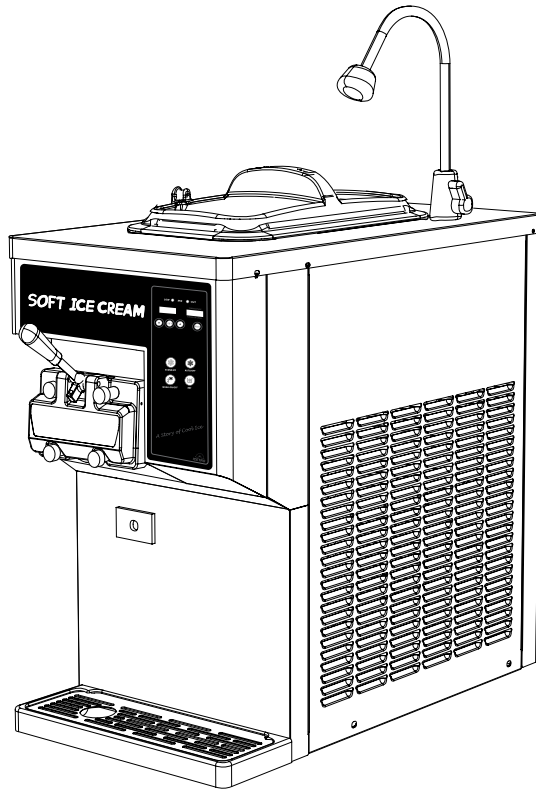# Soft Ice Cream Maker
User Manual

ISI–321TA
ISI–300TA

* Read this manual carefully before using the product.
  Keep the booklet in a safe place after reading.
* The product is to be used indoors.
  Be sure to install it inside a building.
* Appearances, design, color, or parts may be changed
  without prior notice for the most effective manufacturing process.
※ The product provides optimal functions in an atmosphere from 10 ℃ to 40 ℃

ICETRO

This Soft Ice Cream Maker has the following benefits:

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

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 customer,

Thank you for purchasing this Soft & Yogurt Ice Cream Maker from Icetro Corp. Be sure to read this user manual for the correct usage and maintenance of the product. If you encounter any problem while using the product, refer to this manual for troubleshooting. Keep this manual in a safe place since it contains the warranty certificate. The product must be installed by a qualified engineer. Icetro will not be liable for any quality or functionality issue resulting from using a part or a component other than that authorized or supplied by Icetro or any part or component authorized or supplied by Icetro but modified in any way.

(Functions or specifications published on the Icetro website or this manual may be changed at the discretion of Icetro without prior notice.) Be sure to visit http://www.icetro.com for the latest specifications.

Contents

Safety Cautions

The caution/warning details for safety are intended to prevent accident or danger through safe and proper use. Therefore please follow the details accordingly. The precaution details are categorized into warning and caution, and the respective meanings are as follows.

⚠ **Danger** — If you neglect this symbol and wrongly use the product, it may cause a fire, serious injury or death.

⚠ **Warning** — This means that it can cause death or major injury when the details are violated.

⚠ **Caution** — This means that it can cause injury or house/property damage when the details are violated.

※ Personal Injury： Minor cuts, burns (high or low temperature) or electric shocks that do not need hospitalization or long-term hospital visiting.

※ Property Loss： The loss on houses, household goods, livestock, bedding, and such.

[Each symbol has the following meanings]

This symbol means that it can be dangerous in specific conditions.

This symbol means never to do the described action.

This symbol means not to touch specific parts with bear hands.

This symbol means to unplug the power from the outlet.

Must be grounded.

This symbol means not to disassemble the product.

This symbol means to be careful because there is a possibility of electric shock.
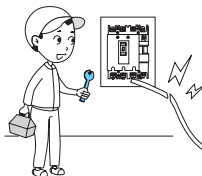
⚠️ **Warning**

For relocation of the product, call an expert.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved
- Children shall not play with the appliance

The product may cause such hazards as falling down unless properly installed.
It should be installed in accordance with related regulations such as KS standards, the road and traffic act. The fire fighting act and the food sanitation act. ※ Call your distributor.

❗ Observe the regulations

Call an expert for repair.
Imperfect repair may cause fire, electric shock or injury.
If you think the product needs repairing, call your distributor.
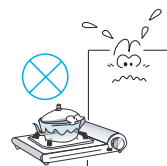
❗ Call a service center

If the power cable needs replacement or repair, call a service center or an expert.
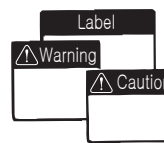
❗ Caution

When you replenish ice cream raw materials do not allow rain or snow to get into any interior electric part.
Defective operation may occur.

❗ Caution

Do not use or store inflammablegas or material near the product.
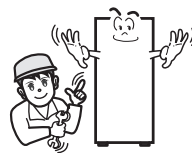It can cause damages to the product.

❗ Caution

Keep your warning and caution labels clean for easy legibility.
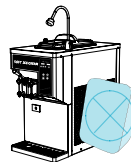If the user misunderstands the content of such a label, an accident may occur.

❗ Check your labels

When you dispose of the product, consult a disposal expert.
An accident may result unless it is properly disposed of.
※ Call your distributor.

❗ Caution

Do not place any obstacle at the entrance of the air vent.
The side and rear of the product should be maintained at least 20cm from the wall. If no t so, the performance will be degraded

❗ Caution

Before you clean the inside of the product, unplug the earth leakage breaker wearing rubber gloves.
Electric shock or injury may result.

❗ Caution

To have good soft icecream, it is recommended topasteurize or cleanit everyday.
Otherwise, the ingredients can deday.
If sterilization is not done every day, you are recommen ded towash it every day.
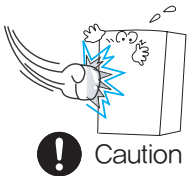
❗ Caution

- Cleaning and user maintenance shall not be made by children without supervision
- The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction
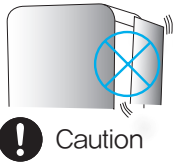- Children being supervised not to play with the appliance

⚠ Warning
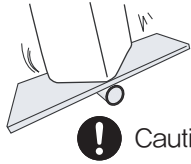
Do not install it on a tilt.
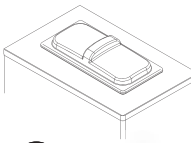It can cause physical injury or product damages.

Caution

Do not apply excessive force orimpact to the product.
It can cause damages to the product.

Caution

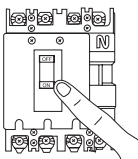Do not operate the product while all panels are not well fastened enough.

Caution

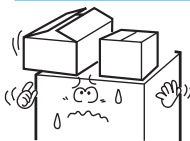While operating the product, please close the upper cap completely.
Bugs or alien substances can enterthe product.

Caution

Do not turn the power ON/OFF with the circuit breaker continuously.
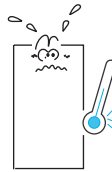It can cause electrical shocks or fire.

Caution

Do not put anything on the product.
Injury may occur if it falls over.

Prohibited

– The instructions shall state that access to the service area is restricted to persons having knowledge and practical experience of the appliance, in particular as far as safety and hygiene are concerned.
– The appliance is not suitable for installation in an area where a water jet could be used.
– The installation instructions for appliances of the supervised type shall state that the appliance is only to be installed in locations where it can be overseen by trained personnel.

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

Caution

Do not install it near dust, moisture or rainwater(water) popping.
It can cause electrical shocks or fires.

Caution

If you sell or hand over the product, make sure to hand over the user's manual with it.
without the manual, an accident may occur because of erroneous handing or operation.

User's Manual
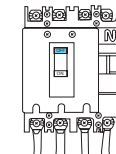
Caution

Do not connect manyelec–trical products to the earth leakage circuit breaker. Use it individually.
It can cause fires.

Caution

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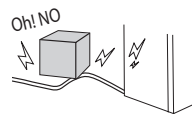
Prohibited

Oh! NO
Do not put anything on the power cable.
Make sure that the power cable is not twisted or knotted.
Fire or electric shock may occur.

Prohibited

– WARNING: When positioning the appliance, ensure the supply cord is not trapped or damaged.
– WARNING: Do not locate multiple portable socket–outlets or portable power supplies at the rear of the appliance

⚠ Warning

If the earth leakage breaker is in the 'OFF' position, do not turn it to the 'ON' position by force.
If you turn it 'on' while the machine is defective, fire or electric shock may occur.
🚫 Prohibited

Do not inject inflammable material such as benzene, gasoline, paint thinner or LP gas into the product otto keep it close to product
🚫 Prohibited
Explosion, fire or injury may occur.

Make sure that no electric part has come into contact with water.
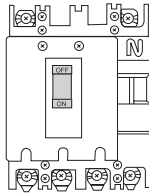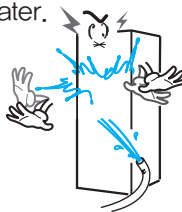If the product was immersed in water by a flood, call a service center for a check. Otherwise, fire or electric shock due to electric leakage may occur.
🚫 Prohibited

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 cancause electrical shocks, fire anddamages.
🚫 Prohibited
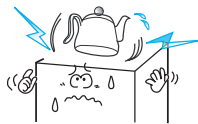
Do not place candle lights or cigarettes light on top of theproduct.
It can cause fires.
🚫 Prohibited
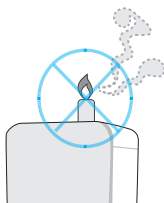
Stop using the machine, if you find the power cable, or any other cable to be defective.
Fire or electric shock may occur.
🚫 Prohibited
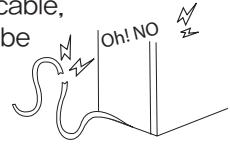
Do not spray with an insecticide, flammable spray or perfume near the product.
🚫 Prohibited
Fire or electric shock may occur.

Do not climb onto the product or shake or tilt it.
The product may fall down or develop a problem.
🚫 Prohibited

Keep a heating device away from the power cable.
A heating device may melt down the coating of the power core, resulting in fire or electric shock.
🚫 Prohibited
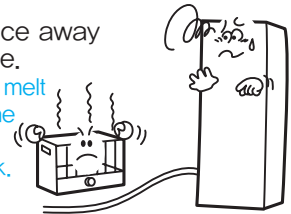
Do not put anything on the product.
Injury may occur if it falls over.
🚫 Prohibited
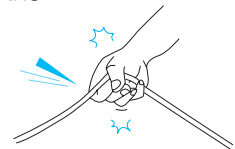
Do not touch any moving part inside the product.
🚫 Prohibited   You may get injured.

How to Unpack and Install the Ice Cream maker

This soft & yogurt ice cream maker has been inspected at the factory prior to shipping out. Remove the wooden or other packaging; if the product is found to be damaged during transport, contact the local agent or manufacturer.
Check the serial number both outside and inside the product, since it is required when inquiring about the product or requesting for customer service. Contact the local agent or a professional service supplier to install or move the product.

1. Remove the wooden packaging, taking care not to damage the exterior of the ice cream maker.
2. Remove the protective tapes and check the parts.

   ※Caution : Watch out for electric conduction when tilting or moving the product.
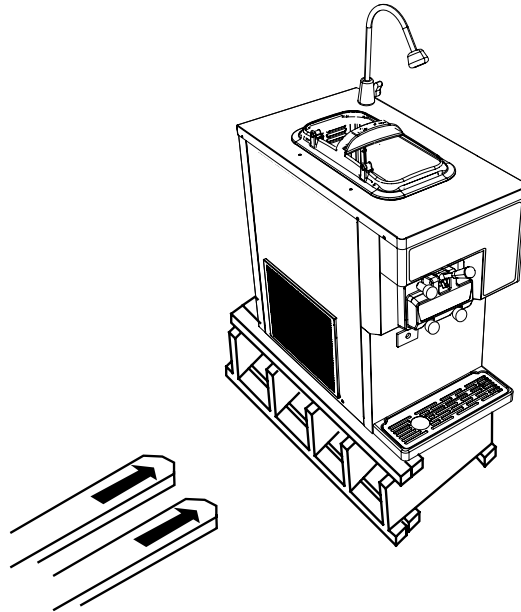
• Where to Install/Cautions

1. Do not install the product on any tilted or uneven surface.
    - Otherwise, there will be danger of electric conduction or malfunction of the product.
2. Install the product in an indoor place with minimal direct sunlight, wind, or rain.
    - Water from the ice cream-making process or rainwater may cause short circuit, fire, or electric shock.
3. Install the product in a place without the direct influence of sea air or toxic gas.
    - It may give rise to complaints from customers selling ice cream from this maker.

How to Install

- ● Follow this process!

Water Valve
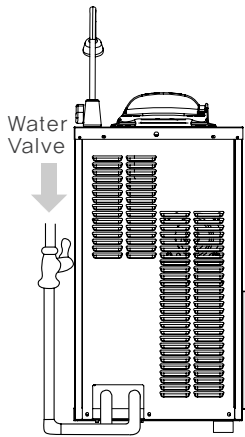
- ● The water supply valve may have different shapes depending on the installation condition.

For Your Information

- To guarantee the optimal operation of the product, please consult our technician on how to install the product.
  (Contact our authorized technician in case of moving the product after the initial installation.)
- Avoid uneven surface or place with direct sunlight, too much dust, or spattering water.
- If the product is to be used for an extended period of time, reset the current time.

● Connecting the water supply

1. Insert the o-ring into the nut of the wrinkled pipe and tighten the nut on the water supply connecto on the lower back of the product with a tool.
2. Make sure that "A" is not damaged in the process.

A

※ The following must be checked when connecting the water supply!
1. The water pressure must be in the range of 1~3kgf/㎠.
   ▶ Too much pressure will cause leak from the connected part.
2. If the product is installed where the temperature drops below 10℃, be sure to prepare a freeze protection measure for the product.
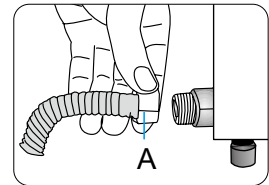   ▶ Otherwise, leak or product malfunction may occur.
3. The water supply must have a valve so that it can be closed in case of malfunction of the tap on the top of the product.

● Connecting power

1. Be sure to connect to a single-phase power outlet with 230V and 50Hz; connect only one product per outlet.
2. Connect the earth leak breaker (higher than 20A) to the distribution box.
3. Ground the product for safety.
4. The distance between the right side and the back of the product must be longer than 50cm, and that between the right side and the wall must be longer than 30cm.
5. Install the rubber feet correctly to prevent slippage.

50cm
50cm
30cm

⚠ **Caution** Do not ground to the gas pipe or water main. There is danger of accident.
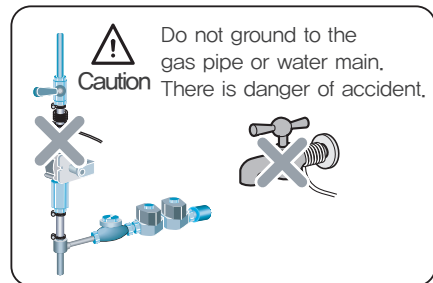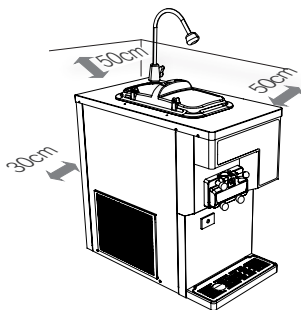
⚠ **Caution** If there is no grounding equipment at the installation area, be sure to ground the product.
- Bury a copper bar or a pipe electrode deeper than 30cm from the surface.
- Lack of proper grounding may cause electric shock due to leak.

Copper bar or pipe electrode

Deeper than 30cm

Description of Parts and Dimensions

Front

Water tap

462

Ingredient inlet cover

Upper cover

SOFT ICE CREAM

Display

Outlet lever

Setup button

Power switch

Adjusting button

Dasher cover

Right control box

Joint bolt

Drain box

Foot Rubber

Left

840

803

688

160

Back

Power input

Water supply part
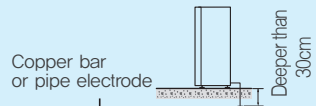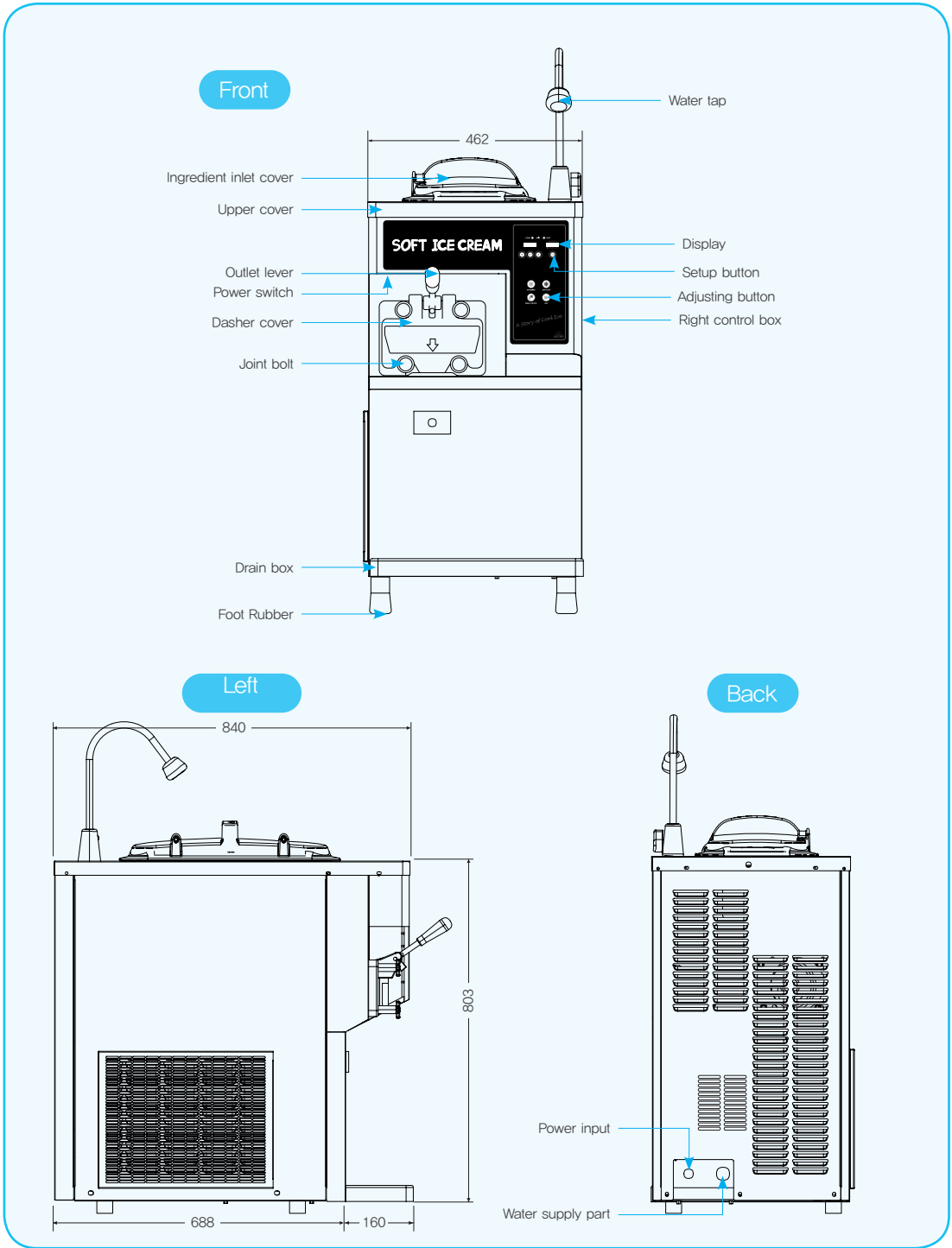
Description of Parts and Dimensions

Included accessories

BRUSH DRUM
1EA

BRUSH COVER
1EA

BRUSH 3
1EA

BRUSH CARBURETOR OUT
1EA

BRUSH 143
1EA

DASHER LUG FOAM
2EA

CARBURETOR TUBE
BODY, TUBE
1EA, 1EA

UNION 1/2
1EA

HOSE
1EA

PACKING REMOVE HANDLE
1 EA

PACKING DASHER COVER
1EA

O−RING
2EA

PACKING DOWN 141
1EA

PACKING DASHER SHAFT
2EA

DASHER BEARING
1EA

HAYNES
1EA

MANUAL
1EA

Specifications

Category		Specification	
Product		Soft ice cream maker	
Model		ISI−321TA	ISI−300TA
Voltage and frequency rating		1 Ph, 230 V, 50 Hz	1 Ph, 220 V, 60 Hz
Power consumption		2070 W	2500 W
Rated Current		10.1 A	12 A
Dimensions (including wheels)	Horizontal(W)	462 mm	
	Depth(D)	840 mm	
	Height(H)	877mm(Including rubber feet, excluding cover)	
Cylinder capacity		3.2 ℓ	
Maximum capacity of hopper		17.9 ℓ	
Consecutive selling (At interval of 30 seconds) ※ Caution (for making 100g of ice cream at 27℃)		20~24 cups	
Initial cooldown time		7~10 minutes	
Refrigeration temperature		Can manage lower than −5℃	
Compressor		Completely enclosed compressor	
FILTER		Install to the left (for the air−cooling model)	
Refrigerant amount(Freeze/refrigeration)		1180 g / 160 g	1000 g / 180 g
Refrigerant kind(Freeze/refrigeration)		R−404A / R−134A	
Panel type		FND screen	
Weight (without packaging)		140 kg	

Specifications

Category		Specification	
Product		Soft ice cream maker	
Model		ISI−321TA	ISI−300TA
Voltage and frequency rating		1 Ph, 230 V, 50 Hz	1 Ph, 220 V, 60 Hz
Power consumption		2070 W	2500 W
Rated Current		10.1 A	12 A
Dimensions (including wheels)	Horizontal(W)	462 mm	
	Depth(D)	840 mm	
	Height(H)	877mm(Including rubber feet, excluding cover)	
Cylinder capacity		3.2 ℓ	
Maximum capacity of hopper		17.9 ℓ	
Consecutive selling (At interval of 30 seconds) ※ Caution (for making 100g of ice cream at 27℃)		20~24 cups	
Initial cooldown time		7~10 minutes	
Refrigeration temperature		Can manage lower than −5℃	
Compressor		Completely enclosed compressor	
FILTER		Install to the left (for the air−cooling model)	
Refrigerant amount(Freeze/refrigeration)		1180 g / 160 g	1000 g / 180 g
Refrigerant kind(Freeze/refrigeration)		R−452A / R−134A	
Panel type		FND screen	
Weight (without packaging)		140 kg	

What to check before using the product

【 The following must be checked before using the product! 】

⚠️ Be sure to connect to a single-phase power outlet with 230V and 50Hz.
Plug the power cord into an available outlet.
(Consult a qualified electrical engineer regarding the installation of the product.)
The power cord must be connected to operate the product.

- Do not block the area around the vent.
  The inlet and outlet of air must be smooth to ensure proper cooling operation.

- Regular filter cleaning (at least once a week)
  Do not skip filter cleaning to ensure good-quality ice cream.

- The condenser has to be cleaned once a month.
  The daily cleaning of the cylinder, carburetor, hopper, agitator, dasher, piston, and other parts is recommended.
  The condenser has to be cleaned more than once a month.

For Your Information — Clean the product and turn off the earth leak breaker if the product is not to be used for an extended period of time.

Button display description and functions

"Insufficient Ingredients" lamp

It blinks when there are insufficient ingredients.

"Left Status Display Window"

· AUTO: Displays the operational status.

"No Ingredient" lamp

It blinks when there is no ingredient.

SOFT ICE CREAM

LOW   MIX   OUT

TEMPERATURE
ICECREAM LEVEL

STAND-BY   AUTO/OFF

WASH ON/OFF   REF

A Story of Cool Ice

ICETRO

"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.

"Auto" button

It is used to produce soft cream.

" ▼ 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.

"Stand-by" button

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

"Select" button

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

"Ref" button

It is used to store ingredients.

"Wash" button

It is used to wash the machine.

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.

Detailed description of each mode

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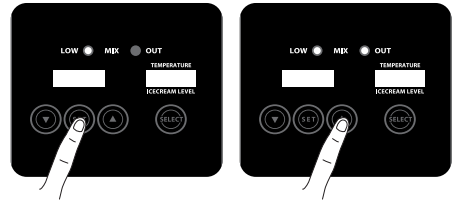
1-1: Check ice cream level settings
      You can check the current setting for the ice cream. If the
      displayed value is higher than the no-load current (1-2),
      the ice cream becomes harder and if lower,
      the ice cream becomes softer.

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.
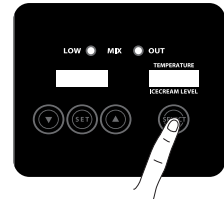
Detailed description of each mode

Check the temperature and the record

Press the "Select" button to check the different temperaturesettings 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.

Detailed description of each mode

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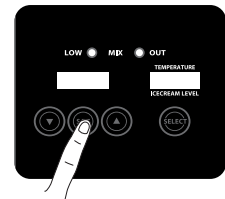
3-1 : Adjust the soft cream level
This item is used to adjust the target current of the soft cream. If the value is lower, the ice cream becomes softer. If the level is too high, the quantity of produced ice creams may drop, it may not be discharged or other malfunctions may occur. Consult an engineer.

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 : 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.

Detailed description of each mode

Press "set" + "select" buttons or 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.
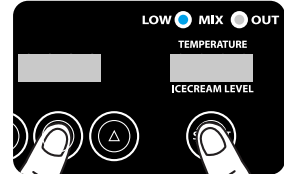
Select the number by "−" and "+" buttons and press "set" buttons to move to the next digit.
Input the 4 digit password in this way.
Do not let anyone without professional education know the 4 digit password under any circumstances.

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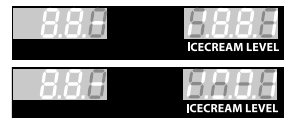
4−1 : Rest time setting
This is the function to allow the compressor to rest for a certain period of time by minute after the soft freezer is made. Adjust this category carefully as it can make the soft freezer melt quickly.

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 inthe 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℃.

For Your Information
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.

Detailed description of each mode

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(℉)

Detailed description of each mode

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℃.

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.
Asmaller 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.
HAn : 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.

Detailed description of each mode

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
Byactivating 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 thiscategory.

Detailed description of each mode

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.

Detailed description of each mode

4–30 : MIX OUT function selection
When this category is activated, all operations are stopped in case there is no raw material.

`40.30` `0.80h` ICECREAM LEVEL

4–31 : MIX LOW function selection

`40.31` `0.80h` ICECREAM LEVEL

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.

`40.32` `0.60h` ICECREAM LEVEL

4–33 : STAND–BY mode selection when the sensor is out of work.

`40.33` `0.80h` ICECREAM LEVEL

4–34 : Hopper Impellar condition selection.

`40.34` `0.00h` ICECREAM LEVEL

4–35 : Fan motor delay time setting.

`40.35` `0.00t` ICECREAM LEVEL

4–36 : Selection whether to use over current detection.

`40.36` `0.00h` ICECREAM LEVEL

1. Setting for time that does not detect current.

`1.000` `0.05t` ICECREAM LEVEL

2. Adjustment for over current setting value.

`2.000` `0.00A` ICECREAM LEVEL

3. Over current detecting time setting.

`3.000` `0.05t` ICECREAM LEVEL

Making ice cream

1. With the carburetor removed, pour ingredient into the mix hopper until the "MIX-OUT" indicator goes off.

2. Put the carburetor back on when a sufficient amount of ingredient is poured. Adjust the carburetor hole according to the amount you want to sell.

   (In case of "220v/60Hz" machine we recommend carburetor hele should be closed)

3. Insert the impeller and put back the cover.

4. Press AUTO.

5. If the maker is operated for the first time, wait till the ice cream level reaches 100% before dischanging ice cream.

impeller(option)
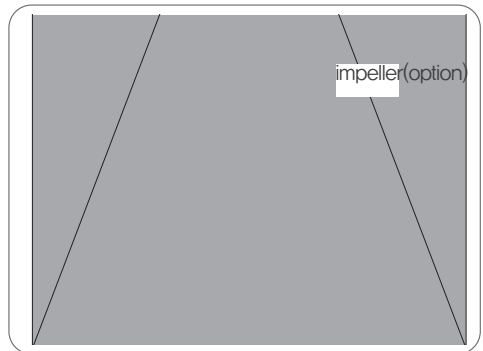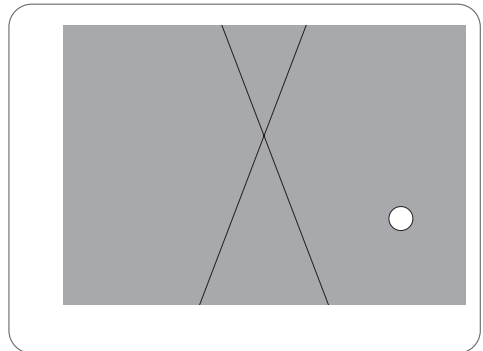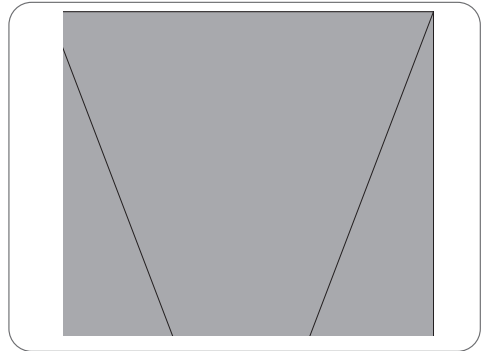
For your information

- The smaller the carburetor hole is, the higher the overrun (air content) is. Instead, in case of continuous sales, the ingredients supply gets slower and the soft ice cream is let out slowly.
- The carburetor hole can get clogged, so check it and wash it periodically during use.
- The manufacturer shall not be responsible for any trouble (e.g., spoilage of materials, overcooling, non-production of ice cream) caused by using materials in non-frozen state (10℃).

# Controlling the speed of making ice cream

1. 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.
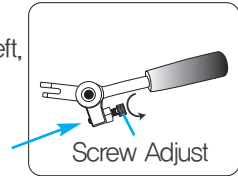
Screw Adjust

2. 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.

'a'
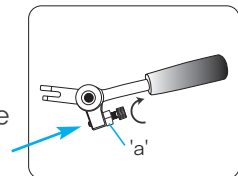
For your information

● 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.

How to adjust the carburetor

The carburetor has two components.
The one inserted into the hopper is "BODY," with a "TUBE" going into the body.
The tube is open on both sides and cannot be inserted in the wrong direction.

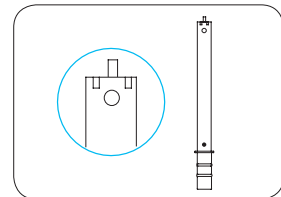Carburetor tube body
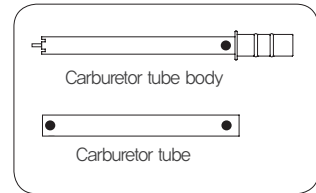
Carburetor tube

The carburetor hole is opened.
Match the projecting part on the upper "BODY" to the upper part of the "TUBE" without a hole so that the hole in the lower part of the "BODY" is plugged.
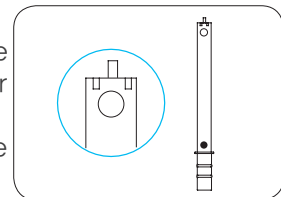Conditions : ⓐ When making ice cream for the first time
ⓑ For regeneration

The carburetor is set to a bigger hole.
Match the projecting part on the upper "BODY" to the big hole in the upper part of the "TUBE" without a hole so that the hole in the lower part of the "BODY" matches the big hole.
This is to minimize overrun and increase the ingredient for the continuous making of ice cream.
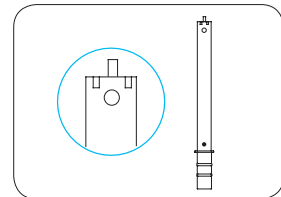Conditions : For operation

The carburetor is set to a smaller hole.
Match the projecting part on the upper "BODY" to the smaller hole in the upper part of the "TUBE" without a hole so that the hole in the lower part of the "BODY" matches the smaller hole.
This is to increase overrun and decrease the ingredient when demand for ice cream is low.
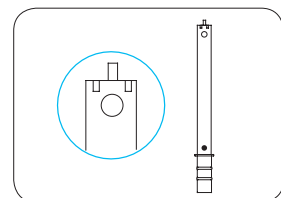Conditions : For operation

The carburetor is set to a medium−size hole.
Match the projecting part on the upper "BODY" to the medium−size hole in the upper part of the "TUBE" without a hole so that the hole in the lower part of the "BODY" matches the smaller hole.
This is to set medium overrun and ingredient.
Conditions : For operation

For your information

Even if overrun is improved with a smaller hole, the amount of ice cream may vary depending on the amount of ingredient in the hopper.
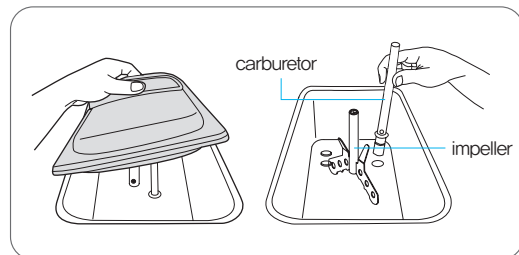The smaller the amount of ingredient that the hopper has, the bigger the overrun will become, and vice versa.
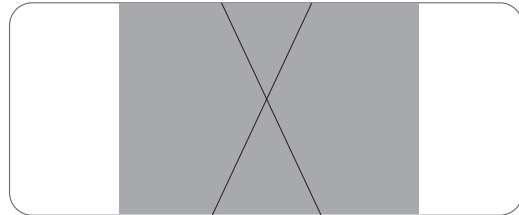
How to clean

1. Press the wash button on the control panel.
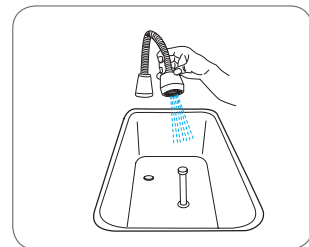   (Wait until the soft cream in the cylinder is melted,
   About 10 minutes.)
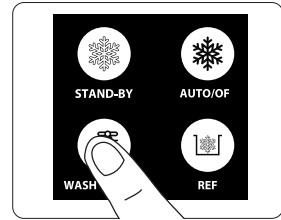
2. Open the cover of the mix hopper
   and remove the carburetor and impeller.

carburetor

impeller

3. Put the draining basin on the drain box.

4. Remove all liquid ingredients in the hopper,
   pour some tap water, and then drain the water
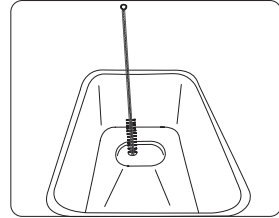   a couple of times until you get clean water.

5. For any ingredient residue around
   the agitating axis, draining hole,
   and height sensor, use neutral detergent
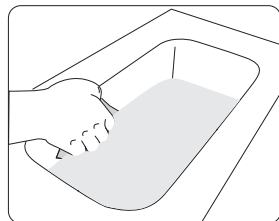   and brush and apply cleaning as well.
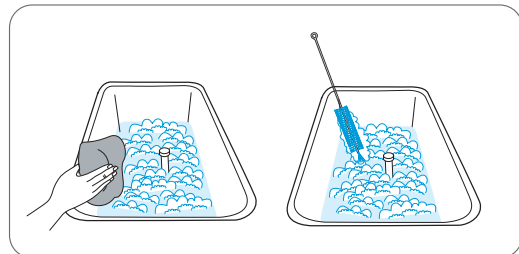
⚠ caution   The carburetor, impeller, and ice cream discharge port shall be cleaned once a day.

How to clean

■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

6. Brush the drain hole of the mixing tank thoroughly.

7. Use faucet water to clean off the inner area of the tank.

8. Press the wash button and finally discharge the water from the mixing tank. Use faucet water to rinse off the cleaning agent residuals.
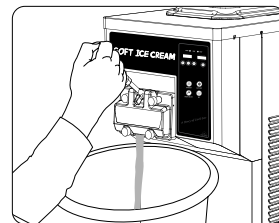
9. Press the wash button to stop the product and Release the four dasher cover bolts.
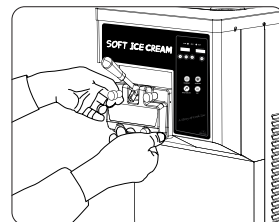
10. Separate the dasher cover from the main body. Disassemble parts of dasher assay.

⚠ caution   The carburetor, impeller, and ice cream discharge port shall be cleaned once a day.

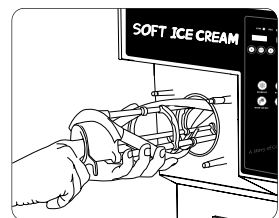# How to clean

11. Separate the dasher from the cylinder.
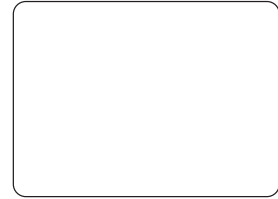
12. Brush off the inner area of the cylinder and wipe it off
    with a soft cloth.
    Insert a brush into the dead end of the cylinder
    and turn the brush left and right to clean up the cylinder.
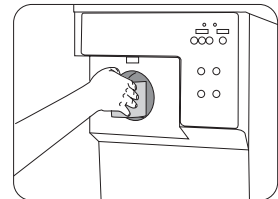
13. Disassemble the DASHER ASS'Y, wash all the parts using
    detergent and wipe them with soft cloth.
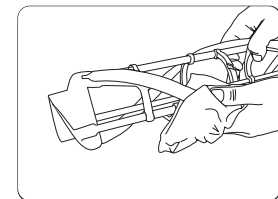
14. Disassemble the DASHER ASS'Y, wash all the
    parts using detergent and wipe them with soft cloth.
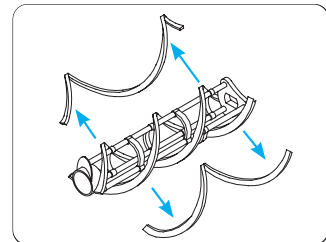
15. Extract a handle shaft and separate the lever
    from the dasher cover.
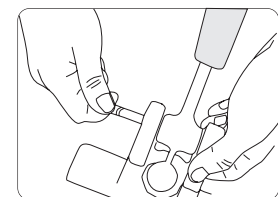
⚠ caution   Wear rubber gloves when cleaning the inside of the system.
             Otherwise, electric shock or injury may be caused.

How to clean

16. Take out the piston of the dasher cover and clean the edge of the piston with a soft towel.
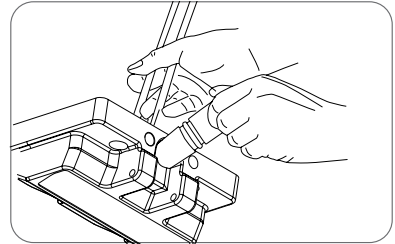
17. Disassemble dasher assay first from dasher bearing and then from mixing shaft, then clean the assay.

BEARING
DASHER
MIXING
SHAFT
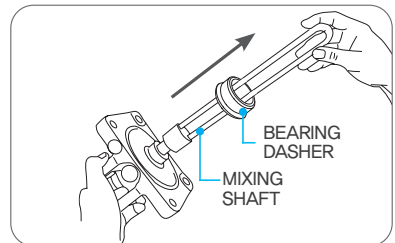
18. Clean the piston assembly hole of the dasher cover with a brush and soft cloth.
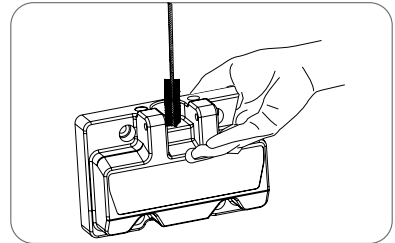
19. After cleaning off all parts, dry them and reassemble them in the reverse order.

Dasher lug foam

dasher bundle

Dasher lug foam
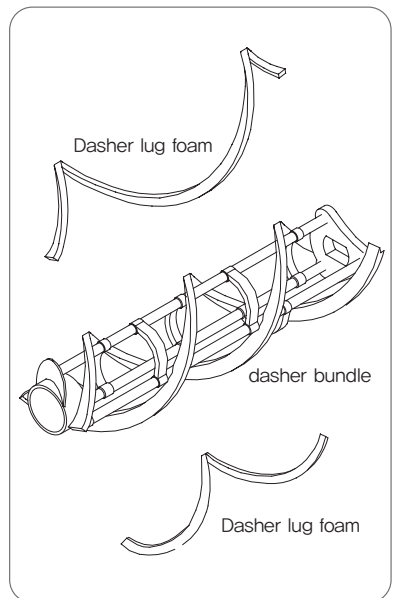
How to clean

【 How to clean the condenser and filter 】

1. Pull out the condenser filter located on the left side of the machine.
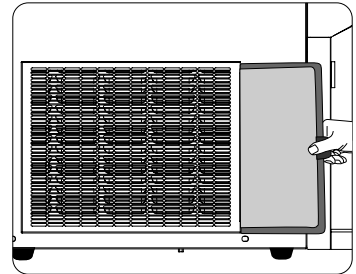
2. Remove dust from the filter element or use a vacuum cleaner, and wash it clean with water.
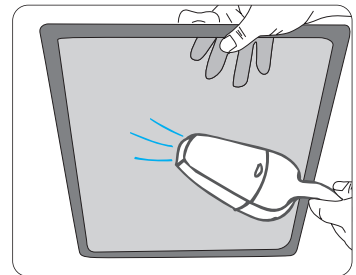
3. Dry the filter element and reinstall it in the machine.

4. Clean and dry the filter and insert in into the machine.

● The Cleaning cycle

– Filter : one time a week
   ※ The pollution status may differ depending on the installed location so clean the polluted filter occasionally.

– Condenser : once a month

⚠ caution   Wear rubber gloves when cleaning the inside of the system. Otherwise, electric shock or injury may be caused.

How to clean

【 How to clean inside the drum 】

1. Using the "A" brush You have to
   clean the entire drum.
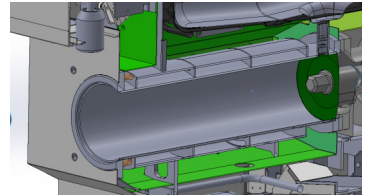
2. Using a "B" brush so that the inner
   edge of drum.
   While pushing the brush a little into
   the shaft gap and the peripheral gap.
   The residue should be cleaned thoroughly.
   (Every time you clean it, clean it with "B"
    It's hygienic and there's no foreign body.)

A   B

BRUSH DRUM   BRUSH 143
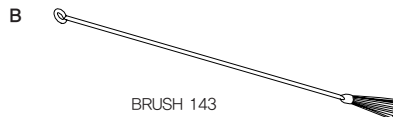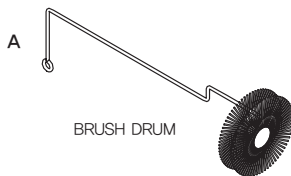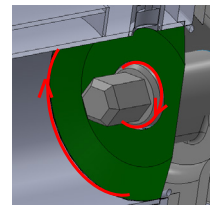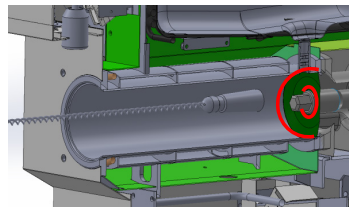
Assembling the dasher and dasher cover

1. Apply edible grease on the ring inserted into the piston.
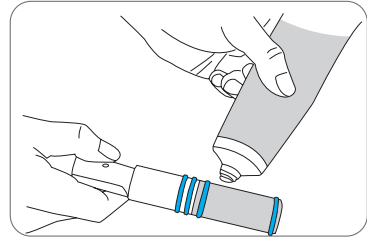
2. Insert the piston into the dasher cover.
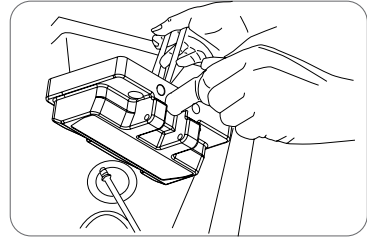
3. Insert the discharge lever into the piston and then insert the lever in line with the dasher cover and the discharge lever.
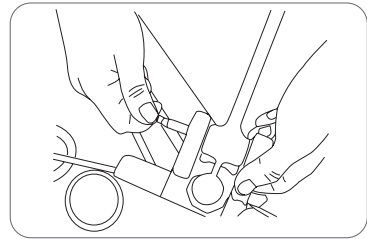
4. Insert the packing dasher into the dasher cover.
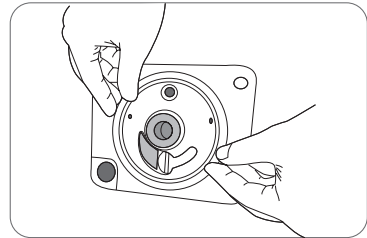
5. Insert the mixing shaft and align the dasher bearing.

dasher bearing

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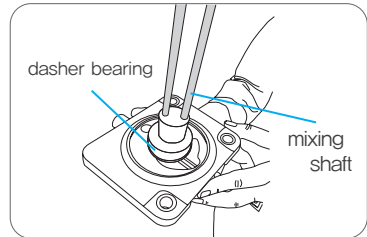
6. Fasten the two pairs of dasher cover bolts facing each other diagonally.
   If they are loose, then the soft cream can leak. Fasten it tightly.

SOFT ICE CREAM

Before requesting for customer 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.

State	Please check
The machine does not work!	1. Contact an electrician or the customer satisfaction team in case a phase error occurred. 2. Check whether the ELB and switch are turned off. 3. In case the display (front display) is on, turn the ELB (breaker) and switch on.
Does not stop but continues to operate!	1. Check whether dust is stacked in the ventilation hole. Take out the filter and remove the dust. 2. If the machine is close to the wall and has no ventilation, it can stop. Please, secure it at least 20~50cm from the wall. 3. Check whether the carburetor hole is blocked and if so clean out the hole. 4. Check whether the temperature in the ventilation hole (inhalation hole) is high. Set the inhalation temperature of the condenser lower than 38℃. 5. Replace the dasher lug pom if it is excessively worn; the blade is a consumable, requiring periodic checking and replacement. 6. Lower the solidity of ice cream if it is set too high.
Soft ice cream is thin!	1. Check whether the carburetor is inserted. 2. In case there are no sales for more than 3 hours, the soft ice cream can be melted and made one ₩ more time by using the recycling function (cover the carburetor hole during recycling). 3. Check whether a sweet raw material is being used and adjust the sweetness (when the raw material is different from the one used during the initial installation education, adjust the level value of the soft ice cream or contract the customer satisfaction team).
The noise is disturbing!	1. This product is an industrial machine and has some operation noise when compared to household appliances.This product is designed to generate noise that is less than 70dB. the customer satisfaction team in case abnormal noise is generated during machine operation. 2. A clicking sound can be generated during the initial operation. This is the sound of plastic blade (dasher blade)that cleans the wall of the cylinder while making soft ice cream. 3. The sound of water flow does not mean that the product is malfunctioning; it is from the refrigerant flowing inside the machine.
Soft ice cream dose not come out enough!	1. Is the raw material need lamp blinking? In the case of MIX LOW, the ejection amount can become small. In the case of MIX LOW, replenish the raw material. 2. The ejection amount can change by carburetor hole. The ejection amount can be large when a large hole is used.
Soft ice cream comes out too much!	1. Soft ice cream becomes thin and ejection amount may become large as time passes. Remake soft ice cream by using the recycling function to solve the problem. 2. Ejection amount can change by carburetor hole. The ejection amount can be small when a small hole is used.
Soft ice cream has gone bad.	1. This product must be cleaned daily. The remaining raw material must be wasted and new raw material must be used to make Soft ice cream. The manufacturer is not responsible if this is not observed.
Overrun is not working correctly.	1. Be sure to familiarize yourself with the user instruction. 2. Overrun will be improved by replacing the carburetor with one having smaller holes.
Soft ice creamhas gone bad.	1. This product must be cleaned daily. The remaining raw material must be wasted and new raw material must be used to make Soft ice cream. The manufacturer is not responsible if this is not observed.

Replacement cycle of consumable parts

PART NAME	Replacement cycle	Quantity	SIZE
DASHER COVER PACKING	6months	1 EA	
RING Carburetor	6months	2 EA	
SHAFT POM PACKING	Once a year	2 EA	

Error Codes and Corrective Actions

The soft ice cream machine may malfunction due to incorrect operation procedure or a trivial cause other than machine defect or failure. If the following corrective actions fail to correct the problem, or the error code is not presented below, or the same error persists, contact the nearest After Service Center.
※ Before contacting the After Service Center, turn power off, wait for five minutes, then turn power on and start the machine again.

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.(Shot)	Stop	Auto release	Continuous display
Er 3	CoPn	Cooling cylinder entrance's temperature	Stop	Auto release	Continuous display
Er 4	CSht	Cooling cylinder entrance's temperature	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. (Shot) 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 pressure	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

Circuit diagram

CIRCUIT DIAGRAM

* WIRE COLOR

B	BLACK
BR	BROWN
R	RED
O	ORANGE
Y	YELLOW
BL	BLUE
V	VIOLET
GY	GRAY
W	WHITE
G	GREEN

* CONTRACTION

COMP1	Freezer compressor
COMP2	Refrigerator compressor
MOTOR	Freezer motor
FAN1	Freezer fan motor
FAN2	Refrigerator fan motor
MC1	Magnet contactor for freezer compressor
MC2	Magnet contactor for freezer motor
EOCR or EMPR	Over current relay for freezer motor
HPS	High pressure switch for freezer compressor
AGITATOR	Agitator motor
Pump	Pump motor

* MODEL

SSI−300 TYPE	Exclude ①,③
ISI−321 TYPE	Exclude ②,③
PUMP TYPE	Include ③

CODE NO : 3800788−02

What to watch out for

■ ■

> Overcooling may give rise to issues such as unintended stopping of operation, damage to the product itself or any part, or malfunction of the power delivery axis.
> There may be excessive noise or smell due to abrasion. Any issue inside the product may result in the formation of foreign object in the ice cream.
> Refer to the main causes of overcooling for safe operation.

1. Using the exclusive liquid ingredient supplied by the manufacturer is recommended. Mixing powdered ingredient with water or milk must be done based on the ratio recommended by the manufacturer.
   (The ice cream maker makes ice cream with appropriately mixed ingredients. Powdered ingredient may cause precipitation or separation of ingredients, leading to overcooling. Making ice cream under such conditions will cause more issues with ice cream.)

2. Mixing the recommended ingredient with other additives or arbitrarily adjusting the mixing ratio of a diluted ingredient may lead either to the proper icing of ice cream or to overcooling. The manufacturer is not liable for any issue arising from improper use or mixing of ingredient. Be sure to check and follow the diluting ratio.

3. Mixing of powdered ingredient must be done by hand slowly.
   If mixing is done fast with the maker, too much oxygen may get into the mixture, resulting in oxidization or clotting of ingredient.
   In such case, the ingredient will coagulate into a form similar to soft tofu, causing difficulty in the supply of ingredient and overcooling.

4. If ingredient is not supplied normally to the inside of the drum where ice cream is made, leading to lack of ingredient, overcooling may occur.
   Check the amount of ingredient frequently to prevent such issues.
   Even if enough ingredient is in the hopper, coagulation may cause the clogging of the carburetor (mixing valve) that supplies the ingredient to the drum and prevent the proper supply of ingredient.
   Be sure to remove and clean the carburetor frequently.

5. If the maker is not used for an extended period of time, the waiting time of the ingredient isextended, causing freezing in the hopper as well as separation of fat in the process of making or keeping ice cream during the waiting time.
   In such case, ice cream may get too thin, or the maker may be overcooled.
   Be sure to operate the maker regularly even though there is no demand for ice cream to prevent such waiting time.

6. Repeated use of ingredient may deteriorate the quality of ice cream and cause overcooling.
   Be sure to refill with new ingredient after cleaning instead of reusing the old one.

Warranty

If no receipt or warranty certificate is received, the receipt/warranty certificate is lost, or the date of purchase cannot be confirmed for reasons other than the foregoing, the warranty expires within 6 months of the manufacturing date.

[Free repair]

1. For issues with functions or performance during normal usage within the warranty period

[Paid repair]

1. If the warranty has expired

2. If installation is required again due to incorrect installation by the customer or the store

3. If installation is required again due to the relocation of product or moving of the customer

4. If the malfunction is not attributable to the product

5. If the wrong power specification is applied

6. If any accessory or consumable other than that recommended by the manufacturer is used

7. If damage is caused by external force or dropping of the product

8. If damage is caused by natural disaster such as lightning, fire, earthquake, storm, typhoon, etc.

9. If any accessory/consumable goes obsolete or its service life comes to an end (packing, o-ring, blade, cleaning brush, etc.)

10. If foreign object is put into the product such as water, beverage, coffee, toy, etc.)

11. If external force is applied during installation or usage, causing damage or malfunction

12. If any accessory/consumable other than that made by the manufacturer is used

13. If directions for installation or standards are not followed

14. If the customer arbitrarily disassembled and lost or damaged any part

15. If a person other than an authorized engineer from the manufacturer repairs or modifies the product

16. If malfunction is caused by failure to follow the "Safety warning / caution" on the user manual

17. If the water supply pipe froze and burst

MEMO

ICETRO