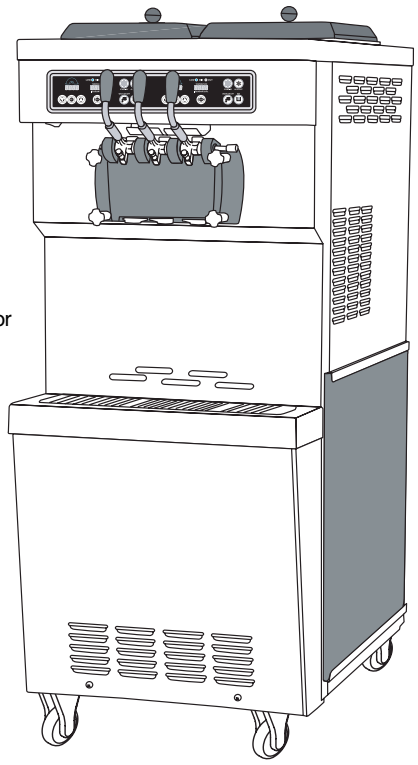
SOFT ICE CREAM FREEZER
User's Manual

SSI(ISI)-303SN
SSI(ISI)-203S, SN, SNP



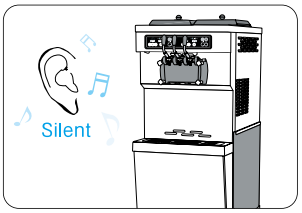
- This product is for indoors, so do not use it outdoors.
- Before using the product, be fully familiar with the contents in the manual. Please store this manual in a place where you can reach it easily for future reference.
- This user manual contains a product warranty.

ICETRO

Our soft ice cream freezer offers the following advantages.

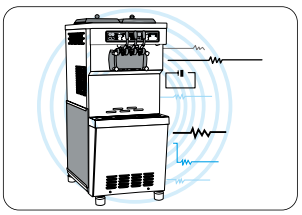
1. Minimum noise and refreshing cooling system

With a high efficiency and low noise motor, we can achieve minimal noise from the refreshing cooling system.



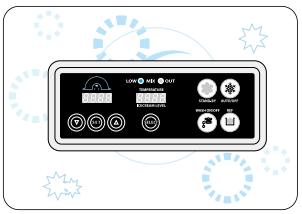
2. MICOM control method

Use of an artificial intelligence control type achieves an optimal cooling system.



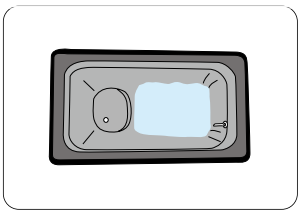
3. Body sensing button

The touch button provides a smoother operation.



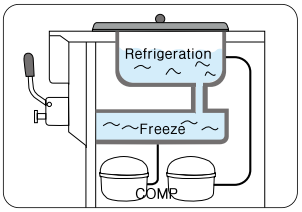
4. Large mixing tank(SSI(ISI)-303)

Additional 19.5 liter space can store more ingredients.



5. Independent cooling system

Separate systems are used for freezing and storage to give more convenience.



Dear customers;

Thank you very much for purchasing a soft ice cream maker made by ICETRO. For correct use of the product and its maintenance, please read this manual carefully. If a problem occurs while using the product, you can refer to this manual for troubleshooting. This manual contains a product warranty, so keep it safely for future reference. This product can be installed only by someone qualified for installation. If use of parts and accessories not provided or approved by ICETRO or any part or accessories made by ICETRO but remodeled by other person causes a problem, we are not responsible for it financially.
(The functions and specifications shown in this manual and on the web site are subject to change without notice. Please visit our website at http://www.icetro.com to obtain the latest specifications.

Contents

Cautions for your safety

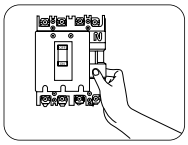
These are safety related items. So, comply with them at all times!
They are meant to protect the safety of users and prevent property damages.
Please, read the cautionary items carefully for correct use.

Danger — If violated, it can cause death or severe injury.

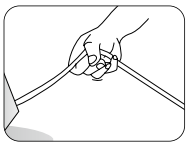
Warning — If violated, it can cause sever physical injury or property damages.

Caution — If violated, it can cause slight physical injury or property damages.

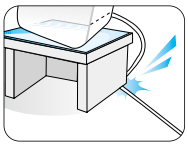
Power supply related items



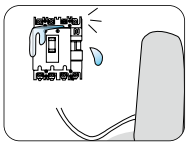
Install it independently with an earth leakage circuit breaker with more than 50[A].
It can cause electrical shocks or fire.



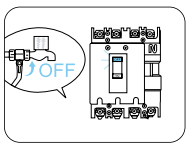
Do not move the product by pulling on the power cord.
It can cause electrical shocks or fires.



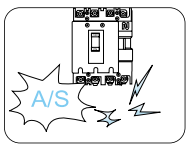
Do not bend the power cord too much or cause damages or deformation by pressing it under a heavy object.
It can cause electrical shocks or fires.



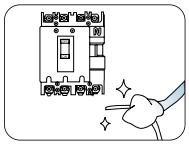
If there is water inside the power supply, turn off the earth leakage circuit breaker and dry it before use.
It can cause electrical shocks or fires.



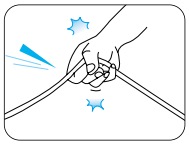
If you want to leave it unused for a long time, then close the water supply valve and turn off the earth leakage circuit breaker.
It can cause electrical shocks or fires.



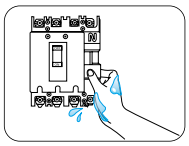
If the power cable is damaged, then do not replace it on your own. Call the service center for cable replacement.
It can cause electrical shocks or fires.



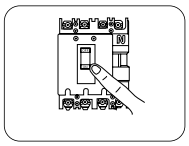
Use a power cable larger than 4mm^2.
The outer box for the product should be grounded.
It can cause electrical shocks or fires.



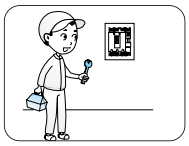
Do not pull on the power cord.
It can cause electrical shocks or fires.



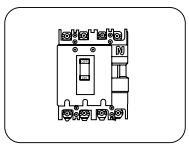
Do not touch the earth leakage circuit breaker with your wet hands.
It can cause electrical shocks or fires.



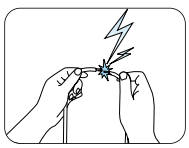
Do not turn the power on/off with the circuit breaker continuously.
It can cause electrical shocks or fires.



When you repair or inspect the product or replace any parts, turn off the earth leakage circuit breaker.
It can cause electrical shocks or fires.



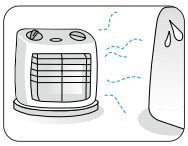
Do not connect many electrical products to the earth leakage circuit breaker. Use it individually.
It can cause fires.



Do not arbitrarily connect the power cord or process it for use.
It can cause fires.

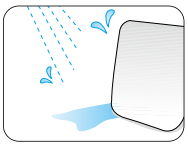
Cautions for your safety

Installation related items



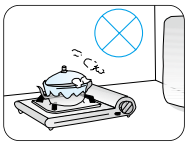
Do not install it near a heating device.

It can cause fires.



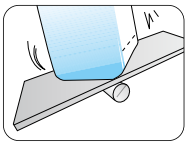
Do not install it near dust, moisture or rainwater (water) popping.

It can cause electrical shocks or fires.



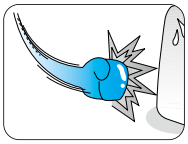
Do not use or store inflammable gas or material near the product.

It can cause electrical shocks or fires.



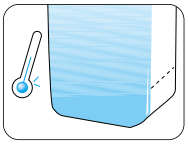
Do not install it on a tilt.

It can cause physical injury or product damages.

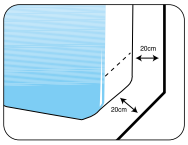


Do not apply excessive force or impact to the product.

It can cause damages to the product.

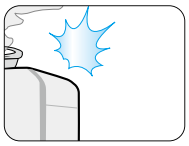


This product shows the best performance at temperature of 10~30°C.



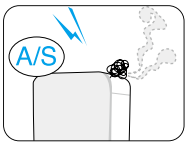
The side and rear of the product should be maintained at least 20cm from the wall.

During use



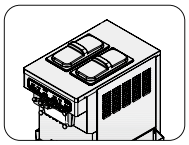
Do not place candle lights or cigarettes light on top of the product.

It can cause fires.



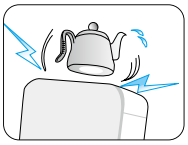
If the product has weird sounds or burning smell or smoke, turn off the earth leakage circuit breaker immediately and call the service center.

It can cause electrical shocks or fires.



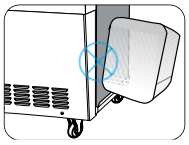
While operating the product, please completely close the upper cap.

Bugs or alien substances can enter the product.



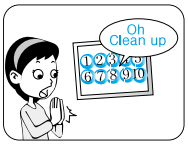
Do not place water containers, medicine, foods, small metal parts or inflammable material on top of the product.

If they go inside the product, it can cause electrical shocks, fire and damages.



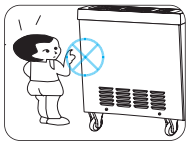
Do not obstruct the entrance of the air vent.

If so, the performance will be degraded.



To have good quality soft cream, it is recommended to clean it every day.

Otherwise, the ingredients can decay.



Don't let a person who was not educated the product or a child touch or operate the machine

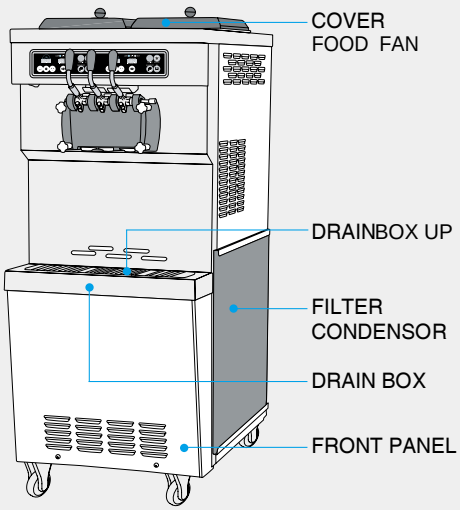
- Comply with the user guideline suggested by the maker. Otherwise, it can cause malfunctions

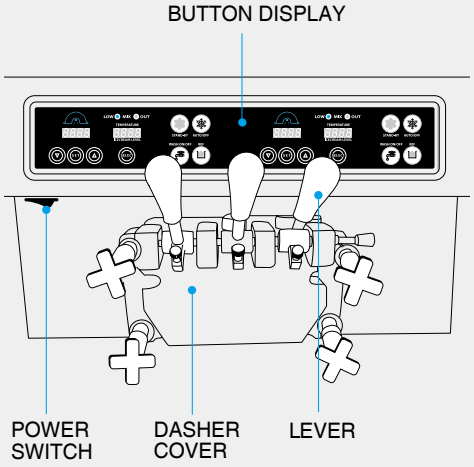
For your information

- Clean the filter periodically. Otherwise, the cooling performance will degrade.
- Comply with the user guideline suggested by the maker. Otherwise, it can cause malfunctions.Don't let a person who was not educated

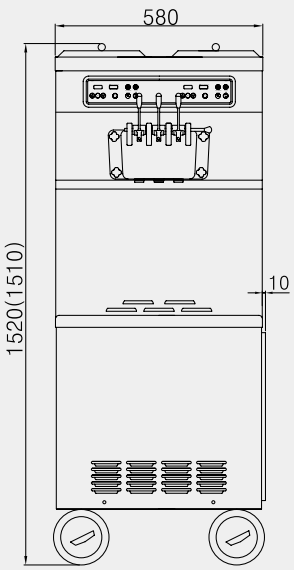
Part names and controller

Front view

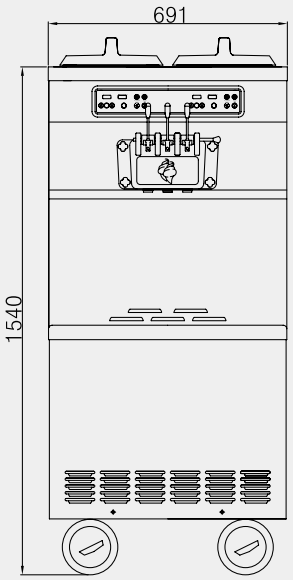




[203]



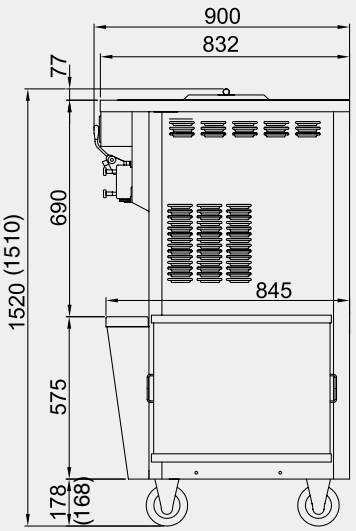
[303]



Part names and controller

Side view

[203S(SN,SNP)]



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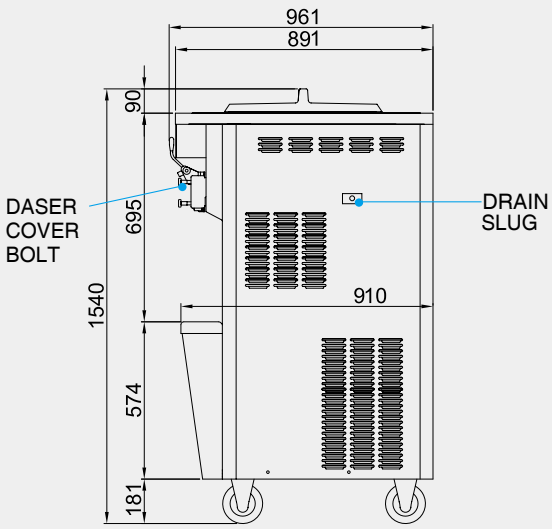
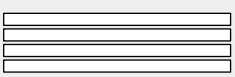


Part



DASHER LUG POM

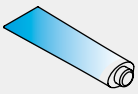
PACKING DASHER COVER

SHAFT POM PACKING

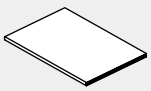
RING CABURATOR

CABURATOR PACKING

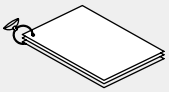
PACKING JAVARA



HINES



MANUAL

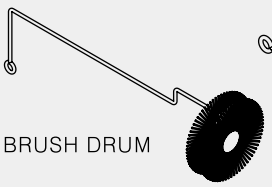


BOARD-CHANGE

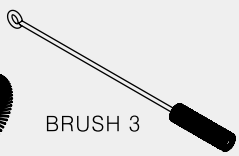
PATITION FOOD

DASHER BEARING

ORIFFICE CAP



BRUSH DRUM



BRUSH 3

CABURATOR ADJUST

CABURATOR TUBE BODY

Check prior to use

【Make sure to check them prior to use. 】

Please check the rating of the product before starting installation.
Install it independently with an earth leakage circuit breaker with more than 50A and provide anexternal grounding.
(Ask a qualified electrical technician for the installation.)
The power cable should be connected before the product can operate normally

203 : 130A, 320A More than
303 : 150A, 330A More than

- Do not block the air vent.

  The air suction and discharge should be facilitated so that the cooling performance can be optimized.

- Close the mixing tank.

  If you leave it open, bugs or contaminants may enter the mixing tank.

- Clean the condenser once a month.

  It is recommended to clean the cylinder, the mixing tank, the impeller, the dasher, and the piston every day. Clean the condenser at least once a month or more often.

- Clean it at least once a day.

  The cylinder, mix tank, impeller, dasher, and piston inside the product make contact with the ingredients, so you should clean them once every day.

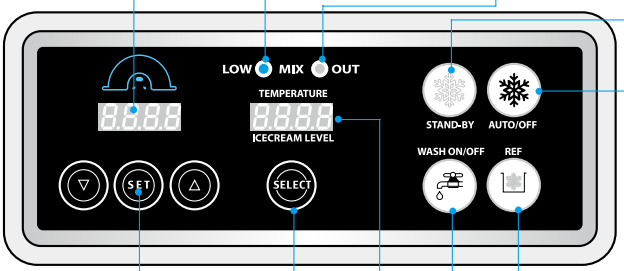
For your information

If you intend to leave it unused for a long time, wash it and turn off the water supply valve and turn off the earth leakage circuit breaker.

Button display names and functions

"Left Status Display Window"

· AUTO: Displays the operational status.
· Defrost: Display the defrost condition.
· Revive: Displays the revival condition.
· Sterilization: Displays the sterilization status.



"Insufficient Ingredients" lamp

It blinks when there are insufficient ingredients.

"No Ingredient" lamp

It blinks when there is no ingredient.

"Stand-by" button

It is used to stand by with ingredients stored in the cylinder and hopper.

"Auto" button

It is used to produce soft cream.

"Ref" button

It is used to store ingredients.

"Wash" button

It is used to wash the machine.

" ▼ and ▲ " Buttons

The ▼ and ▲ buttons are used to change the setting in the upper status display window.
Press the ▼ and ▲ buttons at the same time for five seconds to lock or unlock the touch buttons.

"Select" button

It is used to check the temperature in the lower status display window.

"Right Status Display Window"

Displays the percentage of soft cream formation in operation.
2-1: Displays the soft cream temperature in the storage tank.
2-2: Displays the ingredient temperature inside the cylinder.
2-3: Displays the condenser suction temperature.

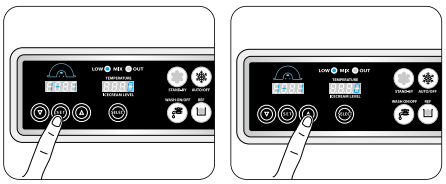
For your information

Buttons sense the touch of people(electric capacity), so press them slightly.
Also, buttons are placed narrowly each other. So when you press a button, the adjacent button can be pressed.
If you press the buttons hard, internal malfunction can occur, or the buttons won't function.

Functional description of the buttons

Change the setting

If you press the "Set" button lightly, you can enter the mode to check the setting as below. Use the "▼" and "▲" buttons to see the settings.



1-1: Check ice cream level settings
You can check the current setting for the ice cream. If the displayed value is higher than the no-load current (1-2), the ice cream becomes harder and if lower, the ice cream becomes softer.

1-2: Check the ice cream default level
It is the no-load current of the dasher motor.
It is the current consumed by the dasher motor when the ingredients are in the liquid status.

1-3: Check the currently supplied voltage.
It is the power supplied to the machine.
If the voltage is not correct after installation, call for service.

1-4: Check the storage temperature in the mixing tank.
You can check the temperature inside the mixing tank.

1-5 : Check the voice announcement
You can check whether a voice announcement is available.

1-6 : Check the program version
You can check the versions of the main PCB and the display PCB.
"n" is for the main PCB and "d" is for the display PCB.

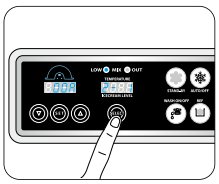
For your information

⚠ The soft cream level is set for the ingredients (vanilla) designated by the maker. Depending on the ingredients, you will need to adjust it properly. Please follow the instructions from our company when changing the level for the ingredients.

Functional description of the buttons

Check the temperature and the record

Press the "Select" button to check the different temperature settings mentioned below. The item number and the temperature will be displayed in turns.
2-1: Temperature of the mixing tank
2-2: Temperature of the mixing tank sensor
2-3: Condenser suction temperature (neighboring temperature)



2-1: Temperature of the mixing tank
The sensor located at the bottom of the mixing tank to measure the temperature of ingredients may display temperatures different from the actual ones if there is no ingredient in the mixing tank or mixer.

2-2: Temperature of the cylinder
The sensor located at the bottom front of the cylinder may display temperatures different from those of the ingredients or the ice cream.

2-3: Ambient temperature of the condenser
The sensor located in front of the condenser can measure the temperature of the ambient air entering the condenser and the recommended installation conditions as well.

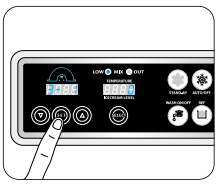
For your information

If 2-3 is too high, an error may occur.
This error is caused by poor environmental conditions (clearance, cleaning, ventilation, etc.).
You should install the machine according to the manufacturer's recommendation.

Functional description of the buttons

Change the setting

Press the "Set" button for three seconds to enter the setting change mode as follows.
Use the "▼" and "▲" to enter the password and use the "Set" button to move to each item. When the display blinks, use "▼" and "▲" to change the value and use the "Set" button to leave the item. Press and hold the "Set" button for three seconds to leave the value change mode.



3-1: Adjust the soft cream level
This item is used to adjust the target current of the soft cream. If the value is lower, the ice cream becomes softer. If the level is too high, the quantity of produced ice creams may drop, it may not be discharged or other malfunctions may occur. Consult an engineer.

3-4 : Set the mixing tank temperature
This item is used to adjust the cooling temperature of the ingredients in the mixing tank. The larger the number is, the higher the storage temperature is. The smaller the number is, the lower the storage temperature is.
If the temperature is too low, the ingredients may freeze.
If too high, they may spoil.

3-5-1: Select a voice announcement option
You can turn on/off the voice announcement.

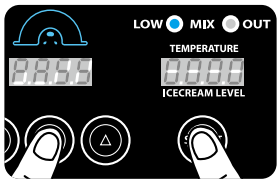
For your information

The ice cream level (3-1) may vary according to ingredients or sugar content. If it is high, the machine operates too much unnecessarily to make the ice cream soft. Also, if the machine stays in the auto mode for two or three hours without discharging any ice cream, this may make the ice cream softer depending on the ingredients.

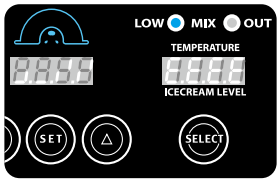
Explanation of the function button (set by an expert)

Model selection: Only experts that have been designated by the main office or by those who received professional education and received approval from the main office shall adjust this category. A service charge will be applied if problems occur due to unapproved alterations.

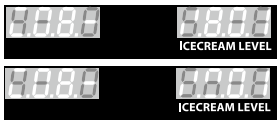
Press “set” + “select” buttons for 3 seconds to enter the stage of inputting the password.
Password has 4 digits and input begins from the left to the left and the relevant digit blinks.



Select the number by “-” and “+” buttons and press “set” button to move to the next digit.
Input the 4 digit password in this way.
Do not let anyone without professional education know the 4 digit password under any circumstances.



4-0. This is the category that can be selected according to the characteristic and model of the product and that has a meaning that is different from the model name of the product. When the model is changed in this category, the content in Category 4 is reset to the default setting.



4-1: Rest time setting
This is the function to allow the compressor to rest for a certain period of time by minute after the soft freezer is made. Adjust this category carefully as it can make the soft freezer melt quickly.

4-2: Set the compressor to restart
This remembers the temperature at the time of making soft freezer. When the temperature rises above the temperature that was set in this category, the compressor is restarted. The rest time of the compressor can be extended when the temperature in this category is increased.

4-3: Hopper management temperature setting
This sets the management temperature to refrigerate the raw material in the hopper. The temperature set in this category is managed as the value added from the value in Categories 3-4. For example, if 3-4 is 2℃and 4-3 is 2℃, the management temperature of the hopper is maintained at 2-4℃.

Important matters

The categories that determine the compressor rest time during operation are 4-1 and 4-2. When one is satisfied with these two categories, the compressor rest time ends.

Explanation of the function button (set by an expert)

4-4: Standby off temperature setting
This sets the cylinder's raw material storage temperature in the standby mode. When the temperature of this category is too low, the raw material inside the cylinder freezer and soft freezer can become like porridge

4-5: Standby management temperature setting
This sets the management temperature to refrigerate the raw material in the hopper. The temperature set in this category is managed the value added from the value in Categories 3-4. For example, if 3-4 is 2℃ and 4-3 is 2℃, the management temperature of the hopper is maintained at 6-8℃.

4-6: Standby reset time setting
This sets the motor's operation cycle to the standby mode.
When one is satisfied with the temperature value of 4-4 plus 4-5 and the time of this category, the motor and compressor are operated.

4-7: 1℃ rise level calculation (The left digit)
When the soft freezer is made, 100% is displayed on the green FND window and the percentage value is deducted from the compressor rest time.At this time, when 1℃ is added to the temperature at which the soft freezer is made, the value set for this category is deducted from the percentage and is then displayed.

4-7: 30 seconds pass level calculation (The right number)
When the soft freezer is made, 100% is displayed on the green FND window and the percentage value is deducted from the compressor rest time. At this time, the value set for this category is deduced from the percentage every 30 seconds after the making of the soft freezer and displayed.

4-8: Upper limit current setting
This category sets the maximum value when adjusting the hardness of the soft freezer in Category 3-1.
This category' s value needs to be set within the range, in which excessive current does not flow on the motor.

4-9: Maximum pasteurization time setting
It is set to stop pasteurization when gas leaks or when problems occur in the pasteurization device. If pasteurization continues until the time set for this category

4-10: Select between Celsius and Fahrenheit
Select between Celsius (℃) and Fahrenheit (℉).

Explanation of the function button (set by an expert)

4-11: Environmental temperature detect function setting

The function to detect the environmental temperature can be turned ON/OFF. Environmental temperature is the temperature of the air coming into the compressor. Therefore, the temperature for this category can be high and a warning message can be given if the place of installation is small and has no ventilation.
Then the installation environment must be improved.

4-12: No load detection function setting

The no load detection function can be turned ON/OFF.
"No load" means the raw material inside the cylinder exists in a liquid condition. The motor current is then called "no load current."
If this function is set to on, power is allowed to the product and the no load current is remembered when the temperature of the cylinder is higher than 5 ° C.

4-13: Voltage standard value setting

Measure the voltage at the place of installation and enter the standard value. This product guarantees ±10% of the supply power. When it is outside of the range a warning sound is given.
If used continually, the product can have problems.

4-14: Button sensitivity setting

This sets button sensitivity.
A smaller number means more sensitivity and a larger number means less sensitivity.

4-15: Voice language selection

The language set in this category gives voice guidance, and a total 2 languages are embedded.
KOr :Korean, Eng :English

4-16: Set motor current value correction

This is the function for performing overall compensation when the measured motor current is different from the actual measurement value.

4-17: Air pump selection

If the model has an air pump, this category can be turned on to control the operation of the air pump.

1: Operation time setting during the initial operation

Set the operation time of the air pump when beginning initial operation.

Explanation of the function button (set by an expert)

2: Operation time setting after sales
Set the operation delay time of the air pump sales. After the motor operation is stopped, the air pump is additionally operated according to the time set for this category.

3: Operation time set after button input
Set the time that the air pump operates every time the button is pushed.

4-18: Select the use of pasteurization.

4-19: Button lock function setting
By activating this category, the buttons (refers to the work mode buttons on the right such as auto, wash, heating, stand-by, refresh, refrigeration, and so forth) can be locked. Press both the "-" button and the "+" button for 5 seconds, in order to lock the buttons and do the same in order to unlock the buttons.

4-20: Voltage corresponding current compensation setting
This is the function for compensating the current value when the voltage is easily changed during the making of soft freezer.
This product consumes a lot of power. Therefore, install and make sure it has a supply of enough stable power.

4-21: Dasher motor delay time setting
Sets the motor' s operation delay time after making soft freezer.

4-22: Compressor delay time setting
This sets the compressor' s operation delay time after making soft freezer. If this category is given much time, soft freezer can be frozen too much and problems can occur to the product.

4-23: Selection of the compressor forced operation
This is the function for forcibly operating the compressor during rest time when the compressor is not operating. The following categories appear when the compressor operation time is set in this category.

4-24: Temperature detection time setting after stop
This chooses the time to determine the temperature during the rest time. In case "4n" is chosen, it means, "detecting temperature 4 minutes after rest." It sets the temperature for operating the compressor.

4-25: Operation temperature selection
This detects the temperature at the time set in Category 4-24 and sets the temperature at which the compressor can be operated.
The compressor is operated for duration stipulated in Item 4-23 when the temperature reaches the temperature that was set for this category

Explanation of the function button (set by an expert)

4-26: Specification of whether surrounding temperature compensation will be used
This category is used to compensate for the surrounding temperature (located at the suction side of the compressor)

1: Temperature compensation value setting for 10 ℃ or lower
This sets the temperature compensation value of the ambient temperature to the environmental temperature of 10 ℃ or lower.

2: Temperature compensation value setting for 20℃ or lower
This sets the temperature compensation value of the ambient temperature to the environmental temperature of 20℃ or lower.

3: Temperature compensation value setting for 30℃ or lower
This sets the temperature compensation value of the ambient temperature to the environmental temperature of 30℃ or lower.

4: Temperature compensation value setting for 40℃ or lower
This sets the temperature compensation value of the ambient temperature to the environmental temperature of 40℃ or lower.

5: Temperature compensation value setting for 41℃ or higher
This sets the temperature compensation value of the ambient temperature to the environmental temperature of 41℃ or higher.

4-27: Sale lever no return judgment time setting
When the lever does not return to the original position after the ejection of the soft freezer, an alarm is set off after the time that was set for this category.

4-28: Hopper temperature compensation function setting
The temperature sensor on the bottom of the hopper detects the temperature of the raw material in the hopper.
Models with an impeller almost have the same temperature, but a temperature difference can appear in the models that don't have an impeller. Therefore, it is the category to compensate this temperature difference.

Explanation of the function button (set by an expert)

4-30: MIX OUT function selection

When this category is activated, all operations are stopped in case there is no raw material.

4-31: MIX LOW function selection

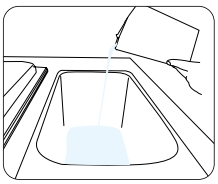
4-32: Frequency standard value setting

Setthe frequency standard of the supply power. When the standard value of this category is wrongly selected, the present supply voltage of 1~3 can be displayed differently.

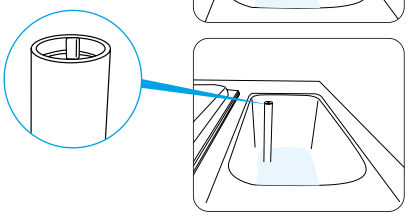
How to make soft ice cream

How to make soft cream

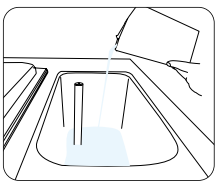
1. Pour 2.0 ℓ of ingredients in the mixing tank.
   The raw material must has been stored in a cooler at a temperature 10℃ or below.



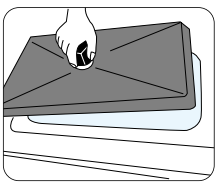
2. Plug in the caburator and block the hole.



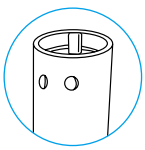
3. Pour 2.0 ℓ of ingredients in the mixing tank.
   (See if the insufficient ingredient lamp is turned off.)

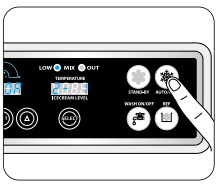


4. Close the cap.



5. Press the "Operate(AUTO)" button.
   When the soft ice cream is formed, open the caburator of the tank.





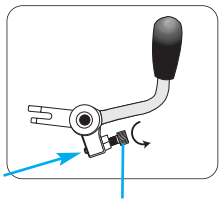
For your information

⚠ The smaller the caburator hole is, the higher the overrun (air content) is. Instead, in case of continuous sales, the ingredients supply gets slower and the soft cream is let out slowly.

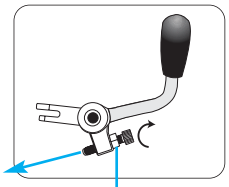
⚠ The caburator hole can get clogged, so check it and wash it periodically during use.

Soft ice cream out-speed control

By adjusting 'Screw Adjust' at the bottom of the lever (out lever), you can adjust the out-speed of the soft ice cream. As shown in the figure on the left, release the 'Screw Adjust' to increase the out-speed of the soft ice cream.



As shown in the figure on the right, fasten the 'Screw Adjust' to reduce the out-speed of the soft ice cream.



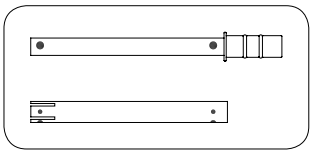
※ After setting up the adjustment bolt position, tighten the set nut ‘a’ to fix the 'Screw Adjust' position and maintain constant dispensing volume.

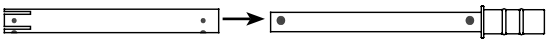
For your information

If you release the Screw Adjust to increase the out speed of the soft ice cream, then the ingredients in the mixing tank will be supplied to the cylinder relatively slowly. Suddenly, the soft ice cream may no longer come out. Therefore, you are recommended to adjust the vending speed for one cup every 6 to 8 seconds.

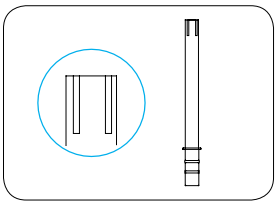
Caburator control

The carburetor is consisted of two parts.
The part that is inserted into the hole of the mixing tank is called the body and a tube is inserted into this.The tube has a hole at the top and at the bottom. It can't be inserted in the reverse direction.

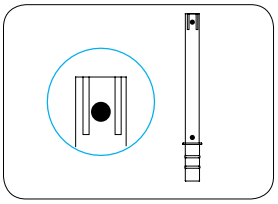




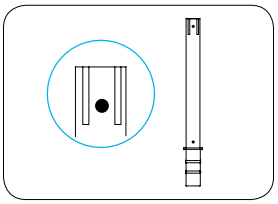
The figure shows the caburator with a blocked hole.
If you align the no hole of the upper area of the caburator body with the area having no hole in the upper area of the tube, then the hole in the lower area of the caburator body will be blocked.
Condition of use: Initial soft ice cream making



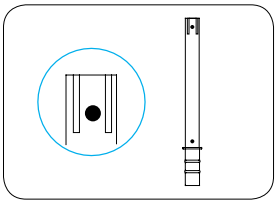
This figure shows the caburator aligned with a large hole.
Align the large hole of the upper area of the caburator body with the large hole in the upper area of the tube. Decrease the overrun and increase the amount of ingredients injection in this way when you need continuous vending of the product.
Condition of use: When the "AUTO" mode is executed



This figure shows the caburator aligned with a small hole
Align the small hole of the upper area of the caburator body with the small hole in the upper area of the tube. Then, it will be aligned with the small hole in the lower area of the caburator body.
Increase the overrun and decrease the amount of ingredients injection in this way when you expect a small amount of sales.
Condition of use: When the "AUTO" mode is executed



This figure shows the caburator aligned with a medium hole.
Align the medium hole of the upper area of the caburator body with the medium hole in the upper area of the tube. Then, it will be aligned with the medium hole in the lower area of the caburator body.
It will make the overrun and the amount of ingredients iinjection at medium level for sales
Condition of use: When the "AUTO" mode is executed



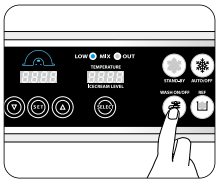
For your information

A small hole can improve the overrun, but it may depend on the amount of ingredients in the mixing tank. The fewer ingredient is in the mixing tank, the higher the overrun becomes. The more the ingredient is, the lower the overrun becomes.

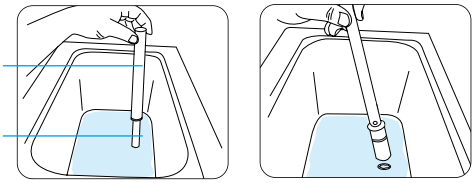
Cleaning method

Wash mode

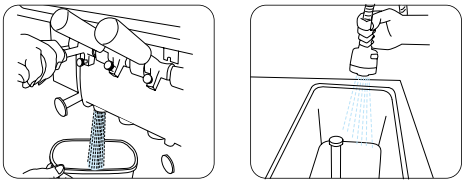
1. Press the wash button on the control panel. (Wait until the soft cream in the cylinder is melted. About 10 minutes.)



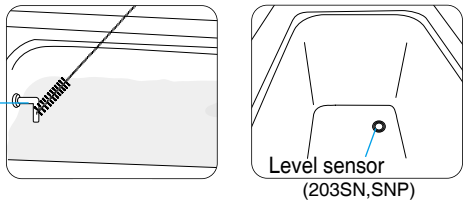
2. Take out the caburator (tube+body).



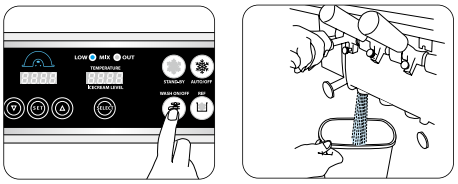
3. Remove the soft cream liquid in the mixing tank and pour faucet water into it. Repeat it two or three times until you get clean water from it.



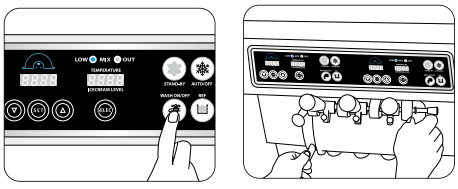
4. Clean out the raw materials and foreign objects from around the agitation axle, level sensor, drain hole, and so forth from inside the Mixing tank with a brush.



5. Press the wash button and finally discharge the water from the mixing tank. Use faucet water to rinse off the cleaning agent residuals.



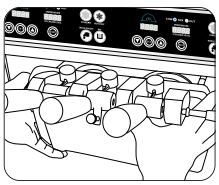
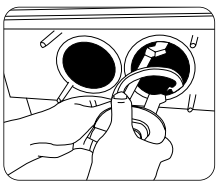
6. Stop the product by pressing wash button (do not turn off the power switch) and loose the dasher cover bolts diagonally by the order shown in the picture and separate the dasher cover from the machine.



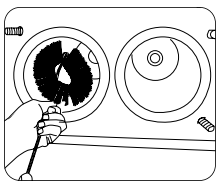
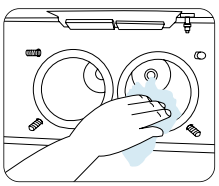
Cleaning method

Wash mode

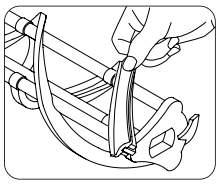
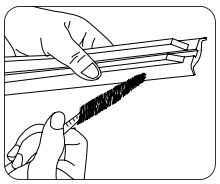
7. Separate the dasher cover from the main body. Separate the dasher from the cylinder.

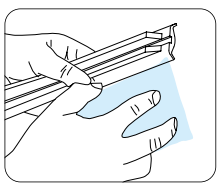
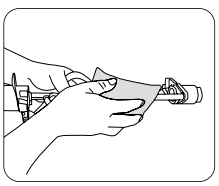
8. Brush off the inner area of the cylinder and wipe it off with a soft cloth.

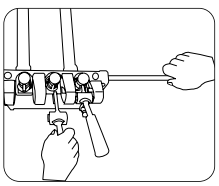
9. Remove the dasher brush and clean the blade hole with a brush and wipe out moisture with a soft cloth.

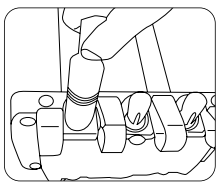
10. Clean up the dasher with a soft cloth.

11. Extract a handle shaft and separate the lever from the dasher cover.



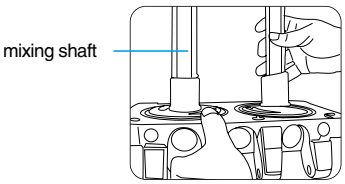
12. Take out the piston of the dasher cover and clean the edge of thepiston with a soft towel.



Cleaning method

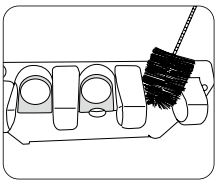
▌Washing of each parts ▐

13. Disassemble the mixing shaft and wipe it off with a brush.



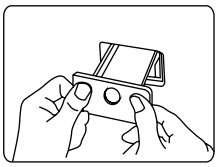
14. Brush the piston holes of the dasher cover.

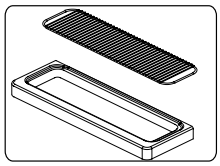
15. After cleaning off all parts, dry them and reassemble them in the reverse order.



16. Clean the drain slug and drain box(drain box up).

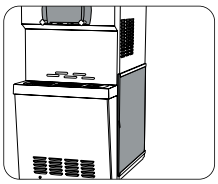
※ Clean it at least once a day.





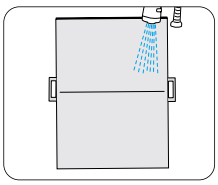
【Condenser and filter cleaning method 】

1. Take out the condenser filter located in the rear.

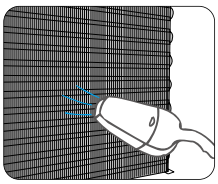


2. Shake off filter dusts and wash it off thoroughly with water.

※After washing it, Dry the filter.



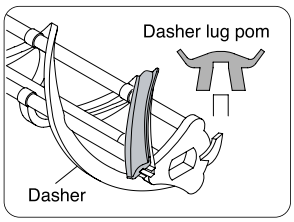
3. The condenser surface has lots of dust. Remove it by using a household vacuum cleaner or hand held cleaner. Clean and dry the filter and insert it into the machine.



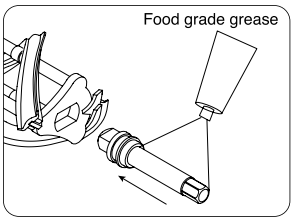
Dasher and dasher cover assembly method

Dasher assembly

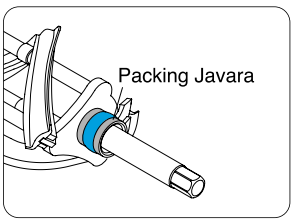
1. Assemble the dasher lug pom by turning it onto the dasher blade.



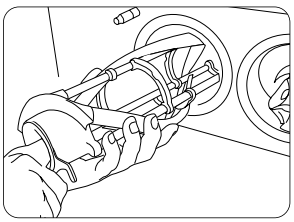
2. Apply food grade grease on the shaft and insert it into the dasher.



3. Check the direction of the packing javara and push it as deep as possible to prevent from coming off.



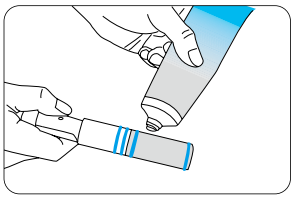
4. Insert the dasher assembly into the cylinder.



Dasher cover assembly method

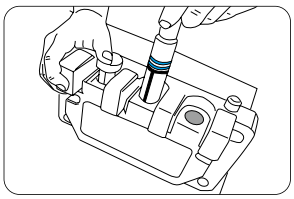
[Dasher cover assembly]

1. Apply edible vegetable oil to the ring inserted into the piston.

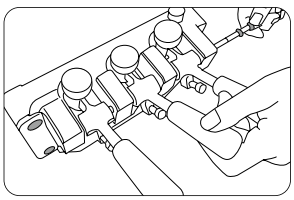


2. Insert the piston in the middle of the dasher cover.

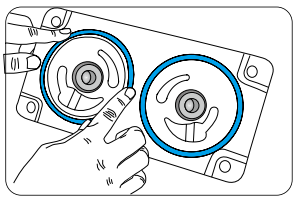
   ※ Pay attention to the locations of the left/right pistons and the center piston.



3. Insert the discharge lever into the piston and then insert the lever in line with the dasher cover and the discharge lever.

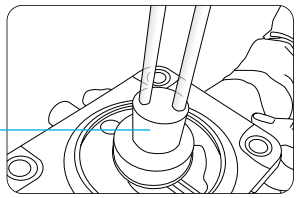


4. Insert the packing dasher to the dasher cover.

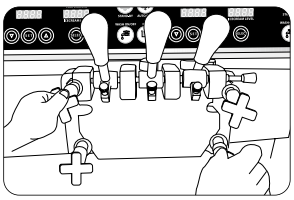


5. Insert the mixing shaft and align the dasher bearing.

dasher bearing

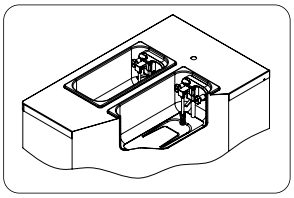


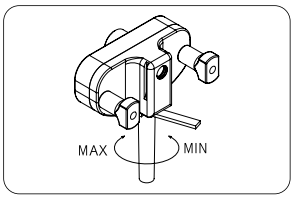
6. Fasten the two pairs of dasher cover bolts facing each other diagonally.
   If they are loose, then the soft cream can leak.
   Fasten it tightly.



‘ICETRO’ AIR PUMP ‘A’

- ‘ICETRO’ pump allows, by changing position of regulator position. ‘A’ , to vary proportions between air and mix conveyed to the freezing cylinder ; so, within certain limits, it allows overrun regulation depending on mix used.
- ‘ICETRO’ pump regulator should be set to the middle position. If, after dispensing a significant number of cones, ice cream is too heavy and wet, you may move ‘ICETRO’ pump regulator a notch at a time towards the right. If ice cream comes out of spigot mixed with air bubbles, then turn pump regulator a notch at a time towards the left.



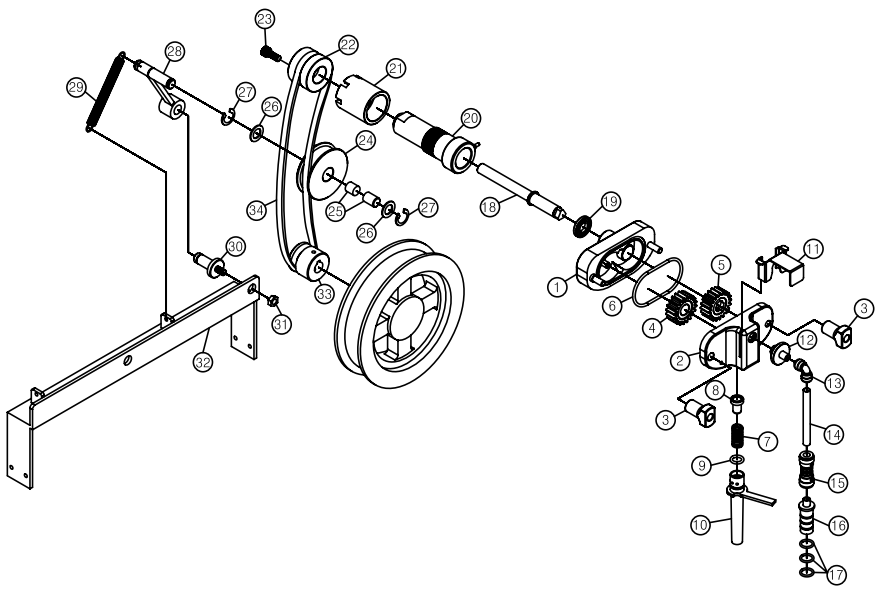


《A》

Pump Cleaning

Disassembling the pump

- Disconnect the connection pipe by freeing it from the pin found on the pump cover.
- Pull the connection pipe backwards and remove the feeding pipe(⑬ ~⑱) then pulling upwards.
- Removing the pump by turning it clockwise of 45℃ then pull backwards.
- Disassemble the pump



Pump Cleaning

1. Fill a clean sink with detergent and hot water(50~60℃)
2. Wash the disassembled parts with the solution and scrub them thoroughly with the brushes provided with the machine. As you proceed, rinse with hot water. Make sure all lubricant and mix film is removed from the parts.
3. Fill another sink with sanitizer prepared in 21~31℃water(ex. 1pack in 9.5 liter of water).
4. Place the parts in the sanitizing solution. Leave them there at least 1minute(using the sanitizing solution, sanitizer manufacturers' directions are to be followed).
5. Place the components on a clean tray to air-dry.
6. Return to the machine with a small amount of sanitizer.
7. Dip a brush into the sanitizer and thoroughly brush the disassembled
8. Dip a brush into the sanitizer and thoroughly brush clean the mix inlet hole and the pump drive hub opening in the rear mix tank
9. Spray the back of cylinders and the tankswalls with sanitizer

Repeat step 7, 8, 9 several time.

Reassemble and connect to the pumps only when cleaning operations are complete. Reassemble the pumps, making sure to use food-grade lubricant on all o-ring and insert them into the tanks

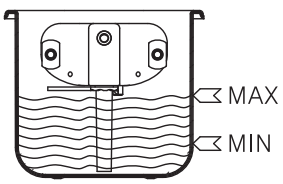
STARTING THE MACHINE

After installing the machine according to the instructions given in the chapter INSTALLATION, and after carefully cleaning and sanitizing the machine, proceed as follows:

Remove the compression pipes from tanks bottoms and place them in the sanitizing solution.

Filing the tanks:

- Take the 50% level into mix hopper firstly.
  NB.: Mix to be poured at a temperature of 4~5℃
- Pour one bag of mix into each tank allowing it to be convenyed into the freezing cylinders. Mix level in the tank tank must never reach the pump(see picture)and more mix must be added when level goes below about 2cm from tank bottom.
- Lower the distribution handles and wait until only full strength mix will come out of the lid; close the handles.

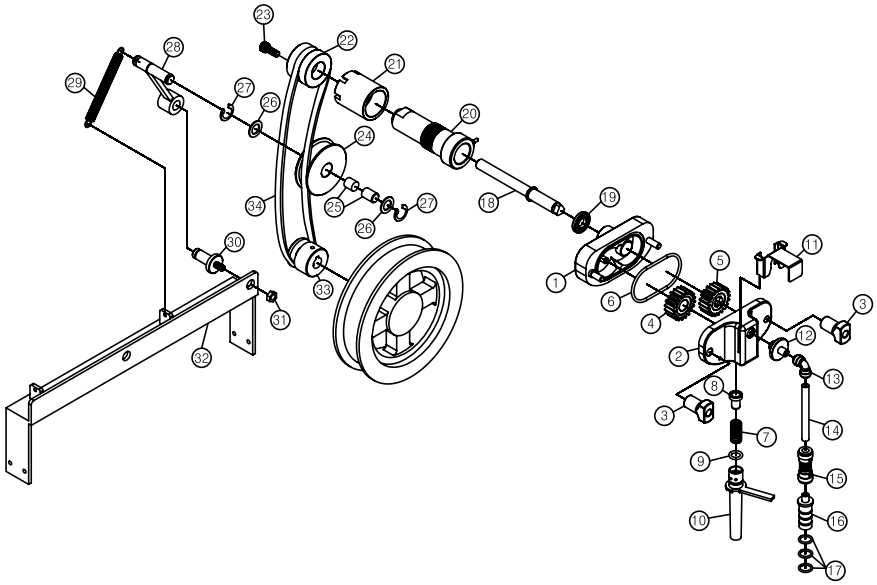


Connecting the mix pressure pipe:

- Keep on pouring the mix and wait till the cylinders have been completely filled (during that time you see bubbles in the tanks); With sanitized hands, draw the compression pipes out from the sanitizing solution and insert them into relevant tank bottoms.
- Turn the compression pipes clockwise and align them to the pump, insert the connection pipes well into the compression pipes, then into the pumps and lock them. Mix inside the tanks shall never reach the pump(see the picture); furthermore mix shall be added whenever level is 2cm from tank bottom.
- Place tank covers back.
- Select the function Production and after a few minutes, ice cream is ready for distribution

DISASSEMBLING MIX PUMP

1. Take the connection pipes out from the pumps and compression pipes position. Disassembling compression pipes lift them while taking them out from their seats inside the tanks.
2. Remove the pumps by turning them 45° clockwise and pulling backwards.
3. Remove air regulators(⑩), now, by turning them anticlockwise and pulling downwards.
4. Remove spring(⑦)and valve(⑧) with the extractor provided, remove OR(⑨)
5. Unscrew the two knobs(③) in order to separate cover(②)and pump body(②).
6. Hit the pump body in order to remove its gear(④ and ⑤). With the extractor, remove OR(⑥)



REASSEMBLING THE MIX PUMP

1. Lubricate and place the o-ring back on the connection tube(⑬).
2. Lubricate and place the o-ring(⑨ ~ ⑱) back on the pressure pipe(⑰).
3. Insert the connection tube (⑬) assembly in the pressure pipe(⑭ ~ ⑱)
4. Dip the pressure pipe into a sanitizing solution.
5. Lubricate and install the pump body o-ring(⑥)
6. Lubricate the sides as well as the center of the pump gears(④and⑤) with a thin film of lubricant and insert them into the pump body(①).
   Do not lubricate the teeth of the pump gears.
7. Lubricate and place the o-ring(⑨)on the feeding tube(⑩).
8. Hold the pump cover(①) upside down and insert the back flow valve(⑧)and spring (⑦) in their pump cover housing.
9. Insert the feeding tube (⑩) in the pump cover: push and turn it clockwise.
10. Assemble the pump cover(②) with the feeding tube downwards onto the pump body and turn the two knobs(③) tightly; install the mix pump in the tank with the locking pin hook on the right, turning the pump anticlockwise until it locks onto the tank locking pin.

PRIMING THE MIX PUMP

Tank filling:

- ▶ Take 1 bag of mix from the refrigerator.
- ▶ Pour one bag of mix into the each tank allowing it to drain into the freezing cylinders.
- ▶ Lower the distribution handles and wait till only full strength mix(not mix and sanitizer) will come out from front lid; close the handles.

Connecting the mix pressure pipe:

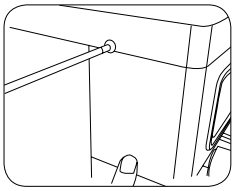
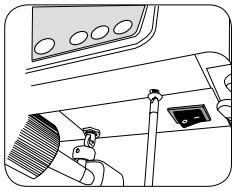
- ▶ Keep on pouring the mix and wait till the cylinders have been completely filled(during that time you see bubbles in the tanks); with sanitized hand, draw compression pipe out from the sanitizing solution and insert them into relevant tank bottoms.
- ▶ With sanitized hands, take the connection pipes(⑬) from the sanitizing solution and insert them well into the compression pipes(⑭), then into the pumps and lock them. Mix inside the tanks shall never reach the pump(see the picture); furthermore mix shall be added whenever level is 2 cm from bottom.
- ▶ Place tank covers back.
- ▶ Select the function Production and after a few minutes, ice cream is ready for distribution.

TROUBLESHOOT GUIDE

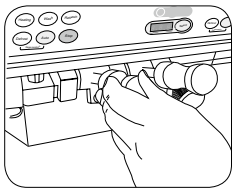
IRREGULARITY	CAUSE	PROCEDURE TO FOLLOW
Low ice cream overrun	1. Pump stuffing box not properly installed or damaged	1. Change regulator(⑩)
Drip drawer shows mix drops	1. Pump stuffing box not properly installed	1. Stop the machine, disassemble pump and check thir stuffing boxes are o.k

How to upgrade the program (Download kit → Product)

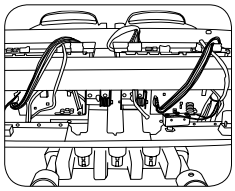
1. If the product is operating, then first stop it before performing any work. In this case, do not power off. Remove the fixing bolts from the left/right/ bottom/top of the product.

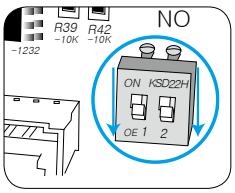
2. While pulling out the lever shaft, separate the sales lever. At this time, please be careful not to drop thesales lever. It can easily get damaged.

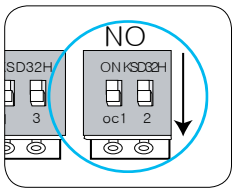


3. By taking out the button display panel on the bottom and turning it upside down, you can place it on top of the product. At this time, do not damage the PCB wire and connectors.

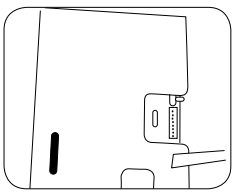
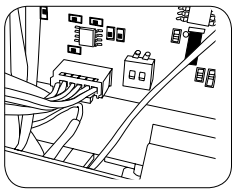


4. Turn off both dip switches pin no. 2 of the display PCB on the button display panel and pin no. 2 of the main PCB inside.

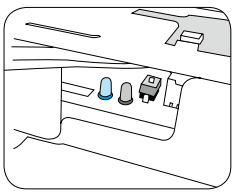
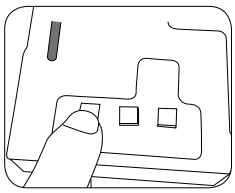




5. Prepare a download kit with the latest version of program. Insert itinto the download connector (left ofthe dip switch) for the main PCB.

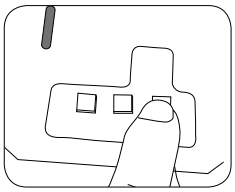



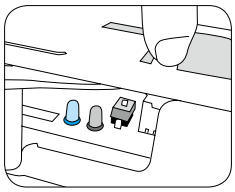
6. When the green LED of the download kit is on, press the left button. Then the green LED will blink once tomean that it is ready for downloading.

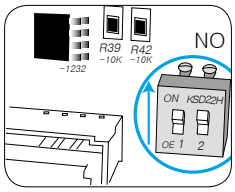
How to upgrade the program (Download kit → Product)

7. Press the right button on the download kit.
   The red and green LED will blink and then the green LED will blink alone when downloading starts. When downloading iscompleted, the green LED will stay on.

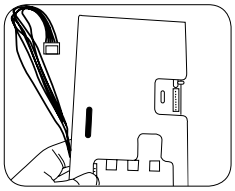


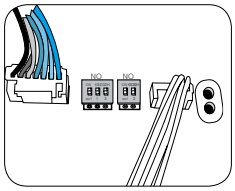


8. When the downloading is completed, remove the downloading connector and turn on all the pins of the 2 pin dip switch.

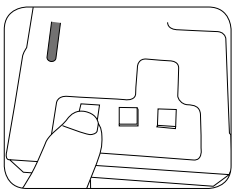


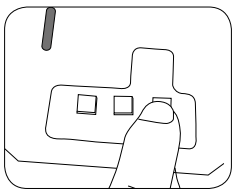
9. Prepare a download kit with the latest version of the program. Insert it into the download connector (left to thedip switch) of the main PCB.



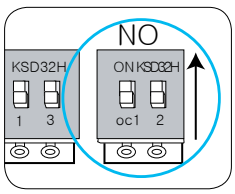


10. Using the same method as for downloading the main PCN program, when the green LED of the download kit is on, press the leftbutt on. Then the green LED will blink onceto mean that it is ready for downloading. Press the right button to download.

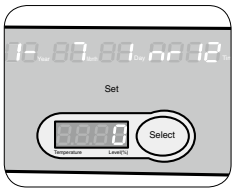


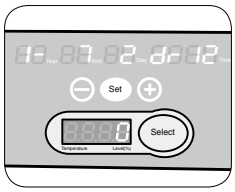


11. When the downloading is completed, remove thedownloading connector and turn on all the pins ofthe 2 pin dip switch.



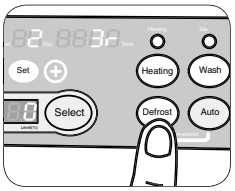
12. After updating the program, assemble the button display panel and check if the version of the program is correct in item 1 through 7.



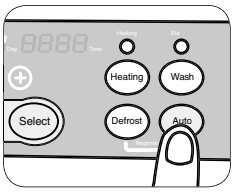


How to upgrade the program (Download kit → Product)

13. If the new program is downloaded, the no load value (1- 2) could have been initialized. Therefore if the operating program is updated, you must defrost it first.
(To “Defrost”, block the mix valve hole.)



14. When the “Defrost” is fully completed, leave the bottom power switch off for more than five seconds and turn it on again and then press the ‘Auto’ button.
(After about 10 seconds, the no load value will be automatically memorized.)
If the product was not in operation, then after upgrading it, turn off/on the power in the above method and press the ‘Auto’ button.



Caution

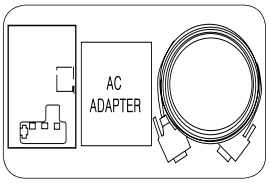
If you want to update the product program, then check the settings (1-1) of the product and apply the same settings after the upgrades.

Caution

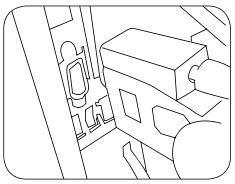
The program can be upgraded only according to the procedures suggested by the customer satisfactionteam of our company. Obtain the upgrade program and download it into the download kit before inserting itinto the product.

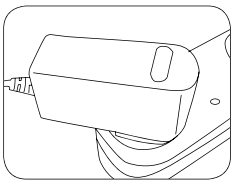
How to upgrade the program (PC → Download kit)

1. The picture on the left shows the components of the software download kit: 1 download kit, 1 AC power adapter, 1 RS-232C (or USB) serial cable. As SSI-203S comes in two parts - main and display - you will need 2 sets of download kit.

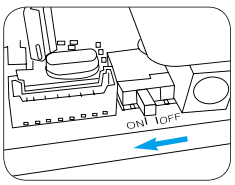


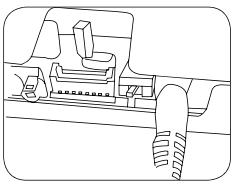
2. Connect the RS-232C cable to the serial port of the PC and plug the AC power adapter into a power outlet



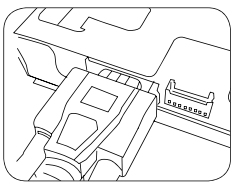


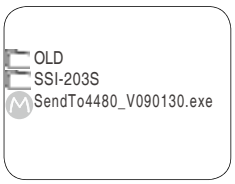
3. Power on the download kit and connect the AC power adapter.



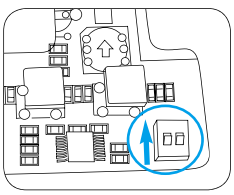


4. Connect the RS-232C cable to the download kit and run the download software.

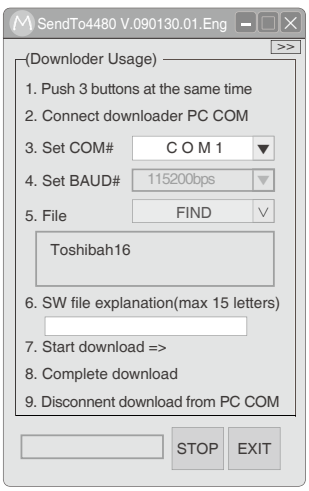




5. Make sure that all the 2-pin deep switches of the download kit are "ON".



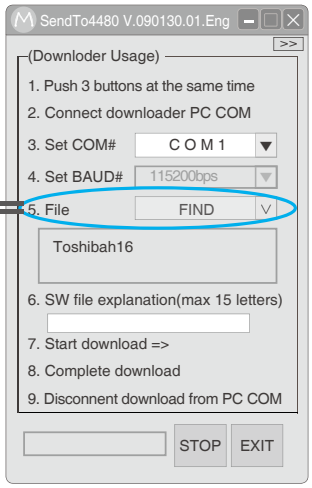
6. Upon running the software, a window like the one shown on the left will be activated. Select the port of the PC to which the RS-232C cable is connected. COM1 is set by default, so try the other ports if downloading doesn't seem to work.



How to upgrade the program (PC →Download kit)

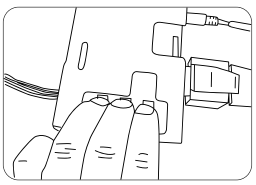
7. Click "FIND" and a pop-up window will open, as shown below. Go to the folder where the most recent software is stored and select the main program from the files with the extension "h16" .

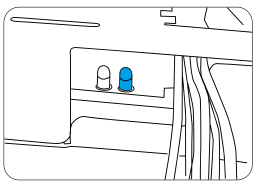
Example: "MAIN203s_v1.3(2010.0708)h16"

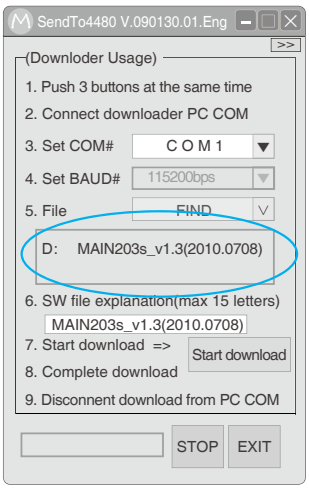


8. Select the program you wish to update, as shown in the picture on the left.

9. Press the 3 buttons of the kit simultaneously for more than 3 seconds to turn off both the red and green LEDs.

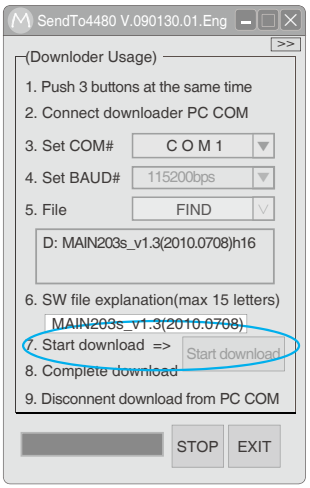






How to upgrade the program (PC → Download kit)

10. Click "Start downloading" and you will see the progress of downloading, as shown in the figure. A new pop-up window will appear upon completion of downloading. Please apply the above mentioned procedures to update the Display part.

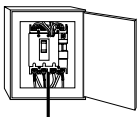


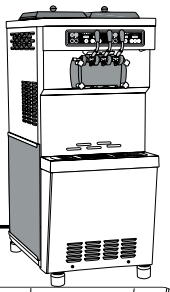
Installation method

【 Electrical connection 】

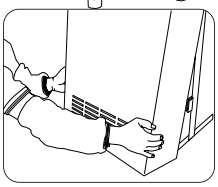
1.Install a leakage current breaker, capacity of 20A or larger, in each distribution panel of the relevant model.

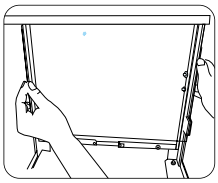
▶AC 1Φ 220V
▶AC 3Φ 220V
▶AC 3Φ 220V



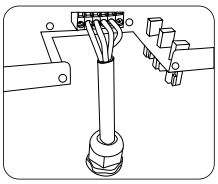


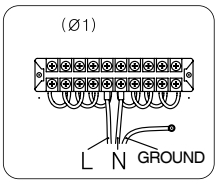
2. Remove the front panel at the front bottom, and remove the control box cover.

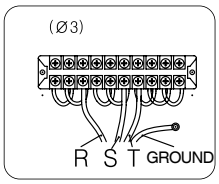


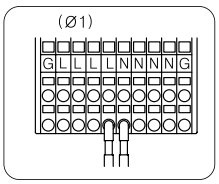


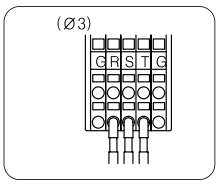
3. Attach a cable gland firmly on 4.0㎟ cable and connect the cable.



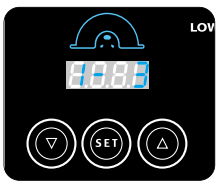


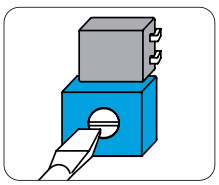






4. Measure the L and N phasevoltages.
They should match the voltage displayed in 1-3. If not,then using a straight headed driver, adjust the PCB variable resistance located in the control box at the bottom front of the product as shown in the figure on the right. (Clock wise:Increase, Counter-Clock wise : Decrease)





For your information

Electrical connections should be performed by an electrical technician to make sure that each phase is (L, N, GROUND) correctly connected. If the connection is wrong, it can cause explosions or ignition of the PCB in the product and electrical shocks or fires.

Before requesting service

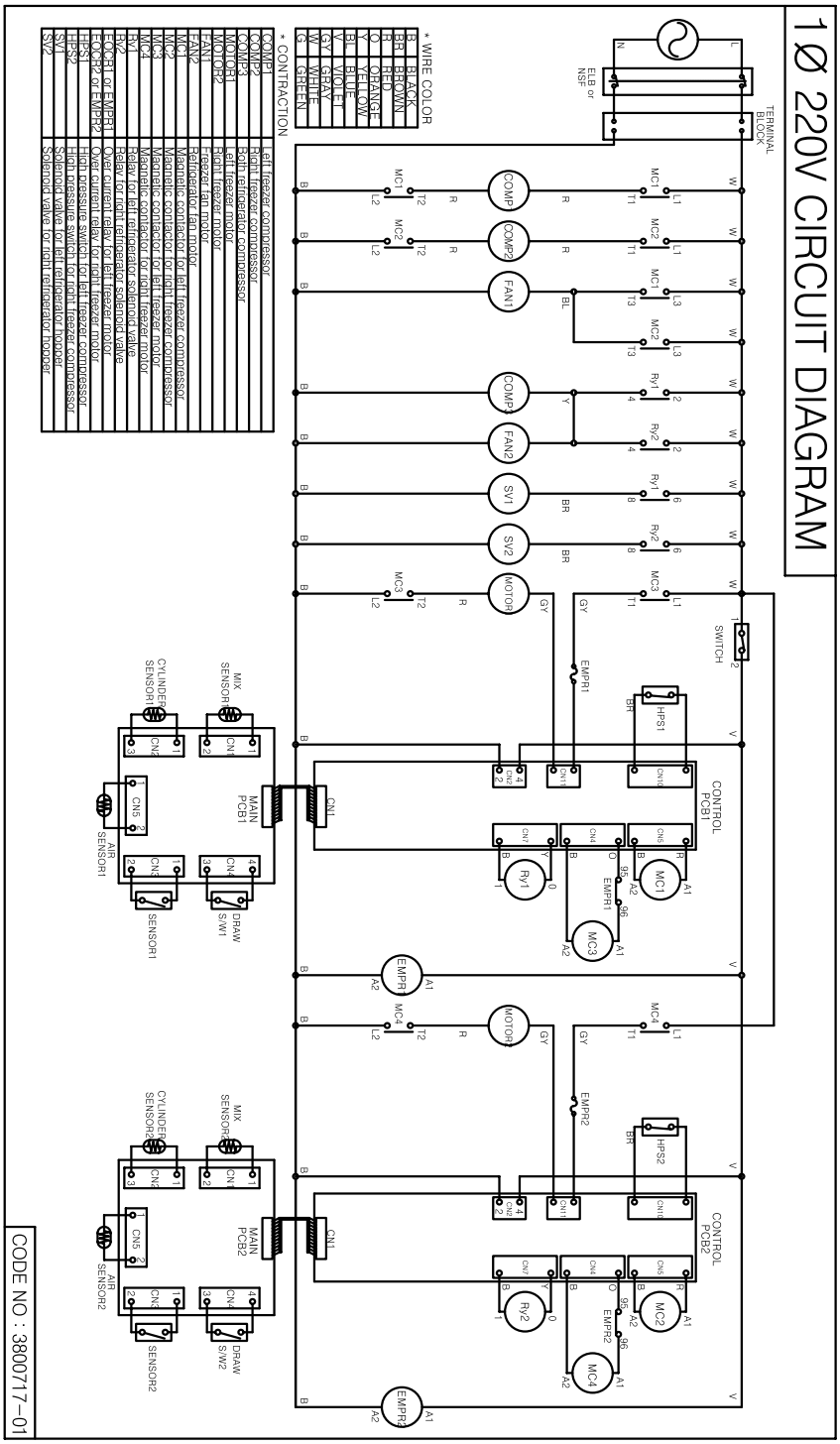
The soft ice cream machine can operate abnormally because you are not familiar with the method for use or due to another insignificant reason. It does not necessarily mean a malfunction. In this case, check the following items to resolve a simple problem on your own without the help from the service center. If you still can't resolve it after checking the following items, please contact our service center.

Status	Check it!	Inspection and necessary actions
Can't operate it!	1. Has a reverse phase error occurred? 2. Is the earth leakage circuit breaker or the switch turned off? 3. Is the display (front side) lamp on?	1. Contact our electrical technician or the customer satisfaction team. 2. Turn on the power switch or earth leakage circuit breaker. 3. Turn on the ELB (breaker) and the switch.
It does not stop operating!	1. Is there dust in the vent (suction hole)? 2. Is the air ventilation smooth? 3. Is the caburator hole clogged? 4. Is the vent (suction opening) temperature too high?	1.Take out the filter and remove dust. 2.Maintain the minimum distance of 20cm from the product to the wall. 3.Wash the caburator and insert it again. 4.Keep the suction temperature for the condenser below 38℃.
No soft ice cream comes out!	1. Is the caburator hole clogged? 2. Is the speed control bolt for the out lever fastened? 3. Are there insufficient ingredients in the tank?	1.Open the caburator hole. 2.Release the speed control bolt. 3.Supply ingredients. (If used for a long time, it can generate bubbles or foam depending on the type of ingredients. Use liquid ingredients.)
Soft ice cream is too thin!	1. Is the caburator inserted? 2. Have you stopped using it for a long time? 3. Is the sugar level of the ingredients too high?	1. Insert the caburator for use. 2. If it has not been used for more than 3 hours, use the "Regeneration" function. (In this case, block the caburator hole.) 3. Increase the strength. (If the ingredients are different from what was used in the initial training, then adjust the soft ice cream level or contact the customer satisfaction team.)
Too much noise!	1. This product is a business machine. It can generate slight noises unlike general consumer electronics. 2. At the initial start, you will hear the ticking sounds.	1. This product is designed for less than 70dB. If some abnormal noises are heard during operation, then contact the customer service center. 2. The plastic blade scratches the cylinder wall when making the soft ice cream. It is a normal sound.
The caburator moving vertically and out of range gradually!	1.Did you block the caburator for the initial start? 2.Did you block the caburator during pasteurization?	1. Familiarize yourself with the method for use. (If there is no air in the cylinder while making the soft ice cream, then the volume expands and pushes out the caburator or vomits the soft ice cream. 2. Familiarize yourself with the method for use. (same as above)
Soft ice cream color is dark!	1. Did you put on the caburator? 2. Did you block the caburator during pasteurization?	1. The smaller the caburator hole is, the better the overrun is. 2. Open the caburator and let out the soft ice cream several times to finally get the bright and clean soft ice cream.

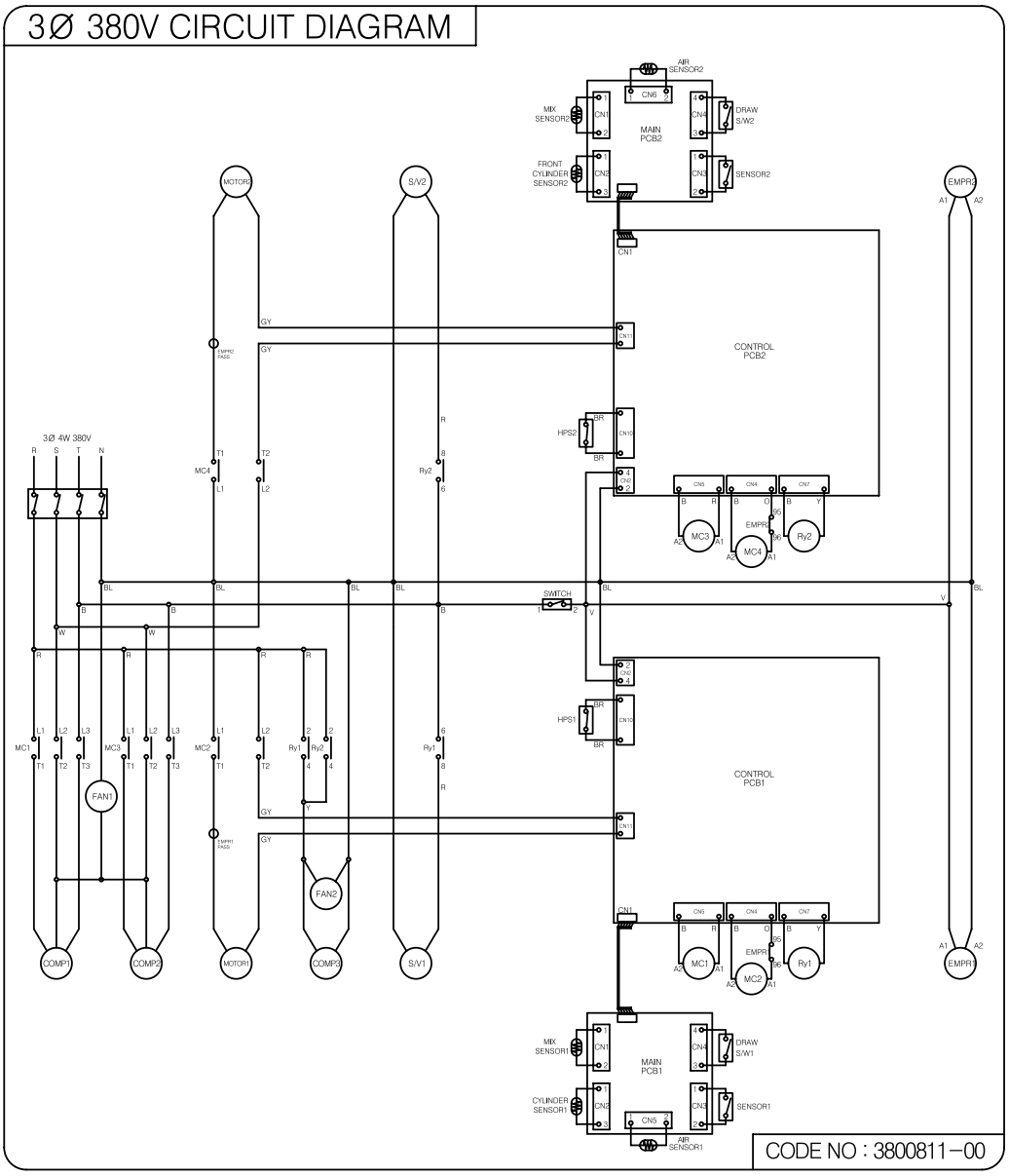
Error code types

Error code		Error details	Error occurrence	Release condition	Display
Er 1	hoPn	Cooling temperature sensor is bad.(Open)	Stop	Auto release	Continuous display
Er 2	hSht	Cooling temperature sensor is bad.(Short)	Stop	Auto release	Continuous display
Er 3	CoPn	Cooling cylinder entrance's temperature sensor is bad.(Open)	Stop	Auto release	Continuous display
Er 4	CSht	Cooling cylinder entrance's temperature sensor is bad .(Short)	Stop	Auto release	Continuous display
Er 5	AoPn	Condenser suction temperature sensor is bad. (Open) But it operates when 4-11 (neighboring temperature selection) is on.	Start	Auto release	5 minute interval
Er 6	ASht	Condenser suction temperature sensor is bad. (Short) But it operates when 4-11 (neighboring temperature selection) is on.	Start	Auto release	5 minute interval
Er 7	EoCr	Over current of the dasher motor and current detection failure.	Stop	Reset	Continuous display
Er 8	HiPS	High voltage detected.	Stop	Auto release	Continuous display
Er 9	noLA	Soft cream not formed.	Start	After a dormancy	Continuous display
Er 10	Lovo	Supply voltage exceeding -15%.	Stop	Auto release	Continuous display
Er 11	Hivo	Supply voltage exceeding +15%.	Stop	Auto release	Continuous display
Er 12	drAU	Bad location of the out lever.	Start	Auto release	5 minute interval
Er 13	Hott	Condenser suction temperature too high.	Start	Auto release	5 minute interval
Er 14	bELt	Axial power is abnormal.	Stop	Reset	Continuous display
Er 15	EEP1	Main PCB EEPROM is abnormal.	Start	Reset	5 minute interval
Er 16	dAtA	Data communication failure.	Stop	Auto release	Continuous display

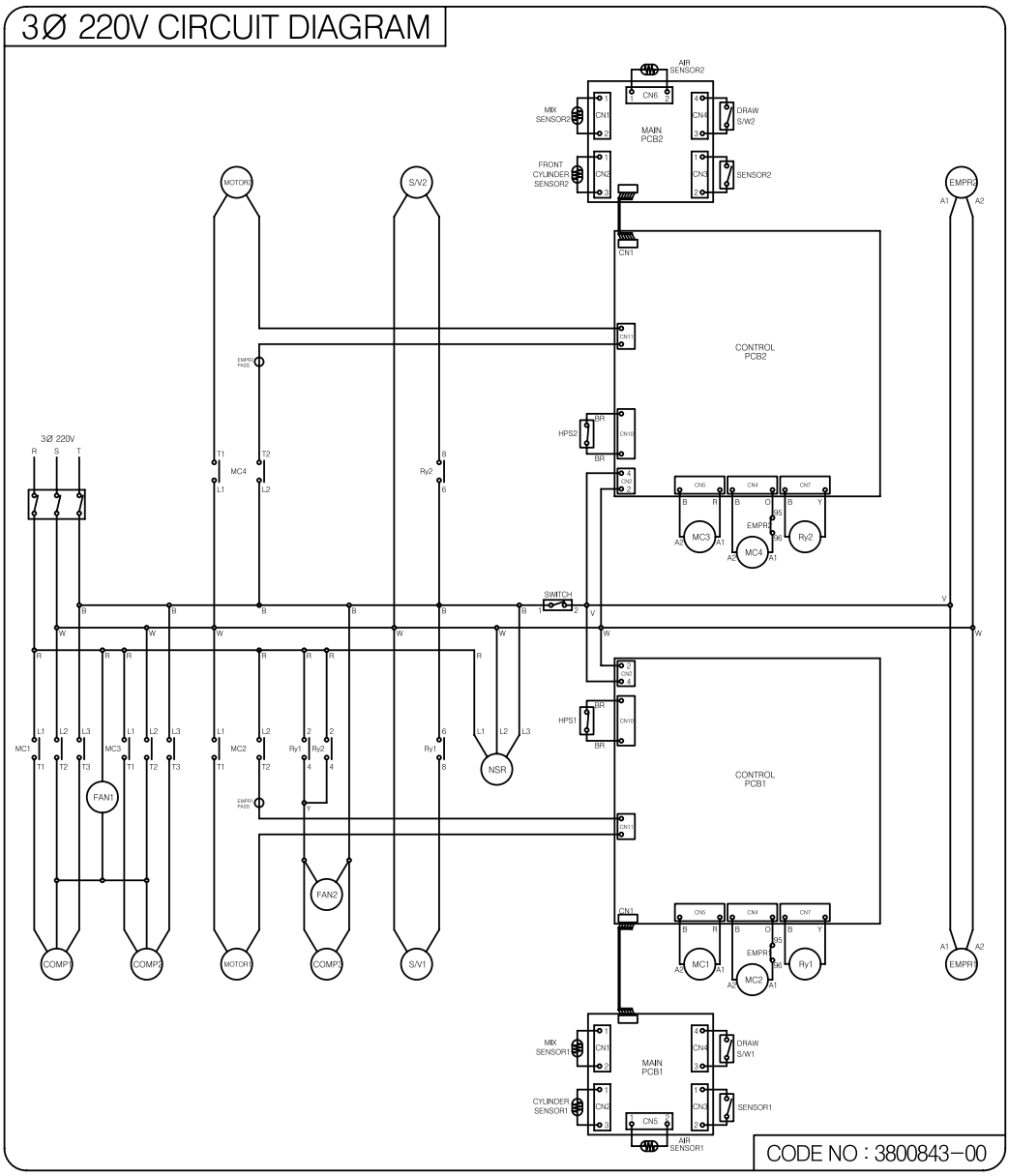
Circuit diagram



Circuit diagram



Circuit diagram



Product specification

Classification		Specs			
Product name		Soft Ice Cream Freezer			
Model name		203S	203SN	203SNP	303SN
Rated voltage and frequency		1Ø 220V 50/60Hz, 3Ø 220V 50/60Hz, 3Ø 380V 50/60Hz			
Power consumption		4.5KW			7.4KW
Product size (including the wheel and excluding the cap)	Height	1520	1510	1510	1540
	Width	590	540	540	670
	Length	900	900	900	961
Cylinder capacity (MIXING TANK capacity)		2.7 (10)	2.7 (9.5)	2.7 (9.5)	3.4 (19.5)
Continuously sold cups		7~8	10~14	10~14	10~14
Cooling temperature		10℃ Below			
Ingredient sensor		Applied			
FILTER mounted		Applied			Unapplied
Product weight	Before being packaged	250	270	270	330
	After being packaged	300	295	295	350

※ The power consumption in the manual is reference data by model. Regarding the power consumption for SSI-303 you can refer to the nameplate.

Product warranty

If a quality warranty or receipt is not received or missing or if the date of purchase can't be verified due to other reasons, then the quality warranty period is deemed to be 6 months from the date of manufacturing.

Free repairs

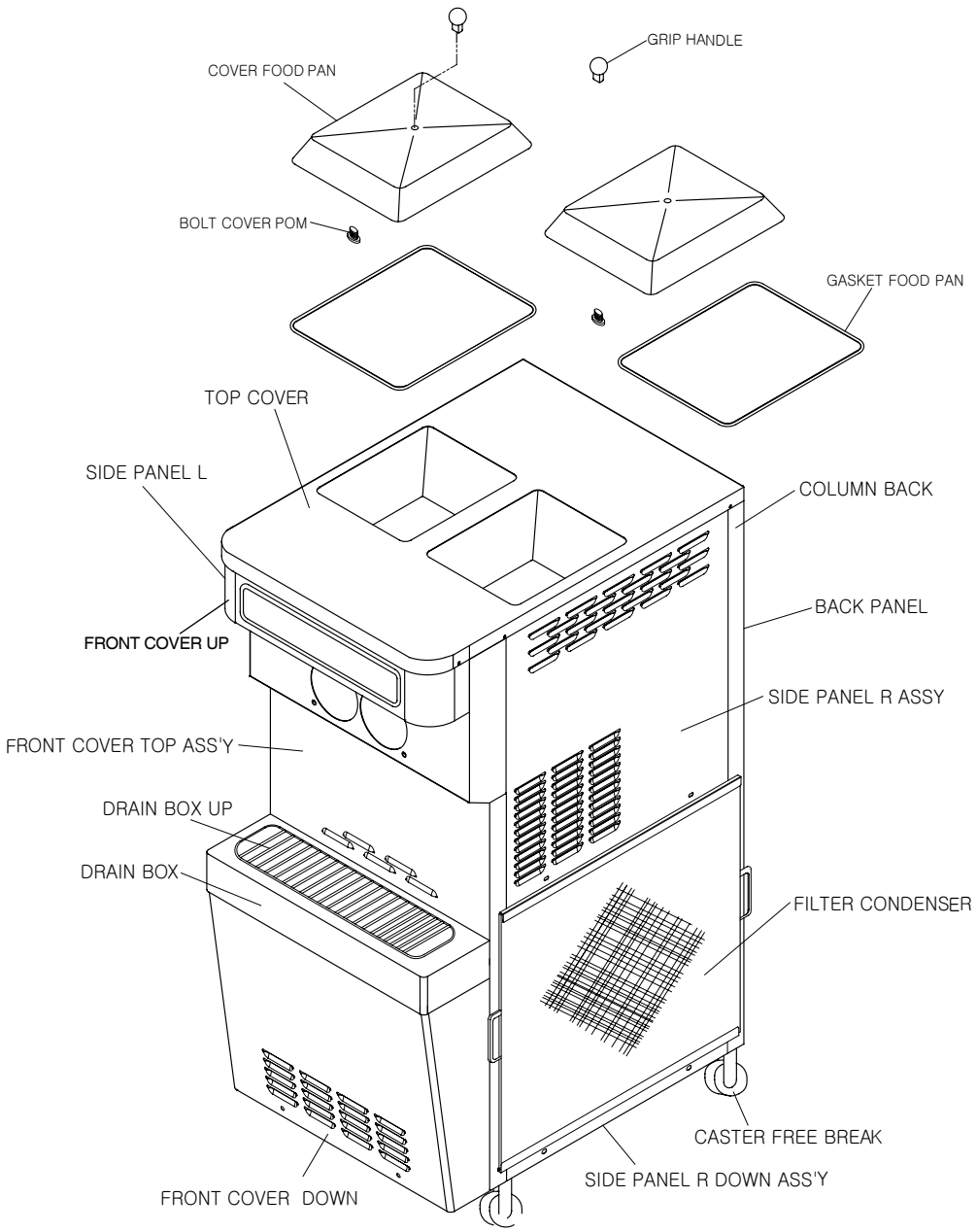
1. Performance or functional failure occurring under the normal condition of use within the qualified warranty period.

Chargeable repairs

1. The warranty period is expired.
2. Reinstallation due to incorrect initial installation by the shop (customer).
3. Installation due to the product having been moved or moving to a new location.
4. Malfunction caused by the defects of products from other companies.
5. Malfunction caused by incorrect use of the electrical capacity.
6. Malfunction caused by consumable parts or optional parts not designed or supplied by our company.
7. Malfunction caused by external impacts or falling.
8. Natural disasters (thunderbolt, fire, earthquake, flooding, tsunami).
9. Due to the expiration of a consumable part. (Packing, blade, cleaning brush)
10. Foreign substances in the product (water, drink, coffee, toys) caused malfunctions.
11. Product damages or functional failures caused by external impacts during installation or use.
12. Product malfunction caused by consumable parts or parts which are not the authentic ICETRO.
13. Malfunctions caused by neglecting the installation standard in the user manual.
14. Lost accessories or damaged parts caused by arbitrary disassembly by the customer.
15. Malfunction caused by repairs or remodeling performed by someone other than ICETRO engineer.
16. Malfunction caused by neglecting the safety warning and cautions in the user manual.
17. Winter freezing or clogging of the water supply pipe or the water discharge pipe caused the malfunction.

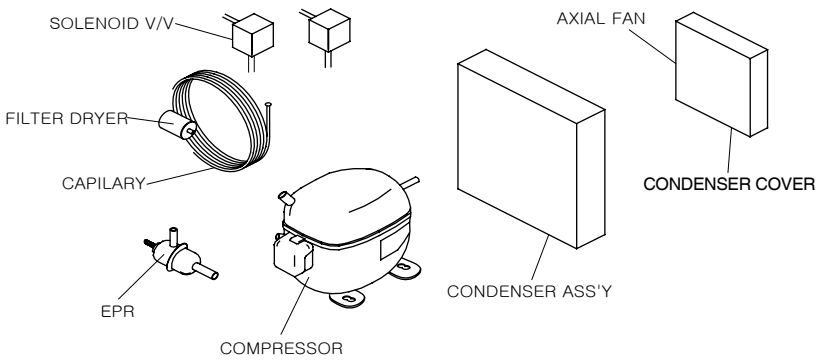
PART LIST

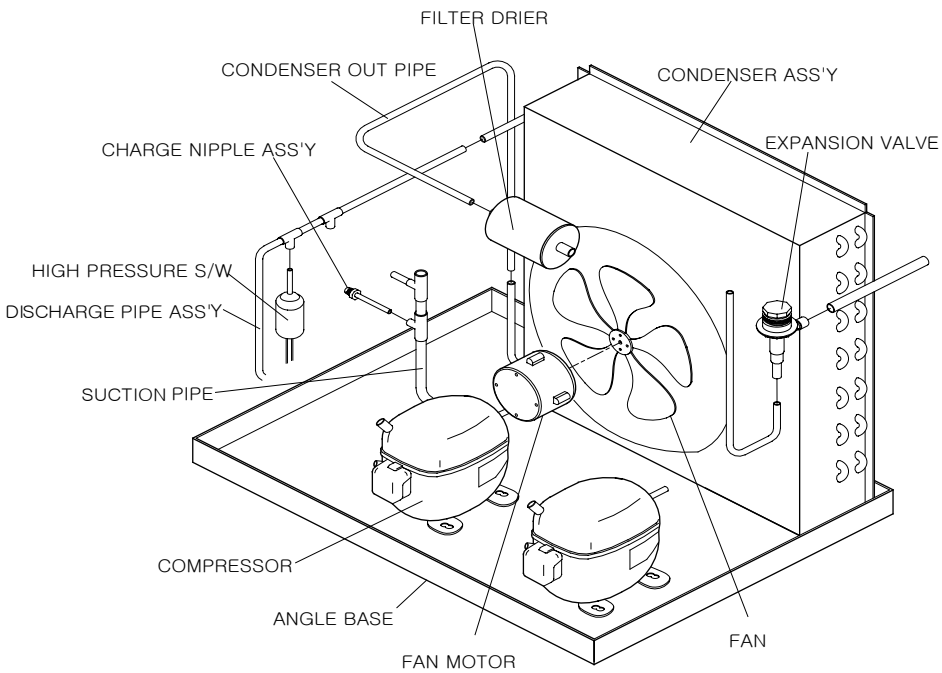
203S, SN
[OUTSIDE ASS'Y]



PART LIST

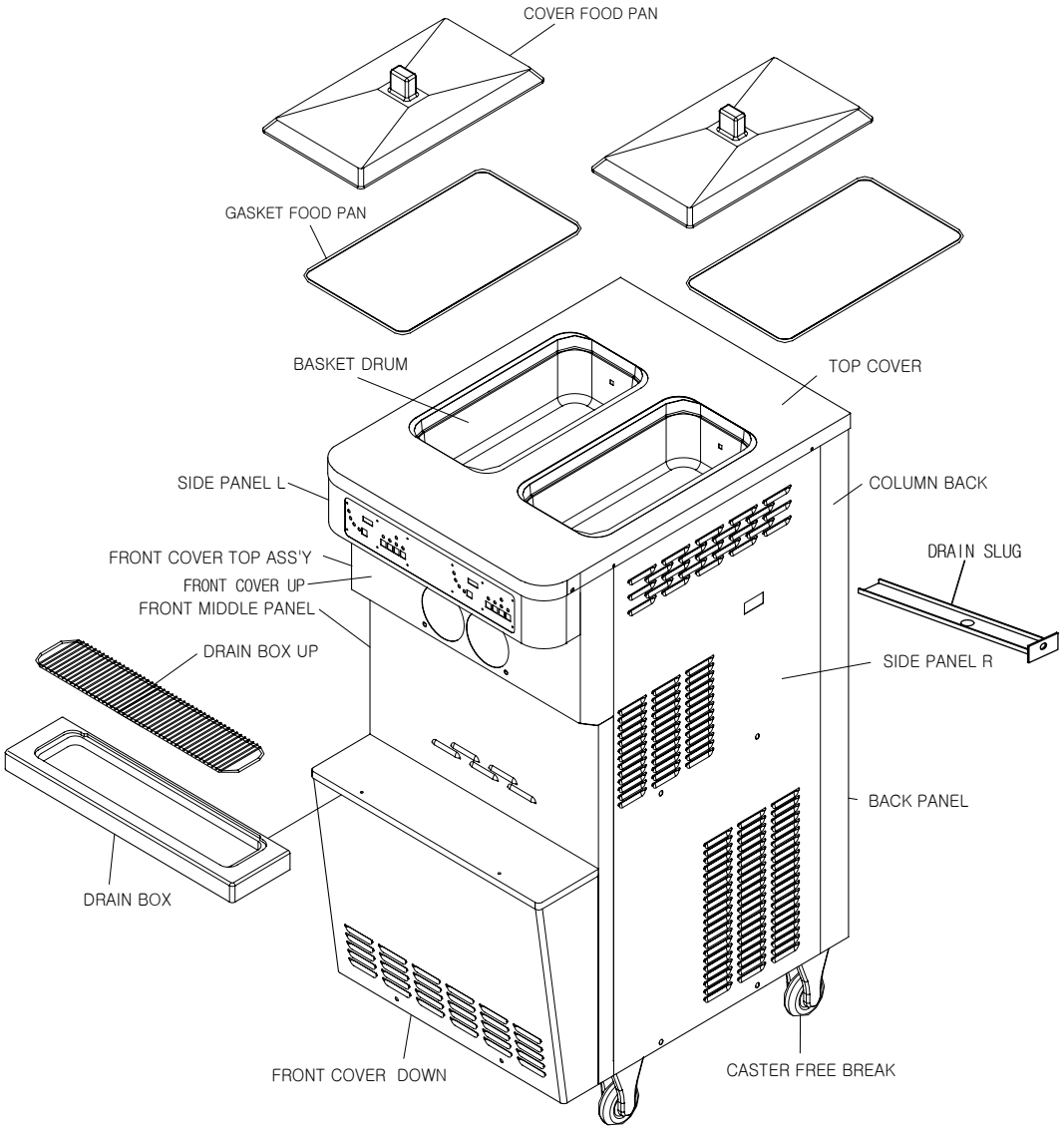
203S, SN
[CONDENSER FAN MOTOR ASS'Y]





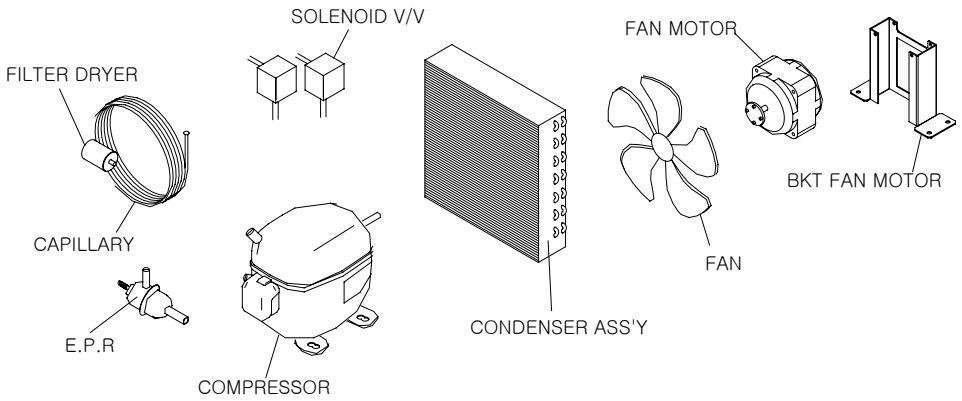
PART LIST

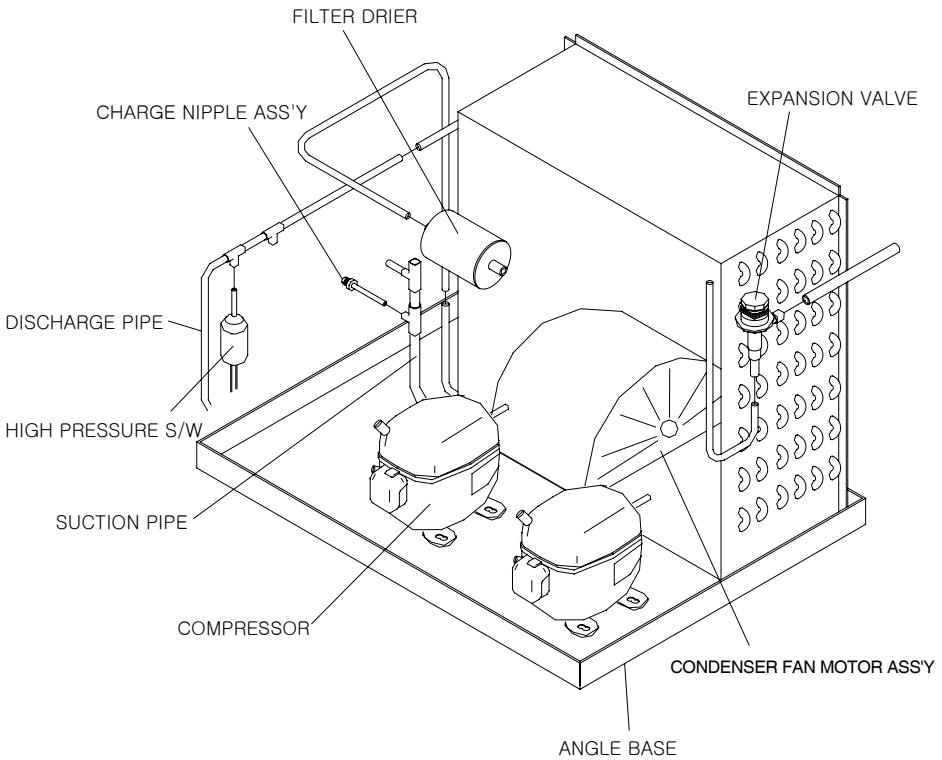
303S
[EXTERNAL ITEMS]



PART LIST

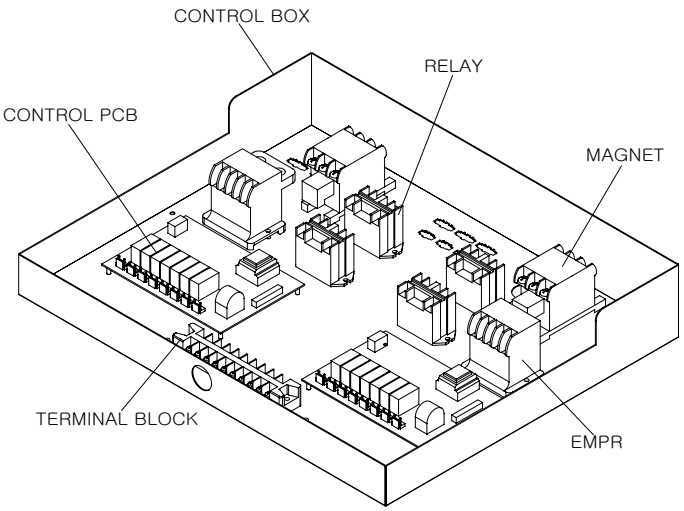
303S
[CONDENSER FAN MOTOR ASS'Y]



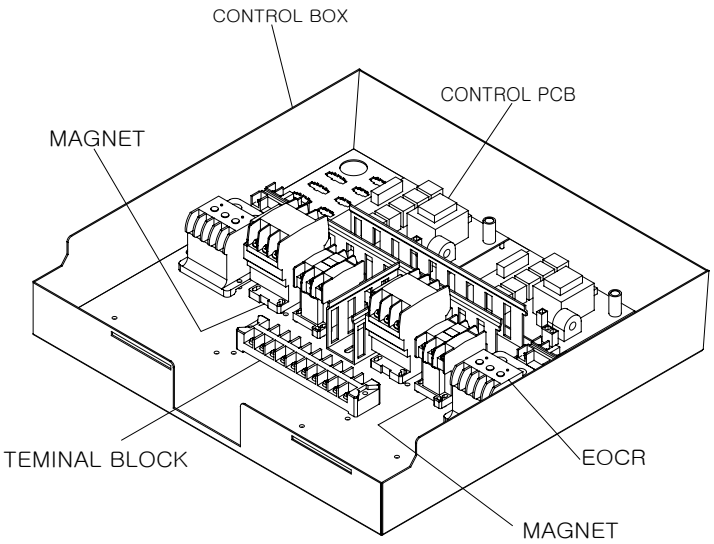


PART LIST

203
[CONTROL BOX PART]

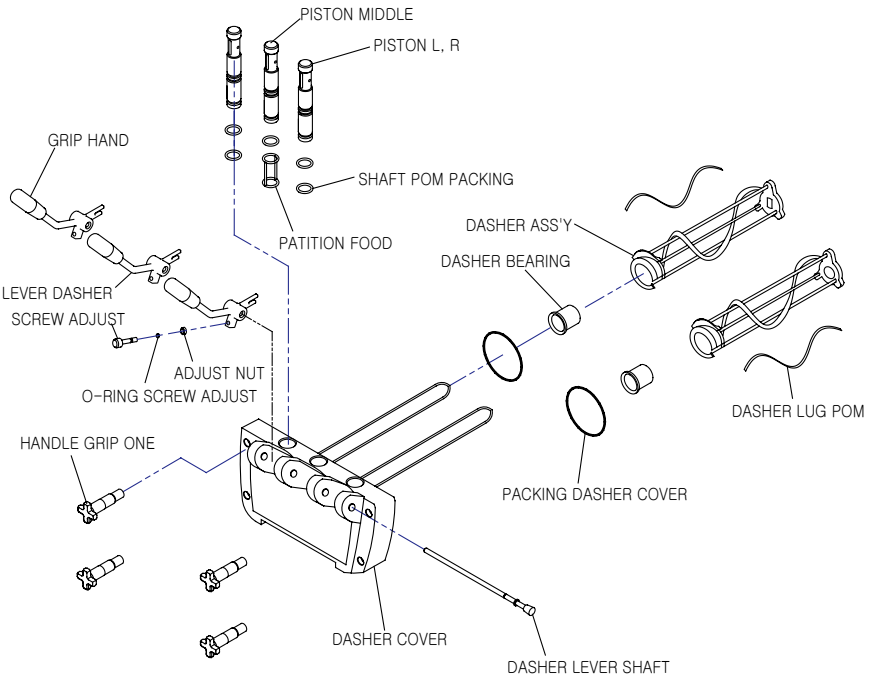


303

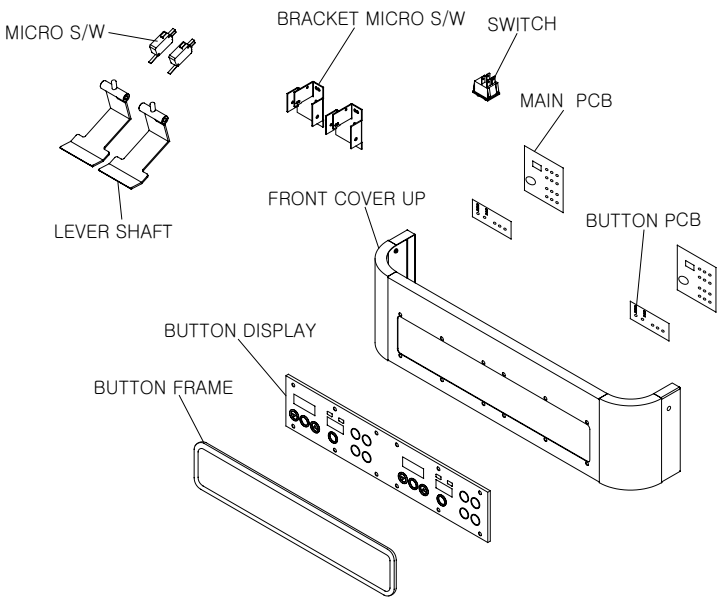


PART LIST

203, 303
[DASHER ASS'Y]

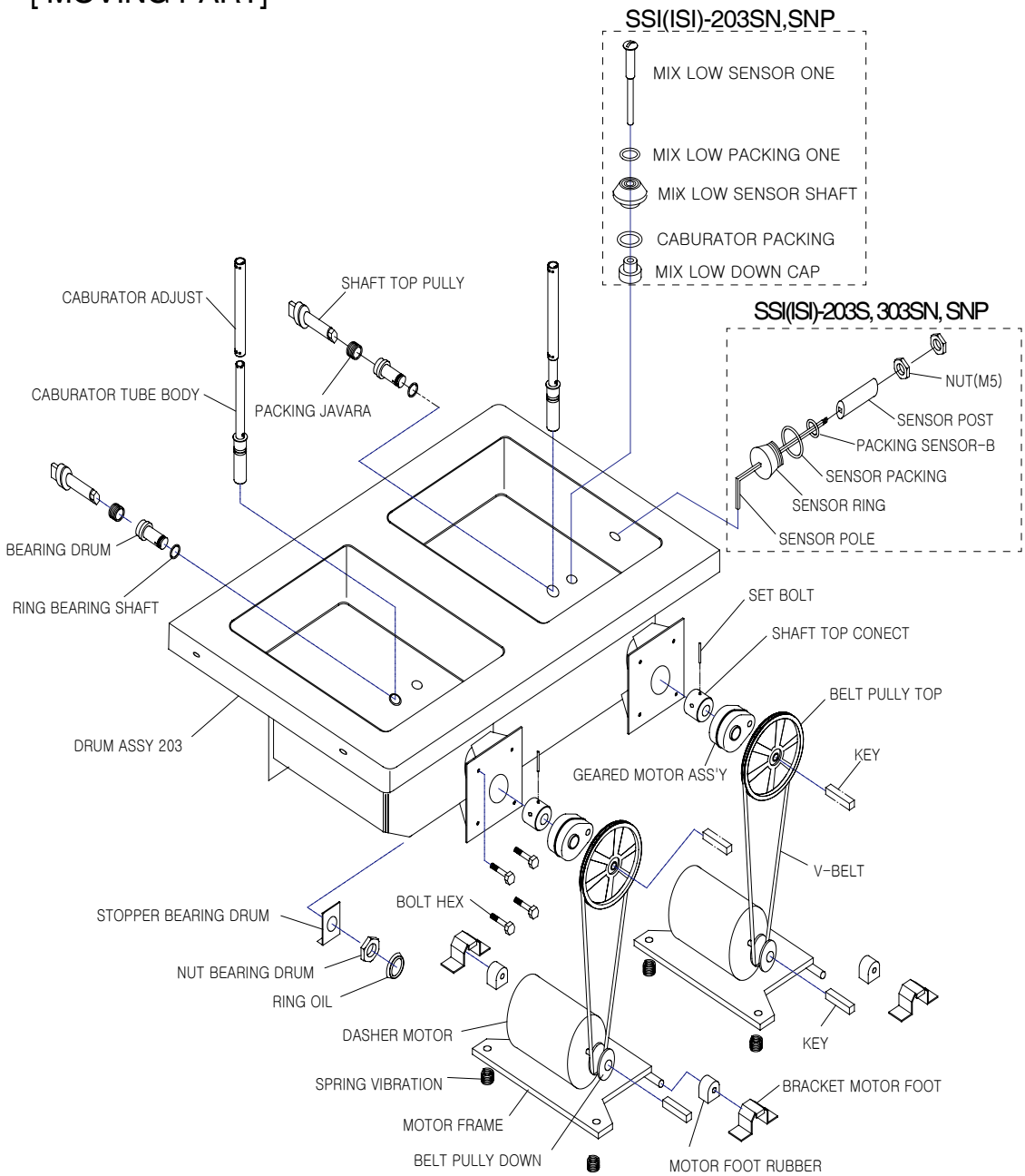


[DISPLAY PANEL ASS'Y]



PART LIST

203, 303
[MOVING PART]



ICETRO

SOFT ICE CREAM FREEZER

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