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

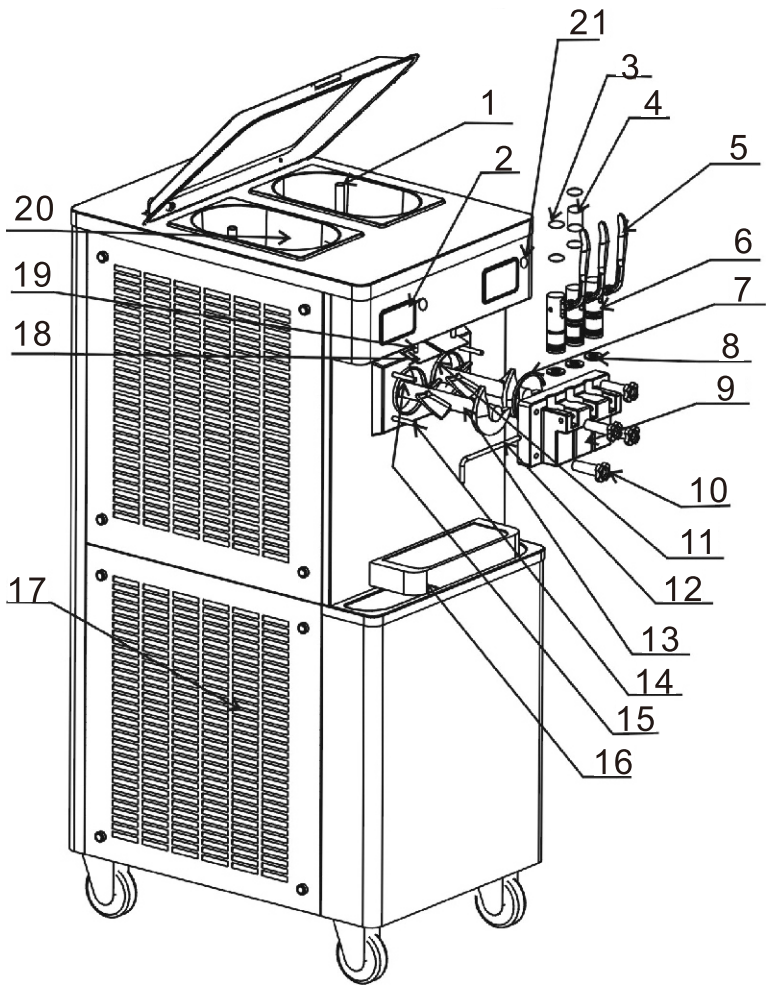
Thank you for your selection of our icecream machines. Our machine series is refrigerating machinery of new generation designed on basis of advanced refrigerating technology. The outward design is artistic and in good taste. All the compressors used for the machine are of international brand. Control system of brand-new digital circuit renders operation easy and performance reliable.

1、Schematic Structure

Name:

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

Structure:



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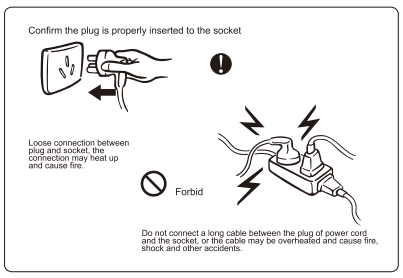
2. Precautions

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℃ 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

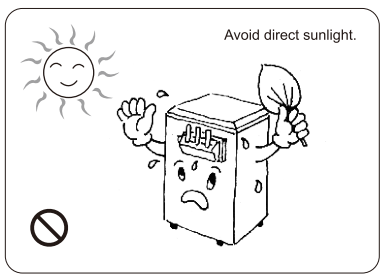
• The power socket must have a earth line or just connect the machine metal case to the earth.

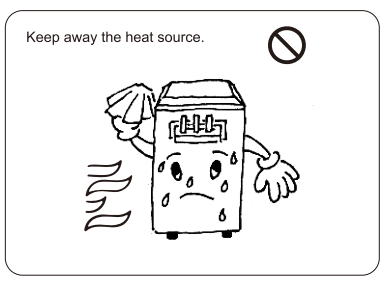
• Power Specifications:

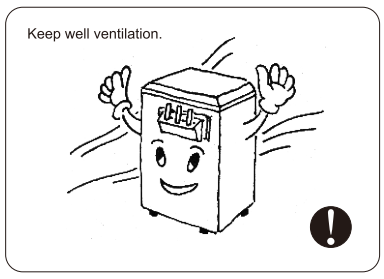
Single Phase: 220V/50Hz,Voltage Fluctuation: 198V-240V.

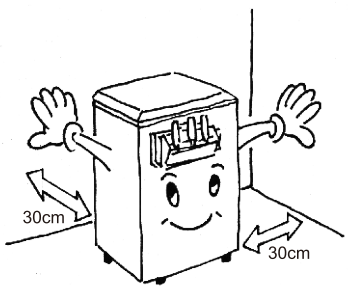
Three Phase: 380V/50Hz, Voltage Fluctuation: 370V-390V.

• Section area of the power conductor must be at









least 2.5m㎡ 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.

3. Operation

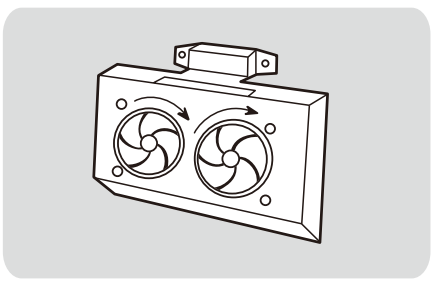
Production

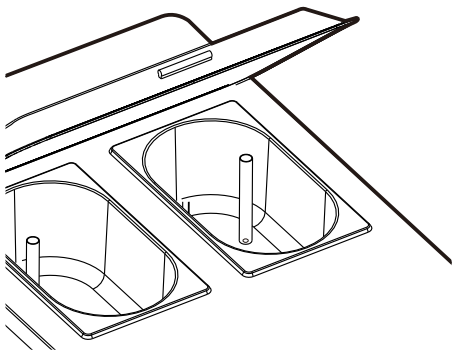
1. Insert two expansion tubes into the feed hole of each feed basin respectively.

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 handls 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 chocked 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.

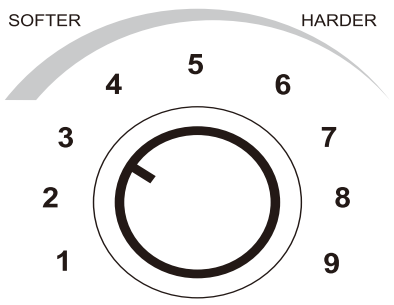
6. Hardness Setting

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 djuster 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.

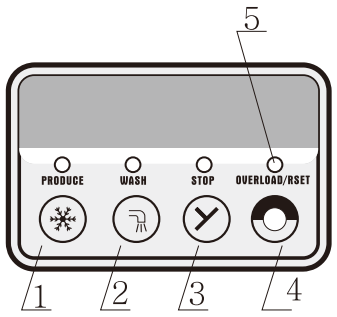
2) The models with hardness adjustment on control panel.
Press the set key for more than 2 seconds, the figure on the display flashes. The system for hardness adjustment in now in set mode.Press +, the figure increases; press ,the figure decreases; there are 1 to 15 steps available for adjustment.



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.

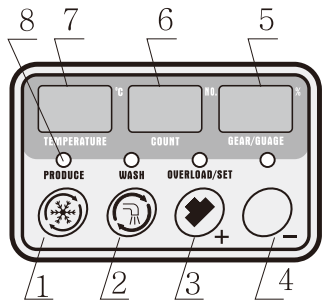
7. Operation On Different Type of Control Penal

A. The model without display



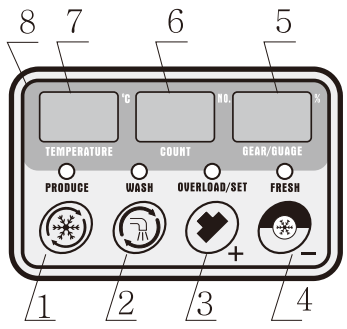
1. PRODUCE Key
2. WASH Key
3. STOP Key
4. OVERLOAD/RESET Key
5. LED Indicator

B. The model with 3 displays but without precooling



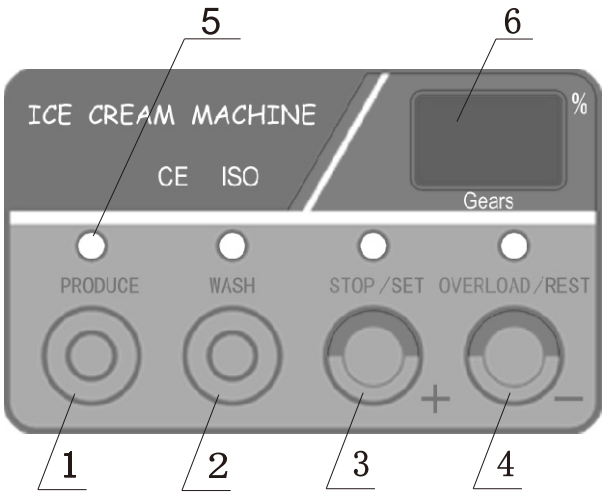
1. PRODUCE/STOP key
2. WASH/STOP key
3. OVERLOAD RESET/HARDNESS SET/+ key
4. key
5. STEP/TIME display
6. COUNTER display
7. Ice Cream Tem. display
8. LED indicator

C. The model with 3 displays



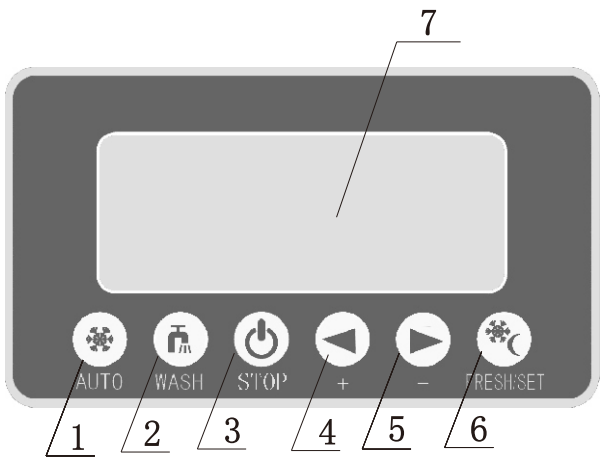
1. PRODUCE/STOP key
2. WASH/STOP key
3. OVERLOAD RESET/HARDNESS SET/+ key
4. /PRECOOLING ON-Off/HARDNESS SET/TEM. SET key
5. STEP/TIME display
6. COUNTER display
7. FEED BASIN PRECOOLING TEM. display
8. LED indicator

D.New B2 control panel



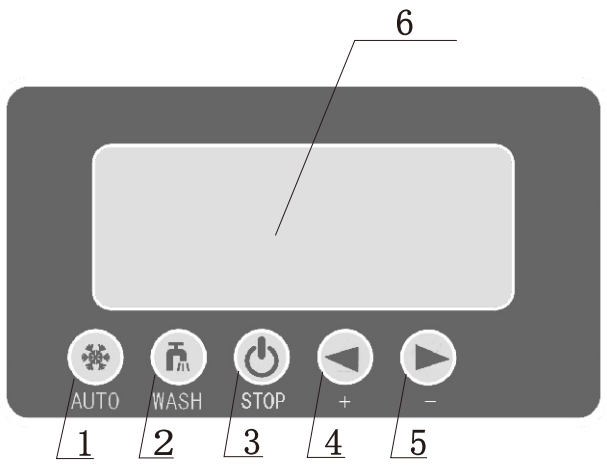
1. PRODUCE KEY
2. WASH KEY
3. STOP/SET KEY
4. OVERLOAD/RESET KEY
5. LED INDICATOR
6. STEP/TIME DISPLAY

F.Six key rectanglar control panel with fresh



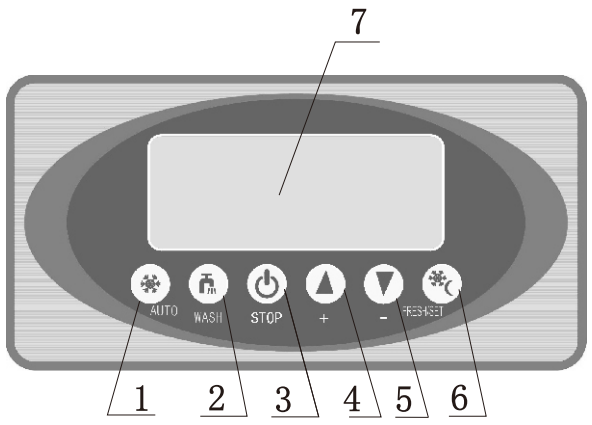
1. PRODUCE KEY
2. WASH KEY
3. STOP KEY
4. GEARS+ KEY
5. GEARS- KEY
6. FRESH/SET KEY
7. DISPLAY

E.Six key rectanglar control panel without fresh



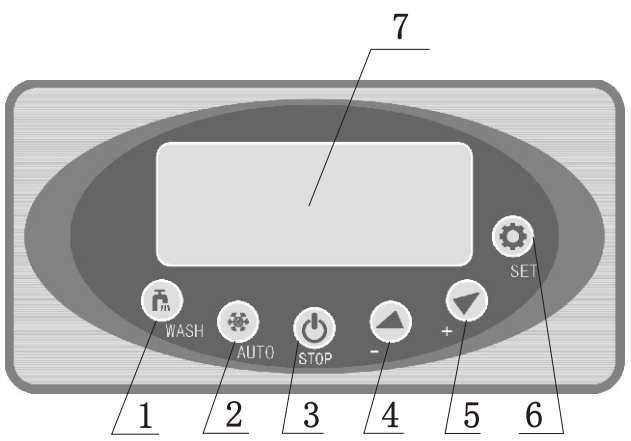
1. PRODUCE KEY
2. WASH KEY
3. STOP KEY
4. GEARS+ KEY
5. GEARS- KEY
6. DISPLAY

G.Six key ellipti control panel with fresh



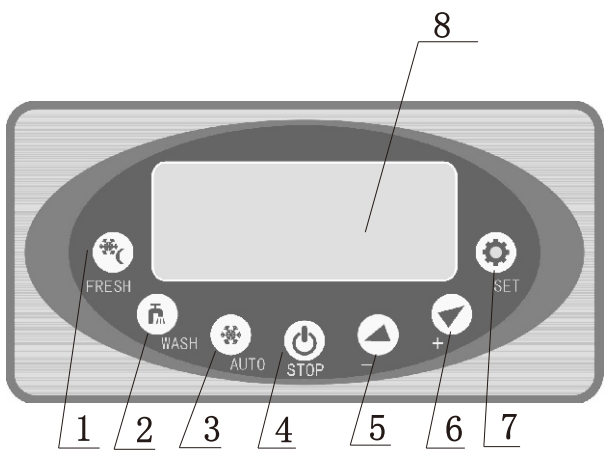
1. PRODUCE KEY
2. WASH KEY
3. STOP KEY
4. GEARS+ KEY
5. GEARS- KEY
6. FRESH/SET KEY
7. DISPLAY

I.Seven key ellipti control panel without fresh



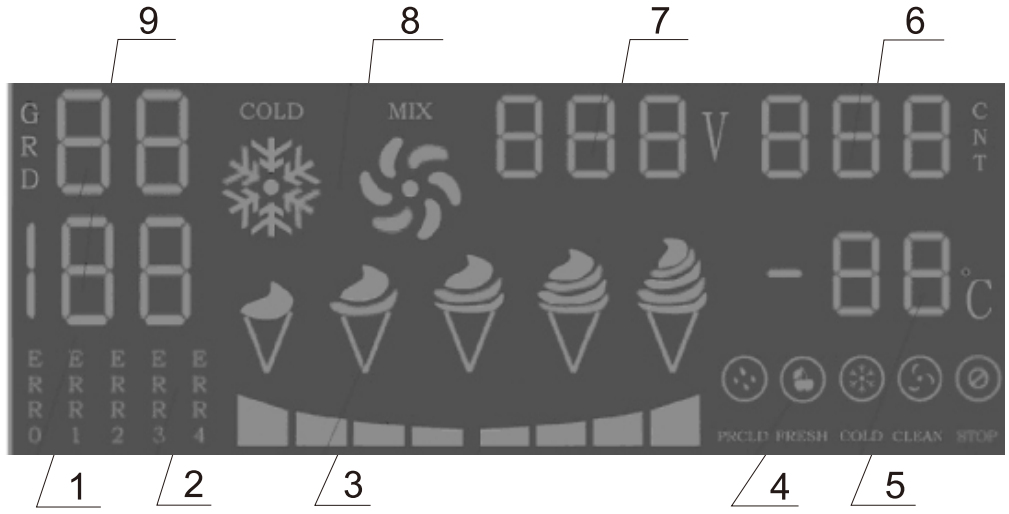
1. WASH KEY
2. PRODUCE KEY
3. STOP KEY
4. GEARS- KEY
5. GEARS+ KEY
6. SET KEY
7. DISPLAY

H.Seven key ellipti control panel with fresh



1. FRESH KEY
2. WASH KEY
3. PRODUCE KEY
4. STOP KEY
5. GEARS- KEY
6. GEARS+ KEY
7. SET KEY
8. DISPLAY

J.English LED display



1. PRODUCTION PROGRESS 2.ERRORS 3.ICE CREAM CONDITION

4.WORKING CONDITION 5.TEMPERATURE 6.COUNT

7.VOLTAGE 8.COOLING CONDITION 9. HARDNESS

Fault analysis and solve

When the system is not normal,the system will be stop all output and show the fault code.And the buzzer sound on.And the details explain as follow.

Fault message	Fault reason	Solution
High pressure protected	1.the pressure of the compressor is over high 2.the pressure testing swich of compressor damage	1.adjust the compressor 2.change the pressure testing switch
The ingredient in hopper not enough	1.ingredient not enough 2.the testing switch of the ingredinent is damage	1.add the ingredient to normal 2.change the testing switch of the ingredient
Overtime for ice cream hard	1.the hardness set too high 2.fault for cooling system	1.adjust the motor 2.repair the cooling system
Overcurrent protected	1.fault of motor 2.hardness set too high,so that ice cream too hard to block the cyliner	1.change the motor 2.adjust the suitable hardness
Volt unnormal	The input volt is too low	Add voltage stabilization
Input power,nothing display	1.the plug into the socket no good 2.the line of electronic board not connect no good 3.fuse broken 4.electronic board broken	1.check the power normal or not 2.connect the electronic board with control 3.change the fuse 4.change the electronic board

The user of the control panel button:

1.press produce button,machine is goin g into cooling situation,press stop butto n,machine stop cooling.Press wash butt on is in wash situation.

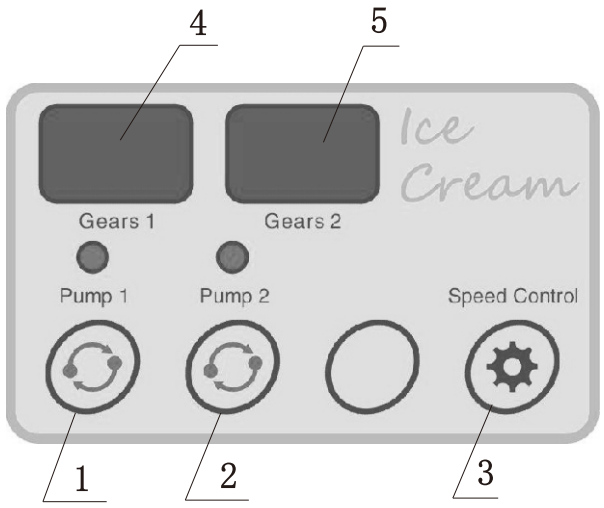
2.press wash button,machine is going in to wash situation,press stop button,mac hine stop wash.Press produce button is in cooling situation.

3.press INC or DEC can adjust the hardn ess.Can adjust from 1-15.

4.keep press the set button for 5 second s,going into the setting,the volt will sho w three code,if show P00 ,for the adjust ment of the temperature,if show P01 for the adjustment for ice cream count.Whe n the volt area show P00,go into the tem perature setting,the ice cream counter area show the temperature value,press INC and DEC can adjust the tempreratur e range 4-10℃,when the volt area show P01,then into ice cream count adjust,ic e cream count area show the ice cream count,if you want to clean the number to 000,press INC and DEC button together at the same time,and clean the ice crea m count to 000.

5.press fresh button,machine is going in to fresh、cooling ,press fresh button aga in,machine stop fresh、cooling system.

K.Rainbow control panel



1. PUMP 1 PRODUCE KEY
2. PUMP 2 PRODUCE KEY
3. SPEED CONTROL KEY
4. GEARS 1 DISPLAY
5. GEARS 2 DISPLAY

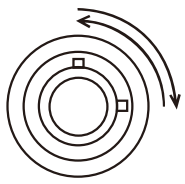
Control panel user manual:

(1)、Press pump 1 button, the system of rainbow run,if you push the handle of ice cream,then the ice cream with rainbow, press the pump 1 again ,rainbow system stop.

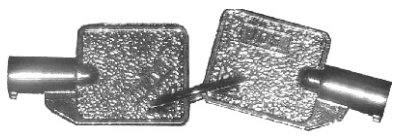
(2)、Press pump 2 button, the system of fillings run,if you push the handle of ice cream,then the ice cream with fillings, press the pump 1 again, fillings system stop.

(3)、The speed control button is to control the jam , it is a cycle gears button, total is 100 gears, the d isplay is show the gears of pump 1 and pump 2.Yo u press one time the speed control button.the gear s will show one more in the display(100 is the min mum),when you have up to 100 gears in the displ ay,then press the speed control again,it will be bac k to 1 gears . If you keep pressing on thespeed con trol,then will increase the gears number quickly.

D.Electronic Lock-switch for Batch Number Reset

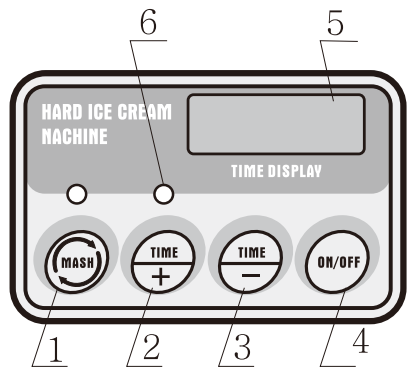


Key for Lock Switch



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

4. Washing Of The Machine

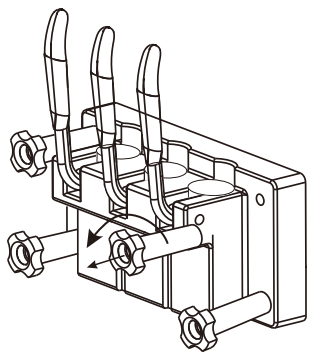
1. Washing Before Production

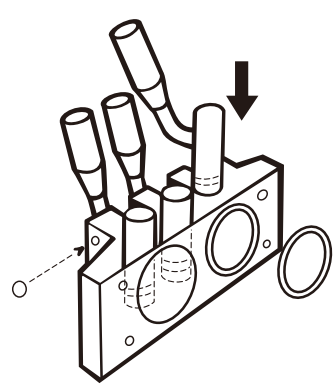
■ Turn the plastic set nuts for the discharge block, totally 4 nuts, in counter clockwise direction, dismount the discharge block

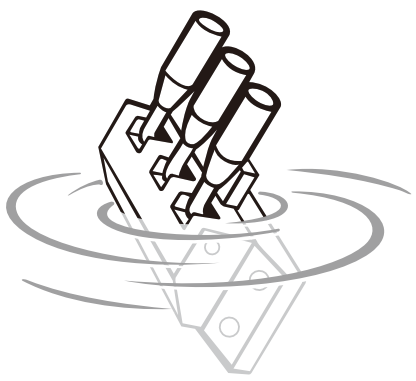
■ The temperature of the feed stock must be between 5℃~40℃. If the temperature is out of the range, it will do harm to the machine.

■ Wash the feed basin, stirrer shaft and expansion tube with detergent liquid or disinfectant liquid.

■ Put the discharge block in one of 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.

5. 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.

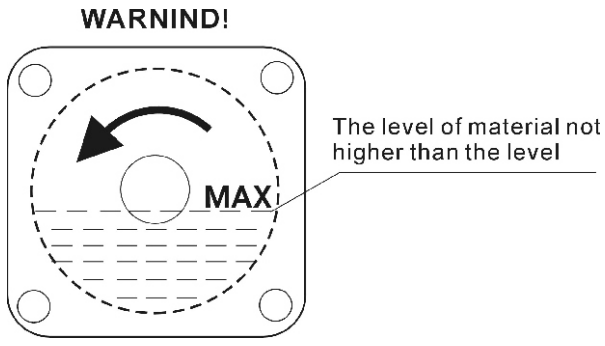
4. If the machine is to lay idle for long time, push the main switch to OFF position. The machine will be in standby mode if the power is On.

5. Don't put any brush to clean inside the hold.

6. Models for Hard Ice Cream Machine

1. Production

■ Fill the pulp from the feed hole of the discharge block to the stirrer drum. The level to be filled should not to 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.

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.

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.

3. Washing

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

■ 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

7. Troubleshooting

PHENOMENON	REASONS	ANALYSIS	REMEDY
THE MACHINE DOSE NOT RUN.		**1.**Power Supply Failure. **2.**Power switch is damaged. **3.**No power supply to control circuit **4.**No. DC12V supply **5.**Overload protection tripped.	**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.	**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.	**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.	**1.**The capacitor for the motor is damaged. **2.**The motor is damaged. **3.**Overload protection circuit tripped.	**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.	**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.	**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.	**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.	**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	**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. Tighten the fixing bolts of the discharge block. **2.**Change the related rubber sealing. **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.**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.

8.DIGITAL KEYBOARD:

Error code	Error meaning	Failure	Solution
E00	Power supply voltage is too low	Input voltage is too low	Configuring Power Regulator
E01	Compressor pressure protection switch alarm	1 、 Compressor is high pressure ; 2、Compressor pressure detection switch is damaged	1、Checking Heat Dissipation 2 、gas inside compressor is too much 2、Replace the pressure detection switch
E02	Insufficient Cooling	Cooling system failure	1. check ice cream material proportion 2. Cooling system overhaul
E03	Frozen -cylinder	1. ice cream material moisture content is too high 2. Freezing cylinder cooling mode is initiated when no material	1. Please follow the instructions for use ratio of ice cream ice cream powder material 2. Freezing cylinder material is strictly prohibited without the cooling mode starts
E07	Shutdown Timeout	1.hardness of ice cream is too high 2.ice cream material proportion is wrong 3. Cooling system Failure	1.Adjust the right hardness 2 use the correct proportion of material 3. Cooling system overhaul
E08	Overcurrent Protection	1.Motor Failure 2. Hardness adjustment is too high, therefore the ice cream being too hard and can cause the blender to get stuck	1.Replace motor 2.Adjust the hardness adjustment setting
	Ice cream counter displays “ ___”	1. Empty Hopper 2. Switch failure	1. Insert recipe until the counter works regularly 2. Replace switch
	Temperature display window displays “ -99”	1 . Temperature sensor is disconnected 2 . Temperature sensor is damaged	1.Reconnect the temperature sensor ; 2 . Replace temperature sensor
	Temperature display window	1. Temperature sensor short circuit	1 . Replace temperature sensor

	displays “ 099”	2. Temperature sensor is damaged	
	No display after powered on	1. Power is not plugged in 2. Circuit board is not plugged in 3. Bad fuse 4. Circuit board failure	1. Check if the power supply is normal 2. Re- plug the display controller board 3. After eliminating the cause of the bad fuse, replace the fuse 4. Repair the circuit board

9.LED KEYBOARD

Error code	Error meaning	Failure	Solution
ERR0	High-voltage protection	1.Compressor High pressure 2.Compressor pressure detection switch is damaged	1、Adjust the gas inside the compressor 2、Replace the pressure detection switch 3, make sure the machine well ventilation
ERR1	Lack of material inside the tank	1. Lack of material inside the tank 2.Shortage detection switch failure	1. Add ice cream material, until normal 2. Replace shortage detection switch
ERR2	Forming timeout	1.hardness too high 2. ice cream material proportion is wrong 3. Cooling system failure	1.Adjust the right hardness 2. Please follow the instructions for use ratio of ice cream ice cream powder material 3. Cooling system overhaul
ERR3	Overcurrent protection	1. Motor is defective 2. hardness adjusted so high that the resulting blocked too hard ice cream mixer	1. Replace the motor 2. Adjust the appropriate hardness
ERR4	Abnormal voltage	Input voltage is too low	Configuring Power Regulator
	No display after power on	1.Power is not plugged in 2.Circuit board is not plugged in 3.Bad fuse 4.Circuit board failure	1.Check if the power supply is normal 2.Re-plug the display controller board 3.After eliminating the cause of the bad fuse, replace the fuse 4.Repair the circuit board

REMARK: Repairing the circuit board must be carried out by professionals