

# Ice Cream Machine

## D900HP USER MANUAL



**DONPER** USA



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# I. Safety Cautions



## Notice

### Notice:

- ◆ To prevent the water and other conductive liquids flow into the machine
- ◆ Carrying or moving the machine, the maximum tilt angle is 45 °
- ◆ When the machine is working, no stick or something like that put into the air grid or the dispenser door spout.
- ◆ When there is no mix or water in the freezing cylinder, the machine is not allowed to work, failure to follow this instruction may damage the beater.
- ◆ The machine is recommended to use in an indoor environment, keep it dry and clean with good ventilation and heat dissipation. Avoid the heat source, direct sunlight and the place where water splashing. The distance between the air grid and the wall or some similar barrier should be over 50cm.

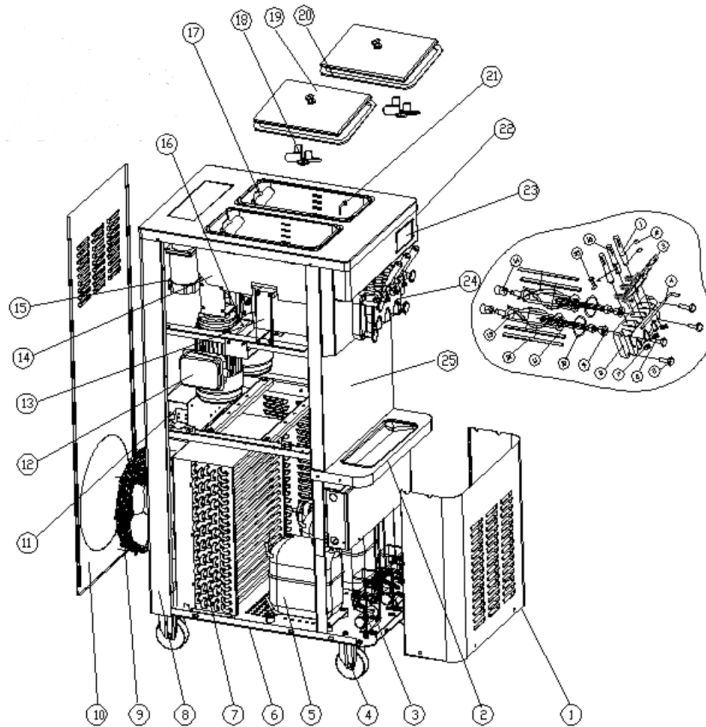
### Safety Warning:



## Warning

- ◆ This machine must be operated by professional or well trained staff.
- ◆ For safety, ensure the ground connection is in good condition.
- ◆ Select the proper power supply according to the voltage and power on the nameplate, the deviation of operating voltage should not be greater than  $\pm 10\%$ , wiring job should be operated by professional staff
- ◆ To avoid any danger, please make sure the power cord is replaced by maintenance staff or similar professional personnel when it's damaged;
- ◆ Please make sure the machine is repaired by maintenance staff or similar professional personnel when failure occurs;
- ◆ Do not attempt any repairs unless the main power supply to the soft serve machine has been disconnected. Failure to this instruction may result in electrocution.
- ◆ Don't wet or sprinkle the liquid onto the plugs, motors or other electrical parts so as to avoid electric shock;
- ◆ The foam layer is inflammable and should not be discard at random or disposed by users. The materials should be recycled and dealt with by specified departments according to related rules by the country.

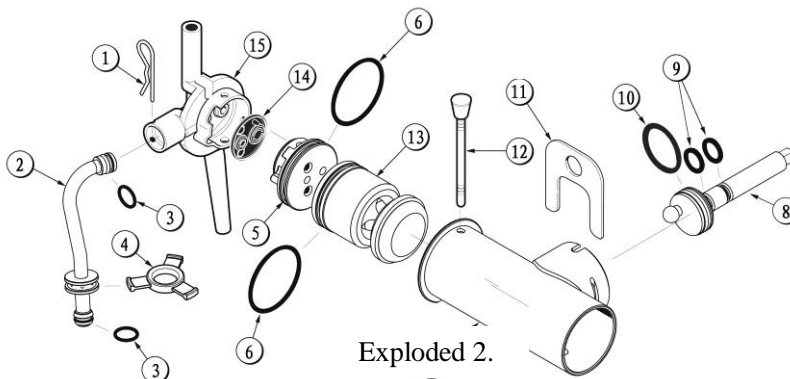
## II. Exploded Diagram



No.	Part name	No.	Part name	No.	Part name
1	Front Panel(Lower)	11	Inverter	21	Mix Level Sensor
2	Drip Tray	12	Worm Gear Motor	22	Operation Panel
3	Compressor Accessories	13	Agitator Motor	23	Touch Screen
4	Wheel	14	Evaporator	24	Dispenser Door Assembly
5	Compressor	15	Air Pump Motor	25	Front Panel(Upper)
6	Framework	16	Proximity Switch		
7	Condenser Assembly	17	Air Pump		
8	Corner Supporting Bracket	18	Hopper Agitator		
9	Fan Motor	19	Tank Cover		
10	Rear Panel	20	Tanks Cover Gasket		

表 1

### Air Pump Exploded Diagram



Exploded 2.

No.	Part name	No.	Part name	No.	Part name
1	Pin for Feed Tube	6	O-ring for Piston	11	Pump Clip
2	Feed Tube	7	Pump Cylinder	12	Pin for Pump
3	O-ring	8	Drive SHaft	13	Piston
4	Ring-Check	9	O-ring 12.5x3.55	14	Valve
5	Inlet Valve	10	O-ring 36.5x3.55	15	Pump Cover

### III. Installation

#### A. Installation

1) Open the wooden case. and then remove the fixing bolt and fixing feet that are at the bottom of the machine. Move the machine to a suitable place. Check the accessories with packing list. The machine must not tilt more than 45° during moving or handling. Note: When the machine is first opened, a small amount of water droplets may stay in the cylinder due to the water left in the pipe when the machine is cleaned in the factory, which is normal and will not affect the performance and service life of the machine.

#### 2) Use environment

Ambient temperature: 10 ~ 35 °C Humidity: ≤ 90% relative humidity

a, A fixed horizontal position to ensure the normal operation of the machine, without accidents;

b, Good ventilation and cooling conditions, to avoid heat and direct sunlight. Avoid areas where water splashes may occur, with sides of air in or out over 50cm from walls or similar obstructions.

#### 3) Air Pump Assembly Installation

a、 Inspect the O-ring Of piston should be in good condition before you assemble it onto the piston.( Figure.3)

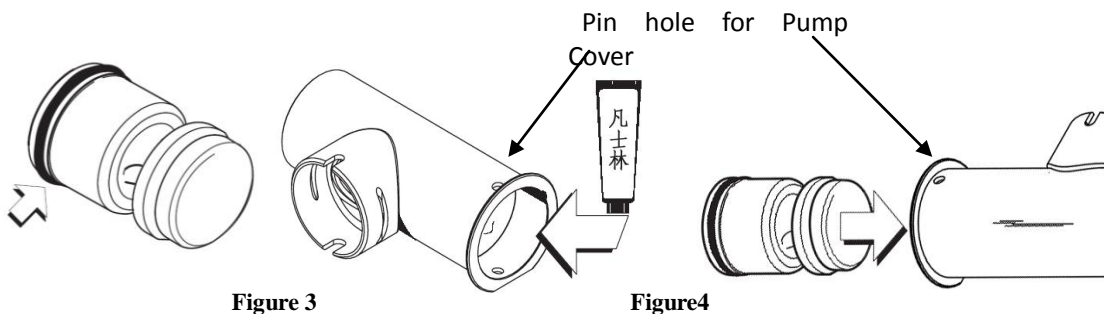


Figure 3

Figure4

b、 Apply lubricant to the inside of the cylinder end, and insert piston into cylinder as the direction of Figure.4

c、 Install the inlet valve. Put the O-ring onto the groove of the inlet valve without lubricant.

Then assemble the inlet valve into the holes on the valve plate. Then put the assembled inlet valve into pump cover. ( Figure.5)

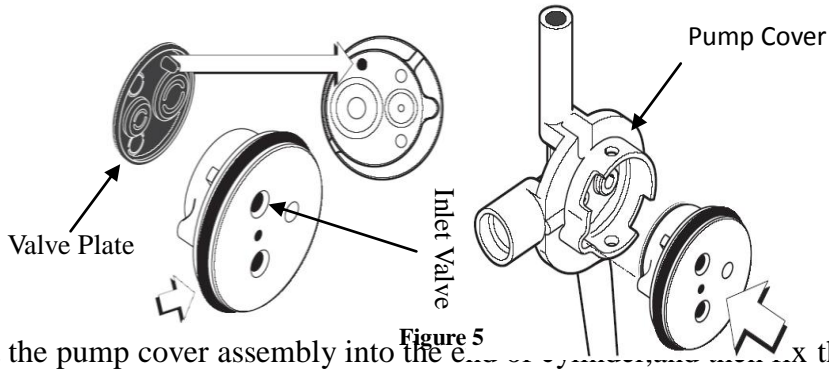


Figure 5

- d、 Insert the pump cover assembly into the end of the mix pump by the pin . ( Figure.6)

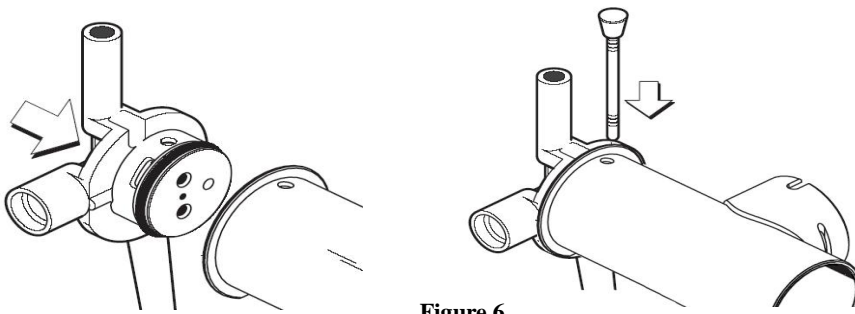


Figure 6

- e、 Put the ring-check into the groove of feed tube. Install the O-ring on each end of feed tube with lubricant. ( Figure.7)

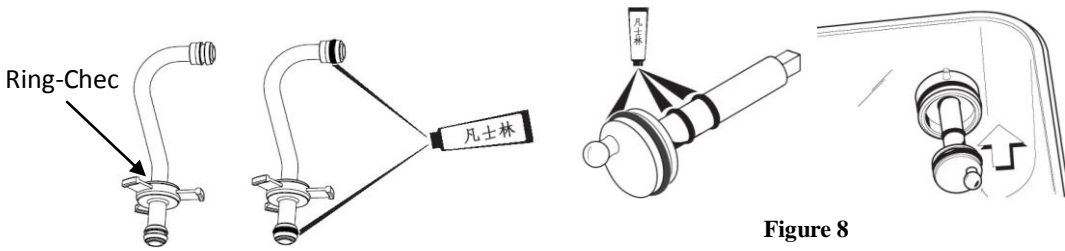


Figure 7

Figure 8

- f、 Install the large O-ring and two smaller O-rings into the groove of drive shaft. Apply lubricant the O-rings and shaft. Don' t lubricate the square shaft end of drive shaft. Insert the square shaft end of the drive shaft into the hole of shaft seat at the rear wall of the mix hopper. ( Figure.8)

- g、 Insert the mix pump assembly into the into the shaft seat. Firstly check the eccentric ball which on the end of drive shaft ,and it must be positioned into the piston groove of pump cylinder. Then put the side connector of pump cylinder onto the drive shaft seat and fix it with pump clip. After that, insert the end of feed tube with ring-check into bottom inlet hole of

hopper. Finally insert the other end of feed tube into the outlet pipe of pump cover and fix it with pin. ( Figure.9)

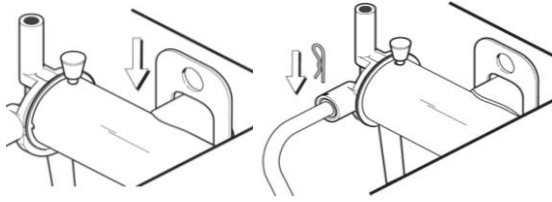


Figure 9

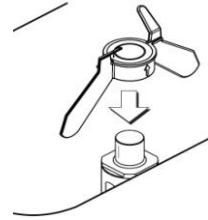


Figure10

h、 Install hopper agitator on the rotating shaft base(Figure 10)

#### 4)Power supply

Power supply voltage:

Power frequency:

198 ~ 242V/1PH

50 ± 1Hz

207-253V/1PH

60 ± 1Hz

3N ~ 380V ± 38V

50 ± 1Hz

a, Confirm the power type and capacity according to the nameplate marked voltage and power.

b, Make the machine power cords connect with the power according to the following requirements, and ensure yellow-green line connect with ground line. Brown line (L) connects to the hot line, blue line (N) connects to the zero line, yellow / green line power supply ground.

c, three-phase power cord provides: yellow / green or green line for the ground, the black line for zero line (or N), the other color line for live wire (L1, L2, L3). The power lines are not allowed to have the same color line.

① For your and others' safety and that of others, make sure that the machine is well grounded.

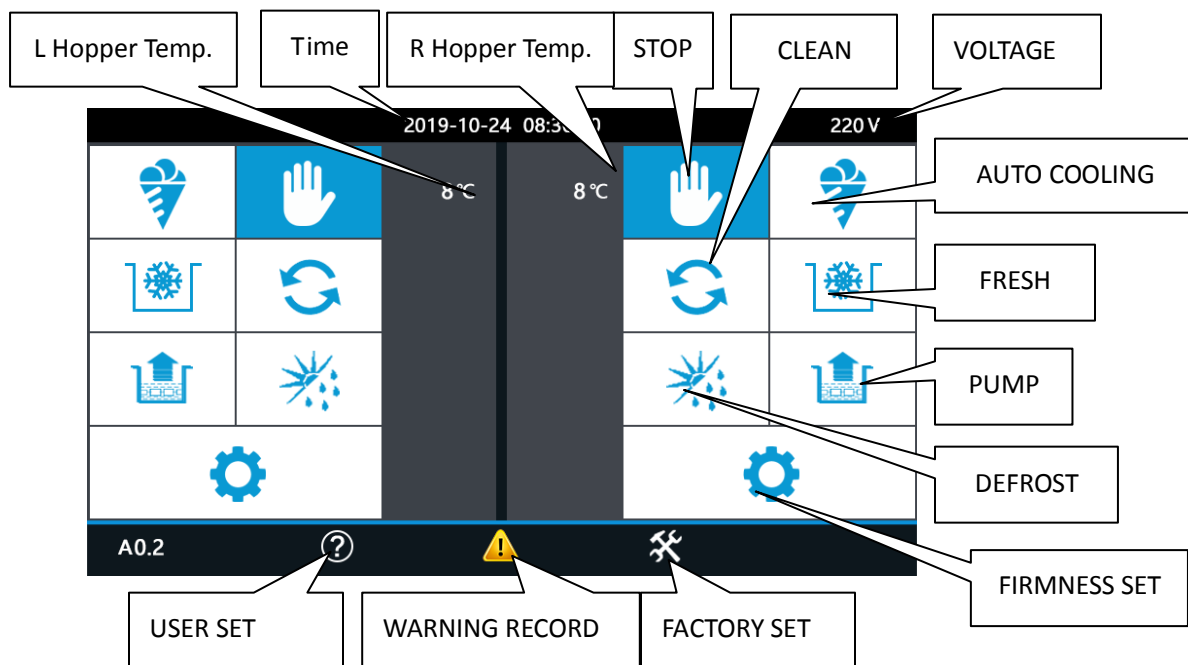
② All external wiring and electrical appliances should be Combined

with national standards.

③ For a machine without a plug, the machine power cord can only be connected to an external power source that contains an air switch and the machine power cord is connected directly to the air switch. If machines rated is less than 2000W, air switches with 16A (single-phase) or 10A (three-phase) should be used. If machines rated is more than 2000W, air switches with 32A (single-phase) or 16A (three-phase) should be used.

## IV. Operation Instruction

### A. TOUCH SCREEN



### POWER SWITCH


The POWER SWITCH is located on the left corner of the operation panel. When the switch is “ON”, the touch screen is in an operable state; when the switch is “OFF”, the touch screen is in an inoperable

state.



## TOUCH SCREEN


The display screen is located on the front control panel, which corresponds to two hopper tanks and corresponding cooling systems. In normal operation, the screen display shows information about the mixture in the hopper and other operating options.


### Indicator Light


◆ Lack of Mix -- When the  icon on the screen is displayed, it indicates that the mix in the hopper is insufficient. At this time, the mix should be added as soon as possible.


### Function Button


◆ **Cooling**--When the icon  is lighted, it means that the corresponding cooling cylinder of the machine has entered the automatic cooling mode, when the corresponding cooling cylinder status icon  turns to full blue, it indicates that the cooling process has been completed.

◆ **Preservation**--When the icon  is lighted, the freshness function is turned on.

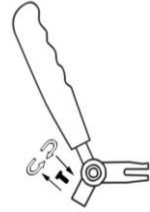
◆ **Cleaning**--When the icon  is lighted, the beater in the corresponding freezing cylinder of the machine starts rotating.

◆ **Defrost** - When the icon  is lighted, it means that the ice cream in the corresponding cooling cylinder is heated and defrosted.

◆ **Pump** - When the icon  is lighted, the pump will feed the mixture in the tank into the refrigerating cylinder.

◆ **Firmness** - Press  icon, it can set the firmness of the ice cream (the higher the value, the

higher the level, the harder the ice cream will be).



## Flow Regulation

Each handle has a limit screw that gives you the best ice cream dispensing speed. Adjusting the screw counterclockwise to increase the flow rate , clockwise to reduces the flow rate (Figure 11).

## B. Debugging (operated by professional debugging personnel)



**Note:** The debugging part is completed by professional debugging personnel. The machine parameters are set according to your actual situation. The password is controlled by the debugging personnel and must not be disclosed to others! The user must not change these parameters, otherwise the machine will be damaged and will not be covered by the warranty.

1) Power cord connected, controller on, and turn on the main power switch, and the touch screen will be displayed after a few seconds (Figure 12).

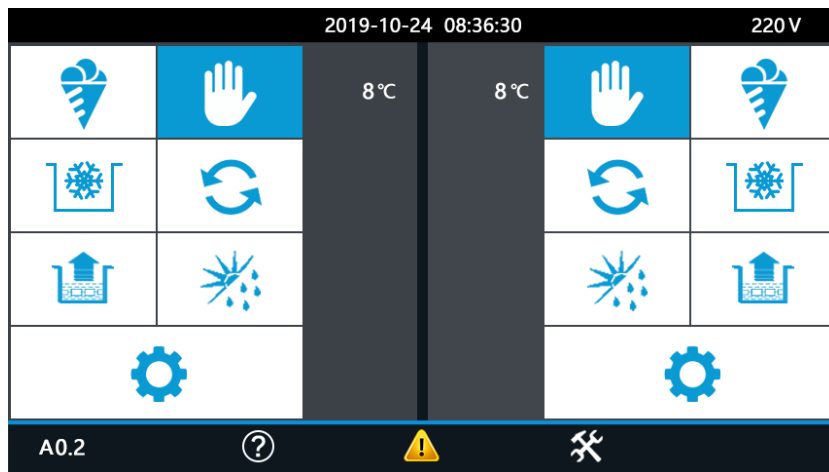




图 12

2) On the current page, click  and input the user password “5168” to enter the user parameter setting page (Fig. 13) and set the corresponding parameters.

<b>Preservation Temp.</b>	<b>Pumping Time</b>	<b>Sales Cup number record and clear</b>
<b>Speed Test</b>	<b>Lack Mix Stop Time</b>	<b>Clean Fault Record</b>
<b>User Password Set</b>	<b>Time Change</b>	<b>BACK</b>

### 3) Lack of Mix

When the machine is out of mix, the machine  icon will light up; after feeding, the icon will disappear automatically.

4) The following are the faults that may occur in the machine. The causes and contents of the faults indicated in the record are as follows:

	Cause of the Fault	Solution
220V Serie	Dispensing is continuously on for 1 minute.	The buzzer will beep and the whole machine will stop. It must be powered off and then restart after problem solved
	High Voltage Failure	
	Freezing Cylinder Temp.Sensor Fault	
	Hopper Temp.Sensor Fault	
	Too high or Too Low Voltage	
	Proximity Switch failure or Motor failure	It will not affect the normal use of the machine
Low temperature protection		

Chart 3

## C、Ice Cream Making



**Tip: Be sure to wash and disinfect your hands before following the steps below.**

### 1) Machine Cleaning and Disinfection Work before Making Ice Cream

- a. Dispose the appropriate amount of disinfectant solution required by the disinfection solution (temperature between 50~60 °C), pour into two tanks, and carefully clean all food-contact surfaces of the tank. ;
- b. Turn on the power switch and operate the CLEAN icon to stir for 5 minutes.
- c. Place an empty container under the dispenser door, and pull the dispensing handle for around 6 times or more and push back the handle;
- d. Drain the cleaning solution and press the STOP icon;
- e. Remove the four fastening screws of the dispenser door, remove the assembly and disassemble the parts into the disinfectant for careful cleaning, and then assemble the components back and install them on the machine;
- f. Pour an appropriate amount of clean water into the tank, repeat the above steps, and wash it with water several times;
- g. Last, wipe the water trace on the dispenser door with a clean towel.



### 2) slurry configuration before production

According to the configuration instructions, the ice cream powder you purchased should be made into liquid mix. There should be no unmelted particles or impurities in the mix. After the mix is configured, let it stand for 15 minutes before using it, or buy the ice cream mix and use it directly. The mix can be pre-cooled to about 6 °C by using a freezer or something like, the performance will be better (Mix Prepared Temperature of Mix Prepared: 2~30 °C).





**Friendly Tip: We recommend using a ready-mixed liquid mixture. The special mix can be taken out from the freezer directly, saving your time and avoiding the influence of the ingredients on the quality of the ice cream produced.**

### 3) Add Mix

a. Remove the tank cover and pour the prepared mix into the for appropriate amount first. Operate the CLEAN  button to stir. Until no more bubbles comes out from the feed port of the tank. If you skip this part, it will produce a "gas bombing" phenomenon when producing ice cream, which will affect the appearance of the ice cream. Stirring for 2-3 minutes and press the STOP  button. Note that the mix needs to be higher than the lowest level of the mix level probe, but not higher than the highest scale line of the tank.

b. Remove the feed tube pin on the pump cover, install the top end of the feed tube to the pump cover, and insert the feed tube card into the corresponding position and click the card to tight (see Figure 14), then pour the remaining mix into the tank and close the lid.



c. After the mix is added, when the icon  is lighted, it indicates the corresponding cooling cylinder has entered the automatic cooling state, and when the corresponding cylinder status icon  changed to full blue (figure 14), it indicates that the cooling has been completed.

## V. Daily Maintenance

The maintenance and maintenance cycle and steps are not absolutely constant. It is determined according to the actual use of the product and the environmental conditions. Each ice cream machine needs to be specifically maintained according to the actual situation.

### A. cleaning of the production system

In order to ensure the health of customers, improve the service life of machine parts, and avoid unnecessary troubles, you must carefully clean the machine

1) Press the CLEAN  button to discharge all the remaining mix in the hopper tank and the freezing cylinder, and press the STOP  button to stop the machine;

2) Take an appropriate amount of food detergent, and prepare a cleaning and disinfecting solution

with warm water according to the instructions for use, and pour it into each tank separately;

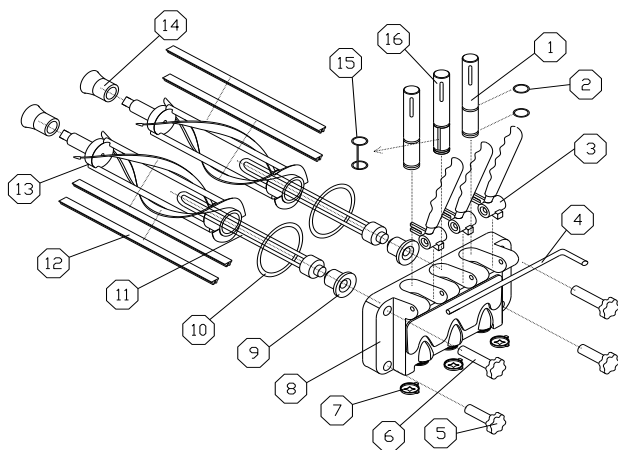


3) Press the CLEAN button, stirring for about 5 minutes, drain out the cleaning solution, then rinse with water for 2~3 times, stop the machine;

4) Turn off the Power and Disassemble the Parts.

a. Unscrew the four screws on the front of dispenser door and remove the dispenser door assembly;

b. Remove the handle pin, the handle, the piston, o-ring and dispenser door seals from dispenser door assembly in sequence;

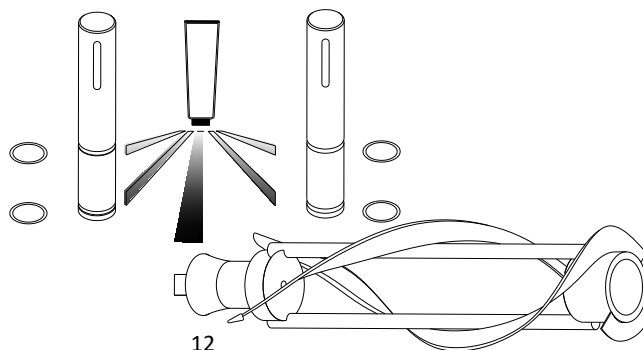


- |                     |                        |
|---------------------|------------------------|
| 1.Piston            | 2.O-ring               |
| 3.Handle            | 4.Handle Pin           |
| 5.Lower Bolt        | 6. Upper Bolt          |
| 7.Star Cap          | 8.Dispenser Door       |
| 9.Supporting Sleeve | 10.Dispenser Door Seal |
| 11.Bolt Bar         | 12.Scraper             |
| 13.Beater           | 14.Gasket              |
| 15.Piston           | 16.Middle Piston       |

c. Pull out the beater from the freezing cylinder and remove the beater gasket.

d. Clean the removed parts in the disinfectant and check the status of the beater,gasket, dispenser door seal, supporting sleeve and piston o-ring. Change when it is worn and necessary.

e. After cleaning, apply the parts with Vaseline, and install the parts according to the method of disassembly.



12



**Note:** Vaseline should be applied at the appropriate position when installing the piston, sealing o-rings and beater, beater gasket. (When applying Vaseline to the sealing sleeve, Vaseline should be applied in the groove of gasket, do not apply to the four corners of the beater. ), Vaseline can help to extend the life cycle of components.

#### **B、 Routine Maintenance Inspection**

- 1) Replace the broken or damaged scraper blade. Always install the scraper correctly before installing the beater
- 2) Check the beater gasket whether it's worn and make sure it is clean. (If there is leaking liquid in the residual drip tray, then the gasket must be replaced)
- 3) Use a screwdriver and a towel to ensure that the beater gasket and the beater shaft have been properly cleaned.
- 4) Change the worn, cracked or loose gasket and seals.
- 5) Follow all the lubrication steps mentioned in the “Installation” section.
- 6) Regularly check whether there is dust or wool fabric accumulation on the condenser or filter net. Blockage of the condenser will reduce the efficiency and productivity of the machine. If there is a filter at the outlet of the condenser, the filter should be cleaned regularly every month. If there is no filter, use a soft brush to clean the condenser. Never use sharp tools or metal objects to clean the fins. part.

#### **C、 Daily Use Instruction**




- 1) When installing the beater, make sure that the scraper blade is not damaged, and the scraper clip is not deformed, otherwise it should be replaced. Make sure that the scraper is correctly inserted into the pin of the beater. First install the scraper inside, push it in while turning it, and then install the scraper on the outside. The scraper should be replaced every three months.

2) The two beater jackets on each beater are not exact same. Make sure that the semicircular groove of each sheath is stuck on the round support rod of the beater.

3) The ice cream mixture must be well stirred before use, and the temperature should be between 3 ~ 35 °C, otherwise it may affect the normal working of the machine.

4) The remaining mixture refrigerated every other day is better to be mixed with the new mix on the next day. And the proportion of the old mix should be lower than the new mix every other day, and should be evenly stirred without particles.

5) Clean before use, drain out water residue in hopper tank and cylinder. Keep Cooling Mode off when adding mixture into the tank, close the nozzle when there's mixture flows out through it. Turn to CLEAN MODE first and dispensing out some liquid mixture and put back into the hopper to empty the air in the cylinder.

6) Cylinder Frozen: Press Stop  when cylinder is frozen, wait for 10-20 minutes to defrost, then start CLEAN MODE, until cylinder beater rotating again and ice cream start to dispensing out from nozzle. After that start AUTO MODE again or you can also press STOP  and then press DEFROST , default setting is 300 seconds, after DEFROST is over, machine will stop for another 300 seconds and enter fresh maintaining mode.

## D、 Machine Body Cleaning

To keep a nice appearance, please keep machine body clean, you can use wet towel but do NOT use water in case of Electrical problem.

## V. Trouble Shooting Guide

We have listed some trouble shooting and corresponding solutions of ice cream machine in

below sheet. You can follow the instruction and solve the simple trouble by yourself, if the problem persists or too complex, don't handle it by yourself, please contact our professional technicians to avoid any unnecessary loss.

<b>Problem</b>	<b>Possible Cause</b>	<b>Solutions</b>
Machine Doesn't Start	Power Disconnected	Power connected
	Protection Program Activated	Restart after full check
Clean Mode Doesn't Work	Wire Disconnected	Wire reconnected
	Beater Motor Malfunction	Repair or change new motor
	AC Contactor OFF	Change when necessary
Auto Mode Doesn't Work	Function Switch Disconnected	Check and Reconnected
	PCB Malfunction	Change PCB
Compressor not Working	Low Voltage	Solve Power Supply Problem
	AC Contactor	Change Contactor
	Relay Broken	Change Relay
	PCB Malfunction	Change PCB
	Compressor Overload Protection	Check and Solve Problem
	Compressor Broken	Change Compressor
	Compressor Capacity Broken	Change Capacitor
Pump not Working	Air Pump Malfunction	Change new air pump
None-Cooling	Refrigerant Leakage	Find the leakage and fix it
	Solenoid Valve Faulty	Change a new one
	Fan motor not working	Fan motor maintenance
	Fan motor capacity malfunction	Change capacitor
	Compressor Malfunction	Check whether compressor need to be replaced or not
None-Stop	Firmness Level Too High	Lower setting
	PCB Faulty	Change new PCB
	Bad Cooling Efficiency	Cooling System Maintenance
Relay Bouncing	Low Voltage	Solve the power supply problem
	PCB faulty	Change PCB
	AC contactor Burnout	Elimiate contact point or change new One
Dispensing No Ice Cream	Inappropriate Mixing	Add new mixture according to instruction
	Lack of Mix	Add more mixture in
	Micro Switch Broken or Disconnected	Change micro switch or reconnected

	Beater or Gasket is Worn	Replace beater or beater gasket
Cylinder Frozen	Lack of Mix in Cylinder	Make sure mixture feeding in time
	Unstable Voltage	Check the power supply
Ice Cream Too Soft	Inappropriate Mixing	Appropriate ingredients of mixture
	Firmness Setting Too Low	Adjust setting value
Leakage	Dispensing Nozzle Leakage	Reassemble or change the O-ring.
	Dispensing Door Leakage	Tighten the screws or change the O-ring
	Drip Tray Leakage	Reassemble or change the gasket for beater
Buzzer	Low Voltage Protection	Stop, restart after 5 minutes
	Shutdown Protection	Stop, restart after 5 minutes
	Micro Switch Reset Overtime	Push the handle to reset

## VI. Technical Parameter and Electrical Diagram

Find technical parameter on the nameplate

Find electrical diagram on the inside panel



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