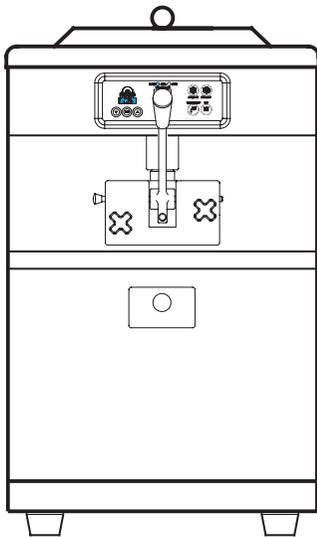
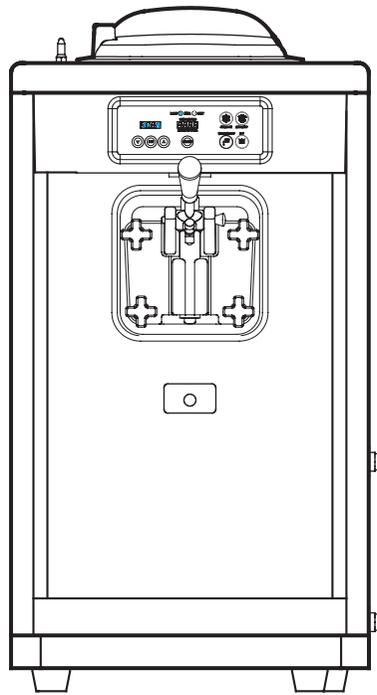


# SOFT ICE CREAM FREEZER User's Manual



SSI-151TG



SSI/ISI-300T, TW

- This product is designed for indoor use .
- Make sure to install it indoors.
- The appearance, design, color, and parts of the product are subject to change without prior notice.

# Yogurt & soft ice cream Self machine 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

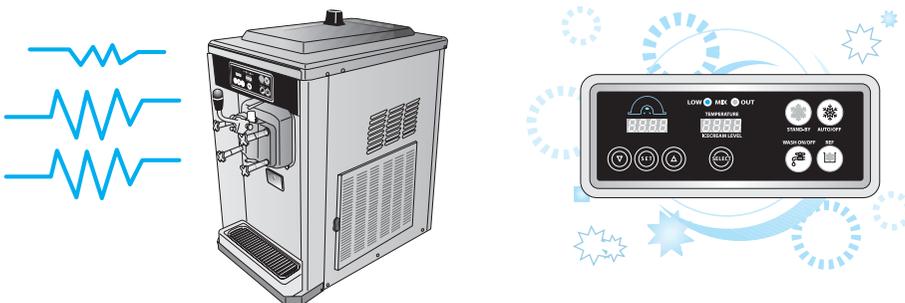
The touch button provides a smoother operation.

## 4. Large mixing tank (Model 300T, TW)

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 .....	4~7
Unpacking method .....	8
Installation method .....	9~11
For long-term storage .....	12
Name of each part .....	13~16
Product specification .....	17
Check prior to use .....	18
Button display names and functions .....	19
Functional description of the buttons .....	20~28
"1 category" .....	20
"2 category" .....	21
"3 category" .....	22
"4 category" .....	23~28
Making soft ice cream .....	29
Soft ice cream out-speed control For .....	30
Caburator control .....	31
Cleaning method .....	32~36
Dasher and dasher cover assembly method .....	37
Before requesting service .....	38
Replacement cycle of consumable parts .....	39
Error Codes and Corrective Actions .....	40
Circuit diagram .....	41~42
Part list .....	43~52

# Cautions for your safety

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 bare 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.

# Cautions for your safety

For relocation of the product, call an expert.

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

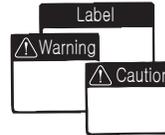


Do not use or store inflammable gas or material near the product.

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 not so, the performance will be degraded.

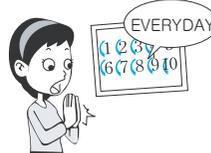
**!** Caution



Before you clean the inside of the product, unplug the earth leakage breaker wearing rubber gloves.

Electric shock or injury may result.

**!** Caution



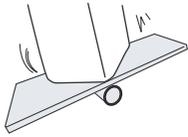
To have good soft ice cream, it is recommended to pasteurize or clean it everyday.

Otherwise, the ingredients can decay.

If sterilization is not done every day, you are recommended to wash it every day.

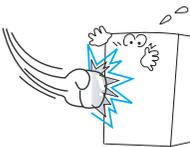
**!** Caution

# Cautions for your safety



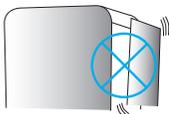
Do not install it on a tilt.  
It can cause physical injury or product damages.

**!** Caution



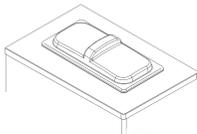
Do not apply excessive force or impact to the product.  
It can cause damages to the product.

**!** Caution



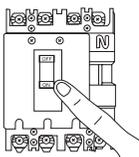
Do not operate the product while all panels are not well fastened enough.

**!** Caution



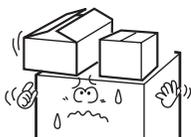
While operating the product, please close the upper cap completely.  
Bugs or alien substances can enter the product.

**!** Caution



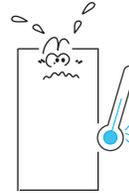
Do not turn the power ON/OFF with the circuit breaker continuously.  
It can cause electrical shocks or fire.

**!** Caution



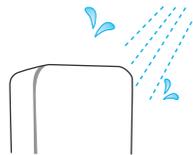
Do not put anything on the product.  
Injury may occur if it falls over.

**⊘** Prohibited



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

**!** Caution



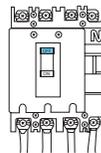
Do not install it near dust, moisture or rainwater (water) popping.  
It can cause electrical shocks or fires.

**!** 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 handling or operation.

**!** Caution



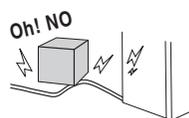
Do not connect many electrical products to the earth leakage circuit breaker.  
Use it individually.  
It can cause fires.

**!** Caution



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

**⊘** Prohibited



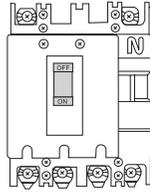
Do not put anything on the power cable.  
Make sure that the power cable is not twisted or knotted.  
Fire or electric shock may occur.

**⊘** Prohibited

# Cautions for your safety

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 or to 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 can cause electrical shocks, fire and damages.

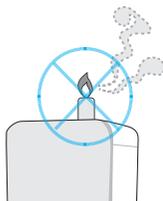


Prohibited

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

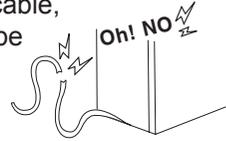
It can cause fires.

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.

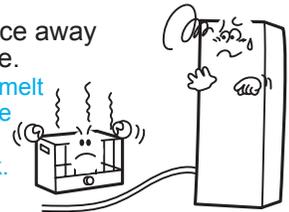
The product may fall down or develop a problem.



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



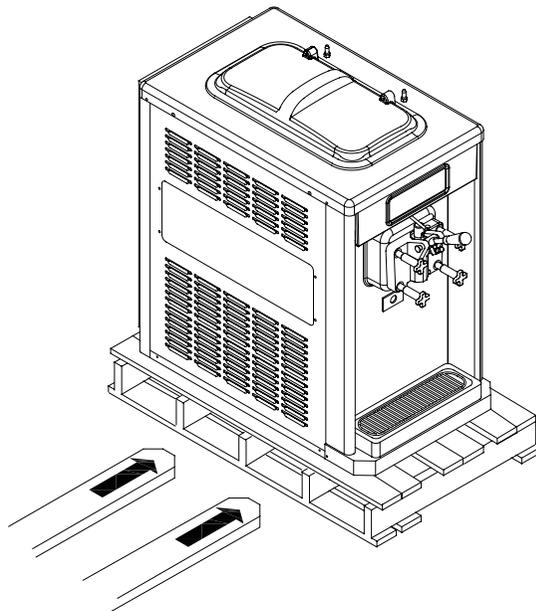
Do not touch any moving part inside the product.

Prohibited You may get injured.

# Unpacking method

The Ice Cream Dispenser has been fully inspected and tested at the factory prior to shipping. If you detect damage to the wooden package or apparent distortion of the shape of the system after unpacking the product, immediately inform your distributor or manufacturer. Find the serial number marked on the packing and the machine before starting installation. Inform us of the serial number if you have any inquiry. Request the dealer or service provider for assistance when the machine is to be moved.

1. Remove the wooden packing, taking care not to damage the exterior of the Ice Cream Dispenser.
2. Remove the wooden packaging and the protective tapes and make sure that all parts of the system are complete.
  - ※ When tilting or moving the machine, take care not to overturn the machine.



## ● Location and Precautions for Installation

1. Avoid sloping or irregular surface.
  - Installation on a sloping or an irregular surface may result in machine overturning, malfunction, or failure.
2. Avoid direct sunlight, rain, snow, and wind.
  - Otherwise, fire or electric shock may occur due to the ice cream or rain water.
3. Avoid the direct influence of sea wind and hazardous gases.
  - Ice cream buyers may complain or file a claim.

# Installation method

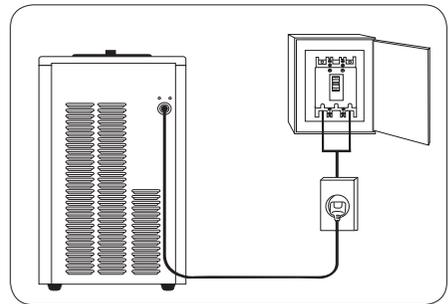
## SSI-300

### ● Electrical connection

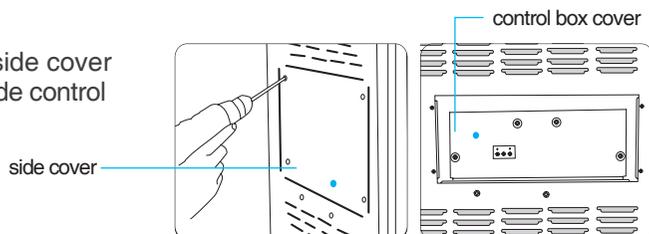
- Consult with the engineers of the company for the details of installation of the system to ensure optimal performance of the system (change of the installation site of the system also requires consultation with the engineer of the company).
- Do not install the system on a place with adverse conditions such as uneven floor, place exposed to direct light, or place with too much dusts or direct splashing of water.

1. Connect the main power for single-phase power distribution box.  
Install an earth leakage breaker (with capacity of 30A or higher) in the distribution box.

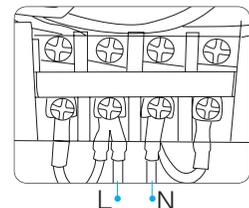
- ◆ Earth shall be provided for the safe operation of the system.
- ◆ Maintain space of 50cm or more each between the walls and the right and rear sides, 20cm or more between the left of the system.
- ◆ Precisely seat the rubber feet at the bottom to prevent slipping



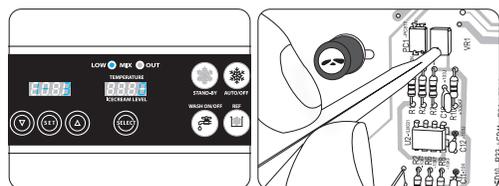
2. Remove the screws of the left side cover and remove the cover of the inside control box by the same method.



3. Plug in the power cord and measure voltage at the ends of two power cords (L, N) of terminal block.



4. Measure the phase voltages.  
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.

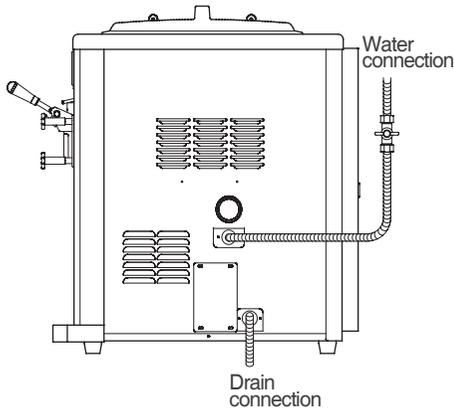


Measurement must be taken by a qualified electrician and adjust voltage to values displayed in '1-3'. Otherwise, icecream will be too watery or too thick.

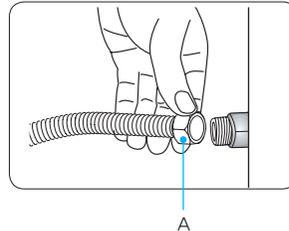
## ISI-300TW

### ● Water Supply Connection

The raw water supply valve may vary depending on the installation environment of the system.



1. Coil teflon tape 5~10 times around the thread of water supply connector.
2. Fir rubber packing in the corrugated tube nut of the feed water line and join it to the water inlet of the product. Tighten the nut firmly with a tool.
3. Pay special attention to protecting Section "A" from damage when assembling the tools.



### ● Check the followings after connecting the feed and discharge water lines:

1. Feed water pressure should be between 1~3kgf/cm<sup>2</sup>.
  - ▶ If the water pressure is too high, water may leak at connections.
2. If the temperature can go down below 10℃, provide a means to prevent freezing.
  - ▶ Freezing can cause water leakage or failure of the system.
3. There should be a tap water valve when you connect the system to tap water.
  - Close the tap water valve if there is water leak due to a defect of the tap on top of the product.



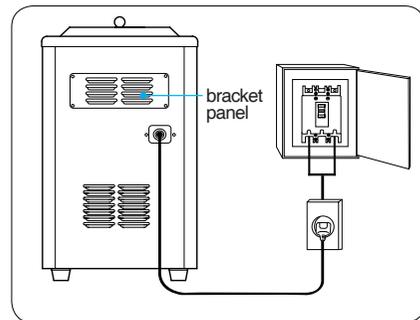
Measurement must be taken by a qualified electrician and adjust voltage to values displayed in '1-3'. Otherwise, icecream will be too watery or too thick.

## SSI-151TG

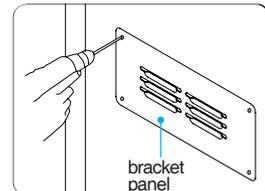
- Consult with the engineers of the company for the details of installation of the system to ensure optimal performance of the system (change of the installation site of the system also requires consultation with the engineer of the company).
- Do not install the system on a place with adverse conditions such as uneven floor, place exposed to direct light, or place with too much dusts or direct splashing of water.

1. Connect the main power for single-phase power distribution box.  
Install an earth leakage breaker (with capacity of 15A or higher) in the distribution box.

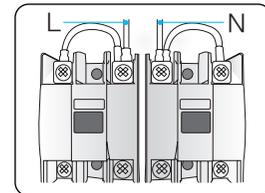
- ◆ Earth shall be provided for the safe operation of the system.
- ◆ Maintain space of 50cm or more each between the walls and the right and rear sides, 20cm or more between the left of the system.
- ◆ Precisely seat the rubber feet at the bottom to prevent slipping



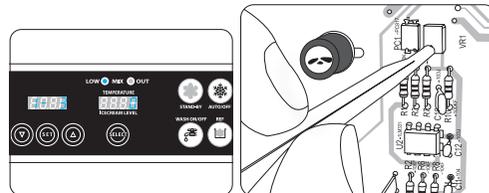
2. Loosen the screw on bracket panel on the back to remove the cover.



3. Measure voltage at both ends of relay magnet connector.



4. Measure the phase voltages.  
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.



Measurement must be taken by a qualified electrician and adjust voltage to values displayed in '1-3'. Otherwise, icecream will be too watery or too thick.

## For long-term storage



### Warning

- The machine will be out of order if water gets frozen due to sub-zero temperature in winter. Be sure to drain water before storing the machine.
- The manufacturer will not be responsible for the freezing and bursting of the machine without draining water. Be sure to keep the following precautions to avoid charging of excessive repair cost:

1. Drain raw ice cream liquid, clean the machine, and assemble the dasher cover and dasher assy while the body is still wet from cleaning.  
(Refer to the user instruction for the cleaning method.)

2. Lock the water supply valve. The power supply must be connected at this point, so check if it is.

3. Disconnect the water supply valve from the side of the machine to drain any remaining water in the line. (Figure 1)

4. Unscrew the quick valve cover from the lower part of the left panel and have a basket ready at the outlet hose.  
(The basket is for collecting the water that may spill on the ground.)

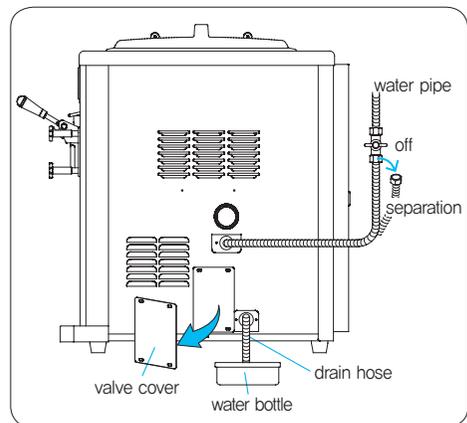
5. Turn and open the quick valve inside of the valve cover counter-clockwise.  
This will allow the water to flow from the outlet hose.  
(Figure 2)

6. Press the "AUTO" button and keep the machine running for 5~10 minutes.  
(Up to 10 minutes until the high-pressure switch is activated and the machine stops.)

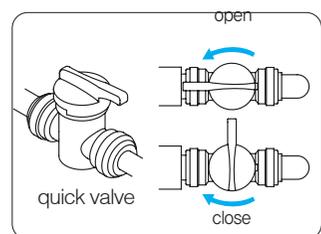
7. Press the "STOP" button on the front to stop the machine.

8. After water is completely drained, lock the water valve (Figure 1) and quick valve (Figure 2) and close the cover.  
(About 1.3~1.5 liters of water will be drained.)

9. To reuse the machine, lock the quick valve again (Figure 2) and reconnect the water supply line (Figure 2)



(Figure 1)



(Figure 2)

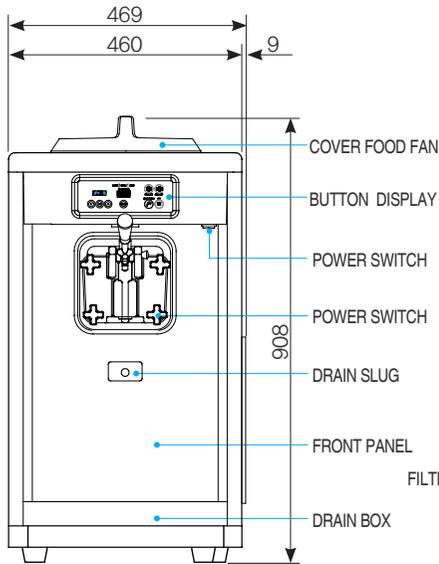
- Be sure to check the following when connecting the water supply line!

1. The pipe must have a diameter bigger than  $\Phi 12.7\text{mm}$ .
2. Check if the pressure is between 0.3 and 0.5 Mpa on the water pressure gauge after connecting the line. (The water pressure gauge is on the back of the machine.)
3. If pressure is lower than 0.3 Mpa when operating the machine, control the flow of the main valve to ensure stable operation.
4. The high-pressure cut-out switch (HPS) of the machine will be activated to stop and protect the machine unless pressure is strong enough.  
Remember to maintain the proper water pressure.

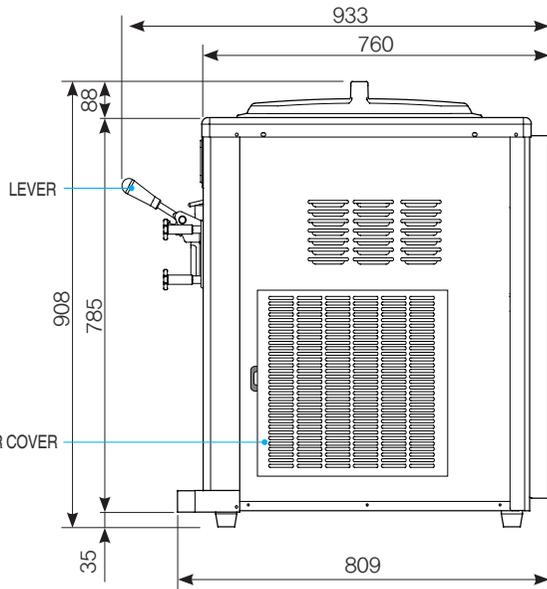
# Name of each part

SSI-300T

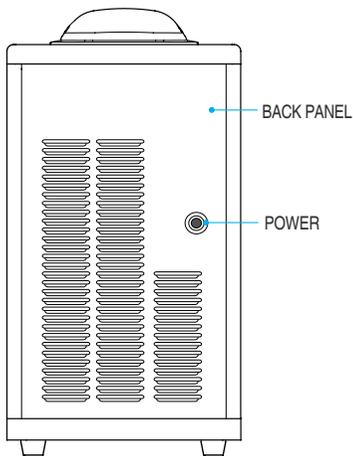
FRONT



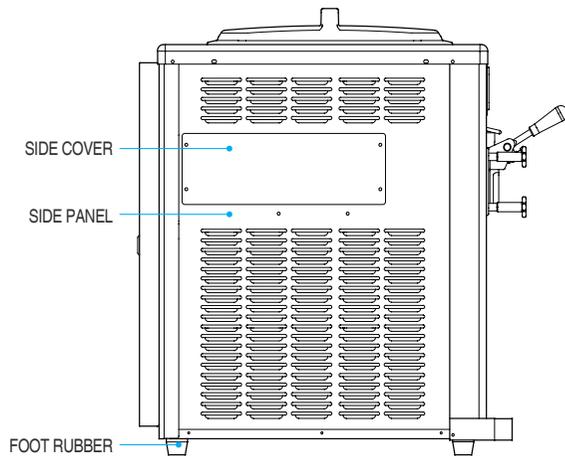
RIGHT SIDE



BACK

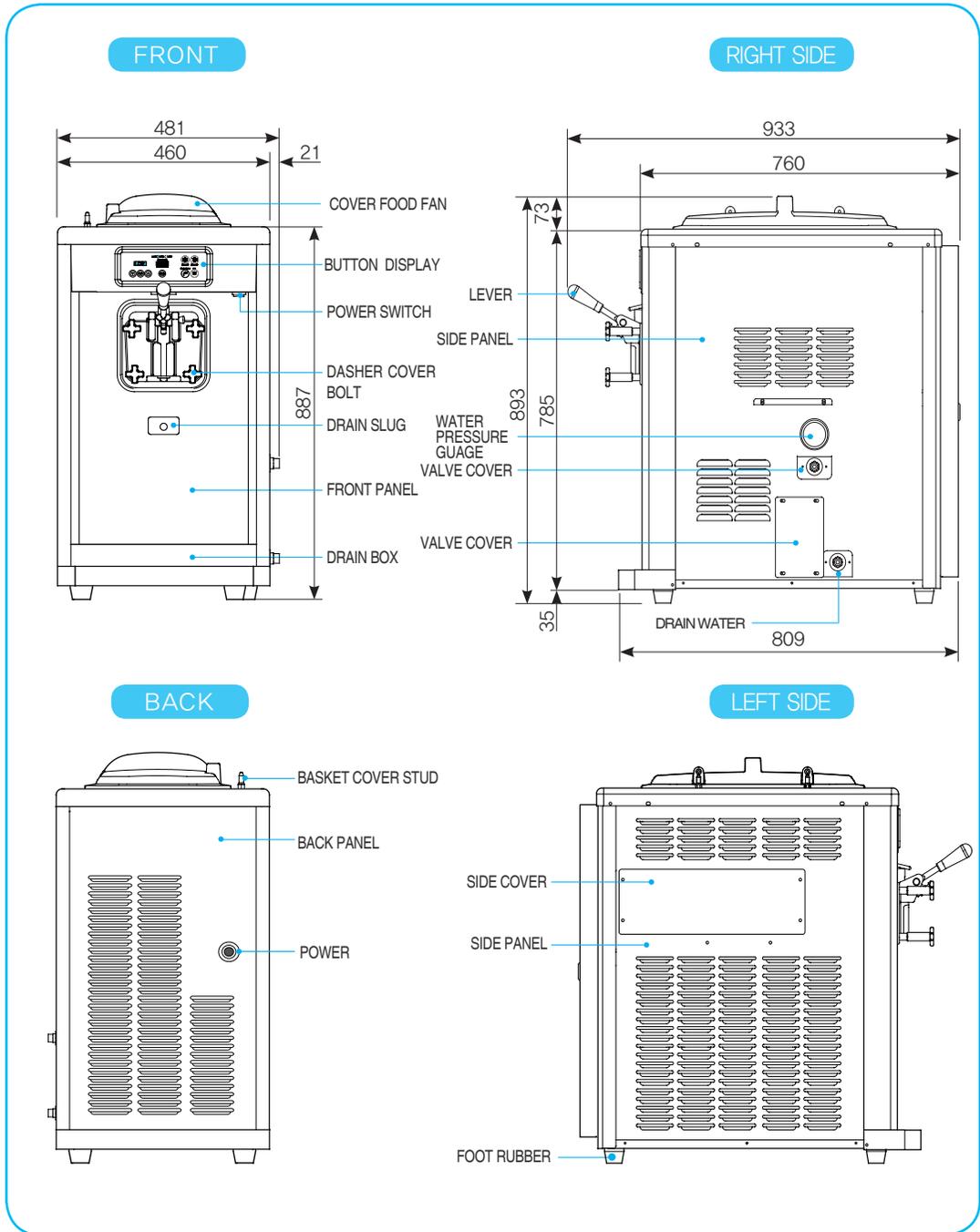


LEFT SIDE



# Name of each part

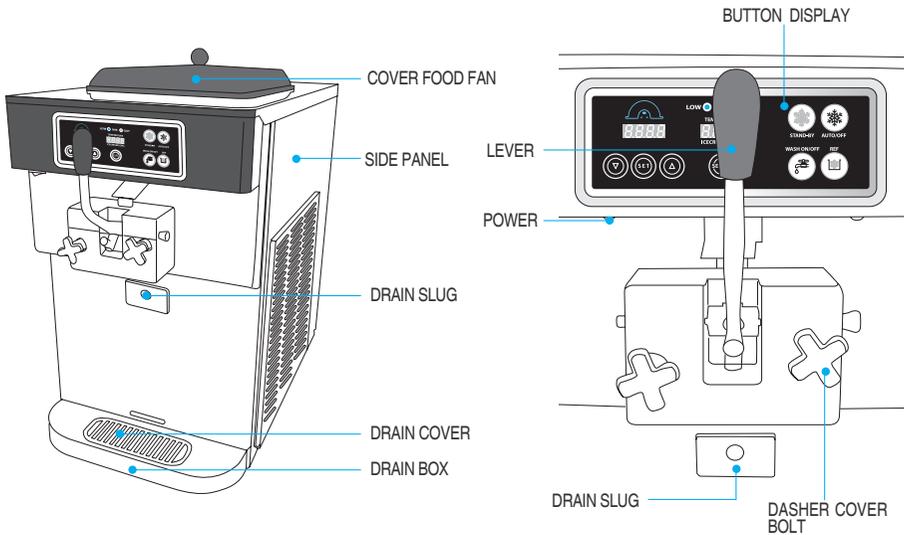
SSI-300TW



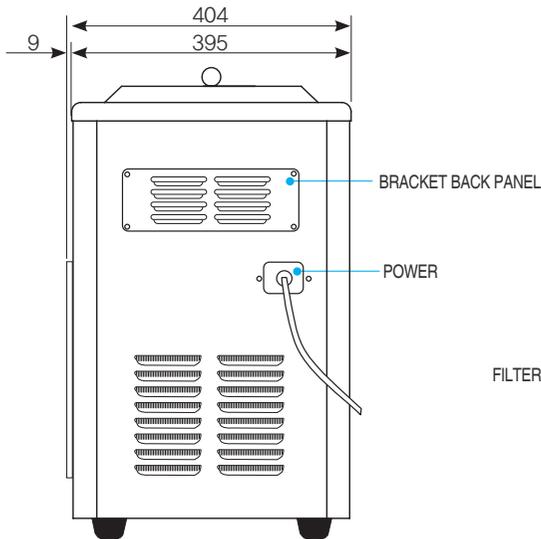
# Name of each part

SSI-151TG

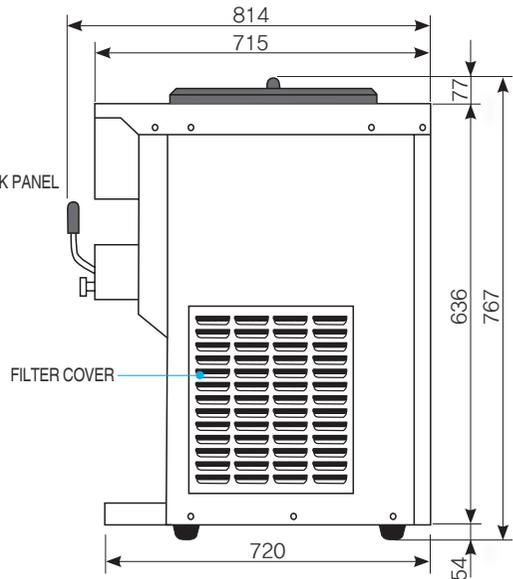
## FRONT



## BACK



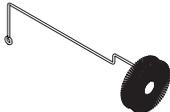
## LEFT SIDE



# Name of each part

## PART

300



BRUSH DRUM  
WHITE -1 EA  
BLACK -1 EA



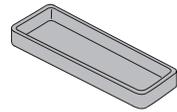
BRUSH 3  
1 EA



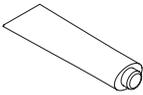
MANUAL  
1 EA



DRAIN BOX UP  
1 EA



DRAIN BOX  
1 EA



HINES  
1 EA



DASHER LUG POM  
6 EA



PACKING JAVARA  
1 EA



ORIFFICE  
1 EA



DASHER BEARING  
1 EA



SHAFT POM PACKING  
3 EA



RING CABURATOR  
2 EA



CABURATOR  
TUBE  
1 EA

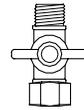


CABURATOR  
TUBE BODY  
1 EA

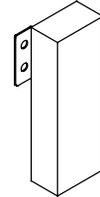
300TW



ELBOW NIPPLE  
2 EA



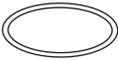
WATER VALVE  
1 EA



WATER IN  
COVER  
1 EA



HOSE  
1 EA

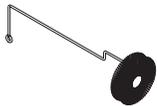


PACKING  
DASHER COVER  
1 EA



O-RING  
1 EA

151



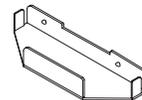
BRUSH DRUM  
1 EA



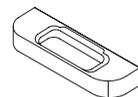
BRUSH 3  
1 EA



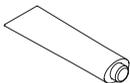
MANUAL  
1 EA



BRACKET  
DRAIN BOX  
1 EA



DRAIN BOX  
1 EA



HINES  
1 EA



DASHER LUG POM  
2 EA



PACKING JAVARA  
1 EA



DRAIN BOX UP  
1 EA



PACKING PISTON  
2 EA



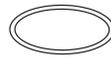
HANDLE JAVARA  
1 EA



ORIFFICE CAP  
1 EA



DASHER BEARING  
1 EA



PACKING  
DASHER COVER  
1 EA



CABURATOR  
TUBE  
1 EA



CABURATOR  
TUBE BODY  
1 EA

# Product specification

CLASSIFICATION		SPECIFICATION		
Product name		Soft Ice Cream Freezer		
Model name		SSI-300T	ISI-300TW	SSI-151TG
Rated voltage and frequency		1PH, 220V, 60Hz / 230V, 50Hz		
Power consumption		3000 W	2170 W	1400 W
Product size	WIDTH (Filter and coolant supply pipe excluded)	460mm	460mm	395mm
	DEPTH (cover excluded)	760mm	760mm	715mm
	HEIGHT (foot inclusion)	820mm	820mm	690mm
Cylinder capacity		3.4ℓ		1.3ℓ
Mixing tank capacity		19.5ℓ		9ℓ
Consecutive selling (At interval of 30 seconds) ※ Caution (for making 100g of ice cream at 27°C)		20~24cups		4~5cups
Cooling temperature		Can keep under 8°C		
Filter		Located at the right of product.		
Refrigerant amount(Freeze/refrigeration)		1000g / 140g	950g / 120g	380g / 80g
Refrigerant kind(Freeze/refrigeration)		R-404A / R-134a		
Ingredient sensor		Applied		
Product weight(Before packing)		130Kg	140Kg	92Kg

# Check prior to use



【 Make sure to check them prior to use 】



**This product is for 1PH / 220V, 60Hz**

Install it independently in an earth leakage circuit breaker with more than 20A and provide an external grounding.

(Ask a qualified electrical technician for the installation.)

The power cable should be connected before the product can be operated normally.

- Do not block the air vent.

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

- Periodic filter cleaning

For better taste of soft ice cream, do not miss the filter cleaning time.

- Clean the condenser once a month.

It is recommended to clean the cylinder, the mixing tank, the impeller, the dasher, the caburator, the cup sensor, the piston every day.

Clean the condenser at least once a month or more often.

※ This does not apply to 'ISI-300TW' (water cooled model).



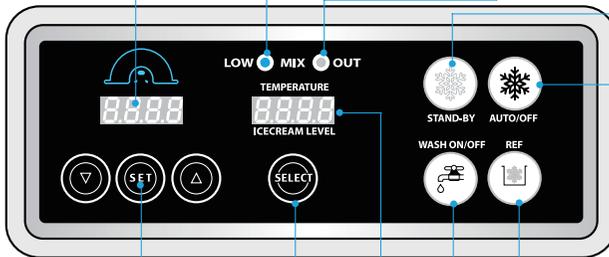
For your  
information

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.

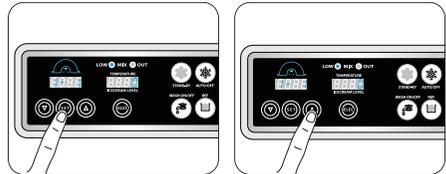
Also, buttons are placed narrowly each other. So when you press a button, the adjacent button can be pressed.

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.



 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.

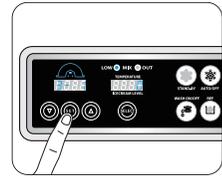
This error is caused by poor environmental conditions (clearance, cleaning, ventilation, etc.). You should install the machine according to the manufacturer's recommendation.

# 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.



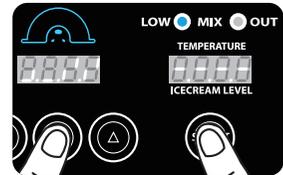
  
For your  
information

 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.

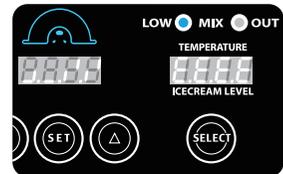
# Functional description of the buttons

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°C and 4-3 is 2°C, the management temperature of the hopper is maintained at 2-4°C.



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.

# Functional description of the buttons

## 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°C and 4-3 is 2°C, the management temperature of the hopper is maintained at 6-8°C.



## 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 °C 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 °C 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 deducted 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 (°C) and Fahrenheit (°F).



# Functional description of the buttons

## 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  $\pm 10\%$  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.  
H H H : Korean, E n g : 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.



# Functional description of the buttons

## 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



# Functional description of the buttons



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 °C or lower  
This sets the temperature compensation value of the ambient temperature to the environmental temperature of 10 °C or lower.



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



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



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



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



# Functional description of the buttons



## 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

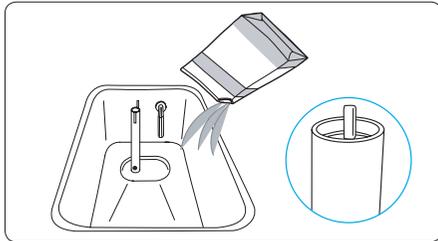


## 4-32: Frequency standard value setting

Set the 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.

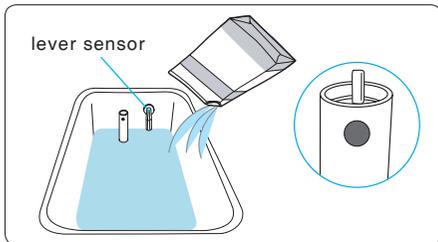


# Making soft ice cream

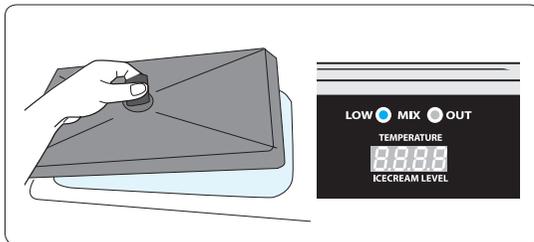


1. Pour 2.0ℓ (151TG: 1ℓ) of ingredients in the mixing tank. The raw material must have been stored in a cooler at a temperature 10°C or below.

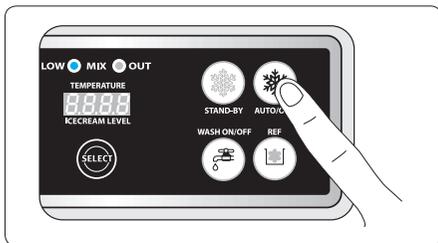
2. Plug in the caburator and block the hole.



3. Pour 2.0ℓ (151TG: 1ℓ) of ingredients in the mixing tank. open the caburator hole of the caburator tube.

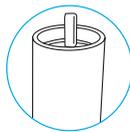


4. See if the insufficient ingredient lamp is turned off. and Close the cover.



5. Press the "AUTO" button.

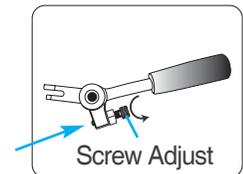
When the soft ice cream is formed, open the caburator of the tank.



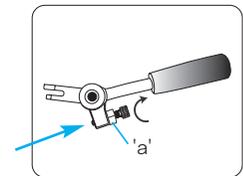
- The smaller the caburator hole is, the higher the overrun (air content) is. Instead, in case of continuous sales, the ingredients supply gets slower and the soft ice cream is let out slowly.
- The caburator hole can get clogged, so check it and wash it periodically during use.
- The manufacturer shall 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°C).

# Soft ice cream out-speed control

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.



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.

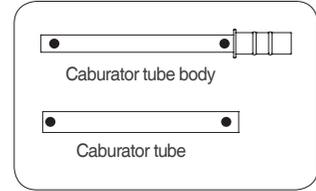
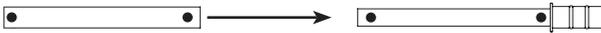


- If you release the Screw Adjust to increase the out speed of the soft ice cream, then the ingredients in the mixing tank will be supplied to the cylinder relatively slowly. Suddenly, the soft ice cream may no longer come out. Therefore, you are recommended to adjust the vending speed for one cup every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

# Caburator control

The caburator is made up of two parts.

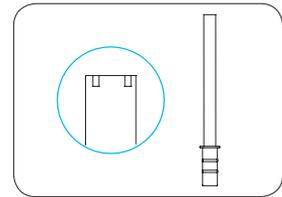
The part that is inserted into the hole of the mixing tank is called the body and a tube is inserted into this. The tube has a hole at the top and at the bottom. It can't be inserted in the reverse direction.



The figure shows the caburator with a blocked hole.

If you align the protrusion 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.

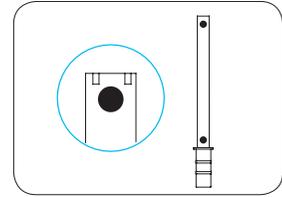
Condition of use: Initial soft ice cream making



This figure shows the caburator aligned with a large hole.

Align the protrusion 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.

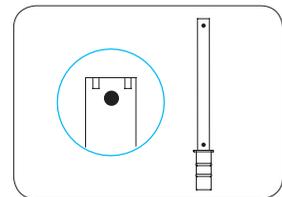
Condition of use: When the "Auto" mode is executed



This figure shows the caburator aligned with a small hole.

Align the protrusion 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.

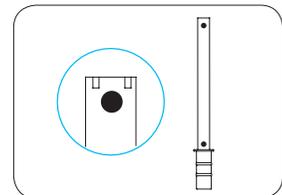
Condition of use: When the "Auto" mode is executed



This figure shows the caburator aligned with a medium hole.

Align the protrusion 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 injection adequate for sales.

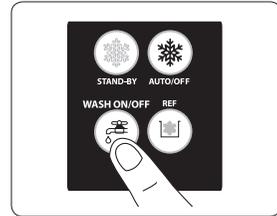
Condition of use: When the "Auto" mode is executed



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

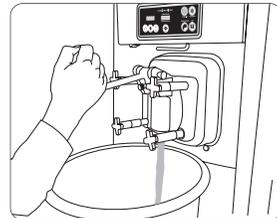
1. Press the wash button on the control panel.  
(Wait until the soft cream in the cylinder is melted,  
About 10 minutes.)



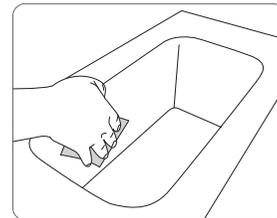
2. Remove the mixing tank cover and Take out the caburator tube and caburator body.



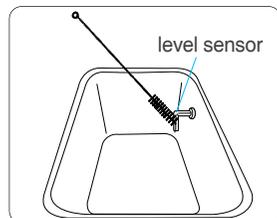
3. Remove the soft cream liquid in the mixing tank and pour faucet water into it.  
Repeat it two or three times until you get clean water from it.



4. Clean up the inside of the mixing tank with a soft towel and neutral detergent.



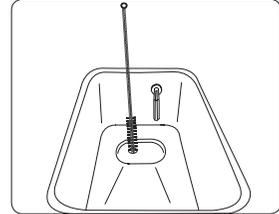
5. Brush around the level sensor.  
(The level sensor of the 151TG model is on the left-hand side.)



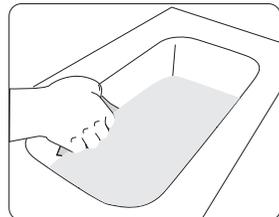
The carburetor, impeller, and ice cream discharge port shall be cleaned once a day.

# Cleaning method

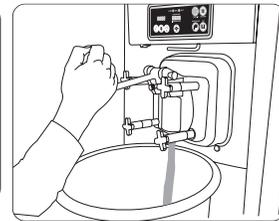
8. Brush the drain hole of the mixing tank thoroughly.



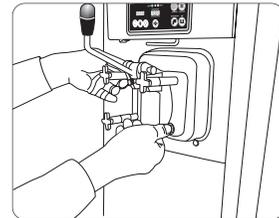
9. Use faucet water to clean off the inner area of the tank.



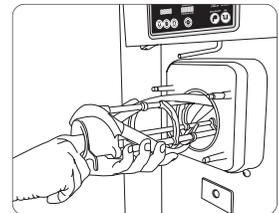
10. Press the wash button and finally discharge the water from the mixing tank. Use faucet water to rinse off the cleaning agent residuals.



11. Press the wash button to stop the product and Release the four dasher cover bolts.

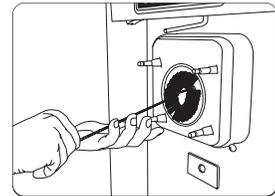


12. Separate the dasher cover from the main body. Disassemble parts of dasher assay.

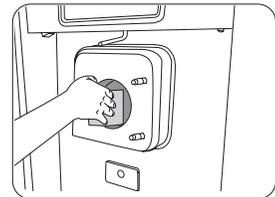


# Cleaning method

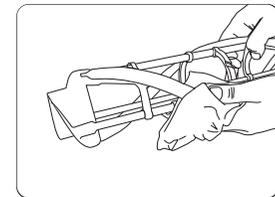
13. Separate the dasher from the cylinder.



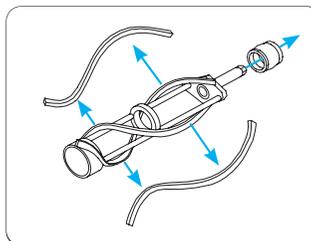
14. Brush off the inner area of the cylinder and wipe it off with a soft cloth.  
Insert a brush into the dead end of the cylinder and turn the brush left and right to clean up the cylinder.



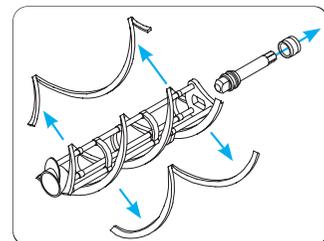
15. Disassemble the DASHER ASS'Y, wash all the parts using detergent and wipe them with soft cloth.



16. Disassemble the DASHER ASS'Y, wash all the parts using detergent and wipe them with soft cloth.

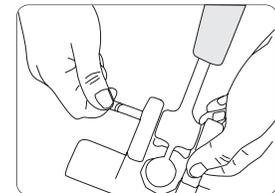


< 151 >



< 300 >

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

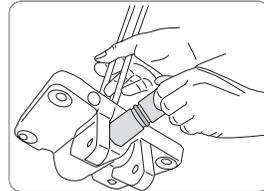


caution

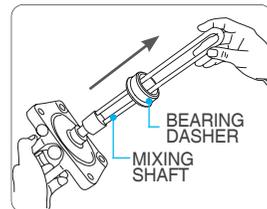
Wear rubber gloves when cleaning the inside of the system.  
Otherwise, electric shock or injury may be caused.

# Cleaning method

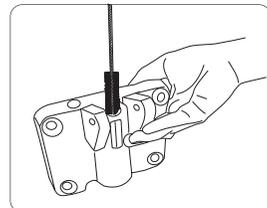
18. Take out the piston of the dasher cover and clean the edge of the piston with a soft towel.



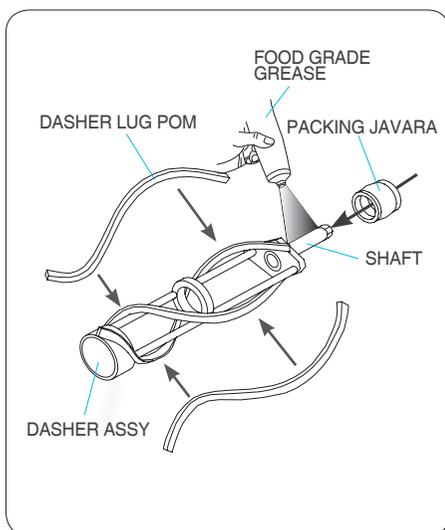
19. Disassemble dasher assay first from dasher bearing and then from mixing shaft, then clean the assay.



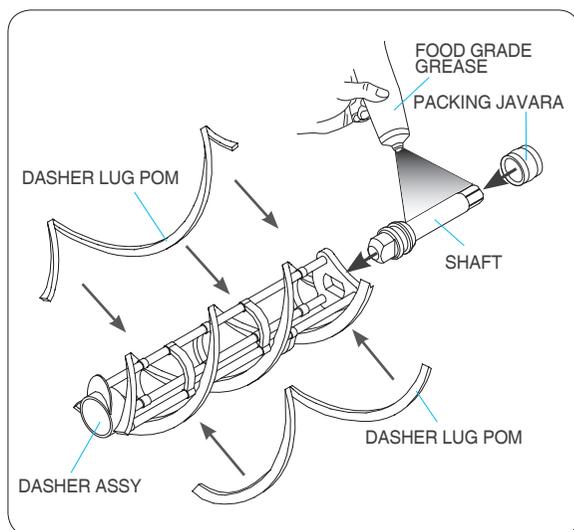
20. Clean the piston assembly hole of the dasher cover with a brush and soft cloth.



21. After cleaning off all parts, dry them and reassemble them in the reverse order.  
(Apply food grade grease on the shaft as shown below.)



< 151 >



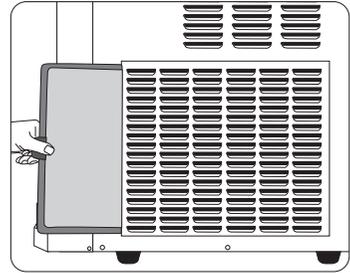
< 300 >

# Cleaning method

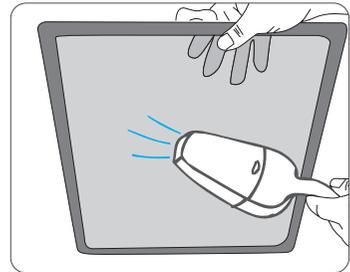
## 【 Condenser and filter cleaning method 】

1. Pull out the condenser filter located on the right side of the machine.

※ ISI-300TW is water-cooled and does not require cleaning of condenser.



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.

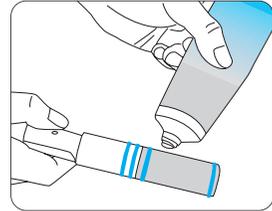
- The Cleaning cycle
  - Filter : one time a week
    - ※ The pollution status may differ depending on the installed location so clean the polluted filter occasionally.
  - Condenser : once a month



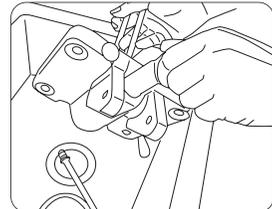
Wear rubber gloves when cleaning the inside of the system.  
Otherwise, electric shock or injury may be caused.

# Dasher and dasher cover assembly method

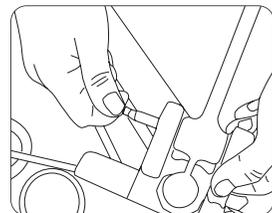
1. Apply edible vegetable oil to the ring inserted into the piston.



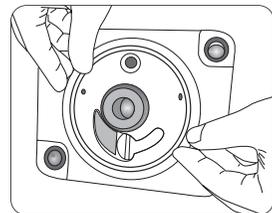
2. Insert the piston in the middle of the dasher cover.



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

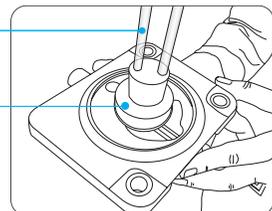


4. Insert the packing dasher to the dasher cover.

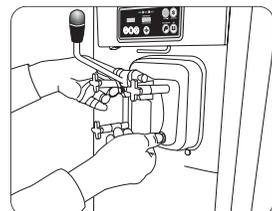


5. Insert the mixing shaft and align the dasher bearing.

MIXING SHAFT  
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.



# 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.

State	Please check
The machine does not work!	<ol style="list-style-type: none"> <li>1. Contact an electrician or the customer satisfaction team in case a phase error occurred.</li> <li>2. Check whether the ELB and switch are turned off.</li> <li>3. In case the display (front display) is on, turn the ELB (breaker) and switch on.</li> </ol>
Does not stop but continues to operate!	<ol style="list-style-type: none"> <li>1. Check whether dust is stacked in the ventilation hole. Take out the filter and remove the dust.</li> <li>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.</li> <li>3. Check whether the carburetor hole is blocked and if so clean out the hole.</li> <li>4. Check whether the temperature in the ventilation hole (inhalation hole) is high. Set the inhalation temperature of the condenser lower than 38°C.</li> <li>5. Replace the dasher lug pom if it is excessively worn; the blade is a consumable, requiring periodic checking and replacement.</li> <li>6. Lower the solidity of ice cream if it is set too high.</li> </ol>
Soft ice cream is thin!	<ol style="list-style-type: none"> <li>1. Check whether the carburetor is inserted.</li> <li>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).</li> <li>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).</li> </ol>
The noise is disturbing!	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>3. The sound of water flow does not mean that the product is malfunctioning; it is from the refrigerant flowing inside the machine.</li> </ol>
Soft ice cream dose not come out enough!	<ol style="list-style-type: none"> <li>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.</li> <li>2. The ejection amount can change by carburetor hole. The ejection amount can be large when a large hole is used.</li> </ol>
Soft ice cream comes out too much!	<ol style="list-style-type: none"> <li>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.</li> <li>2. Ejection amount can change by carburetor hole. The ejection amount can be small when a small hole is used.</li> </ol>
Soft ice cream has gone bad.	<ol style="list-style-type: none"> <li>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.</li> </ol>
Overrun is not working correctly.	<ol style="list-style-type: none"> <li>1. Be sure to familiarize yourself with the user instruction.</li> <li>2. Overrun will be improved by replacing the carburetor with one having smaller holes.</li> </ol>
Soft ice cream has gone bad.	<ol style="list-style-type: none"> <li>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.</li> </ol>

# Replacement cycle of consumable parts

300

PART NAME	Replacement cycle	Quantity	SIZE
DASHER COVER PACKING	6months	1 EA	
RING CABURATOR	6months	4 EA	
SHAFT POM PACKING	Once a year	6 EA	
PACKING JAVARA	Once a year	1 EA	

151

PART NAME	Replacement cycle	Quantity	SIZE
DASHER COVER PACKING	6months	1 EA	
PACKING PISTON 151	6months	2 EA	
PACKING JAVARA	Once a year	1 EA	
PACKING CABURATOR	6months	4 EA	

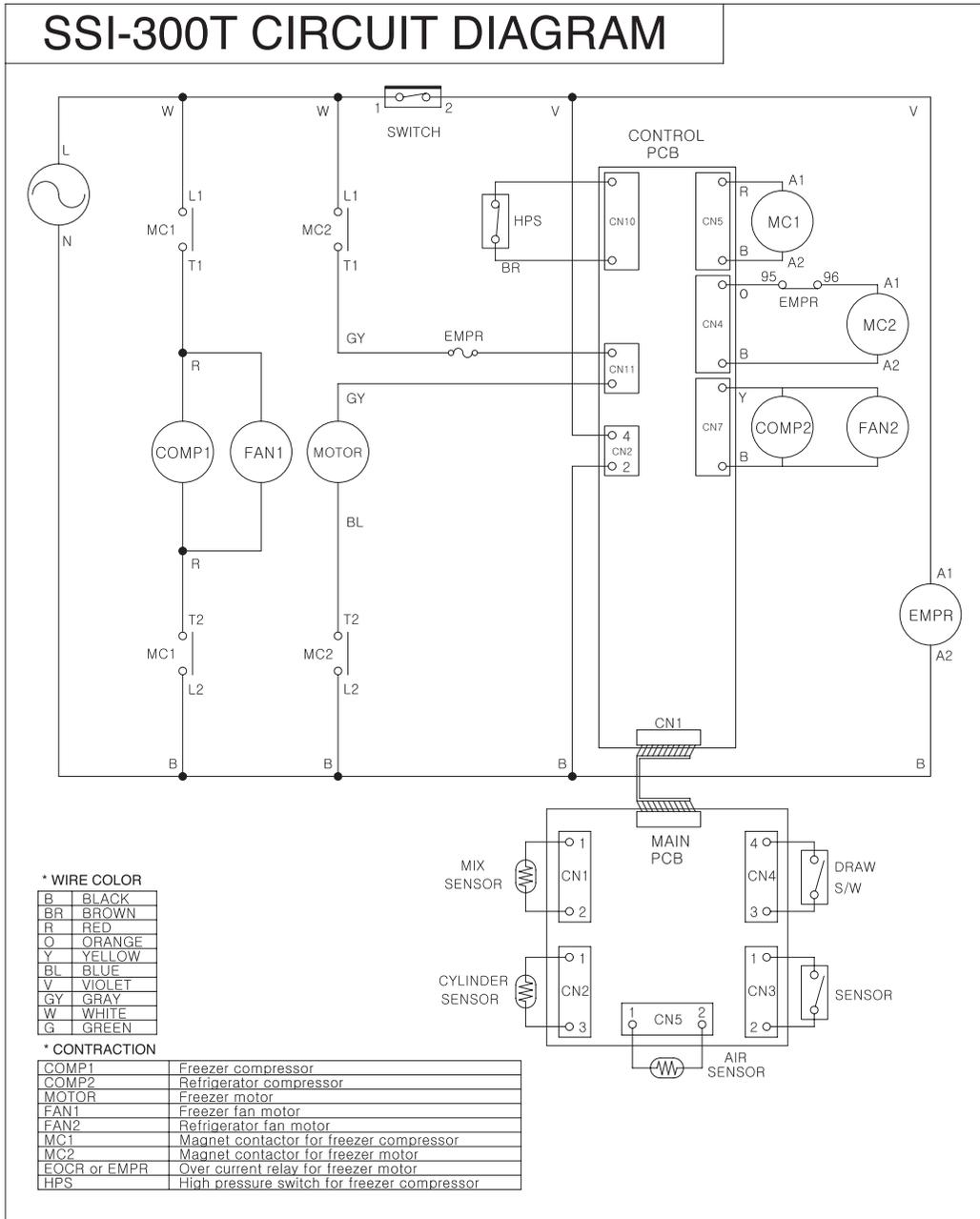
# Error Codes and Corrective Actions

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.

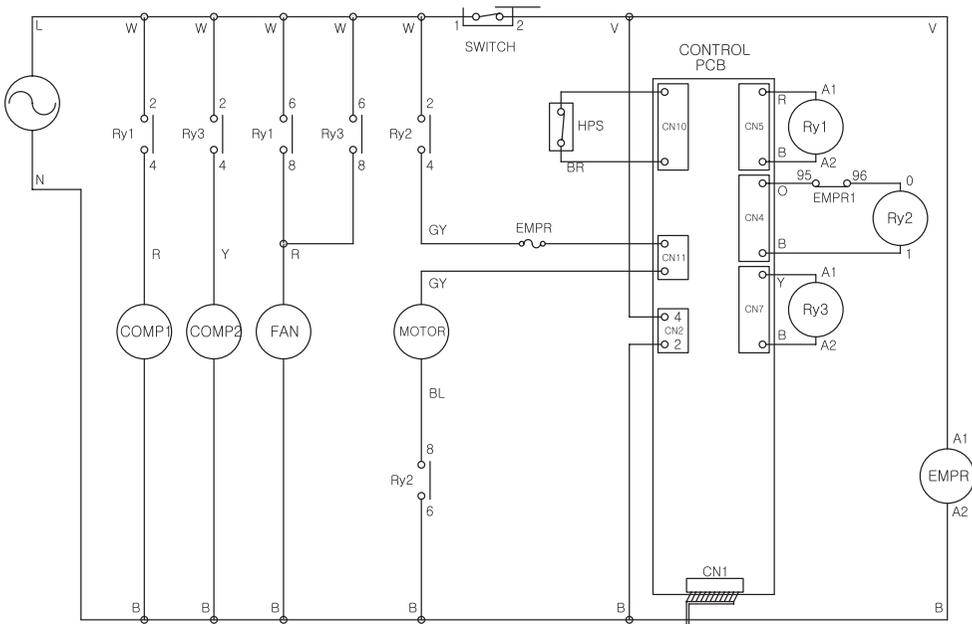
Error code	Error details	Error occurrence	Release condition	Display	
Er 1	hoPn	Cooling temperature sensor is bad.(Open)	Stop	Auto release	Continuous display
Er 2	hSht	Cooling temperature sensor is bad.(Shot)	Stop	Auto release	Continuous display
Er 3	CoPn	Cooling cylinder entrance's temperature	Stop	Auto 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 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

## SSI-151TG CIRCUIT DIAGRAM

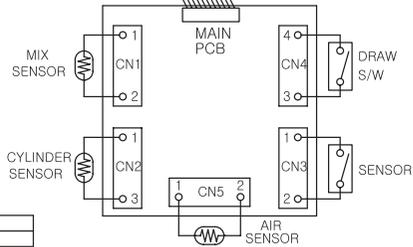


\* WIRE COLOR

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

\* CONTRACTION

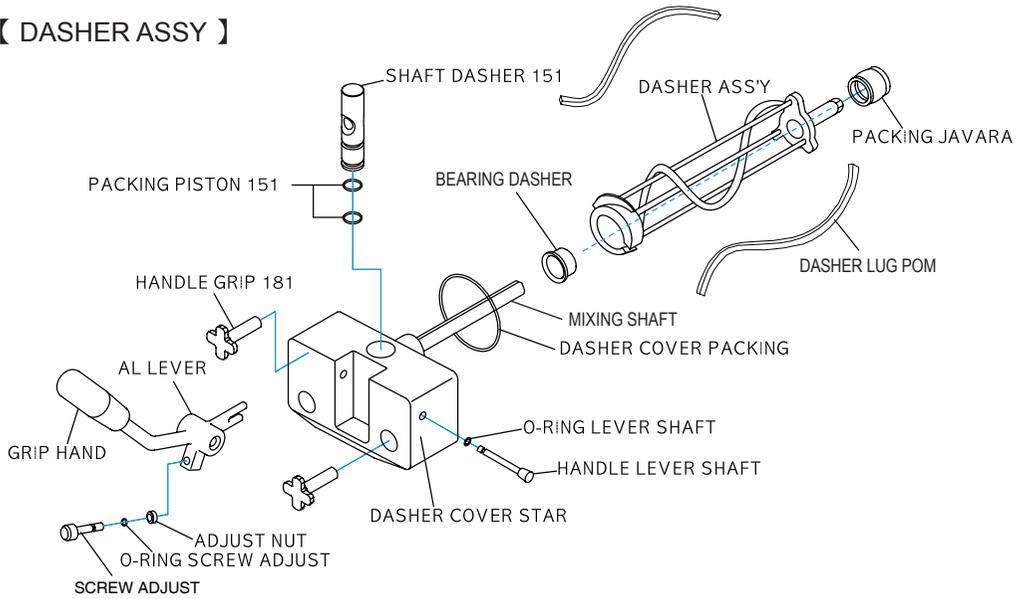
COMP1	Freezer compressor
COMP2	Refrigerator compressor
MOTOR	Freezer motor
FAN	Freezer & refrigerator fan motor
Ry1	Relay for freezer compressor
Ry2	Relay for freezer motor
Ry3	Relay for refrigerator compressor
EOCR or EMPR	Over current relay for freezer motor
HPS	High pressure switch for freezer compressor



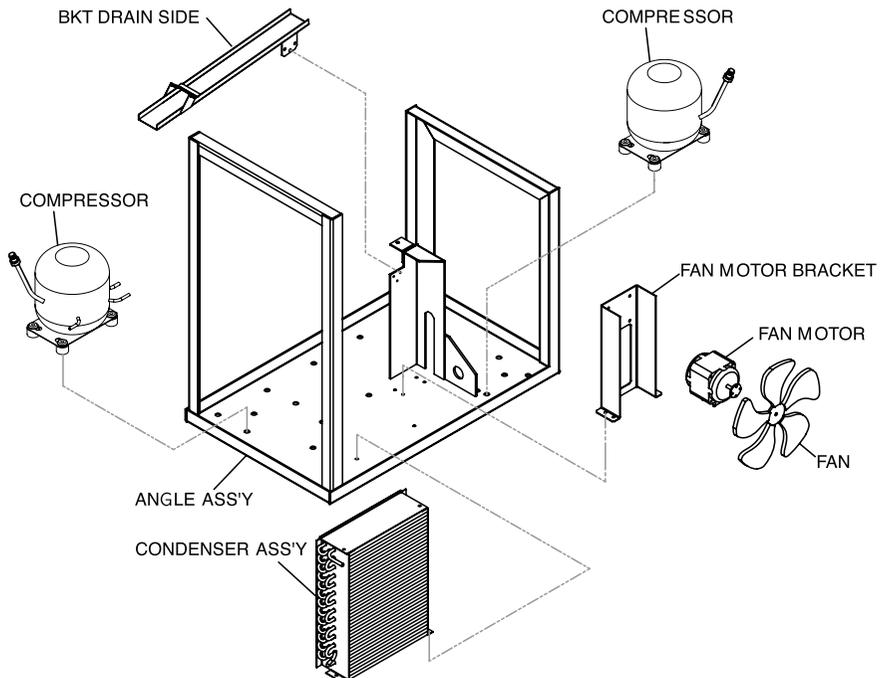
# Part list

SSI-151

## 【 DASHER ASSY 】



## 【 COMPRESSOR & CONDENSER 】

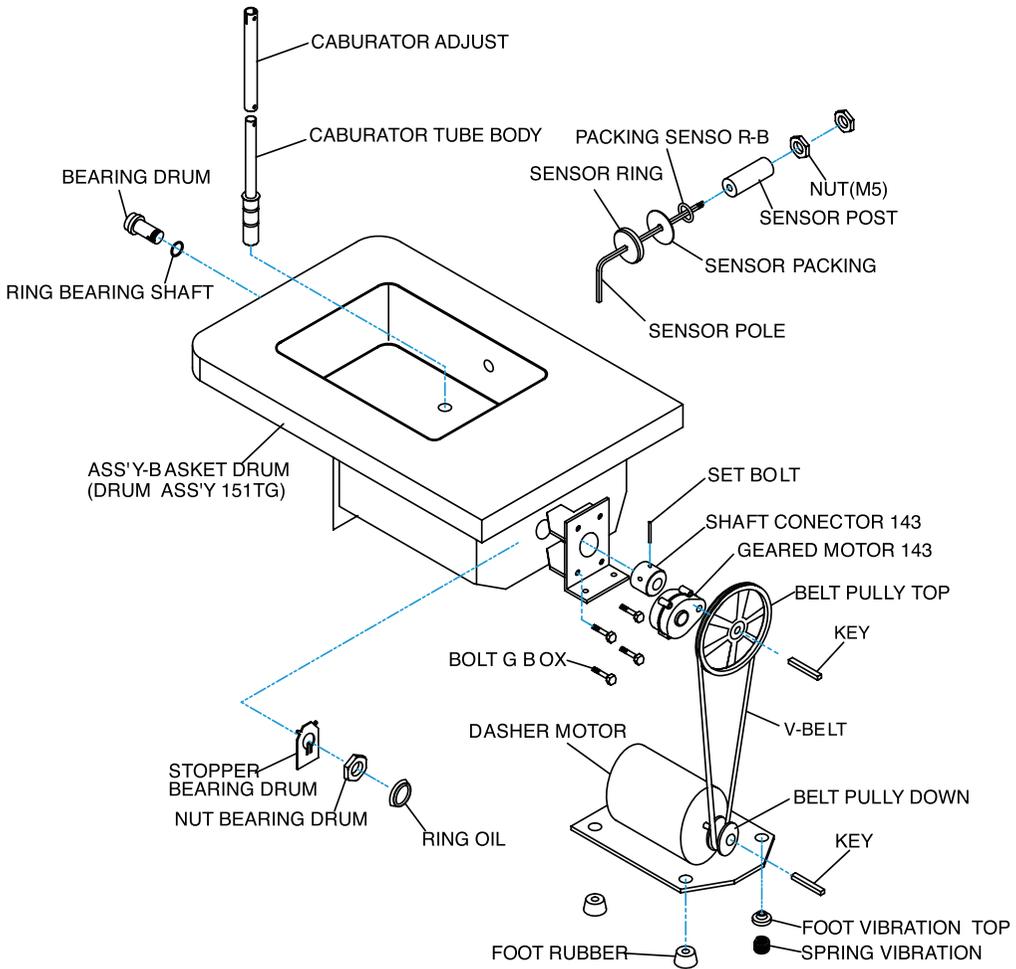




# Part list

SSI-151

【 MOVE PART 】

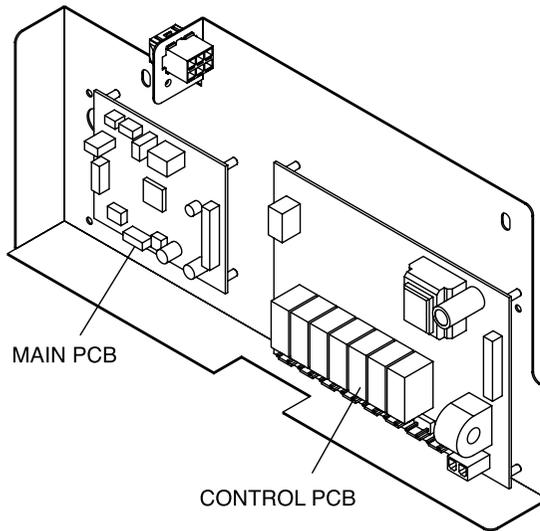


# Part list

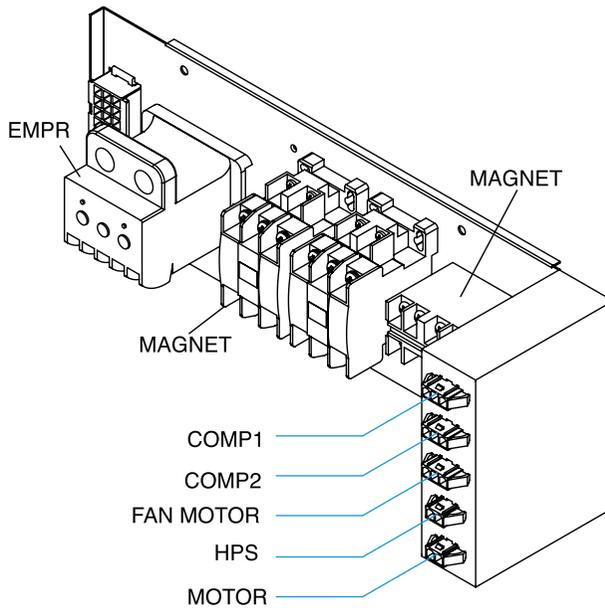


SSI-151

## [ASS'Y CONTROL BOX]



## [ASS'Y RELAY BOX]

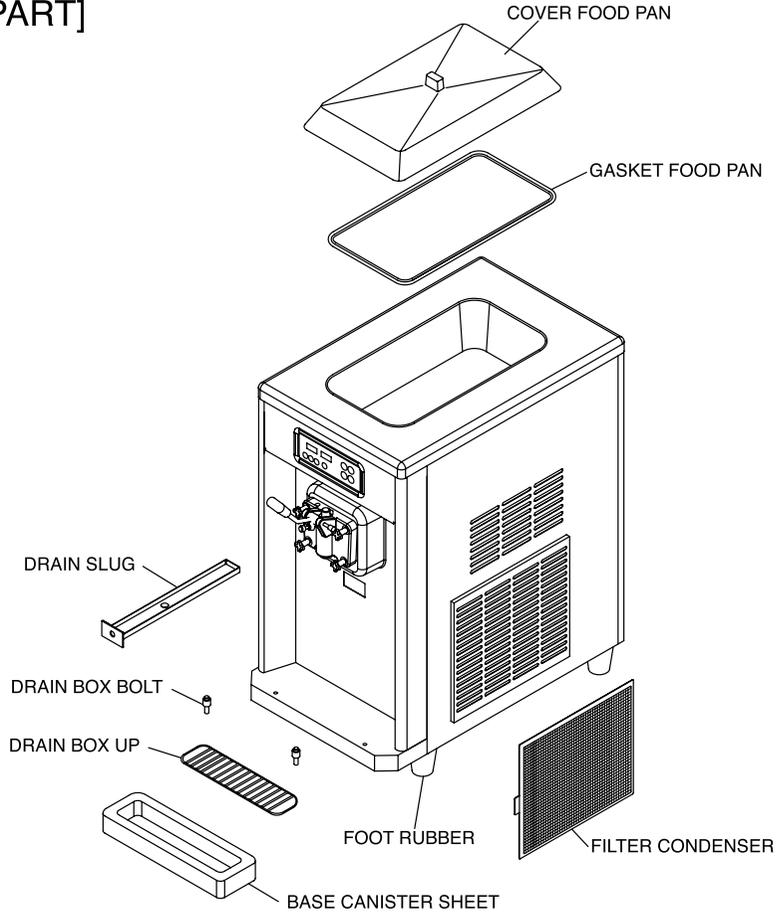




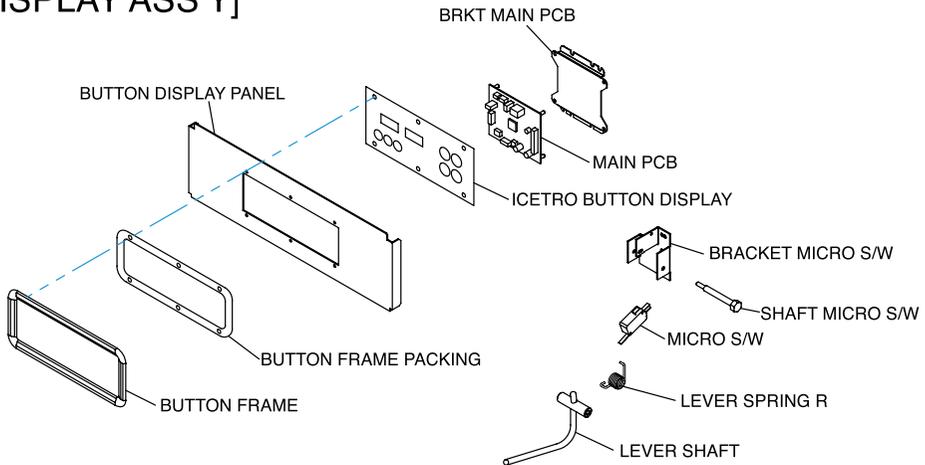
# Part list

SSI-300

[CASE PART]



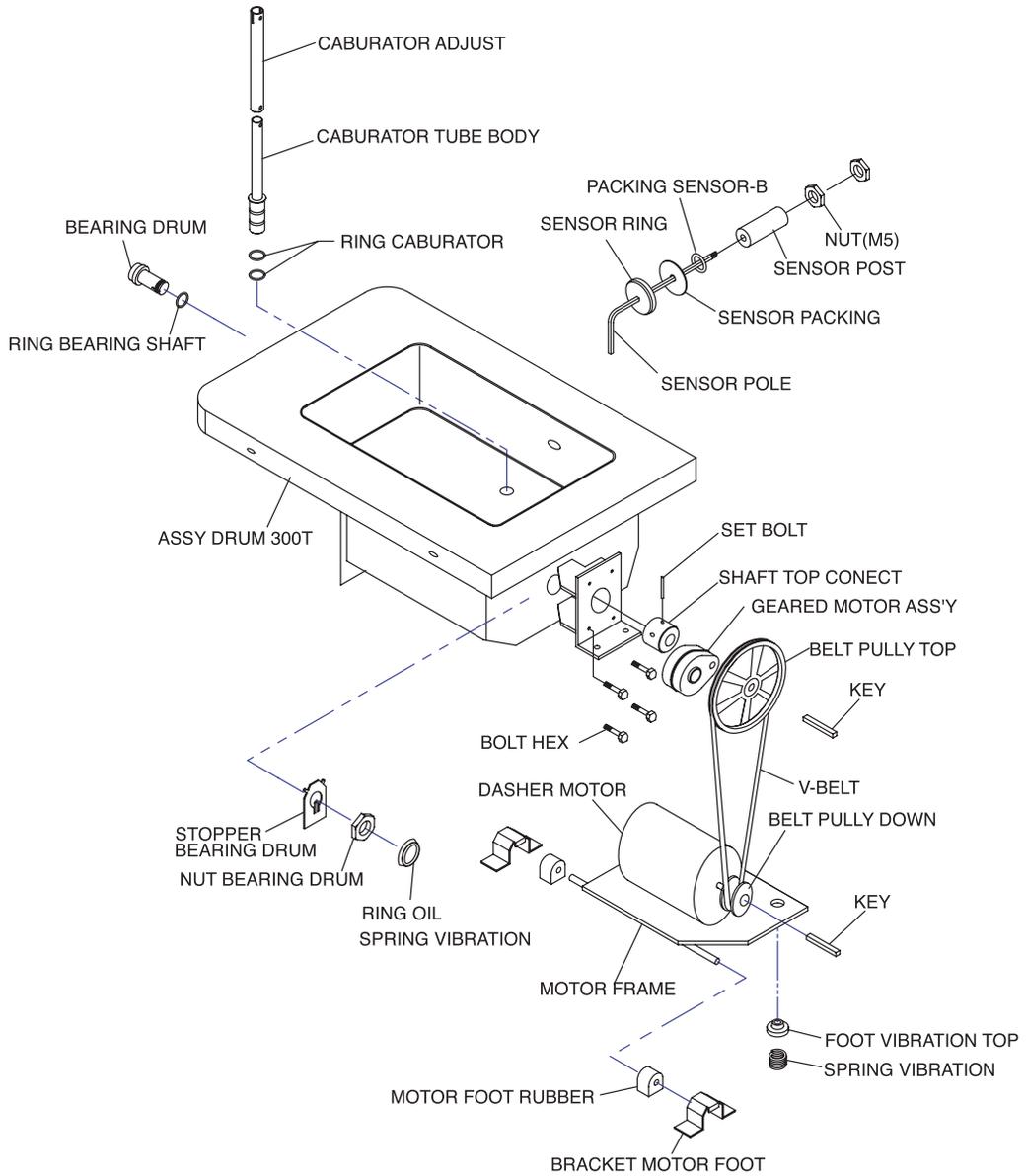
[DISPLAY ASS'Y]



# Part list

SSI-300

## [MOVING PART]

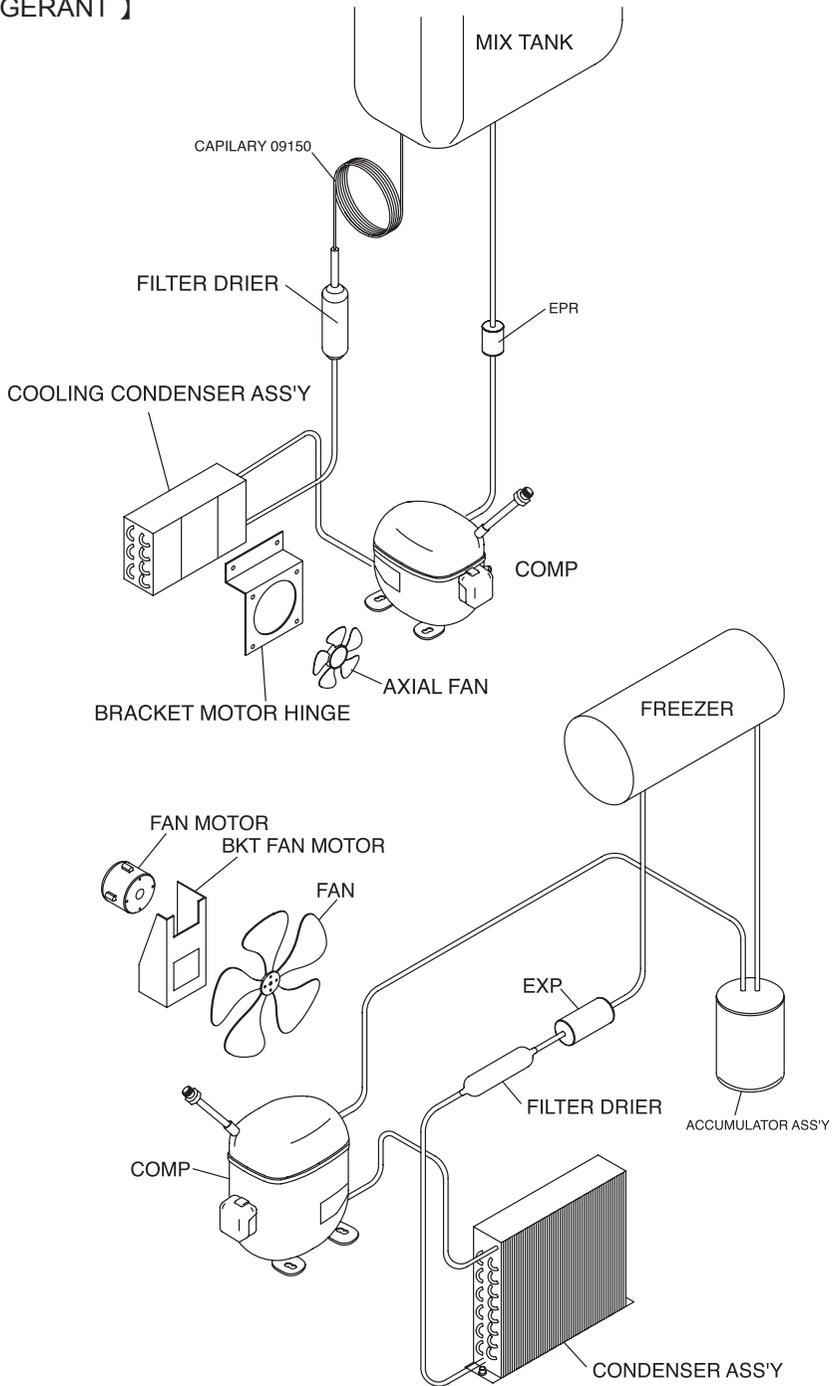




# Part list

SSI-300

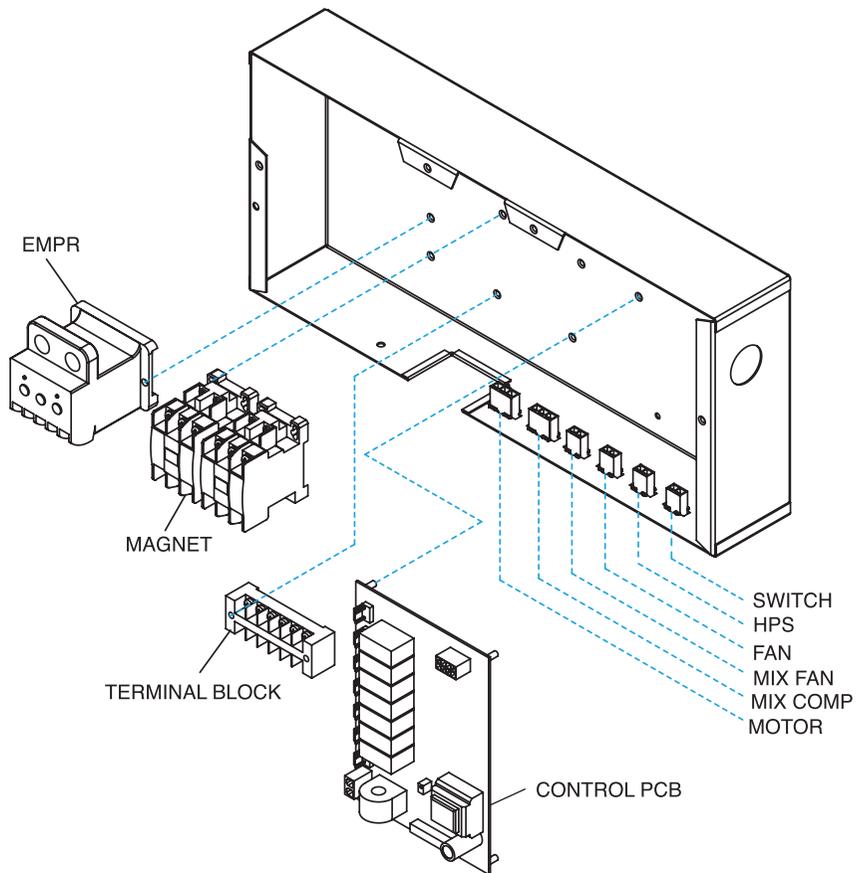
【 REFRIGERANT 】



# Part list

SSI-300

【 ASSY CONTROL BOX 】



MEMO



# MEMO



MEMO



