CARPIGIANI

APPLICARE

TARGA

CARATTERISTICHE

INSTRUCTION HANDBOOK

Maestro

high efficiency

*We wish to thank you for the preference granted to us by purchasing one of **CARPIGIANI** machines.*

*To the best guarantee, since 1993 **CARPIGIANI** has submitted its own Quality System to the certification according to the international Standard ISO 9001, nowadays its production has got UNI-EN-ISO 9001 Certified Quality System.*

Moreover, Carpigiani machines comply with following European Directives:

- "Machinery" Directive 2006/42/EC,
- "Low Voltage" Directive 2014/35/EU,
- "EMC" Directive 2014/30/EU,
- "PED" Directive 2014/68/EU,
- Regulation 2004/1935/EC relating to "Materials and articles in contact with foodstuffs"
- Regulation 2023/2006/EC "Good manufacturing practice for materials and articles intended to come into contact with food"

CARPIGIANI

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FOREWORD

INSTRUCTION HANDBOOK

Editing this handbook, it was taken into due account European Community directions on safety standards as well as on free circulation of industrial products within E.C.

PURPOSE

This handbook was conceived taking machine users' needs into due account.
Topics relevant to a correct use of the machine have been analyzed in order to keep unchanged in the long run quality features charachterizing **CARPIGIANI** machines all over the world.
A significant part of this handbook refers to the conditions necessary to the machine use and to the necessary procedure during cleanout as well as routine and special maintenance.
Nevertheless, this handbook cannot meet all demands in details. In case of doubts or missing information, please apply to:

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HANDBOOK STRUCTURE

This handbook is divided in sections, chapters and subchapters in order to be consulted more easily.

Section
A section is the part of the handbook identifying a specific topic related to a machine part.
Chapter
A chapter is that part of a section describing an assembly or concept relevant to a machine part.
Subchapter
It is that part of a chapter detailing the specific component of a machine part.

It is necessary that each person involved in the machine operation reads and clearly understands those parts of the handbook of his/her own concern, and particularly:

- The Operator must read the chapters concerning the machine star-up and the operation of machine components.
- A skilled technician involved in the installation, maintenance, repair, etc., of the machine must read all parts of this handbook.

ADDITIONAL DOCUMENTATION

Along with an instruction manual, each machine is supplied also with additional documentation:

- **Wiring diagram**: a diagram of wiring connections is placed in the machine.
- **Installation sheet:** To be completed by the installer. Return a copy to the customer, the dealer and the manufacturer in order to activate the machine warranty

Before using the machine read carefully the instruction handbook.
Pay attention to the safety instructions.



CONVENTIONAL SYMBOLS



CAUTION: ELECTRIC SHOCK HAZARD
The staff involved is warned that the non-observance of safety rules in carrying out the operation described may cause an electric shock.



CAUTION FLAMMABLE GAS HAZARD (ISO 817 - A2L)
Reports residual fire hazard from use of low- flammability refrigerant (A2L).



CAUTION: DANGER FROM HIGH TEMPERATURES
This warns the staff involved that failure to abide by safety rules in carrying out the operation described involves the risk of burns and scalds.



CAUTION CRUSHING HAZARD
This warns the staff involved that failure to abide by safety rules in carrying out the operation described involves the risk of suffering crushed fingers or hands.



CAUTION: GENERAL HAZARD
The staff involved is warned that the operation described may cause injury if not performed following safety rules.



NOTE
It points out significant information for the personnel involved.



WARNINGS
This warns the personnel involved that the non-observance of warning may cause loss of data and damage to the machine.



PERSONAL PROTECTION DEVICES
This symbol on the side means that the operator must use personal protection against an implicit risk of accident.



EQUIPOTENTIAL CONNECTION
For connecting all appliances with this type of connection.
Warning: do not connect to ground.



READ THE INSTRUCTION MANUAL
It signals to the personnel involved that it is necessary to carefully read the instruction manual before using the machine.

QUALIFICATION OF THE PERSONNEL SYMBOLS

The personnel allowed to operate the machine can be differentiated by the level of preparation and responsibility in:



MACHINE OPERATOR
Unqualified personnel, without any specific technical abilities, capable of carrying out simple jobs, such as: operating the machine using the commands available on the keypad, the loading and unloading of products used during production, the loading of any consumable materials, basic maintenance operations, (cleaning, simple blockages, inspections of the instrumentation, etc.).



SKILLED ENGINEER
He/she is a skilled engineer, capable of operating the machine under normal conditions; he/she is able to carry out interventions on mechanical parts and all adjustments, as well as maintenance and repairs. He/she is qualified for interventions on electrical and refrigeration components.



CARPIGIANI ENGINEER
He/she is a skilled engineer the manufacturer assigned to field interventions for complex jobs under particular conditions or in accordance with agreements made with the machine's owner.

SAFETY



When using industrial equipment and plants, one must be aware of the fact that moving parts (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damage to persons and things.
The persons in charge of safety must ensure that:

- any incorrect use or handling is avoided;
- the safety devices are neither removed nor tampered with;
- the machine is regularly serviced;
- only original spare parts are used, especially in the case of safety-related components (e.g.: protection microswitches, thermostats).
- suitable personal protective equipment is worn;
- high care is taken during hot product cycling.
- open flames are not used near the machine.

To achieve the above, the following is necessary:

- at the work station an instruction manual relevant to the machine should be available;
- such documentation must be carefully read and requirements must consequently be met;
- only adequately skilled personnel should be assigned to electrical equipment and machineries; this appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety;
- Make sure that no technician will ever carry out interventions outside his own knowledge and responsibility sphere;
- Children should be supervised to ensure that they do not play with the machine

IMPORTANT!
Make sure that the personnel do not perform operations out of their range of knowledge and responsibility (refer to "Qualification of the personnel symbols").



NOTE:
According to the standard in force, a QUALIFIED ENGINEER is a person who, thanks to:

- ***training, experience and education,***
- ***knowledge of rules, prescriptions and interventions on accident prevention,***
- ***knowledge of machine operating conditions,***

It is able to realize and avoid any danger and has also been allowed by the person in charge of plant safety to carry out all kinds of interventions.

WARNINGS



The machine must be installed in compliance with current installation regulations.
When installing the machine, insert a differential magnetothermal protection switch on all poles of the line, (see par. 2.5).

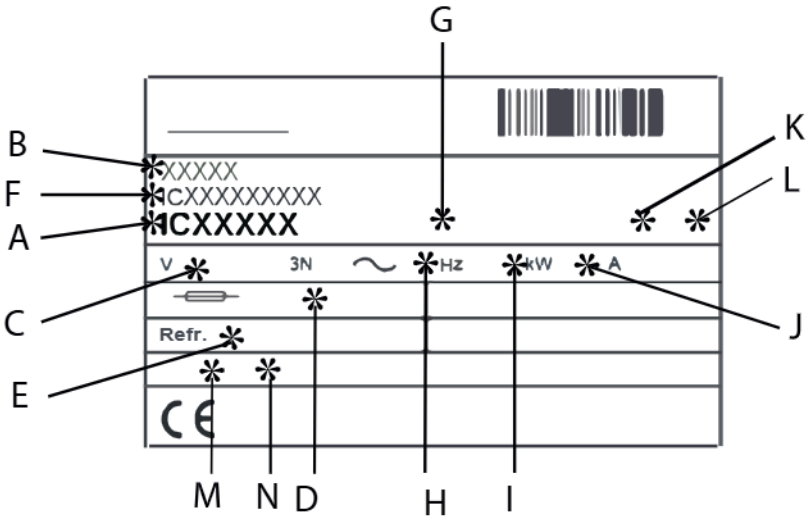
- Never perform operations on the machine using your hands, during both production and cleaning. Before carrying out any maintenance operation, make sure that the machine is in "STOP" position and that the main switch has been cut out.
- It is forbidden to wash the machine by means of a jet of pressurized water.
- It is forbidden to remove panels in order to reach the machine internal parts before disconnecting the machine from the power supply.
- The place of installation must not be exposed to water sprays, high moisture, heat or steam sources and open flame sources.
- Do not store explosive substances or spray cans inside the machine, nor aerosol cans containing flammable propellant.
- Ensure that ventilation openings of the machine remain unobstructed.
- Do not damage the refrigerant circuit
- Do not use any mechanical device or other means near the refrigerant circuit to prevent it from getting damaged
- **CARPIGIANI** is not responsible for any accident that might happen during operation, cleaning and/or servicing of its machines if this warning has not been fully complied with.

1. GENERAL INFORMATION

1.1 GENERAL INFORMATION

1.1.1 Manufacturer's identification data

The machine has a data plate carrying manufacturer data, machine type and serial number, assigned when it is manufactured.
Copy of machine data plate to be found on first page of this handbook.



Legend:

A= Serial number
B= Machine type
C= Supply voltage
D= Fuse rating
E= Gas type and weight
F= Machine code
G=Condensation type
A=Air
W=Water
H=Frequency
I= Power
J= Rated current
K= IP code
L= Climate class
M= Greenhouse effect gas quantity
N= PS max pressure admitted (if A2L gas is present)

IMPORTANT:
When the refrigeration circuit requires the use of low GWP refrigerant, classified as low flammability A2L(ISO817), the machine features the symbol next to the identification plate, which identifies residual al risk of fire/explosion in case of refrigerant accumulation in the equipment due to refrigeration system leakes.



NOTE:

Pay special attention to the indications in the manual highlighted with the symbol .



1.1.2 Information for the installation technician

To comply with regulations regarding the transport of hazardous materials, the machine may be shipped without the refrigerant required for its proper operation.
In this case, the refrigeration circuit will be filled with Nitrogen (UN1066 - pressure below 200 kPa at 20°C), and it will be necessary to empty the system and refill it with the type and quantity of gas specified on the data plate.



1.1.3 Information about service

All operations of routine maintenance are here described in section "Maintenance"; any additional operation requiring technical intervention on the machine must be cleared with the manufacturer, who will also examine the possibility of a factory technician field intervention.



1.1.4 Information to the user

- The manufacturer of the machine described in this manual is available to provide any clarification or information the user may need regarding its operation.
- In case of need, please call the local distributor - or the manufacturer, if no distributor is available in the country of the user.
- The manufacturer's customer care service department is available for any information about operation, and requests of spare parts and service.
- The manufacturer reserves the right to make any changes deemed necessary to the machine described in this manual without prior notice.
- The descriptions and illustrations contained in this document are not binding.
- All copyrights on this manual belong to **CARPIGIANI**.



1.2 INFORMATION ABOUT THE MACHINE

1.2.1 General data

Maestro HE machines are built to produce artisanal gelato and patisserie products.
They are electronically controlled machines for professional production of ice cream, custard creams and hardened chocolate. The production cycle can be customised to batch freeze any mix perfectly as well as to produce other speciality mixes. In fact, only with the **Maestro HE** machine is it possible to produce infinite, original ice creams and also fruit cremolata, perfect Sicilian granita and a host of different patisserie products.

CARPIGIANI recommends that you always use ingredients of the highest quality when making ice cream as this will allow you to satisfy even the most demanding of customers. Any saving made to the prejudice of quality will surely turn into a loss much bigger than the saving itself.
Bearing in mind the above statements, please take heed of the following suggestions:

- Make your mixes yourselves from high quality natural ingredients or buy them from reliable companies;
- Follow closely instructions given by your mix supplier for the preparation of the mixes;
- Do not alter your mix supplier's recipies, by adding, for instance, water or sugar;
- Taste ice cream before serving it and start selling it only if entirely satisfactory;
- Make sure your staff always keeps the machine clean.

Have your machine serviced always by companies authorized by **CARPIGIANI**.

1.2.2 Technical features

MODEL	Beater	Electrical supply			Installed power	Condenser*	Dimensions cm			Net Weight
		Volt	Hz	Ph	kW		Width	Depth	Height	Kg
Maestro **	Multiple speed	400	50	3	6,4	Water*	52	65 W 93 A	140	280
Maestro ***	Multiple speed				7,6	Water*	52	65	140	320
Maestro ****	Multiple speed				9	Water	52	65	140	350

* Air cooling available with price surcharge

1.2.3 Production data

		Quantity per cycle					
		Maestro **		Maestro ***		Maestro ****	
		Min	Max	Min	Max	Min	Max
Mix fed	kg	1,5*	7,5	2,5*	10,5	3,5	13
Produced ice cream	litri	2	10	3,5	15	5	19
Crystal	kg	3,5	7,5	5	10,5	6	13
Granita (slush)	kg	3,5	7,5	5	10,5	6,5	13
Topping	kg	4,5	9	6	10	7,5	12
SoftIce	kg	4,5	9	6	12,5	7,5	15
Chocolate tempering	kg	5	10	7,5	12,5	10	15
Yogurt	kg	3	10	5	12	7	14

Production changes according to used ingredients
* "Excellent" cycle quantity
The following characteristics are purely indicative. Carpigiani reserves the right to make all the changes whenever necessary and without being bound to previous statements to the purchaser.

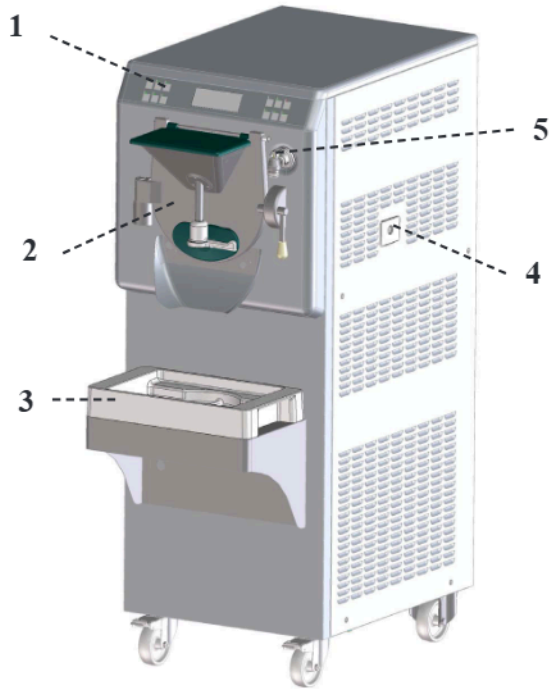
1.2.4 Optimum Production Conditions

To obtain perfect products, the optimum utilisation conditions of Maestro HE are:

- using ingredients indicated in the recipe book within the minimum and maximum quantities.
- put the ingredients in the machine during the production progress only when requested on the display.
- equipping the Beater with scrapers as indicated in the table.

Unit	Recipe	Metal scraper	Plastic scraper	No scraper
Ice Cream machine	Ice cream	X		
	Cremolata, Sicilian Slush		X	
	Chocolate and Fruit Sauce			X
	Cream sauce	X		
	Chocolate and Fruit Topping			X
	Cream Topping	X		
Cream	Panna cotta, Fruit cream, Gelatine for cakes			X
	Custard, zabaione custard, Bavarian cream	X		
Chocolate	Chocolate, (dark, milk, white), ganache custard, chocolate spread			X
Pastry specialities	Semifreddo base products	X		
	Pochée Fruit, Yogurt, Infusions, Rice cooking, mix crepés			X

1.2.5 Location of machine groups



Legend:

1. Control panel
2. Barrel front lid
3. Shelf
4. Drip drawer
5. Water dispenser

1.3 INTENDED USE

The machine must only be used for the production of ice cream and patisserie products, in compliance with that stated in paragraph 1.2.1 "General information", and within the operating limits indicated here below.

Voltage:	±6%
Min air temperature:	10°C
Max air temperature:	43°C
Min water temperature:	10°C
Max water temperature:	30°C
Min. water pressure:	0,1 MPa (1 bar)
Max water pressure:	0,5 MPa (5 bar)
Max relative humidity:	85%

This machine has been designed for its use in rooms not subject to explosion-proof laws; its use is thus bound to complying rooms and normal atmosphere.

1.4 NOISE

The steady acoustic pressure level weighed A in a working place alike by watercooled and by aircooled machines is less than 70 dB(A).

1.5 STORING A MACHINE

The machine must be stored in a dry and dump-free place.
Before storing the machine, wrap it in a cloth in order to protect it against dust and else.

1.6 DISPOSAL OF PACKING STUFFS

When opening the packing crate, separate packing stuffs per type and get rid of them according to laws in force in machine installation country.

1.7 WEEE (Waste Electrical and Electronic Equipment)

In conformity with the European Directives 2006/66/EC, on batteries and accumulators and waste batteries and accumulators, and 2002/96/EC, also known as WEEE, the presence of the symbol on the side of the product or packaging means that the product must not be disposed of with normal urban waste. Instead, it is the user's responsibility to dispose of this product by returning it to a collection point designated for the recycling/treatment of electrical and electronic equipment waste. Differentiated collection of this waste material helps to optimize the recovery and recycling of any reclaimable materials and also reduces the impact on human health and the environment. For more information concerning the correct disposal of this product, please contact your local authority or the retailer where this product was purchased.



2. INSTALLATION

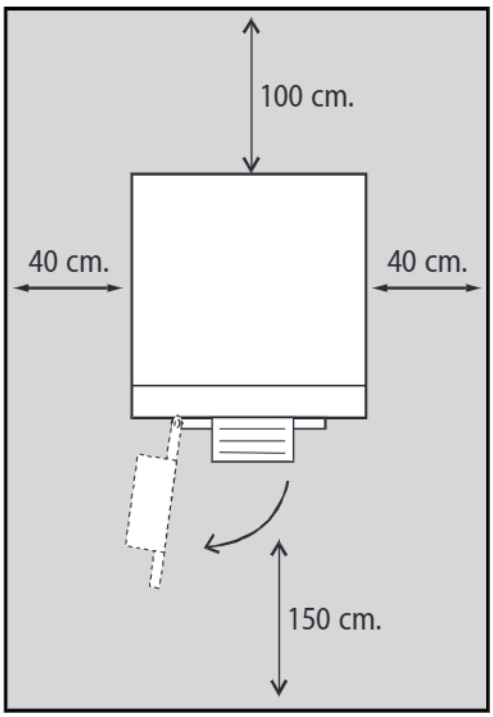
2.1 ROOM NECESSARY TO THE MACHINE USE

The machine must be installed in such a way that air can freely circulate all around.
Rooms for the approach to the machine must be left free in order to enable the operator to act without constraint and also to immediately leave working area, if need be.
The minimum approach room to working area should be at least 150 cm in consideration of space taken by opened doors.

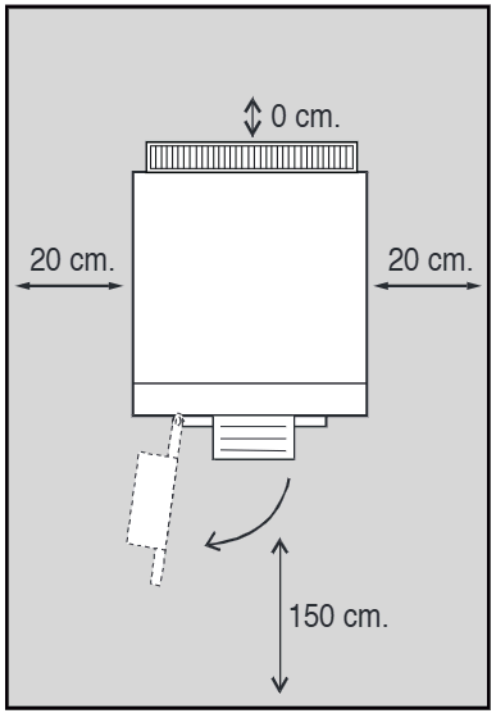
NOTE
An insufficient air circulation affects operation and output capacity of the machine.

WARNING
Ensure that all ventilation openings of the machine remain unobstructed. Do not install the machine near heat sources

WARNING
Clean under and near the machine frequently in order to prevent paper and other foreign bodies from obstructing regular air flow.



Machines without rear conveyor air:
Maestro 4 stelle HE



Machines with rear conveyor air:
Maestro 2 stelle HE
Maestro 3 stelle HE

2.2 WATER SUPPLY CONNECTION

The machine must be connected to running water which pressure must not be higher than 0,8 MPa (8 bars).
By aircooled machines, water connection for drinking water (for machine wash) is placed under the machine.
By watercooled machines water connections (for machine wash and gas cooling) are placed on upper panel.

ATTENTION
If the mains water may contain solid particles greater than 1 mm, such as sand, it is recommended, before commissioning, to install a water filter to keep the water circuit unobstructed and prevent particles from damaging the exchanger or cause non-optimal performance.

2.3 MACHINE WITH AIRCOOLED CONDENSER

Machines with air-cooled condenser must have sufficient free space along the sides and rear in order to allow free air circulation around the condenser.

NOTE
An insufficient air circulation affects operation and output capacity of the machine.

2.4 MACHINES WITH WATERCOOLED CONDENSER

The machine must be connected to the water supply respecting the applicable national requirements; moreover the water mains pressure must not exceed 0.5 MPa (5 bar). The connection pipes are provided by the installer and must comply with IEC61770. Used pipes cannot be reused.
Water must have a pressure of 0.1 MPa and 0.5 MPa (1-5 bar) at least, and a delivery at least equal to the estimated hourly consumption.
Connect inlet pipe marked by plate "Water Inlet" to water supply installing a shut-off valve, and outlet pipe marked by plate "Water Outlet" to a drain pipe, installing a shut-off valve.

2.4.1 Water valve adjustment

IMPORTANT
If water valve needs be reset, this operation will have to be carried out by skilled personnel, only. Valve adjustment must be carried out in such a way that no water flows when machine is off and lukewarm water flows when machine is on.

NOTE
Water consumption increases if temperature of entering water is above 20°C.

ATTENTION
Do not leave the machine in a room with temperature below 0°C without first draining water from the condenser.

2.5 ELECTRIC CONNECTION

The power supply system must comply with the national regulations in force in the place of installation and provided with an efficient ground connection.
The manufacturer is not responsible for any malfunction or for injury to persons and/or damage to property resulting from connection to a non-compliant electrical system.
The appliance must be installed according to the current regulations for electrical installation, by competent and qualified technical personnel meeting the technical and professional requirements provided for by the legislation in force in the country of installation.
Before connecting the machine to the mains, check that the mains characteristics meet those of the machine specified in the identification plate applied to the machine itself.

Check that the power supply network is provided with a disconnection device, in compliance with the installation rules, ensuring complete disconnection from the mains for each pole (differential circuit breaker), in the conditions of overvoltage category III. The opening distance of contacts must be at least 3 mm.
Check that the trip level of the differential circuit breaker is ≤ 30mA.
If the machine is equipped with a power cable; in case of three-phase machines with neutral, the blue wire of the power cable must to the system neutral.

WARNING
If the machine is fitted with a power cable including a yellow/green wire, this MUST be connected to an appropriate grounding of the electric system.

2.5.1 Equipotential connection

Connection to external equipotential terminal is indicated by symbol .
It is present on the side or on the back of the machine, not to be connected to the protection ground.
The conductor to be used has a cross-section at least equivalent to the one of the connected conductor with greatest cross-section.

2.5.2 Replacing the power cable

If the machine power cable is damaged, replace it immediately with a cable with the same features. Replacement must be carried out by qualified personnel only.



WARNING
Do not connect to ground.

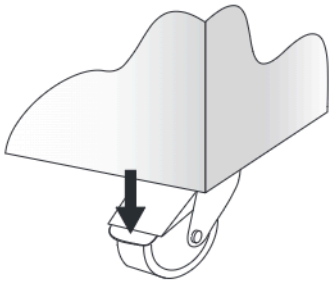
IMPORTANT
Check the correct direction of rotation of the beater.

Reversal of rotation (only for three-phase machines)
Should direction of rotation be wrong, reverse it by exchanging two of the three phases which start at the differential magnetothermal protection switch.

2.6 LOCATION



The machine is fitted with wheels to ease its positioning. The wheels feature mechanical lock mechanisms which, once engaged, prevent the machine from moving and shifting to a different position. The machine must be positioned at right angles on a horizontal bearing surface (max. tilt: 2°).



2.7 REFILLING



Motor installed in the machine is of the type with lubrication for life; no action of checking/ replacing or topping up is necessary.
Gas filling necessary to the freezing system is carried out at **CARPIGIANI** works during machine postproduction testing.
If a gas addition happens to be made, this must be carried out by skilled technicians, only, who can also find out trouble origin.

2.8 MACHINE TESTING



A postproduction test of the machine is carried out at **CARPIGIANI** premises; Operation and output functionality of the machine are thoroughly tested.
Machine test at end user's must be carried out by skilled technicians or by one of **CARPIGIANI** engineers.
After the machine positioning and correct connections, also carry out all operations necessary to functional check and test of the machine.

3. DIRECTIONS FOR USE

3.1 MACHINE CONFIGURATION

The machine is comprised of a motor-drive section to move the beater unit and a chilling and heating system with air- or water-cooled condenser.
The product is prepared by placing the mix inside the production cylinder and starting up the automatic production cycle, using the minimum or maximum amounts of mix as listed in the table in paragraph 1.2.2. When the cycle has ended, the product is ready to be extracted from the ice cream door, directly into a tub.

CAUTION
In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.

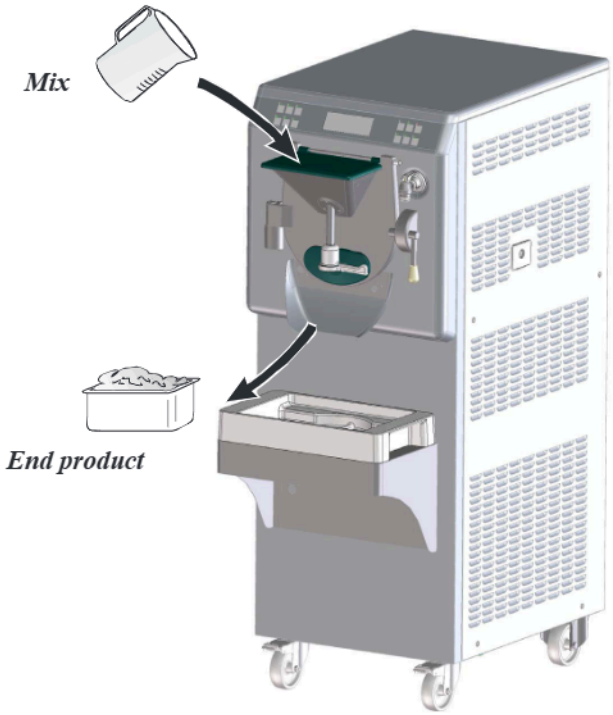


CAUTION
Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.



CAUTION
To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.





3.2 CONTROLS

3.2.1 Push-button Panel

The machine is equipped with a push-button panel fitted on the front panel; each button is marked by an explanatory symbol of the assigned function.



3.2.2 Push-button functions



STOP

In this function, the machine is idle.
From this position, it is possible to access other functions.
The display shows:

MAESTRO **

Maestro HE 2 **

To set the machine to Stop during the recipes, press the "**STOP**" key; the recipe is set to "pause"and the display shows:

STOP ? (STOP) CONTINUE ? (OK)

During this phase, any thermostating or mixing timers are temporarily frozen, waiting for the recipe to be restarted or permanently interrupted.

When the **OK** key is pressed, the machine will resume its operation from the point of interruption, while if the **STOP** key is pressed, the machine will set itself to stop mode.



OK

When pressed whilst visualising menus, the OK key starts the process selected.
This key is used when running programs, to confirm the insertion of ingredients or the continuation of a process after the **STOP** key has been pressed.



INCREASE

Whilst inside any menu (ice cream, slush, etc.), this key is used to select the desired process (selected by the asterisk at the side of the cycle).
Furthermore, it increases the values that can be modified in the functions where permitted. For example; the modification of the process temperature.
If pressed in Stop mode for 5" the temporary inhibited processes will resume.



DECREASE

This decreases the values that can be edited for those functions where this is permitted, e.g., to change the temperature of the production process.
While production is in progress, holding down this key makes it possible to perform an AUTOSETUP for the single cycle, i.e., for the current production process, the Temperature, Duration and Speed values are set back to default values.
If this key is held down in STOP mode, an AUTOSETUP is carried out for all programs.
This key is also used to reset alarm messages.

WATER DISPENSE

When pressed, at any time, this enables the water dispensing function (via the shower on the front of the machine). To stop the water dispensing function, press the **WATER DISPENSE** key or wait for three minutes.

Memorization of the Water Dispensing Time:

Pressing the Water Dispensing key for approximately 3" (until a beep is heard) whilst dispensing, the dispensation stops and memorises the time past from the activation. From the successive utilisation of the shower, the dispensation time will be that time memorised.

To increase the time, adjust step U14.

CLEANING/EXTRACTION

CLEANING FUNCTION

Upon pressing the button in Stop mode, the following menu is displayed:

- CLEAN
- HOT CLEAN
- DRY CLEAN
- POSTPONED CLEANING
- WATER FILLING (if enabled)

and the Cleaning, Decrease and Increase LEDs light up.

The user may select the desired cleaning cycle using the **INCREASE** and **DECREASE** buttons (an asterisk appears next to the selected cycle).

Press the **OK** button to start the desired cleaning program.

NOTE: *The last cycle is stored and suggested for the next use.*

CLEANING PROGRAMS:

- **CLEAN**: to clean the machine in a traditional way, using the shower (that can be connected to hot water supply), first fill cylinder with water and press OK to activate beater, then wash.
- **HOT CLEAN**: not only beater, but heating is also activated for 1'.
- **DRY CLEAN**: Heating with no beating is activated for 1'.
- **POSTPONED CLEANING**: This function includes the cooling of cylinder walls to allow an easy cleaning even if the machine is not immediately cleaned after product extraction.
- **WATER FILLING** (**if enabled**): With this function it is possible to fill the cylinder with a certain amount of water, using the shower. The display shows:

```
WATER FILLING
Set    Lt    10.00
       OK?
```

- the current function on the first line;
- the number of liters on the second line (it can be changed from 0.00 to 17.00 liters);

It is possible to edit the amount of water dispensed using the **INCREASE** and **DECREASE** buttons.

Press OK to confirm the quantity set and start dispensing. The counting of dispensed water quantity is displayed on the third line:

```
WATER FILLING
Set   Lt    10.00
Water Lt    01.50
```

Once dispensing is over, the machine automatically switches to Stop mode.

During the washing cycle, the display first line indicates the selected washing program, the second and third line show warning messages in case of hot cylinder (as is the case in the DRY CLEAN program), while the fourth line shows beater speed and 1' timer countdown.

Timer is increased by 1' 30" if speed 1 is selected, while it is decreased by the same time when shifting back to speed 2 or 3.

Machine is automatically set back to Stop mode as soon as timer times out or whenever the Stop button is pressed. If speed 1 is set and timer is already below one and a half minute, if speed 2 or 3 is selected, the machine will automatically set to Stop mode as the 1' timer has already elapsed

EXTRACTION FUNCTION

The fourth line of the display shows the speed; it can be changed using the Increase and Decrease buttons on a scale from 1 to 5. Speed 3 is enabled as initial speed.
For Maestro 4 Stars the maximum speed (5) is reached using an acceleration of 20".
The display shows:



It is possible to modify the speed with Increase/Decrease, however the changes are not saved as default values for the following extractions.

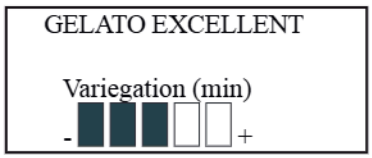
Press the Cleaning button for 3" to change the extraction speed so that it is saved as default value.
The display shows:



The OK button LED turns on, change the speed with Increase/Decrease and press OK to confirm the change (it will be saved as default value for the extractions of all ice cream cycles). After the confirmation, the display shows the Extraction screen again.
Variegated and/or Cooling Extraction can be enabled for Gelato Cycles.

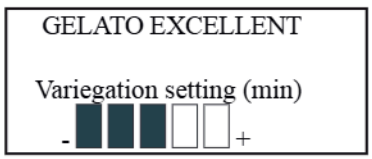
Variegated Extraction

Variegated extraction can also be enabled.
The Cleaning button remains enabled after extraction is started.
By pressing the Cleaning button the display shows "Variegation" and speed 1 is always enabled (Slow Variegation Extraction).



It is possible to modify the speed with Increase/Decrease (changes are not saved for the following variegation extractions).

Press the Cleaning button for 3" to change the Slow variegation extraction speed so that the change is saved as default value.
The display shows:



The OK button LED turns on, change the speed with Increase/Decrease and press OK to confirm the change (it will be saved as default value for the slow variegation extractions of all ice cream cycles). After the confirmation, the display shows the

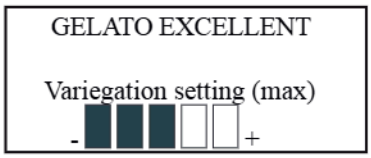
Variegation Extraction screen again.

Press Cleaning again to go to Variegation Extraction (Fast), and Speed 5 will be activated.



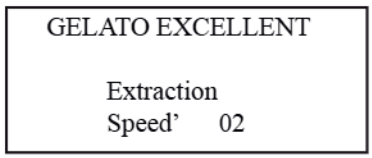
It is possible to modify the speed with Increase/Decrease (changes are not saved for the following variegation extractions).

Press the Cleaning button for 3" to change the Fast variegation extraction speed so that the change is saved as default value.
The display shows:



The OK button LED turns on, change the speed with Increase/Decrease and press OK to confirm the change (it will be saved as default value for the fast variegation extractions of all ice cream cycles). After the confirmation, the display shows the Variegation Extraction screen again.

2) Extraction - GRANITA cycles
The speed can be changed using the Increase and Decrease buttons on a scale from 1 to 3, setting as initial speed the speed of the freezing cycle. The display shows:



3) Cooling Extraction - ICE CREAM cycles
During the extraction of all ICE CREAM cycles, regardless of machine model, it is possible to activate the Cooling Extraction.

COOLING EXTRACTION from Gelato Speed, Gelato Simply, Gelato Hard, Gelato Zero+, Sorbet Zero+:
Once extraction is activated from the above-mentioned cycles, press Ice Cream button to activate product cooling during extraction, which will stop once a fixed 20-seconds timer will elapse.
Ice Cream button LED turns on while 20" cooling is active.

COOLING EXTRACTION from Gelato Excellent, Gelato Simply, Gelato Hot, Gelato Hot Age, Gelato Manual, Gelato Garnish:
Press the Ice Cream button to allow product cooling during extraction. Cooling will be activated. Ice Cream button LED turns on while cooling is active.
If the machine is in variegated extraction and the two lower speeds are selected, Cooling cannot be activated.

4) Extraction - All Processes except ICE CREAM and GRANITA
Cleaning Button is active also while the other processes are in progress.
During the last phase, the message EXTRACT will be displayed on the second line, for example:

CUSTARD
Extract
Storage
+04°C +04°C

If Cleaning Button is pressed, the mixing determined for the extraction of the product being processed will be activated, and the display will read:

CUSTARD
Extraction
Speed 03

The Increase and Decrease LEDs turn on and Extraction speed can be modified through the Increase and Decrease Buttons.

During extraction, the machine continues to carry out the current phase of the cycle in progress. For example, if the product is extracted during Storage phase at 4°C, it is still kept at the set temperature.
Press again Cleaning button to end the extraction and go back to the previous displaying.
The machine switches to Stop mode only if the button is manually pressed (there are no limits set for extraction duration).

ICE CREAMS
Pressing the **ICE CREAM** key, the following menu appears:
- Gelato Excellent
- Gelato Speed
- Gelato Hard
- Gelato Simply
  - o Gelato Cream
  - o Gelato Fruit
  - o Fruit ice
- Gelato Manual
- Gelato Garnish
- Gelato Hot
  - o Gelato Hot 65-90
  - o Gelato Hot 5-55
- Gelato Hot Age
- Gelato Hot Cold
  - o Gelato WF (if T09 = YES)
  - o Gelato WF
- Gelato hot wf
- Gelato Crystal
- Gelato Zero+
- Sherbet Zero+
- IceCream

GRANITA
Pressing the **GRANITA** key, the following menu appears:
- Sicilian Granita
- Fruit Cremolata

TOPPING
Pressing the **TOPPING** key, the following menu appears:
- Chocolate sauce
- Cream paste
- Fruit sauce
- Chocolate topping
- Cream topping
- Fruit topping



CREAMS

Pressing the CREAMS key, the following menu appears:

- Custard (Submenu)
  - o Custard Speed
  - o Custard Excellent
- Zabaione custard
- Bavarian cream
- Fruit cream
- Panna Cotta
- Gelatine for cakes
- Custard Excellent



CHOCOLATE

Pressing the **CHOCOLATE** key, the following menu appears:

- Chocolate harden. (Submenu)
  - o Bitter Choc.harden
  - o Milk Choc. harden.
  - o White Choc. harden
- Speed choc.harden
- Ganache custard
- Chocolate spread
- Melting Chocolate
- Cocoa Butter Tempering



SPECIALITY

Pressing **SPECIALITY** key, the following menu appears:

- Semifreddo base
- Pochee' Fruit
- Yogurt
- Kefir
- Infusion
- Rice cooking
- Mix Crepes
- Egg Pasteurization
- Inverted Sugar

To select a production cycle, it is necessary to scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

3.3 ICE CREAM PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", pour the required amount of mix into the cylinder through the loading hopper in the door, respecting the minimum and maximum amounts as listed in the table in paragraph 1.2.2.
Before pouring in the mix, make sure that the door and ice cream door are perfectly closed.

Pressing the key, the following menu appears:

- Gelato Excellent
- Gelato Speed
- Gelato Hard
- Gelato Simply (Submenu)
  - Cream Gelato
  - Fruit Gelato
  - Fruit Ice
- Gelato Manual
- Gelato Garnish
- Gelato Hot
  - Gelato Hot 65-90 Pasteurisation (pasteurisation – whipping)
  - Gelato Hot 5-55 Heating (heating – whipping)

IMPORTANT
The Gelato Hot Heating cycle does not pasteurize the mix.
We recommend using the cycle for any addition of fat-based flavouring pastes.

- Gelato Hot Age (Pasteurization - Ageing – Batch freezing)
- Gelato WF (Submenu)
  - Gelato WF
  - Gelato HOT WF
- Gelato Crystal
- Gelato Zero+
- Sorbet Zero+
- Postponed Cleaning

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

Production example with " Gelato Excellent":



The display shows:

- The name of the recipe in progress on the first row
- On the fourth row, the value of the HOD consistency to be reached on the left, the current consistency on the right and in the middle, the increasing bars for the HOD consistency.

For Speed, Hard, Excellent, Manual and Garnish cycles (Hot Age and Hot process freezing included), when process is started Increase and Decrease LEDs will come ON to allow editing the HOT Consistency Set.
The displayed setting is the one set during the last cycle.
Set will be stored as soon as cycle is quit, and will be shown again upon next cycle, even in case of blackout.

For Gelato Simply cycles, the HOT Set can be edited through the programming steps U08, U09, U10.

In case of GELATO SIMPLY, GELATO HOT or GELATO WF the sub-menu has to be selected:



The sub-menu is displayed by confirming with **OK**.

Use the **INCREASE** and **DECREASE** keys to move the asterisk alongside the required production cycle.

```
* CREAM GELATO
  FRUIT GELATO
  FRUIT ICE
  ---- BACK ----
```

Press the **OK** key to start the production process, which will be completely automatic. The operator will not be able to change the set Hod values in the Gelato Simply cycle.
Select BACK to go back to main menu.

Note: *HOD is a patented Carpigiani system for dynamic control of ice cream consistency.*

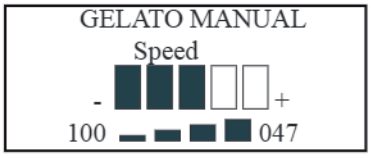
Note*: If the last recipe performed belongs to a sub-menu (e.g."Cream Gelato"), when the key is pressed again , the previously selected "Cream Gelato" sub-menu is displayed. To return to the main menu, press "backward" on display.*

3.3.1 Gelato Manual

Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

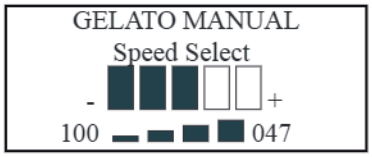
```
   GELATO HARD
   GELATO SIMPLY
*  GELATO MANUAL
   GELATO Garnish
```

as soon as you press OK to confirm, the selected cycle starts and the display shows:



Default speed is 3 (standard freezing speed).
The LEDs of the Increase/Decrease buttons are on to allow the user to change the Set HOT.

This cycle allows you to change freezing speed from 1 to 6.
By pressing the Ice Cream button (the OK LED turns on) the display will show the speed setting screen:



The default speed indicated is always the standard freezing speed, but user can change it using Increase and Decrease buttons.

By pressing OK the set speed is saved as default for all following Manual cycles, while by pressing the Ice Cream button the change is applied only to the cycle in progress (the following Manual cycle will start with speed 3).
In any case, after pressing one of the two buttons, the display shows the standard screen of the Manual cycle again, the OK button turns off and the Increase/Decrease buttons will return to have the Set HOT change function.

3.3.2 Gelato Garnish

Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  GELATO HARD
  GELATO SIMPLY
  GELATO MANUAL
* GELATO Garnish
```

as soon as you press OK to confirm, the selected cycle starts and the display shows:

```
GELATO GARNISH


100 ▬ ▬ ■ ■  47
```

- on the first line, the name of the ongoing process
- on the fourth line the current consistency to the right and the target consistency setting to the left, with consistency indicator at the center.

When cycle starts, the Increase and Decrease buttons light up to allow the operator to change the consistency setting up to 120. The displayed setting is the one set when this cycle was last used.

This cycle is suitable for multi-layer tubs. It allows the operator to freeze ice cream, dispense a part of it and leave the rest inside the freezer for the time required to cool down and stuff the first layer already dispensed.
Cycle includes four stages:

1. A first freezing stage with editable Set Hot. The display will read:

```
GELATO Garnish


100 ▬ ▬ ■ ■          047
```

2. When Set Hot is reached, operator can dispense a part of the product by pressing the Cleaning Button . The display will read:

```
GELATO  Garnish
CONTINUE ? (OK)
Extraction
- ■■■□□+
```

NOTE:
After this first extraction stage, a quantity of product at least equal to minimum machine load must remain inside the freezer.

3. When extraction timer times out, or when OK Button is pressed as shown on the display, the remaining ice cream is kept at a Set Hot 20 points lower compared to stage 1, for a time ranging from 5 to 15 minutes.
   In this stage, speed is reduced and fourth line on display will indicate (as a flashing message) stage timer with timer set on the left and remaining time on the right:

```
GELATO Garnish

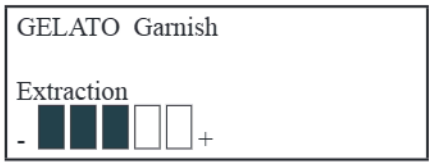

05:00   Timer  04:4
```

Stage time can be changed by pressing the Ice Cream button : the message displayed on the last line becomes steady and timer can be edited through Increase and Decrease buttons

Press again the Ice Cream button to go back to previous page.
The thus-set timer is stored and indicated the next time cycle is run again.

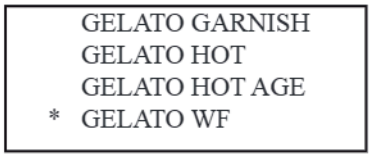
4. When timer times out, ice cream is brought again to stage 1 Set Hot, at normal freezing speed.

   When Set is reached, operator can dispense the product by pressing the Cleaning Button :



3.3.3 Gelato WF

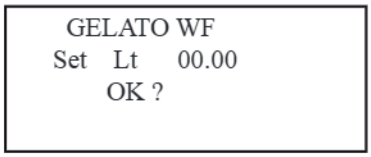
Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:



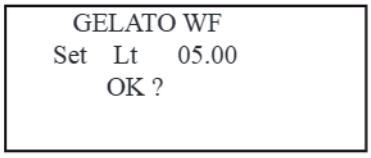
The sub-menu is displayed by confirming with **OK**.
Use the **INCREASE** and **DECREASE** buttons to move the asterisk alongside the process to be executed.



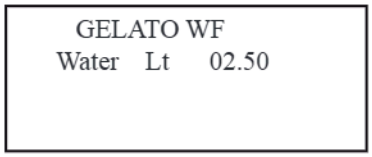
Press the **OK** button to start the process. The display shows:



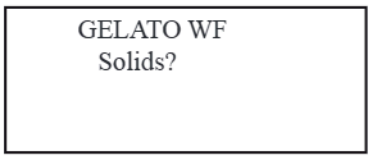
Set the quantity of water to be delivered in number of liters using Increase and Decrease buttons.



Press OK to activate water delivery.



When the counter reaches half of the set quantity, delivery ends and the display shows.



Press OK to activate the beater and insert solids.

At the end of solids insertion the display shows:

```
GELATO WF
End Solids?
```

Press OK to activate the delivery of the remaining half water.

```
GELATO WF
Water   Lt     02.50
```

At the end of dispensing the machine switches to Mixing mode. The duration of the phase is 3':

```
GELATO WF

Mixing
Timer: 00:02:59   +18
```

Press Ice Cream button to open pages to edit the duration of mixing (from 1 to 5') and speed (from 1 to 3)
The set time and speed are saved.
Press Mixing button to set the maximum speed, that can be changed using the Increase/Decrease buttons. Changes do not remain saved. Press Mixing button again to set speed to default again.

At the end of mixing the machine starts the freezing process (Gelato EXCELLENT cycle). The HOT set can always be edited.
Behavior and displays are the same as the EXCELLENT cycle.

3.3.4 Gelato HOT WF

Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  GELATO GARNISH
  GELATO HOT
  GELATO HOT AGE
* GELATO WF
```

The sub-menu is displayed by confirming with **OK**.
Use the **INCREASE** and **DECREASE** buttons to move the asterisk alongside the process to be executed.

```
  GELATO WF
* GELATO HOT WF
    ---- BACK  ----
```

Press the **OK** button to start the process. The display shows:

```
GELATO HOT WF
 SET  050 °C
   OK ?
```

The cycle is similar to Gelato DF cycle, but the temperature is set at cycle start, which can be edited using Increase and Decrease buttons (up to a maximum of 90°). Press OK to confirm.
The set temperature is used for all the heating phases of the recipe.

By pressing OK, the amount to be dispensed is requested.

```
  GELATO HOT WF
Set   Lt     00.00
      OK ?
```

Set the quantity of water to be delivered in number of liters using Increase and Decrease buttons.

```
GELATO HOT WF
Set   Lt     05.00
      OK ?
```

Press OK to activate water delivery.

```
GELATO HOT WF
Water   Lt     00.00
```

When the counter reaches half of the set quantity, delivery ends and the display shows.

```
GELATO HOT WF
  Solids?
```

Press OK to activate the beater (Speed 1) and insert solids. At the end of solids insertion the display shows.

```
GELATO HOT WF
 End Solids?
```

Press OK to activate the delivery of the remaining half water.

```
GELATO HOT WF
Water   Lt     00.00
```

At the end of dispensing the machine activates mixing with heating. The duration of this first heating phase is 3'.

```
GELATO HOT WF

 Mixing + Heating    .
+52   00:02:59   +50
```

Press Ice Cream button to open pages to edit the temperature set, the duration of phase (from 1 to 5') and the speed (from 1 to 3).
The set time and speed are saved.
The set temperature is used for all the heating phases of the recipe.
Press Mixing button to set the maximum speed, that can be changed using the Increase/Decrease buttons. Changes do not remain saved. Press Mixing button again to set speed to default again.

At the end of mixing time, heating is activated:

```
GELATO HOT WF

 Heating
+52°C        +50°C
```

Speed and temperature can be edited as for the previous phase.
The set temperature is used for all the heating phases of the recipe.

When the set is reached, cooling is activated:

```
GELATO HOT WF

Cooling
+04°C      +52°C
```

Speed and temperature can be edited as for the previous phase.

At the end of mixing the machine starts the freezing process (Gelato EXCELLENT cycle). The HOT set can always be edited.
Behavior and displays are the same as the EXCELLENT cycle.

3.3.5 Gelato Crystal

Press Ice Cream button  and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  GELATO HOT
  GELATO HOT AGE
  GELATO WF
* GELATO CRYSTAL
```

confirm with OK.

By starting a Gelato Crystal cycle the display will show:

```
GELATO CRYSTAL


060 ▬▬▬▬ 47
```

Default speed is 2 (standard freezing speed).
The LEDs of the Increase/Decrease buttons are on to allow the user to change the Set HOT.
This cycle does not allow changing the freezing speed.

The product is brought to the right consistency for 5 times.
The consistency Set = 60 by default. Editable with the Increase/Decrease buttons (minimum settable = 40).

Lastly, the display will show "Extract" (until the function is changed) and an intermittent acoustic signal is activated. The last line will also start flashing.

```
GELATO CRYSTAL

    Extract
060 ▬▬▬▬ 47
```

The product is kept at the right consistency with the same cyclical activations of the previous phase.

Press OK to extract (it is recommended to use OK as the product continues to be maintained remaining in this function).
In this way, the machine will switch from freezing speed to extraction speed (and vice versa).

When the button is pressed to activate the extraction speed, the acoustic signal stops and after 1 minute:

- if the function is not changed or if the extraction speed has not been deactivated yet, the machine switches automatically back to freezing speed and the acoustic signal is reactivated with flashing display.
- if the speed has already been set back manually to freezing speed but the machine is still in Production mode, the acoustic signal is reactivated.

Each time an operator activates the extraction speed with the OK button, the timer will restart from 1 minute.
The OK button LED remains on until extraction speed is activated.

3.3.6 Gelato Zero+

Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  GELATO HOT AGE
  GELATO WF
  GELATO CRYSTAL
* GELATO ZERO+
```

confirm with OK.
This program allows freezing ice cream with low solid content. To be used for milk-based ice cream.

3.3.7 Sorbet Zero+

Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  GELATO WF
  GELATO CRYSTAL
  GELATO ZERO
* SORBETTO ZERO+
```

confirm with OK.
This program allows freezing ice cream with low solid content. To be used for water-based ice cream.

3.3.8 IceCream (optional)

WARNING
The IceCream cycle is a freezing cycle that requires the use of beater 3E.

Press Ice Cream button and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  GELATO CRYSTAL
  GELATO ZERO+
  SORBETTO ZERO+
* ICECREAM
```

as soon as you press OK to confirm, the selected cycle starts and the display shows:

```
ICE CREAM


100   047
```

A Speed type cooling is activated with freezing speed corresponding to speed 4 of the ice cream extraction for machines with inverters, or to speed 3 for machines without inverters.

The LEDs of the Increase/Decrease buttons are on to allow the user to change the Set HOT.

The freezing speed cannot be modified during the cycle.

When setting to extraction mode the freezing speed is maintained, but it can still be changed using the arrow keys.

3.3.9 Ice cream removal

When the production is complete, the ice cream can then be removed from the batch freezing cylinder, proceeding as follows:

- Place the tub on the shelf under the ice cream chute.
- Turn the lever to release the ice cream door to the left (ref. 1).
- Lift the lever and the ice cream door.
- Press the **CLEANING/EXTRACTION** key.
- Select speed 3 by pressing the INCREASE key.
- After this stage, press **STOP**.

Fig. 6



CAUTION

To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine

SAFETY WARNING

To avoid unnecessary wear of the scraper sliding block and the cylinder, the machine returns to STOP after 1 minute of continuous functioning in extraction mode.

3.3.10 Using the ice cream lever

Locking

Lock the ice cream door by moving the lever (ref. 1) all the way to the right.

Opening

Turn the lever (ref. 1) 90° to the left.
Lift the lever and door.
Lock the door upwards turning the lever (ref. 1) all the way to the right.

Closing

Repeat the opening operation in reverse order.

3.3.11 Post cooling

Present in all Maestro HE versions, this function is extremely useful for the models with greater production capacity (two or more tanks per cycle):
In fact, if each tank of ice cream needs to be externally processed after the extraction, such as garnishing, variegation or anything else, the ice cream that is still inside the machine, remains in beating mode at extraction high speed and tends to lose its initial consistency before being put into storage.
For the Excellent Ice Cream, Simply Ice Cream and Hot Age Ice Cream, the Maestro HE are equipped with an automatic post cooling system (intelligent post cooling).
To activate this system during the extraction phase, press the PRODUCTION key to continue to cool the product. The compressor will start and stop automatically when the value of consistency is less than the prefixed value.
For the Speed and Hard cycles, the post cooling system activates when the PRODUCTION key is pressed and the cooling remains active for 20".

3.4 GRANITA PRODUCTION



After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", pour the required amount of mix into the cylinder through the loading hopper in the door, respecting the minimum and maximum amounts as listed in the table in paragraph 1.2.2.
Before pouring in the mix, make sure that the door and little door are perfectly closed.

Pressing the **GRANITA** key, the following menu appears:
- Sicilian Granita
- Cremolata Fruit

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

3.4.1 Sicilian Granita

During the Sicilian Granita cycle, the display shows:

SICILIAN GRANITA	
-03°C	+30°C

The display shows:
- On the first line, the name of the ongoing process
- On the fourth line, the temperature set on the left and the product temperature on the right.

Press Increase and Decrease Buttons to change Granita temperature set.

When the product reaches the set temperature, for example: -3°C, cooling ends and mixing continues for 5"; an acoustic signal is activated.

Sicilian Granita extraction

When the recipe is finished, an intermittent acoustic signal will be heard and the display will read:

SICILIAN GRANITA
Extract
Granita end

The correct temperature for the end of chilling depends on the amount of sugar in the granita and if it is made with coffee, on the coffee blend used.

At this point, it is possible to extract the granita by pressing the key or opening the cylinder door and using the spatula supplied.



CAUTION

To make cremolata extraction easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.

3.4.2 Fruit cremolata

During preparation of the Fruit Cremolata recipe, the display will read:

FRUIT CREMOLATA	
Set Time 10	09:59

The display shows:
- The name of the production cycle in progress on the first row
- On the fourth row, the total production time set in minutes and seconds and on the right, the production time for the Cremolata, counting down.

By pressing the **INCREASE** and **DECREASE** keys, it is possible to change the Cremolata production times.

Fruit Cremolata extraction

When the set time is up, the buzzer will sound continuously to indicate that the cremolata is ready for extraction and the display will read as follows:

FRUIT CREMOLATA
Extract
Cremolata end

At this point, it is possible to extract the fruit cremolata by pressing the key or opening the cylinder door and using the spatula supplied.



CAUTION

To make cremolata extraction easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.

3.5 TOPPING PRODUCTION



After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", make sure that the door and LITTLE door are perfectly closed.

Pressing the **TOPPING** key, the following menu appears:
- Chocolate sauce
- Cream paste
- Fruit sauce
- Chocolate topping
- Cream topping
- Fruit topping

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

CHOCOLATE SAUCE
* CREAM PASTE
FRUIT SAUCE
CHOCOLATE TOPPING

The display will read

CREAM PASTE	
Water+EggYolk OK?	
Heating	
+40°C	+36°C

The display shows:

- On the first row, the name of the production in progress
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause.

3.5.1 Topping extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:

- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door
- Press the key to start beating at the recommended speed
- At the end of this stage, press STOP.

CAUTION

In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.



CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.



CAUTION

To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.



3.6 CREAM PRODUCTION



After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", make sure that the door and little door are perfectly closed.

Pressing the CREAMS key will open the menu:

- Custard (Submenu)
  - o Custard Speed
  - o Custard Excellent
- Zabaione custard
- Bavarian cream
- Fruit cream
- Panna Cotta
- Gelatine for cakes
- Custard Excellent

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

```
  CUSTARD
  ZABAIONE CUSTARD
* BAVARIAN CREAM
  FRUIT CREAM
```

The display will read:

```
      BAVARIAN CREAM
     Sugar + Eggs  OK?
          Mixing
  +00  00:04:58    +34
```

The display shows:
- The name of the recipe in progress on the first line
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause

3.6.1 Cream extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:
- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door. Pay attention to hot product.
- Press the key to start beating at the recommended speed
- At the end of this stage, press STOP.



CAUTION

In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.



CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.



CAUTION

To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.

3.7 CHOCOLATE PRODUCTION



After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", proceed as follows:
- Open the machine door
- Press the key from Stop mode and use the INCREASE and DECREASE keys to move the asterisk alongside the DRY program before pressing the OK key to start the program.

```
  CLEAN
  HOT CLEAN
* DRY CLEAN
```

Once drying starts, the cylinder will heat up but the beater will remain idle. All moisture will evaporate completely and the machine will be immediately ready to use for tempering chocolate. The display will read:

```
      DRY CLEAN
    HOT CYLINDER!
      Don't touch!
Speed 0        00:59
```

Close the door and the small product outlet door.

Pressing the **CHOCOLATE** key, the following menu appears:
- Chocolate harden (Submenu)
  - Bitter Choc harden (dark chocolate)
  - Milk Choc harden (milk chocolate)
  - White Choc harden (white chocolate)
- Choc harden

- Ganache custard
- Chocolate spread
- Melting Chocolate
- Cocoa Butter Tempering

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

```
* CHOCOLATE HARDEN
  SPEED CHOC HARDEN
  GANACHE CUSTARD
  CHOCOLATE SPREAD
```

Will open the tempering menu:

```
* BITTER CHOC HARDEN
  MILK CHOC HARDEN
  WHITE CHOC HARDEN
```

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.
The display will read:

```
BITTER CHOC HARDEN
Chocolate    OK?
Heating
+00  00:02:58  +24
```

The display will read:

- The name of the production in progress on the first row
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause.



***Note**: If the last recipe performed belongs to a sub-menu (e.g. "Dark choc. tempering"), when the key is pressed again, the previously selected "Dark choc. tempering" sub-menu is displayed. To return to the main menu, press "backward" on display.*

3.7.1 Chocolate extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:

- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door
- Press the key to start beating at the recommended speed
- At the end of this stage, press STOP.

CAUTION
In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.



CAUTION
Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.



CAUTION
To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.



3.8 SPECIALITY PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", make sure that the door and little door are perfectly closed.

Pressing **SPECIALITY** will open the menu:
- Semifreddo base
- Poche Fruit
- Yogurt
- Kefir
- Infusion
- Rice cooking
- Mix Crepes
- Egg Pasteurization
- Inverted Sugar

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

```
* SEMIFREDDO BASE
  POCHE FRUIT
  YOGURT
  KEFIR
```

The display will show:

```
      SEMIFREDDO BASE
   Yolks+Wat+Sugar  OK?
         Mixing
  +00   00:02:58   +24
```

The display will read:
- The name of the production in progress on the first row
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause.

3.8.1 Speciality extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:
- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door
- Press the key to start beating at the recommended speed
- At the end of this stage, press STOP.



WARNING
When making YOGURT use the beater WITHOUT scrapers.



CAUTION
In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.



CAUTION
Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.



CAUTION
To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.

3.9 CUSTOMISED PRODUCTION CYCLES

3.9.1 Editing original production cycles



On Maestro HE model machines, it is possible to edit the temperature and times for each stage in the production cycle. To make these changes, proceed as follows:
After selecting the cycle to be edited, press the **OK** key to start it.
Press the production key (Ice Cream, Slush, Topping, Crème, Chocolate or Speciality) and the first parameter will appear; if the LEDs on the **INCREASE** and **DECREASE** keys are lit, then the value can be changed.
Pressing the production key a second time will show the second parameter, "Temperature"; if the LEDs on the **INCREASE** and **DECREASE** keys are lit, then the value can be changed.
Pressing the production key a third time will show the third parameter "Duration", if the LEDs on the **INCREASE** and **DECREASE** keys are lit, then the value can be changed.
To return to the main menu, press the production key again or wait 10 seconds without pressing any key.

The new production cycle will be stored to memory and carried out using the new settings.

3.9.2 Restoring default production cycles

To restore the default production cycle, hold down the **DECREASE** key for a few seconds while the production cycle is in progress. In this way, the temperature and duration of each stage in the production cycle will return to their default settings.

3.10 PROCESS MENU CUSTOMIZATION



In each process menu, the displaying of unused cycles can be eliminated by positioning the asterisk on the cycle to be hidden and by pressing OK for 5 seconds.
To enable all of them again: press the Increase Button from Stop for 5 seconds.
The display shows:

Loading Programs

If all cycles of a unit are eliminated, "Empty Unit" is displayed and it returns to Stop.

3.11 USER SETTINGS

To gain access to User Programming, press the **STOP** and **DECREASE** keys (with the machine at STOP) simultaneously and release them immediately.
The message “Manager Menu” and the software version "SW ver. Maestro HETC25 (or successive versions)" appear, followed by:

```
Time
Step U01      15
```

Use the **INCREASE** and **DECREASE** keys to change the time setting, if required.

Press **STOP**, which will open the steps for the following table in sequence; these settings can all be edited using the **INCREASE** and **DECREASE** keys.

Step	Display	Note	U.M.	MIN	MAX	Default
U01	Hour		hour	0	23	
U02	Minutes		min	0	59	
U03	Day of the Week		gg	Sun	sat	
U04	Day of the Month		gg	1	31	
U05	Month		mm	1	12	
U06	Year		yyyy	2000	2099	
U07	Language	Ita, Eng, Fra, Deu, Esp	n°	Ita	Jpn	Ita
U08	HOT-Crema Simply		N	000	120	100
U09	Hot-Frutta Simply		N	000	120	90
U10	Hot-Sorbetto Simply		N	000	120	80
U14	Water dispenser time period		Sec	015	300	180
U15	Backlight time period		Min	000	030	003

Steps U08, U09 and U10 relate to the HOT set of the Simply Cream, Simply Fruit and Simply Sorbetto cycles.

Step U14 is the time set for the dispensing of water.
Step U15 are the minutes that have passed after which the backlight of the display switches OFF when the machine is in Stop mode. The backlight lights up again by activating a function in Programming or pressing the OK key. If the step is at 0, the display is always illuminated.

To quit the programming stage, wait approximately 30 seconds without pressing any key or press the **BEATING** key to force quitting.

Changed settings are automatically stored to memory.

4. SECURITY DEVICES

4.1 ALARMS



The machine signals possible alarms by displaying them on line four and flashing the message on the display.
If an alarm was triggered and then reset, the alarm remains visible on the display in a steady way (not flashing).
E.g. :



To delete the message after restoring the alarm, press the **Decrease** button. If the alarm will not reset, this means it is still active.

Following is the ALARM list:

Display	Description
Alarm Inverter	The alarm sets the machine to Stop. Check the inverter.
Alarm TES	**Safety Thermostat Alarm** This alarm triggers machine Stop.
Comm.Err.MB EEV	A communication error between machine control board and electronic valve control board has occurred. Check that the communication cable is properly connected and make sure that dip switch is correctly positioned on board.
Comm.Err.MB Inverter	A communication error between machine control board and beater motor inverter has occurred. Check that the communication cable is properly connected.
Pressure Switch	**Safety pressure switch tripping** This alarm stops the compressor. If pressure switch trips 3 times in a row or if it stays open for 2 consecutive minutes, the machine sets to Stop. The display reads “Pressure Switch”. Check the inlet and outlet water pipes to make sure that water can flow freely when the compressor is operating. For machines with air-cooled condensers, it is necessary to make sure that the condenser fan is running while the compressor is switched on, or that the air-cooled condenser is not clogged; if this is the case, clean the condenser with a blast of compressed air.
Overload RTL	**Slow Beater overload cutout tripped** This alarm triggers machine Stop. Check MA absorption limits.
Overload RTV	**Quick Beater overload cutout tripped** This alarm triggers machine Stop. Check MA absorption limits**.**
Overload RTC	**Compressor overload cutout tripped.** This alarm triggers machine Stop.
Alarm TEC Probe	"TEC" temperature probe switched off or short-circuited. Alarm displayed during the cycles of Units: - Ice Cream only for: Gelato Hot and Gelato Hot Age - Granita - Creams - Chocolate - Specialties This alarm triggers machine Stop. As long as alarm is active, none of the above-listed cycles can be started.
Alarm T_Ric	"T_Ric" temperature probe switched off or short-circuited. Alarm displayed during the cycles of Units: - Ice Cream only for: Gelato Hot and Gelato Hot Age - Granita - Creams - Chocolate - Specialties This alarm triggers machine Stop. As long as alarm is active, none of the above-listed cycles can be started.

Alarm T_IN	"TIN" temperature probe switched off or short-circuited. Alarm displayed during Excellent Ice Cream cycles. This alarm triggers machine Stop. As long as alarm is active, no GELATO cycle can be started: - Gelato Excellent - Simply (if T25 = 0) - Gelato Hot - Gelato Hot Age
Alarm L.P.	L.P. Sensor malfunction Alarm displayed during the GELATO cycles. It signals a malfunction of evaporator outlet pressure sensor.
Alarm H.P.	H.P. Sensor malfunction Alarm displayed in Stop mode, it does not prevent any machine function. It signals a malfunction of compressor outlet pressure sensor. Alarm can be reset by pressing the Decrease button.
Alarm T_OUT	"TOUT" temperature probe switched off or short-circuited. Alarm displayed during the GELATO cycles. This alarm triggers machine Stop. As long as alarm is active, no GELATO cycle can be started: - Gelato Excellent - Simply (if T25 = 0) - Gelato Hot - Gelato Hot Age Speed cycles, on the contrary, can be used in safety mode with a substantial increase of freezing time.
Timeout Prd.	Timeout Prod (Cooling fault). It is triggered when the machine cooling is faulty. If compressor remains on continuously for over 20', during freezing (Gelato Cycles), and HOT does not reach a (fixed) Discriminant value, the machine sets to Stop with displayed “Timeout Prd.” alarm. It can be reset by pressing any button. One of the possible causes for this type of problem could be no gas in the system.
PTMC1 Compressor	Alarm PTMC 1 Compressor thermal cut-out tripped. If step T69 is set to Yes, compressor will be disabled and automatically re-enabled as soon as the read temperature value falls below a pre-established threshold. Alarm is memorized in the event log but is not shown on the display.
PTMC2 Compressor	Alarm PTMC 2 Compressor second thermal cut-out tripped. Compressor will be disabled and automatically re-enabled as soon as the temperature value read by the T_Ric probe falls below a pre-established threshold. Alarm is memorized in the event log but is not shown on the display.

Please find below the list of WARNINGS, not blocking warnings and therefore NOT considered as ALARMS:

Display	Description
Wait	**Autodefrost** If a Freezing or Postponed Cleaning cycle is interrupted by the pressing of the Stop Button or blackout, the machine will automatically start (after back to Stop mode) the cylinder defrost function (MC + EVC activation) after which standard operation can be resumed.
ATTENTION HOT!	**Hot product inside cylinder warning** If the cylinder sensor reads a temperature value above 40° in Stop mode, when the machine is running or during the Clean programs, the "ATTENTION HOT!" message will appear flashing on the display.
Spigot door open	**Spigot door open** This alarm triggers machine Stop and is automatically reset when spigot door is closed.
Cooling BlackOut.	**Blackout** The alarm is displayed when time/temperature parameters are not observed. See blackout.
Safe Mode ON	**Safe mode activation** In case of P.B. Pressure or T_OUT temperature sensor malfunction, the machine operates with the EEV open in fixed position. Damaged sensor must be replaced in the shortest delay.
Service	**Scheduled Maintenance Warning** The machine has to be serviced. This warning does not prevent machine operation and is reset after the intervention of a technician.
Setting in progress ...	**Setting in progress (Start up)** The machine carries out a periodical reset of Electronic Valve position. This re-positioning procedure, lasting approx. 16 seconds, takes place: 1) whenever voltage is restored 2) through a special command by the operator forcing the procedure from the push-button panel (see Par. “Setting”) 3) at regular intervals, in automatic mode During this phase, "Setting in Progress" is displayed and the machine cannot be used until this procedure is completed.

4.2 NO VOLTAGE

In case of blackout, the machine will behave differently based on the function it was carrying out upon blackout.
In the functions/cycles of:
- Stop
- Cleaning
- all Gelato cycles except Gelato Hot AGE, Gelato HOT 65-90 and Gelato WF
- Granita

the machine restarts in Stop mode once power is restored. If, upon blackout, the machine was in ice-cream freezing cycle, once back to Stop mode (if necessary) it will enable the AUTO-DEFROST function.

From Gelato Hot Age, Gelato HOT 65-90 cycle
- in the heating and pause phase, when power is restored, the machine resumes heating without displaying any message, however saving the "Black Out" event.

- in the cooling phase, after restoring the power supply, the machine will resume the interrupted phase and check the TEC temperature as well as the duration of the current blackout. If the blackout lasted longer than the time given in the blackout table, the machine will repeat the Hot Age cycle from the beginning and display "Restart Cycle - BLK" (saving the event in the memory) to warn the user that the cycle is repeated as the mix may have been altered as a result of the blackout. Otherwise, if the duration of the blackout was shorter than the time given in the blackout table, no message will be displayed, however the machine will log the "Black Out" event.

- During storage phase, the machine will check how much TEC diverges from its Temperature Set.
1) If the difference is lower than 4°C, the "Black Out" event is logged and no message is displayed.
2) If the difference is higher than 4°C, the machine will repeat the cycle from the beginning and display "Restart Cycle - BLK" (saving the event) to warn the user that the cycle is repeated as the mix may have been altered as a result of the blackout.

From the Gelato Hot WF cycle:
- If there is a blackout during water filling initial phase, or during Production final phase, the machine restarts from Stop.
- If there is a blackout during the first heating + mixing phase (timed), the machine repeats the heating + mixing phase.
- If there is a blackout during heating, pause, cooling phase, see Gelato HOT AGE.

From the other cycles:
- in the heating and mixing phases, when power is restored, the machine resumes the interrupted phase without displaying any message, however saving the "Black Out" event

- in the cooling phases, after restoring the power supply, the machine will resume the interrupted phase and check the TEC temperature as well as the duration of the current blackout. If the blackout lasted longer than the time given in the blackout table, the machine will display "Cooling BlackOut" (saving the event in the memory) to warn the user that the product may have been altered as a result of the blackout. Otherwise, if the duration of the blackout was shorter than the time given in the blackout table, no message will be displayed, however the machine will log the "Black Out" event.

- During storage or thermostating phases, the machine will resume the interrupted phase and check how much TEC diverges from its Temperature Set. If the difference is lower than the value set by the Manufacturer, the "Black Out" event is logged and no message is displayed. Instead, if the value is higher, the machine will display "Cooling BlackOut" (saving the event in the memory) to warn the user that the product may have been altered.

Blackout table

TEC Temperature	**Time**
>50°C	30 minutes
49°C ÷ 15°C	10 minutes
14°C ÷ 10°C	20 minutes
9°C ÷ 6°C	2 hours

5. CLEANOUT DISASSEMBLING AND REASSEMBLING OF PARTS IN CONTACT WITH THE PRODUCT

5.1 GENERAL INFORMATION



Cleaning and sanitisation are operations that must be carried out habitually and with maximum care at the end of each production run to guarantee the production quality and respect the necessary hygienic norms.
Giving dirt the time to dry out can greatly increase the risk of rings, marks and damage to surfaces. Removing dirt is much easier if it is done immediately after use because there is the risk that some elements containing acid and saline substances can corrode the surfaces. A prolonged soaking is recommended.

5.2 WASHING CONDITIONS



- **Avoid using solvents, alcohol or detergents that could damage the component parts, the machine or pollute the functional production parts.**
- When manually washing never utilise powder or abrasive products, abrasive sponges or pointed tools. There is a risk of dulling the surfaces, removing or deteriorating the protective film that is present on the surface and scoring the surface.
- Never use metal scouring pads or synthetic abrasives that could cause oxidization or make the surfaces vulnerable to attack.
- Avoid using detergents that contain chlorine and its composites. The use of these detergents such as bleach, ammonia, hydrochloric acid and decalcifiers can attack the composition of the steel, marking and oxidising it irreparably and causing damage to the parts made from thermoset materials.
- Do not use dishwashers and their detergent products.

5.3 SUGGESTIONS



- Perform all washing and refitting operations using disposable gloves and replacing them when required.
- Use a non-aggressive cleaning solution to wash the parts and the supplied brushes, previously sanitized.
- (Manually) wash the parts in water (max 60°C) using a non-aggressive detergent and the cleaning brushes supplied as standard to forcefully brush all components and relevant holes.
- Use drinking water (bacteriologically pure) to rinse the parts.
- To sanitize, leave the disassembled parts in sanitized lukewarm water for the time indicated on the sanitizing product label.
- When the washing procedure has been completed and before reassembly, dry each component thoroughly with a clean and soft cloth that is suitable for coming into contact with foodstuffs, to avoid leaving any humidity rich in mineral salts and chlorine that could attack the metal surfaces and leave opaque traces.
- Place the components on a clean and sanitized tray to air-dry.

Carpigiani recommends the use of a cleaning/sanitising solution to wash the machine.
The use of a cleaning/sanitising solution optimises the washing and sanitising procedures in that it eliminates two phases of the procedure (a rinse and a washing phase). In substance the use of a cleaning/sanitising solution saves time by facilitating and simplifying washing/ sanitising procedures.

WARNING



Every time the machine is washed and its parts that come into contact with the ice cream mix are disassembled it is essential to carry out a visual control of all the parts manufactured in thermoset materials and metal such as sliding shoes, pump gears, beaters, etc.
All parts must be integral and not worn, without cracks or splits, or opaque if originally polished/transparent.
Carpigiani declines all responsibility for any damage caused by imperfections and/or undetected breakages and not promptly solved by the substitution of original spare parts and is available for consultation and for any specific requests made by the customer.

5.4 HOW TO USE CLEANING/SANITISING SOLUTION

Prepare a solution of water and sanitising detergent following the instructions shown on the label of the product being utilised.

Washing/sanitizing by soaking

- Remove larger residues by hand
- Remove finer residues with a jet of water
- Immerse the assembled parts to be cleaned into the solution
- Use the supplied brushes to forcefully brush all the components and relevant holes.
- Let the solution react for the time indicated on the label of the product being utilized
- Rinse the parts with care, using plenty of clean drinking water

5.5 CLEANING THE EXTERIOR OF THE MACHINE

Remove the dust and protective material that was applied before shipment. Use water only with a mild soap-based detergent and apply using a soft cloth.

5.6 PRELIMINARY CLEANOUT

1. When the machine is idle, with the beater unit door closed, fill the batch freezer chamber with water using the hose on the front of the machine and pressing the "**WATER DISPENSE**" key.
2. Press the **CLEANING** key from Stop and the following menu will open:

* CLEAN HOT CLEAN DRY CLEAN WATER FILLING

and the Cleaning, Increase and Decrease LEDs will switch on.
Using the **INCREASE** and **DECREASE** keys, it is possible to select the type of cleaning required (shown by an asterisk alongside the cycle).
Press the **OK** key to start the required cleaning program.

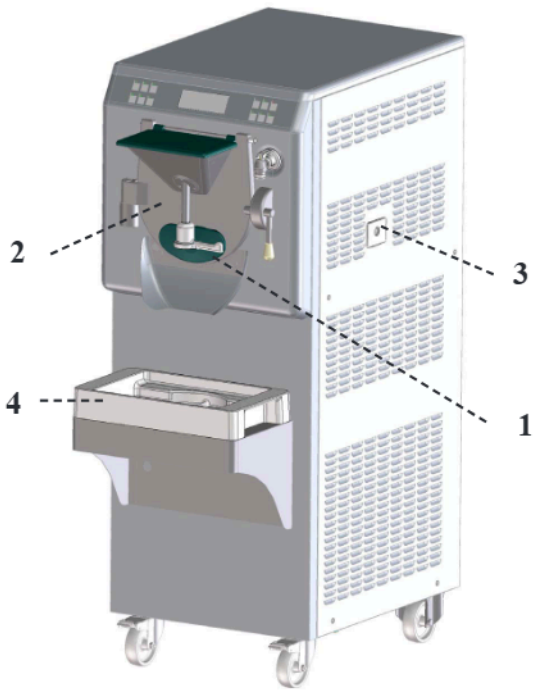
Cleaning programs:
- CLEAN: beating is enabled
- HOT CLEAN: beating and heating are enabled
- DRY CLEAN: heating is enabled
- WATER FILLING: filling with cylinder water is activated.

Pressing the **OK** key will start the selected cleaning program (e.g. HOT CLEAN) and the display will show:

HOT CLEAN Speed 2 00:59

The first row shows the name of the washing program, while the second and third rows are used for warnings in the event of boiling **hot cylinder** (as is the case for the DRY CLEAN program), and the fourth line is used to display the speed (this can be changed in CLEAN and HOT CLEAN modes) and the 1-minute timer counting down.

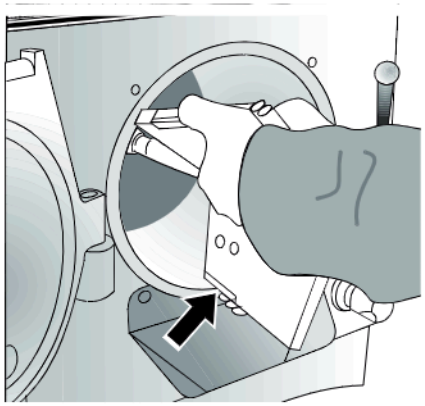
3. Position a bucket on the shelf and open product draining spigot door (ref. 1) letting all water inside the cylinder out.
4. Once the cylinder is emptied, it is preferable to open the spigot door (ref. 2) and clean the cylinder using a direct water jet, keeping the beater locked in its seat.



5.7 BEATER REMOVAL

Remove beater by pulling delicately out and taking care not to damage the scrapers; pay attention not to hit the cylinder walls with beater shaft.

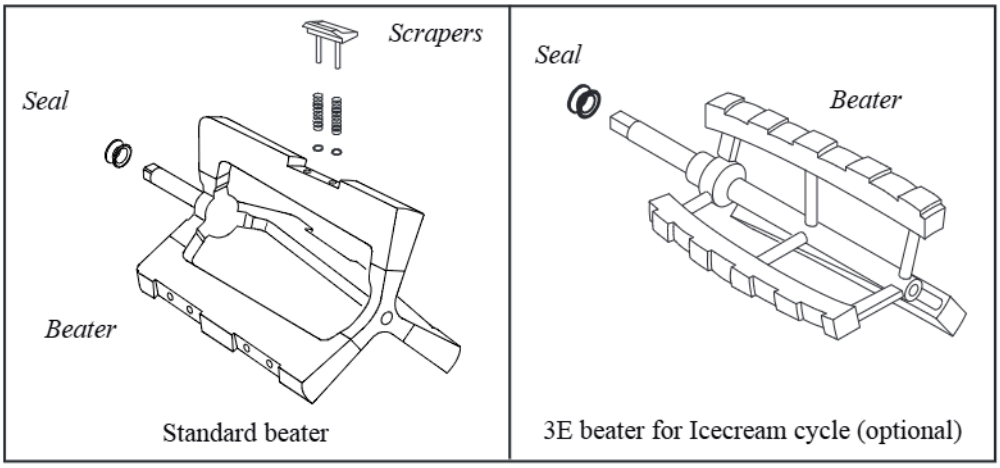
WARNING
Act with utmost care, as a fall to the ground might damage the beater.



- Completely remove the scrapers.

WARNING
Beater scrapers are "self-regulating". Good cleanliness levels ensure system efficiency.

- Remove seal from its seat on beater shaft.



Standard beater

3E beater for Icecream cycle (optional)

5.7.1 Seal

When removing the beater it is necessary to check the seal for wear. Seal can be replaced with the second seal supplied within the machine accessory box, depending on the current machine duty cycle.

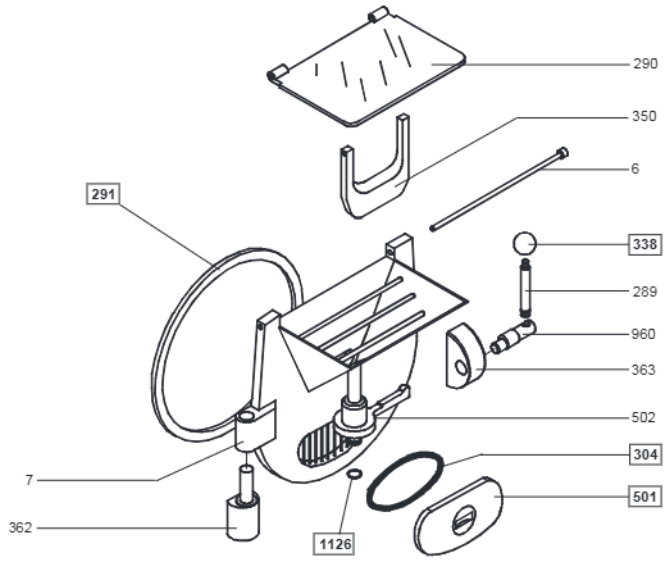
- Remove beater unit
- Remove seal from its seat
- Lubricate the replacement seal
- Install the new seal
- Clean and lubricate the replaced seal and store it away to allow it to recover its elasticity.

IMPORTANT
Change seal with genuine parts any time you notice some ice cream when removing the drip tray on machine side.
Continuing production after this condition could further increase leakage, resulting in machine malfunction possibly affecting production quality.

PRECAUTIONS
When the machine is not in use, leave beater spigot open to avoid seal compression which could lead to its deformation.

5.8 SPIGOT DOOR REMOVAL

- Raise spigot locking lever and move it to the right.
- Open spigot pivoting on the hinge.
- Lift spigot to remove.
- Remove all mobile parts, including the cylinder seal.



5.8.1 Ice cream outfeed spigot door removal

- Turn lever (ref. 1) to the left by 90° to lift spigot.
- Lift lever and spigot and lock spigot up by turning lever fully home to the right.
- Now remove the bottom O-ring from spigot door pivot and remove it, in this way lever is released as well.
- Remove spigot O-ring.



5.8.2 Hopper cover removal

To clean mix feeding area, with machine stopped, slide out cover retaining shaft (pos. 6) and remove it.
Cover features a small baffle preventing ice cream from going up the hopper, which must be removed and cleaned.

5.8.3 Product outlet chute removal

In order to make easier the removal of any ice-cream residue, remove the ice-cream chute using both hands and turn it anti-clockwise so as to release it from its seat.



5.9 WASHING AND SANITIZING COMPONENTS

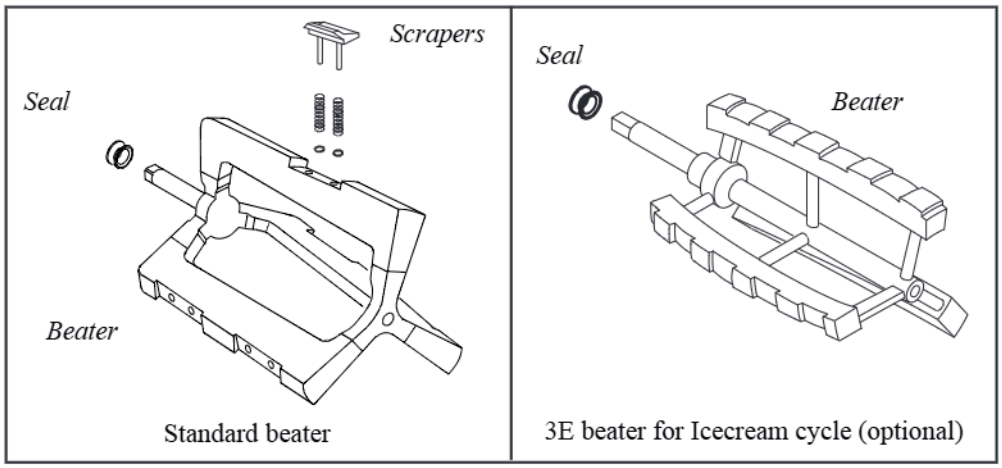
1. Remove larger residues by hand.
2. Remove finer residues with a jet of water
3. Soak the parts to be cleaned in the cleaning/sanitizing solution.
4. Use the supplied brushes to forcefully brush all the components and relevant holes.
5. Leave the cleaning/sanitizing solution to work for the time indicated on the product packaging.
6. Rinse the parts with care, using plenty of clean drinking water.
7. Place the components on a clean tray to air-dry.
8. Soak a brush in the cleaning/sanitizing solution and clean the cylinder and housing hole of the beater.
9. Spray cleaning/sanitizing solution on the whole internal surface of the cylinder.

Repeat steps 8 and 9 several times.

10. Remove drip tray (Ref. 3), clean it, sanitize it and refit it in its seat.
10. Disassemble tray shelf (Ref. 4), clean it, sanitize it and refit it.
11. Wipe the exterior of machine with a clean wet sanitized cloth.

5.10 BEATER REFITTING

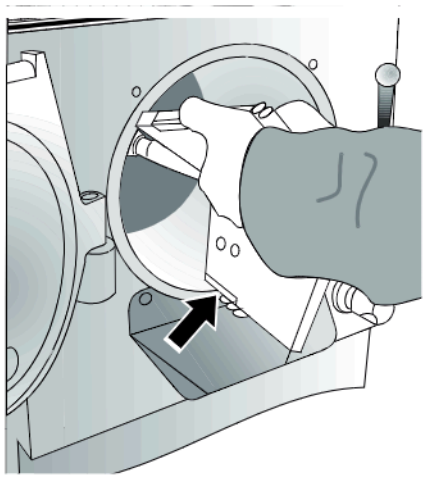
Refit all removed parts taking care to smear seal with some food-grade lubricant.



Standard beater

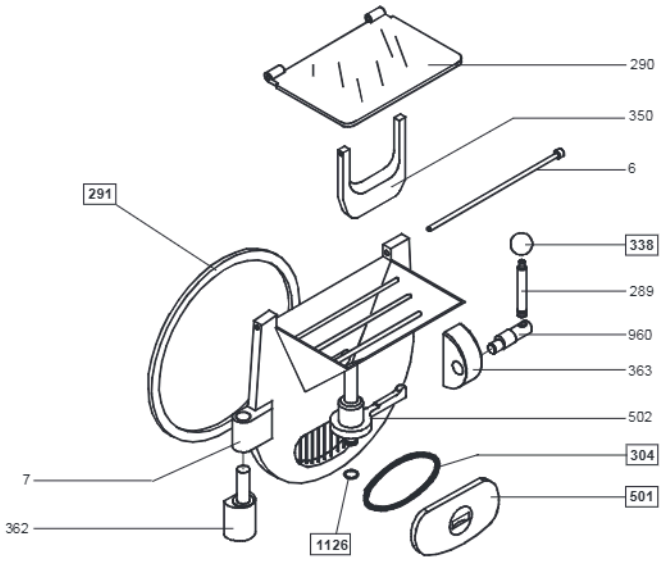
3E beater for Icecream cycle (optional)

When refitting the beater, grab it with both hands and press scrapers so as to help insertion. Press beater fully home and meanwhile turn it until inserting the shaft fully in its seat.



5.11 SPIGOT DOOR REFITTING

- Reinstall all removed parts taking care to smear with some food-grade lubricant all O-rings and spigot door support shaft pos. 362.
  Reposition the assembled spigot door in its seat



5.11.1 Product outlet chute repositioning

Reposition the chute on the front panel of the machine turning it clockwise in order to lock it in its seat.



5.12 SANITIZATION



Operation required before each production process.

- With the machine stopped, the beater unit enabled and the spigot door closed, pour the cleaning/ sanitizing solution in the cylinder. It shall be prepared by following the instructions on the product label.
- Press the "**CLEANING**" button.
- The WASHING function by pressing **INCREASE** and **DECREASE** keys.
- Press **OK** key
- Leave the machine running for 10/15 seconds.



WARNING

Operating the machine in "CLEANING" mode for too long with an empty cylinder or just filled with water and sanitizing solution brings about a quick wear of the beater scrapers.

- Let the cleaning/sanitizing solution react inside the cylinder during the time shown on the product label.
- Completely drain solution from working cylinder.
- Rinse with plenty of clean water.



WARNING

Do not touch the sanitized parts with hands, napkins, or else.

WARNING

Before starting again with production, rinse thoroughly with water only, in order to remove any residue of sanitizing solution.



5.13 HYGIENE



Ice cream fat contents are ideal fields for proliferation of mildew and bacteria.
To eliminate them, parts in contact with mix and ice cream must be thoroughly washed and cleaned.
Stainless steel materials as well as plastic and rubber ones used for the construction of these parts and their particular design make cleaning easy, but cannot prevent the growth of mildew and bacteria if not properly cleaned.

6. MAINTENANCE

CAUTION

Never put your hands into the machine, either during the operation or during cleaning. Before servicing, make sure the machine has been set in "STOP" position and the main switch has been cut out.



6.1 SERVICING TYPOLOGY

ATTENTION

Any servicing operation requiring the opening of machine panels must be carried out with machine set to stop and disconnected from main switch!
Cleaning and lubricating moving parts is forbidden!
"Repairs to the wiring, mechanical, air supply or cooling systems, or to parts of same must be carried out by qualified personnel with permission to do so and if necessary, according to the routine and extraordinary maintenance schedules as envisaged by the customer with reference to specific intervention methods, according to the use for which the machine is destined".





WARNING

Do not use any mechanical device or other means near the refrigerant circuit to prevent it from getting demaged.



Operations necessary to proper machine running are such that most of servicing is completed during production cycle.
Servicing operations, such as cleaning of parts in contact with the product, replacing of stuffing box, disassembling of beater assembly are to be carried out at the end of a working day, so as to speed up serving operations required.
Here below you can find a list of routine servicing operations:

- **Cleanout and replacement of stuffing box**
  Cleaning should be carried out at the end of a working day, whilst replacement only after checking of stuffing box and in the event product drips inside drip drawer.
- **Cleanout of beater assembly**
  At the end of a working day.
- **Cleanout of sliding shoes**
  At the end of a working day.
- **Cleanout of panels**
  To be carried out daily with neutral soap , seeing to it that cleaning solution never reaches beater assembly at its inside.
- **Cleanout and sanitization**
  At the end of each working day, according to procedures described in section 5 of this manual.
- **Sprayer maintenance**
  If there is a water leak from the sprayer, we advice you to replace the seals (ref. 1, 2, and 3) in case they are broken, see the drawing. In order to replace the seals (ref. 1 and 2) it is enough to undo the front white plug. On the other hand, to replace the seal (ref. 3) it is necessary to undo the front white plug and remove the handle pin (ref. 4).

WARNING

NEVER USE ABRASIVE SPONGES TO CLEAN MACHINE AND ITS PARTS, AS IT MIGHT SCRATCH THEIR SURFACES.



WARNING

Make sure that nothing is obstructing the ventilation openings of the machine.











6.2 WATERCOOLING

By machines with watercooled condenser, water must be drained from condenser at the end of selling season in order to avoid troubles in the event that the machine is stored in rooms where temperature may fall under 0°C. After closing water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.

6.3 AIRCOOLING

Clean condenser, periodically, so as to remove dust, paper and what can prevent air from circulating. For cleanout, use a brush with long bristles or a bolt of compressed air.

ATTENTION

When using compressed air, put on personal protections in order to avoid accidents; put on protective glasses!

NOTE: never use sharp metal objects to carry out this operation. Good working of a freezing plant mostly depends on cleaning of condenser.

6.4 ORDERING SPARE PARTS



When one or more parts are worn out or broken, place the order through your local distributor.

WARNING

Before using spare parts and/or supplied parts intended to come into contact with the product on the machine, it is absolutely necessary to clean and sanitize them as indicated in sec. 5 of this manual

For proper cleaning, use the accessories supplied with the machine and replace them periodically, based on the frequency of use, and in any case whenever they are worn and/or deteriorated.
Replacement with original parts is recommended.

7. TROUBLESHOOT GUIDE



IRREGULARITY	CAUSE	PROCEDURE
Machine does not start	Main switch is off	Switch it on
	Machine unplugged	Check and plug in
	Machine is not set at PRODUCTION	Check push button for PRODUCTION is lit
	Front lid is not closed well	Check front lid closure
Compressor starts and then stops after a few seconds without ice cream being thick	Watercooled machine: water does not circulate	Open water tap Check that hose is neither squashed nor doubled up.
	Aircooled machine: air does not circulate	Check that rear of machine is at least 50 cm from wall Clean condenser from obstructions
After 30 minutes processing mix has not frozen and the machine returns to Stop	No gas in the machine	1. Air the room and contact a qualified technician 2. Disconnect power 3. Contact the qualified technician
Machine runs but no ice cream comes from ice cream door	No sugar in the mix	Wait for the ice cream in the cylinder to defrost or activate the drying programme and then modify or change the mixture.
Machine works but ice cream is too soft	Too much sugar in the mix	Modify or replace the mix
Mix in drip drawer	Stuffing box missing or ruined	Install if missing Replace if ruined
Ice cream comes out from behind front lid	Gasket missing or not properly installed	Check and fix or replace
Bacteria tests show too high bacteria charge	Too high bacteria charge in the mix	Improve preparation procedure by sanitizing all containers, spoons, etc., and have mix analyzed before pouring it into the machine
	Machine not clean enough	Empty and thoroughly wash the machine. Carry out sanitization as per chapter 5 of manual.
The machine displays the "Service" message	The number of hours that the machine has functioned requires that the machine is serviced.	The machine can be used normally. To reset the optimum settings of the machine, contact the authorised technical assistance.

