

PASMO US Series Ice Cream Machines Training Manual

The announcements after machines arrive

- After receiving the machines from logistics company, the machines need to be placed steady for 4 hours to make sure the compressors work normally.
- Ice cream machines are high-power electric appliances, which must be provided the electricity with independent power line bigger than 4 square millimeter.
- Please make sure the machines are grounded when assembling to the power supply. Please make sure the stabilization of the voltage, Either low voltage or high voltage can reduce the service life of the compressors or cause the compressors burnt down.
- If the machines you purchased are in 380V, please contact the manufacturer to install the three phase electricity correctly, in case of burning the spare parts of the machines.

Before using the machines, customers need to read and watch the operation manual and video carefully or receive training from the technicians first. According to statistics, 80% of the problems are caused by the faulty operation.

Power Connection

208V-230V, 60Hz, 20Amps power connection: we advise connecting to the air switch directly. If using plugs, please use 20Amps high-power sockets.

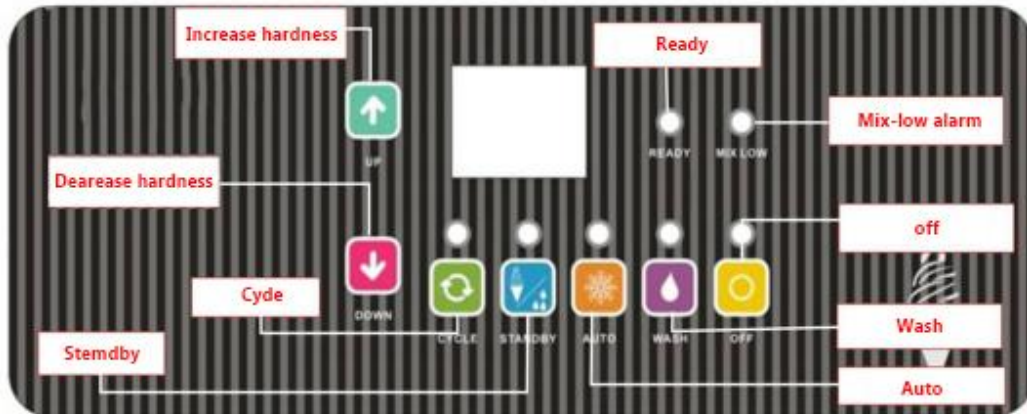


L6-20P



L6-20R

Introduction of the control panel:



1. Indicator light

(1) Mixture supply indicator light (MIXLOW light) will light up when the ice cream mixture is below the electrode in the hopper, which is red, with buzzer alarms.

When the light is shining, it can continuously refrigerate when the machine is on the running mode; It can't run any other mode when the MIXLOW light is shining except for the wash mode.

(2) When the ice cream is going to be ready, the forming light will light up.

(3) The pre-cooling indicator light will always be on when it was on the pre-cooling mode. It will also be on when it reaches the setting temperature.

2. Cleaning

The wash mode will run 5 minutes at most to turn into the "off" mode. It can only run 1 minute when the interval of the twice washing is less than 1 minute. It will run five minutes when the interval is more than 1 minute.

3. Working

Supplementary function instruction

1.press"off"button for long time to get into the setstate and shift to different setting.Stop pressing the button for 12 seconds, it will exit the setstate and reserve the setting value.**Customers should not change the setting values by themselves, or it will cause problems.**

2.Mixlow in the hoppers, there isn't any tip on the display screen, mixlow red indicator light twinkles and alarms. When it is alarming, press "up"or "down" button for 3 seconds, the buzzer stops buzzing, the red indicator light keeps twinkling.

3.the time of liquid level detection in the hopper in total is 15 seconds, detection time 1 second.

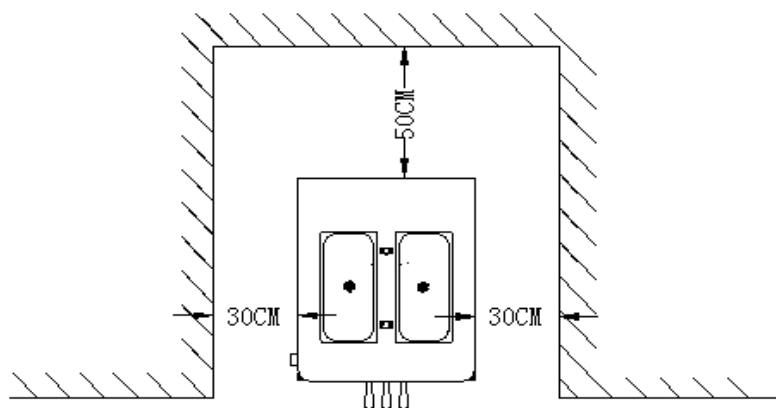
It can't run any other modes when the machine is on Auto mode, except for the standby mode.

Heat dissipation

Pasmo series soft ice cream machines with air cooling use fans to dissipate the heat.

The air inlet needs at least 30cm space, air outlet needs at least 50cm space. Let's take S520F for instance as the picture shows as below.

If the space of heat dissipation is not enough, it will influence the refrigeration of the machines: including the shaping degree of ice cream, time for shaping. What's even worse, it may cause the compressors to enter thermal protection state or even burn down the compressors.



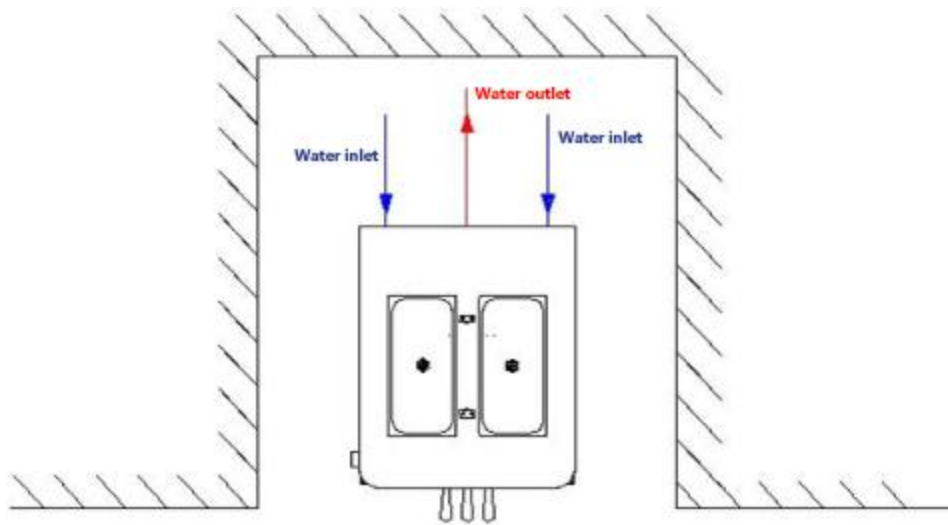
Model	S318	S630	S850	S110	S230	S520	S970	S930
The direction of air outlet	Left	left	back	left	Left and right	back	back	up

Pasmo series soft ice cream machines with water cooling have no requirements for space. The heat is taken away by the water cycle, which makes a big improvement than air cooling.

Water cooling models have two inlet tubes, one outlet tube. Requirement: inlet water temperature $< 20^{\circ}\text{C}$

Intake pressure $> 1\text{Mpa}$, refrigeration effect is good; Otherwise, it is poor.

So, the size of the inlet tubes and the water pressure will have certain influence to the refrigeration effect.



There will be E6 alarm on the screen if the water is cut off.

Please assemble the discharge door and the cylinder kits correctly.

No. 8 and 9 in the picture below are the O-rings of pistons, any breakage of the O-rings here will cause the leakage of the mixture.

Notice: The O-rings of the pistons for machines with air pumps and the O-rings of the pistons for normal models are different.

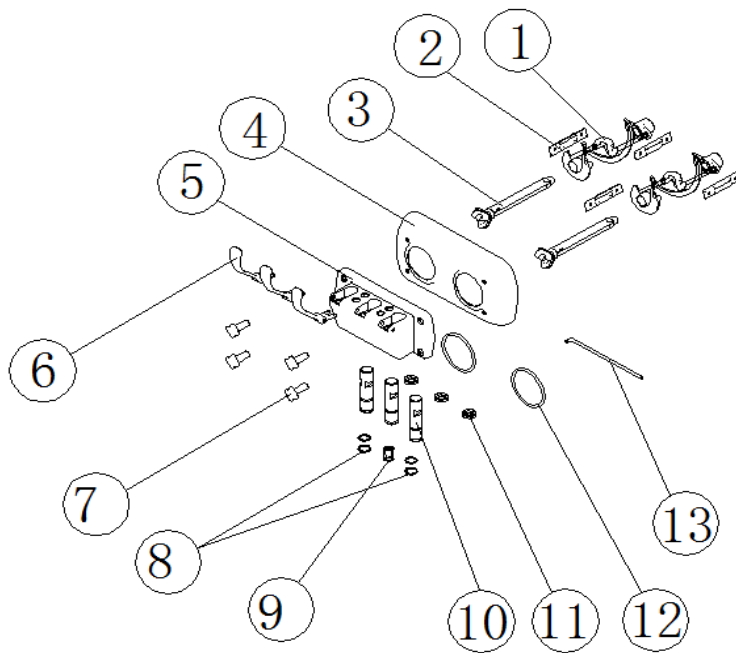
No. 12 in the picture is the O-ring for discharge door(door gasket), any breakage of the O-rings here will cause the leakage of the discharge door.

All the O-rings mentioned above should be oiled with food grade lube to protect the machines.

No. 2 in the picture is the clip scraper, for the old models(S318C, S340C, S630C, S640C, S850C), please pay attention to the positive and negative sides, the side with arrow should face to outside.

Notice: All the O-rings shall be replaced every 3 months. Please replace at once there is any breakage.

Notice: The clip scrapers shall be replaced every 6 months.

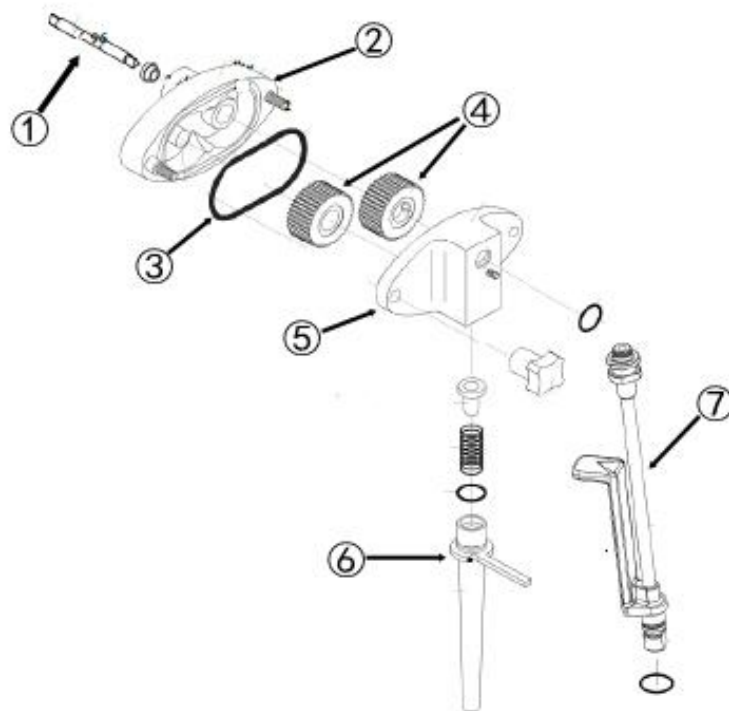


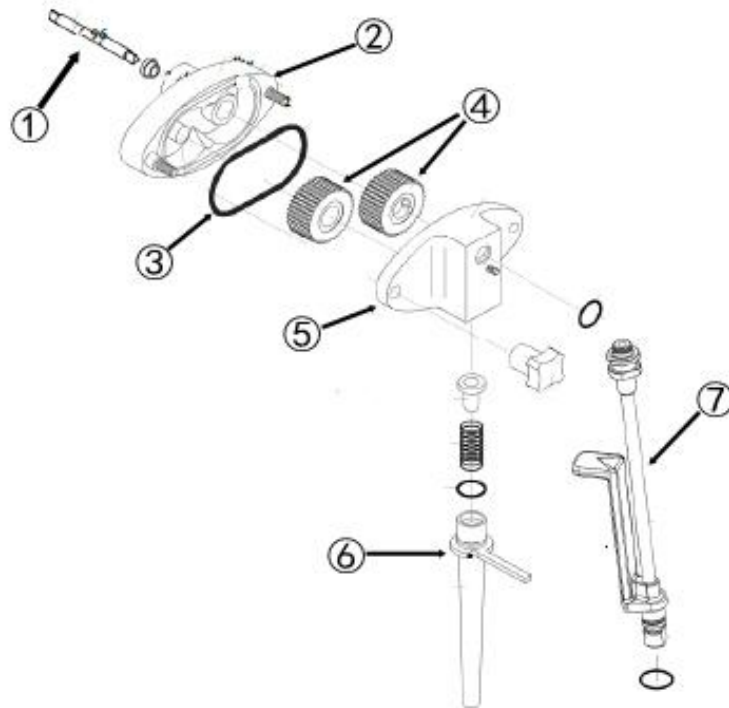
Cylinders exploded view

Smear the food grade lube



The introduction of the air pump and the installation





Air pump exploded view

Announcements of air pumps' installation

① is the motor shaft of the air pump, which can be taken out from the machine. Please make sure it is installed correctly, or the air pump won't work.

② is the main part of the air pump. The sealed sleeve must be assembled and oiled with lube to the main part of the air pump.

③ is the seal ring of the air pump, please smear the lube before installing, to make sure the leakproofness of the whole air pump.

④ is the gear of the air pump. Oil the two smooth sides of the gears, do not oil the teeth. Notice: the gears can only be cleaned with cold water.

⑤ is the other part of the air pump, please oil the inner side surface.

⑥ is the hole position adjusting pipe of the air pump. Please assemble all the spare parts(choke plug, spring, O-ring) according to the exploded chart. Turn to the biggest hole during mix suction, namely when facing to the machine, the pole towards the far left; The more to the right, the holes become smaller, the overrun becomes higher. Customers need to adjust the holes by themselves according to the thickness of the mixture and the sales volume; More thick the mixture is, more sales volume the shops

get, bigger holes the customers should use.

⑦ is the air pump pipe. Please plug it into the hole of the hopper, rotate it to the right direction to lock it with the buckle. Notice: if it didn't assemble well, the mixture might splash while the machines running.

Notice: all the spare parts of the air pump need to be cleaned everyday, or it will cause the bacteria growth.

The operation of General models

Cleaning before making ice cream

- (1) Pour the disinfectant water into the hoppers, press WASH button to let the machine wash for 5 minutes
- (2) Press the handle to release the water, press off button to stop washing.
- (3) Pour the mixture into the hoppers slowly, press the handle to release the remained disinfectant water until all the fluid comes out from the outlet is mixture.

Making ice cream: the operation is different according to the different flowability of the mixture.

**The
mixture
with
good**



flowability

- (1) Let the mixture flows into the hoppers naturally, till it stops bubbling. The temperature of the mixture can't be higher than the indoor temperature.
- (2) Press WASH button to help the mixture get into the cylinders for about 5 seconds. Press OFF button. Plug the air tube with closed state. Press WASH button again, let the machine wash for 5 minutes so that the mixture in the cylinders is fully stirred.
- (3) Press OFF button, then press AUTO to start refrigerating.
- (4) Turn the air tube to small hole after the ice cream is ready.

The mixture with bad flowability

- (1) Pour the mixture into the hoppers (if the mixture is too thick, please pour it to the holes in the hoppers directly)
- (2) Press WASH button to help the mixture get into the cylinders for 5 minutes, plug the air tube with middle hole or big hole (if the mixture is too thick, please do not use the air tube).
- (3) Press AUTO
- (4) Discharge ice cream after the refrigeration finishes.

The operation of air pump models

Cleaning before making ice cream

The way to clean the models with air pumps is the same with general models'. Please see the (1),(2),(3) above for reference.

Making ice cream: the operation is different according to the different flowability of the mixture.

The mixture with good flowability

- (1) Let the mixture flows into the hoppers naturally, till it stops bubbling. The temperature of the mixture can't be higher than the indoor temperature.
- (2) Plug the air pump pipe, rotate it to the buckle. Please do not connect the other side to the main part of air pump first.
- (3) Press WASH button and observe whether the air pump draws the mixture and spray it out.
- (4) After making sure the air pumps working normally, please turn the pole on the hole position adjusting pipe to the far left side. Connect the other side of the air pump pipe to the main part of the air pump, then start refrigerating.

The mixture with poor flowability

- (1) Let the mixture flows into the hoppers naturally. The temperature of the mixture can't be higher than the indoor temperature.
- (2) Press WASH button to help the thick mixture get into the cylinders adequately for 5 minutes. Before washing, observe whether the air pump works normally. When the wash state stops, Plug the air pump pipe, rotate it to the buckle position. Connect the other side to the main part of air pump.
- (3) turn the pole on the hole position adjusting pipe to the far left side, then start refrigerating.

Notice: If the material is too thick, pressing WASH button a few times to make the air pumps draw the mixture into the cylinders would be helpful. How many times to press the WASH button depends on how thick the mixture is: more thick the mixture is, more times the wash state need.

The time for air pump to draw the mixture can be adjusted: long press OFF button for 5 seconds, the screen shows P1, press OFF again to shift to Ud. The factory setting is 15 seconds for the section time, press UP or DOWN buttons to adjust. More thick the mixture is, longer the suction time should be set. We suggest adjusting to 30 seconds.

Notice: During the first time refrigeration, the hardness should not be set too high. When the customers use the machines at first time, please lower the hardness than normal. The machine will stop automatically when the hardness reaches to the setting hardness, please check whether the ice cream is good enough or not. If too soft, heighten the hardness a little. Please do not set the hardness too high, or it will cause the frozen cylinder.

Customers should use the air tubes and air pump pipes correctly depends on the thickness and flowability of the mixture and the sales volume. During high thickness, bad flowability and big sales volume, we need to turn the air tubes to middle holes, big holes or even pull it up. The pole on the hole position adjusting pipe.

Hardness setting for Pasma series machines

Models	Suggested hardness setting
S110F (220V)	1.8
S230F (220V)	1.8
S520F (220V)	2.2

Pasma series soft serve ice cream machines are with high capacity and strong

continuous discharging ability, but still, they cannot be discharged without any rest.

How to improve the performance?

1. Control the weight of ice cream discharged every time.
2. If the weight is changeless, try to control the time between discharging. For example, 100g each cone, 7~10 seconds can make good continuous discharging ability.
3. Adjust the holes of air tubes and air pumps properly according to the sales volume.

Cleaning after making ice cream

(1) Press WASH button and handles to release all the mixture in the cylinders, then press OFF button.

(2) Pour clean water into the hoppers. Press WASH button to make the machines wash for 5 minutes, then release the water. Redo 2 to 3 times till the water comes out from the cylinders is cleaned.

(3) Turn off the switch, disassemble all the spare parts and clean with water.

(4) Dry the hoppers, cylinders and all the spare parts with towel. Keep all the spare parts in clean and dry places.

Notice: The air pumps need to be cleaned everyday with brushes, to prevent the bacterial growth. Before disassembling the air pumps, decompression is required. The extract way is to loosen the two screws on the air pump slowly to exhaust the air in it.

Something else

noticed:

1. The cylinders, spare parts must be grade disinfectant ice cream. All the gears can not be higher than 40°C, in order to prevent the expansion of rubber O-rings and gears.



need to be

hoppers and all the sanitized with food water before making rubber parts and cleaned with water

2. The remained disinfectant water in the cylinders must be released by pouring the mixture into the cylinders slowly, so that it won't effect the ratio of the mixture.

3. The mixture must be made strictly according to the ratio that material factory suggested. Too much water in the mixture would cause frozen cylinder; It will also cause the frozen cylinder because the mixture is too thick, which makes it hard to get into the cylinders.

E7 alarm→JJ alarm→frozen cylinder

Frozen cylinder is the main problem we may encounter during using Pasmo ice cream machines. The main reasons cause frozen cylinder are as below:

1. Hardness setting is too high. The system won't stop working until it reaches the setting hardness. If the setting is too high, the machines will get frozen cylinder before it reaches the setting value.

2. Too much water in the mixture. Water becomes ice once the temperature reaches 0°C, but normal mixture needs -6 to -9°C to become ice cream. So the cylinders will be frozen if there is too much water.

3. The lack of the mixture in the cylinders is the most important reason for frozen cylinder.

1) When discharging ice cream, the air tube remains closed, which makes the mixture can't get into cylinders.

2) The mixture is too thick, the flowability is not good, the hole of air tube is too small, make the mixture hard to get into cylinders.

3) Discharging too much ice cream in one time, which makes the mixture can't get into cylinders fast enough to reach the speed of discharging ice cream, it will cause frozen cylinder as well.

4) The air pumps do not work or the suction time is not long enough.

Please do not forced start the machines after frozen cylinder!

Please wait 10-20 minutes till the ice cream melts, pull up the air tube, press WASH botton to let the machine wash for 5 minutes.

We should try to find the reasons of frozen cylinder according to the practical situation.

The reasons for appearing ice crystals

- 1.The water in the cylinders is not completely released. It becomes the ice crystals while the machines working.
- 2.The mixture separated into material and water
- 3.The problem of the mixture itself
- 4.The ice cream is stirred too long in the cylinders, which makes the texture worse than before.

Solutions: After cleaning the machines, please completely release the water remained in the cylinders. Please stir the mixture adequately before pour into the hoppers(standing for a half hour would make the ice cream taste better)

The ice crystal problem after long time no discharging is inevitable. We can discharge some ice cream first to make the following ice cream better.

Standby function:

The blue button “STANDBY” is for pre-cooling

Standby system will keep fresh for hoppers and cylinders at the same time.

Operation of standby for general models:

(1)After a whole day business at night, press “OFF” button to stop all the functions. Take the agitator blades down, clean them, then put them back. Pull up the air tubes, clean them, turn them to closed state, then put them back.Clean all the mixture remains on the wall of hoppers, then press “STANDBY” button.

(2)After back at the second day, press “OFF” button to turn the standby function off.Press “WASH”button to start washing function, release all the mixture in the cylinders to a clean container. Pull the air tubes up, let the mixture in the hoppers get into cylinders. Press “WASH” button, let the machines wash for 5 minutes to help the mixture get into cylinders. After washing state, turn the air tubes to small holes or middle holes and plug them back. Start “AUTO” to make ice cream. The ice cream in the container can be poured back to hoppers after it melts into liquid.

Operation of standby for air pump models:

The air pumps need to be taken down during the standby state for air pump models.

The standby state should be running without the air tubes at night. Clean the main parts of the air pumps, assemble and use them the second day.

Daily Maintenance

- 1.All the seal parts shall be replaced every 3 months. The clip scrapers shall be replaced every 6 months.Please replace at once if there is any breakage of the seal parts and the clip scrapers.
- 2.All the seal parts should be oiled with lube every time after cleaning the machines.
- 3.Making sure that the machines work with stable voltage is the best way to protect the compressors and motors.
- 4.The time for making the first batch of ice cream is 7-12 minutes. If there is a large deviation, we need to find the reasons out in time and resolve them.
- 5.Clean the condensers regularly.

FAQ

Poor refrigeration effect

1. Gas leakage
2. Blade scrapers on wrong side or worn out
3. the condenser is dirty
4. the environmental temperature is too high
5. Not enough air exhaust space left
6. Mixture problems

Machines stop after a period working

1. 90% possibility compressors work overload and it gets into the protection status
2. Refrigeration system is not reasonable
3. Refrigerant for a long time
4. Environmental temperature is too high, air exhaust space is not enough, the condenser is dirty

The ice cream is too hard

1. Target hardness setting is too high
2. Wrong mixture ratio
3. Not enough mixture in the cylinder

The machines don't discharge well or don't discharge

1. The target hardness setting is too high, or wrong mix ratio, or the speed of discharging is faster than feeding.
2. Check whether the motor is working. If isn't, check the frequency converters work normally or not.

Static electricity

1. Poor ground wire connection or not grounded
2. Short circuit or Wires touched in the machines

Code	Error	Solution
HH	High voltage error	Pls check if the voltage is too high
LL	Low voltage error	Pls check if the voltage is too low
JJ	High electric current error (Frozen cylinder)	Turn off the refrigeration,take out the air tube, press wash for about 5 minutes,then press Auto to make ice cream;If the machine still show JJ error, you need to rest for about 10-20 minutes,then press wash button.you also need to check the material if it can flow into the cylinder.
E1	Hopper sensor error	pls contact with supplier first , change sensor (sensor 16)
E2	Evaporation tank sensor error	pls contact with supplier first , change sensor (sensor 15)
E3	Evaporation temperature sensor error	pls contact with supplier first , change sensor (sensor 14)
E4	Wrong phase	This is for three phase machine,the three fire wire is wrong,you can change position for any two of them
E5	lack phase	This is for three phase machine,among the three fire wire one of it doesn't connect,pls check.
E6	Heat exhaust error	pls check the heat exhaust for the machine (check the location,check if the condensor is dirty,etc.) we suggest to turn off the power and let the machine rest for 30 minutes
E7	Cylinder lack of mixture	turn off the refrigeration,take out the air tube,press wash for about 5 minutes,then restart the refrigeration,customer need to check the materia if it can flow into the cylinder.
Lo	Cylinder temperature is too low	turn off the refrigeration,take out the air tube,press wash for about 5 minutes.set the hardness lower then restart the refrigeration.
1d	Heat exhaust error	pls check the heat exhaust for the machine (when this error came out,the machine still can work,but if you don't solve this problem on time,later the machine will show E6 and stop working)
FC	The motor doesn't run	turn off the power and rest for 5 minutes (you must takt out the plug,not only turn off the power switch) then restart the machine and set the hardness lower.if you can't solve the problem,pls contact with supplier
R-CB	Right micro-switch error	pls check if the handle has reset to its location,after reset,pls restart the machine.if can't solve,pls contact with supplier
L-CB	Left micro-switch error	
M-CB	Middle micro-switch error	

System Setting

item	function	note
P1	The electric current of the forming indicator light main beater motor (the electric current is 0.1A-1.0A) Default 0.2A Change as the electric current changes, lower than the electric current setting value.	Press“up or down” button to changethe value
P2	Pre-cooling temperature setting(-2~5) default 3 centigrade	
P3	98G(hoppers'temperature) Pre-cooling running time 3-9 minutes Default 3 minutes	
P4	Automatic restart time(3~12) default 6	
Ud-	Expantion time(0-30) Default 15S	
UL-	Low voltage alarm value: 170~220 default 198V	
UH-	Low voltage alarm value: 230~300 default 242V	
Ub	Voltage correcting: ±9 default 0	
P5	98G(hoppers' temperature) pre-cooling off time 6~15 minutes Default 10 minute	
P6	Night standby mode refrigeration off temperature -10-0 centigrade default -6 centigrade	
P7	Night standby mode refrigeration running temperature 3-10 centigrade default 4 centigrade	
CUP	The discharge number reset function: press “down” button for 5 seconds.	

Long press OFF button to enter the setting interface. In P2 state, press OFF button for 7 seconds to enter "F1 F2 F3 F4 F5 F6 F7". Input the code: WASH-AUTO-STANDBY, then press OFF button to shift different setting. Stop operating for 12 seconds to exit and reserve the setting.