



**INSTRUCTION HANDBOOK**  
**193 BAR AV**

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”

## **CARPIGIANI**

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## FOREWORD

### INSTRUCTION HANDBOOK

This handbook takes into due account European Community directives for the harmonisation of safety standards and for the free circulation of industrial products within the 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 analysed in order to keep unchanged in the long run the quality features characterising **CARPIGIANI** machines all over the world. A significant part of this handbook refers to the conditions necessary for machine use, during cleaning operations and ordinary and extraordinary maintenance. Nevertheless, this handbook cannot meet all demands in detail. In case of doubts or missing information, please contact:

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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.

#### Sub-chapter

It is that part of a chapter detailing the specific component of a machine part.

Each person involved in the machine operation must read and clearly understand those parts of the handbook of his/her own concern, and particularly:

- The Operator must read the chapters concerning machine start-up and 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:

- **Supplied spare parts:** 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 operating on the machine, read the instruction manual carefully.  
Read the safety instructions.**



## CONVENTIONAL SYMBOLS



### **WARNING: 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.



### **WARNING: 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: MOVING PARTS HAZARD**

This points out to the staff concerned that there are moving parts and there is a risk of suffering physical injury in the event of failure to abide by safety regulations.



### **WARNING: 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.



### **WARNING: 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.



### **PERSONAL PROTECTIONS**

This symbol on the side means that the operator must use personal protections 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**

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



### **QUALIFIED ENGINEER**

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

## SAFETY

When using the machine, one must be aware of the fact that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damage to persons and things.

Persons in charge of plant safety must make sure that:

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

To achieve the above, the following is necessary:

- at the work station an instruction manual relevant to the machine should be available;
- such documentation must be carefully read and requirements must consequently be met;
- only adequately skilled personnel should be assigned to electrical equipment.

### WARNING!

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

### NOTE:

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

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

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

## WARNINGS

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

- Never put your hand into the machine 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 jet of pressurised water.
- It is forbidden to remove panels in order to reach the machine internal parts before disconnecting the machine from the power supply.
- **CARPIGIANI** is not responsible for any accident that might happen during operation, cleaning and/or servicing of its units, if the safety guidelines provided has not been fully complied with..







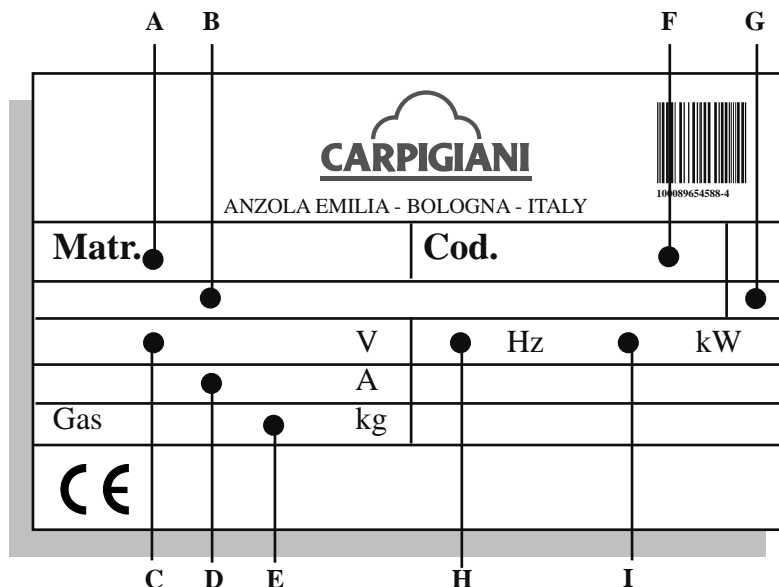
## 1. GENERAL INFORMATION

### 1.1 GENERAL INFORMATION

#### 1.1.1 Manufacturer identification data

The machine has an identification plate carrying manufacturer data, machine type and serial number assigned when it is manufactured.

A copy of the machine identification plate is found on first page of this handbook.



#### KEY:

- A= Serial number
- B= Machine type
- C= Supply voltage
- D= Main switch amperometric value
- E= Gas type and weight
- F= Machine code
- G= Condensation
- H= Frequency
- I= Power

#### 1.1.2 Information on maintenance service

All ordinary maintenance operations are described in section "Maintenance" of this manual; any additional operation requiring technical intervention on the machine must be agreed upon with the manufacturer, who will also examine the possibility of sending one of its own engineers for the intervention.

#### 1.1.3 Information for users

- The machine manufacturer can be contacted for any explanation and information about the machine operation or any modifications aimed at improving the machine's efficiency.
- In case of need, please call the local distributor, or the manufacturer if no distributor is available.
- The 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 information

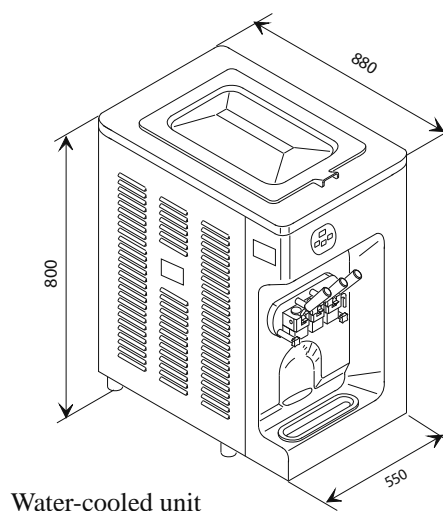
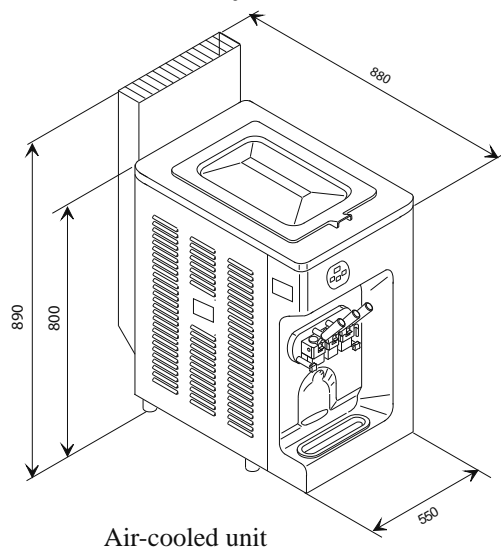
Counter-top machine to immediately produce and distribute soft express ice cream in two flavours + mixed, available with pump to ensure a higher overrun.

**CARPIGANI** recommends to always use high quality mix for ice cream production in order to please even the most demanding customers. Any saving made to the detriment of quality will surely turn into a much bigger loss than the saving itself.

Bearing in mind the above statements, please take into consideration 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 supplier's recipes, by adding, for instance, more water or sugar than recommended.
- Taste ice cream before serving it and start selling only if entirely satisfactory.
- Make sure your staff always keeps the machine clean.
- Have your machine serviced always by companies authorised by **CARPIGIANI**.

### 1.2.2 Machine layout



### 1.2.3 Technical features

MODEL	Hourly production *	Hopper capacity liters	Flavors	Electrical supply **			Installed power kW	Net weight kg
				Volt	Ph.	Cycles		
193 G/AV	30 Kg	18 + 18	2 + mixed	400	3	50	4.24	190
193 P/AV	35 Kg	12 + 12	2 + mixed	400	3	50	4.75	212

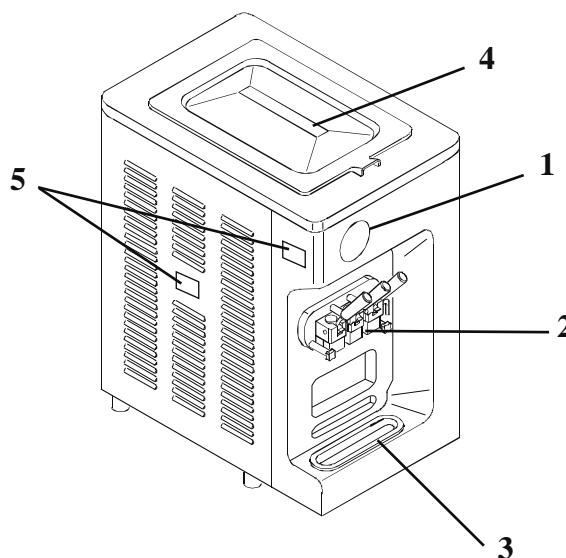
\* The hourly production and the mix quantity for each ice cream can vary, according to the temperature and the type of mix used and the increase in volume (overrun) desired.

\*\* Other power supplies are available.

### 1.2.4 Machine unit location

Key:

1. Control panel
2. Freezing cylinder front lid
3. Shelf
4. Mix hopper cover
5. Drip drawers



### 1.3 INTENDED USE

The machine 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	10°C
Max air temperature	43°C
Min water temperature	10°C
Max water temperature	30°C
Min. water pressure	0.1 MPa (1 bar)
Max water pressure	0.8 MPa (8 bar)
Max relative humidity	85%

The machine must not be used for any purpose other than the one it has been originally designed for.

### 1.4 NOISE

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

### 1.5 MACHINE STORAGE

The machine must be stored in a dry and damp-free place.

Before storing the machine, wrap it in a cloth in order to protect it against dust and other substances.

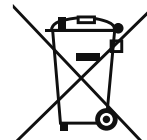
### 1.6 DISPOSAL OF PACKAGE MATERIALS

When opening the crate, divide packaging materials by type and dispose of them according to laws in force in machine installation country.

### 1.7 WEEE (Waste Electrical and Electronic Equipment)

In conformity with the European Directives 2006/66/EC, on batteries and accumulators and waste batteries and accumulators, and 2002/96/EC, also known as WEEE, the presence of the symbol on the side of the product or packaging means that the product must not be disposed of with normal urban waste. Instead, it is the user's responsibility to dispose of this product by returning it to a collection point designated for the recycling of electrical and electronic equipment waste. Separate collection of this waste helps to optimise 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 FOR MACHINE USE

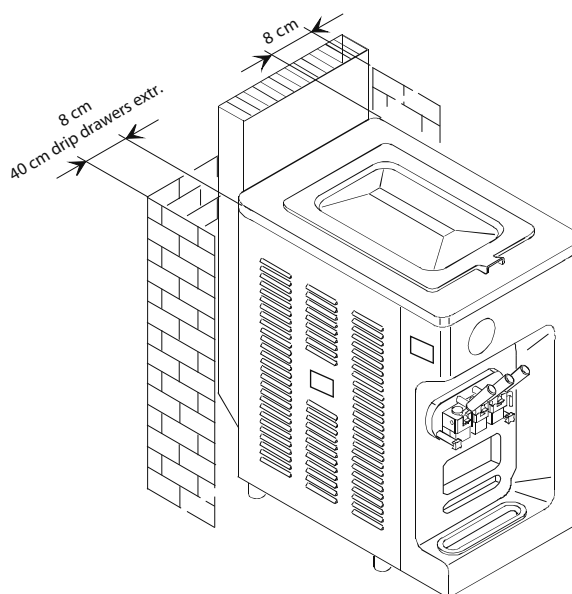
The machine must be installed in such a way that air can freely circulate all around. Enough room must be left free around the machine, in order to enable the operator to act without constraint and also to immediately leave working area, if necessary. There must be a lateral space of nearly 40 cm to remove the drip drawers.

#### WARNING

**MACHINES WITH AIR-COOLED CONDENSER must be installed at least 8 cm away from 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 MACHINES WITH AIR-COOLED CONDENSER

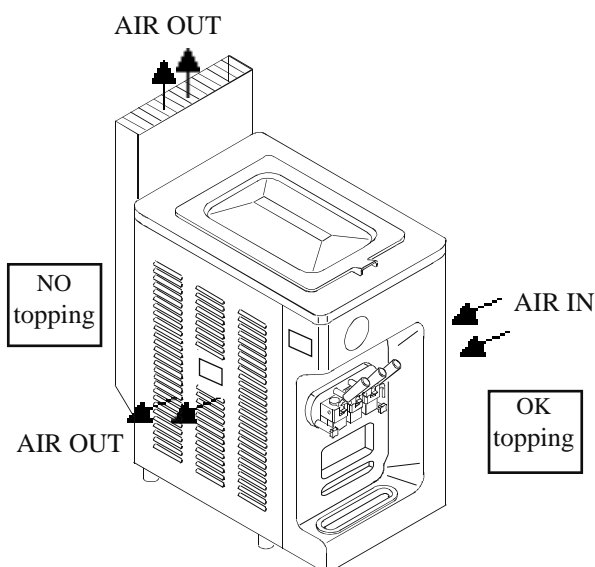
Machines with air-cooled condenser must be installed at least 8 cm away from any wall in order to allow free air circulation around the condenser.

#### NOTE

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

#### 2.2.1 Air flow

The **CARPIGIANI 193 BAR AV** machine is provided with an internal fan which takes fresh air from the right panel of the machine and exhausts the heated air through the left panel and through the stack on the rear of the machine.



#### WARNING

**Do not place topping containers, syrup containers or other products in front of the left panel of the machine because the hot air flow increases the temperature of the products or may melt them.**



## 2.3 MACHINES WITH WATER-COOLED CONDENSER

To make the machine run, a water-cooled machine must be connected to running water supply, or to a cooling tower. Water must have a pressure ranging between 0.1 MPa and 0.8 MPa (1-8 bar) and a flow rate 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 needs to be reset, this operation will have to be carried out by skilled personnel, only. Valve adjustment must be carried out in such a way that no water flows when machine is off and lukewarm water flows when machine is on.

#### NOTE:

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

#### WARNING:

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

## 2.4 ELECTRIC CONNECTION

Before connecting the machine to the mains, check that machine voltage indicated on the identification plate corresponds with the mains (see par. 1.1.1 point C).

Insert a differential magnetothermal protection switch adequately sized to absorption capacity required (see par. 1.1.1 point D) and with contact opening of 3 mm at least. The machines are delivered with a 5 wire cable: blue wire must be connected to the neutral lead.

#### WARNING

**Yellow/green ground wire must be connected to an adequate ground plate.**

#### Rotation direction of three-phase machines

The beater rotates anticlockwise.

#### Reversing rotation direction

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

### 2.4.1 Replacing the power cable

If the machine main power cable is damaged, it must be replaced with a cable having similar features. Replacement shall be carried out by skilled technicians only.

## 2.5 TOP-UPS

The motor on the machine features life lubrication; therefore, it is not necessary to replace or top up its lubricant. The amount of gas necessary to the freezing system is filled by **CARPIGIANI** during post-production testing of the machine. A new machine should not require any top-ups or replacement. If gas top-up or replacement is necessary, the operation must be carried out exclusively by qualified technical personnel able to establish the cause leading to such need.

## 2.6 MACHINE TESTING

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



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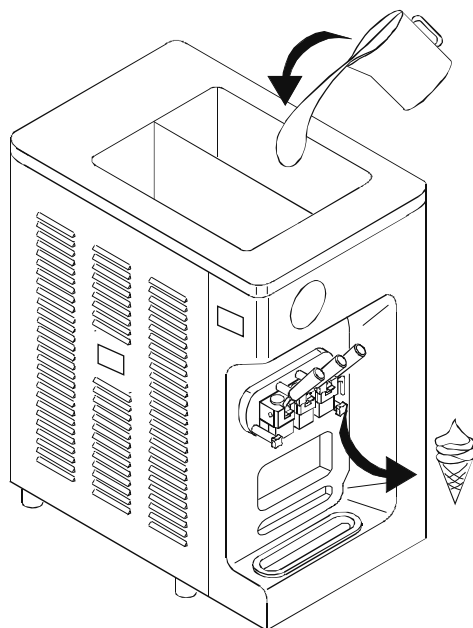
### 3. INSTRUCTIONS FOR USE

#### 3.1 MACHINE CONFIGURATION

The machine consists of a motor to drive the beater, and a water or air cooling system with condenser.

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

Thanks to the pump, the mix enters the freezing cylinder already mixed with air; ice cream is produced only when it needs to be served. The spigot handle allows a single portion of soft ice cream to be distributed. At the same time, the same amount of mix moves from the top hopper into the freezing cylinder.



## 3.2 ELECTRONIC CONTROL KEYBOARD AND BUTTON FUNCTIONS

Details of the panel are shown in the picture below.



### Display

On turning the machine on and during its operation, a series of messages are displayed on the screen.

### Led indicators

A led indicator lights up when the function corresponding to the symbol onto it is activated.



#### STOP key

In this function, your machine is off and relevant (backlit) led is on. From Stop position you can enter any machine function. To change function, IT IS always NECESSARY to first go back to STOP. On the display:

10:33:21 Fri

To set the machine in Stop from Production, Pasteurization or Storage mode, it is necessary to press the key and hold it down for 2". In this way you will avoid accidental activation caused by simply touching the key.

If you leave the machine in Stop when mix is above the level sensor, the message "Why in STOP ???" will be displayed after 30" so as to alert the user to set the machine to Production, Pasteurization or Storage mode.



#### PRODUCTION key

The Production function can only be entered if the mix has not reached the low level. The product is cooled in the cylinder till its programmed consistency is reached (HOT).

As soon as you enter Production, you also enter a menu through which you can set the type of product you wish to serve from each of the two sides, i.e., SoftIce (custard) or WaterIce (fruit); the following is then displayed:

SoftIce SoftIce

This window shows the type of product served from each of the two sides:

SoftIce (left) = side 1 produces SoftIce

SoftIce (right) = side 2 produces SoftIce





This page is the first one in the menu; by pressing Production the following combinations are available:

WaterIce SoftIce (WaterIce in side 1 and SoftIce in side 2)

SoftIce WaterIce (SoftIce in side 1 and WaterIce in side 2)

WaterIce WaterIce (WaterIce in both sides)

Once the desired combination is displayed, wait for 3 seconds (without disturbing any key) and the machine will automatically enter the selected type of production, and load the relevant settings.

Now system will automatically enter Production mode and the following will be displayed:

Ready!  
TEV +4°C W-3

The first line indicates whether ice cream is ready to be dispensed (Ready!) or not yet (Do not Serve!).

If the message is Do not Serve!, it means that ice cream has not yet reached its programmed consistency and you shall consequently wait.

The second line indicates the number of days to next machine wash. The example above shows there are 3 days to next wash.

By pressing Production you pass to the various “windows” or screens hereafter described:

Hopper ↓ +014°C  
↓ +015°C ↓ +013°C

The first line (top) of this window shows the Hopper temperature:

↓ = on, when cooling the hopper +014°C=temperature in the hopper (TEV)

The second line shows the temperature of the two Cylinders:

↓ left = on, when cooling cylinder 1 +015°C=temperature in cylinder 1 (TEC1)

↓ right = on, when cooling cylinder 2 +013°C=temperature in cylinder 2 (TEC2)

Hot=085 Hot=085  
Set=100 Set=100

The first line (top) of this window shows the following:

HOT=085: reading of current consistency in the cylinders of both sides

The second line shows the following:

Set=100: Set HOT for both sides (left side 1, right side 2)

Today's Cones  
12345

This window shows the Cones of the day (starting 0:00 to 23:59):

12345 = number of cones dispensed in the day

TC1 +013 TC2 +013  
TE1 -012 TE2 -012

This window shows the sensors (neither °C nor °F are displayed):

TEC = Cylinder Thermostat (1 = side 1, 2 = side 2)

TE = Evaporator Thermostat (1 = side 1, 2 = side 2)

TEV+014 TGV-022

This window shows sensors TEV and TGV (neither °C nor °F are displayed):

TEV = hopper thermostat TGV = hopper ice thermostat

By pressing Production again, you go back to the initial screen.

**CLEANING key**

Press Cleaning once and the following is displayed:

TC1 +014	TC2-010
Beat.+Pump ON	

Both beater and pumps are activated for 30 seconds or until STOP is pressed.

Pss Cleaning a second time and the following is displayed:

TC1 +014	TC2-010
Pump ON	

Only pumps remain active, whereas the beater is disabled.

Pss Cleaning a third time and the following is displayed

TC1 +014	TC2-010
Beater ON	

The beater is activated and the pumps are disabled.

Pss Cleaning a fourth time and the following is displayed:

TC1 +014	TC2-010
Beat.+Heat.	


The beater remains active and the cylinder heating is enabled until reaching the set temperature.

This machine has an automatic system commanding the wash of parts in contact with food products every 3 days. This system, called "WASH", inhibits the production at the end of the 3rd day.

**KEYBOARD LOCK Function**

In order to clean the keyboard with a clean cloth, it is recommended to lock the keys on the board as follows:



Press the key  for 3 seconds, the check lamp will blink to indicate that the keyboard is now locked. You can clean it, now, with no risks. To unlock, press again for 3 seconds and the check lamp will switch off.

**PASTEURIZATION key**

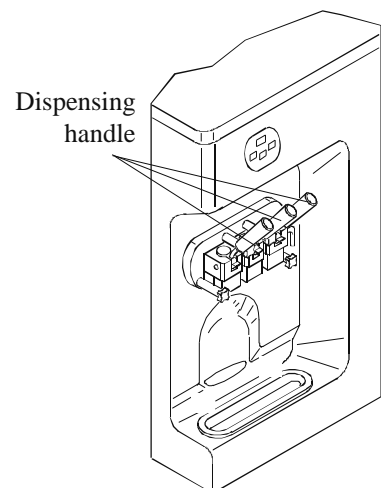
Not used.

**STORAGE key**

By pressing the Storage key, the product is conveyed into the hopper and into the cylinder at a temperature of 4°C.

**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. 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.

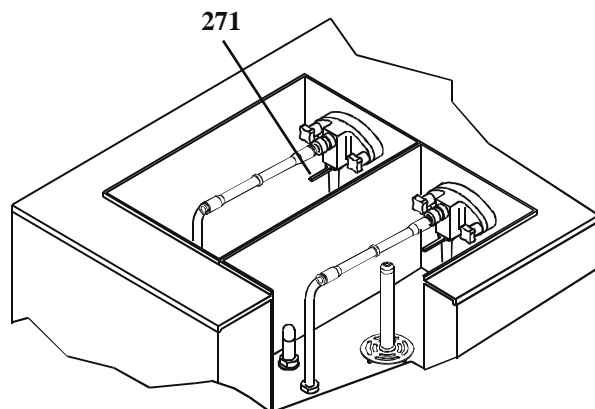


### 3.4 PUMP FEED MACHINE - "R" PUMP

"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 adjustment depending on the mix used.

"R" pump regulator should be set to the middle position.

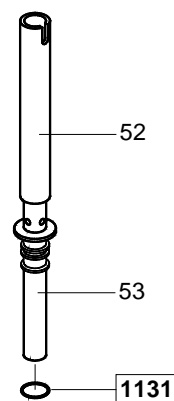
If, after dispensing a significant number of cones, ice cream is too heavy and wet, you may move R pump regulator a notch at a time towards the right. If ice cream comes out of spigot mixed with air bubbles, then turn R pump regulator a notch at a time towards the left.



### 3.5 GRAVITY-FED MACHINE - FEEDING NEEDLE

How to obtain and how to keep top quality performance in time.

1. Maintain a high mix level inside the hopper (more than half of the hopper). During production and storage, mix temperature inside the hopper is +4°C.
2. During the day, the mix must be periodically stirred by use of a plastic spatula to avoid separation, particularly when product has not been dispensed for a long time and the machine has been in "storage" mode for a long time.
3. A fluid mix without particles must 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 hole with smaller diameter, the quantity of mix to the hopper will decrease, and vice versa.
5. Set the feeding needle in such a way that inlet hole is turned towards the middle of the hopper.
6. Never exceed production limits declared by Carpigiani in par 1.2.3, 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 the alarm signal "ICE" is displayed. If this occurs, reset the machine as follows.
  - stop the machine (STOP position)
  - remove the feeding needle to enable the mix to quickly drop into the cylinder
  - set machine in the "cleaning" position for a few minutes
  - make sure that the product coming out from the spigot body is liquid
  - reposition the feeding needle making sure the slider is sufficiently open
  - restart the machine setting it in "PRODUCTION" mode. Do not start dispensing product until the production cycle is completed.





### 3.6 PRELIMINARY OPERATIONS, WASHING AND SANITISING

Before starting the machine for the first time, it is necessary to thoroughly clean its parts and sanitise all parts coming into contact with the mix. See section 5.

### 3.7 STARTING THE MACHINE

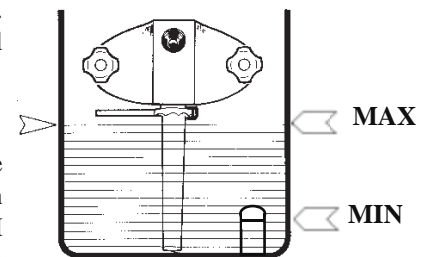
After installing the machine according to the instructions given in the chapter **INSTALLATION**, and after carefully cleaning and sanitising the machine, proceed as follows:

#### 3.7.1 Starting pump-fed machines

Remove the compression pipes from hopper bottom and place them in the sanitising solution.

##### Filling the hoppers:

- Take 1 bag of mix from the refrigerator.  
**NB.: Mix to be poured at a temperature of 4-5°C.**
- Pour one bag of mix into each hopper allowing it to be conveyed into the freezing cylinders. Mix level in the hopper must never reach the pump (see picture) and more mix must be added when minimum level sensor is uncovered.
- Lower the spigot handles and wait until some mix will come out; close the handles.



##### Connecting the mix compression pipes:

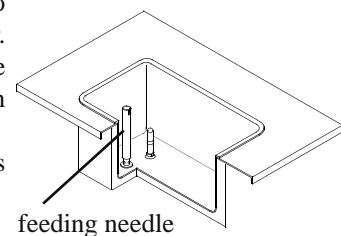
- Keep on pouring the mix and wait till the cylinders have been completely filled (during that time you see bubbles in the hopper); with clean and sanitised hands, draw the RH and LH compression pipes out of the sanitising solution and insert them into relevant hopper bottom.
- Turn the compression pipes clockwise and align them to the pumps, insert the connection pipes (pos. 207) well into the compression pipes, then into the pumps and lock them. Mix inside the hoppers shall never reach the pump (see the picture); furthermore mix shall be added whenever level is 2 cm from hopper bottom.
- Place hopper cover back.
- Now select Production, a Pasteurization program will automatically be executed, before one can dispense ice cream. This will guarantee a better condition of the product.
- When the Pasteurization program is over, select the Production function and ice cream will be ready for serving after a few minutes.

#### 3.7.2 Starting gravity-fed machines

Remove the feeding needle from hopper bottom and place it in the sanitising solution.

##### Prime Hopper:

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




##### Connect the feeding needle:

- Keep on pouring the mix and wait till the cylinder has been completely filled (during that time you see bubbles in the hopper); with clean and sanitised hands, draw the feeding needle out of the sanitising solution and insert it into relevant hopper bottom. Mix inside the hopper shall never exceed the feeding needle height (see the picture); furthermore mix shall be added whenever level is 2 cm from hopper bottom.
- Replace the hopper cover.
- Select production function.

### 3.8 PRODUCTION

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

When the first line of the display reads "Mix Out 1", this means that the minimum level of left-hand hopper is uncovered and therefore, that it is essential to add mix because the machine will dispense a maximum of 5 more cones before entering Storage mode automatically. If the minimum level is uncovered in the right-hand hopper, the first line of the display will read "Mix Out 2". If both levels are uncovered, the display will read "Mix Out 1" and in this case, if you top up the left-hand side hopper and not the right-hand side one, "Mix Out 1" will disappear from the display, which will then read "Mix Out 2".

In all of these cases, the LED  will switch on and an acoustic signal will sound continuously. The second line of the display will show the number of cones that can still be dispensed.

Out of business hours, keep machine set at STORAGE by pressing the STOP key and the STORAGE key. You will also save a lot of electricity because the compressor runs only when necessary in order to store the product at the right temperature. On reopening the shop, just set the machine at PRODUCTION and the machine will be ready within a few minutes.

If, after a power failure, the machine has not been working for a long time, it is indispensable to check the product temperature before starting service again; if it is above +6°C, empty, wash and sanitise the machine, then refill it with fresh mix at +4°C.

The PRODUCTION function features 4 options for different product combinations in both hoppers. These options can be selected by pressing the PRODUCTION key several times after entering the function, within 30 seconds.

Functions list:

Left side	Right side
SOFTICE	SOFTICE
SOFTICE	WATERICE
WATERICE	SOFTICE
WATERICE	WATERICE





### 3.9 ALARMS

The machine is provided with a self-CHECK device to indicate possible troubles.

The display shows the type of Alarm occurred. An acoustic signal will also warn the operator.

Press RESET in order to delete the alarm from display.

Use the table below for troubleshooting.

The machine can be used in Production mode also when a non-critical alarm has taken place; while if the alarm is a critical one, the machine will not allow you to enter production and it is necessary to press STOP and not to use the machine until repaired. Alarms are listed in the table below:

ALARM	DESCRIPTION
Mix Out Left - Right	The display indicates Mix Out when the mix is below the level sensor. When the mix is low and in Production you distribute a number of cones same as/ or higher than the value set in step Last Cones, not only will Mix Out - be displayed, but also your machine will set at "Hot reached" position, thereby disabling all outputs from the side where cones are out.
Overload Beater 1	Beater motor (bimetallic) overload cutout relevant to cylinder 1 tripped. Machine in Stop mode.
Overload Beater 2	Beater motor (bimetallic) overload cutout relevant to cylinder 2 tripped. Machine in Stop mode.
Pressure Switch	Pressure Switch tripped. Machine sets at Stop: - if it trips for the third time within 1 hour - if pressure switch contact is opened for 2 minutes. If the machine was in Pasteurization mode, Pasteurization program shall be executed again. Check cooling water flow.
Overload Compres	Compressor Motor Overload. Machine sets at Stop.
Al.Hopper Probe	Hopper probe faulty. This is a critical alarm: consequently, the machine sets at Stop, from Production as well as from Storage and Pasteurization modes.
Al.Cylind.1 Probe	Cylinder 1 probe faulty. This is a critical alarm: consequently, the machine sets at Stop, from the Storage and Pasteurization modes; it stays in the same function when in production mode, because consistency is controlled.
Al.Cylind.2 Probe	Cylinder 2 probe faulty. This is a critical alarm: consequently, the machine sets at Stop, from the Storage and Pasteurization modes; it stays in the same function when in production mode, because consistency is controlled.
Al.IceHop.Probe	Hopper evaporator sensor faulty. This alarm does not cause the machine to stop (current function stays active). In Pasteurization Heating step, the alarm is eliminated.
Spigot opened	Safety Magnet Switch. If opened for 10 sec., it resets Wash message (Wash). IMS opening also resets Pasteurization flag, so that if the machine was in Pasteur. mode, you can directly enter Production by opening and closing the front lid.
Al.Evap. 1 Probe	Alarm Cylinder 1 evaporator sensor. This alarm does not cause the machine to stop (current function stays active). In Pasteurization Heating step, the alarm is eliminated.
Al.Evap. 2 Probe	Alarm Cylinder 2 evaporator sensor. This alarm does not cause the machine to stop (current function stays active). In Pasteurization Heating step, the alarm is eliminated.
Power on	Power return after a blackout. Check blackout table in Pasteurization and Production. Event stored in all functions.

ALARM	DESCRIPTION
Ice Cylinder	<p>Cylinder anti-icer read by TE sensors.</p> <p>In Production, if one of the two TE becomes lower than the value set in the step Ice Cylinder, the machine sets at position "HOT reached" and stores the alarm Ice Cylinder among the events.</p> <p>The alarm might be caused by an insufficient feeding to the cylinder.</p> <p>Check pump efficiency.</p> <p>The alarm will reset as soon as the temperature in the cylinder raises back.</p> <p>If, instead, the alarm is displayed in Stop, it is necessary to check/replace TE sensor, because the readable temperature end of scale is read by the CPU.</p>
Timeout Prd. 1-2	<p>In Production, activation time of the beater motor is checked. If the beater motor is 10 minutes ON (Timeout Prd.) and Hot has not been reached, the machine sets at "HOT reached" condition with alarm "Timeout Prd." in the event list.</p> <p>The Timer will be reset on MIR and on MA starting.</p> <p>Check mix level in cylinder, pump in the hopper and the freezing unit.</p>
Belt alarm	<p>In Pasteurization Heating step, if the temperature TGV2 becomes &gt; than TEV-value programmed in step DELTA TGV-TEV, "Belt alarm" is displayed and the machine sets at Stop.</p> <p>Check the driving belt or if the rotor is in its seat.</p> <p>Warning: this alarm is not active if one of the sensors TEV or TGV is inhibited.</p>
W -nn g	<p>In Production, "Wash in n days" is displayed: this means that n days remain until machine wash. Alarm Wash might also be caused by leaving machine 24 hours in stop position with mix above the level sensor</p> <p>See WEEKLY CLEANING.</p>
Wait! (Do not serve!)	<p>In Production, every time consistency value is below the one programmed in step Hot Lock, cone red led lights up to indicate you should wait for icecream to be ready and "Wait!" is displayed. If, in such a case, you try to dispense some ice cream, all units stop (MA and MC) till the photocell is no longer busy. As soon as it is set free, both MA and MC re-start in order to bring ice cream to its proper consistency.</p>
Invert Phases!	<p>It is necessary to exchange 2 phases on the three-phase line in order to get the correct beater rotation direction. The alarm resets by pressing the Reset key (after exchanging 2 phases).</p> <p>Check lasts 1 minute only, after switching the machine on.</p>
Why in STOP ??	<p>If the machine is left in the Stop position with mix covering the level sensor, the message "Why in STOP?" will be displayed, flashing, 30 seconds later and an intermittent beep will be emitted. All this to warn the user to set the machine at Production, Pasteurization or Storage.</p> <p>Above mentioned message will be deleted by entering Production, having low mix level, or pressing Reset (Stor.) key.</p> <p>To have the message back on the display, enter again Production, Storage or Pasteurization mode.</p>
Piston opened	<p>The "Piston opened" alarm (enabled only with T79=Yes) signals a piston open or missing piston in the spigot alarm. To reset the alarm, close the pistons with the spigot fitted to show that the pistons are actually present. The alarm may occur again after an IMS or a power blackout.</p> <p>This alarm blocks access to all functions.</p>

### 3.9.1 Blackout

In the event of a blackout, if the machine was set to any of the functions mentioned below, the following will happen, namely

- Cleaning, on power return, it sets to STOP;
- Production, Storage: on power return, the machine sets back to the function set was before the blackout and the message "Power on" on display.





### 3.10 USER PROGRAMMING

To enter in User Programming, press STOP and RESET key at the same time till the message “MANAGER MENU” is displayed, then release.



Press Stop to enter in the next step Increment  or Decrement , when you want to change the value. See programming table.

In order to leave the programming mode, do not touch any key for 15 seconds, or just press PRODUCTION or CLEANING. The machine will now return to STOP.

Step	Display ITA	Display ENG	Min	Max	Default
U01	Ore	Hours	00	23	
U02	Minuti	Minutes	00	59	
U03	Giorno Settimana	Day of Week	SUN	SAT	
U04	Giorno del Mese	Day of Month	01	31	
U05	Mese	Month	01	12	
U06	Anno	Year	2000	2099	
U07	Linguaggio	Language	ITA	DEU	ENG
U08	Ora avvio distribuzione	Start prod time	00	23 + NO	08
U09	Ora Avv. Cons	Start stor time	00	23 + NO	02
U10	Abilita beep liv.	Lev. beep enable	NO	YES	YES
U11	Lato attivo	Active side	01	03	
U12	Lato frutta	Fruit side	00	03	
U16	HOT 1	HOT 1	000	120	100
U17	HOT 2	HOT 2	000	120	100

#### U08 Start Prod. Time

Time setting of the automatic Distribution start. If set to NO, the automatic Distribution will be disabled.

#### U09 Start Stor. Time

Time setting of the automatic Storage start time.  
If set to NO, the automatic Storage will be disabled.

#### U10 Lev. Beep Enable

If set to YES, an intermittent beep will be emitted when the product is below the medium level, except in Stop mode, where it remains OFF even if enabled.

#### U11 Active Side

Three settings are available (1, 2 or 3). Set the active side:  
1= LH; 2= RH; 3= both

#### U12 Fruit Side

Four settings are available (1, 2, 3 or No). Set the fruit (WaterIce) side. If set to NO, the machine will only produce SoftIce.  
1= LH; 2= RH; 3= both

#### U16 HOT 1

HOT value for side 1. Increase this value to increase the ice-cream thickness and beater motor power input.

#### U17 HOT 2

HOT value for side 2. See previous item.



## 4. SAFETY DEVICES

### 4.1 MACHINE SAFETY DEVICES

#### 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 automatically up to the second tripping, on 3rd tripping, machine will set to STOP.

---

#### 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 freezing cylinder, containing the beating unit, which stops the beater immediately when the lid is opened. The machine enters STOP mode and the display shows the message "Front lid open".

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

---

#### WARNING

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

---





## 5. CLEANING, DISASSEMBLY AND REASSEMBLY OF PARTS IN CONTACT WITH THE PRODUCT

### 5.1 GENERAL INFORMATION

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

Giving dirt the time to dry out can greatly increase the risk of rings, marks and damage to surfaces. Removing dirt is much easier if it is done immediately after use because there is the risk that some elements containing acid and saline substances can corrode the surfaces. A prolonged soaking is not recommended.



### 5.2 WASHING CONDITIONS

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



### 5.3 TIPS

- Use a non-aggressive detergent solution to wash the parts.
- Manually wash the parts in water (max 60°C) using a non-aggressive detergent and the cleaning brushes supplied as standard.
- Use drinking water (bacteriologically pure) to rinse the parts.
- To sanitise leave the disassembled parts in sanitised lukewarm water for the time indicated on the sanitising product label 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 a cleaning/sanitising solution to wash the machine.**

The use of a cleaning/sanitising solution optimises the washing and sanitising procedures in that it eliminates two phases of the procedure (a rinse and a washing phase). Basically, the use of a cleaning/sanitising solution saves time by facilitating and simplifying washing/sanitising procedures.

#### WARNING

**Every time the machine is washed and the parts that come into contact with the ice cream mix are disassembled, it is essential to carry out a visual inspection of all the parts made in thermosetting, plastic, elastomer-based and silicon-based materials and metal such as sliding shoes, pump gears, beaters, etc. ).**

**All parts must be integral and not worn, without cracks or splits, or opaque if originally polished/transparent.**

**Carpigiani declines all responsibility for any damage caused by imperfections and/or undetected breakages and not promptly solved by the replacement with original spare parts. The manufacturer is available for consultation and for any specific requests made by the customer.**





## 5.4 HOW TO USE CLEANING/SANITISING SOLUTION

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

Washing/sanitisation by immersion of components

- Manually remove the bulk residues.
- Remove finer residues with a jet of water.
- Immerse the parts to be cleaned into the solution.
- Let the solution react for the time indicated on the label of the product being utilised.
- Rinse the parts with care, using plenty of clean drinking water.

## 5.5 PROGRAMMED CLEANING TIME

The machine is provided with an automatic system which calls for washing of the parts in contact with the product for example every 3 days.

This system, identified as "WASH", disables the production function at the end of the 3rd day after the latest cleaning. On the display, the message "WASH TODAY" appears.

In Production mode, the display indicates the number of days to machine next cleaning.



### WARNING

**Cleaning and sanitisation must be carried out at the programmed date indicated on the display (for example every 3 days), as a habit and with utmost care, in order to guarantee quality of production and the compliance with health rules.**

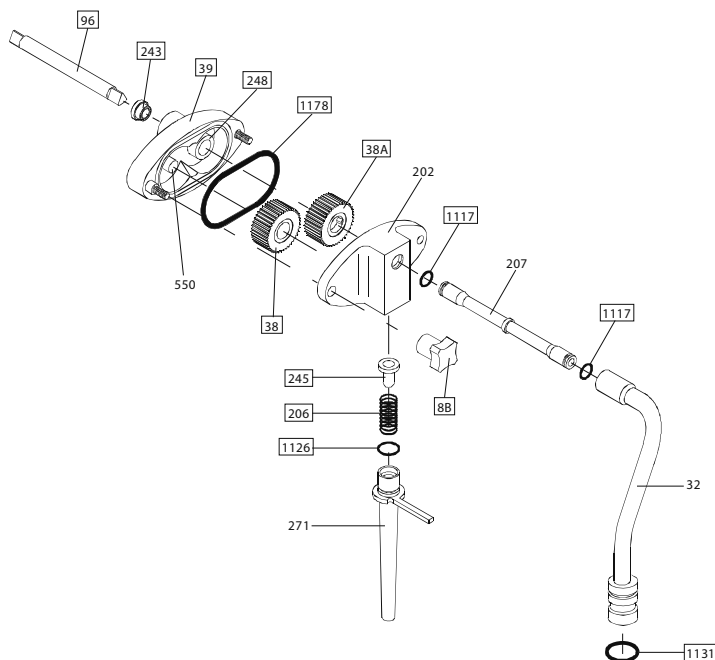
## 5.6 DRAINING AND CLEANING



1. Place an empty pail under the spout.
2. Press the STOP button.
3. Pull the spigot handles and completely drain the ice cream to empty the cylinders.
4. Select CLEANING function .
5. When the product coming out becomes liquid, push STOP button and leave the handles down.
6. Disconnect the connection pipes (pos. 207) from pumps and compression pipes (pos. 32), turn the latter by 90° and lift them in order to take them out from their own seats inside the hopper. Wait until all the product has flown out of hoppers. Disassemble the pumps by turning them clockwise over 45° and pulling them towards you.
7. Remove hopper beaters (see par. 5.6).
8. Wait until the liquid mix flows out completely and then set the spigot handles back to closing position. Fill the hoppers with 10 litres of clean water. Clean hopper walls, level sensor and hopper beater seats with the brushes provided. With a smaller brush, also clean pump and compression pipe seats.
9. Place an empty pail under spout. Open the spigot handles and let the water drain out.
10. Rinse with warm water until the solution runs clear.
11. Select CLEANING function and let the machine run for 10 seconds.
12. Press the STOP button, place a pail beneath the spigot, lower the spigot handles and drain all the water from the machine.
13. Fill the hoppers with a detergent/sanitising solution prepared according to the instructions on the used product label. Clean the hopper walls, the level sensors and the seats of beaters, pumps and compression pipes using the supplied brushes.
14. Select the CLEANING function and let the machine run for 10 seconds.
15. Press the STOP button. Allow the solution to stay for the time specified by the manufacturer.
16. Lower the spigot handles and drain out all the sanitising solution completely.
17. Take out the drip drawers, wash them with detergent/sanitising solution, rinse them and position them back in their original seat.

## 5.7 PUMP-FED MACHINES - DISASSEMBLING PUMP AND COMPRESSION PIPE

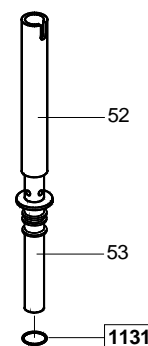
1. Remove the pumps by turning them 45° clockwise and pulling backwards.
2. Take the connection pipes (pos. 207) out from the pumps and compression pipes pos. 32). Turn RH and LH compression pipes 90° anticlockwise and lift them while taking them out from their seats inside the hoppers. Remove O-rings (1117 and 1131).
3. Remove air regulators (pos. 271) by turning them anticlockwise and pulling downwards.
4. Remove spring (pos. 206) and valve (pos. 245). With the extractor provided, remove O-ring (pos. 1126).
5. Unscrew the two knobs (pos. 8B) in order to separate cover (pos. 202) and pump body (pos. 39).
6. Hit the pump body in order to remove its gears (pos. 38 and 38A). With the extractor, remove O-ring (pos. 1178).



## 5.8 GRAVITY-FED MACHINES - DISASSEMBLING FEEDING NEEDLE

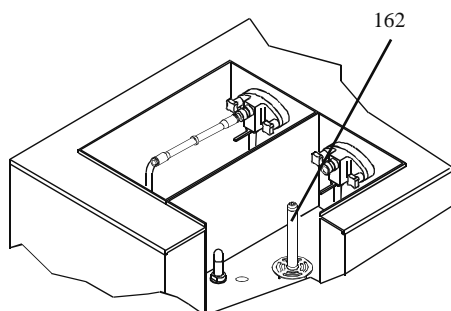
To disassemble the feeding needle

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



## 5.9 DISASSEMBLING HOPPER BEATER

After taking out the pump, also remove the beaters (pos. 162) by pulling them upward.



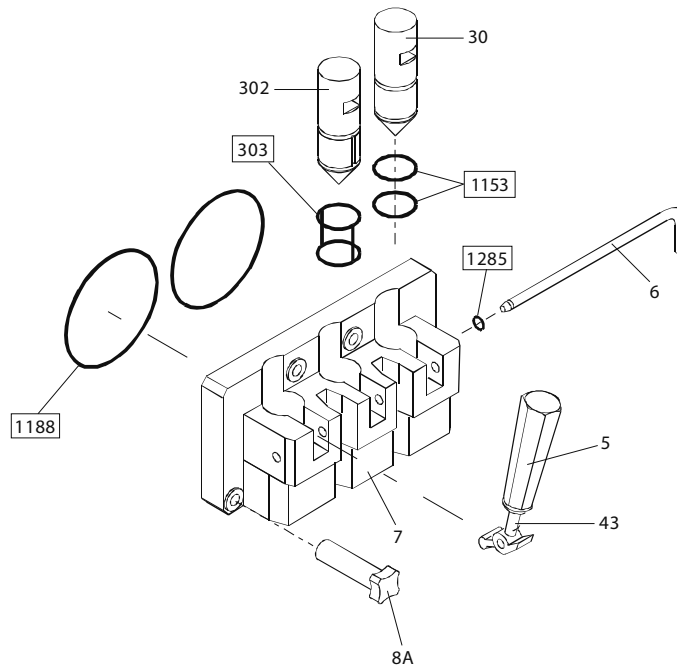


## 5.10 DISASSEMBLING FRONT LID

### WARNING

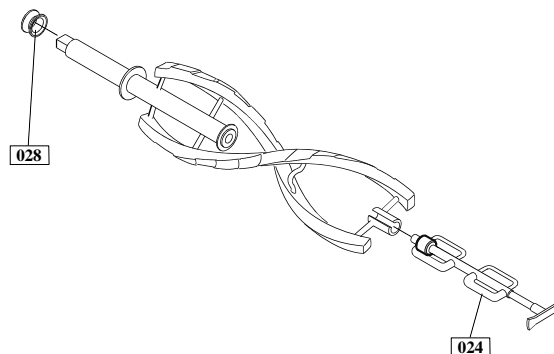
Before disassembling the front lid, make sure that hopper and cylinder are completely drained.

1. Remove the two retaining knobs (pos. 8A) and pull the lid assembly towards you sliding it out.
2. Pull the dispensing handles (pos. 5) so the pistons (pos. 30 and 302) raise in their housing.
3. Remove the pivot pin o-ring (pos. 1285) and the pivot pin (pos. 6) which locks the dispensing handles (pos. 5)
4. Using the dispensing handles pull the pistons (pos. 30 and 302) out completely.
5. Using the supplied O-ring extractor, remove the O-rings (pos. 1153, 303 and 1188).



## 5.11 PUMP-FED MACHINES - DISASSEMBLING BEATER

1. Draw the beater out from the cylinder taking care to avoid hitting the cylinder walls.
2. Slide the beater seal (pos. 28) out of the beater shaft.
3. Pull the idler (pos. 24) out of the beater and remove it.



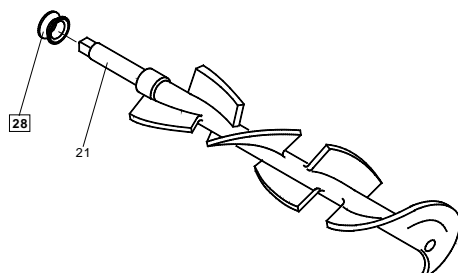
### WARNING

Like all moving parts, the complete beater is also subject to wear and tear. For this reason, we recommend checking the amount of wear of parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation. In particular, make sure that the wear 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 GRAVITY-FED MACHINES - DISASSEMBLING BEATER

- 1- Draw the beater out from the cylinder taking care to avoid hitting the cylinder walls.
2. Slide the beater seal (pos. 28) out of the beater shaft.

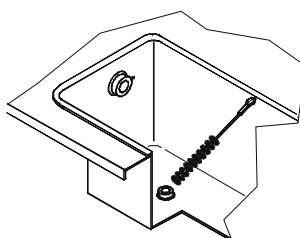


## 5.13 WASHING AND SANITISING COMPONENTS

### WARNING

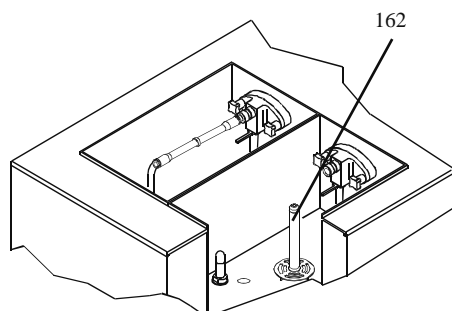
For the use of detergent/sanitiser, instructions on labels are to be followed.

1. Fill a sink with detergent/sanitising solution.
  2. Dip the disassembled parts in the sanitising solution and leave them there for as long as recommended by the manufacturer.
  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 detergent/sanitising solution and thoroughly clean the cylinders.
  6. Dip a brush into the detergent/sanitising solution and thoroughly brush the compression pipe and pump housing holes.
  7. Spray the cylinder bottom and the hopper walls with detergent/sanitising solution.
- Repeat steps 5, 6 and 7 several times**



## 5.14 REASSEMBLING THE HOPPER BEATER

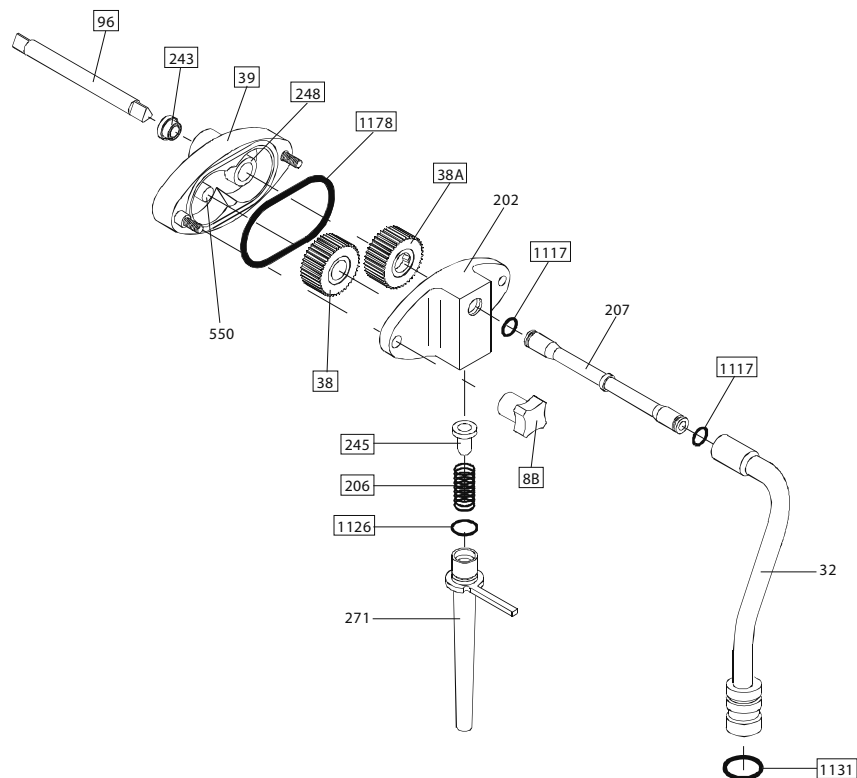
Place the beaters (pos. 162) back in their seat.





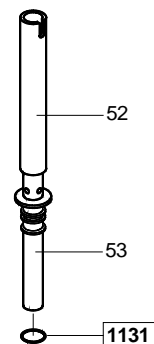
## 5.15 PUMP-FED MACHINES - REASSEMBLING THE PUMP AND COMPRESSION PIPES

1. Lubricate and place the O-ring (pos. 1117) back on the connection pipes.
2. Lubricate and place the O-rings (pos. 1126 and 1131) back on the compression pipes (pos. 32).
3. Insert the connection pipes (pos. 207) in the compression pipes (pos. 32) and leave them in the sanitising solution.
4. Lubricate and install the O-ring (pos. 1178).
5. Lubricate the gears (pos. 38 and 38A) and insert them into the pump body. **Do not lubricate the teeth of the pump gears.**
6. Lubricate and place the O-ring (pos. 1126) on the inlet pipe (pos. 271).
7. Insert the valve (pos. 245) and spring (pos. 206) in their pump cover housing (pos. 202).
8. Insert the air regulator (pos. 271) in the pump cover: push and turn it clockwise.
9. Assemble the pump cover (pos. 202) with the air regulator as shown and turn the two knobs (pos. 8) tightly. Install the mix pump in the hopper with the locking hook on the right, turning the pump anticlockwise until it locks in place.



## 5.16 GRAVITY-FED MACHINES - REASSEMBLING FEEDING NEEDLE

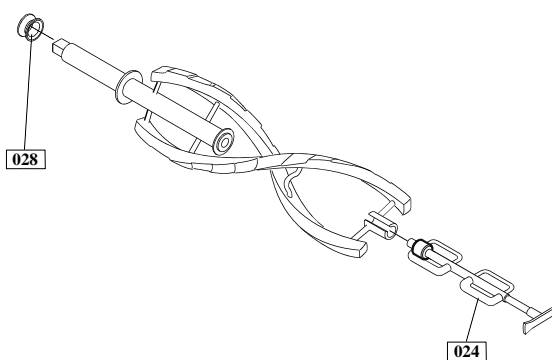
- 1- Lubricate the O-ring (pos. 1131)
- 2- Reassemble the feeding needle
- 3- Place the feeding needle in the sanitising solution.





## 5.17 PUMP-FED MACHINES - REASSEMBLING THE BEATER

1. Lubricate the beater seal (pos. 28) and slide it onto the beater shaft.
2. Insert the idler (pos. 24) in the beater body in the proper way.
3. Insert the beater assembly into the cylinder. Push while turning it clockwise until it engages in its drive shaft, otherwise the lid cannot be closed and mix could flow out of the cylinder resulting in serious damage.



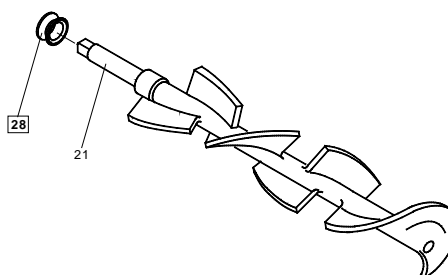
### WARNING

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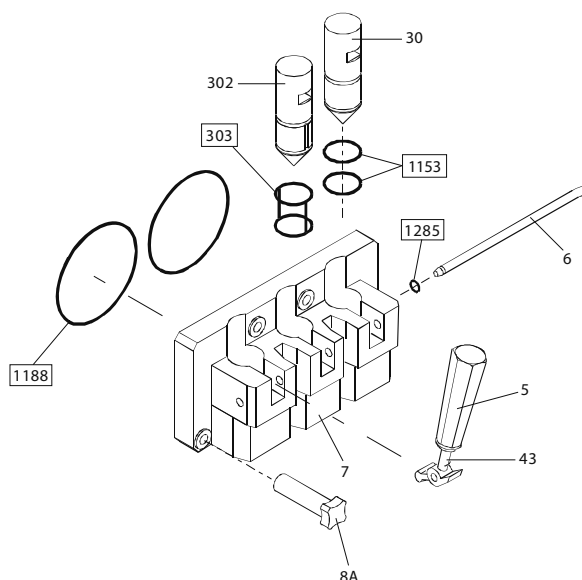
## 5.18 GRAVITY-FED MACHINES - REASSEMBLING THE BEATER

- 1- Lubricate the seal (pos. 28) and slide it onto the beater.
- 2- Insert the idler (pos. 24) in the beater body in the proper way.
3. Insert the beater assembly into the cylinder. Push while turning it clockwise until it engages in its drive shaft, otherwise the lid cannot be closed and mix could flow out of the cylinder resulting in serious damage.



## 5.19 REASSEMBLING THE FRONT LID

1. Lubricate and slide the piston O-rings (pos. 1153 and 303) into their seats.
2. Insert the pistons (pos. 30 and 302) making sure that the piston square notch lines up with the rectangular opening on the lid front.
3. Position the dispensing handles (pos. 5) on the lid (pos. 7) and insert the spigot pin (pos. 6) in its housing through the handle lever hole. Lubricate and insert the pivot pin O-ring (pos. 1285). Lubricate and slide the O-rings (pos. 1188) into its seat.
4. Refit the front lid assembly and fasten it with the four knobs (pos. 8A).





## 5.20 SANITISING THE WHOLE MACHINE

The machine must be sanitised before use. Proceed as follows:

1. Fill the hoppers with detergent/sanitising solution, prepared according to the instructions on the used product label, up to the maximum level and allow the solution to flow into the cylinders. Leave it stay for the time specified by the manufacturer.
2. Using the brushes supplied, clean the mix level sensors, the hopper walls, the surface of the pumps and the hopper beaters.
3. Select CLEANING function and let the machine run for about 10 seconds. Press the STOP button. Cylinders and pumps are now filled with sanitising solution.
4. Pour some detergent/sanitising solution in a pail.
5. Dip a brush in the pail of detergent/sanitising solution and brush clean the lid. Repeat the operation twice.
6. Wipe the exterior of machine with a clean sanitising towel. Repeat the operation twice.
7. Place an empty pail under the front lid and pull the spigot handles.
8. Allow all of the detergent/sanitising solution to drain. If the sanitising solution does not flow out completely, keep the spigot handles down and select CLEANING function, let the machine run for 5 seconds so that the last solution residues flow out, then push STOP.
9. Rinse with plenty of drinking water.

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### WARNING

**Do not keep the machine running in "CLEANING" mode for a long time and with cylinders full of sanitising solution or empty cylinders since the beater would wear out.**

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### WARNING

**Do not touch sanitised parts with hands, napkins, or else.**

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### WARNING

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

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## 5.21 PRIMING THE MIX PUMP

### Hopper filling:

- Take 1 bag of mix from the refrigerator. Add mix at 4-5°C.
- Pour mix into the hoppers allowing it to drain into the freezing cylinders. Mix level in hoppers shall never reach the pumps and mix shall be added when the display reads "MIX OUT".
- Lower the distribution handles and wait till some mix will come out; close the handles.

### Pump-fed machines - Connecting the compression pipe:

- Keep pouring the mix until the cylinders have been filled (bubbles shall be visible in the hopper while filling); with clean and sanitised hands, remove the left and right compression pipes from the sanitising solution, rinse them with drinking water, and insert them into the bottom of the hoppers.
- Turn the compression pipes (pos. 32) clockwise towards the pump. With sanitised hands, take the connection pipes (pos. 207) from the sanitising solution and insert them well into the compression pipes (pos. 32), then into the pump and lock them. Mix inside the hoppers shall never reach the pump (see the picture); furthermore mix shall be added whenever level is 2 cm from hopper bottom.
- Place hopper cover back.
- When selecting Production, now, a Pasteurization program will automatically be executed, before one can dispense ice cream. This will guarantee a better condition of the product.
- When the Pasteurization program is over, select the function Production and after a few minutes, ice cream is ready for distribution.

### Gravity-fed machines - Connecting the feeding needle:

- Keep pouring the mix until the cylinder has been filled (bubbles shall be visible in the hopper while filling); with clean and sanitised hands, remove the feeding needle from the sanitising solution, and insert it into the bottom of the hopper. Mix inside the hoppers shall never reach the feeding needle height; furthermore mix shall be added whenever level is 2 cm from hopper bottom.
- Replace the hopper cover.
- Select production function.



## 6. MAINTENANCE

### 6.1 SERVICE TYPE

#### WARNING

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

Do not clean and lubricate moving parts!

“Repairs to the wiring, mechanical, air supply or cooling systems, or to parts of same must be carried out by qualified 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 intended use of the machine”.



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

Herebelow you can find a list of routine servicing operations:

#### - Cleaning and replacement of seal

Should you ever find that some product drips from drip drawer, it means that seals (pos. 28) have lost their tightness; when disassembling the beater, it is consequently necessary to check them and, according to the machine working period, to replace and alternate them with the seals included in the machine accessory kit.

If the seals show no defects, they can be used again after washing them, when at room temperature they have regained their original shape.

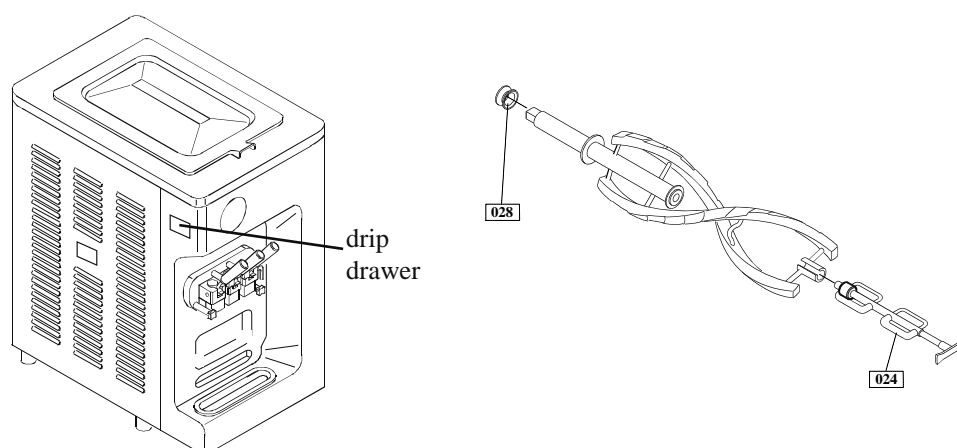
Replace seals as follows:

- Draw the beater assembly out.
- Remove seal from its seat
- Lubricate the new seal and mount it
- Before putting the replaced seal away, clean and lubricate it so as to reach its elasticity again.



#### WARNING

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



#### WARNING

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- **Cleaning of beater assembly, cleaning of pump, cleaning and sanitisation of the all machine**  
According to procedures described in section 5 of this manual.
- **Cleaning of panels**  
To be carried out daily with neutral soap, seeing to it that cleansing solution never reaches the inside of beater assembly.




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**WARNING**

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

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## 6.2 WATER COOLING

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

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

## 6.3 AIR COOLING

Clean the condenser periodically, in order to remove dust and impurities that may hinder air circulation. Use a brush with long bristles or a jet of compressed air




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**WARNING!**

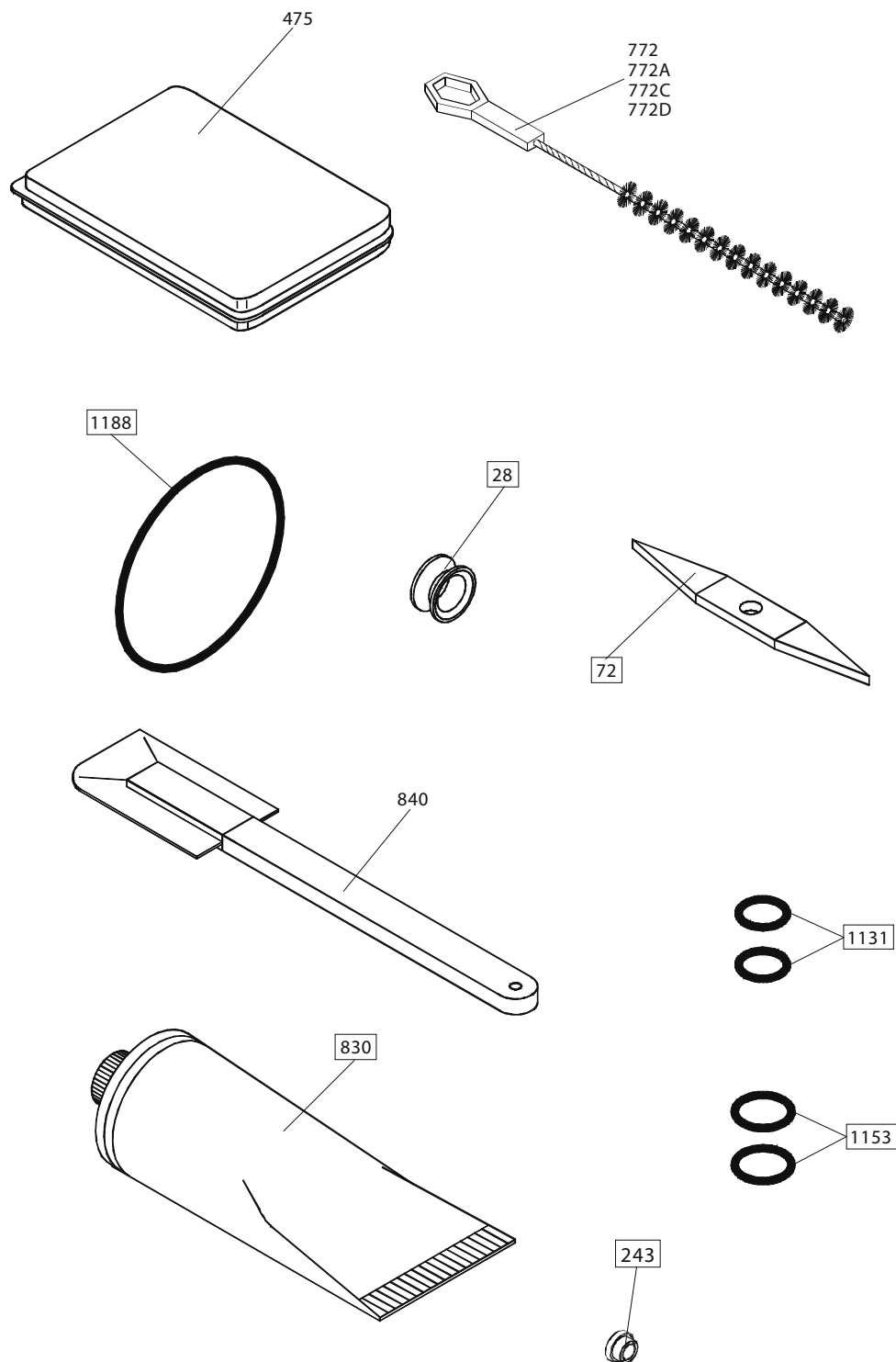
**When using compressed air, use personal protections in order to avoid accidents; put on protective glasses**

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

## 6.4 ORDERING SPARE PARTS



**Pos. Description**

- 28 Beater seal
- 72 O-ring extractor
- 243 Pump seal
- 475 Accessories
- 772 Swab D8x250
- 772A Swab D15x350
- 772C Swab D40x400

**Pos. Description**

- 772D Swab D 30x640
- 830 Food-grade lubricant tube
- 840 Cleaning spatula
- 1131 O-ring
- 1153 O-ring
- 1188 O-ring



## 7. TROUBLESHOOTING GUIDE

FAULT	CAUSE	PROCEDURE TO FOLLOW
<b>Compressor starts and then stops after a few seconds</b>	1. If machine is water-cooled: water is not circulating. 2. If machine is air-cooled: air is not circulating.	1. Open water inlet cock and check that pipe is not squashed nor bent. 2. Check that machine clearance is at least 80 mm from wall. 3. Call for service if necessary
<b>Mix or ice cream come out above or below piston though spigot is closed</b>	1. Piston without O-ring or O-ring is worn-out.	1. Stop the machine and insert or replace O-ring with a new one if worn-out.
<b>Mix coming out of drip drawer</b>	1. Seal missing or worn-out.	1. Stop the machine and install seal if missing. If worn-out, replace it with a new one.
<b>Piston hard to operate</b>	1. Dry sugar on piston.	1. Stop the machine and wash thoroughly and grease piston and O-ring with food-grade grease.
<b>Ice cream comes out from front lid</b>	1. OR missing or not properly fit. 2. Front lid knobs not tightened evenly.	1. Stop the machine, check and fix. 2. Stop the machine. Loosen knobs and tighten them again.
<b>Low ice cream overrun</b>	1. "R" pump not properly adjusted	1. Change regulator (Pos. 271).