

Ice-cream Machine Instruction Book



Thank you for your choice of our
Ice Cream Machine

In recognition of the organization's Quality System which complies with ISO9001:2000
Certificate Number: 15117

Thank you for your selection of our ice cream machines. Our machine series is refrigerating machinery of new generation designed on basis of advanced refrigerating technology. The outward design is artistic

and in good taste. All the compressors used for the machine are of international brand. Control system of brand-new digital circuit renders operation easy and performance reliable.

1、 Technical Data

Soft Ice - Cream Machina Series

Parameter Model	Power Source	Power	Refrigerant / Filling Volume	Out put	Dimensions	N. W.
BQL-A11	220V/50Hz /60Hz	0.9kW	R22 / R404a / 0.6kg	8~11kg 13~18L	422X592X622 mm	59kg
BQL-808	220V/50Hz /60Hz	1.7kW	R22 / R404a / 0.9kg	11~16kg 18~25L	518X740X780mm	108kg
BQL-838	220V/50Hz /60Hz	1.7kW	R22 / R404a / 1kg	11~16kg 18~25L	518X740X1280mm	135kg
BQL-S22	220V/50Hz /60Hz	1.7kW	R22 / R404a / 1kg	11~16kg 18~25L	540X770X1480mm	145kg
BQL-A33	220V/50Hz /60Hz	2.4kW	R22 / R404a / 1.5kg	24~34kg 36~44L	705X770X1480mm	172kg
BQL-S33	220V/50Hz /60Hz	2.4kW	R22 / R404a / 1.5kg	22~28kg 28~38L	540X770X1480mm	160kg
BQL-S36	220V/50Hz /60Hz	2X1.7kW	R22 / R404a / 1kg×2	24~34kg 36~44L	540x770x1480mm	210kg
BQL-S48	380V/50Hz /60Hz	4.2kW	R22 / R404a / 1.5kg	26~36kg 40~55L	518X770X1480mm	160kg

Hard Ice -Cream Machina Series

BQL-H18S	220V/50Hz /60Hz	2.6kW	R22 / R404a / 0.9kg	28~38L	518X740X1240mm	138kg
BQL-H28S	220V/380V /50Hz/60Hz	3.4kW	R22 / R404a / 1.7kg	40~58L	518X770X1480mm	168kg

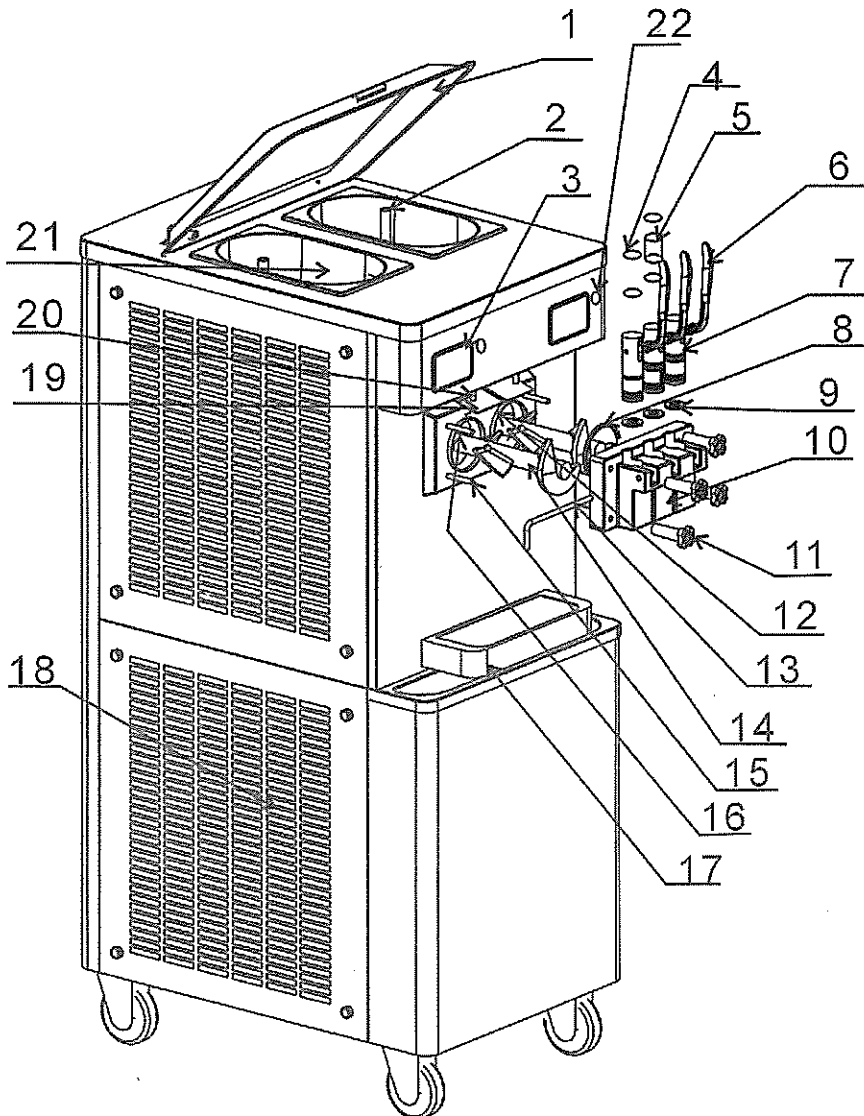
1. The output is measured under the environmental tem. 25°C and feed stock tem.7°C.
2. Output per hour is based on 60-70 grams per cup.
3. Either R134A or R404A refrigerant can be used for all machine models.
4. S36 is the model of double compressor system.
5. 808 series is composed of the following models in terms of outward design: 808-1, 808-2

S22 series is composed of the following models in terms of outward design: S22-1,S22-2,S22-3,S22-4,S22-5
S33 series is composed of the following models in terms of outward design: S33-1, S33-2,S33-3,S33-4, A33
S48 series is composed of the following models in terms of outward design: S48-1,S48-2,S48-3, A33 ,S48-5
Internal layout and technical data are same for models within same machine series.

2. Schematic Structure

- Name:
- | | | |
|--------------------------------|------------------------------|-----------------------------|
| 1. Top Cover | 8. Discharge Block-Drum Ring | 15. Discharge Block Bolt |
| 2. Expansion Tube | 9. Star Ring | 16. Cylinder |
| 3. Control Penal | 10. Discharge Block Body | 17. Receive Plate |
| 4. Piston Ring | 11. Plastic Nut | 18. Hot Air Exhaust |
| 5. Anti-cross-talk Piston Ring | 12. Plastic Deco-plate | 19. Proximity Switch Plate |
| 6. Stainless handle | 13. Cross Bar | 20. Proximity Switch Pusher |
| 7. Piston | 14. Beater | 21. Tank |
| | | 22. Electronic Lock Switch |

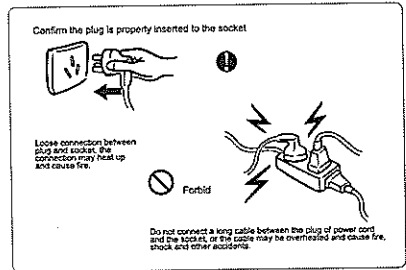
Structure:



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 with the National Security Standard for electrical equipment.
- Install a short and leakage protective device on the feed line.



Hygiene

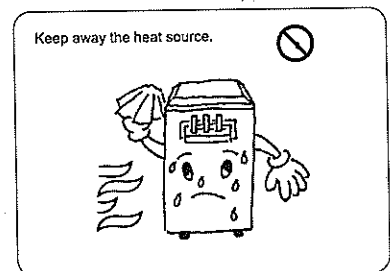
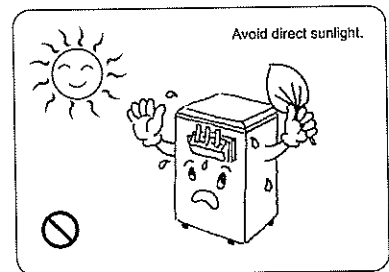
- To use the machine without strict disinfection may pollute the food and the polluted food is dangerous to your health.
- Always keep the machine in clean conditions. Remove the deteriorated material immediately away from the machine.
- Follow strictly the procedure for washing and disinfecting in this Manual.

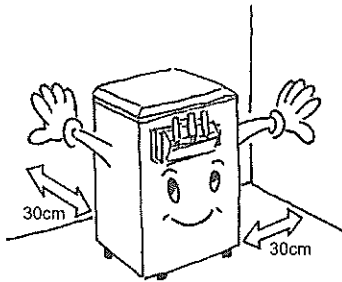
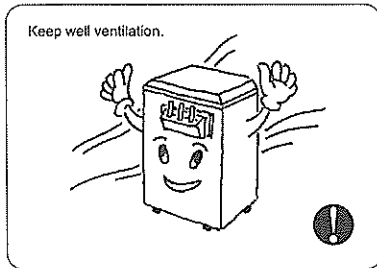
Installation

- Lay the machine on dry and firm floor. Do not lay the machine tilted. Any heat source over 70°C must be kept at least 50cm away round the machine. Keep the machine away from rain and direct sunlight.
- Leave a space at least 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 in by air flow, such as a plastic bag, near the hot air exhaust outlet.

Connect to Power Source

- The power socket must have a earth line or just connect the machine metal case to the earth
- Power Specifications:
Single Phase: 220V/50Hz, Voltage Fluctuation 198V-240V.
Three Phase: 380V/50Hz, Voltage Fluctuation 370V-390V.
- Section area of the power conductor must be a





least 2.5mm² 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 you try to run it for the first time.

- ☞ To maintain best performance of the machine, wipe off dusts from the hot air exhaust outlet regularly.

- ☞ For the machine of double drum models, it is prohibited to use only one drum or feed one drum with ice cream pulp and the other drum with other material (except for machines with double-compressor set).

- ☞ For the machine with 380V power supply, you must check if the stirrer shaft turns in clockwise direction for first the start. If the shaft turns in opposite direction, just exchange any two power conductors of three phases.

4. Operation

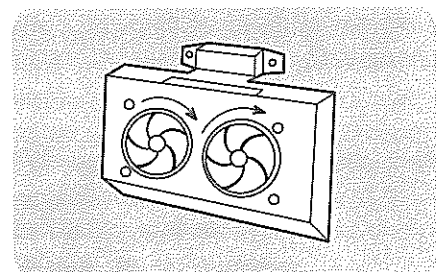
Production

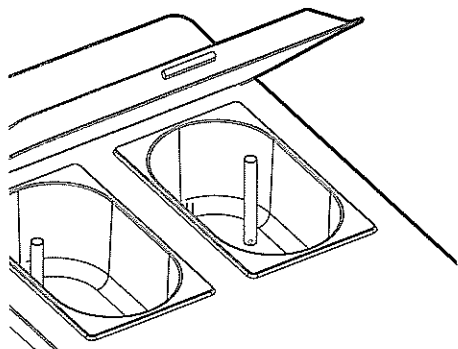
1. Insert two expansion tubes into the feed hole of each feed basin respectively.

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 flown to the drum. Push on PRODUCE key to start the machine. The stirrer motor starts first and then the fans of compressor and condenser start in about 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 about 15 to 20 minutes. At this moment if you want to stop production, just push on Stop key to stop the machine.

4. Any time when you pull one of the handles 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 double 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 choked up whenever the abnormal noise is heard.

5. The machine will stop automatically when the ice cream reaches the preset hardness. The OVERLOAD indicator is on. The machine will restart in 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. When the ice cream reaches the preset hardness, if you do not want to discharge it from the drum, do not push the OVERLOAD RESET or PRODUCE key frequently or the machine may be damaged.
2. The models of soft ice cream machine are of the type for batch production, i.e. after certain amount of ice cream has been discharged, you can not continue discharge the next batch. You have to wait for several minutes until the machine have completed refrigerating the feed stock in the drum.

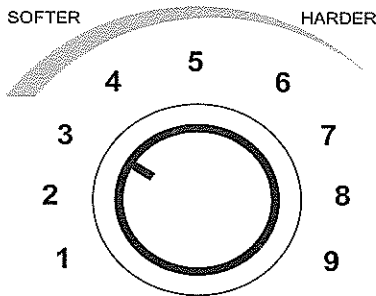
6. Hardness Setting

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 certain point and stop 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.

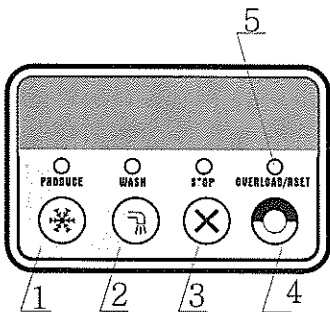
- If the machine does not stop when the ice cream reaches the required hardness, push the adjuster to a softer step until machine stops.
- Or if the machine stops because of overload but the ice cream is not hard enough, push the adjuster to a harder step to allow the machine stops only when the ice cream reaches the required harness.
- Wait to allow the machine to run about one minute before you try to push the adjuster to the next step, or the effect of the adjustment will be impaired.
- The hardness adjuster has 9 steps and the hardness increases in numeral order.

2) The models with hardness adjustment on control panel. Press the set key \otimes_{+} for more than 2 seconds, the figure on the display flashes. The system for hardness adjustment is now in set mode. Press \otimes_{+} , the figure increases; press \ominus_{-} , the figure decreases; there are 1 to 15 steps available for adjustment.



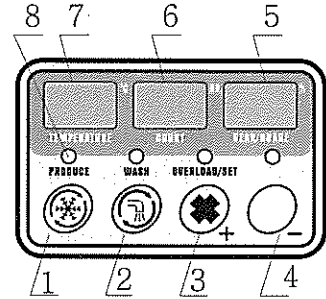
The figure 15 is the hardest and 1 is the softest. After the required figure has been selected, press PRODUCE or WASH key to save the adjustment and withdraw from the set mode.

7. Operation On Different Type of Control Panel
 A. The model without display



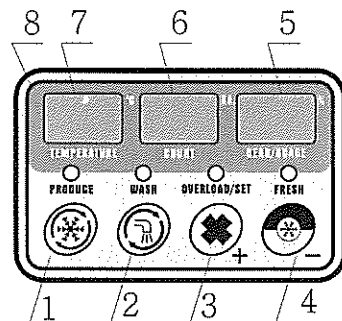
1. PRODUCE Key
2. WASH Key
3. STOP Key
4. OVERLOAD/RESET Key
5. LED Indicator

B. The model with 3 displays but without precooling



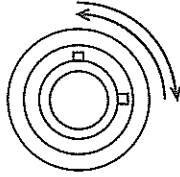
1. PRODUCE/STOP key
2. WASH/STOP key
3. OVERLOAD RESET/HARDNESS SET/+ key
4. key
5. STEP/TIME display
6. COUNTER display
7. Ice Cream Tem. display
8. LED indicator

C. The model with 3 displays

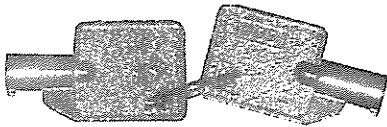


1. PRODUCE/STOP key
2. WASH/STOP key
3. OVERLOAD RESET/HARDNESS SET/+ key
4. /PRECOOLING ON-OFF/HARDNESS SET/TEM. SET key
5. STEP/TIME display
6. COUNTER display
7. FEED BASIN PRECOOLING TEM. display
8. LED indicator

D. Electronic Lock-switch for Batch Number Reset

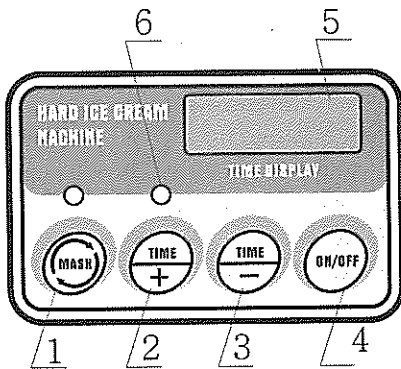


Key for Lock Switch



Counter: The display of the counter counts 1 for each batch of ice cream has been prepared. The maximum figure is 999. An electronic lock switch is located on front or below the control Panel, which is used for resetting the displayed 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

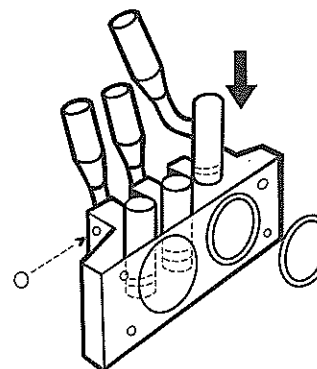
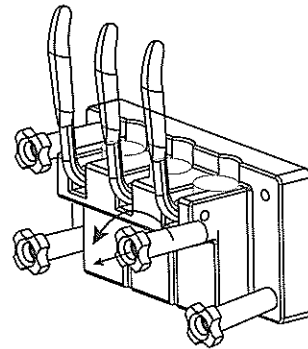


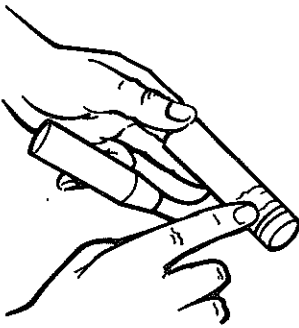
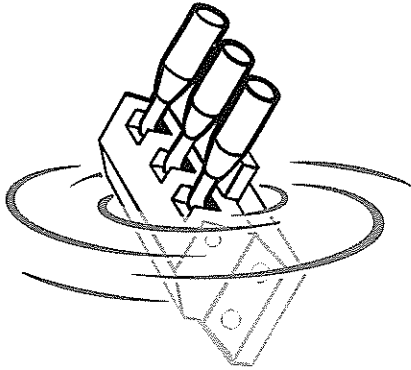
1. WASH key
2. Time+ key
3. Time key
4. PRODUCE ON-OFF/WASH STOP key
5. STEP/SCHEDULE display
6. LED indicator

5. Washing Of The Machine

1. Washing Before Production

- Turn the plastic set nuts for the discharge block totally 4 nuts, in counter clockwise direction to dismount the discharge block
- The temperature of the feed stock must be between 5°C~40°C. If the temperature is out of the range it will do harm to the machine.
- Wash the feed basin, stirrer shaft and expansion tube with detergent liquid or disinfectant liquid
- Put the discharge block in one of the 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

- Pour tap 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 melt. Discharge the water from the drum by pulling the handle. Repeat the above procedure several times.
- Wash the discharge block:
Repeat above Wash Before Production item a. and b.

6. Service and Maintenance

Notice for Service and Maintenance

1. A person must be specially assigned for management of the machine. This machine is for food. It is important to keep the machine always in clean and neat conditions.
2. Each time when you complete the operation, 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 loosen, adjust the center distance between the pulley and the stirrer motor.
4. If the machine is to lay idle for long time, push the main switch to OFF position. The machine will be in standby mode if the power is On.
5. Don't put any brush to clean inside the hol

7. Models for Hard Ice Cream Machine (for the model H18S and H28S)

1. Production

☛ Fill the pulp from the feed hole of the discharge block to the stirrer drum. The level to be filled should not be too high or too low, shown in Fig. adjust the running time according to your recipe and environmental temperature (in room temperature, the running time for each batch is about 12 minutes).

☛ Push on On/Off key, the machine start production. The display indicates the countdown time. As soon as the display indicates 000, the compressor stops and the stirrer motor will stop after a delay of 40 seconds. Ice cream will come out by opening the discharge hole at the discharge block.

☛ While in Production mode, push On/Off key, the machine enters Stop mode.

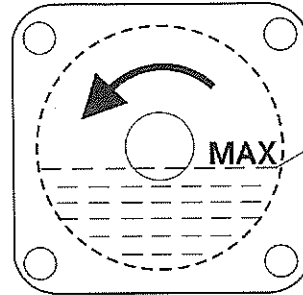
2. Time Setting Operation

☛ While the machine in Stop mode, push 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 minute and - key to decrease the time value in minute.

☛ The time value can be set from 1 minute to 20 minutes, changing in 1 minute step for 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

WARNING!



The level of material no higher than the level

Caution:

If the time is set too long and the ice cream in the chilling drum is too hard. The machine will stop immediately and enter 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

Push WASH key, the machine is in WASH mode. Push On/Off key, the stirrer stops.

8. Troubleshooting

PHENOMENON	REASONS	ANALYSIS	REMEDY
THE MACHINE DOSE NOT RUN.		<ol style="list-style-type: none"> 1.Power Supply Failure. 2.Power switch is damaged. 3.No power supply to control circuit 4.No. DC12V supply 5.Overload protection tripped. 	<ol style="list-style-type: none"> 1.No power supply or disconnection of the power supply 2.Change. 3.Transformer for the control circuit burnt out. 4.Rectification circuit damaged. 5.Check the circuit.
REFRIGERATION SYSTEM DOESN'T WORK	Compressor doesn't work.Pipe Leakage.	<ol style="list-style-type: none"> 1.Temperature reaches the preset value. 2.Supply voltage is too low. 3.Section area of power cable is too small. 4.Start capacitor of the compressor damaged. 5.Compressor is damaged. 6.Overload protection tripped. 7.Malfunction of logic circuit. 8.Leakage of Refrigerant pipe. 	<ol style="list-style-type: none"> 1.Wait until temperature rises to certain degrees and start again. 2.Discuss with commercial power-supply company. 3.Change the cable to a larger size. 4.Change the damaged parts. 5.Same as item 4. 6.Check the overload circuit. 7.Same as item 4. 8.Solder the pipe cracks and refill the refrigerant.
MIXER DOESN'T WORK.	Mixer motor doesn't work.	<ol style="list-style-type: none"> 1.The capacitor for the motor is damaged. 2.The motor is damaged. 3.Overload protection circuit tripped. 	<ol style="list-style-type: none"> 1.Change the damaged parts. 2.Change the damaged parts. 3.Check the overload circuit.
OVERLOAD INDICATOR ON OR SWITCHED ON FREQUENTLY	The system over loaded.	<ol style="list-style-type: none"> 1.Too much water and less sugar in ice cream formula. 2.Ice cream is made too harder. 3.Gearbox is damaged. 4.Overload protection circuit tripped. 	<ol style="list-style-type: none"> 1.Change the formula to proper amount of water and sugar. 2.Adjust the hardness of ice cream. 3.Repair the gearbox. 4.Check the overload circuit.
LOW OUTPUT	It takes too much time to make ice cream.	<ol style="list-style-type: none"> 1.The airflow inlet and outlet is too close to the wall. 2.Lack of refrigerant. 3.Evaporating temperature is not high enough. 4.The piping of refrigeration system is clogged or frozen. 	<ol style="list-style-type: none"> 1.The airflow inlet or outlet must keep away from the wall or any object for good ventilation. 2.Refill the refrigerant. 3.Adjust the expansion valve to proper evaporating 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	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1.Change the related rubber sealing. Tighten the fixing bolts of the discharge block. 2.Change the related rubber sealing. 3.It is normal.
NO ICE CREAM DISCHARGE	Wrong operation	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1.Add material to the basin. 2.Adjust to proper hardness. 3.Fully open the handle. 4.Check the related circuit for the motor. 5.Check the auto travel switch. 6.Mount the screw and start again.

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

Hard Ice Cream Machine

Name	Quantity
Machine Set	1
Discharge Block-Drum Ring	1
Door Ring	1
Ring for Feed Basin	4
Operation Manual	1
Plastic Bag	1