

APPLICARE

TARGA

CARATTERISTICHE

INSTRUCTIONS HANDBOOK

191 P/SP Magica USA
191 P/SP Magica Colore PP USA

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 9001:2008 Certified Quality System.

Moreover, Carpigiani machines comply with following European Directives:

- “Machinery” Directive 2006/42/EC,
- “Low Voltage” Directive 2006/95/EC,
- “EMC” Directive 2004/108/EC,
- “PED” Directive 97/23/EC,
- Regulation 2004/1935/EC relating to “Materials and articles in contact with foodstuffs”

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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:

CARPIGIANI Via Emilia, 45 - 40011 Anzola dell'Emilia (Bologna) - Italy
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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 start-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 DANGER

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.



WARNING DANGER FROM MOVING PARTS

This informs the staff concerned of the presence of moving parts and the risk of injury from failure to comply with safety regulations.



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 staff involved.



WARNINGS

The staff involved is warned that the non-observance of warning may cause loss of data and damage to the machine.



PROTECTIONS

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

SYMBOLGY QUALIFICATION OF THE STAFF

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



MACHINE OPERATOR

Identify unqualified personnel, those without any specific technical abilities who are 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, controls of the instrumentation, etc.).



MAINTENANCE ENGINEER

He/she is a skilled engineer for the operation of 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 drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damage to persons and things.

Who is in charge of plant safety must be on the look-out that:

- an incorrect use or handling shall be avoided;
- safety devices must neither be removed nor tampered with;
- the machine shall be regularly serviced;
- only original spare parts are to be used especially as far as those components with safety functions are concerned (ex.: protection microswitches, thermostats);
- suitable personal protective equipment is worn;
- high care must be paid during hot product cycling.

To achieve the above, the following is necessary:

- at the working place 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;

IMPORTANT!

One must be on the look-out that the staff does not carry out any operation outside its own sphere of knowledge and responsibility (refer to “Symbology qualification of the staff”).

NOTE:

According to the standard at present in force, a SKILLED ENGINEER is who, thanks to:

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

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.

WARNING

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.
- **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.

MODEL NO. _____			
SERIAL NO. _____		DATE _____	
UNITS _____		PHASE _____ HZ _____	
MAY. BREAKER/FUSE SIZE _____ AMP			
MINIMUM CIRCUIT CAPACITY _____			
		DESIGN PRES.	OPERATING PRES.
HIGH SIDE PSIG			
LOW SIDE PSIG			
REFRIGERANT _____		AMOUNT _____ OZ	
	BEATER	COMPRESSOR	FAN
QTY			
HP			
FLA			
LRA			

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

Electronic machine for the production and instantaneous distribution of rippled soft ice cream, with following main features:

- refrigerated upper tank;
- cylinder feeding pump for a higher ice cream overrun;
- for Colore version: Automatic system for rippling ice cream with the special syrups (you can choose among three colours/flavours);
- automatic plant for pasteurizing the product in the upper tank, as well as in the production cylinder during idle times (for example on night pause).



CARPIGANI recommends to always use high quality mix for ice cream 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 recipes, by adding, for instance, water or sugar.
- Taste ice cream before serving it and start selling it only if entirely satisfactory.
- Make sure your staff always keeps the machine clean.
- Have your machine serviced always by companies authorized by **CARPIGANI**.

1.2.2 Machine layout



NOTE:

dimensions in the lay-out can vary in relation to the type of condenser.

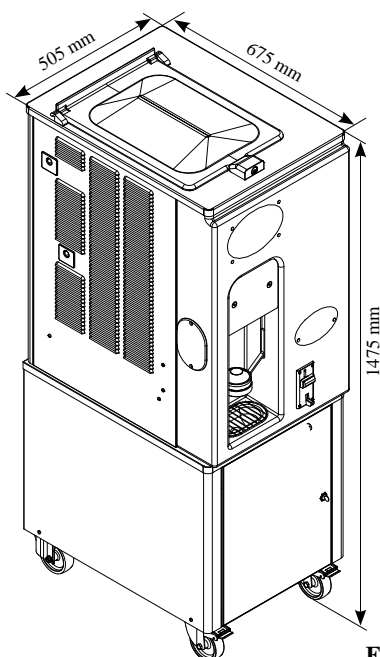


Fig. 1

1.2.3 Technical features

MODELL	Hourly output* 100 gr portions	Tank capacity litres	Flavours	Electric Power			Installed Power kW	Net Weight kg
				Volt	Phases	Cycles		
191 P/SP Magica	190	12	1	208 230	1	60	2,1	120
191 P/SP Magica Colore PP USA	190	12	1 + 2	208 230	1	60	2.6	213

* Hourly output and mix quantity may vary depending on the temperature and the mix used, as well as on overrun you may require.

** Upon request also available with aircooled condenser.

Performances featured by a room temperature of 25°C and a temperature of cooling water at 20°C.

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
Max air temperature °C:	43°C
Min water temperature:	10°C
Max water temperature:	30°C
Min. water pressure:	0,1 MPa (1 bar)
Max water pressure:	0,8 MPa (8 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 atmosphere.

1.4 NOISE

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

1.5 STORING A MACHINE

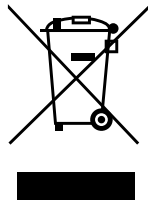
The machine must be stored in a dry and dust-free place.
Before storing the machine, wrap it in a cloth in order to protect it against dust and else.

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/treatment of electrical and electronic equipment waste. Differentiated collection of this waste material helps to optimize the recovery and recycling of any reclaimable materials and also reduces the impact on human health and the environment. For more information concerning the correct disposal of this product, please contact your local authority or the retailer where this product was purchased.



2. INSTALLATION

2.1 ROOM NECESSARY TO THE MACHINE USE

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

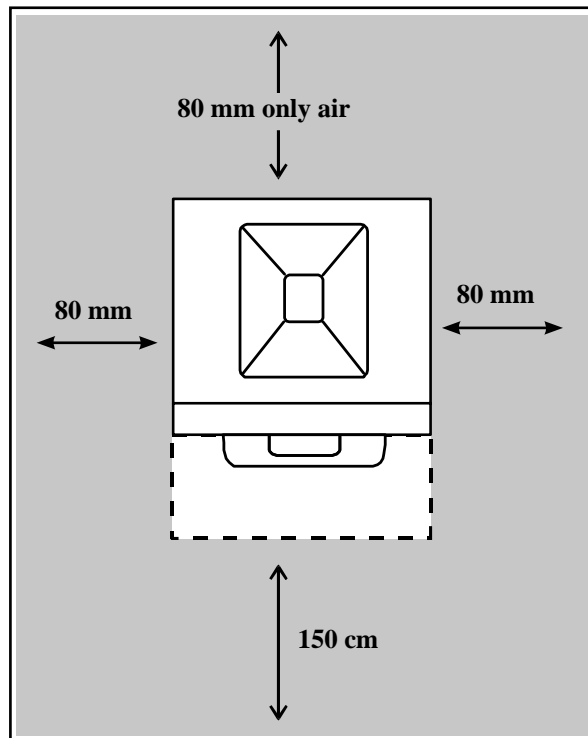


Fig. 3

2.2 MACHINE WITH AIRCOOLED CONDENSER

Machines with aircooled condenser must be installed no closer than 80 mm 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 0.1 MPa and 0.8 MPa (1-8 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.





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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.

ATTENTION

Do not leave the machine in a room with temperature below 0°C 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.

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.

2.4.2 Credit card/USD bill reader connection (optional)

When the machine is provided with credit card/USD bill reader, there is on right panel the plug for external connection. Before to connect, check that electrical data of accessory are proper with data on marking label.

External connection

1.8A - 60Hz - 24V ac

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. Soft ice cream is prepared by filling the tank with cold mix (+4°C) and starting the automatic production cycle, until the ideal ice cream consistency set by CARPIGANI is reached.



3.2 CONTROLS

3.2.1 Keyboard 191 P/SP Magica

The machine keyboard consists of 8 keys. Only 1 of them is visible (picture 4), whilst the other ones are hidden (picture 5). The stars indicate the position of hidden keys. The drawing in picture 4 shows the functions of each key with clear symbols.

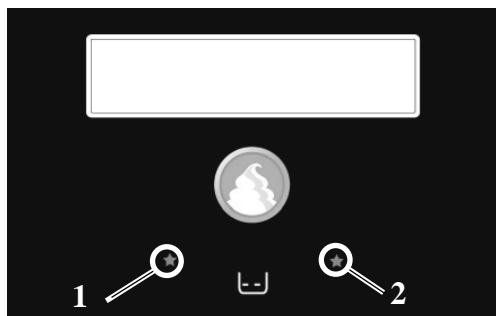


Fig. 4

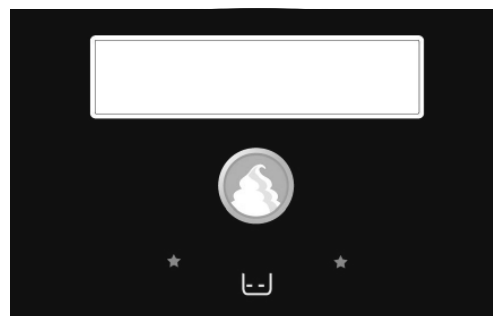


Fig. 5

NOTE:

When a key is pressed and relevant function is accepted, the key panel emits an acoustic signal.



3.2.2 Keyboard 191 P/SP Magica Colore

The machine keyboard consists of 10 keys. Only 3 of them are visible (picture 6), whilst the other ones are hidden (picture 7). The stars indicate the position of hidden keys. The drawing in picture 7 shows the functions of each key with clear symbols.

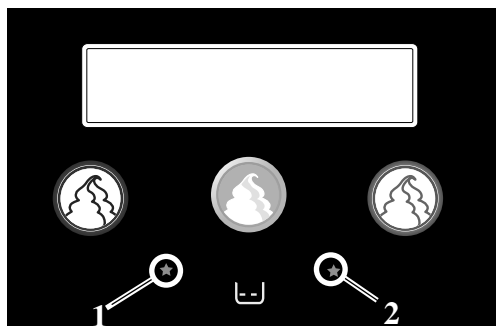


Fig. 6

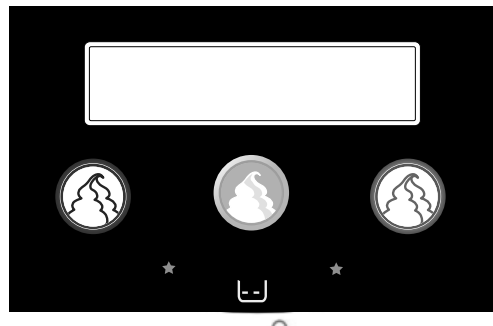


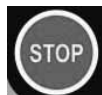
Fig. 7

NOTE:

When a key is pressed and relevant function is accepted, the key panel emits an acoustic signal.



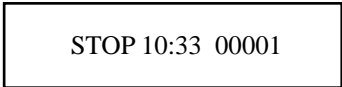
3.2.3 Functions



STOP key

In this function the machine is idle and relevant led (backlight) is on. From Stop position, one can have access to any machine function. For function change, IT IS ALWAYS NECESSARY to first return to STOP.

On the display:



To set the machine at Stop from Production, Pasteurization and Storage, it is necessary to press the key and hold it some 2" down. You will by this avoid wrong pressures due to touch.

If the machine is left in Stop position when level is covered, the display will show "Why in STOP ??" 30" later, in order to alert the user to set the machine at Production, Pasteurization or Storage modes. In Stop, a pressure on the star (Ref. 2 Fig. 4) opens the piston up to its maximum opening in order to make cleaning and emptying of the cylinder possible. While the piston is open, the display shows "Piston Up". When the same button is pressed again, the plunger closes. In Stop, a pressure on the star (Ref. 2 Fig. 4) lifts the cup-holder up its maximum height, in order to make cleaning of front panel possible.

If you press the star again (Ref. 2 Fig. 4), the cup-holder will return to its original position.

For 191 P/SP Magica Colore version:



From STOP position, coloured keys are used to clean the syrup lines.



PRODUCTION button

Access to the Production function is only possible when the minimum mix level is covered. The display shows the consistency to be reached on the left and the current consistency on the right. The product is chilled in the cylinder until it reaches the set consistency (HOT).

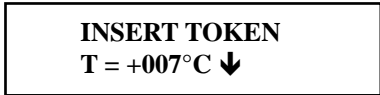
When producing ice cream, when the level of the mix in the tank is uncovered, the display will show the message "Mix Out!", allowing only the set number of glasses to be dispensed.

After this the machine will automatically pass from Production to Storage.

When the PRODUCTION button is pressed in STOP mode, the display will first read:



and it is not possible to dispense ice cream. Only when the display reads:



NOTE: When the arrow is lit, the machine is cooling the tank

After inserting the token, or the bill (USD optional), the display shows:

Without Colore



push button 

With Colore



push button 





During product distribution, the display shows:

WAIT
T = +007°C

If “Wait” appears on the display, the ice cream has not reached the set consistency and it is therefore necessary to wait. The various pages described as follows are arrived at by pressing the Production key.

Cylinder ↓ -009°C
Wash among 14 days

On this page the display visualizes the cylinder temperature on the first line

↓ = on when the cylinder is chilled

The second line shows the number of days until washing.

Set=065 Hot=035

On this page the display visualizes on the first line:

Set=065: Set HOT Hot=035: current consistency reading for the ice cream

Daily cones
12345

On this page the display visualizes the Day’s cones (starting from 00:00 until 23:59):

12345= is the number of cones.

The daily number of cones is reset:

- at midnight

- when Stop is pressed while switching on the machine (see STOP paragraph)

Total Cones
0923456780

On this page the display visualizes the total number of cones dispensed:

0923456780 = is the number of cones dispensed.

To set this to zero, switch the machine off and then on again. Immediately after

switching on (approx. 1"), press Stop  and hold it down for 5".

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

On this page the display visualizes the various sensors (without visualizing °C or °F):

TEV = Tank Thermostat

TEC = Cylinder Thermostat

TGV = Tank Ice Thermostat

TE1 = Cylinder Evaporator Thermostat

AFFOGATO ICE CREAM function (only in the Colore version)

An Affogato Ice Cream function can be enabled in the Colore version that consists of dispensing a reduced portion of vanilla ice cream preceded by a syrup on the bottom of the cup.

To enable this function, set step U13 at “NO” (refer to User Programming, section 3.8).

**CLEANING key**


Pressing this button will start the beater for 30 seconds. This operation is timed and will stop automatically at the end of the set time (30 seconds).

The machine is equipped with an automatic system that imposes the washing of the parts coming into contact with the product after 14 days of use. This system called "WASH" inhibits the distribution function at the end of the period.

KEYBOARD LOCK function

In order to clean the keyboard with a clean cloth, we recommend you to lock the keys as follows:



Press the key  3 seconds; the light will blink to indicate that the keyboard is locked. You can clean it, now, with no risks. To activate it back, press it 3 more seconds and the light will switch off.

**PASTEURIZATION key (only P/SP version)**

PASTEURIZATION can only be activated if the mix in the tank is over the Mean Level.

AUTOMATIC PASTEURISATION CYCLE: whilst the machine is in Production mode and the mixture is above the average level, the Pasteurisation cycle automatically starts at a preset hour (normally at 02:00).

During the Pasteurization cycle the mix inside the tank and in the cylinder is heated till the temperature of 65°C is reached, then it will be held at the said temperature 30 minutes and last cooled down to 4°C.

When the program is over, the display shows the message "Fine Pasto" and date and time of end of operations. The machine will then automatically pass to the STORAGE function.

To serve ice cream, press STOP and then PROD.

For manual start of the Pasteurization program (if step "Ora avvio Pasto" has not been set) press the Pasteurization key 5 seconds long.

NOTE:

Once starting the Pasteurization program, you cannot stop it. It takes some 2 hours to complete the whole cycle. During heat treatment and Pause cycles, the mix inside the machine is hot, so do not try to recover it, nor to disassemble the machine.

WARNING

Neither dispense ice cream, nor disassemble the machine during heat treatment, because the product is very hot and under pressure.

**STORAGE key**

By pressing the Storage key, the product will be treated so as to reach the temperature of 4°C both in tank and cylinder.

**Insufficient mix**

When the mixture is at a low level, the first line of the display visualizes a fixed message: Mix Esaurita! - Mix Out! and the low level LED of the tank on the keypad lights up and also the rear warning light lights up and remains fixed. The second line of the display visualizes the temperature in the tank before the machine passes automatically into Storage mode.

**Mix Out!
Tank +014°C**

NOTE:

With the message Mix Esaurita! On the display, it is not possible to gain access to the successive page of the Production menu.



3.2.4 Syrup check

To check the level of syrup in the pack, the machine counts the numbers of portions dispensed and when it reaches a certain value, an alarm (“**SyrupCheck.1**” or “**SyrupCheck.2**”) is generated that advises the operator to check the residual quantity of syrup.

The rear level warning light flashes when the alarm is activated.



= Syrup 1





= Syrup 2

For example:

Ready !
Check Syrup 2

Note

Check Syrup 2

Once the syrup pack has been substituted, simultaneously press the  and  keys for 3” to eliminate the alarm signal.

The display visualises:

Syrup 1 Num. 00765
Syrup 2 Num. 00723

Note


1 and 2 Syrup counters

The syrup counters appear for 5 seconds on the display.

If no key is pressed, after 5 seconds the display returns to the Production main menu.

If the Syrup key pressed during those 5 seconds, the relative counter is zeroed and the eventual alarm is reset.



For example: pressing the  key, the display visualizes in succession:

Syrup 1 OK

Note

Syrup 1 counter zeroed

Syrup 1 Num. 00000
Syrup 2 Num. 00723

Note

Syrup 1 and 2 counters

NOTE: after reaching 765 shakes, the counters stop counting.

The syrup counters are visualised for 5 seconds even from Stop and they can be zeroed by

pressing the  and  keys for 3 seconds.



3.2.5 Digital Frame (optional)

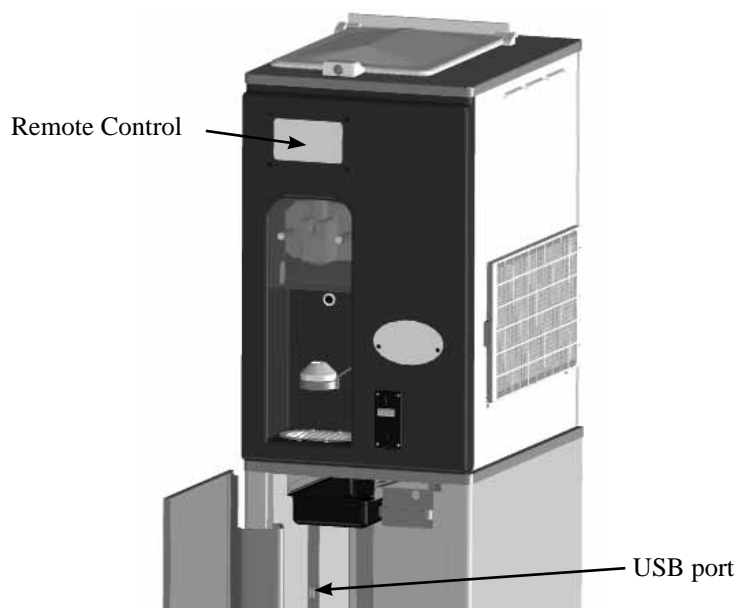
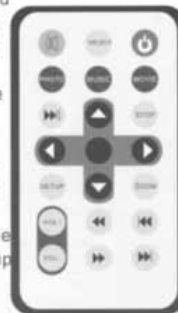
The machine is equipped with a Digital Frame to which it is possible to upload audio files (MP3, WMA formats), photos (JPG format) or films (MPEG1, MPEG2, MPEG4, DIVX and AVI formats). To upload the required files, it is necessary to insert a USB memory stick into the relevant port inside the syrup compartment.

To use the Digital Frame please refer to the instructions for the remote control, provided below.

Remote control and the operation instruction

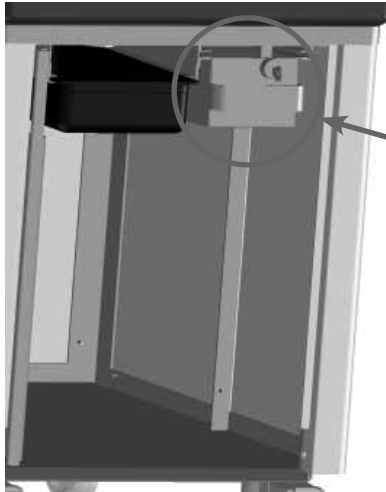
Key Function Instruction:

-  : Power on/off
-  : Mute
- SETUP : Enter the basic setup state
- ENTER : Return to the main menu.
- ZOOM : Zoom in/out while play photo
- SELECT : Select memory card
- VOL+ / VOL- : Adjust the volume.
-  : Play/Pause (photo /music/movie)
- PHOTO/MUSIC/MOVIE: Enter the photo/music/movie file playing mode directly.
-  : Move the cursor to up/down, left/right for choosing the
-  : While playing movie choose for speed up or fade back,
-  : Play the previous or next program.



3.2.6 Token box (optional)

The token box is located inside the syrup compartment and it has its own key. To recover the tokens, it is necessary to open the token box.



The token-operated mechanism is positioned in the Syrup compartment. To recover the money, extract the sliding metal tray.

3.2.7 Credit card/USD Bill reader (optional)

The USD bill reader is located on the right side of the machine..

3.3 PRELIMINARY OPERATIONS, WASHING AND SANITIZING

Before the first machine startup, it is necessary to perfectly clean its parts, and sanitize the ones in contact with ice cream. To disassemble and clean the machine, follow instructions given in section 5.

NOTE:

Cleaning and sanitation shall be carried out as a habit, in order to guarantee quality in the observance of necessary hygienic standards.

3.4 STARTING THE MACHINE

After installing the machine according to the instructions in the **INSTALLATION** chapter and after cleaning and sanitizing the machine (see chap. 5), proceed as follows:

Starting with the machine in STOP mode, after fitting the beater, the front lid and the tank pump, take a package of mix from the refrigerator (we recommend using the product at a temperature of 4-5°C), pour it into the tank and wait for it to flow down and fill the cylinder below; once the cylinder is full, the gurgling around the hole for compression pipe insertion will cease.

Having completed this operation, check that the mixture level in the tank is above the level sensor, but does not exceed the pump regulator (refer to Fig. 8).

Press the cleaning key for a few seconds, making sure that a suitable amount of mix comes out of the pump to show that it has been correctly fitted.

With clean and sanitised hands, insert the compression tube into the bottom of the tank. Turn the pipe anticlockwise to bring it closer to the pump; insert the pump connection pipe and turn it clockwise to lock it in the relevant pin.

After making sure that the mix inside the tank is above the minimum mark and below the pump regulator, refit the lid and press the cleaning key. Wait for the machine to return to STOP mode and then press the Production key.

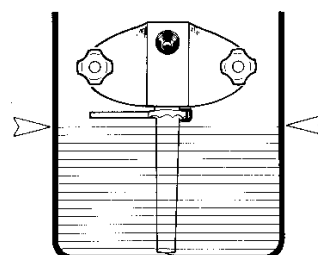



Fig. 8






3.4.1 Loading the syrup lines (only in the Colore version)

1. Connect the syrup tubes to their containers.
2. Position an empty container underneath the door.
3. Press the coloured  key twice and as soon as the syrup exits from the door press the Stop key and throw away the syrup that has been dispensed.
4. Repeat the operation for all syrup lines.
5. Utilise a clean and sanitised cloth to clean the syrup compartment and the door of the compartment.

3.4.2 Adjustment of the syrups (only in the Colore version)

When the machine is in Stop mode:

- Press the coloured  key once.
- The syrup is dispensed for 5/7 seconds.
- Check the quantity of syrup utilising the calibration cup.
- If the quantity of syrup is not satisfactory, modify the calibration as described in the instructions of the Manager menu.
- Pressing the coloured key again whilst the syrup pump is ON, the pump activates MAX speed to rinse and clean the syrup tube.

NOTE:


After the syrup filling and calibration, select the PRODUCTION key (Ref. 2, Fig. A).

3.5 PRODUCTION

The machine will automatically start Production at the scheduled time. The product will be cooled as long as the consistency set is reached. On the display the message DO NOT SERVE / WAIT will appear every time you enter this function and as long as the consistency is reached. In this WAIT step, distribution is inhibited.

Tank beater runs anticlockwise.

NOTE:

30" after the machine is switched on in Production mode, the function buttons (Stop, Cleaning, Pasteurization and Storage) are all locked automatically, while the product serving buttons are still usable. The function buttons are released by holding down the central star button Cleaning  for 10". In this case, the buttons remain released for 30" before locking again automatically.

NOTE:

If the level indicator comes on, the machine will allow the distribution of 10 portions, only, and after that distribution keys lock till the tank is filled with mix.

NOTE:

If automatic Production time is the same as the Pasteurization time, only does Pasteurization start. The machine will start Production at the scheduled time only when Pasteurization cycle has successfully been executed. If, when it is Production time, Pasto End has not yet happened, the machine will NOT set at Production but it will finish the Pasteurization cycle.

3.5.1 Ice cream dispensing

Version without token box

1. Position the cone or cup in the cone holder
2. Press the key for the required flavour
3. The cone/cup is moved to the dispensing position.
4. Once the ice cream has been dispensed, the cone is returned to its initial position.

During the cone/cup positioning stage, the machine detects:

- the actual presence of the cone/cup
- the presence of the set cone/cup, not of any other containers.

In both cases, dispensing does not take place.

Version with token box

1. Position the cone or cup in the cone holder
2. Insert the token
3. Press the key for the required flavour **no more than two minutes after the token has been inserted, otherwise it will no longer be possible to dispense the product.**
4. The cone/cup is moved to the dispensing position.
5. Once the ice cream has been dispensed, the cone is returned to its initial position.

3.6 PASTEURIZATION (only P/SP version)

This machine has an automatic system for automatic daily execution of pasteurization cycle at the programmed time.

It is anyway possible for you to start manual pasteurization by pressing the key Pasteurization.

The product, both in the tank and in the cylinder is heated to 65°C, held at this temperature 30 minutes and then cooled down to the storage temperature. On cycle end, the display shows "PASTO END", meaning that the pasteurization program has properly been executed.

No pasteurization program will ever start if mix level in the tank is below the mena level.



3.7 DAILY CLEANING - OPEN & CLOSING PROCEDURE

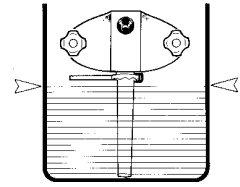
3.7.1 Closing Procedure

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



MIX FILLING:

1. Open the hopper cover to verify the mix level. Fill the hopper with mix. “Add mix to Pasto” on the display should be off. The mix level should be below the pump regulator handle as indicated in the figure.
2. Keep the machine in PROD mode.



DISASSEMBLING AND CLEANING THE COMPONENTS:

1. Remove the hopper cover to wash, rinse and sanitize at the sink.
2. Using a clean, sanitized towel, wipe the outside area of the hopper.
3. Replace the sanitized hopper cover on the machine.



4. Remove the two drip drawers from the left hand side panel to wash, rinse and sanitize at the sink.

NOTE: Advise the authorised technician about any leaks of the mixture into the drip drawer.

Replace the two drip drawers on the machine.



5. Remove the transparent cover of the door by using the key included in the equipment kit of the machine to wash, rinse and sanitize; place the cover in the cabinet to be mounted in the morning.



6. Fill an empty pail with sanitizing solution; dip the brush in the pail and brush clean several times the dispensing spout area and around the piston.



7. Spray the spigot area and spigot spout with sanitizing solution.



WARNING

Make sure not to spray sanitizer directly on the photocell.



8. Dip the brush in the pail and brush clean several times the cone holder from inside and outside.



9. Spray the cone holder with sanitizing solution.



10. Using a clean, sanitized towel, wipe the door area, the front panel, the stain steel area under the drip tray and any other areas that demonstrate a build up of either moisture or food splashed.

11. If the keypad is blocked, press the key (Ref. 4, Fig. A) for approximately 10 seconds to unblock it and then put the machine in STOP mode by pushing the star button for 2 seconds. (Ref. 1, Fig. A).



12. Push the star button ref.3 (see picture A) to lift the cup holder to maximum height.

13. Remove the drip tray and its hose to wash, rinse and sanitize.

14. Open the cabinet door and remove the drip tank to wash, rinse and sanitize.

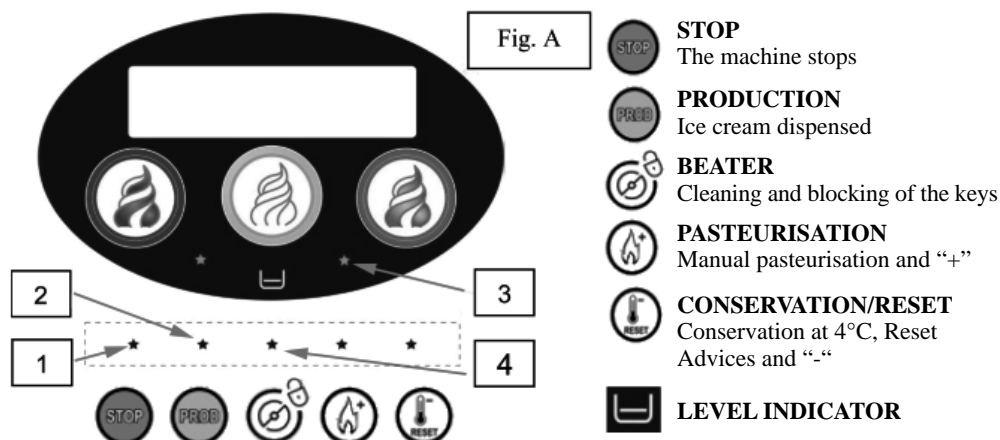


15. After sanitizing, return the drip tank into the cabinet.

16. After sanitizing, return the drip tray into its position; making sure its hose is inside the drip tank in the cabinet.

17. Push the star button Ref. 3 (see picture A) to move the cup holder to the lower position.

18. Push the star button ref. 2 (see picture A) to select the PRODUCTION mode.




CLEANING/SANITISATION OF THE SYRUP LINES

Cleaning the syrup scavenge tubes:

1. Remove the syrup tubes from their containers.
2. Clean the exterior of the syrup tubes with a clean and sanitised cloth.
3. Remove the syrup containers from the syrup compartment.

Sanitise the syrup lines:

1. Fill a bucket with XSAN solution.
2. Place the syrup tube connectors in the XSAN solution. Press the Stop key and then the coloured  key twice to activate the syrup pump at the maximum speed and allow the XSAN solution to flow for 1 minute. Press the Stop key to stop the pump.
3. Repeat the operation for all syrup lines.
4. Leave the syrup tube connectors in the sanitising solution.

With the machine in Stop mode, press the Prod key.

3.7.2 Opening procedure

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



SANITIZING THE DOOR AREA:

1. Fill an empty pail with sanitizing solution; dip the brush in the pail and brush clean several times the dispensing spout area and around the door piston.



2. Spray the spigot area and spigot spout with sanitizing solution.



WARNING

Make sure not to spray sanitizer directly on the photocell



3. Using a clean, sanitized towel, wipe the door area, the front panel and any other areas that demonstrate a build up of either moisture or food splashed.




4. Replace the cover in Plexiglas of the door by using the special key.




5. Ensure that the machine is in Production mode and ready to serve.

EMPTYING THE SYRUP LINES OF XSAN SOLUTION

- a) Remove the syrup connectors from the bucket containing the XSAN solution and place them on a clean cloth.
- b) With the machine in Storage mode, press the Stop key.
- c) Press the coloured  key twice to activate the syrup pump and max speed to empty the tubing of any residual XSAN solution.
- d) Press the Stop key to stop the syrup pump.
- e) Repeat the procedure for all syrup lines.

LOADING THE LINES WITH SYRUP

- a) Connect the syrup tubes to their containers.
- b) Place an empty container underneath the dispenser of the door.
- c) Press the coloured  key twice until the syrup is dispensed and then throw away the dispensed syrup.
- d) Press the Stop key to stop the syrup pump.
- e) Repeat the operation for all syrup lines.
- f) Utilise a clean and sanitised cloth to clean the syrup compartment and the door of the compartment.

3.8 USER PROGRAMMING

To access User Programming, press the STOP and STORAGE keys together (the first row in the display will show the software version and the second will read "Manager Menu") and release them immediately.



At this point, the display will show the first step in the User program.

Hour	
Step U01	10

The first row shows the description and the second the number of the step (U=User) plus the value.

Press the Increase  or  Decrease keys to change the setting.

Press Stop  to access the next step.

It is possible to change the following parameters:

- Hour
- Minutes
- Day of the week
- Day of the month
- Month
- Year
- Language
- Hour Start Prod
- Hour Start Pas-Con
- Enable Beep Level
- Pump speed 1
- Pump speed 2
- Varieg=Y Affog=N
- Cone dimension
- Enable Lamp. Level

Hour Start Prod

Used to set the start time for automatic Production.

When set to no, automatic Production is not started.

When set to auto, automatic Production is started as soon as Pasteurization has finished.

Hour Start Pasto – Storage

Used to set the start time for automatic Pasteurization. If set to no, then automatic Pasteurization is not enabled.

If the machine does not Pasteurize, Storage mode is enabled automatically.

Enable Beep Level

When set to YES, an intermittent acoustic signal is sounded when the medium level is uncovered, unless the machine is in Stop mode, in which case, it remains OFF even if enabled.

Pump speed 1

Set the speed of syrup pump 1 and therefore the speed of product dispensed.

Pump speed 2

Set the speed of syrup pump 2 and therefore the speed of product dispensed.

Varieg=Y Affog=N

Set at YES, dispensing of variegated ice cream is carried out (standard ice cream).

Set at NO, dispensing of affogato ice cream is carried out (portion reduced of vanilla ice cream preceded by syrup on the bottom of the cup).

Cone dimension

Small variations to the dimension of the ice cream that is dispensed can be carried out by this step. 0 = small cone, 10 = large cone

Enable Lamp. Level

If the machine is a Pasteurizing model, at the time set for this step, if the medium level is uncovered (machines with 2 levels only), the light on the machine's rear panel will be switched on. The light switches off at the start of automatic pasteurization. An acoustic signal is activated as well as the rear warning light.

The level signal is visible only in Stop mode for two level pasteurising machines with the Automatic Pasteurisation step set at No.

To quit the programming mode, it is sufficient not to press any buttons for about 30 seconds or to press Production or Cleaning.


At this point the machine will enter STOP mode.

4. CHECK AND SAFETY DEVICES

4.1 MACHINE SAFETY DEVICES

Machine alarms are displayed and alert messages blink.

When an alarm happens and then resets, it is left on the display fixed, (not blinking). To reset the

message, press the key 

In spite of an alarm, the machine can be used in Ice cream Production mode; if it deals with a critical alarm, the machine will inhibit the selection of Icecream Production; if this is the case, press Stop and do not use the machine till its repair.

Table of alarms:


ALARM	DESCRIPTION
Mix Out	The display shows Mix Out when the mix is under LOW LEVEL. An acoustic signal is activated as well as the rear warning light. The rear warning light and the acoustic signal are not active in STOP and CLEANING.
Safety therm. cyl.	Cylinder safety thermostat tripped. Machine sets at STOP.
Safety therm. hop.	Tank safety thermostat tripped. Machine sets at STOP.
Overload beater	Overload (bimetal) beater tripped. Machine sets at STOP.
Pressure switch	Pressure switch tripped. Machine sets at STOP.
Overload compres.	Overload compressor tripped. Machine sets at STOP.
Al. Hopper Probe	Hopper probe faulty. Since it is a critical alarm, the machine will set at STOP, either from Production or from Storage and Pasteurization modes.
Al. Cylinder Probe	Cylinder probe faulty. Since it is a critical alarm, the machine will set at STOP, either from Storage and Pasteurization. In Production, it will keep the same function because consistency is controlled.
Al. icehop. probe	Ice hopper probe faulty. This alarm does not stop the machine (remaining in the running function). Eliminated in Heating step of Pasteurization mode.
Spigot opened	Safety magnet switch.
Al. evapor. probe	Alarm sensor evaporator cylinder. This alarm does not stop the machine (remaining in the running function). Eliminated in Heating step of Pasteurization mode.
Power on	Power return after blackout. Blackout table check in Pasteurization and Production. The event is stored in any function.
Ice cylinder	Anti-icer cylinder read by the sensor TE1.
Timeout Prd.	The activation time of the beater motor is controlled in Production mode. If the motor remains ON for 6 minutes (Timeout Prd.) without the consistency being reached, the machine passes to the "Consistency reached" condition with the "Timeout Prd." alarm recorded in the events.
Belt alarm	If the belt is not properly fixed whilst in Pasteurisation Heating mode, the message "Belt alarm" is visualised and the machine passes to Stop.
Wash in n days	In Production mode, "Wash in n days" is displayed, meaning that n days are still to machine wash.
Do not serve	In Production mode, every time the consistency gets below the value programmed in step Hot Lock, cone red led lights to indicate ready ice cream wait and "Do not dispense" on the display.





ALARM	DESCRIPTION
Invert phases	It is necessary to exchange 2 phases on threephase line in order to have the right direction of beater rotation. Reset follows by pressing Reset key (after exchanging 2 phases).
Pasto needed	When the machine is positioned at Stop with the low level covered, the temperature is checked and if it is greater than a certain value, it starts the Pasteurisation mode.
Why in STOP?	If machine is left in Stop with mix covered the level, the blinking message "Why in Stop" will be on display after 30" and intermittent acoustic signal will also follow. This warns the user to set the machine at Production, Pasteurization or Storage. The message is cancelled by entering Production or having mix level uncovered, or still by Reset (Stor.) key.
Wrong Cone	Cone error The machine considers the cone/cup not suitable. The machine aborts the dispensing cycle, the cup returns to the lower position and the display visualises "Wrong Cone".
No cone	No cone/cup If the "cup present" photocell is concealed, the machine considers the cup is absent and therefore not suitable. The machine aborts the dispensing cycle, the cup returns downwards and the message "No cone" appears on the display.
Photocell alarm	The photocell does not function correctly.
Mix for Pasteur	For machines with 2 levels, this is shown when the medium level is uncovered in all functions except Cleaning. To reset the message definitively, cover the medium level. The rear warning light and the acoustic signal are activated simultaneously. The rear warning light and the acoustic signal are not active in STOP and CLEANING.
Pasto not done	If after 1 minute from the hour of automatic pasteurisation the machine is not in the Pasteurisation function, the message "Pasto not done" appears on the display for 5 seconds. Check the mix level.
Alarm Ind Sens	If the inductive sensor is obscured at the end of dispensing, an alarm appears on the display for 5" and the piston automatically returns to its resting position to free the inductive sensor.
SyrupCheck.n	This alarm is active only when the machine is in Production mode if enabled (refer to step T10) and indicates the need to check the quantity of residual syrup (n = 1 or 2). When the alarm is active, the rear warning light flashes and the acoustic signal is intermittent. The rear warning light and the acoustic signal are not active in STOP and CLEANING. To reset this alarm, refer to the paragraph "Syrup Check".
lavare Sc. in ngg	The message "Wash syrups" is visualised only after 20.00 hours (evening) until 10.00 hours (the following morning). This message appears only when 1 day is left to washing the syrup lines. This message appears at night to avoid being visualised during standard production hours. The "Wash syrups in nth days" message is only visualised during the washing procedure and loading the lines.

The machine has a large memory that helps us to memorise the greater part of the events (the function selected, the alarms, etc.).

To read only Pasteurisations:

With the machine at Stop, press the  key continuously for 3 seconds. The display visualises:

12:10:36 22 May
READ PASTO

With the machine at Stop, press the  (successive event) and Down key  (previous event).

The various steps of pasteurisation:

Start Pasteur.	:	Start Pasteurisation
Start Pause	:	Start Pause (End of Heating cycle)
End of Pause	:	End of Pause (Start Cooling cycle)
End of Pasteur.	:	End of Pasteurisation

N.B. The maximum number of memorisable events is 1000.

At the successive event, the thousandth decimal is removed.

4.2 BLACKOUT

In the event of a power blackout, if the machine was in Cleaning mode, when the power returns, it will pass to Stop mode.

In the Heating step of the Pasteurization mode, or in Pause during the Pasteurization mode, when the power returns, the machine will switch on at the setting it was at when it switched off (with Power On on the display).

If the machine was in:

Production or Storage in Pasteurization mode,

when the power returns, the machine will check the temperature TEV and length of the blackout; if the time is above that indicated in the table, the machine will completely repeat the pasteurization and store the alarm “**Ritorno Tensione**” or “**Power On**” in the “event list”.

However, if the time is less than that indicated in the following table, the machine will reset to the operating mode at which it was set prior to the blackout.

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. DISASSEMBLING AND CLEANING THE PARTS IN CONTACT WITH MIX

5.1 GENERAL DESCRIPTION

Cleaning and sanitisation are operations that must be carried out habitually and with maximum care at the end of each production run to guarantee the production quality and respect the necessary hygienic norms.

Giving dirt the time to dry out can greatly increase the risk of rings, marks and damage to surfaces. Removing dirt is much easier if it is done immediately after use because there is the risk that some elements containing acid and saline substances can corrode the surfaces. A prolonged soaking is recommended.



5.2 WASHING CONDITIONS

- **Avoid using solvents, alcohol or detergents that could damage the component parts, the machine or pollute the functional production parts.**
- When manually washing never utilise powder or abrasive products, abrasive sponges or pointed utensils; there is a risk of dulling the surfaces, removing or deteriorating the protective film that is present on the surface and scoring the surface.
- Never ever use metal scouring pads or synthetic abrasives to stop any scouring action that could remove ferrous parts that could cause oxidisation or make the surfaces vulnerable.
- Avoid using detergents that contain chlorine and its composites. The use of these detergents such as bleach, ammoniac, hydrochloric acid and decalcifiers can attack the composition of the steel, marking it and oxidising it irreparably and causing damage to the “plastic” parts.
- Do not use dishwashers and their detergent products.



5.3 SUGGESTIONS

- 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 sanitise leave the disassembled parts in sanitised tepid water for 10-15 minutes (**use the sanitising product following the instructions of the manufacturer**) and rinse them before reassembling.
- When the washing procedure has been completed and before the reassembly of each component dry 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 XSAN sanitising detergent to wash the machine because it has been checked and approved by our laboratories.

The use of XSAN permits optimising the washing and sanitising process inasmuch that it eliminates two phases of the procedure (a rinse and a washing phase). Substantially, the use of XSAN saves time facilitating and simplifying the washing/sanitising procedures.

ATTENTION

It is also essential that each time the machine is washed and parts in contact with the ice cream mix are removed, to make a visual check of all parts in thermosetting materials, plastics, elastomers, silicone and metal that come into contact with the product (for example, scrapers, pump gears, beaters, etc...).

Each part must be whole, not worn and without cracks or splits, or opaque, if originally polished/transparent.

Carpigiani refuses to accept any liability for damage caused through imperfection and/ or failures not found and promptly solved, including with the use of original replacement parts, and is happy to provide help and consultation for all specific customer requests.



5.4 HOW TO USE XSAN DETERGENT/SANITIZER



Prepare a water-based solution (at a temperature between 45 and 60°C) and XSAN at a concentration between 1 and 3%, according to water hardness.

Washing/sanitizing by soaking

- Remove larger residues by hand.
- Remove finer residues with a jet of water.
- Soak the parts to be cleaned in the XSAN solution.
- Leave the solution to act for about 10-15 minutes.
- Rinse the parts with care, using plenty of clean drinking water.

5.5 DAILY CLEANING



Cleanout and sanitization must be carried out daily, at every opening and closing, following instruction shown in section 3.7 with utmost care, to grant production quality and health rules observance.

NOTE:

The cleaning and sanitisation of the syrup lines must be carried out every 14 days (refer to section 5.7.1).



5.6 SCHEDULED CLEANING

The machine is fitted with an automatic system to force washing of parts that come into contact with the product once a programmed time interval has expired. This system, which is known as "WASH", blocks the distribution function at the end of a set time period.

IMPORTANT

Cleaning and sanitizing are operations that need to be carried out habitually on the scheduled date indicated on the machine display and using the utmost care to ensure product quality and compliance with the necessary hygiene standards.



5.7 EMPTYING THE ICE CREAM CIRCUIT




1. Place a container under the spigot.
2. Press the STOP button.
3. Press the star key (Ref. 1, Fig. 4 or Fig. 6, p.15) to open the front lid piston to empty out the cylinder.
4. Remove the tank lid.
5. Disconnect the connection pipe from the pump, turn the compression pipe 90° and slide it out of its seat in the tank. At this point, wait for the product to come out of the tank completely. Remove the pump by turning it 45° clockwise and pulling it out from the front.
6. Remove the tank beater from its seat.
7. Wait for all of the liquid mix to come out and then press the star key again (Ref. 1, Fig. 4 or Fig. 6, p.15) to close the piston.
8. Fill the tank with 10 litres of clean water. Using the brushes provided, clean the sides of the tank, the level sensor and the tank beater seat. Use the smallest brush to clean the pump seat and the seat of the compressor pipe.
9. Place a pail under the front lid, press the star key (Ref. 1, Fig. 4, page 15) in order to open the piston and let water out.
10. Rinse with hot water as long as clean water comes out.
11. Select the function cleaning and let the machine run 10 seconds.
12. Press the STOP button, place a bucket beneath the front lid, and press the star button (Ref. 1, Fig. 4 or Fig. 6, p.15) in order to release the spigot piston and drain all the water from the machine.
13. Fill the tank with sanitizing solution prepared with 45-60°C water. Clean the tank walls, the level sensor and the mixer seat using the supplied brushes.
14. Select the function cleaning and let the machine run 10 seconds.
15. Press the STOP button. Allow the sanitizing solution to sit for at least 10/15 minutes.
16. Place a pail under the front lid, press the star key (Ref. 2, Fig. 1, page 15) in order to open the piston and let the sanitizing solution out.

5.7.1 Sanitization of the syrup lines (only in the Colore version) – every 14 days

1. Remove the syrup tubes from their containers.
2. Clean the exterior of the syrup tubes with a clean and sanitised cloth.
3. Remove the containers of syrup from the syrup compartment.


Cleaning the syrup lines:

1. Place an empty bucket underneath the door. Fill the bucket with XSAN solution.
2. Position the syrup tubes inside the bucket containing the XSAN solution, press the Stop key then

the coloured  key twice to activate the syrup pump at max speed and let the solution flow for 1 minute. Press the Stop key to stop the syrup pump.

3. Repeat the operation for all syrup lines.


Rinsing the syrup lines:

1. Fill a bucket with clean water and insert the syrup tubes. Press the coloured  key twice to activate the syrup pump and let the water flow for 1 minute. Press the Stop key to stop the pump.
2. Repeat the operation for all syrup lines.




NOTE:

Filling the lines with syrup is carried out after the complete sanitization of the machine.

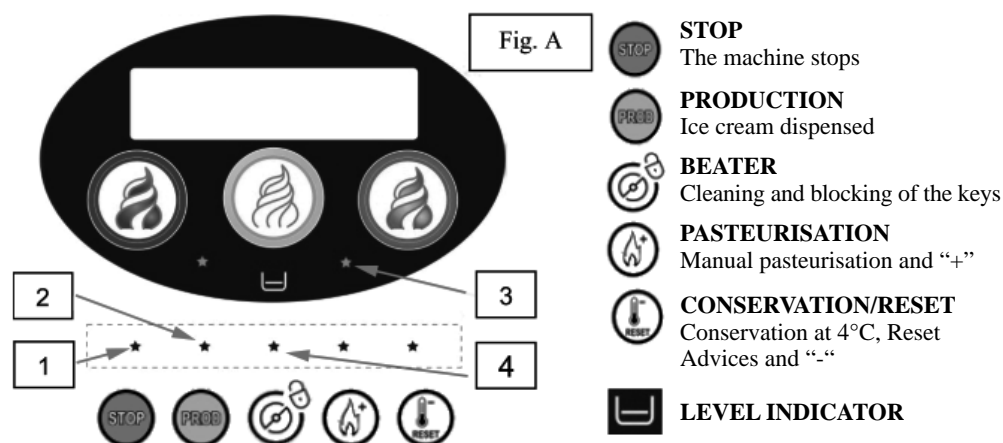
Loading the lines with syrup:

1. Place each syrup tube in its relative container.
2. Place an empty container underneath the door.
3. Press the coloured  key twice until the syrup is dispensed and then throw away the dispensed syrup.
4. Press the Stop key to stop the syrup pump.
5. Repeat the operation for all syrup lines.
6. Utilise a clean and sanitised cloth to clean the syrup compartment and the door of the compartment.

Calibrate the dispensing of the syrup as follows

- Press the Stop key; the LED is illuminated.
- Position the calibration cup under the door.
- Press the coloured  key to activate the syrup pump and dispense syrup for 7 seconds. The pump stops automatically. During the dispensing of the syrup the display visualises the message “syrup number” and the speed of the pump.
- Check the quantity of syrup; it should be approximately 30 ml.
- As soon as the piston closes and the syrup pump stops, the display flashes and visualises the speed of the pump. The   keys light up for 3 seconds. Acting on these keys, the speed of the pump can be increased or decreased. The modification becomes operative.

REPEAT THE CALIBRATION FOR ALL THE SYRUP LINES





5.8 DISASSEMBLING OF THE TANK MIXER

Remove the hopper agitator (pos. 162) by pulling it upwards.

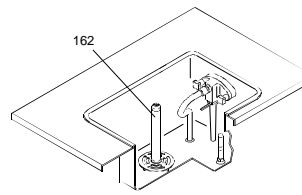


Fig. 11

5.9 DISASSEMBLING PUMP AND COMPRESSION PIPE



1. Remove the shaft (96) and the gasket (243).
2. Remove the air regulator (pos. 271) by turning it anticlockwise and pulling downwards.
3. Take the spring (pos. 206) and the valve out (pos. 245). Remove the OR (pos. 1126) with the special extractor provided.
4. Unscrew both knobs (pos. 8B) so as to split the cover (pos. 202) from the pump body (pos. 39).
5. Strike the pump body with your hand in order to remove the gears (pos. 38 e 38A). Remove the OR (pos. 1178) with the special extractor.
6. Remove ORs (pos. 1117, 1126).
7. Remove the connection pipe (pos. 207) from compression pipe (pos. 32), as well as the ORs (1126).

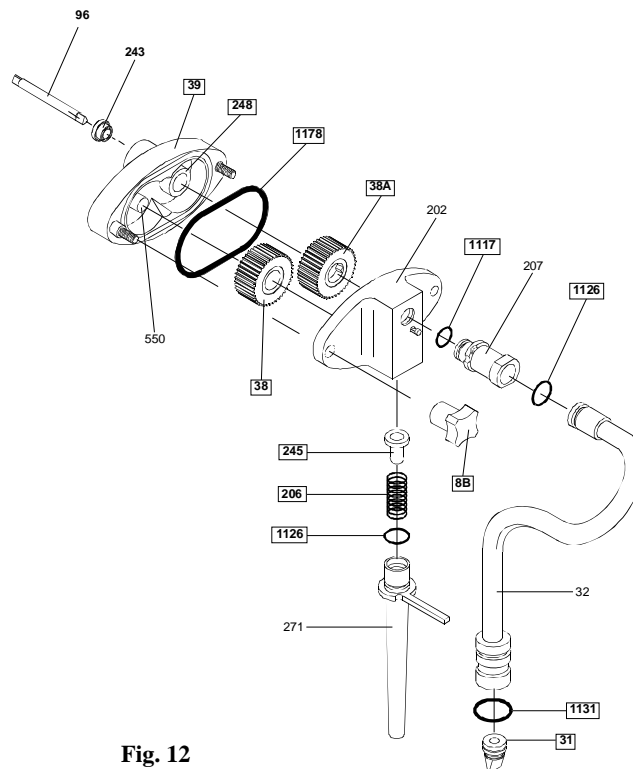


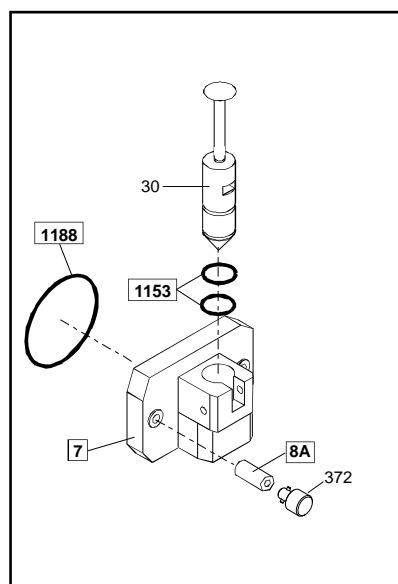
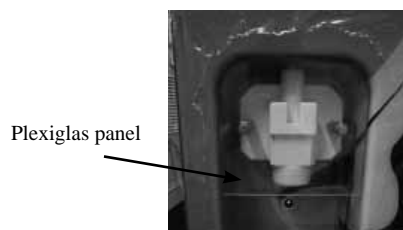
Fig. 12

5.10 REMOVING THE FRONT LID

IMPORTANT

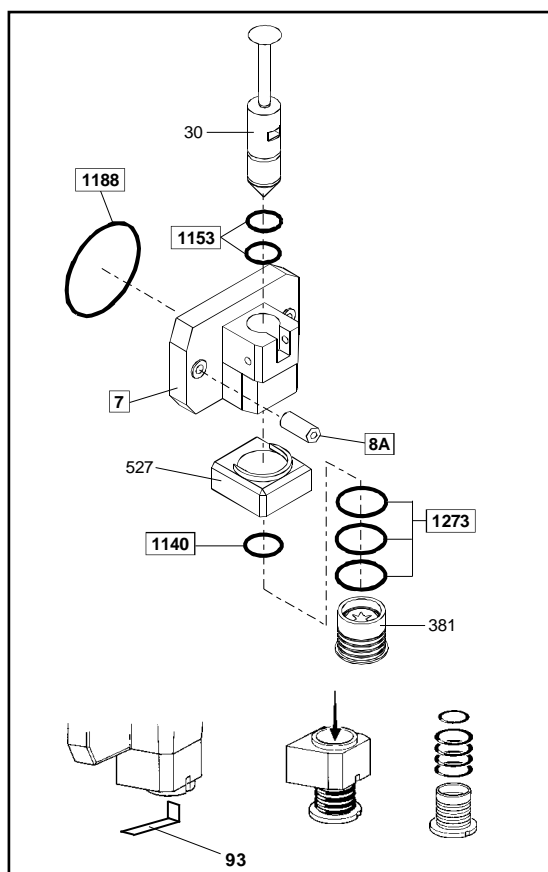
Before removing the front lid, make sure that both the tank and the cylinder are empty.

1. Disassemble the Plexiglas front panel using the appropriate supplied Allen key or using the two front knobs by rotating them in an anticlockwise direction.
2. Using the 17 mm wrench provided, loosen and remove the two knobs on the front lid (pos. 8A). Take off the front lid by pulling it outwards.
3. Lift and remove the piston (pos. 30) from its seat.
4. Remove the O rings (pos. 1153 and 1188) using the extractor supplied with the machine.
5. **Color version only:** Use the wrench (pos. 93) provided to loosen the syrup distributor (pos. 381) anticlockwise and remove the O rings (1140, 1273)..



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Fig. 13



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Fig. 14

5.11 DISASSEMBLING THE BEATER

1. Pull the beater out of the cylinder.
2. Slide the beater seal (pos. 28) out of the beater shaft.
3. Pull the idler (pos. 24) slightly to the front of the beater until the groove in the shaft of the idler lines up with the slot on the beater frame. Pull the idler out.

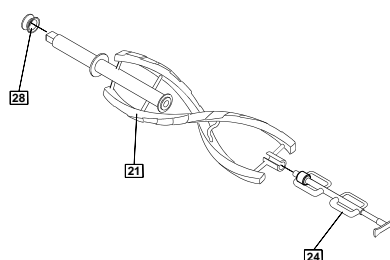


Fig. 15

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, make sure that the wear on 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 beater idler.



5.12 REMOVING THE ICE CREAM DISCHARGE TRAY (OPTIONAL)

On versions where this is fitted, it is necessary to remove, clean and sanitize the ice cream discharge tray, which is located in the module that supports the machine.

Proceed as follows:

- with the machine in STOP, press the star key (ref. 2, fig. 6 p. 15) to lift the cup holder.
- take the drip tray out from its seat with the discharge pipe connected.
- open the ice cream discharge tray and clean and sanitize it.
- Press the star key (ref. 2 fig. 6 p. 15) to lower the cup holder.

5.13 WASHING AND SANITIZING COMPONENTS

CAUTION

For the use of sanitizers, instructions on labels are to be followed.

1. Fill another sink with xsan sanitizing solution prepared with 45-60°C water.
2. Dip the disassembled parts in the sanitizing solution and leave them there for at least 10/15 minutes.
3. Carefully rinse the components using plenty of drinking water.
4. Place the components on a clean tray to air-dry.
5. Dip a brush into the sanitizer and thoroughly brush the freezing cylinder.
6. Dip a brush into the sanitizer and thoroughly brush clean the mix inlet hole and the pump drive hub opening in the rear mix hopper.
7. Spray the cylinder bottom and the tank walls with sanitizer.

Repeat step 5, 6 and 7 several times.

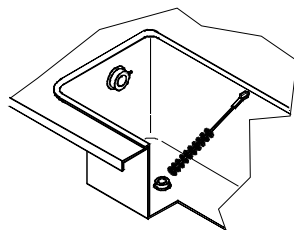


Fig. 16

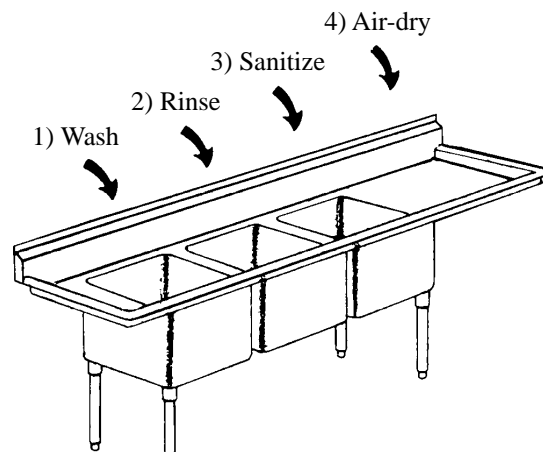


Fig. 17

5.14 REASSEMBLING OF THE HOPPER MIXER

Relocate the hopper agitator (pos. 162) back in its seat: pay attention to engage it onto its shaft correctly.

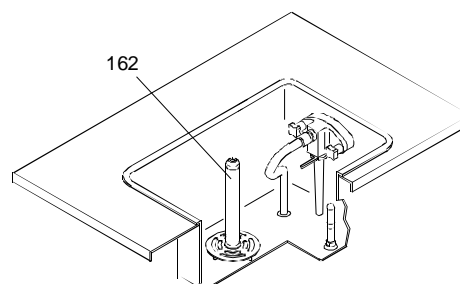


Fig. 18

5.15 REASSEMBLING PUMP AND COMPRESSION PIPE

1. Lubricate and reassemble the OR (pos. 1117) into the connection pipe.
2. Lubricate and reassemble the OR (pos. 1126) into the compression pipe (pos. 32).
3. Insert into the connection pipe (pos. 207) into the compression pipe (pos. 32) and dip it into the sanitizing solution.
4. Lubricate and reassemble the OR (pos. 1178 and 1266).
5. Lubricate the gears (pos. 8 and 8A) and insert them into the pump body. **Warning: do not lubricate gear teeth.**
6. Lubricate and reassemble the OR (pos. 1126) onto the suction pipe (pos. 271).
7. Insert the valve (pos. 245) and the spring (pos. 206) into the pump body (pos. 202).
8. Insert the air regulator (pos. 271) into the pump cover by pushing and rotating it clockwise.
9. Assemble the pump cover (pos. 202) into the pump body, mind-ing that the air regulator is turned downwards and screw both knobs (pos. 8) tight. Reassemble the pump into the tank with its holdback on the right hand. Rotate the pump anticlockwise till locking in its seat.

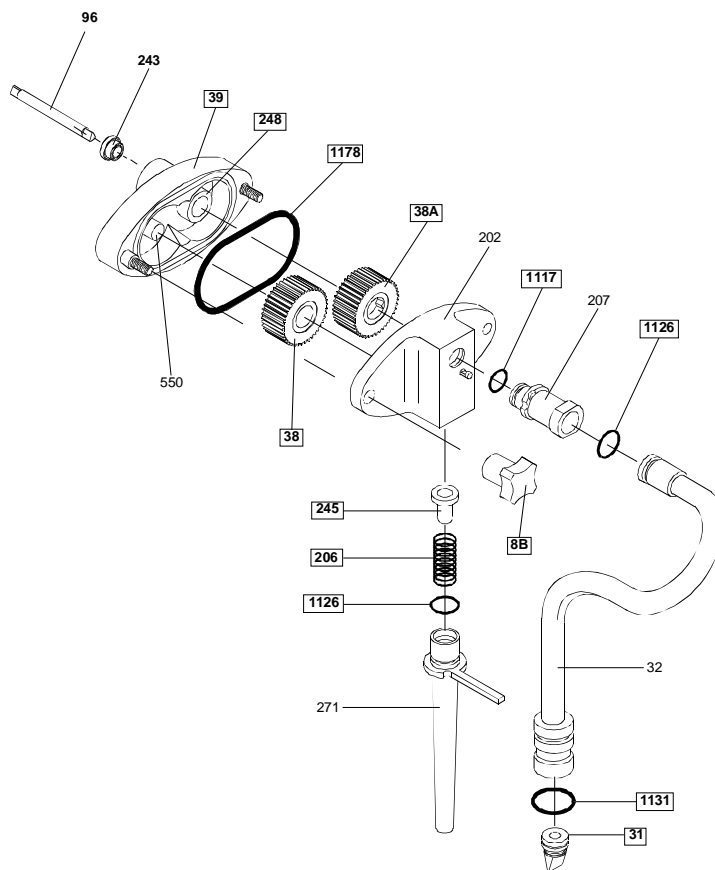


Fig. 19

5.16 REASSEMBLING OF THE BEATER

1. Lubricate the sides of the beater seal (pos. 28) and slide it onto the beater shaft.
2. Insert the end of the idler shaft (pos. 24) in the rear housing and align the idler shaft groove with the frame front slot. Push the idler into position.
3. Insert the beater assembly into the cylinder. Push it while turning it clockwise until it engages in its rear hub, otherwise the dispensing head cannot be fastened properly, mix can flow out and serious damage may occur.

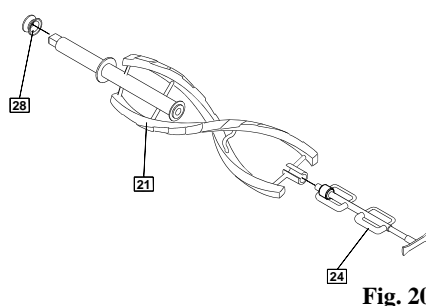


Fig. 20

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, make sure that the wear on 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 beater idler.





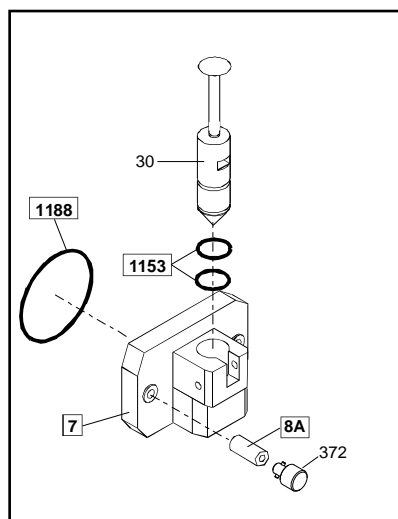
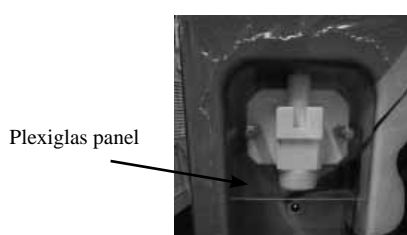
5.17 REFITTING THE FRONT LID

1. Lubricate and fit the two piston O rings (pos. 1153) in their seat.
2. Insert the piston (pos. 30) into its seat, taking care to align the square notch of the piston with the rectangular notch in the front part of the front lid.
3. Lubricate and insert the O ring in its seat (pos. 1188).
4. **Color version only:** Lubricate and insert the O rings in their seats on the syrup distributor.
5. Screw the syrup dispenser (pos. 381) back onto the dispensing head, together with the syrup dispenser bushing (pos. 527).

Important

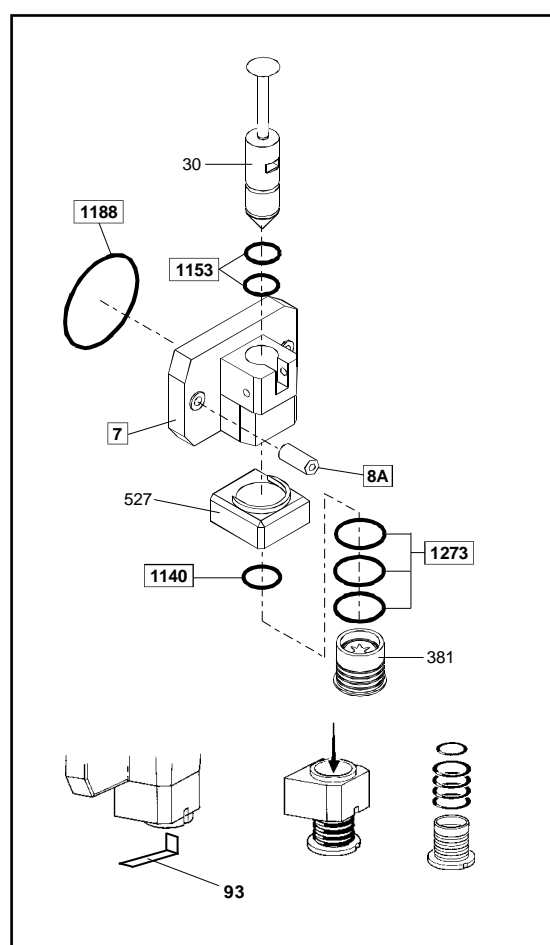
**Always refit the syrup dispenser (pos. 381), being sure to do so correctly.
Due to residual risks, the lack of a syrup distributor could harm the operator.**

6. Refit the front lid on the machine, tightening the two knobs (pos. 8A) with the 17 mm wrench, provided.
Important: Do not overly tighten the knobs (pos. 8A) as this could damage the front lid.
7. Refit the Plexiglas panel (where used)



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Fig. 21



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Fig. 22

5.18 REFITTING THE ICE CREAM DISCHARGE TRAY (OPTIONAL)

1. With the machine in STOP mode, press the star key (ref. 2 fig. 6 p. 15) to raise the cup holder.
2. Open the door of the module.
3. Insert the tray in the special guides.
4. Insert the drip tray into its seat, making sure that the pipe connected to it discharges into the ice cream discharge tray
5. Press the star key (ref. 2 fig. 6 p. 15) to set the cup holder back in the standby position.

5.19 SANITIZING THE MACHINE

The machine must be sanitized before its use. Procedure to follow:

1. Fill the tank with a sanitizing solution prepared in water at 46-60°C to the maximum level and let it into the cylinder.
2. Clean mix level sensor, tank walls, pump and tank beater with the cleaning brushes provided.
3. Select the cleaning function and let the machine run 10 seconds. Press STOP. Cylinder and pump are full of sanitizing solution, now.
4. Also fill a pail with the sanitizing solution.
5. Dip a brush into the sanitizing solution and clean the front lid. Execute twice.
6. Clean the external surface of the machine with a sanitized cloth. Execute twice.
7. Wait for 5 minutes before going ahead with following operations.
8. Place a pail under the front lid and press the start key (Ref. 1, Fig. 4, page 15) to open the piston.
9. Wait until the sanitizing solution comes out. If it does not come out completely, select the function CLEANING. Let the machine run 5 seconds for a full drainage and press STOP.
10. Rinse with plenty of drinking water.
11. Thoroughly clean the syrup containers cabinet, the shelf under the front lid and tank covers.
12. Insert feeding connections and compression pipes into their own seats, after washing them separately.

WARNING

Too a long running in "CLEANING" mode with empty cylinder or just filled with water an sanitizer brings about an early and quick wear of the beater shoes.

ATTENTION

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

WARNING

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

5.20 MIX FILLING

Starting with the machine in STOP, after fitting the beater, the front lid and the tank pump, take a package of mix from the refrigerator (we recommend using the product at a temperature of 4-5°C), pour it into the tank and wait for it to flow down and fill the cylinder below; once the cylinder is full, the gurgling around the hole for compression pipe insertion will cease.

Having completed this operation, check that the mixture level in the tank is above the level sensor, but does not exceed the pump regulator (refer to Fig. 8).

Press the cleaning key for a few seconds, making sure that a suitable amount of mix comes out of the pump to show that it has been correctly fitted.

With clean and sanitised hands, insert the compression tube into the bottom of the tank. Turn the pipe anticlockwise to bring it closer to the pump; insert the pump connection pipe and turn it clockwise to lock it in the relevant pin.

After making sure that the mix inside the tank is above the minimum mark and under the pump regulator, refit the lid and press the cleaning key. Wait for the machine to return to STOP mode and then press the Production key.

NOTE:

In the colour version, fill the syrups as described in sections 3.4.1 - 3.4.2.

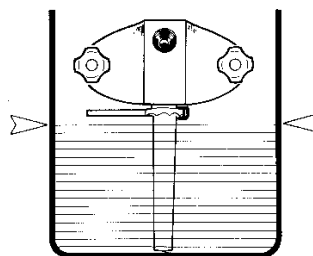


Fig. 8



6. MAINTENANCE

6.1 TYPE OF INTERVENTION

ATTENTION

Any servicing operation requiring the opening of machine panels must be carried out with machine set to stop and disconnected from main switch!

Cleaning and lubricating moving parts is forbidden!

“Repairs to the wiring, mechanical, air supply or cooling systems, or to parts of same must be carried out by qualified personnel with permission to do so and if necessary, according to the routine and extraordinary maintenance schedules as envisaged by the customer with reference to specific intervention methods, according to the use for which the machine is destined”.

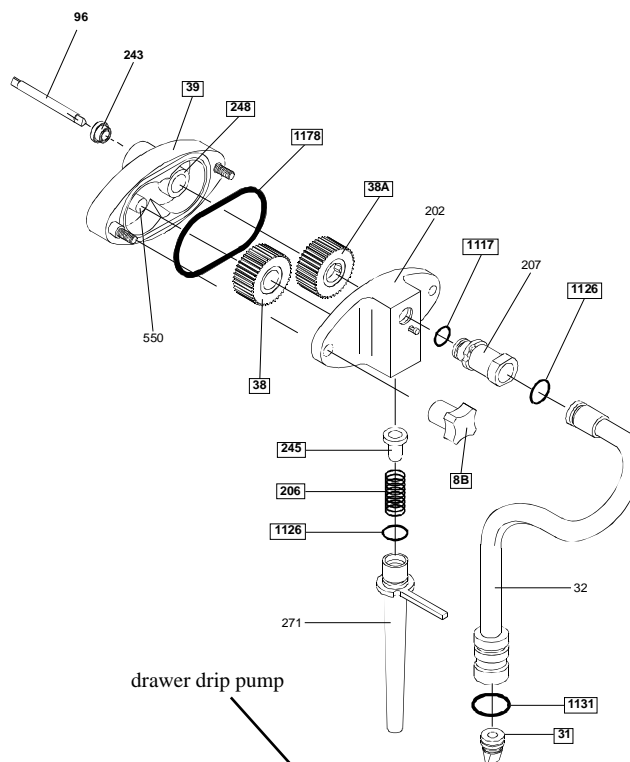


The operations required for good machine operation during production are such that most routine maintenance interventions are an integral part of the production cycle as it is carried out. The following section contains a list of the routine maintenance operations required:

- Check the wear of the two mix pump gears (pos. 38 - 38A) and replace them if necessary.
- **Cleaning and replacing the pump seal**

If any product should be found to be leaking from the pump seal drip tray, this means that the seal (pos. 243) is no longer tight.

It is necessary to remove the pump (see par. 5.5) and check the integrity of the seal. If damaged, the seal needs to be replaced; continuing to work with product leaking from the pump seal will cause the machine to malfunction.



WARNING

Stuffing box must be replaced with an original spare part each time ice cream drops are found on withdrawing drip drawer.

Continuing with production after noticing traces of product in the drip tray means further increasing the leaks from the seal and therefore, the chances of machine malfunctions to the extent of ruining production.

- **Cleaning and replacing the beater seal**

If any product should be found to be leaking from the beater drip tray, this means that the beater seal (pos. 28) is no longer tight.

When removing the beater, it is necessary to check the integrity of the beater seal; according to the periods of machine use, it should be replaced, alternating it with the second seal provided in the bag of accessories in the packaging.

If the removed seal has no defects, it can be reused after washing and when it has recovered its original shape at room temperature.

To replace the seal, proceed as follows.

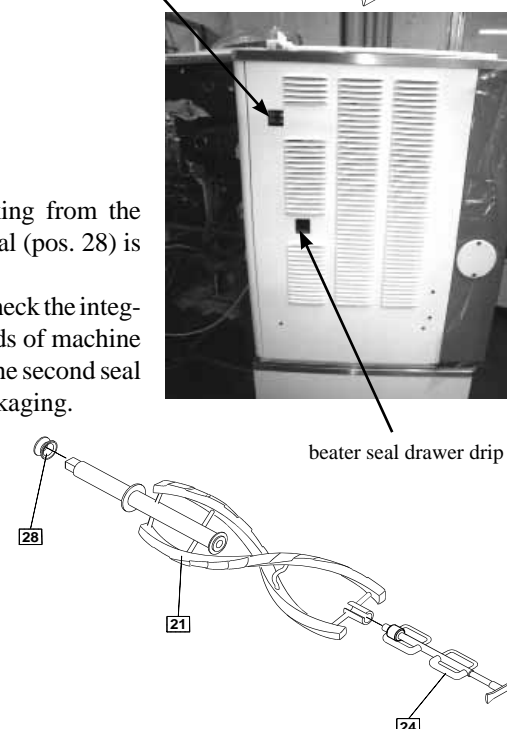
Slide out the beater unit.

Remove the seal from its seat.

Lubricate the replacement seal.

Fit the new seal.

Clean and lubricate the old seal to restore its elasticity.



**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, make sure that the wear on 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 beater idler.

- **Cleaning the beater unit, pump and cleaning and sanitizing the machine**

These operations must be performed according to the procedures described in section 5 of this manual.

- **Cleaning sheet metal**

This is required every day, using mild soap and making sure not to allow detergents to come into contact with the inside of the beater unit.

- **Cleaning Tokens and token tray**


Check the token compartment cleanness on a regular basis, as well as the cleanness of the tokens themselves, as traces of dirt could prevent the machine from recognizing them. Use water and a mild soap to clean the tokens or a universal grease remover (e.g. a standard home cleaning spray) only in critical cases.

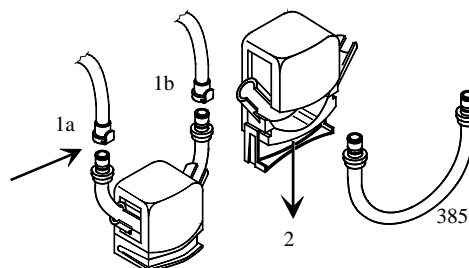
**WARNING**

Never use abrasive sponges to clean the machine or any of its parts as they could scratch the surfaces.

6.2 INSTRUCTIONS FOR THE SUBSTITUTION OF THE TUBE OF THE PERISTALTIC PUMP

6.2.1 Removal of the pump tube

1. Remove the syrup tubes from their containers. Clean the exterior of the tubes with a clean and sanitised cloth.
2. Remove the syrup containers.
3. Place the tubes in a bucket containing XSAN solution. To avoid possible contamination, cover the syrup containers with plastic film.
4. Press the Stop key (LED alight).
5. Press the coloured  key twice to activate the syrup pump to pump the XSAN solution through the syrup line.
6. Allow the XSAN solution to flow until only the solution flows through the line and no syrup.
7. Once the line is free from syrup, remove the feed tubes from the XSAN solution and activate the pump until the line is free of all liquid.
8. Press on the rapid attachment connector (Ref. 1a) to disconnect the collection tube from the pump.
9. Press on the rapid attachment connector (Ref. b) to disconnect the feed tube from the tube of the pump.
10. Open the pump by pressing downwards on the hinged cover (Ref. 2)
11. Grip the pump tube (Ref. 385) from one side and pull it upwards and then outwards from the other side. Remove the pump tube.



6.2.2 Installation of the pump tube

1. Sanitize the new pump tubes (ref. 385) and lubricate the O-rings of the syrup line installations.
2. Position the pump tube in the body of the pump.
3. Pull the cover upwards to close the pump.
4. Connect the feed tube to the pump tube installation.
5. Connect the collection tube to the pump tube installation.
6. Replace the syrup containers.
7. Load the syrup lines. Dispense a single portion of syrup into a cup and then throw away the product.
8. Calibrate the syrup system according to the instructions in the supplied manual.

6.3 WATERCOOLING

By machines with watercooled condenser, water must be drained from condenser at the end of selling season in order to avoid troubles in the event that the machine is stored in rooms where temperature may fall under 0°C.

- After closing water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.

6.4 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.**



6.5 TABLE OF SPARE PARTS EQUIPMENT

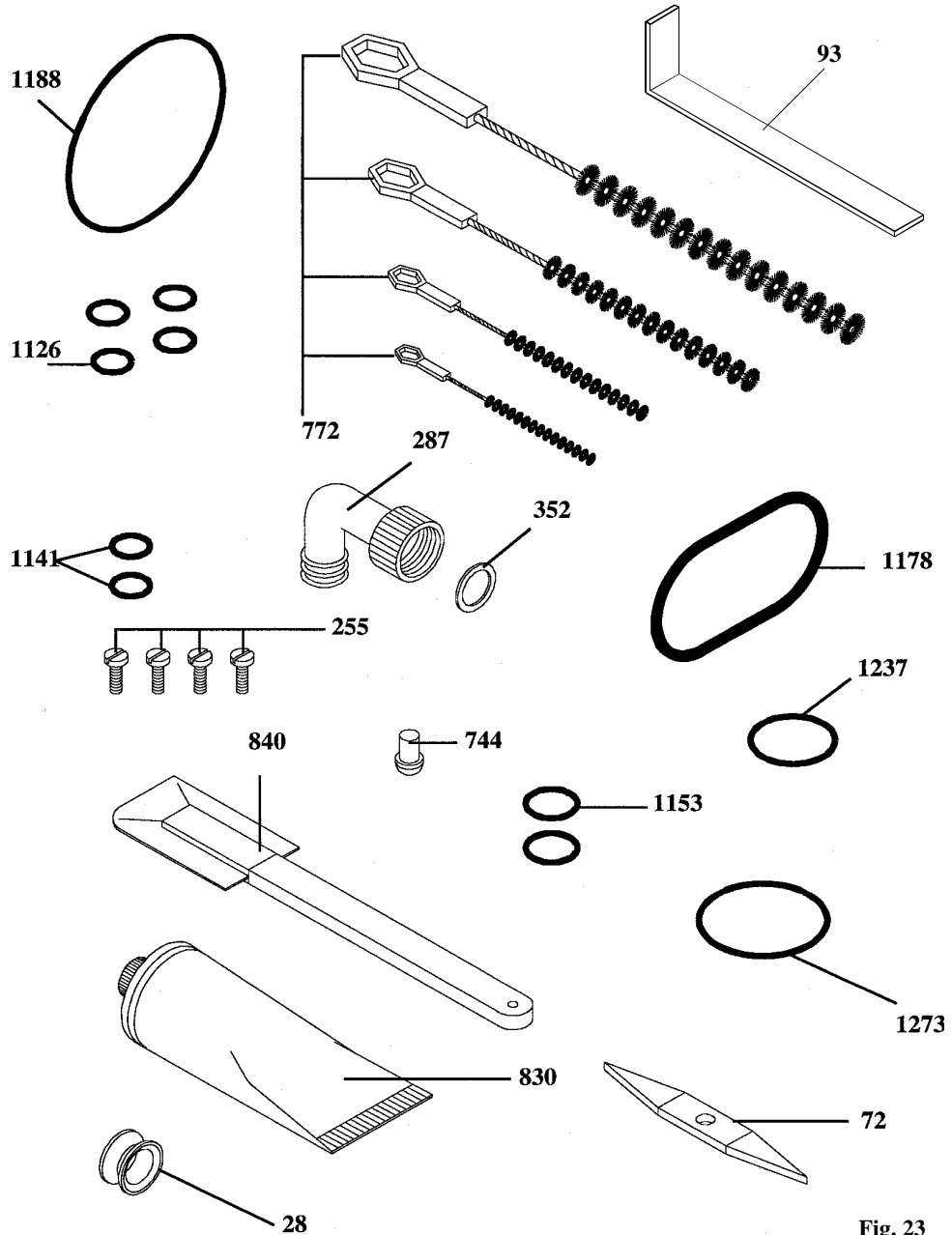


Fig. 23

Q.ty	Description	Position
N°1	Beater stuffing box	28
N°1	OR extractor	72
N° 1	Syrup door wrench	93
N°4	Screws	255
N°3	Connector head dispense 3/4 x 20	287
N°1	Connector head dispense 3/4 x 16	287
N°3	Connect. head disp. gaskets	352
N°3	Stopper rubber	744
N°4	Brushes D 8x250-D 15x350-D 20x450-D 40x400	772
N°1	Gelilube tube	830
N°1	Cleaning spatula	840
N°4	OR gaskets	1126
N°2	OR gaskets	1141
N°2	OR gaskets	1153
N°1	OR gaskets	1178
N°1	OR gaskets	1188
N°1	OR gaskets	1237
N°4	OR gaskets	1273

7. TROUBLESHOOTING GUIDE

Irregularity	Cause	Procedure to follow
Machine does not start.	a) Outside electric circuit. b) Burnt fuses. c) Thermal relay released. d) Not at DISTRIBUTION.	a) Check outside elect. circuit. b) Check and replace. c) Press STOP/RESET. d) Check and even if set at DISTRIBUTION, turn to off and then back to Distribution.
Compressor starts and then stops after a few seconds without ice cream being thick.	a) Water-cooled machine: water not circulating. b) Air-cooled machine: air not circulating.	a) Open water tap. Check that hose is not squashed or doubled up. b) Check that rear of machine is at least 30 cm from wall. Clean condenser obstructed by rags, dust, etc.
Machines fails to cut out when set at DISTRIBUTION.	a) Air or water not circulating enough. b) Air was not bled when machine started and too much air left in the barrel. c) No mix in the tank. d) Pump not working properly.	a) See procedure nr 2. b) Open piston and take out about 1/2 litre product. c) Add mix. d) Wet gears with water or mix. Tighten pump knobs. Check all pump ORs and replace, if needed.
Machine works but no ice cream comes from spigot tap.	a) Frozen water in spigot b) Not enough sugar in the mix.	a) Allow to thaw and take out 1 litre ice cream before resetting. b) Allow to thaw and modify or replace the mix.
Machine works but ice cream is too soft.	a) Too much sugar in the mix. b) Machine has run too long without dispensing ice cream. c) Ice cream is dispensed too fast.	a) Modify or replace the mix. b) Take out ice cream until the barrel contains only fresh mix. c) Remember not to exceed production rate shown in table.
Mix or ice cream come out above or below closed piston.	a) Piston without OR or OR is damaged.	a) Insert or replace ORs.
Mix in drip tray.	a) Beater lip seal is missing or damaged.	a) Install or replace lip seal.
Ice cream comes out from behind front lid.	a) Gaskets are missing or not properly installed. b) Front lid knobs not tightened evenly.	a) Fix or replace. b) Loosen and tighten again.





Irregularity	Cause	Procedure to follow
Ice cream has not increased much in volume (no overrun).	a) OR rings leaking air. b) No pressure in the barrel. c) Pump cover loose. d) Wrong mix. e) Air hole of pump obstructed.	a) Check and, if necessary, replace ORs of pipes transferring the mix from pump to barrel. b) Check that pump valve nr 7 is set correctly. Replace valve and spring, if needed. c) Tighten knobs. d) Refill with fatter or less sweetened mix. e) Wash the pump and clear hole.
Alarm tripping.		a) Call technical service.
The token slot does not recognize the token	a) Dirty token and/or token tray	a) Clean tokens and tokens tray with mild soap and water. If the problem persists, contact Technical service.