APPLICARE

TARGA

CARATTERISTICHE

INSTRUCTIONS HANDBOOK

191 K

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 relating to "Good manufacturing practice for materials and articles intended to come into contact with food"*

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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 characterizing **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:

- **Part list**: A list of spare parts which is delivered together with the machine for its maintenance.
- **Wiring diagram**: A diagram of wiring connections is placed in the machine.

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: 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: MOVING PARTS
This warns the personnel involved about the presence of moving parts and the hazards of injuries if the safety norms are not complied with.

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.

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 the machine, one must be aware of the fact that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damage to persons and things.
Persons in charge of plant safety must make sure that:

- any incorrect use or handling is avoided;
- safety devices are not removed or tampered with;
- the machine is regularly serviced;
- only original spare parts are used especially as far as those components with safety functions are concerned (ex.: protection microswitches, thermostats);
- suitable personal protective equipment is worn;
- attention is paid during hot product cycling.

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;
- The appliance is only to be installed in locations where its use and maintenance is restricted to trained personnel.
- only adequately skilled personnel should be assigned to electrical equipment; 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 appliance.

IMPORTANT!
Make sure that the staff does not carry out any operation outside their own sphere of knowledge and responsibility (refer to “Symbology qualification of the staff”).

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

WARNINGS

When installing the machine, insert a differential magnetothermal protection switch on all poles of the line, adequately sized to the absorption power shown on machine data plate and with contact opening of 3 mm at least.

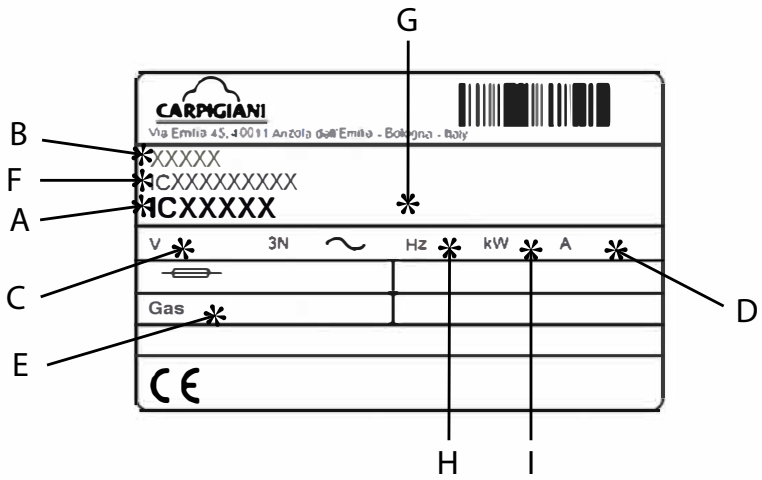
- Never put your hand into the machine, alike during production and cleaning operations. Before carrying out any maintenance operation, make sure that the machine is in “**STOP**” position and main switch has been cut out.
- It is forbidden to wash the machine by means of a bolt of water under pressure.
- It is forbidden to remove panels in order to reach the machine inside before having disconnected the machine.
- The place of installation must not be exposed to water sprays, high moisture, heat or steam sources.
- Do not store explosive substances or spray bottles inside the machine, nor bottles for aerosol with flammable propellants.
- **CARPIGIANI** is not responsible for any accident that might happen during operation, cleaning and/or servicing of its units, 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= Voltage
D= Main-switch amperometric value
E= Gas type and weight
F= Machine code
G=Condensation
H=Frequency
I= Power input

1.1.2 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.

1.1.3 Information to the user

- The manufacturer of the machine is at user's disposal for any explanation and information about the machine operation.
- In case of need, please call the local distributor, or the manufacturer if no distributor is available.
- Manufacturer's service department is available for any information about operation, and requests of spare parts and service.

1.2 INFORMATION ABOUT THE MACHINE

1.2.1 General data

Counter-top machine to immediately produce and distribute product available with gravity feeder.
CARPIGIANI recommends to always use high quality mix for production in order to satisfy your customers, even the most hard-to-please ones. 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 product 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

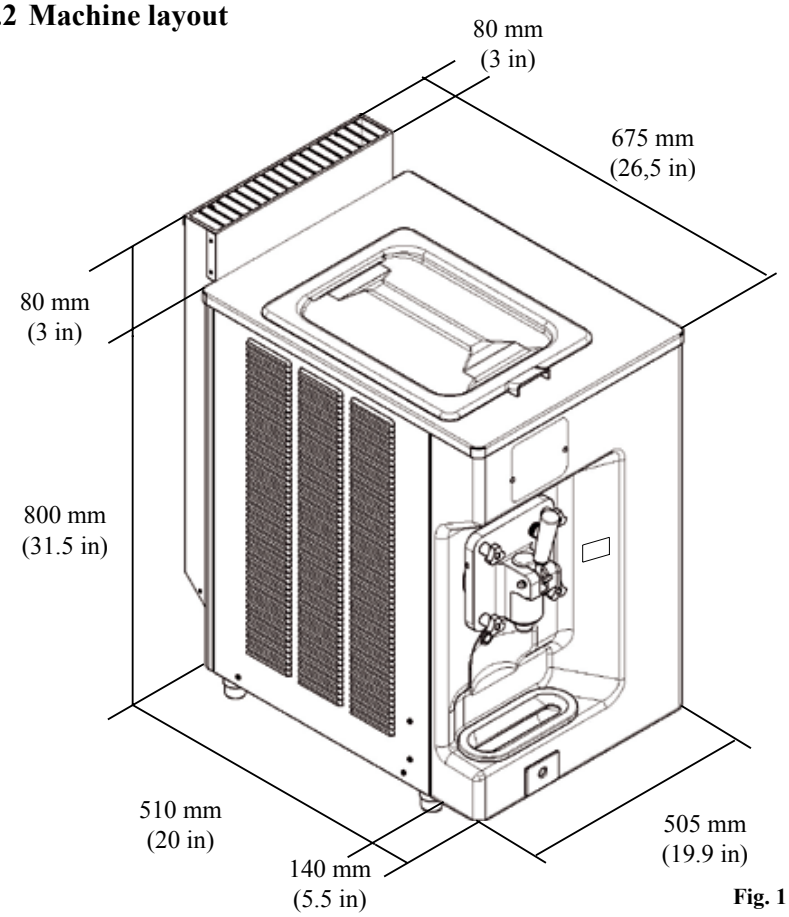


Fig. 1

1.2.3 Technical features

MODEL	Hourly production * 265 g - 9.2 ozl portions	Hopper capacity liters/qts	Flavors	Electrical supply			Installed power	Net weight Kg/lbs
				Volt	Phase	Cycle	kW/Hp	
191 K G	115	18/18.9	1	400 208-230	3	50 / 60	1,5/2	143/315
191 K P	115	12/12,7	1	400 208-230	3	50 / 60	1,6/2,1	145/320

* Hour output may vary depending on mix used
Performances featured by a room temperature of 25°C (77°F) and a water temperature of 20°C (68°F).

1.2.4 Machine sets location

Caption:
1 Control panel
2 Freezing cylinder front lid
3 Drip tray shelf
4 Mix tank cover
5 Safety marking
6 Mixer (only for 191 K M)

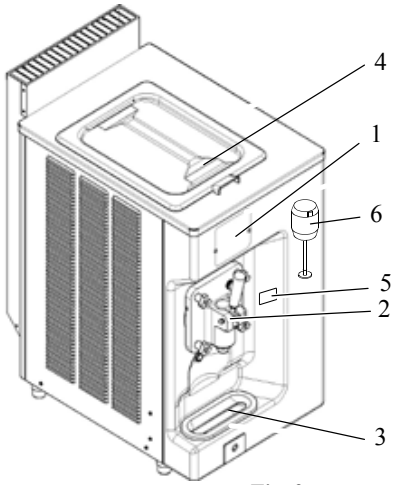


Fig. 2

1.3 INTENDED USE

The machines must be used solely for the purpose described in chapter 1.2.1, "General information" within the functional limits described below.

Voltage:	±10%
Min air temperature °C:	10°C (50°F)
Max air temperature °C:	43°C (109°F)
Min water temperature:	10°C (50°F)
Max water temperature:	30°C (86°F)
Min. water pressure:	0,1 MPa (1 bar)
Max water pressure:	0,5 MPa (5 bar)
Max relative humidity:	85%

The machine has been designed for its use in places which are not subject to explosion-proof standards; its use is thus bound to conforming places and normal atmospher.

CAUTION
Keep fingers and/or tools out of discharge opening.

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

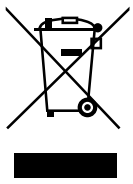
The machine must be stored in a dry and dump-free place.
Before storing the machine, wrap it in a cloth in order to protect it against dust and else.

1.6 DISPOSAL OF PACKING STUFFS

When opening the packing crate, divide 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 of electrical and electronic equipment waste. 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 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.

ATTENTION
Machines with aircooled condenser must be installed no closer than 5 cm (2 in) to any wall in order to allow free air circulation around the condenser.

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

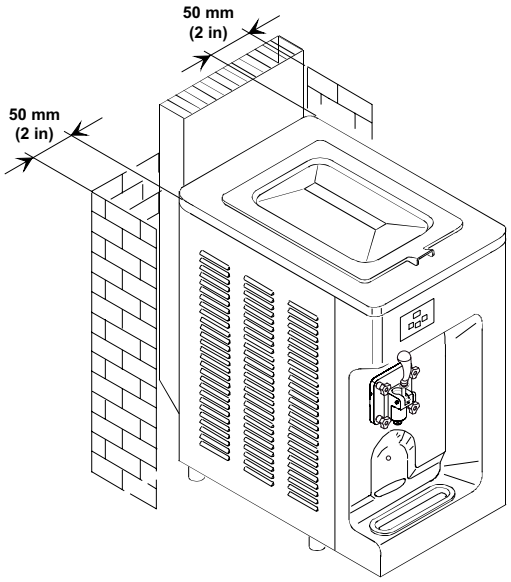


Fig. 3

2.2 MACHINE WITH AIRCOOLED CONDENSER

Machines with aircooled condenser must be installed no closer than 5 cm (2 in) to any wall in order to allow free air circulation around the condenser.

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

2.3 MACHINES WITH WATERCOOLED CONDENSER

To make the machine run, a watercooled machine must be connected to running water supply, or to a cooling tower. Water must have a pressure of 1 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.

2.3.1 Water valve adjustment

WARNING
If water valve must be retarded, 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 (65°F).

ATTENTION:
Do not leave the machine in a room with temperature below 0°C (32°F) without first draining water from the condenser.

2.4 ELECTRIC CONNECTION

Before connecting the machine to the mains, check that machine voltage indicated in data plate corresponds with the mains (see sec. 1.1.1 point C).
Insert a differential magnetothermal protection switch adequately sized to absorption capacity required (see sec. 1.1.1 point D) and with contact opening of 3 mm at least.

WARNING
Yellow/green ground wire must be connected to a good ground outlet.

IMPORTANT
If the machine is not permanently connected to the mains power, but has a power cord with EEC plug, please make sure that a suitable EEC power socket is available and that this has been correctly installed.
The socket must be earthed.
The use of adaptors and extension leads is not permitted.

Rotation direction by three-phased machines
The beater rotates anticlockwise. By gravity-feed machines, it is necessary to remove the plate and check the direction of rotation, whereas by machines with pump you shall check whether the mix comes out from delivery hole when removing the compression pipe.

Reversing rotation direction
To reverse the direction rotation, when wrong, it is necessary to interchange two of the three leads coming from the circuit breaker.

2.4.1 Replacement of power supply cord

If the machine main cable is damaged, it must be replaced through a cable with similar features.
Replacement will have to be carried out by skilled technicians only.

2.5 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.

2.6 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. DIRECTION FOR USE

3.1 MACHINE CONFIGURATION

The machine has a motor to drive the beater, and a cooling system with water or air condenser. **Product is prepared by filling the tank with cold mix (4°C / 39°F)) and starting the automatic production cycle, until the ideal product consistency set by CARPIGIANI is reached.** Thanks to the feeding needle, the mix enters the freezing cylinder already mixed with air; product is produced only when it needs to be served. The spigot head allows a single portion of product to be distributed. At the same time, the same amount of mix moves from the hopper into the freezing cylinder.

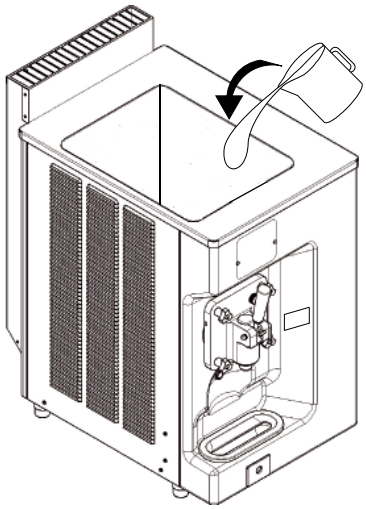


Fig. 5

3.2 ELECTRONIC CONTROL KEYBOARD AND BUTTON FUNCTIONS

Details of the panel are shown in the picture below.

Fig. 6

STOP key
In this function the machine is still and relative LED (backlit) is ON.
From the Stop position any other function can be selected.
In order to change a function, IT IS ALWAYS NECESSARY to first return to Stop position.
On the display:

10:33:21 Fri

If the machine is left in Stop mode with the level covered (low in case off 2 levels), the writing “Why in STOP ??” will be displayed after 30" to warn the user to set the machine to Production, Pasteurization or Storage.

PRODUCTION key

Access to Production is only possible if the level is covered (low in case of 2 levels).
The machine is equipped with a "warm-up" device which starts when user selects Production.
The start-up time is usually set to 30'.
Cup dispensing is inhibited until the machine is starting up.
It is always possible to set to STOP by pressing the relevant key, even during the start-up phase.
During the start-up, the Production key LED flashes and the display shows the following for 2”:

Start Up
HOT=050 EPC=135

after the set-up, the display shows:

Ready!
T=+004°C W-14

By pressing Production again, you move to the different “windows” or screens described below:

Hopper ↓+014°C
Cylinder ↓ +013°C

In this window, the first line (on top) displays the hopper temperature:
↓ = on when hopper is cooled.
The second line displays the Cylinder temperature: ↓ = on when cylinder is cooled

Set=100 Hot=085

In this window, the first line (top) displays the following: Set consistency and current consistency.

Cups Today
12345

This window shows the Cups of the day (starting from 0:00 to 23.59):

Total Cups
0923456780

This window shows the total no. of Cups:

TEV+010 TGV-022
TEC+013 TE1-012

This window shows the various sensors:

HOT MC 003 Set HOT MC 105

This window shows MC load (for preset machines ONLY) and relevant set.

By pressing Production again, machine returns to its starting display.

CLEANING key

The cleaning key allows you to access various functions.
For pump-fed machines all the following functions will be available, whereas for gravity-fed machines only functions in points 3) and 4) are available:
In this function beating will run for 3 minutes and after that the machine will automatically return to Stop, so as to avoid a severe wear of the cylinders.

1) When entering Cleaning, the display will be as follows:

HOT=058 TEC+014 Beater + Pump ON

Beating and pump are activated for 30", then the machine switches automatically to Stop.
The first line (top) of the display shows: HOT and TEC
The second line indicates active outputs.
Press Cleaning to go to the next screen

2) Activation of pump only for 30":

HOT=058 TEC+014 Pump ON

Press Cleaning again:

3) Beating activation for 3 minutes:

HOT=058 TEC+014 Beater ON

Press Cleaning again:

4) Thermal Cleaning:

HOT=058 TEC+014 Beater + Heating

Beating and heating are activated until reaching the programmed Set.

Press Cleaning again to return to the initial display.

BLOCK key

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 will be in the same function where it was.
To unlock the keypad, press again for 3" the Cleaning key.

PASTEURIZATION Key

This process cannot be started if the mix in the tank is under the level (medium if 2 levels).
Pasteurization is performed automatically every day at 2:00 (if the time is set in step Start Pasto Time).
The machine is normally in Production, at the appointed Pasteurization time it will automatically shift from Production to Pasteurization to carry out the cycle.

If the step Start Past.Time is set to “no” automatic Pasteurization is disabled and it can be performed only manually.

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

To start Manual Pasteurization, press and hold Pasteurization for 5".

Warning: after Pasteurization has been running for 5", the cycle must be completed. If the Pasteurization is not successfully completed, your machine will NOT enter Production, till the execution of a full Pasteurization cycle.

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

The product, both in the hopper and in the cylinder, is heated to 65° C where it remains for 30 minutes, and then cooled until the storage temperature.
When the procedure is finished the display shows “- Pasto End -” along with the day and time of completion, thus confirming that Pasteurization has been carried out successfully.

Up to the end of Pasteurization program, access to Production is not allowed (till display of “Pasto End”).

WARNING
Do not dispense the product or disassemble the machine during the heat treatment since the product is hot and under pressure.

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

When entering in Storage mode, you will have following display:

Vasca ↓+015°C
Cylinder ↓ +012°C

In this window the first line (on top) displays the Hopper temperature, whilst the second line displays the Cylinder temperature.
↓: The arrow indicates what side is cooled.

Press Storage again to go to the menu described below:

TEV+066 TGV+070
TEC+067 TE1+068

In this window all sensor temperatures are displayed.

MIX LEVEL INDICATOR
When there is no mix (level uncovered or low for machines with 2 levels) the first line of the display shows "Mix Out!" steady-on and the hopper level LED on the keyboard comes on.
The second line displays the cups that can be drawn (Last Cups).

Mix Out !
Last 5 Cones

Note:
With the message Mix Esaurita ! - Mix Out ! on, the access to the next Production screens is not allowed.

3.3 SPIGOT HANDLE

In order to dispense the product, place a cup or a cone under the spout and slowly pull down the dispensing handle (pos. 5). When the portion has reached the desired size, close the dispensing handle

WARNING
It is important to keep the sensor (pos. 920) clean.

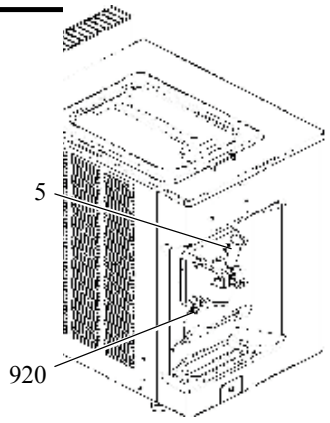


Abb. 7

3.4 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 section 5 of this manual.

3.5 MACHINE START-UP

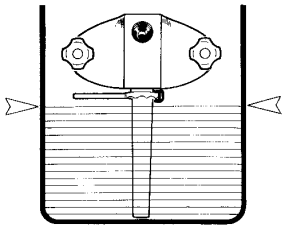
After installing the machine according to the instructions given in the chapter **INSTALLATION**, and after carefully cleaning and sanitizing the machine, proceed as follows:

3.5.1 Pump-fed machines

Remove the pressure pipe from hopper bottom and soak it in the sanitizing solution.

Prime Hopper:

- Take one bag of mix from the refrigerator.
  NB.: Mix to be poured at a temperature of 4-5°C.
- With the dispensing lever open, pour mix into the hopper allowing it to drain into the cylinder. Mix inside hopper shall never reach the pump (see the picture); furthermore mix shall be added whenever level is 2 cm from hopper bottom.
- When a small amount of full strength mix (not mix and sanitizing solution) is flowing from the spigot door, close the spigot door lever.



Connecting the pressure pipe:

- 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 pressure pipe from the sanitizing solution, and insert it into the bottom of the hopper.
- Turn pressure pipe clockwise towards pump, and connect it to pump; turn connecting pipe (pos. 207) to lock it in place. Mix inside hopper shall never reach the pump (see the picture); furthermore mix shall be added whenever level is 2 cm from hopper bottom.
- Place hopper cover back.
- Select production function.

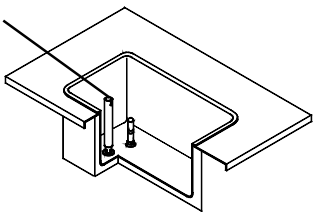
WARNING
Once the mix is poured in the hopper, the suitable lid must be used so as to keep it at the correct temperature and to minimize the risk of contamination

3.5.2 Gravity-fed machines

Prime Hopper:

- Take 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. Mix level in the hopper must never exceed feeding needle height (see picture) and more mix must be added when level goes below about 2 cm from hopper bottom.
- When a small amount of full strength mix (not sanitizing) is flowing from the spigot door, move the lever to its original position and close the spigot door lever.

Feeding needle



Connect 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 sanitizing solution and insert it in the hopper bottom. Mix level in the hopper must never exceed feeding needle height (see picture) and more mix must be added when level goes below about 2 cm from hopper bottom.
- Place hopper cover back
- Select production function

3.6 PRODUCTION

Dispense soft ice cream without exceeding maximum production rate, as shown in the par. 1.2.3; 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 at STORAGE by pressing the STOP key and the STORAGE key. 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 at PRODUCTION and within a few minutes the machine will be ready for service.
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.

3.6.1 Mixer activation (for 191 K M versions)

After dispensing the shake and pouring the syrup on top, you can use the mixer located on machine front side to mix the product. Press the switch on the mixer to activate it.

3.7 CLOSE PROCEDURE

Make sure your hands are clean and sanitized before performing the following procedures.

Mix filling and prepare the machine for the overnight heat treatment cycle

1. Open the hopper cover to verify the mix level. If necessary, fill the hopper with sufficient mix. The low-mix light must not be on at the close of the day because the automatic pasteurization cycle will not start if the low-mix light is on.

NOTE:
Do not fill mix above the feeding needle height.

2. Keep the machine in PROD mode (green light of production button is ON).

Disassembling and cleaning the components

3. Remove the hopper cover. Wash, rinse, and sanitize it at the sink.

4. Using a clean, sanitized towel, carefully wipe the outside area of the hopper. Make sure that no debris falls into the hopper.

5. Put the sanitized hopper cover back onto the machine.

6. Remove the drip drawer from the front of the machine. Wash, rinse, and sanitize it at the sink. Then return it to its position.

Sanitize the door area

7. Fill an empty pail with sanitizing solution. Dip the brush in the pail and thoroughly clean the dispensing spout area, the nozzle, the handle, and the piston area.

8. With sanitizing solution, spray the spigot area, the handle, the spigot spout, and inside the nozzle.

WARNING
DO NOT spray sanitizer directly on the photocell.

9. After sanitizing the door area, remove the drip tray to wash, rinse, and sanitize it. Return the drip tray to its position.

10. Using a clean, sanitized towel, wipe the door area, the front panel, and any other areas that are either wet or splashed with food.

3.8 OPEN PROCEDURE

Make sure your hands are clean and sanitized before performing the following procedures.

Start the machine

1. Check that the heat-treatment cycle has successfully been completed. If there is no malfunction the message “Ready” (and how many days left to clean) will be displayed. This indicates that the heat-treatment process was completed correctly without interruptions and the machine is ready for production.

WARNING
If the heat-treatment cycle was not completed successfully the machine will be locked down and will not start production.
THE MIX HAS NOT BEEN CORRECTLY PASTEURIZED.
Check the reason by reading the alarm messages on the display.
Call for service if necessary.
Press RESET to cancel the alarm message. Press STOP then START to run a manual heat-treatment cycle. If the heat-treatment cycle is successfully completed the lockdown resets automatically and the machine is ready to start production.
No product can be dispensed during the heat cycle.

Sanitize the door area

2. Fill an empty pail with sanitizing solution. Dip the brush in the pail and thoroughly clean the dispensing spout area, the nozzle, the handle, and the piston area.

3. With sanitizing solution, spray the spigot area, the handle, the spigot spout, and inside the nozzle.

WARNING
DO NOT spray sanitizer directly on the photocell.

4. Remove the drip tray, the drip drawer, and the hopper cover to wash, rinse, and sanitize them. Reassemble the parts when sanitized.

5. Using a clean, sanitized towel, wipe the door area, the front panel, and any other areas that are either wet or splashed with food.

3.9 USER PROGRAMMING

To access User Programming, press STOP and STORAGE keys at the same time until the message "MANAGER MENU" is displayed, then release.
Press Stop to pass to the next step, INCREASE or DECREASE to change the value. See programming table:

Step	Display ITA	Display ENG	Min	Max	Default
U01	Ore	Hours	00	23	
U02	Minutes	Minutes	00	59	
U03	Day of the week	Day of Week	SUN	SAT	
U04	Day of the month	Day of Month	01	31	
U05	Month	Month	01	12	
U06	Year	Year	2000	2099	
U07	Linguaggio	Language	Ita	Deu	Eng
U08	Ora avvio Prod.	Start Prod. Time	00	23+no+auto	06
U09	Ora Avvio Pasto	Start Pasto Time	00	23 + NO	01
U10	Abilita Beep Liv	Lev. Beep Enable	NO	YES	YES
U13	HOT 1	HOT 1	000	120	70
U14	Extra Agitaz.Vas	Extra Hop.Agit.	No	Yes	Yes
U15	Visualiz. 12 ore	12 Hour Clock	No	Yes	No

To quit programming, avoid pressing any key for about 30 seconds, or press PRODUCTION or CLEANING.

U01-U06
Date and time setting

U07 Language
Display language setting.

U08 Start Prod.Time
Set the time at which Distribution will automatically start. If set to no, automatic Dispensing is disabled.

U09 Start Pasto Time
Automatic Pasteurization start time setting.
When set at no, no automatic Pasteurization process will start.

U10 Lev. Beep Enable
If set to Yes, the machine will beep intermittently when the mix is below the medium level, except in Stop mode, when it will not beep even if the function is enabled.

U13 HOT 1
Increasing this number, shake hardness will increase.

U14 Extra Hop.Agit.
If set to YES, it enables hopper rotor periodical activation in Production and Storage functions. If it is set to NO, the cyclic beating is disabled.

U15 12 hours Clock
Yes = enables display of 12-hour time format
No = displays 24-hour time format.

4. SAFETY DEVICES

4.1 ALARMS

The machine issues possible alarm messages on display and makes the writing blink.
In case of alarm which has reset, the alarm message will be on display in a fixed way (it will not blink).
To reset the writing, press Storage/Reset key.
The machine can be used in shake production even if an alarm is active; however if it is a critical alarm, the machine will not allow you to select the shake production program; should this be the case, press STOP and do not use the machine till its repair.
Here below is the alarm list:

ALARM	DESCRIPTION
Add Mix	For machine with 2 levels, the message is displayed when the mix goes below medium level in all functions except Cleaning. To reset the message definitively, cover the medium level.
Al.Heat.Exchange (DELTA TGV-TEV)	In Pasteurization Heating step, if the TGV temperature becomes > than TEV by the value set, "Al.Heat Exchange." is displayed and the machine stays in Heating mode disabling EVRV. Check the driving belt or whether the rotor is in its seat.
Al. Cylind.Probe (TEC)	Cylinder probe faulty. This is a critical alarm, so that machine sets at Stop, from Storage and Pasteurization modes, whereas in Production mode it remains in the same function because consistency is controlled.
Al. Evap. probe (TE1)	Cylinder evaporator probe alarm. This alarm does not cause machine to stop (it remains in the running function). In pasteurization heating mode the alarm is eliminated.
Al. IceHop.Probe (TGV)	Tank evaporator sensor faulty. This alarm does not cause machine to stop (it remains in the running function). The alarm will be displayed and saved in the events.
Al. Hopper Probe (TEV)	Hopper probe faulty. This is a critical alarm, so that machine sets at Stop, either from Production or from Storage and Pasteurization modes.
Alarm HOT MC	Active on single-phase machines ONLY If the compressor motor absorption control triggers for a number of times corresponding to the number set, the machine sets to Stop and it displays "Alarm HOT MC". .
No more cups!	When the low level is uncovered and in Production mode, a number of cups is dispensed that is equal to or higher than the value set in step Last Cups, as well as displaying Mix Out, the machine will disable outputs and the second line displays "No more cups!"
Ice Cylinder. (ICE)	Anti-icing cylinder read by sensor TE1. When in Production mode, if the value of TE1 becomes lower than the value set in step Ice Cylinder, the machine switches to reached HOT mode and stores the Ice Cylinder alarm in the event log. This alarm might be caused by an insufficient feeding to the cylinder. Check pump efficiency. When the temperature of the cylinder raises back, the alarm resets. If the alarm occurs in Stop, it is necessary to check/replace the sensor TE1 because temperature full scale is not properly read by the CPU.
Start Pasteur.	Event stored at the beginning of Pasteurization cycle.
Invert Phases	It is necessary to exchange the 2 phases on three-phase line in order to get the right beater rotation direction. The alarm resets by switching power off and on again (after exchanging 2 phases). Check lasts 1 minute after turning machine on.

Wash today! (Wash)	In Production mode, “Wash today!” is displayed, this means that the machine must be cleaned. The alarm can also be generated with the machine left in Stop mode with the low level covered for 24 hours. See sec. 5
Lev. Mix Covered	When the "No more cups!" alarm is displayed, it is necessary to top up the mix level in the hopper. Once it is topped up and the level is covered, the Lev.Mix Covered event is stored.
Power On	Power return after a blackout. Check blackout table in Pasteurization and Production. Event stored in all functions.
Mix Out	The display indicates Mix Out when the mix is below the low level. Also an intermittent acoustic signal is emitted. When the low level is uncovered and in Production mode, a number of cups is dispensed that is equal to or higher than the value set in step Last Cups, as well as displaying Mix Out, the machine will disable the outputs.
Do Not Serve !	In Production mode, each time the consistency drops below the value programmed in step Hot Block, the message “Do Not Serve !” is displayed. If, in such a case, you try distribution, all units will stop (MA and MC) till the photocell is no longer busy. As soon as it is set free, both MA and MC are re-activated in order to bring shake to its proper consistency.
Pasto needed!	When the machine is set to Stop mode with the low level covered for more than 60’, TEV temperature is checked and if it is 15°C or more, Pasteurization is needed. So pressing the Production key will make machine set at Pasteurization. If however, TEV <15°C then all functions are enabled without time limits.
Why in STOP ??	If the machine is left in Stop with the level covered (low if 2 levels), the message “Why in STOP ??” will be displayed flashing after 30” and an intermittent acoustic signal will be emitted. All this to warn the user to set the machine at Production, Pasteurization or Storage. Above mentioned message will be removed if entering in Production, having low mix level, or pressing Reset (Stor.) key. The same message will be back on the display if you first enter in Production, Storage or Pasteurization.
Spigot Opened (IMS)	Spigot Opened Magnetic Safety Switch.
Spigot Closed (IMS)	Magnetic Safety Switch Closed. It is saved only in the events
Pressure Switch (PR)	Pressure Switch tripped. Machine sets at Stop: - after the number of interventions programmed at this step occurring within 1 hour - if pressure switch contact is opened 2 minutes running If the machine was in Pasteurization mode, it is necessary to carry out the Pasteurization program again. Check cooling water flow.
Reset Hours	Reset hour counter and cup counter.
High Cylind.Temp	In Production, Storage or Pasteurization mode, if TEC reaches 85°C the machine sets to Stop with “High Cylind.Temp” alarm. The keys are disabled and only Cleaning can be accessed. When TEC is lower than 80°C, it is possible to reset the message on display by pressing Storage key and access to the other functions is enabled again.

High Hopper Temp.	In Production, Storage or Pasteurization mode, if TEV reaches 85°C the machine sets to Stop with “High Hopper Temp” alarm. The keys are disabled and only Cleaning can be accessed. When TEV is lower than 80°C, it is possible to reset the message on display by pressing Storage key and access to the other functions is enabled again.
Safety Therm.Cyl (TESC)	Cylinder Safety Thermostat tripped. Machine sets at Stop.
Safety Therm.Hop (TESV)	Hopper Safety Thermostat tripped. Machine sets at Stop.
Overload Beater (RTA)	Overload beater motor (bimetallic) tripped. Machine sets at Stop.
Overload Compres (RTC)	Overload compressor motor. Machine sets at Stop.
Timeout Prd.	In Production, starting time of the beater motor is checked. If the beater motor is ON for 6 minutes (Timeout Prd.) and Hot has not been reached, machine sets at a “reached-HOT state” with alarm “Timeout Prd.” in the events. Check mix charge in cylinder, pump in the hopper and freezing plant.
Cooling Timeout	In Production, when any mix is topped up and there is a change in level (low if two levels) from uncovered to covered, a 2h timer is enabled. If the TEV does not drop below 6°C within 2 hours, the machine moves to Stop mode with the Cooling Timeout alarm. After 10", the alarm can be reset by pressing the reset button. This does not force Pasto.
W -n days (Wash)	In Production mode, “TEV +19°C W –n” is displayed, meaning that there are still "n" days remaining until machine cleaning. A forced washing may be required if the machine is left in Stop mode for 24 hours with mix above the minimum level. See sec. 5.
Replace Gears	Displayed for 5" at each supply when the number of dispensed cones is higher than the set number.

4.1.1 Black-out

In the event of blackout, if the machine was in Cleaning, on power return, it sets to STOP.

While if it was in Heating mode of Pasteurization or in Pause mode of Pasteurization program, on power return, the machine remains in the function it was before power failure (Power On on display).

If the machine was in:
Production or Cooling mode of Pasteurization, on power return, the machine checks the temperature TEV and how long the power failure lasted; if a blackout lasts more than what indicated in the table below, the machine will repeat the pasteurization completely and alarm “Mancata Tensione” or “Power On” will be stored in the “events list“.
Otherwise, if blackout time is shorter than the one indicated in the table below, the machine will return to the function where it was before blackout.

Temperature TEV	Time
65°C - 50°C (149-122°F)	30 minutes
49°C - 15°C (120-59°F)	10 minutes
14°C - 10°C (57-50°F)	20 minutes
9°C - 4°C (48-39°F)	2 hours

Startup after a Blackout
In the event of a blackout in Production (also during startup), on power return, the machine will set at Production after skipping the startup step. If a blackout occurs in any other function, on power return, the machine will set back at the function where it was before the blackout and by next access to Production, machine startup will be executed in any case.

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

5.1 GENERAL INFORMATION

Cleaning and sanitization must be carried out at the end of every production as a habit and with utmost care in order to guarantee the production quality in the observance of necessary healthy rules. 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 corrode 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.**
- When washing manually, never use powder or abrasive products, abrasive sponges or pointed tools. There is a risk of dulling the surfaces, removing or deteriorating the protective film present on the surface and scoring the surface.
- Never use metal scouring pads or synthetic abrasives and avoid any other means containing ferrous particles that could cause oxidization or compromise the integrity of the surfaces.
- Avoid using detergents containing chlorine and its compounds. The use of detergents such as bleach, ammonia, hydrochloric acid and limescale removers can attack the steel composition, marking and oxidizing it irreparably and causing damage to the parts made of "plastic" materials.
- Do not use dishwashers and their detergent products.

5.3 TIPS

- Use a non-aggressive detergent solution to wash the parts.
- 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.
- To sanitize leave the disassembled parts in sanitized lukewarm water for the time indicated on the sanitizing product label and rinse them before reassembling.
- 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.

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.

WARNING

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 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 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 parts to be cleaned into the solution
- 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

Follow the daily cleaning procedure at closing and opening as described at 3.7 and 3.8 for details.—

5.6 SCHEDULED CLEANING

The machine is provided with an automatic system which calls for washing of the parts in contact with the product when the set time is out.

This system, called “WASH”, inhibits the distribution function at the end of the set time.

WARNING

User takes full responsibility for the manual control of machine washing and pasteurization, complying with prevailing local regulations on mix handling in case mixes are not pasteurized.

WARNING

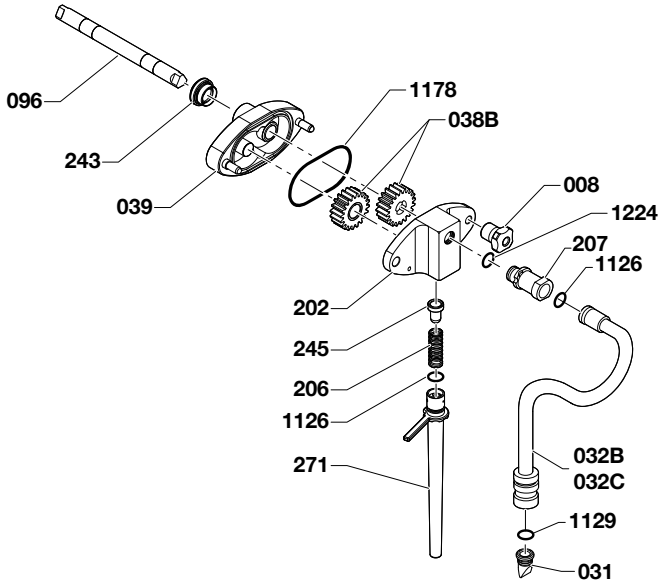
Cleaning and sanitization must be carried out at the programmed date indicated on the display, as a habit and with utmost care, in order to guarantee quality of production in the observance of healthy rules.

5.7 ICE CREAM SYSTEM EMPTYING

1. Place an empty pail under the dispensing spigot.
2. Press the STOP button.
3. Pull the dispensing levers and drain all ice cream from the cylinder.
4. Select the CLEANING function.
   Note: by pressing the CLEANING key again, it is possible to activate the HEATED CLEANING which melts ice cream in the cylinder during machine cleaning.
5. When the product coming out becomes liquid, press STOP and leave the dispensing levers open.
6. Remove hopper cover.
7. Disconnect pressure pipe from pump by turning it by 90° and sliding it out from its seat inside hopper. Wait for the product to be completely drained from hopper. Remove the pump by turning it 45° counterclockwise and pulling forwards.
8. Wait until the liquid mix flows out completely and then set the dispensing levers back to closing position. Fill the tanks with 10 liters of clean water. Clean hopper walls and level sensor using the supplied brushes. With a smaller brush, also clean pump and pressure pipe seats.
9. Place an empty pail under spigot door, lower dispensing lever and let water flow out.
10. Rinse with hot water until clean water flows out.
11. Select cleaning function and let the machine run about 10 seconds.
12. Press STOP button and drain all water out of machine.

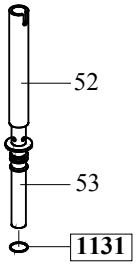
5.8 PUMP FED MACHINES: PUMP AND PRESSURE PIPE REMOVAL

1. Remove the pumps by turning them 45° clockwise and pulling backwards.
2. Remove connecting pipes (pos. 207) from pump and pressure pipes (pos. 32). Rotate the RH and LH pressure pipes by 90° counter-clockwise and lift and remove them from their seat in the hopper. Remove O-rings
3. Remove feeding tubes (pos. 271) by turning them counter-clockwise and pulling them downwards.
4. Remove spring (pos. 206) and valve (pos. 245). Use supplied puller to remove O-ring (pos. 1126).
5. Loosen the two knobs (pos. 8B) to separate cover (pos. 202) from pump body (pos. 39).
6. Tap pump body with your hand and remove gears (pos. 38 and 38A). Use puller to remove O-ring (pos. 1178).
7. Remove pump shaft (96) and seal (243) from pump body.



5.9 GRAVITY-FED MACHINES: FEEDING NEEDLE REMOVAL

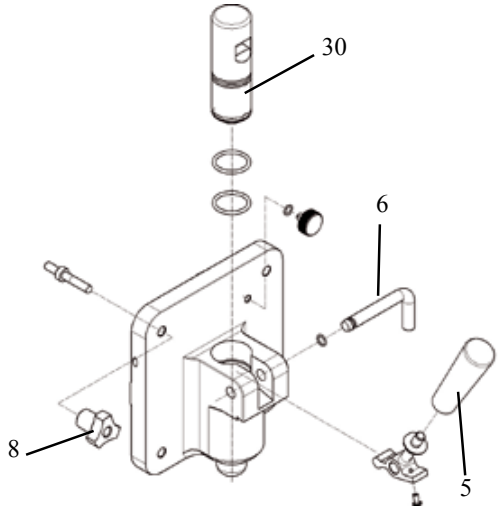
To disassemble the feeding needle do the following:
- remove the feeding needle slider (pos. 53)
- take the feeding needle out of the tank
- remove O-Ring from the needle (pos. 1131)



5.10 DISASSEMBLING OF THE DISPENSING DOOR

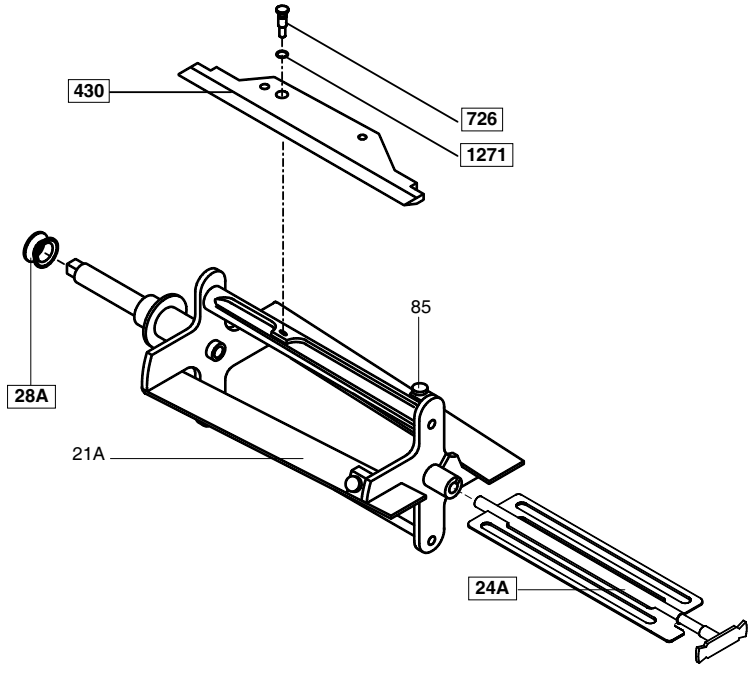
CAUTION
Before disassembling the dispensing head, make sure that the hopper and the cylinder are completely drained.

1-Loose the knobs (Rif.8) and remove the front door.
2-Remove the pin (Rif.6) and disassemble the handle (Rif.5).
3-Remove the piston (Rif.30).
4-Remove all the O-Rings using the OR-extractor provided.



5.11 DISASSEMBLING OF THE BEATER

- Remove the beater from the cylinder turning it slightly.
- Disassemble the blade 430 by removing pin 726 and stoppers 744
- Remove idler 24.
- Slide the stuffing box 28 out (beater seal).



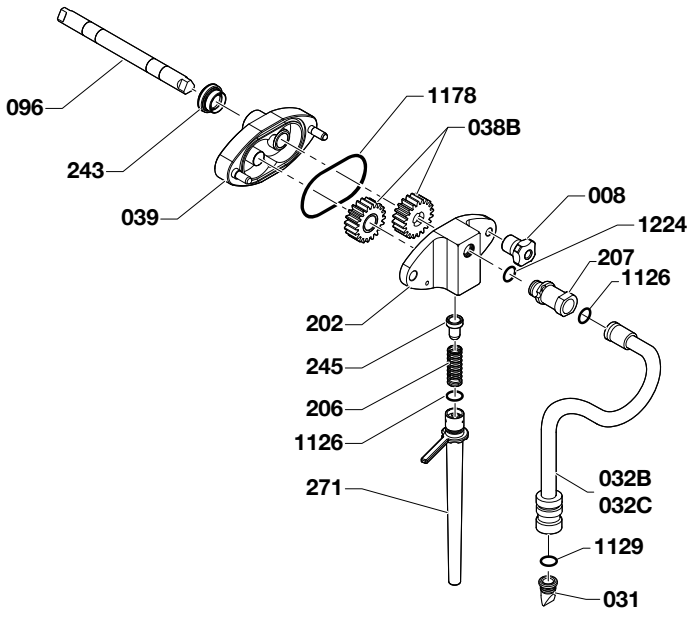
5.12 WASHING AND SANITIZING COMPONENTS

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 for the time indicated on the label of the product used.
4. Rinse the parts with care, using plenty of clean drinking water.
5. Place the components on a clean tray to air-dry.
6. Make sure that machine is in STOP mode.
7. Soak a brush in the cleaning/sanitizing solution and clean the cylinder.
8. Soak a brush in the cleaning/sanitizing solution and clean pressure pipe pump housing hole.
9. Spray cylinder back and hopper walls with the cleaning/sanitizing solution.

Repeat steps 7, 8 and 9 several times.

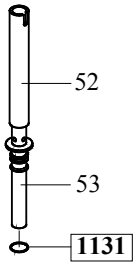
5.13 PUMP-FED MACHINES: PUMP AND PRESSURE PIPE REFITTING

1. Lubricate and refit the O-Rings on the connecting pipes (pos. 207).
2. Lubricate and refit the O-Rings o the RH and LH pressure pipes (pos. 32).
3. Install connecting pipes (pos. 207) on pressure pipes (pos. 32) and leave them soaked inside the sanitizing solution.
4. Lubricate and refit the O-ring (pos. 1178).
5. Lubricate gears (pos. 38 and 38A) and insert them inside pump body. **Warning: Do not lubricate the teeth of the pump gears.**
6. Lubricate and refit the O-ring (pos. 1126) on the feeding tube (pos. 271).
7. Fit valve (pos. 245) and spring (pos. 206) inside pump cover (pos. 202).
8. Fit feeding tube (pos. 271) in the pump cover by pushing it and turning it clockwise.
9. Fit pump cover (pos. 202) in the pump body, with the feeding tube as in the drawing, and firmly screw the two knobs (pos. 8).
10. Fit pump shaft (96) and seal (243) in pump body.
11. Refit pump inside hopper with the locking hook on the right side. Turn pump counterclockwise until it locks in place.



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 in the sanitizing solution.



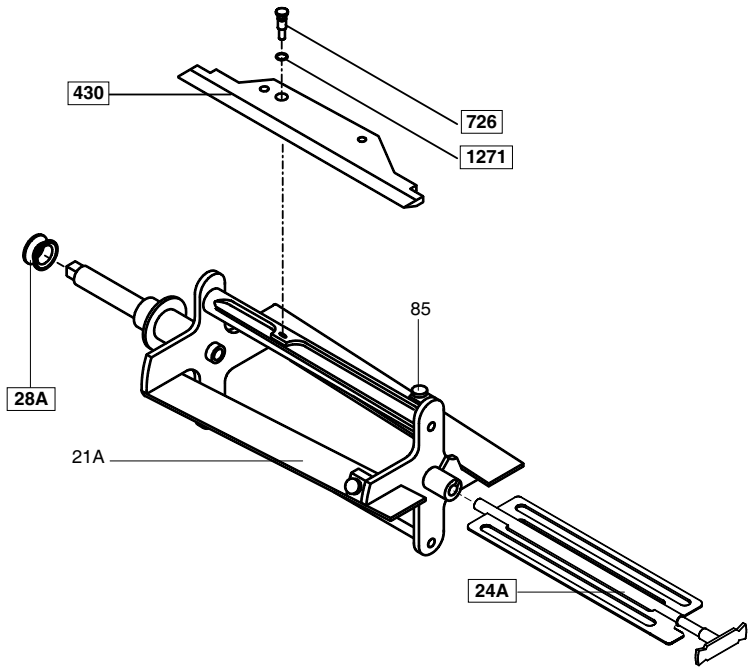
5.15 REASSEMBLING OF THE BEATER

1- Check the status of the stuffing box; based on how long the machine has been used, replace it if necessary, alternating it with the second stuffing box, provided with the accessories packet included in the packing.

Before reassembling all components, grease the STUFFING BOX on its side surfaces and set it correctly, in order to avoid that the mix drops in the drip drawer.
Check that the IDLER, once reassembled, can rotate unhindered.

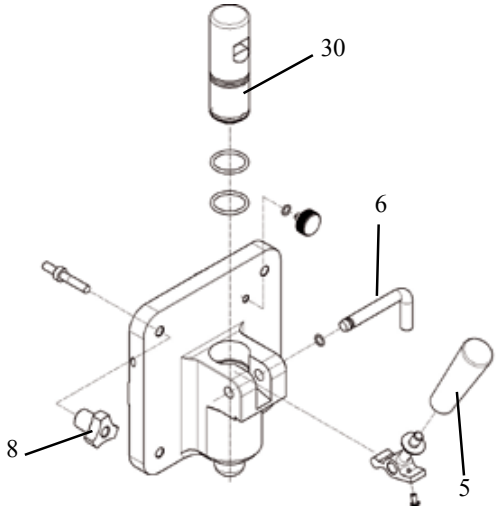
2- Reassembly all parts.

3- With a rotary motion, insert the beater completely reassembled into the cylinder, and correctly engage it in the rear part of the cylinder.



5.16 REASSEMBLING OF THE DISPENSING DOOR

1. Lubricate and slide the 2 piston o-ring into their seats.
2. Insert the piston, pointed end down, in the dispensing head making sure that the piston square notch lines up with the rectangular opening on the spigot front.
3. Position the dispensing handle on the door and insert the pivot pin in its housing through the handle lever hole. Lubricate and insert the pivot pin o-ring.
4. Insert the dispensing door assembly onto the two front panel studs and fasten it with the 4 knobs hand tight.



5.17 SANITIZING THE WHOLE MACHINE

The machine must be sanitized before mix is poured in. Procede as follows:

1. Fill the hopper to the maximum level with **XSAN** solution prepared in 21-32 °C (70-90°F) water (ex. 1 packet in 9,5 litres of water) and allow to drain into the cylinder.
2. Using the brush, clean the mix level probes, the entire surface of the mix hopper.
3. Select CLEANOUT function and let the beater run for about 10 seconds. Press the STOP button. The cylinder and the pump are now filled with the **XSAN** solution.
4. Return to the machine with a small amount of **XSAN** solution in a pail.
5. Dip the door spout brush in the pail of **XSAN** solution and brush clean the dispensing spout. Repeat the operation 2 times.
6. Wiper the exterior of machine with clean sanitized towel. Repeat the operation 2 times.
7. Wait for at least 5 minutes before proceeding with the next instructions.
8. Place an empty pail under the draw spout and pull the handle.
9. Allow all of the sanitizier to drain. If the sanitizing solution does not flow out completely, keep the spigot open and select CLEANOUT function, keep the beater running for 5 seconds so that the last solution residues flow out then push STOP.

CAUTION
Do not keep the beater running for more than the time strictly needed to complete washing and sanitization. Without the lubrification of mix butter fat the beater wear out quickly.

10. Rinse by filling the cylinder with drinking water.
11. Drain the water from the cylinder by lowering the distribution lever.

5.18 MIX PRIMING

See paragraph 3.5 Machine start-up

6. MAINTENANCE

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 lubricatingmoving 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".

Operations necessary to proper machine running are such that most of servicing is completed during production cycle.
Herebelow you can find a list of routine servicing operations:

- **Cleanout and replacement of stuffing box**
  If the product drips from the drip drawer, it means that the stuffing box (pos. 28) has no tightness.
  When dismantling the beater, check the status of the stuffing box; based on how long the machine has been used, replace it if necessary, alternating it with the second stuffing box, provided with the accessories packet included in the packing.
  If the stuffing box has no defects, it can still be used after washing it, i.e., when at room temperature, it has again its original shape.
  To replace the stuffing box, proceed as follows.
  Remove the beater unit.
  Remove the stuffing box from its slot.
  Lubricate the replacement stuffing box.
  Mount the new stuffing box.
  Clean and lubricate the replaced stuffing box and store it to allow it to regain flexibility.

WARNING

If you continue to work after noting traces of product in the drawer, you further accentuate the leakage of the stuffing box; this can lead to a malfunction of the machine serious enough to halt production.

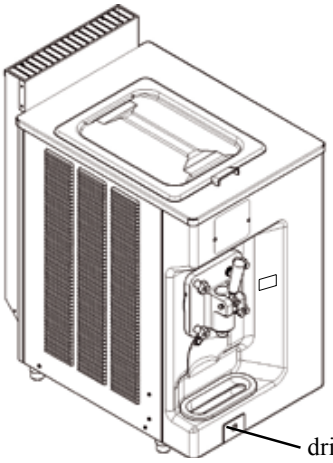


Fig. 35

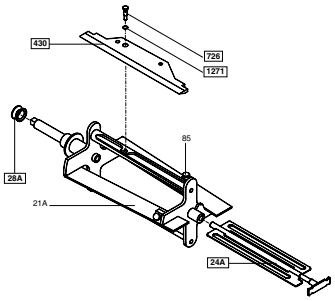


Fig. 36

WARNING

Like all moving parts, the complete beater is also subject to wear and tear. For this reason, we recommend checking the amount of wear to 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, check the wear on the beater idler and beater in their contact points (bushing, idler blades, etc.). If there is a minimum wear it is necessary to replace the beater idler or the complete beater assembly.

- **Cleanout of beater assembly, cleanout of feeding needle, cleanout and sanitization of the all machine**
  According to procedures described in section 5 of this manual.
- **Cleanout of panels**
  To be carried out daily with neutral soap, seeing to it that cleansing solution never reaches beater assembly at its inside.

WARNING
Never use abrasive sponges to clean machine and its parts, as it might scratch their surfaces.

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 (32°F).
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!

NEVER USE SHARP METAL OBJECTS TO CARRY OUT THIS OPERATION. GOOD WORKING OF A FREEZING PLANT MOSTLY DEPENDS ON CLEANING OF CONDENSER.

6.4 TABLE OF SPARE PARTS EQUIPMENT

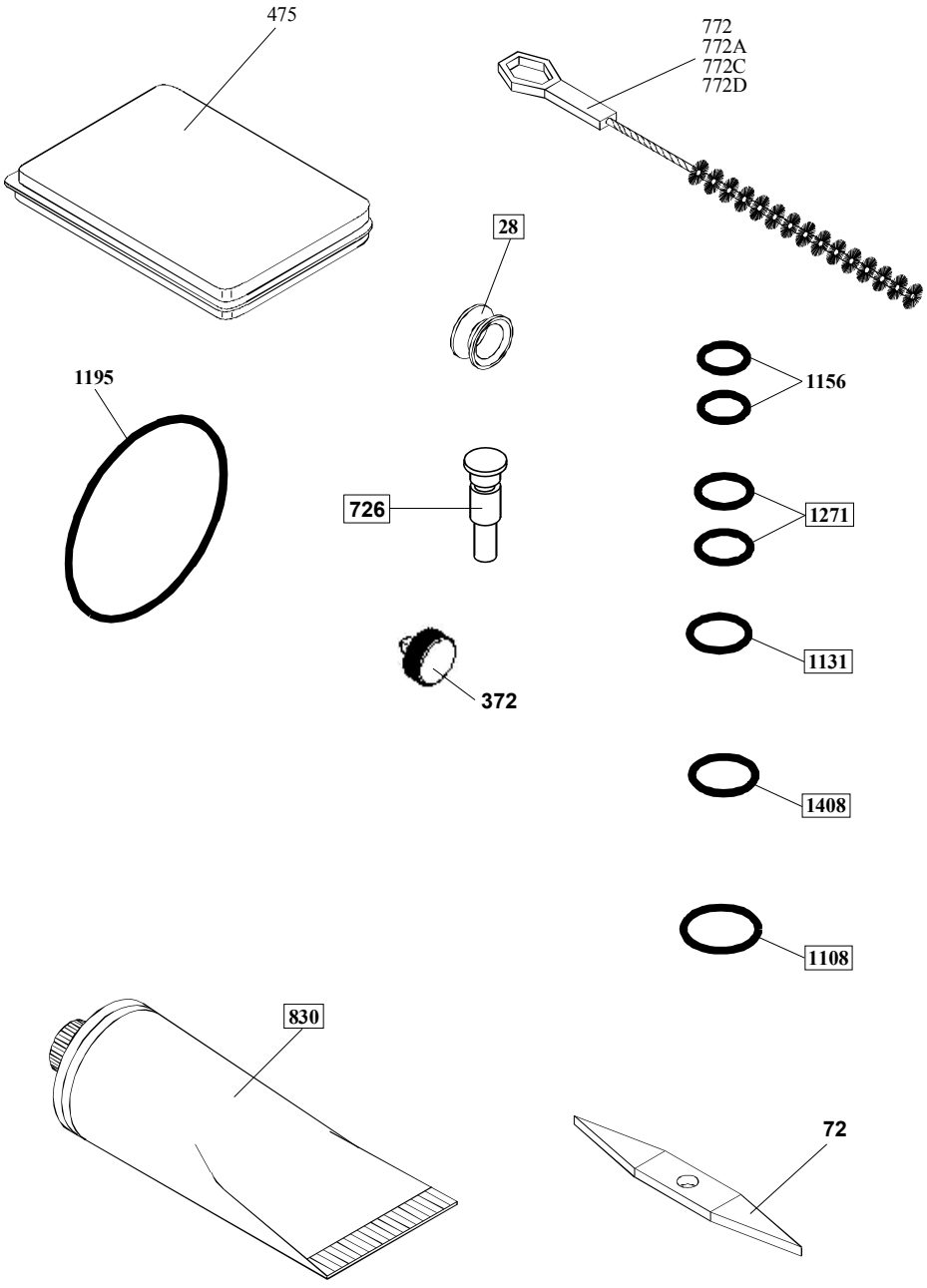


Fig. 37

Pos.	Description
28	Beater stuffing box
72	O ring extractor
372	Plug sniffer air
475	Accessories
726	Pin scraper
772	Swab D 8x250
772A	Swab D 15x350
772C	Swab D 20x450
772D	Swab D 30x640

Pos.	Description
830	Food-grade lubrificant tube
1108	Gasket OR
1131	Gasket OR
1156	Gasket OR
1195	Gasket OR
1271	Gasket OR
1408	Gasket OR

7 TROUBLESHOOT GUIDE

IRREGULARITY	CAUSE	PROCEDURE TO FOLLOW
Compressor starts and then stops after a few seconds.	1. If machine is watercooled: water is not circulating. 2. If machine is aircooled: air is not circulating.	1. Open water inlet cock and check that pipe is not squashed nor bent. 2. Check that machine clearance is at least 80 mm from wall. 2. Call for service if necessary
Mix or product come out above or below piston though it is closed.	1. Piston without OR or OR is worn-out.	1. Stop the machine and insert or replace it with a new one if worn-out.
Mix coming out of drip drawer	1. Stuffing box missing or worn-out.	1. Stop the machine and install it if missing. If worn-out, replace it with a new one.
Piston hard to operate.	1. Dry sugar on piston.	1. Stop the machine and wash thoroughly and grease piston and OR with edible fat.
Product comes out from front lid .	1. OR missing or not properly fit. 2. Front lid knobs not tightened evenly.	1. Stop the machine and check and put remedy. 2. Stop machine. loosen and tighten them again.
Low product overrun	1. "R" pump not properly adjusted	1. Change regulator (Pos. 271).