Off / HARDNESS SET/  
TEMPETURE、 SET key
5. STEP/PROCESS display
6. COUNTER display
7. FEED BASIN PRECOOLING TEM. display
8. LED indicator

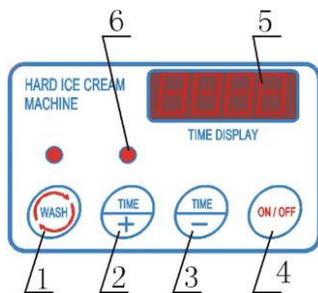
D. Electronic Lock-switch for Batch Number Reset

Key for Lock Switch



Counter: it will show you the figure when each ice cream is made out. The maximum figure is “999”. An electronic lock switch is located on front or below the control panel, which is used for reset the figure to zero. Insert the key to the slot of lock-switch, turn the key round, the figure reset to “000”.

E. The models for hard ice cream machine

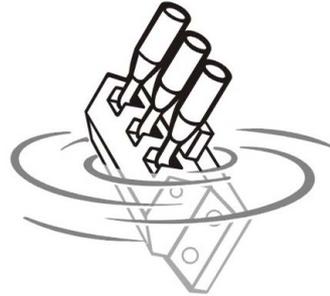
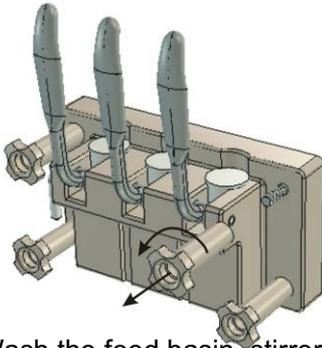


1. WASH key
2. Time + key
3. Time — key
4. PRODUCE ON-OFF/WASH STOP key
5. Washing Of The Machine
6. LED indicator

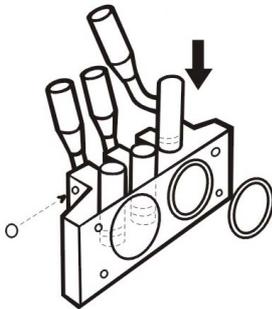
5. Washing Of The Machine

## 1. Washing Before Production

- a. Turn the plastic set nuts for the discharge block, totally 4 nuts, in counter clockwise direction, dismount the discharge block.



- b. Wash the feed basin, stirrer shaft and expansion tube with detergent liquid or disinfectant liquid.
- c. Put the discharge block in one of above liquids. Push and pull the handle 2 to 3 times. Dismount the cross bar, pull the piston out from the block, clean the cross bar and piston.



## 2. Wash After Production

- a. Pour water into the feed basin. Push on WASH key to run the stirrer for 3 to 5 minutes until remains of ice cream in the stirrer drum completely melted. Discharge the water from the drum by pulling the handle. Repeat the above procedure several times.
- b. Wash the discharge block:  
Repeat above "Wash Before Production" item a. and b.

## 6. Service and Maintenance

### **Notice for Service and Maintenance**

1. The machine must be kept clean and neat conditions after using and it will be managed by a professional person.
2. when you complete the operation for each time, you should clean the

machine parts in contact with the ice cream, such as discharge block, stirrer drum, stirrer shaft, expansion tube, feed basin etc. immediately after the machine is stopped. Air dry the parts for the next operation.

3. Check the tightness of the belts regularly. If the belt is loose, adjust the center distance between the pulley and the stirrer motor.
4. If the machine is not in use for a long time, put the main switch to OFF position. The machine will be in standby mode.

## 2). Time Setting Operation

- a. While the machine is in Stop mode, press the time + or — key, the display indicates the time value set at the last time and the figure flashes. At this moment press + key to increase the time value in minutes and — key to decrease the time value in minutes.
- b. The time value can be set from 1 minute to 20 minutes, changing at 1 minute increments each time you press the key.
- c. While the display is flashing, if you do not press + key or — key in 5 seconds, the system will withdraw from the time setting mode, the time value set at the last time is saved and the display returns to “00”.

Caution: If the time is set to a too long time and the ice cream in the chilling drum is too hard. The machine will stop immediately and enter into the protective mode. At the same time, the machine will sound alarm and the display shows “L : L”. In this case, switch the power off and on again in no less than 1 minute. Adjust the production time again.

## 3). Washing

Press WASH key, the machine is in WASH mode. Press On/Off key, the stirrer will be stopped.

## 8. analytical sheet for obstacle

PHENOMENON	REASONS	ANALYSIS	REMEDY
THE MACHINE DOES NOT RUN.		<ol style="list-style-type: none"> <li>1.Power Supply Failure.</li> <li>2.Power switch is damaged.</li> <li>3.No power supply to control circuit.</li> <li>4.No.DC12V supply.</li> <li>5.Overload protection tripped.</li> </ol>	<ol style="list-style-type: none"> <li>1.No power supply or disconnection</li> <li>2.change.</li> <li>3.Transformer for the control circuit burnt out</li> <li>4. Rectification circuit damaged.</li> <li>5. Check the circuit.</li> </ol>
REFRIGERATION SYSTEM DOESN'T WORK	Compressor doesn't work.Pipe Leakage.	<ol style="list-style-type: none"> <li>1.Temperature reaches the preset value.</li> <li>2.Supply voltage is too low.</li> <li>3.Section area of power cable is too small.</li> <li>4.Start capacitor of the compressor damaged.</li> <li>5.Compressor is damaged.</li> <li>6.Overload protection tripped.</li> <li>7.Malfunction of logic circuit.</li> <li>8.Leakage of Refrigerant pipe.</li> </ol>	<ol style="list-style-type: none"> <li>1.Wait until temperature rises to certain degree and start again.</li> <li>2. Discuss with commercial power supply company.</li> <li>3.Change the cable to a larger size.</li> <li>4.Change the damaged parts.</li> <li>5.Same as item4.</li> <li>6.Check the overload circuit.</li> <li>7.Same as item4.</li> <li>8.Solder the pipe cracks and refill the refrigerant.</li> </ol>
MIXER DOESN'T WORK.	Mixer motor doesn't work	<ol style="list-style-type: none"> <li>1.The capacitor for the motor is damaged.</li> <li>2. The motor is damaged.</li> <li>3.Overload protection circuit tripped.</li> </ol>	<ol style="list-style-type: none"> <li>1.Change the damaged parts.</li> <li>2.Change the damaged parts.</li> <li>3.Check the overload circuit.</li> </ol>
OVERLOAD INDICATOR ON OR SWITCHED ON FREQUENTLY	The system overload.	<ol style="list-style-type: none"> <li>1.Too much water and less sugar in ice cream formula.</li> <li>2.Ice cream is made too harder.</li> <li>3.Gearbox is damaged.</li> <li>4.Overload protection circuit tripped.</li> </ol>	<ol style="list-style-type: none"> <li>1.Change the formula to proper amount of water and sugar.</li> <li>2.Adjust the hardness of ice cream.</li> <li>3.Repair the gearbox.</li> <li>4.Check the overload circuit.</li> </ol>
LOW OUTPUT	It takes too much time to	<ol style="list-style-type: none"> <li>1.The airflow inlet and outlet is too close to the wall.</li> </ol>	<ol style="list-style-type: none"> <li>1.The airflow inlet or outlet must keep away from the</li> </ol>

	make ice cream.	2.Lack of refrigerant. 3.Evaporting temperature is not high enough. The piping of refrigeration system is Clogged or frozen.	wall or any object for good ventilation. 2.Refill the refrigerant. 3.Adjust the expansion tem. Or change the valve. 4.Drain the refrigerant from system.Dry, clean and vacuumize the system.Refill the refrigerant.
MATERIAL LEAKING	Material or water leakage	1.Material or water leaking from the discharge block. 2.Material or water leaking from the reducer. 3.Condensate from copper pipe of refrigeration system.	1.Change the related rubber sealing. 2.Tighten the fixing bolts of the discharge block. 3.It is normal.
NO ICE CREAM DISCHARGE	Wrong operation	1.The mixer cylinder empty. 2.Ice cream is too harder. 3.The handle doesn't open enough. 4.Mixer motor doesn't work. 5.Travel switch doesn't work. 6.No mixer screw mounted.	1.Add material to the basin. 2.Adjust to proper hardness. 3.Full open the handle. 4.Check the related circuit for the motor. 5.Check the auto travel switch. 6.Mount the screw and start again.

## 9. Packing List

### 1. Soft Ice Cream Machine

Name	Quantity
Machine Set	1
Discharge Block-Drum Ring	2
Piston Ring	6
Anti-cross-talk Ring	1
Expansion Tube	2
Ring for Expansion Tube	4
Star Washer	3
Operation Manual	1
Plastic Bag	1
Electron lock	2

## 10.Electrical Diagram

