



APPLICARE

TARGA

CARATTERISTICHE

INSTRUCTIONS - HANDBOOK

191 BAR

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 9001-94.

Moreover, Carpigiani machines comply with following European Directives:

- 98/37/CE Machines Directive;
- 73/23/CEE Low tension Directive;
- 89/336/CEE EMC Directive;
- 89/109/CEE Food Contact Directive.

CARPIGIANI

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The purchaser has the right to reprint it for his own office use.

CARPIGIANI policy pursues a steady research and development, thus it reserves the right to make changes and revisions whenever deemed necessary and without being bound to previous statements to the purchaser.

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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.

ATTENTION

**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: 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.

QUALIFICATION OF THE STAFF



MACHINE OPERATOR

He/she is an unskilled person, who has no specific expertise and can only carry out easy chores, such as the machine operation by means of controls available on the push-button panel, and filling and drawing of products used during operations.



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).**

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**
- Be on the look out that no technician will ever carry out interventions outside his own knowledge and responsibility sphere.

QUALIFICATION OF THE STAFF

Staff attached to the machine can be distinguished according to training and responsibility as follows:

OPERATOR

- A person who has not necessarily a high technical knowledge, just trained for ordinary operation of the machine, such as: startup, stop, filling, basic maintenance (cleanout, simple blocking, instrumentation checkings, etc.).

SKILLED ENGINEER

- A person engaged on more complicated operations of installation, maintenance, repairs, etc.

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.

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.

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

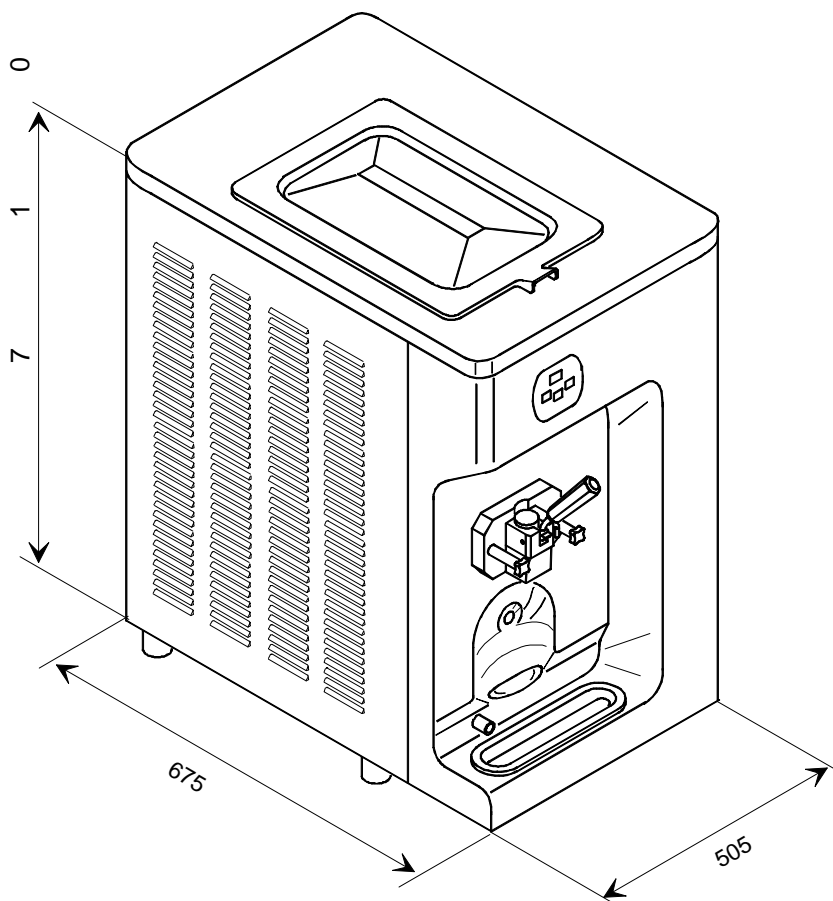
Counter-top machine to immediately produce and distribute soft express ice cream in one flavor available with pump or gravity feeder.

CARPIGIANI 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 CARPIGIANI.

1.2.2 Machine layout



1.2.3 Technical features

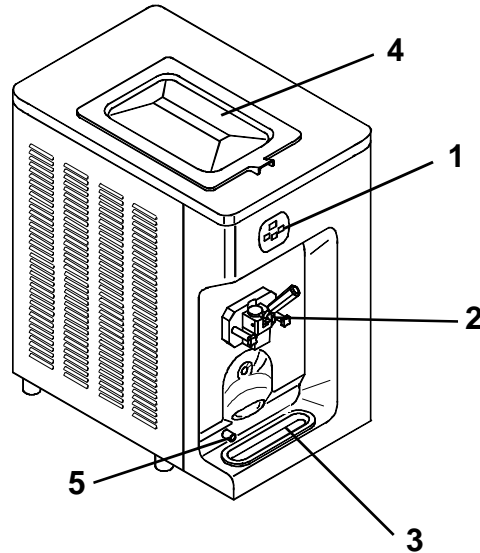
MODEL	Hourly production *		Tank capacity	Flavours	Power supply			Power input	Condenser	Net Weight
	kg	75 gr portions	liters		Volt	hZ	Phases	kW 50Hz		kg
191 BAR	19	250	18	1	230	50/60	1	1,8	air/water	104

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

1.2.4 Machine sets location

caption:

- 1 control panel
- 2 Freezing cylinder front lid
- 3 Drip tray shelf
- 4 Mix tank cover
- 5 Drippipe



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.



2. INSTALLATION

2.1 ROOM NECESSARY TO THE MACHINE USE

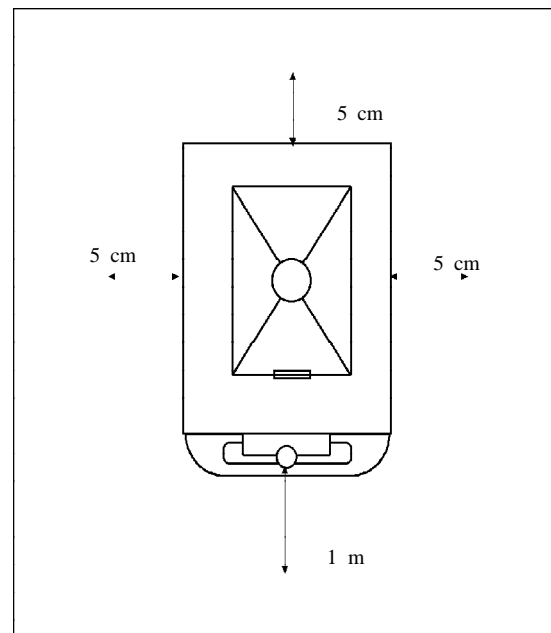
The machine must be installed in such a way that air can freely circulate allaround.
 Rooms for the approach to the machine must be left free in order to enable the operator to act without constraint and also to immediately leave working area, if need be.
 The minimum approach room to working area should be at least 100 cm.

ATTENTION

Machines with aircooled condenser must be installed no closer than 5 cm 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.



2.2 MACHINE WITH AIRCOOLED CONDENSER

Machines with aircooled condenser must be installed no closer than 5 cm 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.

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.

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.

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 LOCATION

Level the machine on the counter surface to ensure smooth operation and prevent mix from leaking.

2.6 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.

2.7 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.

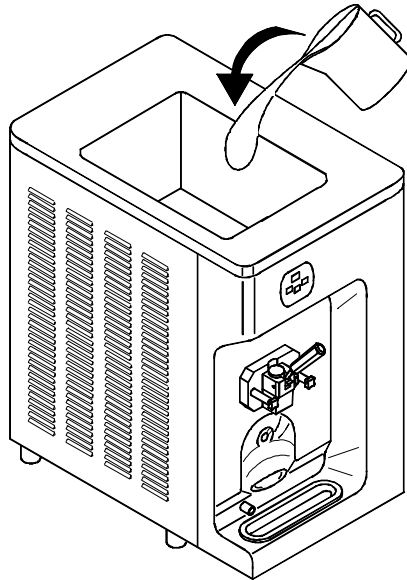
After the machine positioning and correct connections, also carry out all operations necessary to functional check and test of the machine.

3. DIRECTION FOR USE

3.1 MACHINE CONFIGURATION

The machine is made up of a motor-drive to power the beater unit, 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 CARPIGIANI is reached. Thanks to the pump or feeding needle, the mix enters the beating cylinder already mixed with air; ice cream is produced only when it needs to be served. The distributor valve on the machine front allows a single portion of soft ice cream to be distributed. At the same time, the same amount of mix moves from the upper cooled tub into the beating cylinder.



3.2 ELECTRONIC CONTROL KEYBOARD AND BUTTON FUNCTIONS

Details of the panel are shown in the picture below.



Lighted function indicators

The indicator lights up to show that the function corresponding to the symbol next to the indicator itself is inserted.

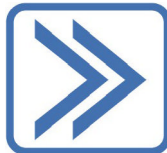
Monitor

This display indicates the product consistency or product temperature in tank when the machine is turned on and during its operation, while in DISTRIBUTION.



STOP button

With Stop function inserted, pilot light lit, the machine is ready to receive commands for any of the main functions.



Function selection button

By pushing this button you may select any of the following functions:



DISTRIBUTION function

When selecting this function the led lights up and the product is processed until its right consistency (pre-set HOT setting) is reached. During this cycle, display indicates a number corresponding to the product consistency in the barrel up to the reaching of the preset value, then the same monitor will show product temperature in the tank.



STORAGE function

When selecting this function, led lights up and the machine stores the product both in tank and barrel at a pre-set temperature of +4°C. The display indicates product temperature in the tank.

Note:

Every so often stir the mix with the special spatula provided, so as to get a uniform temperature and consequently avoid ice building on the tank bottom.



CLEANING function

When selecting this function, led lights up, and only does the beater run, while the refrigeration unit is cut out. This function is timed and ends automatically when the set time (usually 10 minutes) is reached. The display indicates product temperature in the tank.



Function disabled



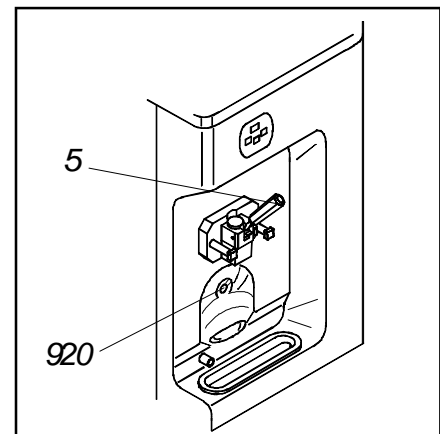
Tank level indicator

By lighting up, this led indicates that the mix level in the tank has reached the minimum allowed and refilling with fresh product is necessary.



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). As soon as the product comes out, twist the cup or the cone to form a cone-shaped serving. When the portion has reached the desired size, close the dispensing handle and quickly pull the cone or the cup down in order to sharpen the tip.



WARNING

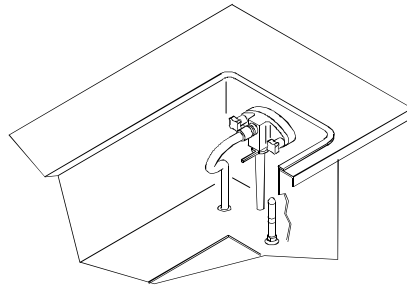
It is important to keep the sensor (pos. 920) clean



3.4 PUMP - FED MACHINES - "R" PUMP

"R" pump allows, by changing position of regulator pos. 271, to vary proportions between air and mix conveyed to the freezing cylinder; so, within certain limits, it allows overrun regulation depending on mix used.

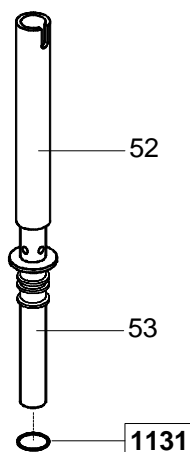
"R" pump regulator should be set to the middle position. If, after dispensing a significant number of cones, ice cream is too heavy and wet, you may move the R pump regulator a notch at a time towards the right. If ice cream comes out of spigot mixed with air bubbles, then turn R pump regulator a notch at a time towards the left.



3.5 GRAVITY - FEED MACHINE - FEEDING NEEDLE

How to obtain and how to keep quality performances.

1. Maintain a big mix level inside the hopper (above the half of the hopper itself). Mix temperature inside the hopper is +4°C both during production and storage
2. During the day the mix must periodically be stirred by use of a plastic spatula to avoid separation, particularly when product has not been dispensed over a long period and the machine has been in "storage" mode for a long time.
3. A fluid mix without particles has to be used. A thick mix with big particles could close the slot of the feeding needle thus blocking mix from entering the cylinder.
4. Keep the feeding needle slider (pos. 52) in a position as to allow for a smooth mix flow from the hopper. By rotating the slider slot to the whole with smaller diameter, the quantity of mix to the tank will decrease, and vice versa.
5. Set the feeding needle in such a way that inlet hole is turned towards the middle of the tank.
6. Never exceed production limits in kilograms declared by Carpigiani, and dispense cones and cups in the most regular way. If limits in production capacity as specified by Carpigiani are exceeded the machine could stop. In this case appear on the display the alarm signal "ICE". If this occurs to reset the machine please operate as follow.
 - stop the machine (pressing the push button to the STOP position)
 - remove the feeding needle to enable a quick drop of the mix into the cylinder
 - set machine in the "cleaning" position for a few minutes
 - make sure that the product coming out for the spigot body when dispensing is liquid
 - position the feeding needle again making sure the slider is sufficiently open
 - start the machine putting it in the "production" mode. Do not start dispensing product from the machine until the production cycle has been completed.



3.6 PRELIMINARY OPERATIONS, WASHING AND SANITIZATION



Before starting the machine for the first time, it is necessary to thoroughly clean its parts and above all sanitize all parts coming into contact with the product.

NOTE

Cleanout and sanitization must be carried out at the end of every working day, as a habit and with utmost care, in order to secure quality of production in the observance of healthy rules.



3.6.1 Cleaning

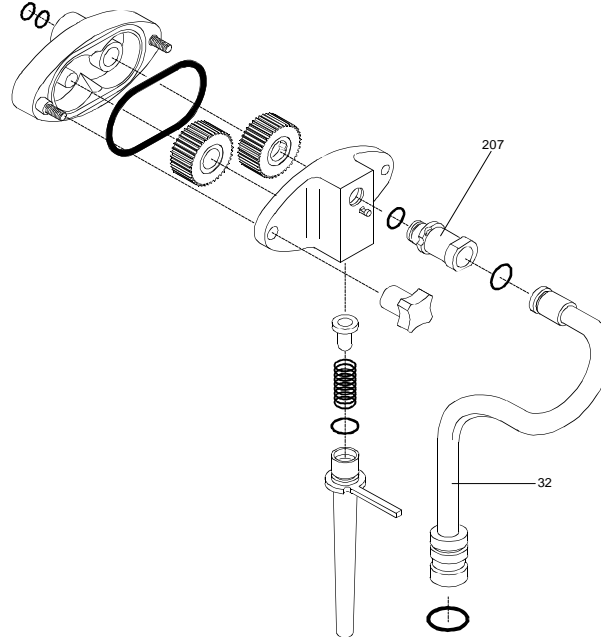
Lift tank cover and from its inside take out bag containing accessories, instruction booklet and warranty sheet.

Remove the tank cover.



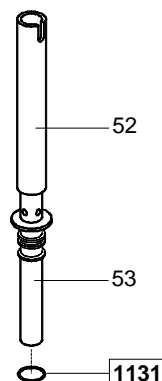
By pump-fed machines:

- Disconnect the connection pipe (pos. 207) by turning it to match with the hole and free it from the pin found on the pump cover.
- Pull the connection pipe backwards and remove the feeding pipe (pos. 32) by turning it 90° then pulling upwards.
- Removing the pump by turning it clockwise of 45° then pull backwards.
- Disassemble the pump (see section 5 of this manual).



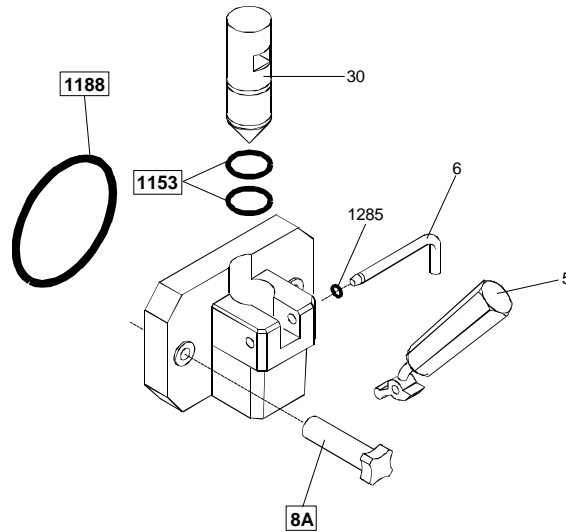
By gravity-fed machines:

- Extract the feeding needle slider (pos. 52), withdraw the slider from the tank bottom and remove the OR (pos. 1131).



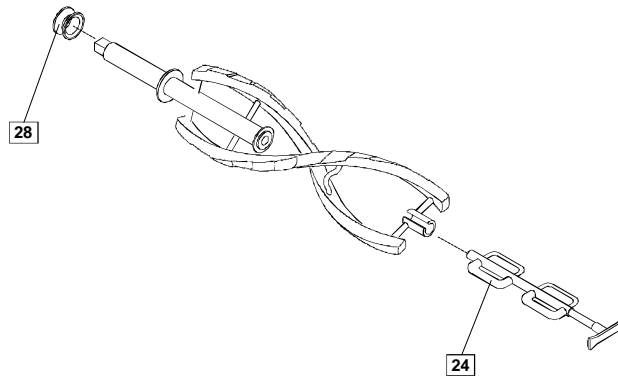
Removing the door

Remove the two retaining knobs (pos. 8A) and pull the door assembly towards you sliding it off the two front panel studs. Pull the dispensing handle (pos. 5) so the piston (pos. 30) raises in its housing. Remove the pivot pin O-ring (pos. 1285) and pull the pivot pin (pos. 6) out releasing the dispensing handle (pos. 5). Using the dispensing handle lever pull the piston (pos. 30) out completely. Using the o-ring extractor, remove the two piston o-rings (pos. 1153), and the large dispensing door o-ring (pos. 1188).



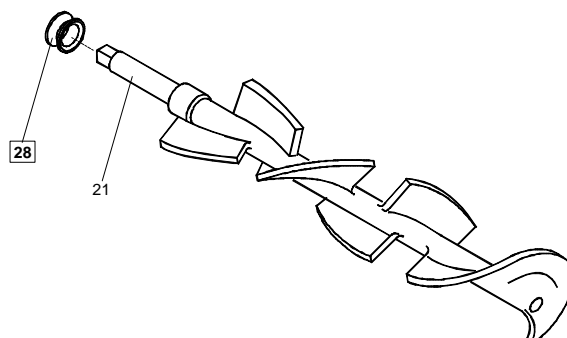
By pump-fed machine: Removing the beater

Pull the beater out of the cylinder. Slide the beater seal (pos. 28) out of the beater shaft. 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.



By gravity-fed machine: Removing the beater

Pull the beater out of the cylinder. Slide the beater seal (pos. 28) out of the beater shaft.



- 1- Fill a clean sink with detergent and hot water (50-60°C).
- 2- Wash the disassembled parts with the solution and scrub them thoroughly with the brushes provided with the machine. As you proceed, rinse with hot water. Make sure all lubricant and mix film is removed from parts.
- 3- Fill another sink with sanitizer prepared in 21-32°C water (ex. 1 packet in 9,5 litres of water).
- 4- Place the parts in the sanitizing solution. Leave them there for a minimum of 1 minute (**using the sanitizing solution, the sanitizer manufacturers' directions are to be followed**).
- 5- Place the components on a clean tray to air-dry.
- 6- Return to the machine with a small amount of sanitizer.
- 7- Dip a brush into the sanitizer and thoroughly brush the freezing cylinder
- 8- Dip the brush (pos. 772D) into the sanitizer solution and thoroughly brush the drip pipe.
- 9- 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.
- 10- Spray the back of cylinder and the hopper walls with sanitizer.

Repeat step 7, 8, 9 and 10 several times

Reassemble and place the compression tube (see section 5 of this manual) into the tank and connect to the pump only when cleaning operations are complete.

Reassemble the pump (see section 5 of this manual), making sure to use food-grade lubricant on all o-ring and insert it in the hopper

Reassemble the beater (see section 5 of this manual), insert it completely into the freezing cylinder by grasping it with both hands.



WARNING

Insert the beater minding not to hit it against the cylinder wall, since you might scratch it and so jeopardize the correct machine operation.

Reassemble the front lid (see section 5 of this manual) and install it back.

Reassemble and install the feeding needle (by gravity-feed machines)

Place the cover back.

3.6.2 Sanitizing



CAUTION

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

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

- 1- Fill the hopper to the maximum level with sanitizer prepared in 21-32°C 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, the surface of the mix pump and the outside of the hopper agitator.
- 3- Select CLENOUT function and let the beater run for about 10 seconds. Press the STOP button. The cylinder and the pump are now filled with the sanitizing solution.
- 4- Return to the machine with a small amount of sanitizer solution in a pail.
- 5- Dip the door spout brush in the pail of sanitizer 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 sanitizer to drain. If the sanitizing solution does not flow out completely, keep the spigot open and select CLENOUT 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 lubrication of mix butterfat the beater wear out quickly

3.6.3 Hygiene

Mildew and bacteria grow rapidly in the ice cream fat contents. To eliminate them, it is necessary to thoroughly wash and clean all parts in contact with mix and ice cream, as described above.

Stainless steel and plastic materials, as well as rubber used in the construction and also their particular shapes make cleanout easy, but cannot prevent proliferation of mildew and bacteria if not properly cleaned.



3.7 STARTING THE MACHINE

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

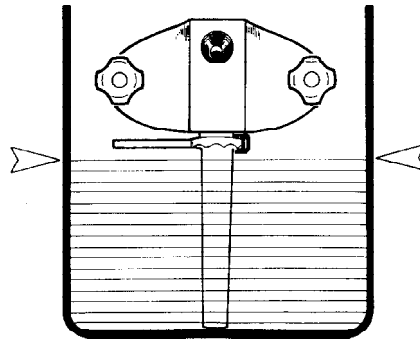


3.7.1 Starting machines with pump

Remove the compression pipe from bottom of the tank and place it in the sanitizing solution.

Prime Hopper:

- Retrieve 1 bag of mix from the walk-in refrigerator.
NB.: Mix to be poured at a temperature of 4-5°C.
- With the draw handle open, pour one bag of mix into the hopper allowing it to drain into the freezing cylinder. Mix level in the tank must never reach the pump (see picture) and more mix must be added when level goes below about 2 cm from tank bottom.
- When only full strength mix (not mix and sanitizer) is flowing from the draw spout, close the draw handle.



Connect the mix pressure pipe:

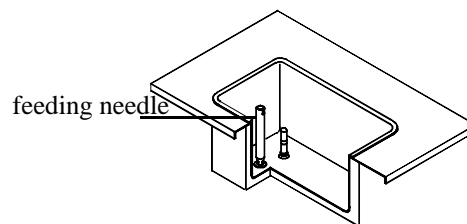
- When the mix stops bubbling from the bottom of the hopper, take the mix pressure pipe from the sanitizing solution and insert it in its position in the bottom of the hopper. Make sure your hands are clean and sanitized.
- Turn the pressure pipe clockwise towards the pump and connect the tube to the pump.
- Select production function to start the Automatic freezing operation.
- Replace the hopper cover.

3.7.2 Starting gravity-fed machines

Remove the feeding needle from tank bottom and place it in the sanitizer solution.

Prime Hopper:

- Retrieve 1 bag of mix from the walk-in refrigerator.
NB.: Mix to be poured at a temperature of 4-5°C.
- With the draw handle open, pour one bag of mix into the hopper allowing it to drain into the freezing cylinder. Mix level in the tank must never exceed feeding needle height (see picture) and more mix must be added when level goes below about 2 cm from tank bottom.
- When only full strength mix (not mix and sanitizer) is flowing from the draw spout, close the draw handle.



Connect the feeding needle:

- When the mix stops bubbling from the bottom of the hopper, take the mix feeding needle from the sanitizing solution and insert it in its position in the bottom of the hopper. Make sure your hands are clean and sanitized.
- Select production function to start the Automatic freezing operation.
- Replace the hopper cover.



3.8 PRODUCTION

Dispense icecream without exceeding the machine production rate as shown in the table on page 13. If you do not exceed it, and provide to refill the machine with fresh mix, you can be sure you will never have to stop selling, even during peak hours.

While your store is closed, set the machine to **STORAGE** by pushing **SELECTION** push-button . You will save significantly on energy consumption, as the compressor runs only for the time strictly necessary in order to keep product at its correct temperature.

When you reopen the store, set the machine to **DISTRIBUTION** and within a few minutes youghourt icecream will be back at the correct consistency for sale.

It is essential that you carry out **CLEANING** and **SANITIZATION** of the machine, daily or every few days, depending on bacteriological quality of your mix as well as on health regulations in force in your country.

If the machine has been stopped a long time due to a power failure, it is necessary that you check product temperature before starting the sale again; if the temperature is over +6°C, the machine must be emptied, cleaned and sanitized, and filled up with new fresh mix at +4°C.

3.9 ALARM MESSAGES ON THE DISPLAY

The machine is provided with alarm messages to signal irregularities, such as:

MIP: Microswitch stopping the beater when the front lid is opened, does not trip.

ICE: Alarm sensor ice in cylinder: both in production and storage, this alarm is active when **TE1** is below -30°C, so stopping the compressor.

P.A: One of temperature sensors, **TEC**, **TEV**, **TE1** is short-circuited or open. Check the faulty one and replace it.

A15: Blackout in Production and Storage. Every time a blackout occurs in Production or Storage, on next turning on, the message **A15** will be displayed (after the number of cones dispensed) to inform the user about a blackout event. Since blackout timing is not counted, it is up to the operator whether the product can still be put on sale.

This alarm will be displayed as long as any push-button is pressed.

3.9.1 Blackout

In the event of a temporary power failure, when current returns the machine sets back to the function programmed at the time the power failure occurred.

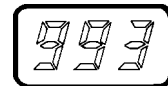
3.9.2 Partial cone-counter

On main switch turning on, alike monitor and all luminous leds light up for about 1 second and carry out a self-control.

Soon after the monitor indicates two series of three digits; the first series corresponds to the number of cones in thousands, the second one indicates the hundreds of cones dispensed.

Example

1993 dispensed cones are displayed as follows:



3.9.3 Self-diagnosis

After indicating the number of cones dispensed, the machine sets to **STOP** or to the position where it was when last switched off.




During the routine operation, the display shows the temperature inside the tank and, during the ice cream production, it shows, instead, the consistency.

In cleanout mode, the cylinder temperature is displayed.

3.10 ADJUSTMENTS AND REGULATIONS

3.10.1 Setting the product consistency

Product consistency can be changed as follows:

- 1) Machine to be set to STOP: press STOP  and SELECTION button  some 3 seconds at the same time and release them.
- 2) The St1 expression and its current value will alternate on display. The value can be changed between 1 and 10, using the SELECTION key ; Hot will have consequently to be changed according to the desired value.
- 3) Await 10 seconds, till the value is stored; the machine will set back to Stop and will automatically display the tank temperature.



4. SAFETY DEVICES

4.1 SAFETY SYSTEMS ON THE MACHINE

PRESSURE SWITCH

It protects the refrigeration system and causes the compressor to stop if the pressure of the system exceeds the pressure switch setting value. This may occur especially due to a lack of water (machine with water condenser) or air circulation problems (machine with air condenser). The switch resets itself automatically.

WARNING

**if the compressor runs for an excessive time or stops and starts repeatedly,
this indicates insufficient condensation; check the causes.**



OPERATOR PROTECTIONS

Safety microswitch on the lid.

A microswitch is located on the lid of the beating cylinder, containing the beating unit, which stops the machine immediately when the lid is opened. The machine enters STOP mode and the monitor displays the message "MIP", flashing if the machine was running, or steady if the machine was already in STOP mode.

When the lid is closed back, the machine remains stopped and shuts off the alarm on the monitor.

WARNING

Always make sure that the machine is in STOP mode before opening the lid.



5. DISASSEMBLING, WASHING, SANITIZING AND REASSEMBLING THE PARTS IN CONTACT WITH THE PRODUCT

Use a mild detergent to wash the parts.

Wash (by hands) the parts in water (at max 60°C), using a mild detergent and the accessory brushes.

Use neither dish-washing machines, no detergents intended for them.

For rinse, use (bacteria free) drinking water.

For sanitizing, leave the parts in sanitize lukewarm water 10 to 15 minutes (**using the sanitizing solution, the sanitizer manufacturers' directions are to be followed**) and rinse before reassembling them.

NOTE

Cleanout and sanitization must be carried out at the end of every working day, as a habit and with utmost care, in order to secure quality of production in the observance of healthy rules.

5.1 EMPTYING THE ICE CREAM PLANT

1 - Place an empty pail under the spout.

2 - Press the  button.

3 - Pull the dispensing lever and drain the ice cream.

4 - Select CLENOUT function .

5 - When the product coming out becomes liquid, push STOP button and leave the spout open.

6 - For the pump fed machine: in the hopper, disconnect pressure pipe from the mix pump, turn it sideways, remove it pulling it up from its seat and let the product flow completely out. Grasp the pump and turn it in a clockwise direction of 45° then pull it out towards you.

7 - For the gravity fed machine: remove the feeding needle.

8 - Close the spout handle, pour 10 litres of cool and clean water into the mix hopper. Use the white hopper brush to scrub the mix hopper and mix level sensor. Use the small brush to clean the mix inlet hole and the drive hub of the mix pump.

9 - Place an empty pail under spout. Open the spigot piston and let the water drain out.

10 - Rinse with warm water until the solution runs clear.

11 - Select CLENOUT function .

12 - Turn the machine off by pushing the  button and let the water flow out.

13 - Fill the hopper with 10 litres of warm detergent solution.

14 - Clean the hopper walls and the level sensor using the supplied brushes.

15 - Pull the dispensing handle and let the liquid flow out completely.

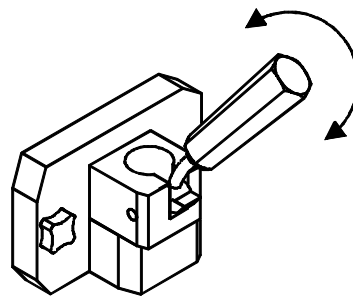
16 - Rinse with clear water, pull the spigot handle and let the water flow out.

17 - Fill the hopper with Sanitizer prepared in 21-32°C water (ex. 1 packet in 9,5 litres of water). Use the white hopper brush to scrub the mix hopper and mix level sensor. Use the small brush to clean the mix inlet hole and the drive hub of the mix pump.

18 - Select CLENOUT function  and let the beater run for 10 seconds.

19 - Push the STOP button. Let the Sanitizer solution stand for a minimum of 1 minute.

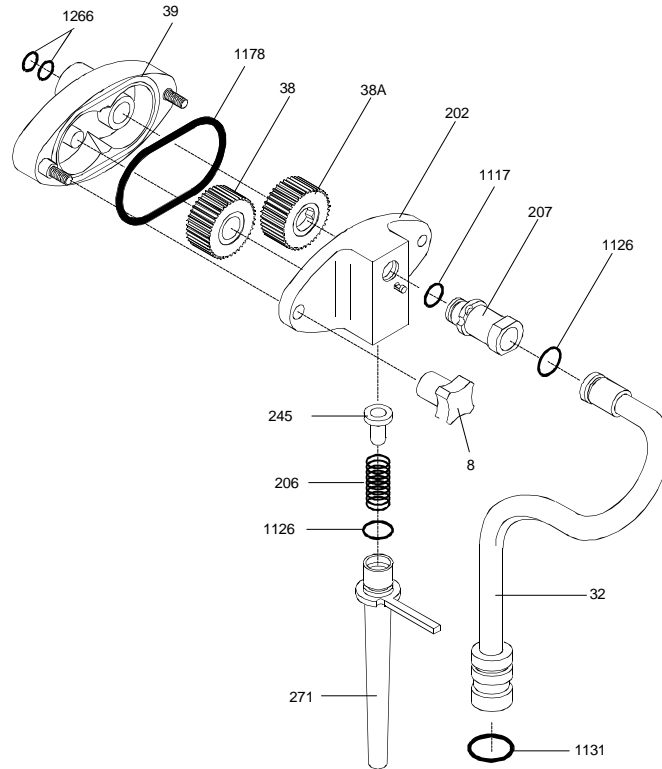
20 - Pull the dispensing handle and let the water flow completely out.



5.2 PUMP FED MACHINES - DISASSEMBLING MIX PUMP



- 1- Keeping the feeding tube (pos. 271) upward turn it counterclockwise and pull it out.
- 2- Pull the spring (pos. 206) and the back flow valve (pos. 245) out. Using the o-ring extractor, remove the o-ring (1126).
- 3- Unscrew the 2 knobs (pos. 8) and separate the cover (pos. 202) from the pump body (pos. 39).
- 4- Tapping the pump body against the palm of your hand, remove the pump gears (pos. 38 and 38A). Using the o-ring extractor, remove the large o-ring (pos. 1178) and the two O-rings (pos. 1266).
- 5- Pull the connection tube (pos. 207) from the pressure pipe. Remove the o-rings (pos. 1117, 1126 and 1131).

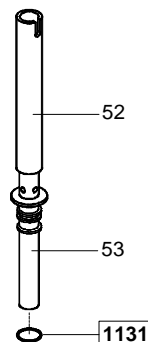


5.3 GRAVITY FED MACHINES - DISASSEMBLING FEEDING NEEDLE



To disassemble the feeding needle

- remove its slider (pos. 52)
- take the feeding needle out of the tank
- remove OR from the needle (pos. 1131)

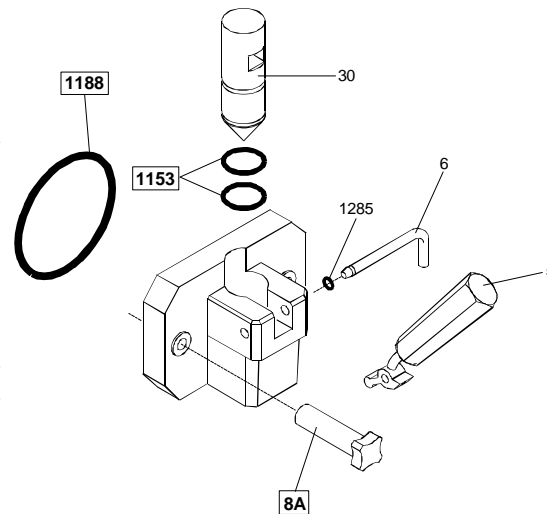


5.4 DISASSEMBLING OF THE DISPENSING DOOR

CAUTION

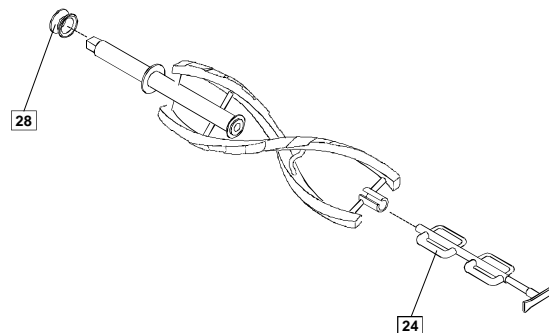
Before disassembling the dispensing head, make sure that the hopper and the cylinder are completely drained.

- 1- Remove the two retaining knobs (pos. 8A) and pull the door assembly towards you sliding it off the two front panel studs.
- 2- Pull the dispensing handle (pos. 5) so the piston (pos. 30) raises in its housing.
- 3- Remove the pivot pin o-ring (pos. 1285) and the pivot pin (pos. 6) out releasing the dispensing handle (pos. 5)
- 4- Using the dispensing handle lever pull the piston (pos. 30) out completely.
- 5- Using the o-ring extractor, remove the two piston o-rings (pos. 1153), and the large dispensing door o-ring (pos. 1188).



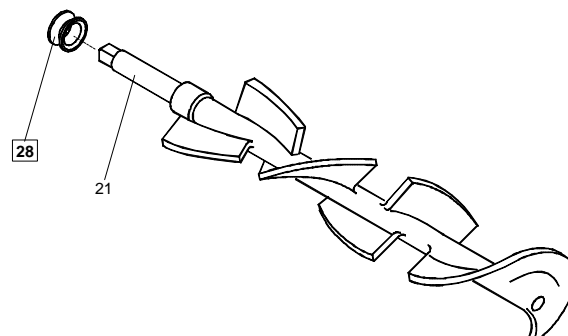
5.5 PUMP FED MACHINES - DISASSEMBLING BEATER

- 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.



5.6 GRAVITY FED MACHINE - DISASSEMBLING 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.





5.7 WASHING AND SANITIZING OF COMPONENT PARTS

CAUTION

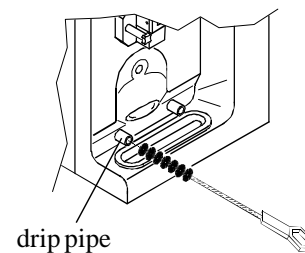
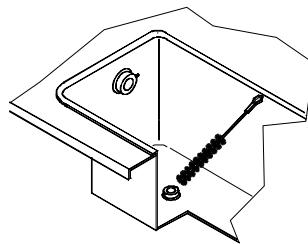
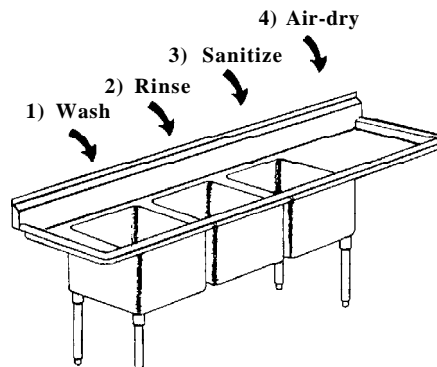
For the use of sanitizers, instructions on labels are to be followed.

- 1- Fill a clean sink with detergent and hot water (50-60°C).
- 2- Wash the disassembled parts with the solution and scrub them thoroughly with the brushes provided with the machine. As you proceed, rinse with hot water. Make sure all lubricant and mix film is removed from parts.
- 3- Fill another sink with sanitizer prepared in 21-32°C water (ex. 1 packet in 9,5 litres of water).
- 4- Place the parts in the sanitizing solution. Leave them there for a minimum of 1 minute.
- 5- Place the components on a clean tray to air-dry.
- 6- Return to the machine with a small amount of sanitizer.
- 7- Make sure machine is in STOP position, dip the brush (pos. 772D) into the sanitizer solution and thoroughly brush the drip pipe. **Perform this operation every day.**

ATTENTION

Avoiding this cleaning procedure (point 7) may cause serious damage to the motors. Carpigiani is not responsible for warranty if this procedure has not been fully complied

- 8- Dip a brush into the sanitizer and thoroughly brush the freezing cylinder
 - 9- 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.
 - 10- Spray the back of cylinder and the hopper walls with sanitizer.
- Repeat step 7, 8, 9 and 10 several times**

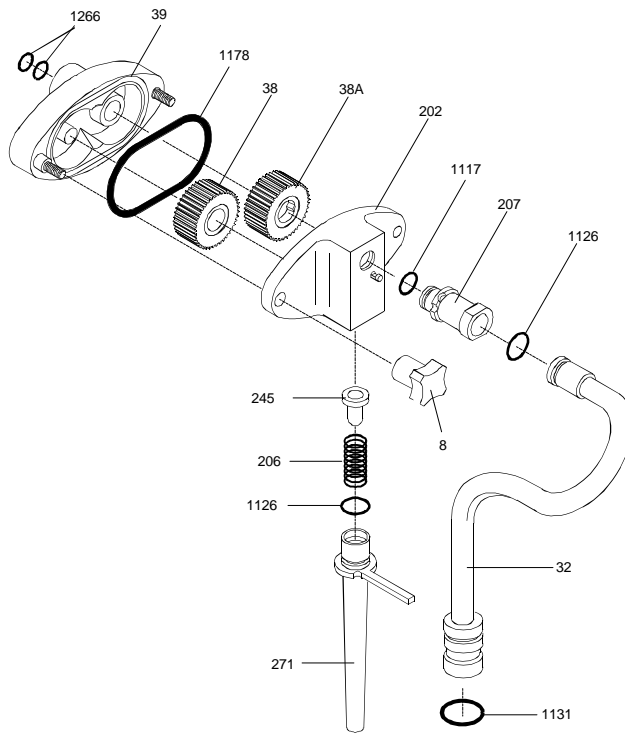


5.8 PUMP FED MACHINES - REASSEMBLING MIX PUMP

- 1- Lubricate and replace the o-ring (pos. 1117) on the connection tube (pos. 207).
- 2- Lubricate and replace the o-rings (pos. 1126 and 1131) on the pressure pipe (pos. 32).
- 3- Insert the connection tube assembly in the pressure pipe (pos. 32)
- 4- Place the pressure pipe in a sanitizing solution.
- 5- Lubricate and replace the pump body o-ring (pos. 1178) and the two o-rings (pos. 1266)
- 6- Lubricate the sides as well as the center of the pump gears (pos. 38 and 38A) with a thin film of lubricante insert them into the pump body (pos. 39). **Do not lubricate the teeth of the pump gears.**

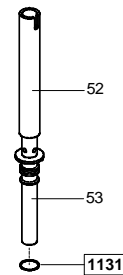


- 7- Lubricate and replace the o-ring (pos. 1412) on the feeding tube (pos. 271).
- 8- Hold the pump cover (pos. 202) upside down and insert the back flow valve (pos. 245) and spring (pos. 206) in their pump cover housing.
- 9- Insert the feeding tube (pos. 271) in the pump cover: push and turn it clockwise.
- 10- Assemble the pump cover (pos. 202) with the feeding tube downwards onto the pump body and turn the two knobs (pos. 8) tightly; install the mix pump in the hopper with the blocking pin hook on the right, turning the pump counter clockwise until it locks onto the hopper blocking pin.



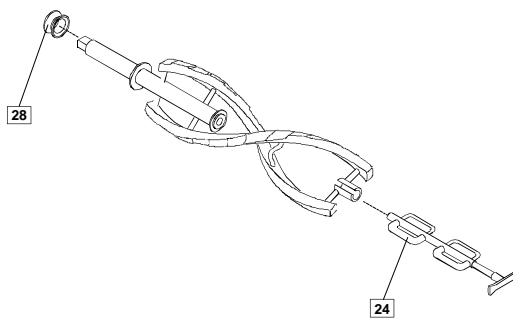
5.9 GRAVITY FED MACHINES - REASSEMBLING FEEDING NEEDLE

- 1- Lubricate the o-ring (pos. 1131)
- 2- Reassemble the feeding needle
- 3- Place the feeding needle in the sanitizing solution.



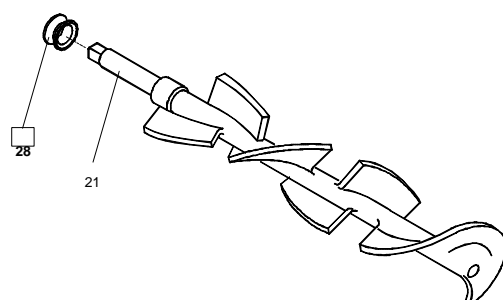
5.10 PUMP FED MACHINES - REASSEMBLING BEATER

- 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.



5.11 GRAVITY FED MACHINES - REASSEMBLING BEATER

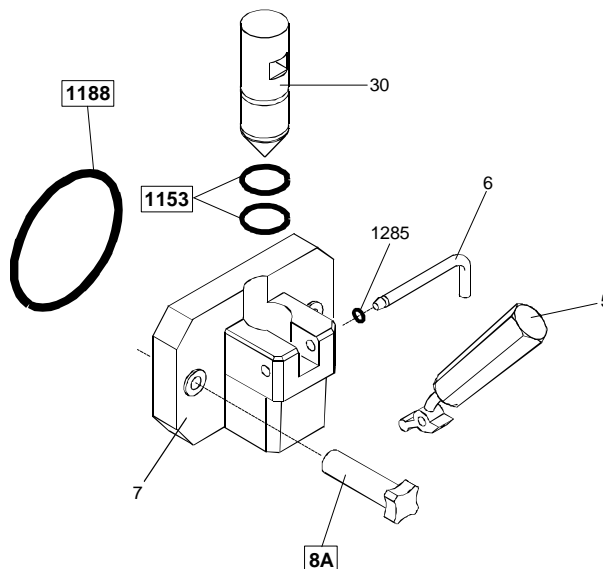
- 1- Lubricate the sides of the beater seal (pos. 28) and slide it onto the beater shaft.
- 2- Insert the beater assembly into the cylinder. Push it while turning it clockwise until it engages in its rear hub, otherwise the dispensing head cannot be fastened properly, mix can flow out and serious damage may occur.



5.12 REASSEMBLING OF THE DISPENSING DOOR



- 1- Lubricate and slide the 2 piston o-ring (pos. 1153) into their seats.
- 2- Insert the piston (pos. 30), pointed end down, in the dispensing head (pos. 7) making sure that the piston square notch lines up with the rectangular opening on the spigot front.
- 3- Position the dispensing handle (pos. 5) on the door (pos. 7) and insert the pivot pin (pos. 6) in its housing through the handle lever hole. Lubricate and insert the pivot pin o-ring (pos. 1285). Lubricate and slide into its seat the large dispensing door o-ring (pos. 1188).
- 4- Insert the dispensing door assembly onto the two front panel studs and fasten it with the two knobs (pos. 8A) hand tight.



5.13 SANITIZING THE WHOLE MACHINE

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

- 1- Fill the hopper to the maximum level with sanitizer prepared in 21-32 °C 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, the surface of the mix pump.
- 3- Select CLENOUT function and let the beater run for about 10 seconds. Press the STOP button. The cylinder and the pump are now filled with the sanitizing solution.
- 4- Return to the machine with a small amount of sanitizer solution in a pail.
- 5- Dip the door spout brush in the pail of sanitizer 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 CLENOUT function, keep the beater runnig 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 lubrication of mix butterfatu the beater wear out quickly



5.14 MIX PRIMING

Prime Hopper:

- Retrieve 1 bag of mix from the walk-in refrigerator.
- With the draw handle open, pour one bag of mix into the hopper allowing it to drain into the freezing cylinder.
- When only full strength mix (not mix and sanitizer) is flowing from the draw spout, close the draw handle.



By pump fed machines - Connect the mix pressure pipe:

- When the mix stops bubbling from the bottom of the hopper, take the mix pressure pipe from the sanitizing solution and insert it in its position in the bottom of the hopper. Make sure your hands are clean and sanitized.
- Turn the pressure pipe clockwise towards the pump and connect the tube to the pump.
- Select production function to start the Automatic freezing operation.
- Replace the hopper cover.

By gravity fed machines - Connect feeding needle:

- When the mix stops bubbling from the bottom of the hopper, take the mix feeding needle from the sanitizing solution and insert it in its position in the bottom of the hopper and adjust the slider to the smallest diameter hole. Make sure your hands are clean and sanitized.
- Select production function to start the Automatic freezing operation.
- Replace the hopper cover.

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 lubricating moving parts is forbidden!
Repairs of electrical and freezing plants must be carried out by skilled engineers!



Operations necessary to proper machine running are such that most of servicing is completed during production cycle.

Servicing operations, such as cleaning of parts in contact with the product, replacing of stuffing box, disassembling of beater assembly are to be carried out at the end of a working day, so as to speed up serving operations required.

Herebelow you can find a list of routine servicing operations:

- Cleanout and replacement of stuffing box

If the prodduct drips from the right drip pipe onto the machine front side, 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

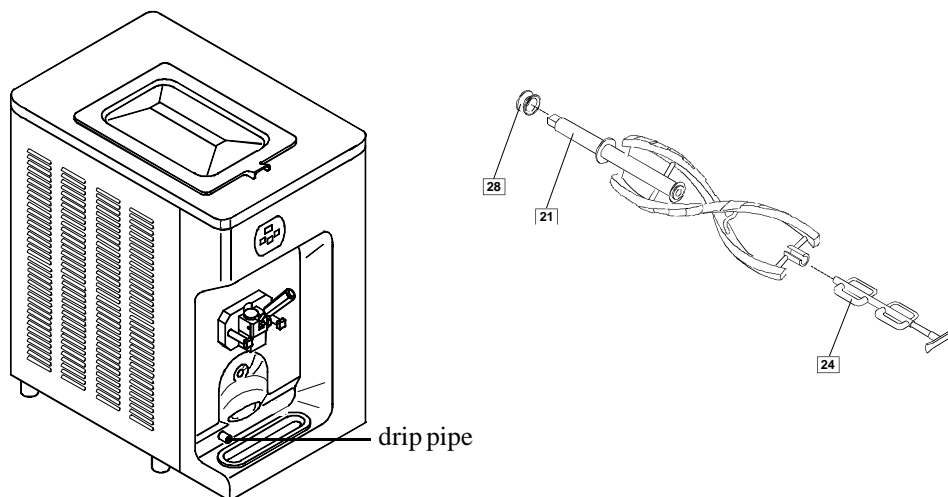
Lubricate the replacement stuffing box

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.



- Cleanout of panels

To be carried out daily with neutral soap, seeing to it that cleansing solution never reaches beater assembly at its inside.

- Cleanout of beater, pump or gravity feed, dispensing door and machine's sanitization

At the end of each working day, according to procedures described in section 5 of this manual.

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.

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.

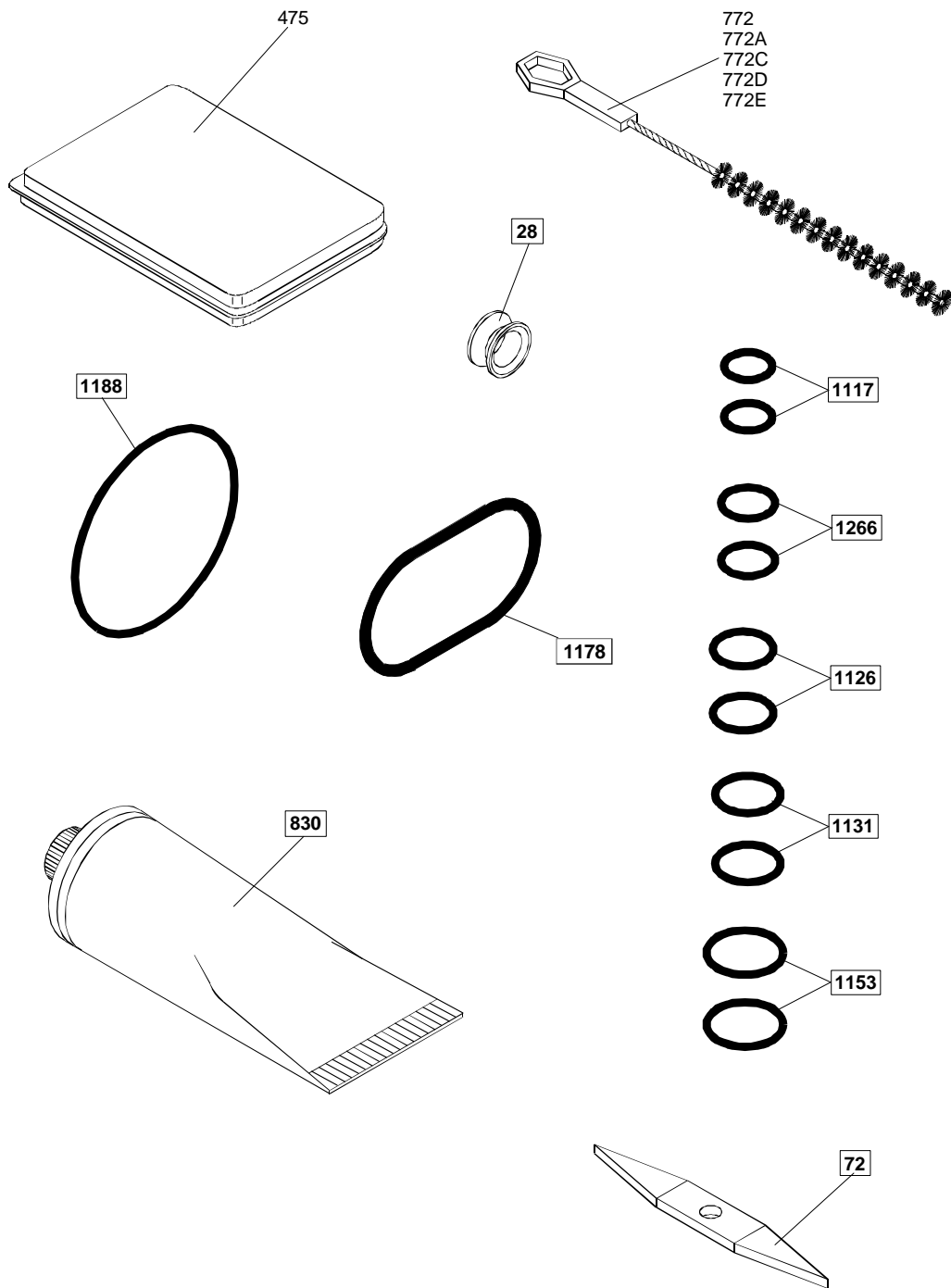


ATTENTION!

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



Pos.	Description
28	Beater stuffing box
72	O ring extractor
475	Accessories
772	Brush D. 8x250
772A	Brush D. 15x350
772C	Brush D. 40x400
772D	Brush D. 30x640
772E	Brush D. 85x145x390

Pos.	Description
830	food-grade lubricant tube
1117	Gasket OR
1126	Gasket OR
1131	Gasket OR
1153	Gasket OR
1178	Gasket OR
1188	Gasket OR
1266	Gasket OR

7 TROUBLESHOOT GUIDE

IRREGULARITY	CAUSE	PROCEDURE TO FOLLOW
Machine does not start.	1. Burnt fuses. 2. Machine not properly plugged. 3. Alarm messages on display	1. Check and replace. 2. Check and plug in. correctly. 3. See section 6,.
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 rear side is at least 50 cm from wall. 2. Clean condenser if obstructed by dust, or else.
Machine works but no ice cream comes out of spigot.	1. Not enough sugar in mix. 2. Washing water has been left in spigot and has frozen.	1. Allow ice cream in barrel to thaw and then modify or replace the mix. 2. Allow to thaw, take out a glass of ice cream before
Machine works but ice cream is too soft	1. Too much sugar in mix. 2. Machine has run too long without dispensing ice cream. 3. Ice cream is dispensed too fast.	1. Modify or replace mix. 2. Take out ice cream until fresh mix reaches the barrel. 3. Remember not to exceed production rate as per table, and adjust ice cream dispensing speed, if need be.
Mix or ice cream come out above or below piston though it is closed.	1. Piston without OR or OR is worn-out.	1. 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. Install it if missing. If worn-out, replace it with a new one.
Piston hard to operate.	1. Dry sugar on piston.	1. Wash thoroughly and grease piston and OR with edible fat.
Ice cream comes out from front lid .	1. OR missing or not properly fit. 2. Front lid knobs not tightened evenly.	1. Check and put remedy. 2. Stop machine. loosen and tighten them again.
Bacteria tests show too high level.	1. Too many bacteria in the mix. 2. Machine not clean enough, nor sanitized. 3. Mix left into the machine over 72 hours without performing cleaning and sanitizing operations.	1. Improve procedure of mix preparation by sanitizing all containers. Have mix analyzed before pouring it into the tank. Storage temperature is too high: adjust storage thermostat. 2. Empty and clean the machine with care. It is then important to sanitize the machine as indicated in section SANITIZATION. 3. Empty the machine: clean and sanitize it; then fill with fresh and pasteurized mix kept at 4°C.