INSTRUCTIONS - HANDBOOK

161 T-SP

APPLICARE

TARGA

CARATTERISTICHE

Code IC193-033521_00

Desideriamo ringraziarVi per la preferenza accordataci acquistando una macchina Carpigiani.
A Vostra maggiore garanzia, ***Carpigiani*** *ha sottoposto il proprio Sistema Qualità a certificazione secondo la normativa internazionale ISO 9001 fin dal 1993.*
Oggi Carpigiani produce con Sistema Qualità Certificato UNI-EN-ISO 9001.

Moreover, Carpigiani machines comply with the 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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The purchaser has the right to reprint it for his own office use.

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TABLE OF CONTENTS

FOREWORD 5

INSTRUCTION HANDBOOK 5
PURPOSE 5
HANDBOOK STRUCTURE 5
ADDITIONAL DOCUMENTATION 5
CONVENTIONAL SYMBOLS 6
QUALIFICATION OF THE PERSONNEL SYMBOLS 6
SAFETY 7
WARNINGS 7

1. GENERAL INFORMATION 9

1.1 GENERAL INFORMATION 9
1.1.1 Manufacturer's identification data 9
1.1.2 Information for the installation technician 9
1.1.3 Information about service 9
1.1.4 Information to the user 9
1.2 INFORMATION ABOUT THE MACHINE 10
1.2.1 General information 10
1.2.2 Machine layout 10
1.2.3 Technical characteristics 11
1.2.4 Machine unit location 11
1.3 INTENDED USE 12
1.4 NOISE 12
1.5 MACHINE STORAGE 12
1.6 DISPOSAL OF PACKAGING MATERIALS 12
1.7 WEEE (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT) 12

2. INSTALLATION 13

2.1 ROOM NECESSARY FOR MACHINE USE 13
2.1.1 Handling the machine 14
2.2 MACHINE WITH AIR-COOLED CONDENSER 14
2.3 ELECTRIC CONNECTION 15
2.3.1 Equipotential connection 15
2.3.2 Replacing the power cable 15
2.4 TOP-UPS 16
2.5 MACHINE TESTING 16

3 INSTRUCTIONS FOR USE 17

3.1 MACHINE CONFIGURATION 17
3.2 ELECTRONIC CONTROL KEYBOARD AND BUTTON FUNCTIONS 17
3.2.1 Functions 18
3.3 ICE CREAM DISPENSING LEVER 22
3.4 GRAVITY-FED MACHINES - FEEDING NEEDLE 22
3.5 PRELIMINARY OPERATIONS, WASHING AND SANITIZATION 23
3.6 MACHINE START-UP 23
3.7 PRODUCTION 23
3.8 OPENING PROCEDURE 24
3.8.1 Spigot door sanitization 24
3.8.2 Machine start-up 24
3.9 CLOSING PROCEDURE 24
3.9.1 Spigot door sanitization 24
3.9.2 Prepare the machine for the night pasteurization cycle 24
3.10 USER PROGRAMMING 25

4 SAFETY DEVICES 29

4.1 ALARMS 29
4.1.1 POWER OFF 33

5. REMOVING, CLEANING AND REFITTING OF PARTS IN CONTACT WITH THE PRODUCT 35

5.1 GENERAL INFORMATION 35
5.2 WASHING CONDITIONS 35
5.3 TIPS 35
5.4 HOW TO USE CLEANING/SANITIZING SOLUTION 36
5.5 DAILY CLEANING 36
5.6 SCHEDULED CLEANING 36
5.7 ICE CREAM SYSTEM EMPTYING 36
5.8 HOPPER BEATER REMOVAL 37
5.9 GRAVITY-FED MACHINES - FEEDING NEEDLE REMOVAL 37
5.10 SPIGOT DOOR REMOVAL 38
5.11 BEATER REMOVAL 39
5.12 WASHING AND SANITIZING THE COMPONENTS 39
5.13 HOPPER BEATER REFITTING 40
5.14 GRAVITY-FED MACHINES - FEEDING NEEDLE REFITTING 40
5.15 REFITTING THE BEATER 41
5.16 REFITTING THE SPIGOT DOOR 42
5.17 SANITIZING THE MACHINE 42
5.18 MIX LOADING 43

6. MAINTENANCE 45

6.1 SERVICE TYPE 45
6.2 AIR COOLING 46
6.3 AIR FILTER MAINTENANCE 47
6.4 HANDLING THE MACHINE 48
6.5 ORDERING SPARE PARTS 48

7. TROUBLESHOOTING 49

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.2.4).

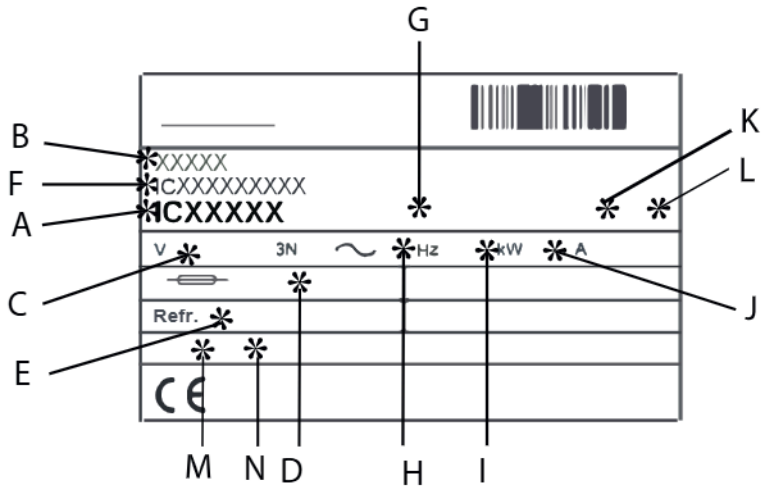
- Never perform operations on the machine using your hands, during both production and cleaning. Before carrying out any maintenance operation, make sure that the machine is in “STOP” position and that the main switch has been cut out.
- It is forbidden to wash the machine by means of a jet of pressurized 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

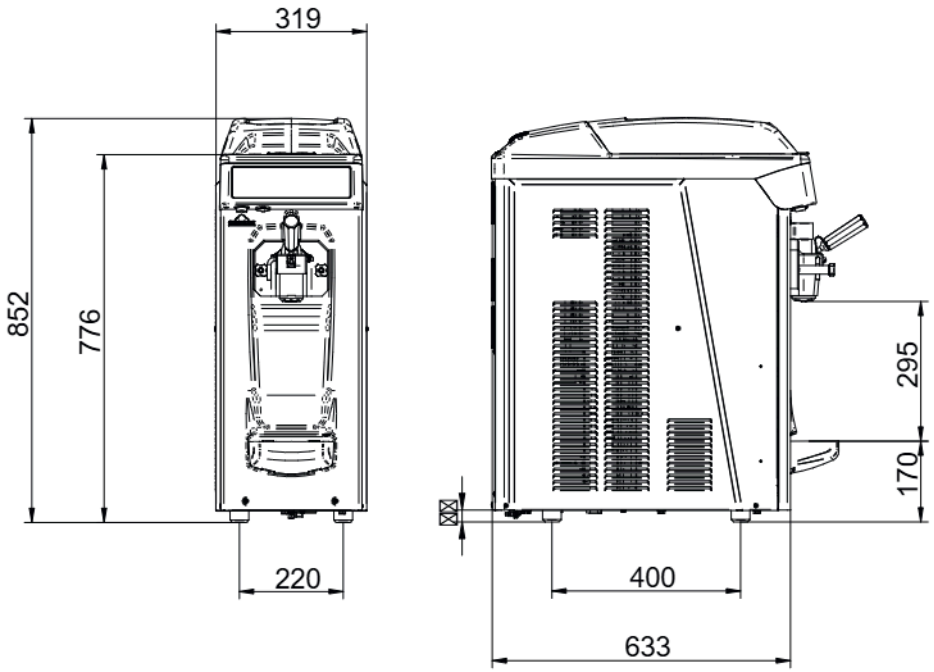
1.2.1 General information

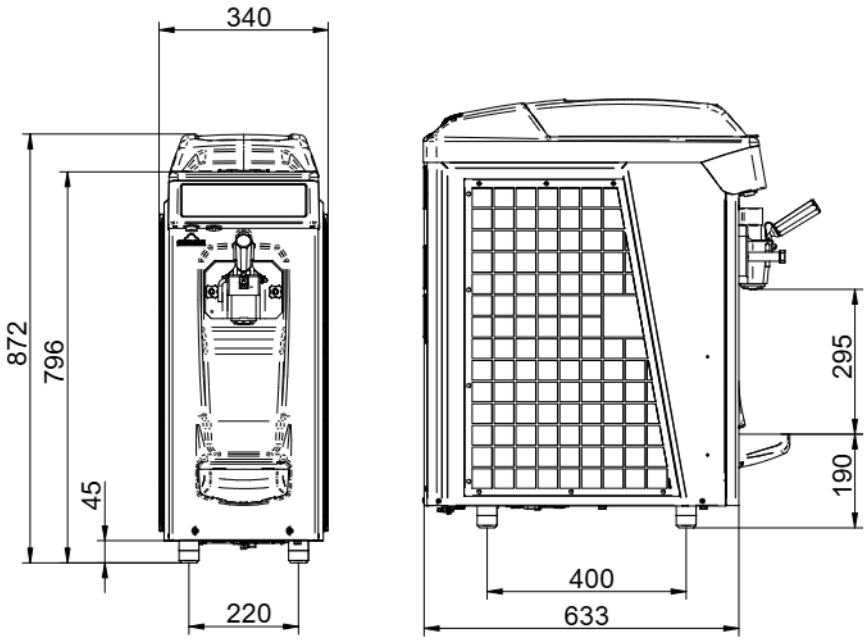
Counter-top machines to immediately produce and dispense soft express ice cream in one flavor, featuring gravity feeding to ensure a higher overrun.

CARPIGIANI recommends using high quality mix for ice cream production in order to satisfy your customers, even the most demanding ones. Any saving made to the prejudice of quality will surely result 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.
- Closely follow the instructions given by your mix supplier for the preparation of the mixes.
- Do not alter your mix supplier's recipes, by adding, for instance, more 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 Machine layout





1.2.3 Technical characteristics

MODEL	Hourly production * kg/h	Hopper capacity liters	Flavors	Power supply **			Condensate	Installed power kW	Net weight kg
				Volt	Phases	Hz			
161 T G-SP	15	5	1	220	1	60	Air	2.7	95

Performance values refer to a temperature of 25°C

* The hourly production and the mix quantity may vary according to the temperature, the type of mix used and the desired increase in volume (overrun).

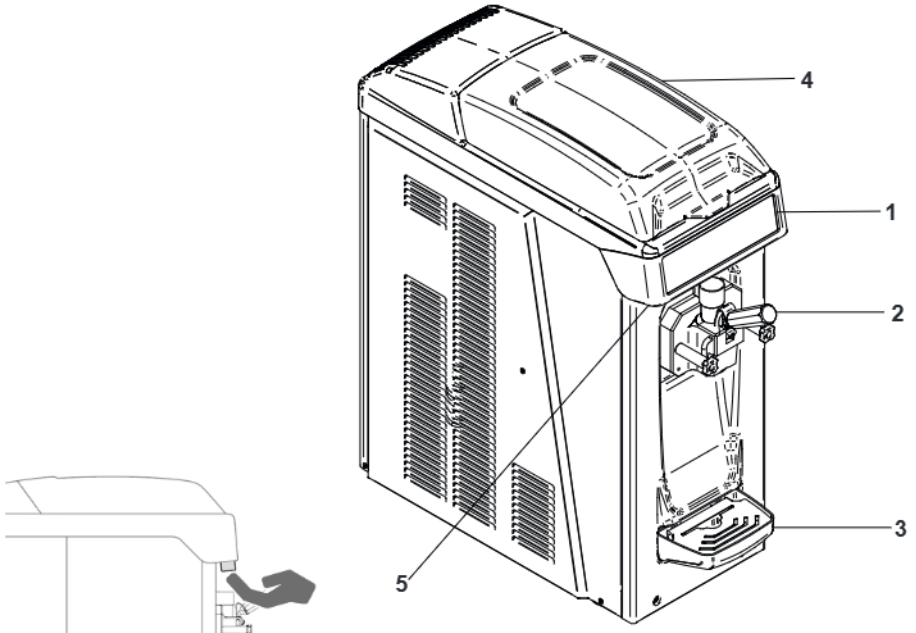
** Other voltages and cycles available.

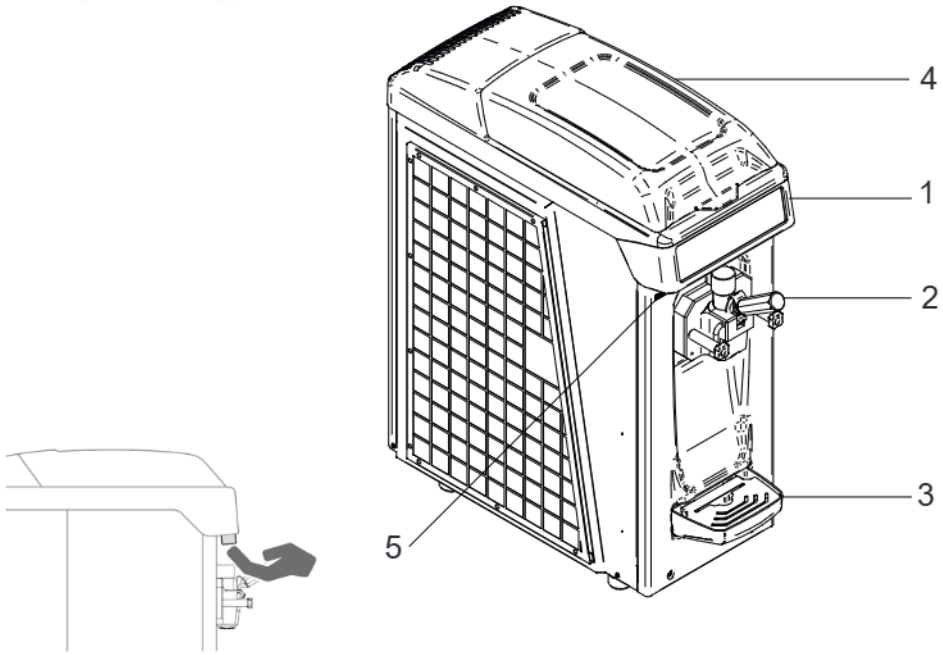
Carpigiani reserves the right to make changes whenever necessary and without being bound to previous statements to the purchaser

1.2.4 Machine unit location

Key:

1. Control panel
2. Cylinder spigot door
3. Drip tray
4. Mix hopper cover
5. Main switch





1.3 INTENDED USE

The machine **161 T G-SP** must be used solely for ice cream production conforming with instructions described in chapter 1.2.1 "General information" within the functional limits described below.

Voltage:	±6%
Min. air temperature:	10°C
Max. air temperature:	43°C
Max. air relative humidity:	85%

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

1.4 NOISE

The equivalent continuous A-weighted sound pressure level in a workplace for water-cooled as well as air-cooled machines is less than 70 dB(A).

1.5 MACHINE STORAGE

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

1.6 DISPOSAL OF PACKAGING MATERIALS

When opening the packing crate, divide packing stuff 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 of unused electrical and electronic equipment. Separate collection of this waste helps to optimize the recovery and recycling of any reclaimable materials and also reduces the impact on human health and on 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 FOR MACHINE USE

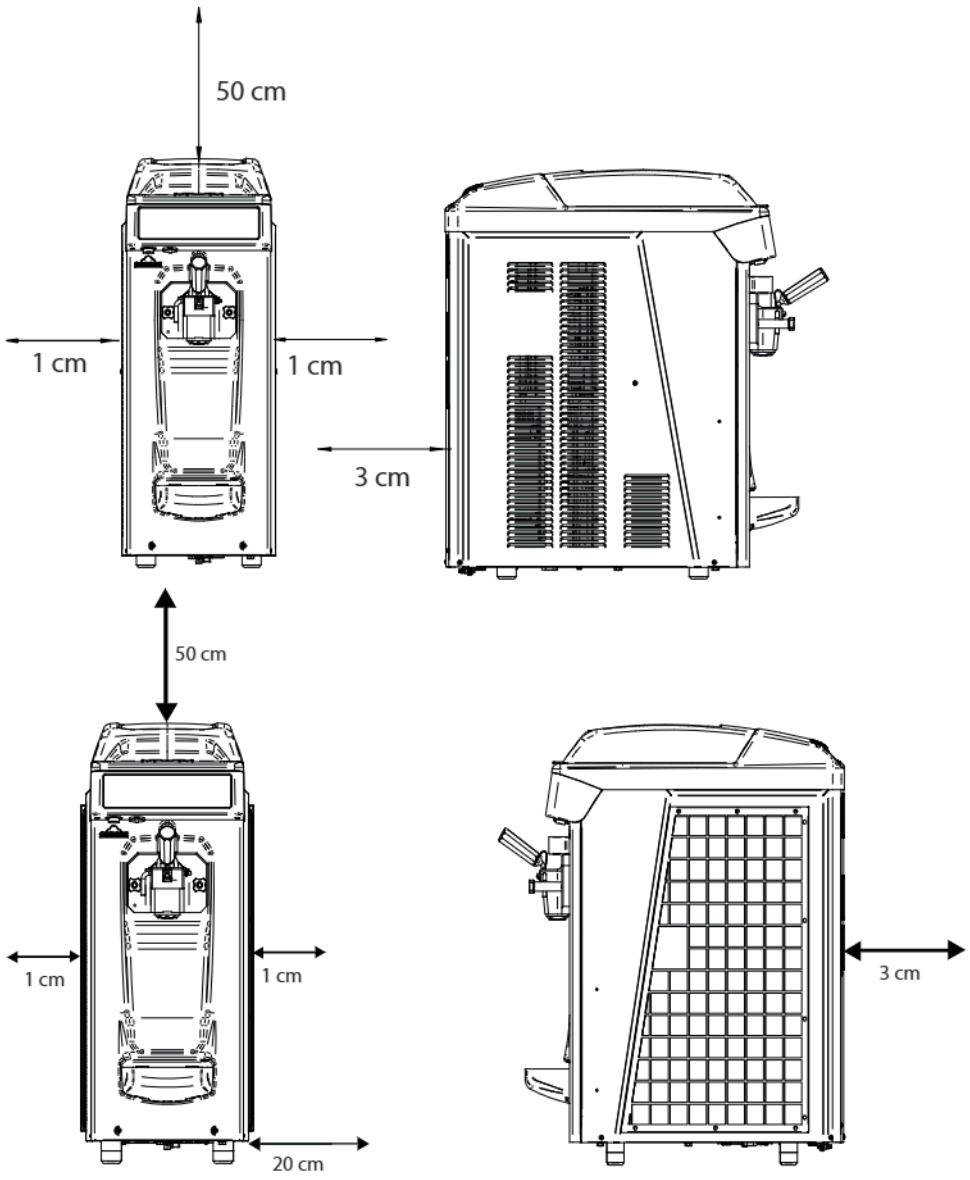
The machine must be positioned on a horizontal flat surface (maximum tilt: 2°).
The machine must be installed on a horizontal surface in such a way that air can freely circulate all around its sides. Space to access the machine must be left free to allow the operator to operate without constraint and to immediately leave the working area, if need be.

Caution
MACHINES WITH AIR-COOLED CONDENSER must be installed AT LEAST 3 CM AWAY FROM THE BACK WALL in order to allow free air circulation around the condenser.

NOTE
Poor ventilation of the machine will impair its operation and production capacity.

WARNING
Keep all ventilation openings of the machine clear of obstructions. Do not install the machine near heat sources

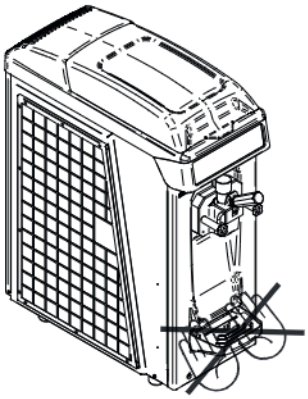
CAUTION
Clean the floor under and near the machine in order to prevent paper and other foreign bodies from obstructing regular air flow.

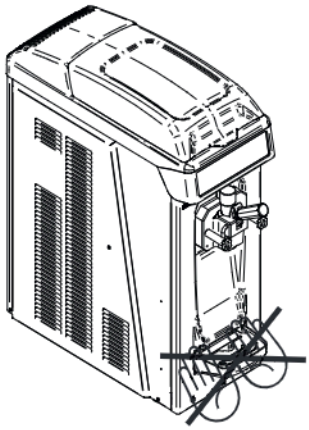


20cm to remove/fit the Filter
(under the machine)

2.1.1 Handling the machine

If the machine needs to be moved for any reason, pay attention to the points used for handling it in order to avoid breaking any non-structural machine part.





2.2 MACHINE WITH AIR-COOLED CONDENSER

Machines with air-cooled condenser must be installed no closer than 3 cm to walls in order to allow free air circulation around the condenser.

NOTE

Poor ventilation of the machine will impair its operation and production capacity.

2.3 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.
The trip level of the residual current device must be ≤ 30 mA, and in any case comply with local regulations.
To ensure proper interruption in the event of a ground fault, the residual current device must be at least of type A, F, or B (ref. IEC 60775), depending on the fault current that the machine may generate.

WARNING

The disconnection device must provide protective functionality by disconnecting power when required. If the device is not suitable, a fault condition may result in untimely or failed/delayed tripping, which could lead to serious hazards for the operator.



For machines equipped with a single-phase inverter connected between phase and neutral, use a device sensitive to high-frequency fault currents, at least type F, capable of detecting and interrupting multi-frequency residual currents.
For machines equipped with a three-phase inverter, use a type B device, which is also sensitive to DC faults.

NOTE

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 be connected to the system neutral



WARNING

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



2.3.1 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.

2.3.2 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.



IMPORTANT:

Check the correct direction of rotation of the beater

Reversing rotation direction

To reverse the rotation direction, when wrong, it is necessary to interchange two of the three leads coming from the differential magnetothermal protection switch



2.4 TOP-UPS

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 circuit operation is carried out at CARPIGIANI factory during the machine post production testing; top-ups or filling are not required if the machine is new.
If any gas top-up or filling becomes necessary, this must be made solely by qualified engineers, able to determine the reason of such occurrence.



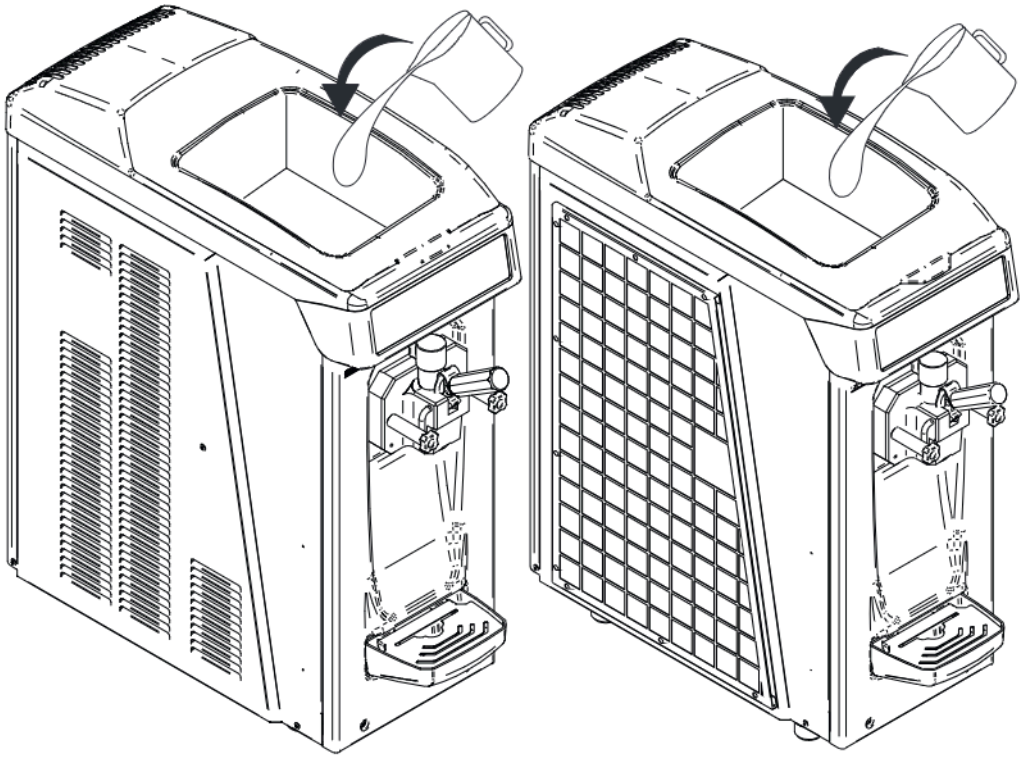
2.5 MACHINE TESTING

A post-production test is carried out on the machine at **CARPIGIANI** premises; the requested operational and production functions are inspected and verified.
Machine test at the end user's premises must be carried out by authorized technical personnel or by a **CARPIGIANI** engineer. Once the machine has been positioned and connected to its supply lines, it is possible to carry out the operations required for machine functional check and operating test.

3 INSTRUCTIONS FOR USE

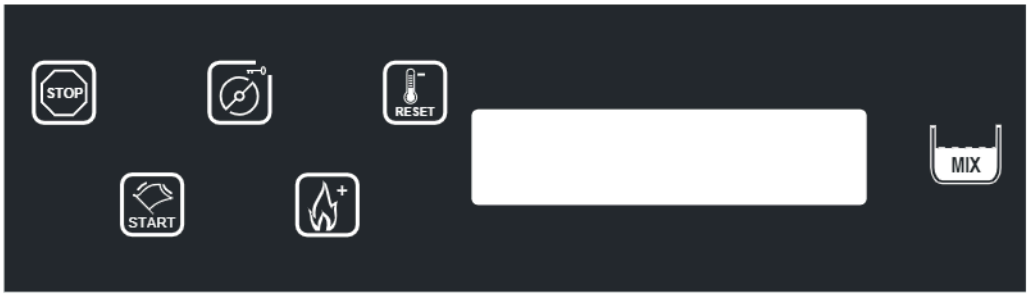
3.1 MACHINE CONFIGURATION

The machine is equipped with a motor to drive the beater, and features an air cooling system. **Soft ice cream is prepared by filling the hopper with cold mix (+4°C) and starting the automatic production cycle, until the ideal ice cream consistency set by CARPIGIANI is reached.** Thanks to the feeding needle, the mix entering the cylinder is already mixed with air. Ice cream is produced only when it needs to be served. The dispensing lever placed on the front side of machine allows a single portion of soft ice cream to be dispensed. At the same time, the same amount of mix moves from the upper refrigerated hopper into the cylinder.



3.2 ELECTRONIC CONTROL KEYBOARD AND BUTTON FUNCTIONS

Monitor and keyboard details are shown in the picture below.



3.2.1 Functions

<table>
<tr><th>BUTTONS</th><th>FUNCTION DESCRIPTION</th></tr>
<tr><td></td><td>
DISPLAY
When you switch the machine on, the display indicates the software version. E.g.:
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>CARPIGIANI 161T
161T_00_06</td><td>model and corresponding software version</td></tr>
</table>
When the push-button panel accepts a command, it will produce a beeping sound.
</td></tr>
<tr><td>
</td><td>
STOP
By pressing this key during operation, machine stops (LED ON).
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>12:24 01-03-2020
STOP</td><td>When the machine is in STOP mode, the display shows the current Time and Date</td></tr>
</table>
To switch the machine to Stop mode from any other function (Production, Storage, Pasteurization, or Cleaning), press and hold the Stop button for 3 seconds.
</td></tr>
<tr><td>
</td><td>
PRODUCTION (START)
Production can be accessed only if mix is above the minimum level.
The product is cooled till its programmed consistency value is reached.
During cone dispensing, as soon as the mix reaches the hopper low level sensor, the display shows the message “Mix Out” and only a limited amount of cones can be dispensed.
Once Production mode is activated, the display shows the following:
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>Ready!
T=+19°C W -14</td><td>The first line indicates whether ice cream is ready to be dispensed (Ready!) or not (Do not Serve!).
The second line indicates the hopper temperature followed by the number of days (W = Wash) until the next required washing.</td></tr>
</table>
Press “Production” again to access the pages below:
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>Hopper ↓+014°C
Cylinder ↓+013°C</td><td>The first line indicates the temperature in the Hopper
The second line indicates the temperature in the Cylinder.</td></tr>
</table>
By pressing “Production” again:
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>Set= 100 HoT=085
mA=00000</td><td>The first line shown on the display indicates the current consistency and the set target value
The second line shown on the display indicates the beater motor absorption value</td></tr>
</table>
By pressing “Production” again:
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>TEV +010 TGV -022
TEC +013 TE -012</td><td>The display shows the temperatures of the different probes.</td></tr>
</table>
By pressing “Production” again:
<table>
<tr><th>DISPLAY</th><th>COMMENTS</th></tr>
<tr><td>TOC +023 TIMC -022
TAMB +022 TOMC -012</td><td>The display shows the temperatures of the different probes.</td></tr>
</table>
</td></tr>
</table>



By pressing “Production” again:

DISPLAY	COMMENTS
Day Cones 12345	The display shows the Cones of the day starting from the time set for automatic production U02 (hour) and U03 (minutes) for the following 24 hours: The counter of day cones is reset after 24 hours

By pressing “Production”, the display shows:

DISPLAY	COMMENTS
Num Cones 09780	This window shows the total number of dispensed cones



CLEANING

By pressing “Cleaning”, the display shows:

DISPLAY	COMMENTS
HOT=010 TEC+25 Beater ON	By pressing “Cleaning”, the beater is activated for 3 min.
HOT=010 TEC+25 Beater + Heating	Pressing “Cleaning” also activates heating.

Press “Cleaning” again to return to the home screen



BLOCK

By pressing the Cleaning key from any function mode for 3 seconds all keys are disabled and the Cleaning led flashes.

This allows cleaning the keyboard without triggering accidental function changes.

The machine does not quit the current function.

To enable the keyboard, press “Cleaning” again and hold it for 3”.



DECREASE

This key is used to Decrease the "User Programming" values.



This key is used to Increase the "User Programming" values.



STORAGE

The Storage function is used to bring the product in the hopper and cylinder to a temperature of 4°C.

Once Storage mode is activated the display shows the following:

DISPLAY	COMMENTS
Hopper ↓+006°C Cylinder ↓+003°C	The first line of this window shows the following: TEV = Hopper temperature probe, ↓ = active when the hopper is being cooled The second line will show: TEC = Cylinder temperature probe, ↓ = active when the cylinder in being cooled

By pressing "Storage", the display shows:

DISPLAY	COMMENTS
TEV +004 TGV +028 TEC +009 TE +012	In this window, the display shows the various sensors (without displaying °C or °F):

By pressing "Storage", the display shows:

DISPLAY	COMMENTS
TOC +055 TIMC +070 TAMB +067 TOMC +068	In this window, the display shows the various sensors (without displaying °C or °F):

Press Storage to go back to the initial page.



PASTEURIZATION

The Pasteurization function can be activated only if the mix in the hopper is above the level sensor.

The mix, both in the hopper and in the cylinder, is heated to 65°C where it remains for 30 minutes (fixed), and then cooled until reaching the storage temperature.

At the end of the cycle, the display shows "- Pasto End -" along with the time and day of the week, indicating that the pasteurization cycle has been successfully completed.

Pasteurization is performed automatically every day at 2:00 (if the time is set in step "Auto Pasteur Hour").

Normally the machine is in Production, when the hour for Pasteurization arrives the machine switches automatically from Production to Pasteurization to perform the procedure.

To start a manual pasteurization cycle, keep the Pasteurization key pressed for 5 seconds.

If Pasteurization is not completed successfully, the machine will NOT be able to enter Production mode until a Pasteurization cycle has been completed.



WARNING

The user takes full responsibility for the manual control of pasteurization: a pasteurization cycle must be carried out within 25h, complying with prevailing local regulations on mix handling in case mixes are not pasteurized.



WARNING

If a pasteurization cycle has not been carried out within 25h, the machine must be cleaned and sanitized.



NOTE: *Once it starts, the pasteurization cycle cannot be interrupted. The complete cycle takes about 2 hours to finish. During pasteurization and Pause cycles, the mix inside the machine is very hot; do not try to collect it or to disassemble the machine*



CAUTION

Do not dispense ice cream or disassemble the machine during pasteurization because the product is very hot and pressurized.

HOT/COLD

WARNING:
The Hot/Cold cycle does not replace Pasteurization. For Dairy products (milk-based) it is always necessary to carry out a daily Pasteurization cycle. User takes full responsibility for the manual control of the machine, complying with prevailing local regulations on mix handling in case mixes are not pasteurized.
If pasteurization is disabled to enable Hot/Cold cycle and vice versa, a complete washing cycle must always be performed as described in paragraph 5.

The Hot/Cold Cycle will run automatically according to the user settings programmed at step "Hot/Cold Auto".

Hot/Cold Auto.

Automatic Hot/Cold mode setting. Setting this parameter to YES activates the function. Pressing the Increase button allows you to access the time selection page, where you can select the frequency (in days) for the cycle execution. Note: if the pasteurization cycle is active, it will take priority over the Hot/Cold cycle. In this case, the Hot/Cold cycle will be ignored even if activated.	Hot/Cold Auto Mode No
Time setting	Auto Hot/Cold Time →02: 00
Setting for the number of days between automatic Hot/Cold cycles (1 to 3 days)	Start Hot/Cold Days →1

The cycle is started at the set time only if the machine is in Production or Storage mode, otherwise the machine stays in the function it is in that moment (e.g. Stop) and the operation is performed later as soon as the operator presses the Production or Storage key.

After selecting the Hot/Cold cycle, if the mix rises above the level sensor, the cycle starts automatically.

After the time scheduled for the start of the cycle, it is not possible to switch to Production until the cycle has been completed.

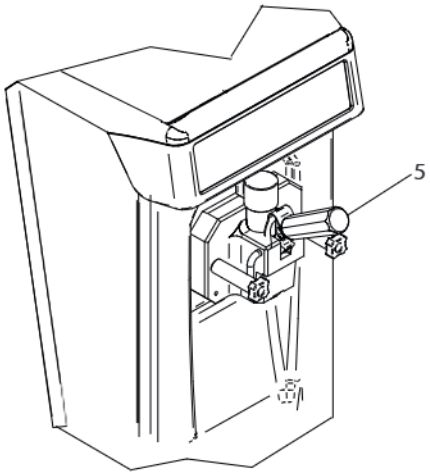
Completing the Hot/Cold Cycle or washing the machine also resets the counter of the days until the next Hot/Cold Cycle.

The product, both in the hopper and the cylinder, is heated to 65°C (programmable in step "1520 H/C Hopper Temp" and step "1180 H/C Cylinder Temp"), held at that temperature for 30 minutes (programmable in step "3106 H/C Pause Timeout"), then cooled to the storage temperature.

At the end of the cycle, the display shows "Hot/Cold End" along with the time and day of the week, indicating that the H/C cycle has been successfully completed.

3.3 ICE CREAM DISPENSING LEVER

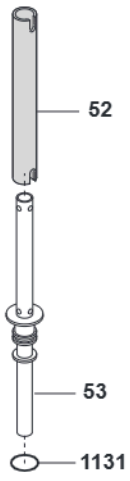
In order to dispense the product, place a cup or a cone under the dispensing spigot and slowly pull down the dispensing lever. As soon as the product comes out, twist the cup or the cone to form a cone-shaped serving. When the portion has reached the desired size, close the dispensing lever and quickly pull the cone or the cup down in order to sharpen the tip.



3.4 GRAVITY-FED MACHINES - FEEDING NEEDLE

How to obtain and how to keep quality performances.

1. Maintain a big mix level inside the hopper (above the half of the hopper itself). Mix temperature inside the hopper is +4°C both during production and storage.
2. A fluid mix without particles has to be used. A thick mix with big particles could close the slot of the feeding needle thus blocking mix from entering the cylinder.
3. Keep the feeding needle slider (pos. 52) in a position as to allow for a smooth mix flow from the hopper to the cylinder. By rotating the slider slot aligning it with the smallest hole, the mix flowing into the hopper is reduced (increased overrun) and vice versa.
4. Position the feeding needle in such a way that the product inlet hole points towards the center of the hopper.
5. Never exceed production limit specified in paragraph 1.2.3 and dispense cones and cups in the most regular way.



3.5 PRELIMINARY OPERATIONS, WASHING AND SANITIZATION



Before starting the machine for the first time, it is necessary to thoroughly clean its parts and sanitize all parts coming into contact with the ice cream (see paragraph 5 of this manual).



CAUTION

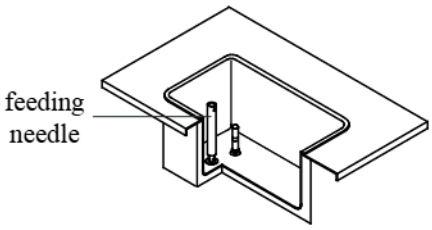
Cleaning and sanitization must be carried out with utmost care in order to guarantee the production quality in the observance of required healthy rules.

3.6 MACHINE START-UP



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

Remove the hopper cover and place it on a sanitized cloth. Remove the feeding needle from hopper bottom and place it on a sanitized cloth.



Prime hopper:

- Retrieve one bag of mix from the refrigerator.
- **NB: Mix to be poured at a temperature of 4-5°C.**
- Lower the dispensing lever and start pouring mix in the hopper to allow it to drain also into the cylinder.
- Wait for a small quantity of mix (not sanitizer) to be dispensed from the spigot door and move the lever to the original position, i.e. close the spigot door lever.

Connecting the feeding needle:

- Keep pouring the mix until the cylinder has been filled (bubbles shall be visible in the hopper while filling); with clean and sanitized hands, remove the feeding needle from the sanitized cloth and insert it in the hopper bottom. The mix level in the hopper must never exceed feeding needle height (see figure);
- Refit the hopper cover
- Select the function “Production”



CAUTION

Once the mix is poured in the hopper, the proper cover must be fitted so as to keep the mix at the correct temperature and to minimize the risk of contamination.

3.7 PRODUCTION



Dispense soft ice cream without exceeding maximum production rate, as shown in the page 10 table; if you keep within this rate of production and refill the machine with fresh mix, the machine will never stop functioning, even during rush hours.

Out of business hours, keep machine set in STORAGE mode by pressing the STOP button and the STORAGE button. You will also save a lot of electricity because the compressor runs only when necessary in order to store the product at the right temperature. On reopening, just set the machine to PRODUCTION and within a few minutes the ice cream will be back to the right consistency and ready to be served.
If, after a power failure, the machine has not worked a long time, it is indispensable to check the product temperature before starting service again; if it is above +6°C, empty, wash and sanitize the machine, last refill it with fresh mix at +4°C.



3.8 OPENING PROCEDURE

3.8.1 Spigot door sanitization

- Prepare a water and cleaning/sanitizing solution following the instructions shown on the label of the product being used.
- Soak a brush in the sanitizing solution and brush the ice cream outfeed hole as well as the whole area around the spigot door several times.
- Spray the sanitizing solution on the ice cream outfeed hole and the whole area around the spigot door.
- Wash, rinse and sanitize drip tray and hopper cover.
- Wipe the exterior of the machine and the hopper area with a sanitized towel.

3.8.2 Machine start-up

Select the PRODUCTION function; a few minutes are enough to make ice cream reach the correct consistency.

3.9 CLOSING PROCEDURE



3.9.1 Spigot door sanitization

- Prepare a water and cleaning/sanitizing solution following the instructions shown on the label of the product being used.
- For the compatible machines, use the special tool provided to unscrew the spigot door nozzle unit, remove it from the spigot door and extract the o-ring inside. Wash and sanitize the nozzle unit and the relevant o-ring.
- Soak a brush in the sanitizing solution and brush the ice cream outfeed hole as well as the whole area around the spigot door several times.
- If featured, refit the nozzle unit on the spigot door.
- Spray the sanitizing solution on the ice cream outfeed hole and the whole area around the spigot door.
- Wash, rinse and sanitize drip tray, drip drawer and hopper cover.
- Wipe the exterior of the machine and the hopper area with a sanitized towel.

3.9.2 Prepare the machine for the night pasteurization cycle

- For gravity-fed machines, open the cover, position the feeding needle so as to close the product inlet hole and so the feeding pipe.
- Add mix if necessary. The hopper level indicator LED must be OFF.
- Make sure that the machine is in PRODUCTION/STORAGE mode (the relevant LED must be ON).

3.10 USER PROGRAMMING



To access the User Programming page with the machine in Stop mode, press and hold the Stop and Decrease buttons until the display shows "*****User Menu****", then release the buttons. Then, the display shows some sub-menus that can be selected with the Increase/Decrease buttons:
To access the User Programming with the machine in Stop mode, press Stop and Decrease buttons and keep them pressed until the display shows "User Menu".
Then, the display shows some sub-menus that can be selected with the Increase/Decrease buttons:

- Date
- Hour
- Time Format
- Alarms
- Events
- Information
- Language
- Autosetup User
- Scale Temperature
- Read Pasto
- Automatic Production Time
- Automatic Standby Time
- Automatic Pasto Time
- User Parameters

User Programming Map:

6. Date;
Date setting.
7. Hour;
Time setting.
8. Time Format;
Setting time format (12/24h)
9. Alarms;
Displaying active alarms.
10. Events;
Displaying events.
11. Information;
Displaying machine version.
12. Language;
Language setting.
13. Autosetup User;
Autosetup of user parameters (only U20 - Level Beep Enable and U21 Extra Hopper Beater).
14. Scale Temperature;
Temperature scale setting (°C/°F)
15. Read Pasto;
Displaying of pasteurization data.
16. Automatic Production Time;
Automatic production time setting.
17. Automatic Standby Time;
Automatic storage time setting.
18. Automatic Pasto Time;
Automatic pasteurization time setting.
19. User Parameters.
Setting of user parameters.

The next time the user menus are accessed, the last selected sub-menu is displayed.

Date	
By pressing Production (Start), the display shows an arrow on the month	Date →06 Mar 2020
That can be changed using the Increase and Decrease buttons. Press Production (Start) to move on to the next value.	
When editing values, it is still possible to access the previous menu by pressing Stop.	

Time	
The time modification procedure is like that for the date.	Time →15:25:00



Note: check date and time at regular intervals to prevent significant deviations over time.

Alarms	
List of Active Alarms It is possible to scroll through the alarms by pressing the Increase and Decrease buttons. The first line shows the alarm number and the total number of alarms occurred at the same time. Stop goes back to the user menu and deletes the reset alarms. When an alarm is triggered this alarm page opens automatically. Stop allows also resetting triggered and reset alarms, while for those still active, a timer is activated after which the alarm(s) will be shown again on the display	The spigot door is open Alarm 1 of 2

Events	
By pressing the Increase and Decrease buttons, the display shifts from one saved event to the other.	
The event number is displayed for one second	EVENT 270/270 Stop
After 1 second, the display shows date and time with the relevant event	03/01/2020 15:22:13 Stop
Press Stop to quit	

Information	
The display shows the sw version loaded into the control unit (161T_00_03) and that of the expansion board (IOE00_01)	CARPIGIANI 161TGSP 161T_00_03 IOE00_01
The display shows the time left until the next pasteurization.	Time left to Pasteur 20:00:00
The display shows the time left until the next wash.	Time left to Pasteur 13d, 20:00:00
The display shows the mix quantity of the last filling performed. (Only with analog level sensor)	Last Fill Liters 1.2 l
The display shows the date of the last filling performed. (Only with analog level sensor)	Date Last Fill 01/01/20 00:00:00
The display shows the quantity of mix in the hopper. (Only with analog level sensor)	Liters in Hopper 4.2 l

Language	
Language selection (English / Italiano / Francais / Deutsch / Espanol / Portuguese / Chinese) with Increase/ Decrease buttons. Confirm with the Production button (Start). Press Stop to exit the page	Language English

Autosetup	
Press Production (Start)	User Menu Autosetup User
Select Production (Start) to perform the User autosetup that sets all default values of user programming. Select STOP to cancel the operation	Autosetup START:YES STOP:NO
Press YES to display “Autosetup Done”	Autosetup Done
And then	User Menu Autosetup User

Scale Temperature	
Press Production (Start)	User menu Scale Temp.
Press Increase/Decrease to set °F or °C. Press Production (Start) to save the set scale. Press Stop to quit the page.	Scale Temp. ° C Celsius Scale Temp. ° F Fahrenheit

Read Pasto	
If there are no Pasteurization processes completed, the display shows NO PASTO	NO PASTO
Press the Increase/Decrease buttons to scroll the list of the pasteurization processes successfully completed. The first line shows the date (in the dd-mm-yyyy format). The second line shows the start time, e.g. S 13:44 (S=start), and the end time, e.g. E 14:50 (E=end). Press Production (Start) to access the selected pasteurization page to see the details of the different steps [Heating, Pause, Cooling, End Pasto]. Press Stop to quit the page.	12-03-2020 S 13:44 E:14:50
From the page of the selected pasteurization it is possible to scroll the different steps by pressing the Increase/Decrease buttons. The first line shows the name of the step, the second line shows the duration on the left and the temperature at the beginning of the step on the right. Press Stop to return to the pasteurization selection page.	Heat 00:40 37°C Pause 00:30 65°C Cool 00:35 65°C End Pasto 01:45 03°C

Auto PRD Time	
	User Menu Auto PRD Time
Automatic Production time setting.	Auto PRD Time 08:00 ON
As in the time menu, use Production (Start) and Increase/Decrease buttons to navigate. ON: the machine sets to Production at the set time. OFF: Disabled function	Auto PRD Time 08:00 ON

Auto STRG Time	
	User Menu Auto STRG Time
Impostazione orario di Conservazione automatica.	Auto STRG Time 00:00 ON
Come nel menu orario si naviga con i tasti Produzione (Start) e Incremento/Decremento. ON: la macchina passa in Conservazione all'ora impostata OFF: Funzione disabilitata	Auto STRG Time 00:00 ON

Auto PASTO Time	User Menu Auto PASTO Time
Impostazione orario di Pastorizzazione automatica.	Auto PASTO Time 02:00 ON
Come nel menu orario si naviga con i tasti Produzione (Start) e Incremento/Decremento. ON: la macchina passa in Pastorizzazione all'ora impostata OFF: Funzione disabilitata	Auto PASTO Time 02:00 ON

User Params	User Menu User Params
Setting of user parameters. Press Production (Start) to access parameters:	
HoT (Consistency adjustment)	HoT T01 100
U20 Level Beep En (beep enabled with mix below minimum level)	Level Beep En U20 01
U21 Extra Hop Beater (MMV ON for periodic activations)	Extra Hop Beater U21 01
U29 Heat Treat Type (Heat Treat Type: Pasteur / Hot Cold)	Heat Treat Type U29 Pasteur
T48 MV Mode (Ventilation Mode)	MV Mode T48 Max Production

4 SAFETY DEVICES



4.1 ALARMS

The machine signals possible alarms by showing them on the display and flashing the message.
If an alarm was triggered and then reset, the alarm remains visible on the display in a steady way (not flashing).
To reset the message, press the Stop or Storage/Reset button
If the alarm does not reset, it means it is still active

The table below shows a list of possible alarms:

ALARM	DESCRIPTION
Al. Ice Cylinder	Cylinder Ice Alarm Triggered during Production, Storage and Pasteurization Cooling mode. This alarm is memorized only in the event log but is not shown on the display.
Alarm TAMB Probe	"TAmb" temperature probe switched off or short-circuited This alarm does NOT trigger machine Stop. .
Alarm TE Probe	"TE" temperature probe switched off or short-circuited This alarm does NOT trigger machine Stop.
Alarm TEC Probe	"TEC" temperature probe switched off or short-circuited The machine is set to Stop, except for Production and Cleaning functions (beating only mode).
Alarm TEV Probe	"TEV" temperature probe switched off or short-circuited The machine Stops.
Alarm TGV Probe	"TGV" temperature probe switched off or short-circuited This alarm does NOT trigger machine Stop.
Alarm TIMC Probe	"TIMC" temperature probe switched off or short-circuited Pasteurization is inhibited. If it intervenes when the Pasto has started the machine switches to Storage with the message Pasteur Failed. Storage, Production and Cleaning are allowed.
Alarm TOC Probe	"TOC" temperature probe switched off or short-circuited. This alarm does NOT trigger machine Stop.
Alarm TOMC Probe	"TOMC" temperature probe switched off or short-circuited Pasteurization is inhibited. If it intervenes when the Pasto has started the machine switches to Storage with the message Pasteur Failed. Storage, Production and Cleaning are allowed.
Cyl. Temp. High	High cylinder temperature alarm It is triggered during Production, Storage and Pasteurization if TEC reaches 85°. In case of alarm the machine is forced to Stop mode with flashing alarm on the keyboard and disabled keys, which allows access to the Cleaning mode alone. The alarm is reset and the display stops flashing as soon as the temperature drops. Now the alarm can be reset by pressing the Storage/ Reset button and normal access to functions is restored.
DD Bridge Overtemp	Direct Drive Bridge Overtemperature The machine Stops. Driver overheat due to high temperature. Wait for a few minutes to allow motor driver to cool down.
DD Brownout	Direct Drive Brownout The machine Stops.

DD Comm. Error	Direct Drive Communication Error The machine Stops.
DD Loss of Phase	Direct Drive Loss of Phase The machine Stops.
DD Motor Stall	Direct Drive Motor Stall The machine Stops. Try to perform a thermal cleaning.
DD Other Fault	Direct Drive Other Fault The machine Stops.
DD Overcurrent	Direct Drive Overcurrent The machine Stops.
DD Overheat	Direct Drive Overheat The machine Stops.
Hop. Temp. High	High hopper temperature alarm It is triggered during Production, Storage and Pasteurization if TEV reaches 85°. In case of alarm the machine is forced to Stop mode with flashing alarm on the keyboard and disabled keys, which allows access to the Cleaning mode alone. The alarm is reset and the display stops flashing as soon as the temperature drops. Now the alarm can be reset by pressing the Storage/ Reset button and normal access to functions is restored.
Hot Cold Not Done	Hot Cold Cycle not performed If the machine is in Stop mode at the time set for automatic Hot Cold, this alarm is triggered to remind that the cycle has to be started.
IOE Modbus Alarm	Modbus Alarm between IO Expander – control unit The machine Stops.
Last Pasteur. 25h	Last Pasteur. 25h More than 25 hours have passed from the start of the last completed Pasteurization, therefore it is necessary to perform pasteurization.
Manual Stop	Manual Stop When the Stop button is pressed, an event is saved to notify the user of the action.
MC Absorption	MC Absorption Alarm The machine Stops.
Mix Out!	Mix Out The display indicates Mix Out! when the mix is below the level sensor. When the mix is below level sensor and upon Production a number of cones same as/or higher than the value set in step Last Cones are dispensed, not only will Mix Out! be displayed, but the machine will also set to Storage.
No More Cones!	No More Cones When the low level has been reached (mix level on) the machine can dispense the number of cones set at the Last Cones step. After which the machine automatically sets to Storage displaying the message No more Cones (also saved in the events log). The alarm resets by pressing the Storage key.
Params Local Update	Parameters Local Update When the parameters of the programming table are updated on board the machine, an event is saved to notify the user of the action.
Params Remote Update	Parameters Remote Update When the parameters of the programming table are updated via Teorema, an event is saved to notify the technician of the action.
Pasteur. Failed	Pasteurization Failed If the machine takes longer than 90' to reach the heating temperature or more than 2 hours to reach the storage temperature during cooling, it is set to storage mode.

Pasto needed!	Pasteurization needed When the machine is set to Stop mode with the minimum level covered for more than 60', TEV temperature is checked and if it is 15°C or more, Pasteurization is needed. In this situation, when Production is pressed the machine will automatically start Pasteurization unless the spigot door has been opened and closed.
Pasteur. Not Done	Pasteurization not performed If the machine is in Stop mode at the time set for automatic Pasteurization, this alarm is triggered to remind that pasteurization is needed.
Power OFF	Power OFF The power off is recorded only in the event log.
Power ON	Power On When the power is back on, this event is displayed and saved in the event log.
Pressure Switch	Pressure Switch 1 This alarm stops the compressor. If pressure switch trips 10 times (programmable) in a row or if it stays open for 5 consecutive minutes, the machine sets to Stop. The display shows "Pressure Switch".
Pressure Switch 2	Pressure Switch 2 Pressure Switch on condenser outlet. When it trips, the fan activates at the maximum speed.
Safety Thermostat	TES safety thermostat When the TES Safety Thermostat trips, the machine switches to STOP mode and the display shows "Safety Thermostat". Wait for a few minutes to allow the thermostat to reset, then the machine can be used. This alarm can be triggered by either the cylinder safety thermostat (TESC) or the hopper safety thermostat (TESV).
Spigot Open	Magnetic safety switch (IMS) or Spigot Open No matter the function it is in, the machine sets to Stop. When the spigot door is closed again, "Spigot Open" is no longer displayed.
TE Limit	TE Limit In Pasteurization mode, when a programmed temperature threshold is exceeded, it is stored in the "TE Limit" events. The machine remains in the same function.
TGV Limit	TGV Limit In Pasteurization when a programmed temperature threshold is exceeded, "TGV Limit" is displayed. The machine remains in the same function.
Timeout PRD	Production Timeout (Cooling fault) In Production, activation time of the beater motor is checked. If it stays ON for 10 minutes without the HoT being reached, the machine switches to "Reached HoT" mode and the alarm "Timeout Prd." is stored in the event log. After triggering for 5 times, the alarm does not disappear from the display and the machine sets to Storage mode. If, instead, the set HoT is never reached upon the first access to production, the machine switches to Stop mode with the relevant alarm displayed

Wash today!	Wash today! In Production mode, “TEV +19°C W –n” is displayed, meaning that there are still "n" days remaining until machine cleaning. When the scheduled wash day arrives, Production is inhibited and the machine will not accept that function. The display shows Wash today! A forced washing may be required if the machine is left in Stop mode for 24 hours with mix above the minimum level. mandatory cleaning can also be triggered in the following cases: 1. Power OFF or Stop mode duration for more than 30 minutes (regardless of TEV, level and function of the machine before the blackout) 2. Power ON following a blackout with TEV >= 7°C, if the machine was previously in Production mode (regardless of the power OFF duration and the level).
Wg Modbus Alarm	Modbus Alarm between MWG - control unit
Why in STOP?	Why in STOP? If the machine is left in the Stop position with mix above the minimum level, after 30 seconds the flashing message “Why in STOP?” will be displayed and an intermittent beep will be emitted. This warns the operator to set the machine either to Production, Pasteurization, or Storage mode. The above mentioned message will be deleted by entering in Production, having low mix level, or pressing Reset (Stor.) key.

4.1.1 POWER OFF

In case of power off, if the machine was in Cleaning mode, it will set to STOP when the power is back on.

If the machine was in Pasteurization Production, Storage, Heating phase or Pause during Pasteurization, when power is supplied again, the machine will continue with the function it was performing when the blackout occurred (the display will show the message Power On).

If the machine was in H/C Heating phase or Thermostating during the H/C Cycle, when the power returns the machine will continue with the function it was performing when the blackout occurred (the display will show the message Power On).

If the machine was in Pasteurization Cooling or Cooling of the Hot Cold cycle, when the power returns the machine will check the TEV temperature and the duration of the blackout. If the length of time is greater than the duration indicated in the table, the machine will completely repeat the Pasteurization cycle (or the Hot Cold cycle if it was in the Cooling phase), memorizing the alarm "Power Off" or "Power On" in the event log.
Otherwise, if the time is less than that indicated in the table below, the machine will return to the mode in which it was before the power off.
Power OFF table

TEV temperature	Time
68°C ÷ 50°C	30 minutes
49°C ÷ 15°C	10 minutes
14°C ÷ 10°C	20 minutes
9°C ÷ 4°C	2 hours

5. REMOVING, CLEANING AND REFITTING OF PARTS IN CONTACT WITH THE PRODUCT

5.1 GENERAL INFORMATION



Cleaning and sanitization must be carried out as a habit and with utmost care at the end of every production cycle to ensure product quality and compliance with hygiene standards.
If dirt is left enough time to dry out, this increases the risk of stains, marks and damage to surfaces.
Removing dirt is much easier if it is done immediately after use because some elements containing acid and saline substances might damage the surfaces. A prolonged soaking is not recommended.

5.2 WASHING CONDITIONS



- Avoid using solvents, alcohol or detergents that could damage machine parts or pollute the functional production parts.
- For enhanced safety, avoid sanitizing agents that contain highly aggressive active ingredients, as they may be too harsh for daily use or sensitive surfaces. The use of cleaning/sanitizing solution such as bleach, ammonia, hydrochloric acid can attack the steel composition, marking and oxidizing it irreparably and causing damage to the parts made of plastic materials.
- Never use powder or abrasive cleaning products, scourers or pointed tools when cleaning by hand: these may dull the surfaces, remove or weaken the protective film on the surface by scratching it.
- Never use metal or synthetic scouring pads under any circumstances to prevent any abrasion or removal of ferrous parts leading to surface oxidation or weakening.
- Do not use dishwashers and the relevant detergent products.

5.3 TIPS



- 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.
- Use drinking water (bacteriologically pure) to rinse the parts.
- For sanitizing, keep the disassembled parts in lukewarm sanitized water for the time indicated on the label of the product used (avoid prolonged contact), use the supplied cleaning brushes to forcefully brush all the components as well as their holes, then rinse using drinkable water (bacteriologically pure).
- 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/sanitizing solution to wash the machine..
The use of a cleaning/sanitizing solution optimizes the washing and sanitizing procedures in that it eliminates two phases of the procedure (a rinse and a washing phase). Basically, the use of a cleaning/sanitizing solution saves time by facilitating and simplifying washing/ sanitizing procedures.

CAUTION



Every time the machine is washed and the parts that come into contact with the ice cream mix are disassembled, it is essential to carry out a visual inspection of all the parts made in thermosetting, plastic, elastomer-based and silicon-based materials and metal (such as scraper blades, feeding needle, 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 replacement with original spare parts. The manufacturer is available for consultation and for any specific requests made by the customer.



5.4 HOW TO USE CLEANING/SANITIZING SOLUTION

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

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 DAILY CLEANING

Refer to the opening procedures (par. 3.8) and closing procedures (par. 3.9).



5.6 SCHEDULED CLEANING

The machine is provided with an automatic system which calls for washing of the parts in contact with the product for example every 14 days.
This system, called “WASH”, inhibits the dispensing function at the end of the 14th day.
Whenever product is dispensed or beater motor is activated, the display will show the number of days left to next machine programmed cleaning.



CAUTION
Cleaning and sanitizing must be carried out at the programmed date indicated on the display (for example every 14 days), as a habit and with utmost care, in order to guarantee quality of production in the observance of healthy rules.

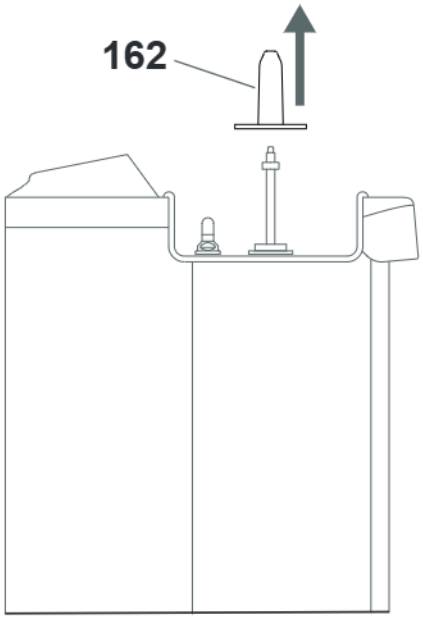


5.7 ICE CREAM SYSTEM EMPTYING

1. Place an empty pail under the dispensing spigot.
2. Press the STOP button.
3. Pull the dispensing lever and drain all ice cream from the cylinder.
4. Select CLEANING function.
5. When the product coming out becomes liquid, push STOP button and leave the dispensing lever open.
6. Remove hopper cover. Remove the hopper beater and the feeding needle, and leave them inside the hopper.
7. Wait until the liquid mix flows out completely and then set the dispensing levers back to closing position. Fill the hopper with 5 liters clean water. Clean hopper walls and level sensor using the supplied brushes.
8. Place an empty pail under spigot door, lower dispensing lever and let water flow out.
9. Rinse with hot water until clean water flows out.
10. Select cleaning function and let the machine run about 10 seconds.
11. Press STOP button and drain all water out of machine.

5.8 HOPPER BEATER REMOVAL

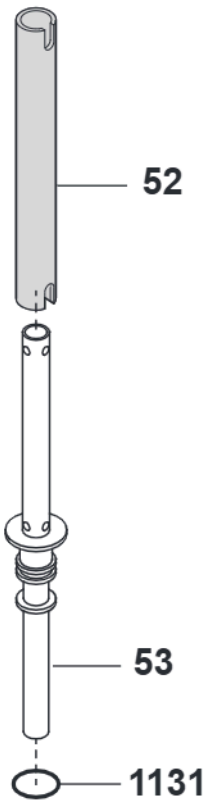
- Remove the hopper beater from the inside of the hopper.



5.9 GRAVITY-FED MACHINES - FEEDING NEEDLE REMOVAL

To disassemble the feeding needle do the following:

1. remove the feeding needle slider (pos. 52)
2. take the needle out of the hopper (pos. 53)
3. remove the O-Ring from the needle (pos. 1131)

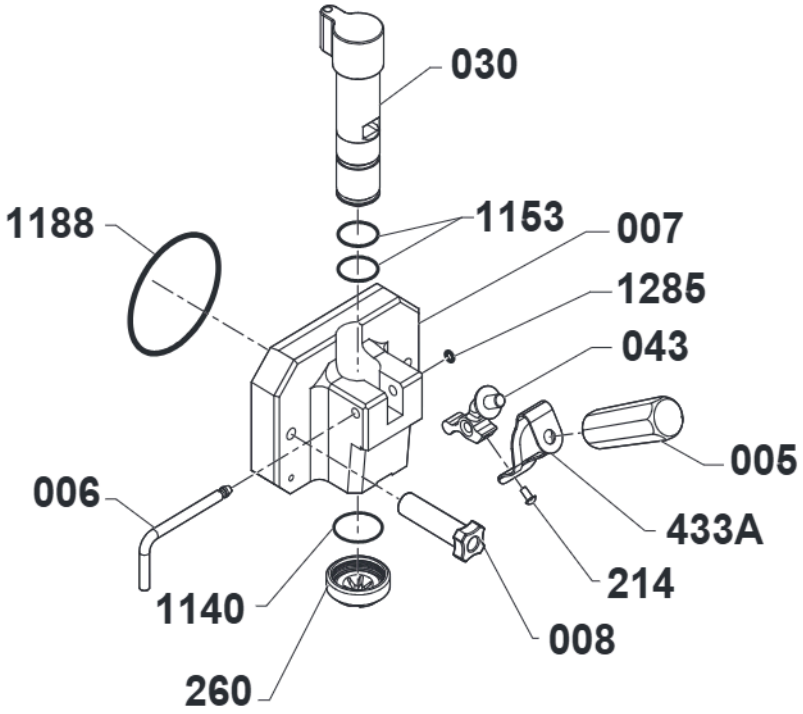


5.10 SPIGOT DOOR REMOVAL

CAUTION

Before disassembling the spigot door, make sure that hopper and cylinder are completely drained.

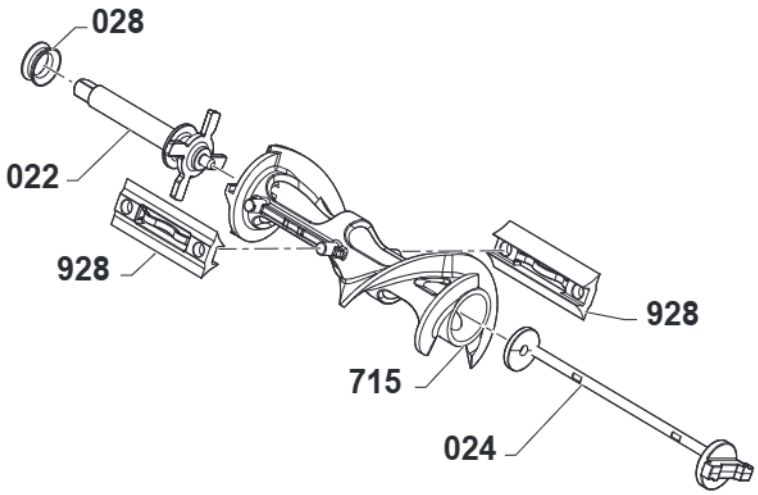
1. Unscrew the dispensing lever to remove the self-closing spring.
2. Screw the dispensing lever back onto the piston control unit.
3. Loosen and remove the two knobs on spigot door (pos. 008). Remove spigot door (007) by pulling it outwards.
4. Work dispensing lever (pos.005) to lift the piston (pos. 030) from its seat.
5. Remove O-ring (pos. 1285) and pin (pos. 006) locking dispensing lever in place (pos. 005).
6. Use dispensing lever to remove piston from its seat (pos. 030).
7. Remove the piston control unit (043) from the dispensing lever (005)
8. Remove O-rings (pos. 1153 and 1188) using the special puller supplied with the machine.
9. Remove the nozzle unit 260 and its O-ring 1140 from the spigot door



5.11 BEATER REMOVAL

Beater

1. Slide beater out of its seat inside cylinder, taking special care not to hit cylinder walls.
2. Remove seal (pos. 028) by letting it slide along shaft.
3. Remove the shaft (022)
4. Slide the idler (pos.024) out of the beater body (pos. 715).
5. Remove the scraper blades (pos. 928) from the beater body.



WARNING

Like all moving parts, the complete beater is also subject to wear.
For this reason, we recommend checking the amount of wear of parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation.
In particular, make sure that the wear condition of the bushing on the beater idler is no more than 2 mm, as indicated by the marking on the bushing itself.
If there is more than 2 mm wear, it is necessary to replace the idler.

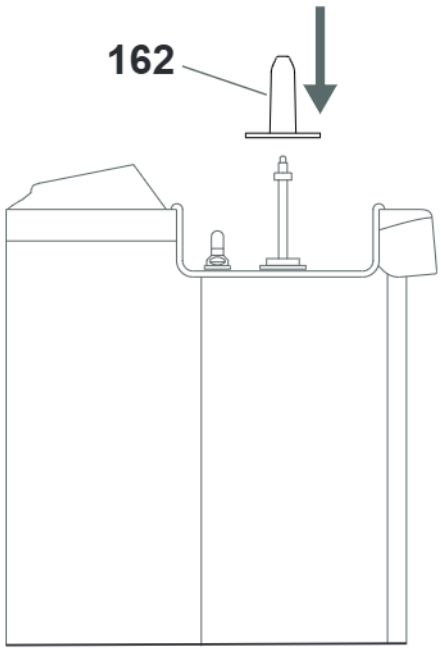
5.12 WASHING AND SANITIZING THE COMPONENTS

1. Remove larger residues by hand.
2. Remove finer residues with a jet of water
3. Prepare a water and cleaning/sanitizing solution following the instructions shown on the label of the product being utilized, soak the parts to clean in the cleaning/sanitizing solution.
4. Use the supplied brushes to forcefully brush all the components and relevant holes.
5. Let the cleaning/sanitizing solution react for the time indicated on the label of the product being utilized.
6. Rinse the parts with care, using plenty of clean drinking water.
7. Place the components on a clean tray to air-dry.
8. Make sure that machine is in STOP mode.
9. Soak a brush in the cleaning/sanitizing solution and clean the housing hole of the feeding needle.
10. Spray the whole cylinder internal surface and hopper walls with the cleaning/sanitizing solution.
11. Soak a brush in the cleaning/sanitizing solution and clean the cylinders and the hoppers.

Repeat steps 9, 10 and 11 several times.

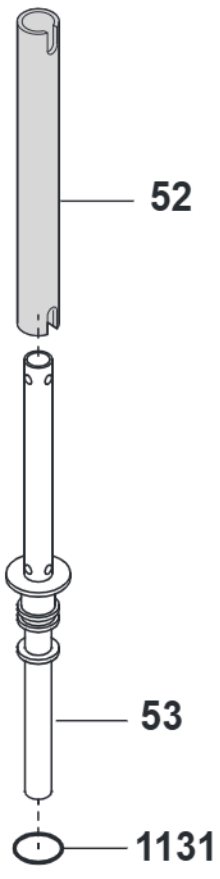
5.13 HOPPER BEATER REFITTING

Refit the hopper beater (pos. 162) in its seat.



5.14 GRAVITY-FED MACHINES - FEEDING NEEDLE REFITTING

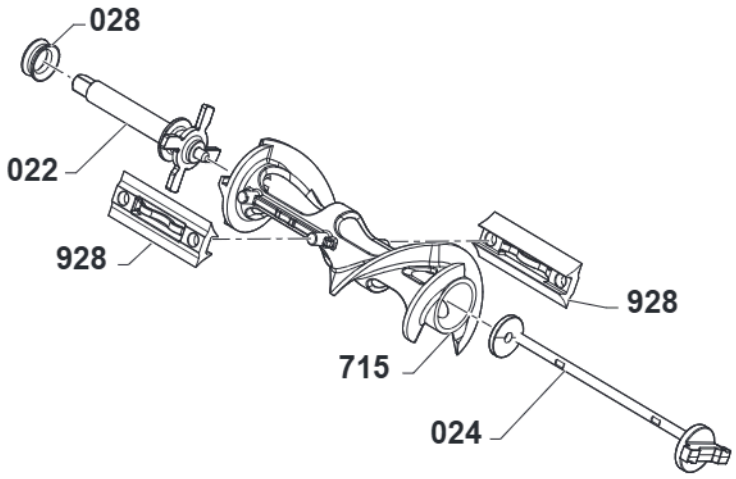
1. Lubricate the O-ring (pos. 1131)
2. Reassemble the feeding needle
3. Place the feeding needle at the bottom of the hopper without fitting it.



5.15 REFITTING THE BEATER

Beater

1. Lubricate seal (pos. 028) and insert it inside beater shaft (022).
2. Fit the scraper blades (pos. 928) in the beater body (715)
3. Fit the beater body (715) in the beater shaft (022).
4. Insert the idler (024) inside the beater body (715)
5. Insert the beater assembly into the cylinder. Push it while turning it clockwise until it engages in its rear hub, otherwise the dispensing spigot door cannot be fastened properly, mix can flow out and serious damage may occur.

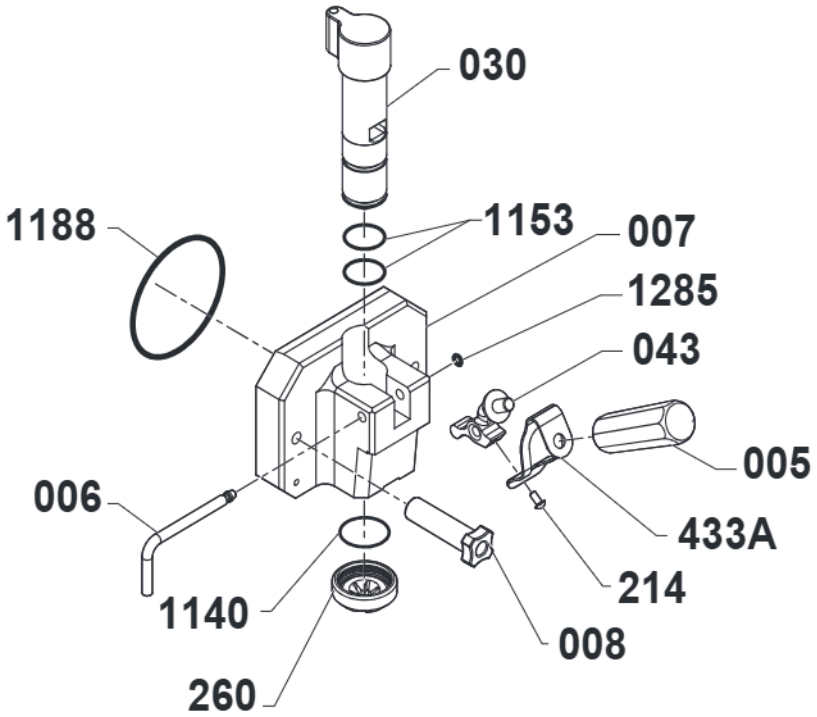


WARNING

Like all moving parts, the complete beater is also subject to wear.
For this reason, we recommend checking the amount of wear of parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation.
In particular, make sure that the wear condition of the bushing on the beater idler is no more than 2 mm, as indicated by the marking on the bushing itself.
If there is more than 2 mm wear, it is necessary to replace the idler.

5.16 REFITTING THE SPIGOT DOOR

1. Lubricate and fit the two piston O-rings (pos. 1153) in their seats.
2. Fit piston (pos. 030) in its seat, taking special care to align the piston square notch with the rectangular notch on the spigot door front side.
3. Fit the self-closing spring (433A) in the piston control unit (043)
4. Partially screw the dispensing lever (pos. 005) onto the piston control unit (043)
5. Position the dispensing lever (005) on the spigot door (pos.007) and insert the shut-off valve pin (pos. 006) through lever hole. Lubricate and fit O-ring (pos. 1285). Fully tighten the dispensing lever (005)
6. Lubricate and insert O-ring in the relevant housing (pos. 1188).
7. Refit the nozzle unit (260) with its O-ring (1140)
8. Refit the spigot door onto the machine and tighten the two knobs (pos.008).



5.17 SANITIZING THE MACHINE

Before use, machine must be sanitized. Proceed as follows:

1. Fill hopper with a cleaning/sanitizing solution prepared according to the instructions present on the label of the product used, up to max. level, and let it flow inside cylinder.
2. Using the cleaning brushes provided, clean the mix level sensor, the hopper walls, the feeding needle and the hopper beater.
3. Select cleaning function and let the machine run about 10 seconds. Press the STOP button. The cylinder is now filled with the cleaning/sanitizing solution.
4. Fill a pail with cleaning/sanitizing solution.
5. Soak a brush in the cleaning/sanitizing solution and clean spigot door. Repeat the operation twice.
6. Wipe the exterior of machine with a clean sanitized towel. Repeat the operation twice.
7. Wait for at least 5 minutes before proceeding with the following operations.
8. Place an empty pail under the spigot door and pull the dispensing lever.
9. Allow all of the sanitizing solution to drain. If the sanitizing solution does not flow out completely, keep the dispensing lever down and select the CLEANING function. Let the machine run for 5 seconds so that the last solution residues flow out, then push STOP.

WARNING

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

10. Proceed to rinsing by filling cylinder with drinking water.
11. Drain all water out of cylinder by lowering dispensing lever.

5.18 MIX LOADING



Follow the procedure described in para. 3.6

6. MAINTENANCE



6.1 SERVICE TYPE



WARNING

Every maintenance operation requiring opening of the machine panels must be carried out with machine stopped and disconnected from the power supply!
It is forbidden to clean and lubricate moving parts!
"Repairs to the wiring, mechanical, air supply or cooling systems, or to parts of same must be carried out by qualified and authorized personnel and if necessary, according to the routine and extraordinary maintenance schedules as envisaged by the customer with reference to specific operation 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 damaged.

Operations necessary for correct machine operation are such that most of routine maintenance operations are integrated into the production cycle.
Below is a list of ordinary maintenance operations:

- **Seal cleaning and replacement**
- If a product leakage is detected from the discharge tube located on the front side of the machine, this indicates that the seal (pos. 028) is faulty.
- 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.
- If the removed seal does not show any defect, it can be used again after having been washed as soon as, at ambient temperature, it has recovered its original shape. To replace seal, proceed as follows.
- 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.



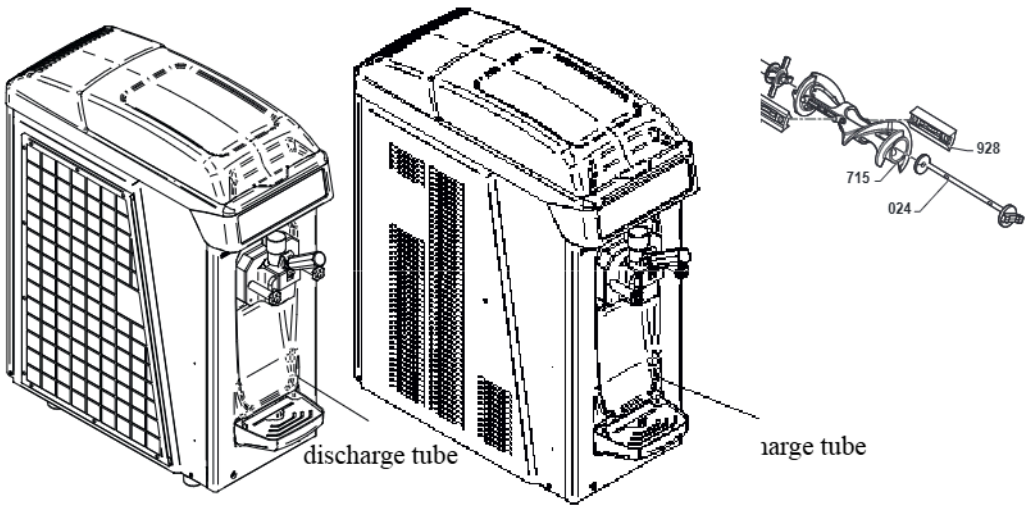
WARNING

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

WARNING

Continuing production after detecting traces of product in the drip tray could further increase leakage from the seal, resulting in machine malfunction possibly affecting production quality.





WARNING

Like all moving parts, the complete beater is also subject to wear.
For this reason, we recommend checking the amount of wear of parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation.
In particular, make sure that the wear condition of the bushing on the beater idler is no more than 2 mm, as indicated by the marking on the bushing itself.
If there is more than 2 mm wear, it is necessary to replace the idler.

- **Cleaning of beater unit and feeding needle, cleaning and sanitization of the machine**
  To be performed according to procedures described in section 5 of this manual.
- **Cleaning of panels**
  To be carried out daily with neutral soap, seeing to it that cleansing solution never reaches beater unit at its inside.

WARNING

Never use abrasive sponges to clean machine and its parts as they might scratch its surfaces.

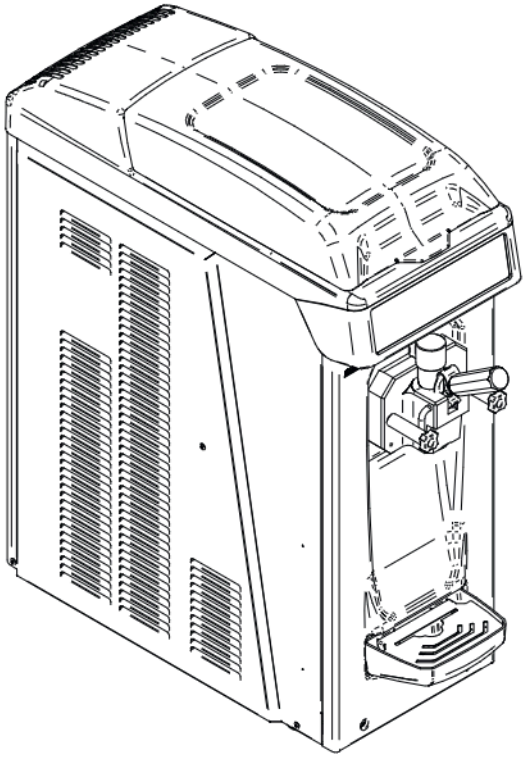
6.2 AIR COOLING

Periodically clean the metal sheets by removing dust, paper, and any other material that may obstruct airflow.
Use a brush with long bristles for cleaning.

CAUTION!

Always proceed with caution and wear appropriate personal protective equipment to prevent injury.

NEVER USE SHARP METAL OBJECTS TO CARRY OUT THIS OPERATION; THE CORRECT OPERATION OF THE REFRIGERATION SYSTEM LARGELY DEPENDS ON HOW CLEAN THE CONDENSER IS.



6.3 AIR FILTER MAINTENANCE

The air filters must be cleaned monthly as follows:

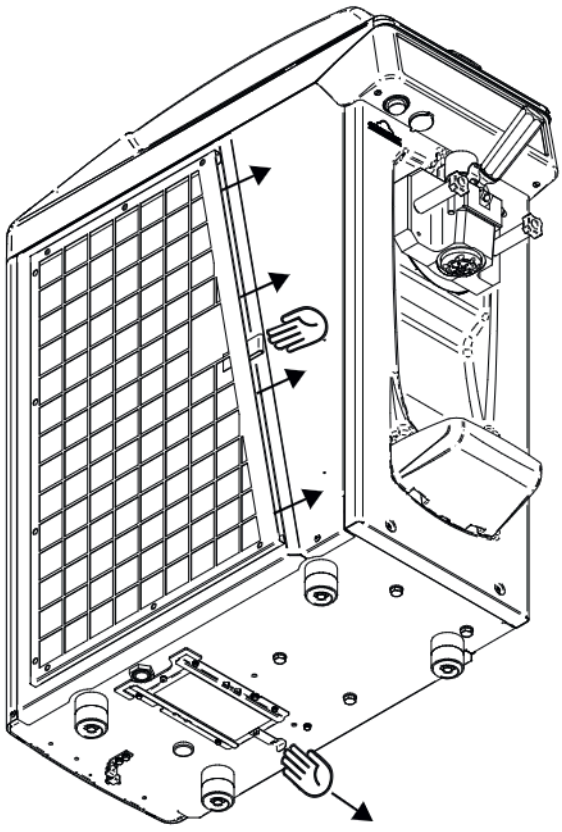
1. Locate and remove the filters from the machine (no.2 filters on both sides of the machine and no.1 filter underneath), refer to the figure.
2. Fill the sink with a cleaning/sanitizing solution and wash the filter mesh
3. Rinse carefully using very hot water.

NOTE: Rinse by flushing water in the opposite direction of the normal airflow.

4. Shake the filters to remove all the water.
5. Use a clean, sanitized cloth to wipe away any remaining residue from the filters.
6. Place the filters back into their seats on the machine.
7. Push them until fully seated in position.
8. Filter cleaning is now complete.

CAUTION!
Always use appropriate personal protective equipment to prevent injury;

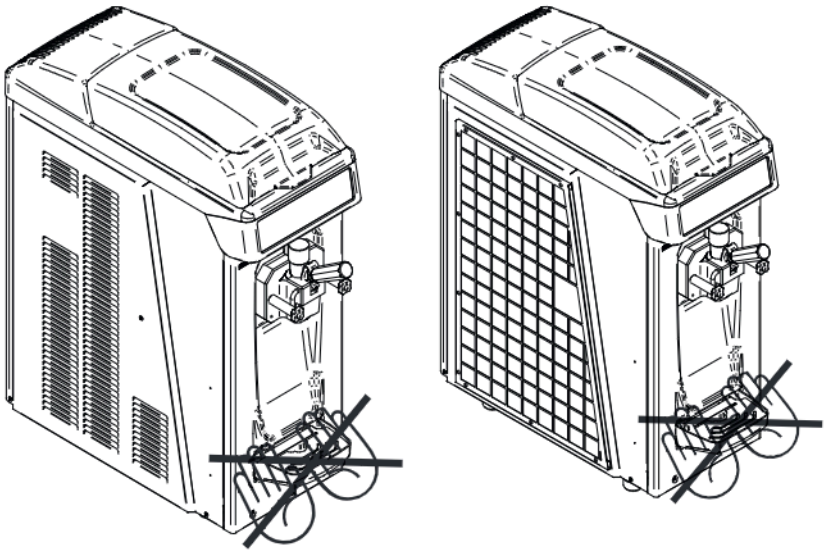
NEVER USE SHARP METAL OBJECTS TO CARRY OUT THIS OPERATION; THE CORRECT OPERATION OF THE REFRIGERATION SYSTEM LARGELY DEPENDS ON HOW CLEAN THE CONDENSER IS.



6.4 HANDLING THE MACHINE

If the machine needs to be moved for any reason, pay attention to the points used for handling it in order to avoid breaking any non-structural machine part.

Caution
Do not lift the machine by pulling on the front panel



6.5 ORDERING SPARE PARTS

If one or several parts are worn or broken, refer to your dealer to order all necessary spare parts.

ATTENTION
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. TROUBLESHOOTING





FAULTS	CAUSES	REMEDIES
The compressor starts and then stops after a few seconds.	1. In case of air-cooled machine: air does not circulate.	1. Check that the machine is positioned at least 3 cm away from any wall or obstacle. 3. If necessary, contact the technician
The machine cannot produce with the required consistency within the set time	Machine gas exhausted	1. Ventilate the environment and contact the qualified technician 2. Disconnect power 3. Contact the qualified engineer
Mix or ice cream coming out above or below piston though it is closed.	1. Piston without O-ring or O-ring is worn-out.	1. Stop the machine and insert or replace it with a new one if worn-out.
Mix leaking from the discharge tube.	1. Seal missing or worn-out.	1. Stop the machine and install it if missing. If worn-out, replace it with a new one.
Dispensing spigot hard to operate.	1. Dry sugar on piston	1. Stop the machine, wash thoroughly and grease piston and O-rings with edible fat.
Ice cream comes out from spigot door.	1. O-rings missing or not properly fit. 2. Knobs not tightened evenly.	1. Stop the machine and inspect it, then take corrective action as needed. 2. Stop machine. loosen and tighten them again.
Low ice cream overrun.	1. Slider not positioned/ adjusted correctly.	1. Change the position of the slider (pos.52).