Soft Ice Cream Machine

User Manual

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A.
Main Characters and Use
The Two Thousand Brand ice-cream machine, developed by our factory , is a new kind of refrigeration food machine. The machine is beautiful in appearance, light in weight, fast in refrigerating and automatic in control. The major parts of the machine are introduced from the products of foreign famous factories, which are of guaranteed quality. The ice-cream produced by our machine is delicious and good to eat. The machine is widely used in hotels, restaurants, individual cold drink stores, factories, mines and other enterprises, schools and so on.

B.
Major Technical Data

Name	Figures / Type	Power	Rating (kw)	Refr	Filling Amount(kg)	Capacity (kg/h)	Net weight(kg)	Measurement(mm)
TT-I94A TT-I94B	BQL-25/2	220v/50hz	2.8kw	R22	1.4kg	20-25	160	750x546x1325
TT-I94C TT-I94D	BQL-20/2	220v/50hz	2.6kw	R22	1.2kg	16-20	145	750x546x1325
TT-I94E	BQL-30/2	3-380v/50hz	3kw	R22	1.4kg	26-30	165	750x546x1325
TT-I94F	BQL-38/2	3-380v/50hz	4.2kw	R22	3kg	34-38	200	750x670x1425

Note:
1. The capacity is measured at the environmental temperature 25C and the ingredients temperature 7C.

2. Type TT-I94B and Type TT-I94D are equipped with computer controlled circuits.

C.
Points for Attention
1. It is unavoidable that the machines are vibrated during transport and handling .Be sure to leave the machine untouched for over 24 hours before operation in case of the affection on the performance of the compressors.
2. The machine shouldn't be operated until the reliable earth wire is connected to it. To ensure the ability for overcurrent, the section area of the power cable must be at least 2.5mm.
3. The machine should be placed in a well-ventilated dried position. Leave an over 50cm space round the machine for air flow. Keep the machine away from direct sunlight and heat sources.

D.
Preparation Before Operation
Before operation, the parts touching food such as the discharge throat block, the stirrer drum, the feed container and so on (Fig.). Use the accessory tools to dismount the discharge throat block and get the stirrer shaft out and put them into clean water. After that , wash the feed container, the stirrer drum, the bulk tube, the discharge throat block and so on with clean water. Soak the discharge throat block into the clean water, push and pull the handle several times . Dry the above-mentioned parts with towel and then install the machine in order . After that, insert the bulk tube, the inner and outer hole of which are coaxial, into the discharge hole of the feed container.

E.
Operation
1. Pour the prepared cooled ice-cream materials into the feed container. (In case of three-color ice-cream,prepare ice-cream materials of two colors and pour them separately into two feed containers.)
2. In order to let the prepared ice-cream materials discharge smoothly, make sure that the stirrer drum is 4/5 filled with materials before electrifying and running the machine. About 10 minutes after the production state of the machine, the desired ice-cream is done.
3. Pulling the middle handle of the discharge throat block can let the mixed ice-cream out while pulling the ones on both sides can let single color ice-cream discharge.
4. To make the ice-cream bulky, adjust the outer tube of the bulk tube .If the top hole and the bottom hole are coaxial, the bottom hole will be completely open. If the bottom hole is sealed, the ice-cream materials in the container cannot flow into the stirrer drum. Depending on fast or slow discharging speed, adjust the bottom hole of the bulk tube to allow more or less material and air flow into the stirrer drum so as to obtain a better bulky effect of the ice-cream.

F.

Function

1. The function of Type Type TT-I94A, Type TT-I94C, TT-I94E, Type TT-I94F

a) Adjusting the Hardness of Ice-cream

The hardness of ice-cream of the machine of the types mentioned above has been set before delivery. In case of readjusting the hardness, dismount the side-panel, adjust the hardness adjustor in the electrical box. When the ice-cream reaches the set hardness, the red hardness indicator will light up and the machine will stop. The machine will automatically start to run again in 7 minutes or so. Type 938 is of high-power refrigeration. Due to great output, the machine will be frequently overloaded if the discharge is not continuous. Therefore, the machine has no function of automatic restoration to production, but it is equipped with manual reset button. Pressing the button can start the machine to produce ice-cream again when necessary.

b) Continuous Production

When the ice-cream reaches the set hardness, the red hardness indicator will light up and the machine will stop. When necessary, press the continuous production button to start the machine to restore to produce ice-cream.

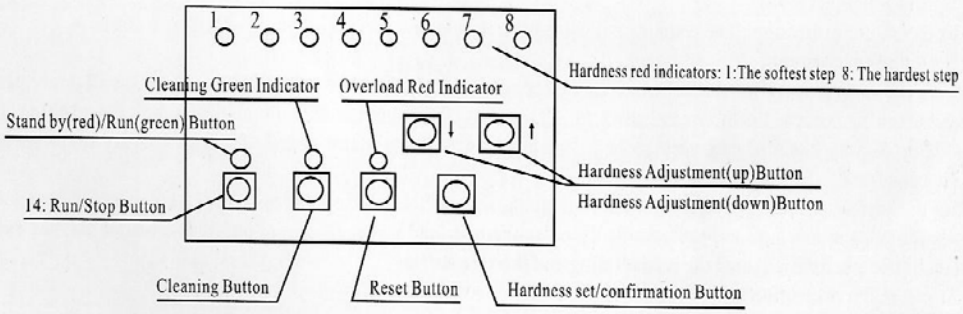
c) Cleaning Function

When the machine needs cleaning or to race, turn the command button to the " Cleaning" position and the stirrer motor will run. When the cleaning is going on, pour clean water into the feed container and let the water into the stirrer drum. Let the machine run 3 to 5 minutes. After the remaining ice-cream materials in the stirrer drum melt, let the water out.

d) Automatic Reset (Machines with travel switches)

When the machine is electrified , in any case, if any handle is pulled, the stirrer motor can be started.

2. The Function and Instructions for Operation of Type TT-I94B, Type TT-I94D



1. Electrified State : After the machine is electrified, the STAND BY red indicator on the control panel will light up, indicating that the machine is in STAND BY state. (ready for running). (Press the concerned command buttons and the machine will be in various running states.)

2. RUN/STOP Button : When the machine is in the STAND BY state, press the RUN/STOP button and the machine will be running. When the machine is running, press the RUN/STOP button and the machine will stop and be in STAND BY state again.

3. The original hardness set of the computer-control panel is set at Step 5. So, after the machine is electrified (Without changing the set of hardness), press the RUN/STOP button and the machine will be running with the hardness set of Step 5. Meanwhile, the red indicator of Step 5 and the green indicator for running will light up. (After the machine is electrified, if the hardness set is changed and confirmed, and the machine will be running according to the changed and confirmed hardness.)

4. Hardness Red Indicators : During the normal running, the hardness red indicator lights up. When the hardness of the ice-cream in the machine is changed during running, the hardness set is indicated by the Step indicators from the low step to the high step. The indicator will flash every second till the machine is overloaded and the indicators go out. This function can inform the machine operator of the current actual hardness set of the ice-cream in the machine and of the proper discharge time so that the customers' waiting time can be shortened.

5. Hardness setting and confirming for Ice-cream
(Hardness setting and confirming for ice-cream can be done any time after the machine is electrified.)
a) Press the HARDNESS SET/CONFIRMATION button and the hardness indicator will flash every second, indicating the current hardness.
b) Press the concerned ^ or ˇ (hardness adjustment) button intermittently . Every time the button is pressed , the concerned hardness indicator will light up. Don't stop pressing the button until the desired hardness is reached.
c) Press the SET/CONFIRMATION button once more to confirm the hardness, and the hardness indicator will light up during the running while it will go out in the state of STAND BY. After the confirmation of hardness, the machine will be running according to the new hardness set.
d) After the hardness adjustment mentioned in b) ,if the confirmation mentioned in c) is not done , the hardness will be reset automatically as the previous set .
6. Reset : Automatic reset and manual reset are available. During the normal running , when the hardness of ice-cream in the machine exceeds the set hardness, the machine will automatically enter the overload state, and the overload red indicator will flash every second. The machine will stop the refrigeration first and then the stirring. As soon as the machine enters the overload state , it will automatically reset in 7 minutes, or the RESET button can be pressed manually to let the machine reset to run normally again. But due to the limitation of the safe running characteristics of the refrigeration system, the manual reset shouldn't be done until the machine is in overload state for 2 minutes.
7. Cleaning :
The cleaning shouldn't be done until the machine has stopped to be in the STAND BY state . Press the CLEANING button, and the CLEANING indicator will light up, indicating that the cleaning is going on. Press the RUN/STOP button and the CLEANING green indicator will not light up and the machine will enter the STAND BY state.

G.
The Protection Function of Type TT-I94B, Type TT-I94D
Three kinds of protection are available for Type TT-I94B, Type TT-I94D. They are as follows :
a) Overloadproof for the stirrer motor
b) Button adherenceproof
c) Stirrer motor protection : The machine will stop when the electric current of the stirrer motor is over 7A.
1. Button adherenceproof :
During the normal operation, if the button is pressed continuously for 10 seconds, but the button is still not released or the touching point in the button are stuck for 10 seconds. The computer will automatically stop the machine. The indicator of Step 2 will flash every second, accompanied with the alarm sound of a buzzer every other second.
2. Overloadproof :
After the hardness is set, during the normal running, as soon as the hardness of ice-cream in the machine is over the set hardness, the machine will automatically enter the overload state . The overload red indicator flashes every second . The machine will stop the refrigerating and then the stirring.
3. Stirrer motor protection :
Besides overloadproof, when the machine is in the overload state and cleaning state, and the electric current of the stirrer motor is over 7A for some reason, the machine will automatically stop running. The hardness indicator for Step 1 will flash every second, accompanied with the alarm sound of a buzzer every other second .
4. When the protection performance of a) and c) occur, after removing the factors causing the protection performance mentioned in a) and c) , the RESET button can be pressed to do the failure reset. After the reset, the machine will be in STAND BY state.

H.
Recipe for Reference
1. Whole milk powder : 1.5kg 2. Condensed Milk :2kg
Agar : 0.01kg White Sugar : 0.7kg
Edible Starch : 0.15kg Isinglass : 0.12kg or Agar :0.01kg
White Sugar : 1.5kg Flavoring Essence : adequate
Water : 10kg Edible Starch : 0.12kg
Water : 10kg
3. Fresh Milk : 3kg
Whole Milk Powder : 1kg
Edible Starch : 0.12kg
Agar : 0.01kg
Flavoring Essence : adequate
White Sugar : 1.5kg
Water: 10kg

I. Troubleshooting

Trouble	Reasons	Analysis	Disposal
No Refrigeration	1 The compressor does not run.	A: The starter or capacitor for the compressor is defective.	A,B: Change the defective parts.
		B: The overloadproof of the compressor is defective.	
		C: Power voltage is low or section area of the power cable is too small to cause the low voltage.	C: Contact the power supply department to ask for help or increase the cable size for larger section area.
	2. The cooling system is blocked by ice or foreign material.	Moisture of foreign material enters the system.	Remove moisture or foreign material from the system.
	3 . Refrigerate Leaking	The chilling system is not properly sealed.	Repair af ter leakage checkup. Vacuum the system and fill the refrigerant again.
The ice-cream is too thin	1. The refrigerant is not enough.	A: Not enough refrigerant is filled in the system. B: The machine has been used for a long time. The leakage is over normal annual leakage volume.	Refill the system with refrigerant. (The leakagemust be repaired before refilling.)
	2.Improper evaporating temperature of refrigeration.	The heat expansion vale is not properly adjusted.	Adjust the valve so that the evaporating temperature is in its best state.
Material or water leakage	1. Leaking from throat block.	A. The plug gasket or the square gasket between the drum and the throat block is defective.	Change the defective gaskets.
		B. The fixing bolts for discharge throat block are not tight or not properly mounted.	Mount the throat block in proper position and tighten the bolts.
	2. The gear box is leaking.	The Y-gasket or O-ring for the gear box is defective.	Change the damag ed gaskets.
No product discharge	1. The ice-cream is too hard.	A. The materials contain too little sugar.	A. Strictly control the proportion according to the recipe.
		B. Improper overloadproof adjustment.	B. Turn to the professional personnel for the adjustment of the overloadproof.
	2. The stirrer shaft does not run.	A. The motor is damaged.	Repair or change the damaged parts.
		B. The control circuit is defective.	
		C. The transmission belts are too loose.	
		D. The gearbox is defective .	
	3.Improper operation.	The front part of the ice-cream in the stirrer drum is hard while the back is soft, so the squeezing force is not strong enough.	Every time the machine is started to produce ice-cream, make sure that the machine shouldn't be electrified and run until the stirrer drum is 4/5 filled with materials.

J.

Maintenance

1. Users must observe the instructions for use and points for attention.

2. If any trouble is met with during the use, please contact our factory of retail dealers. Please inform us of your trouble in detail in order to be served better.

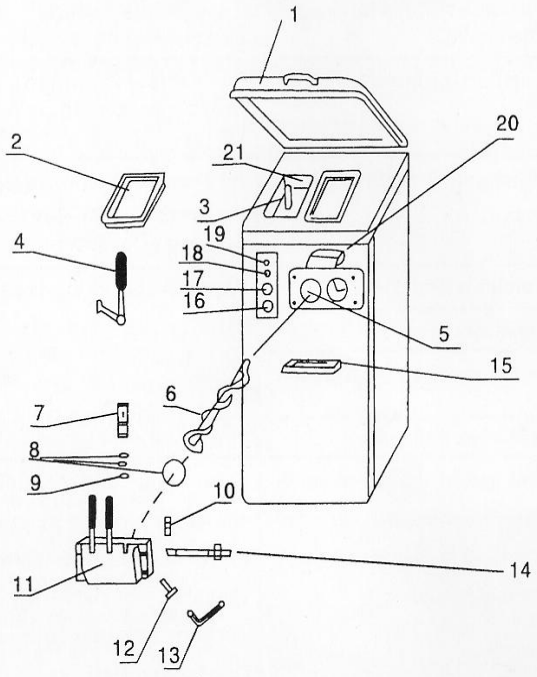
3. From the purchasing day (The purchasing invoice is used as a voucher.) ,within one year, free maintenance is available in our factory or retail shops. The cost of the changed parts will be charged depending on the damage. Beyond one year, the maintenance fee will be charged.

K.

Packing List

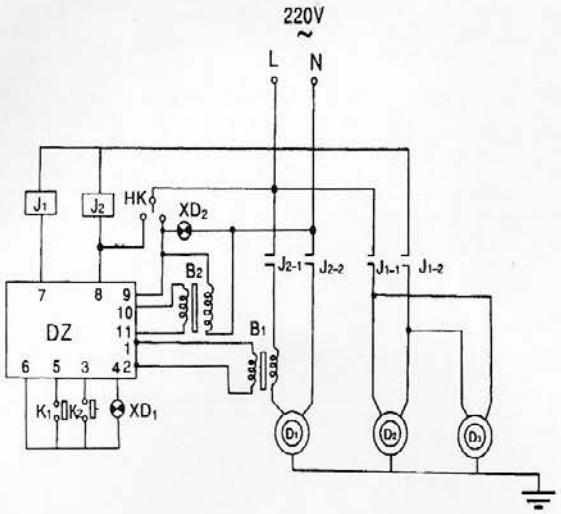
No.	Name	Type TT-I94A/ TT-I94B	Type TT-I94C / TT-I94D TT-I94E / TT-I94F	Remarks
1	Main Engine	1	1	
2	Hexagon Key	1	1	
3	Radial Piece	3	3	
4	O-ring ¢23x3.5	3	3	
5	O-ring ¢26x3.5	3	3	
6	Square gasket ¢ 88x4	2		
7	Square gasket ¢100x ¢ 92x4 2		2	

The Structure Diagrammatic Sketch of Types TT-I94A / TT-I94C / TT-I94F



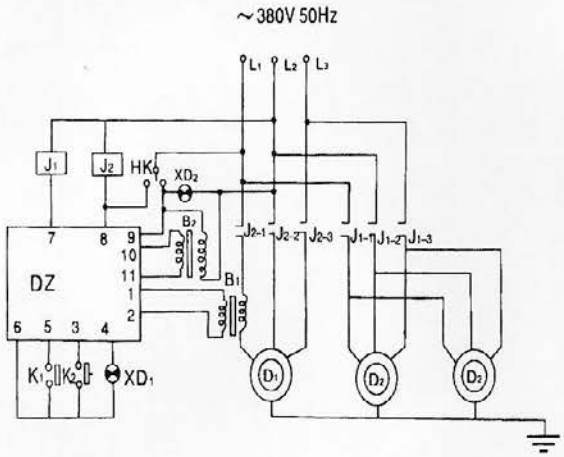
1.Top Cover
2. 2.Feed Hopper Lid
3.Bulk Tube
4.Handle
5.Stirrer Drum
6.Stirrer Shaft
7.Plug
8.O-ring
9.Radial Piece
10.Nut
11. Discharge Throat
12.Bolt
13. Hexagon Key
14.Horizontal Bar
15.Discharge Outlet
16.Continuous Production Button
17.Overload indicator
18.Production Indicator
19.Command Switch
20.Limit Switch Assembly (Travel Switch)

The Circuit Diagram of Types TT-I94A / TT-I94C

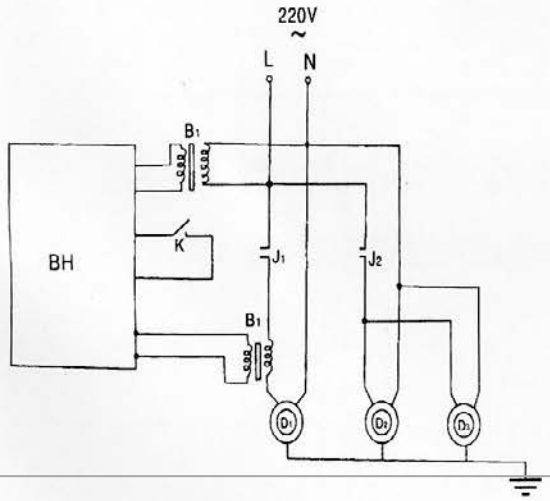


DZ---electronic circuit plate
HK---command switch
K1---travel switch
K2---reset switch
B1---current sensor
B2---mains transformer
XD1---overload indicator
XD2---Production indicator
D1---stirrer motor
D2.---compressor
D3---fan motor
J1 ,J2---alternating contactor

The Circuit Diagram of Types TT-I94E / TT-I94F



The Circuit Diagram of Types TT-I94B / TT-I94D



BII---computer controller D3---fan motor
K---Travel switch J1, J2---direct current relay
B1---mains transformer
B2---mains sensor
D1---stirrer motor
D2---compressor
D3---fan motor
J1,J2---direct current relay

Type Name :

Size :

Net Weight:

Gross Weight:

Packing Personnel:

Inspector:

Delivery Date :

Delivery No. :

We reserve the right to improve the products mentioned above. Any improvement of the products will not be informed of.

Caution: No children touching due to danger.