

# INSTRUCTION MANUAL

# XVL 1 COUNTER

APPLICARE  
TARGA  
CARATTERISTICHE





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**Carpigiani's machines conform to the requirements of the following European Directives:**

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

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## GENERAL INDEX

<b>FOREWORD .....</b>	<b>7</b>
Instruction manual .....	7
Purpose .....	7
Manual structure .....	7
Additional documentation .....	7
Standard symbols.....	8
Qualification of the personnel.....	8
Safety .....	9
Warning .....	9
<b>1. GENERAL INFORMATION .....</b>	<b>10</b>
<b>1.1 General information .....</b>	<b>10</b>
1.1.1 Manufacturer's identification data .....	10
1.1.2 Information about maintenance.....	10
1.1.3 Information for the user .....	11
<b>1.2 Information about the machine.....</b>	<b>11</b>
1.2.1 General data.....	11
1.2.2 Technical features .....	11
1.2.3 Location of machine groups.....	12
<b>1.3 Intended use.....</b>	<b>12</b>
<b>1.4 Noise .....</b>	<b>12</b>
<b>1.5 Storing a machine.....</b>	<b>12</b>
<b>1.6 Disposal of packing materials .....</b>	<b>12</b>
<b>1.7 WEEE (Waste Electrical and Electronic Equipment).....</b>	<b>13</b>
<b>1.8 Bacterial contamination detection.....</b>	<b>13</b>
<b>2. INSTALLATION.....</b>	<b>15</b>
<b>2.1 Space necessary to use the machine .....</b>	<b>15</b>
<b>2.2 Machine with air-cooled condenser.....</b>	<b>15</b>
<b>2.3 Machines with water-cooled condenser .....</b>	<b>15</b>
2.3.1 Water valve adjustment .....	15
<b>2.4 Electrical connection.....</b>	<b>16</b>
2.4.1 Replacing the power cable.....	16
<b>2.5 Refilling .....</b>	<b>16</b>

<b>3</b>	<b>INSTRUCTIONS FOR USE .....</b>	<b>17</b>
3.1	Machine safety warnings .....	17
3.2	Machine configuration .....	17
3.3	Controls .....	18
3.3.1	Push-button panel .....	18
3.3.2	Functions.....	19
3.4	Dispensing handles .....	31
3.4.1	Modifica quantità prodotto erogato.....	31
3.4.2	Self closing.....	32
3.5	Machines fed by pump and semi-submersible pump.....	32
3.6	Gravity-fed machines - feeding needle.....	32
3.7	Preliminary operations, washing and sanitising .....	33
3.8	Commissioning the machine .....	33
3.8.1	Avviamento macchine con pompa.....	33
3.8.2	Avviamento macchine a gravità .....	33
3.8.3	Dry Filling.....	34
3.9	Production .....	34
3.10	Pasteurisation .....	35
3.11	Daily cleaning – Opening and closing procedures.....	36
3.11.1	Daily closing procedures .....	36
3.11.2	Daily opening procedure.....	38
<b>4.</b>	<b>SAFETY DEVICES.....</b>	<b>40</b>
4.1	Alarms .....	40
4.1.1	Blackout .....	42
<b>5.</b>	<b>DISASSEMBLY, CLEANING AND REASSEMBLY OF THE PARTS IN CONTACT WITH THE PRODUCT .....</b>	<b>43</b>
5.1	General description .....	43
5.2	Washing conditions .....	43
5.3	Suggestions.....	43
5.4	How to use cleaning/sanitising solution.....	43
5.5	Daily cleaning .....	44
5.6	Scheduled cleaning .....	44
5.6.1	Machine Drainage .....	44

5.6.2	Pump feed machine - removal from Hopper.....	44
5.6.3	Gravity fed machines - removing feeding needle from hopper.....	45
5.6.4	Mix Beaters Removal from Hopper.....	45
5.6.5	Hopper Washing .....	45
5.6.6	Pump feed machine - disassembly of the pump .....	47
5.6.7	Gravity fed machines - disassembling the feeding needle.....	49
5.6.8	Disassembly of the door .....	49
5.6.9	Disassembly of beaters .....	51
5.6.10	Disassembly of the drip drawer, the drip tray and the hopper lid.....	52
5.6.11	Cleaning and sanitising of the components .....	52
5.6.12	Reassembly of the tank beater .....	52
5.6.13	Reassembly of the beater .....	53
5.6.14	Reassembly of the dispensing door .....	53
5.6.15	Pump feed machine - Reassembly of the pump .....	54
5.6.16	Gravity fed machines - refitting the feeding needle.....	56
5.6.17	Drip Tray and Hopper Cover Reassembly.....	56
5.6.18	Complete sanitisation of the machine.....	57
<b>6.</b>	<b>MAINTENANCE .....</b>	<b>58</b>
6.1	Maintenance.....	58
6.2	Water-cooling .....	59
6.3	Ordering spare parts .....	59
6.4	Supplied accessories .....	60
<b>7.</b>	<b>TROUBLESHOOTING GUIDE .....</b>	<b>61</b>

## FOREWORD

### Instruction manual

In writing this manual, the European Community directions on safety standards as well as on free circulation of industrial products within the E.C. were taken into due account.

### Purpose

This manual was conceived taking machine users' needs into due account.

Issues regarding the correct use of the machine have been analysed in order to keep the longstanding quality features characterising Carpigiani's machines all over the world unchanged.

A significant part of this manual refers to the conditions required for using machine and, above all, to the necessary procedures to follow while cleaning and during routine and special maintenance.

Nevertheless, this manual cannot meet all demands in details. In case of doubts or missing information, please apply to:



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### Manual structure

This manual is divided in sections, chapters and subchapters in order to be consulted more easily.

#### Section

A section is the part of the manual 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.

**Any person employed to use the machine must have first read and fully understood the parts of the manual that refer to his/her competence and in particular:**

- the Operator must have read the chapters regarding starting the machine, the functioning of the machine units and the prescribed safety precautions;
- a skilled technician involved in the installation, maintenance, repair, etc., of the machine must read all parts of this manual.

### Additional documentation

**Along with an instruction manual, each machine is also supplied with additional documentation:**

- Spare parts list: a list of spare parts provided with the machine for its maintenance.
- Wiring diagram: a diagram of wiring connections placed in the machine.



**WARNING**



**Before using the machine read the instruction manual carefully.**

**Pay attention to the safety instructions.**



## Standard symbols

 **ELECTRIC SHOCK  
DANGER** 



This warns personnel concerned that the operation described could cause electric shock if not carried out while respecting safety norms.

 **DANGER FROM HIGH  
TEMPERATURES** 



This warns personnel concerned that the operation described could cause burns and scalds if not carried out while respecting safety norms.

 **DANGER  
MOVING PARTS** 

This warns personnel concerned about the presence of moving organs and the risk of physical injury if safety norms are not respected.

 **CRUSHING  
HAZARD** 



This warns personnel concerned about the risk of having a finger, hand or other body part crushed if the described operation is not carried out while respecting safety norms.

 **GENERAL  
HAZARD** 

This warns personnel concerned that the operation described may cause injury if not carried out respecting safety norms.

 **NOTE** 

This points out significant information for the personnel concerned.

 **WARNING** 

This warns the personnel involved that the non-observance of warning may cause loss of data and damage to the machine, or cause risks for non-compliance with any applicable law/regulations.

 **PROTECTION** 

This symbol located next to description means that the operator must use personal protection against an implicit risk of accident.

## Qualification of the personnel

Personnel using/working on the machine can be differentiated according to training and responsibility as follows:

### OPERATOR



This term identifies unqualified personnel who have no specific technical qualifications and who can carry out only simple tasks such as operating the machine using the controls on the keyboard, loading and unloading product utilised during production, loading of any consumable materials, basic maintenance operations (cleaning, removing simple obstruction, controlling instrumentation, etc.).

### MAINTENANCE ENGINEER



He/she is a skilled engineer for the operation of the machine under normal conditions; he/she is able to carry out interventions on mechanical parts and all adjustments, as well as maintenance and repairs. He/she is qualified for interventions on electrical and refrigeration components.

### CARPIGIANI ENGINEER



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



## Safety

When using the machine be aware that drive mechanisms (rotary motion), high voltage components and parts subject to high temperatures may cause serious injury/damage to persons and things.

**The person in charge of plant safety must check that:**

- any incorrect use or handling is avoided;
- safety devices are not removed or tampered with;
- the machine is regularly maintained;
- only original spare parts are used especially with regards to those components with safety functions (e.g., protection microswitches, thermostats, etc.);
- suitable personal protective equipment is worn;
- great care is taken during hot product cycles;
- particular attention is paid to organs in movement.

**To achieve the above, the following is necessary:**

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

## IMPORTANT

Ensure that technical personnel do not carry out operations that are not within their capabilities, knowledge and responsibility.



### NOTE



**According to the norms in force, a SKILLED ENGINEER is a person who, thanks to his/her:**

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

**Is able to recognize and avoid any danger and has also been authorised by the person in charge of plant safety to carry out all types of interventions.**

## Warning

When installing the machine, insert a differential thermomagnetic 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 during production and cleaning operations. Before carrying out any maintenance operation, make sure that the machine is in the Stop position and the main switch has been switched OFF.
- Using a jet of pressurized water to wash the machine is forbidden.
- Removing panels in order to reach the machine inside before the machine has been disconnected is forbidden.
- Carpigiani will not respond to accidents that might happen during the use, cleaning and/or maintenance of its machines if the specified safety norms have not been complied with.

## 1. GENERAL INFORMATION

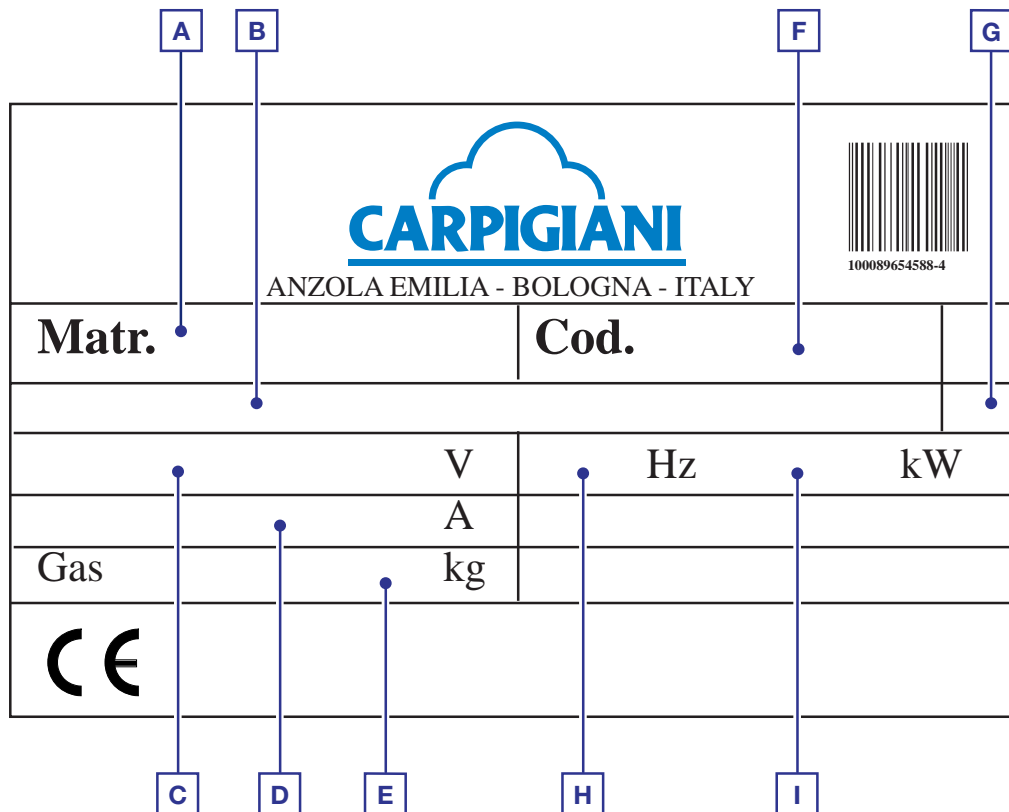
### 1.1 General information

#### 1.1.1 Manufacturer's identification data

The machine has a data plate that was assigned to the machine when it was manufactured, showing the manufacturer's data, machine type and serial number.

A copy of the machine data plate can be found on the first page of this manual.

Fig. 01



- |   |   |
|---|---|
| <b>A</b> Serial number                  | <b>F</b> Machine code                     |
| <b>B</b> Machine type                   | <b>G</b> Condensation (A= Air - W= Water) |
| <b>C</b> Voltage                        | <b>H</b> Frequency                        |
| <b>D</b> Main-switch amperometric value | <b>I</b> Power input                      |
| <b>E</b> Gas type and weight            |   |

#### 1.1.2 Information about maintenance

All operations of routine maintenance are hereby described in the section "Maintenance". Any additional operation requiring a 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 for the user



- Carpigiani is at the disposal of the user for any clarification or necessary/integrative information regarding the functioning of the machine or any improvement modifications to the machine.

- Contact the area distributor in the event of any problems or the manufacturer if a distributor is not available.
- The customer assistance service is available at any time to respond to customer requirements regarding the functioning of the machine, requests for spare parts or technical assistance that may eventually be necessary.

## 1.2 Information about the machine

### 1.2.1 General data

It is an electronic machine for the production and instant distribution of variegated ice cream that has the following main characteristics:

- refrigerated upper tank;
- electronic control of product consistency via the “Hard-o-tronic” system;
- automatic pasteurisation system of the product contained in the tank and cylinder during non-production periods (e.g., at night);
- Dry Filling;
- mixer for mixing the dressing with the ice cream;

Carpigiani recommends using top quality raw materials always in the production of ice cream and confectionery products to satisfy the most demanding requirements of customers. Any cost saving of the mix utilized affects the quality and much greater losses will occur apart from the economic losses.

**Taking into account everything mentioned above, the following recommendations should be taken into account:**

- only you produce the mix using top quality natural products, or receive supplies from serious and trustworthy companies;
- scrupulously follow the mix preparation instructions that are supplied by the supplier;
- Do not modify suggested recipes without knowing the characteristics of the ingredients;
- taste the final product and place it on sale only if you are completely satisfied;
- advise your personnel that the machine must always be kept clean.

Contact only the Carpigiani Technical Assistance Service for any repairs to the machine.

### 1.2.2 Technical features

MODEL	75g CONES / HOUR **	CYLINDER CAPACITY	FLA-VOURS	ELECTRICAL POWER SUPPLY ***			CONDENS-ER	INSTALLED POWER OUTPUT	NET WEIGHT	DIMENSIONS mm		
		l		V	Phase	Hz		kW		L	P	H
XVL 1 COUNTER P	310	1,75	1	400	3	50	Air/Water	2,4	170	400	744	909
XVL 1 COUNTER G	265	1,75	1	400	3	50	Air/Water	2,4	160	400	744	909

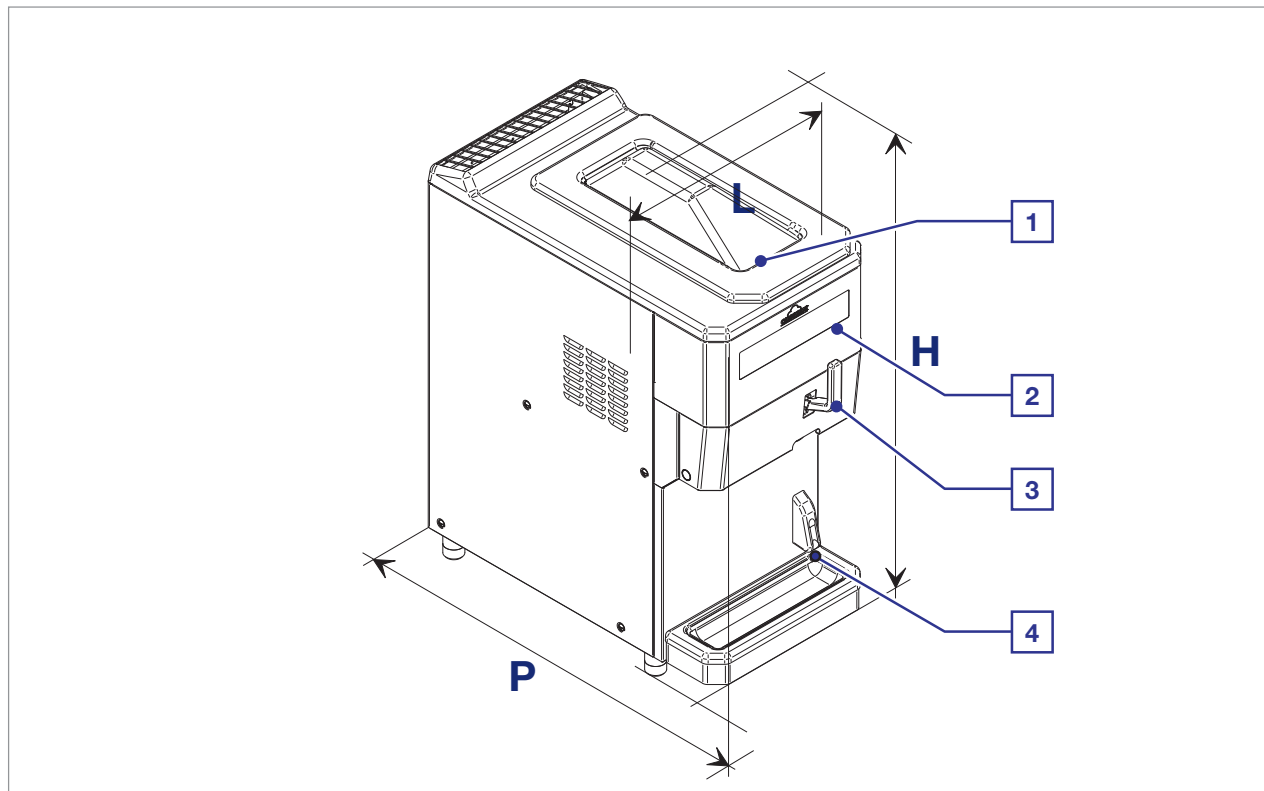
\*\* The hourly production and mix quantity for each ice cream can vary depending on the temperature and type of mix utilised and on the increase in volume (overrun) required.

\*\*\* Also available with a water-cooled condenser and other types of electrical power supply.

Performances refer to room temperature of 25°C at a water temperature of 20°C in the condenser.

### 1.2.3 Location of machine groups

Fig. 02



- 1 Tank lid  
2 Control panel

- 3 Product dispensing door  
4 Drip tray

### 1.3 Intended use

The machine must only be used for the production of ice cream and patisserie products, in compliance with what has been stated in paragraph 1.2.1 "General information", and within the operating limits indicated here below.

- Voltage:  $\pm 10\%$
- Min. air temperature:  $10^{\circ}\text{C}$
- Max. air temperature:  $43^{\circ}\text{C}$
- Min. water temperature:  $10^{\circ}\text{C}$
- Max. water temperature:  $30^{\circ}\text{C}$
- Min. water pressure:  $0,15\text{ MPa (1,5 bar)}$
- Max. water pressure:  $0,8\text{ MPa (8 bar)}$
- Max. relative humidity:  $85\%$

This machine has been designed for use in rooms not subject to explosion-proof laws and therefore it can only be utilised in rooms that conform to a normal atmosphere.

### 1.4 Noise

Continuous acoustic pressure level equivalent to Weighting A in the working place is less than  $70\text{ dB(A)}$  for both water-cooled and by air-cooled machines.

### 1.5 Storing a machine

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

Before storing the machine, cover it with a sheet to protect it against dust and dirt.

### 1.6 Disposal of packing materials

When removing the machine from its packaging, subdivide the packing materials into the various types and dispose of them in accordance with the norms in force in the destination country.



**WARNING**



**It is forbidden to dispose of packaging materials in the environment.**



**GENERAL  
HAZARD**



**Do not leave packaging materials within reach of children because they could cause suffocation.**

## 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 this symbol on the side of the product or packaging means that the product must not be disposed of with normal urban waste. Instead, it is the user's responsibility to dispose of this product by returning it to a collection point designated for the recycling/treatment of electrical and electronic equipment waste.

Differentiated collection of this waste material helps to 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.

## 1.8 Bacterial contamination detection

A qualified bacteriologist must periodically analyse samples of the product to check for the presence of bacteria. The bacteria count in the samples should be below the following figures:

Standard Plate Count (SPC)..... 50,000  
Coliforms ..... 10

If the bacteria count exceeds the above-mentioned figures, there is a source of bacterial contamination. This source must be immediately identified and eliminated. A high bacteria count means that the product is not fit for consumption and a correct cleaning and sanitization of the machine must be carried out to eliminate the continued bacterial contamination of the product.



### NOTE



**Soft yogurt normally has a high bacteria count and therefore it is necessary to highlight the product. In any case, coliform bacteria contamination IS NOT ACCEPTABLE in any type of product. The following information will help you to prevent coliform bacteria contamination problems.**

The following list indicates the possible sources of bacterial contamination and the methods to prevent it.

SOURCES OF CONTAMINATION	HOW TO PREVENT CONTAMINATION
<b>Operator contact.</b>	<ul style="list-style-type: none"> <li>• Wash hands and forearms thoroughly.</li> <li>• Wear rubber gloves if they are cut or have skin problems.</li> <li>• Wash hands several times a day.</li> </ul>
<b>Residues / deposits of material (milk clots).</b>	<ul style="list-style-type: none"> <li>• Utilise the appropriate brushes.</li> <li>• To clean thoroughly, scrub the parts and components to prevent the formation of milk clots because milk clots are fertile material for the proliferation of bacteria that could contaminate the fresh milk.</li> </ul>
<b>Worn or damaged parts.</b>	<ul style="list-style-type: none"> <li>• Lubricate all rubber parts that come into contact with the mix using a food-grade lubricant.</li> <li>• Replace damaged O-rings only with original spare parts.</li> <li>• Systematically check the drip drawers to avoid excessive dripping.</li> </ul>

SOURCES OF CONTAMINATION	HOW TO PREVENT CONTAMINATION	SOURCES OF CONTAMINATION	HOW TO PREVENT CONTAMINATION
<p><b>Cleaning and wrong hygienic procedures.</b></p>	<ul style="list-style-type: none"> <li>• The container in which the pieces are washed must be perfectly clean and contain enough detergent/sanitising solution to completely cover even the largest components. Use the brushes to clean and sanitise the machine regularly.</li> <li>• Utilise the appropriate brushes, lubricants and disposable cloths.</li> <li>• Store and utilize the detergents as per the manufacturer's instructions.</li> <li>• Follow expert personnel's cleaning habits. Ensure the personnel can complete cleaning procedures coherently, correctly and without interruption.</li> <li>• Leave the sanitising solution in the cylinder and tank at least for the time suggested by the manufacturer of the sanitising solution.</li> <li>• Each time after using, wash and sanitise the utensils used for cleaning and the tube containing the lubricant. Always replace the cap on the tube.</li> <li>• The machine components and the brushes must be left to dry in the open. Do not put them back into the machine whilst they are wet or damp.</li> <li>• Always carry out the daily cleaning procedure. Regularly clean the outside of the machine and the dispenser with a sanitized cloth.</li> </ul>	<p><b>Wrong method of storing the mix.</b></p>	<ul style="list-style-type: none"> <li>• Utilise leftovers of mixes with the oldest date first. Be careful of the expiry date.</li> <li>• Put the mix directly in the fridge. Do not accumulate mix outside in direct sunlight before putting it in the fridge.</li> <li>• In the fridge, leave at least 2-3 cms of space between the mix and other products to allow air to circulate.</li> <li>• The mix must not be left at ambient temperature for long periods of time.</li> <li>• The storage temperature of the tank must be maintained at 4.4°C (40°F). Storage temperatures above 4.4°C would permit the multiplication of bacteria to dangerous levels within less than one hour.</li> <li>• Once the mix has been placed inside the tank, place the lid on the tank to store the mix at the correct temperature and minimise the possibility of contamination.</li> </ul>

## 2. INSTALLATION

### 2.1 Space necessary to use the machine

Space for access to the machine must be left free in order to enable the operator to act without constraint and also to immediately leave the working area if necessary.

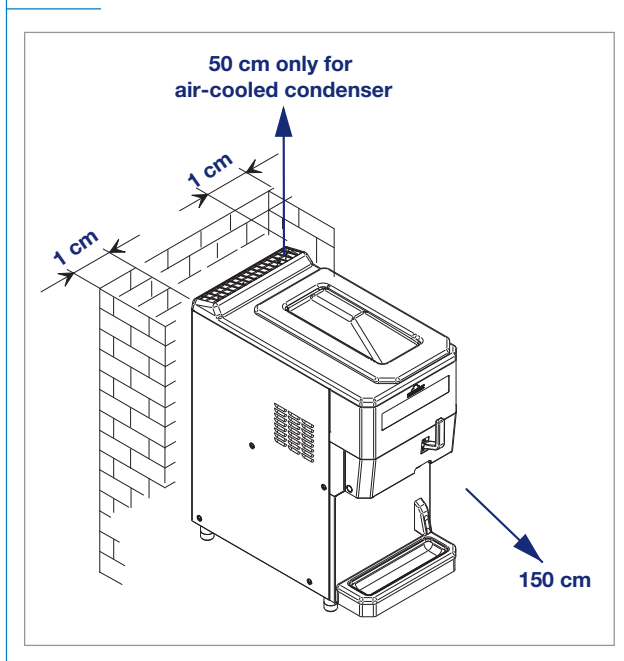
The machine also requires free space on the side to extract the drip trays.

It is also advisable to have a minimum access to the operating area of the machine of at least 150 cm, and about 45 cm. of space on the side of the machine to allow for extracting drip trays.

**NOTE**

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

Fig. 03



**WARNING**

**Machines with an air-cooled condenser must be installed leaving a minimum distance (at least 50 cms) above the chimney for the free circulation of the condensate air.**

### 2.2 Machine with air-cooled condenser



Machines with an air-cooled condenser must be installed leaving a minimum distance (at least 50 cms) above the chimney for the free circulation of the condensate air.

**NOTE**

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

### 2.3 Machines with water-cooled condenser



A water-cooled machine must be connected to a mains water supply or to a cooling tower to operate it.

The water must have a pressure of between 0.15 MPa and 0.8 MPa (1,5-8 bar) and a flow capacity at least equal to the estimated hourly consumption.

Connect the inlet pipe marked by the "Water Inlet" plate to the water supply by installing a shut-off valve and the outlet tube marked by the "Water Outlet" plate to a drainage pipe by installing a shut-off valve.

#### 2.3.1 Water valve adjustment

##### IMPORTANT



If the water valve needs to be reset, this operation must be carried out only by skilled personnel.

**NOTE**

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

**WARNING**

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

## 2.4 Electrical connection



Before connecting the machine to the mains supply, check that the machine voltage indicated on the data plate corresponds with the mains supply voltage.

Position a class D section thermomagnetic circuit breaker switch correctly rated to the absorption power required and with a contact aperture of at least 3 mm. The machines are delivered with a 5 wire cable: the blue wire must be connected to the neutral lead.

### IMPORTANT

The yellow/green ground wire must be connected to an adequate ground plate.

### 2.4.1 Replacing the power cable



Should the machine's power cable become damaged, it must be replaced immediately by one with similar characteristics.

The replacement must be carried out only by a skilled technician.

## 2.5 Refilling



The type of motor installed in the machine is a lubricated-for-life motor. No checking/replacing or topping up is necessary.



The correct quantity of gas for the refrigeration circuit is put in by Carpigiani when testing the machine. A new machine does not need any topping up or refilling.

If it becomes necessary to top up or fill the system with gas, the procedure must be carried out in conditions of safety and by a qualified technician capable of establishing the cause of the anomaly prior to topping up.

## 2.6 Machine testing



The machine is tested by Carpigiani at the end of the assembly procedure. The foreseen operational and production functions are checked.



Machine testing on the end user's premises must be carried out by skilled technicians or by one of Carpigiani's engineers.

After positioning the machine and making the correct connections, carry out all operations necessary for functionality check and operational testing of the machine.



## 3 INSTRUCTIONS FOR USE

### 3.1 Machine safety warnings

When using industrial equipment and plant, be aware that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious injury/damage to persons and things.

**The person in charge of plant safety must check that:**

- any incorrect use or handling is avoided;
- safety devices are not removed or tampered with;
- the machine is regularly maintained;
- only original spare parts are used especially with regards to those components with safety functions (e.g., protection microswitches, thermostats, etc.);
- suitable personal protective equipment is worn;
- great care is taken during hot product cycles.

**To achieve the above, the following is necessary:**

- at the work station an instruction manual relevant to the machine must be available;
- the documentation must be carefully read and requirements must consequently be met;
- only adequately skilled personnel should be assigned to electrical equipment;
- ensure that technical personnel do not carry out operations that are not within their capabilities, knowledge and responsibility.

### 3.2 Machine configuration

The machine is composed of a motor for operating the beater unit, a cooling system with a water-cooled or air-cooled condenser and electronic management of the main functions.

**The preparation of soft ice cream occurs by placing the cold mix (+4°C) inside the tanks and starting an automatic production cycle until the set programmed optimum consistency of the ice cream is reached.**

The mix enters into the whipping cylinders already mixed with air. The ice cream is produced only at the moment in which it is served.

By using the ice cream dispensing levers positioned on the front of the machine, a portion of soft ice cream requested will be dispensed.

Simultaneously, an equal quantity of mix passes from the upper refrigerated tanks to the whipping cylinder.

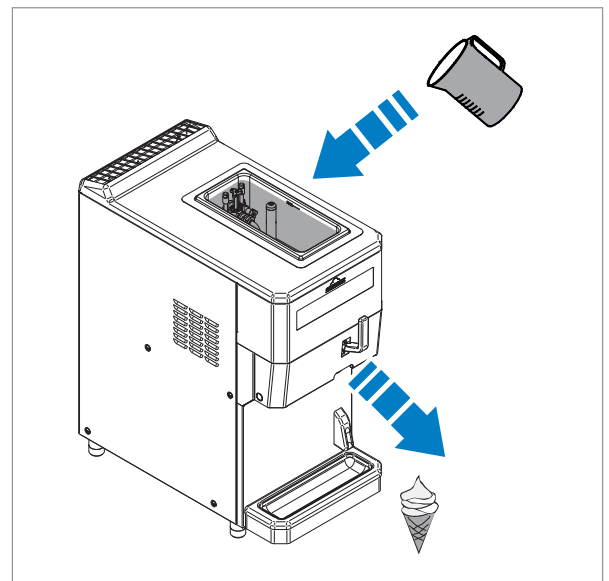


DANGER FROM HIGH TEMPERATURES



Be extremely careful during pasteurisation phase; contact could cause burns.

Fig. 05

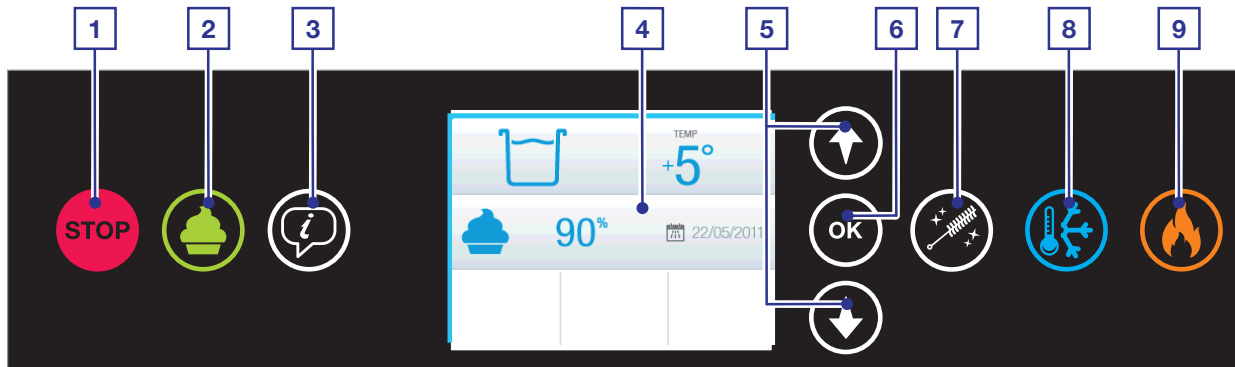


### 3.3 Controls

#### 3.3.1 Push-button panel

The machine is equipped with a push-button panel fitted on the front panel; each button is marked by an explanatory symbol of the assigned function.

Fig. 06



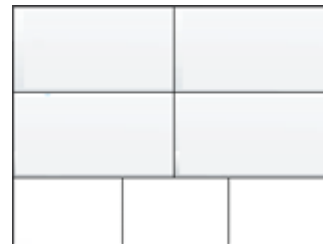
- |                                     |                       |
|-------------------------------------|-----------------------|
| 1 Stop the machine from functioning | 7 Cleaning            |
| 2 Production                        | 8 Storage/Alarm Reset |
| 3 Information                       | 9 Pasteurisation      |
| 4 Touch screen display              |                       |
| 5 Increment/Decrement.              |                       |
| 6 Confirm                           |                       |



#### NOTE



The display is touch screen with 7 sensitive zones:


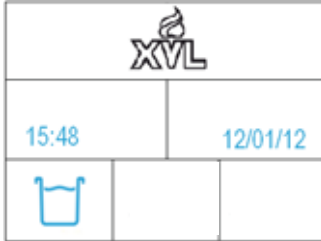

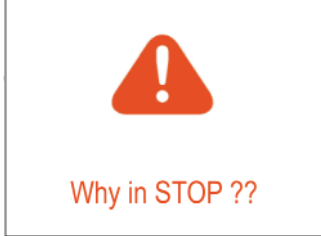
















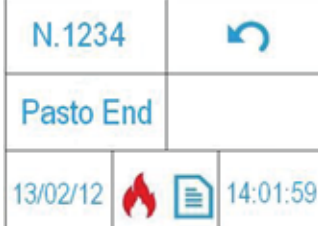




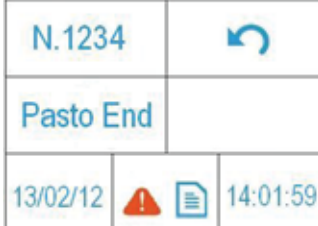


#### NOTE












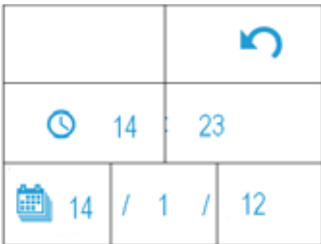


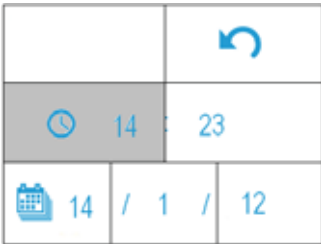





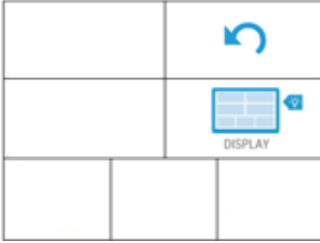




The keypad emits an acoustic signal when the key pressed has been accepted.

### 3.3.2 Functions







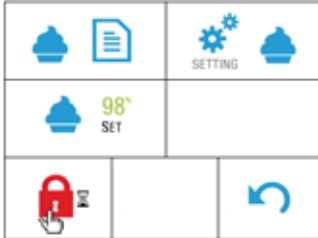



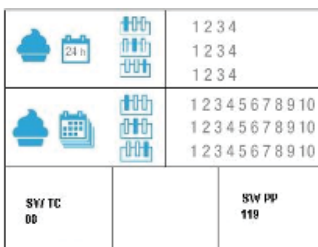




BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>STOP</b></p> 	<p>In Stop mode, with the Stop key back lit, the machine is at stop. From the Stop position any machine function can be accessed. To change function, returning first to Stop IS ALWAYS REQUIRED.</p> <p>The display indicates the time, date and the indication of the tank.</p> 
<p><b>WHY IN STOP ??</b></p>  <p>With the machine in Stop mode for more than 30 seconds.</p>	<p>If the machine is left in Stop mode with the level covered, after 30 seconds the message “<b>Why in STOP ??</b>” is visualised to alert the user to put the machine into Production, Pasteurisation or Storage mode.</p>  <p>Press the  key to cancel the alarm message from the display. Refer to alarms.</p>
<p><b>WASH TODAY!</b></p>  <p>With the machine in Stop mode for more than 24 hours.</p>	<p>From Stop mode, there is a time countdown if the tank level is covered. If this time exceeds 24 hours, the display visualises the message “<b>Wash today!</b>”.</p>  <p>The user must carry out machine washing procedure before restarting Production.</p> <p>Press the  key to cancel the alarm message from the display. Refer to alarms.</p>

BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>INFO whilst in Stop mode</b></p>  <p>Functions that can be selected from INFO whilst the machine is in Stop mode:</p> <ul style="list-style-type: none"> <li>• Pasteurisation history</li> <li>• Events history</li> <li>• Key locking</li> <li>• Settings</li> </ul>	<p>Pressing the Info  key whilst in <b>Stop</b> mode, the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Pasteurisation history </li> <li>• Events history </li> <li>• Key locking </li> <li>• Settings </li> </ul>  <p>Press the  key to go back to the previous page.</p>
<p><b>INFO – PASTEURISATION HISTORY</b></p>  <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• PASTEURISATION HISTORY</li> </ul>	<p>Pressing the Pasteurisation History  key the display visualises the list of pasteurisations carried out successfully.</p>  <p>Utilise the  and  arrow keys to scroll the different events.</p>
<p><b>INFO – EVENTS HISTORY</b></p>  <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• EVENTS HISTORY</li> </ul>	<p>Pressing the Historical Events  key the display visualises the list of events that include function changes, alarms and pasteurisation steps.</p>  <p>Utilise the  and  arrow keys to scroll the different events.</p> <div style="background-color: #008000; color: white; padding: 5px; text-align: center;"> <p><b>NOTE</b></p> <p>The maximum number of memorizable events is 1000.</p> </div> <p>A further event deletes the earliest one.</p>









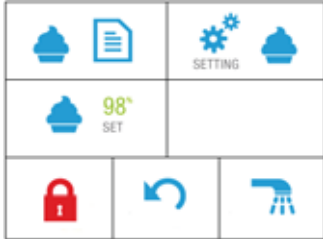





BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>INFO – KEY LOCKING</b></p>  <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• KEY LOCKING</li> </ul>	<p>The key locking button is present in all functions of the machine. Pressing and holding the Lock icon  for about 10 seconds (wait for the visualisation of the display to return to the current function) will lock the touchpad, except for those inside the display, so that it can be cleaned without accidentally activating a different function.</p>  <p>To re-enable the keys press any key; The window with a lock will re-appear: press it for 10 seconds to enable the keys.</p>
<p><b>INFO - SETTINGS</b></p>  <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• SETTINGS</li> </ul> <p>Functions that can be selected from SETTINGS mode:</p> <ul style="list-style-type: none"> <li>• Setting the time</li> <li>• Display</li> <li>• Setting the machine</li> </ul>	<p>Pressing the Settings  key, the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Setting the time </li> <li>• Display </li> <li>• Setting the machine </li> <li>•</li> </ul> 
<p><b>INFO – SETTING THE TIME</b></p>  <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• SETTINGS</li> <li>• SETTING THE TIME</li> </ul>	<p>Pressing the Setting the time  key, the display visualises:</p>  <p>Pressing on the hour the background of the key becomes grey and the  and  arrow keys light up so that the hour can be modified. To confirm press the button on the display to deselect it.</p>  <p>To modify minutes and date follow the same procedure.</p>







































BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>INFO - DISPLAY</b></p>   <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• SETTINGS</li> <li>• DISPLAY</li> </ul>	<p>Pressing the Display  key, the display visualises:</p>  <p>The display luminosity bar (intensity of the backlight) of the display appears when pressing on the display and the  and  arrow keys light up to allow modification.</p>  <p>Confirm using the  key.</p>










BUTTONS	DESCRIPTION OF FUNCTIONS																																																	
<p><b>INFO – MACHINE SETTING</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> </div> <p>With the machine in Stop mode press:</p> <ul style="list-style-type: none"> <li>INFO</li> <li>SETTINGS</li> <li>MACHINE SETTING (PROGRAMMING)</li> </ul>	<p>Pressing the Machine setting  key, access is gained to the first step of user programming.</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px 0;"> </div> <p>To scroll the various steps, utilise the  and  arrow keys. The display visualises the first step of user programming. E.g., U07 - Language: Eng. The value is modifiable using the left and right arrow keys visualised on the touch screen. Refer to the Programming table.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th>Step</th> <th>Display ITA</th> <th>Display ENG</th> <th>Min</th> <th>Max</th> <th>Default</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>U07</td> <td>Linguaggio</td> <td>Language</td> <td>Ita</td> <td>Esp</td> <td>Ita</td> <td></td> </tr> <tr> <td>U08</td> <td>Ora Avvio Prod.</td> <td>Start Prod. Time</td> <td>00</td> <td>23+no+auto</td> <td>08</td> <td></td> </tr> <tr> <td>U09</td> <td>Ora Avvio Pas-Con</td> <td>Start Pasto Time</td> <td>00</td> <td>23+no</td> <td>02</td> <td></td> </tr> <tr> <td>U10</td> <td>Abilita Beep Liv</td> <td>Lev. Beep Enable</td> <td>No</td> <td>Yes</td> <td>Yes</td> <td></td> </tr> <tr> <td>U12</td> <td>Tempo Mixer</td> <td>Mixer Time</td> <td>0</td> <td>20</td> <td>0</td> <td></td> </tr> <tr> <td>U15</td> <td>Extra Agitaz.Vas</td> <td>Extra Hop.Agit.</td> <td>No</td> <td>Yes</td> <td>Yes</td> <td></td> </tr> </tbody> </table> <p><b>U07 - Language:</b> Set language among Italian, English, German and Spanish.</p> <p><b>U08 - Start Prod.Time:</b> Set the time at which Production will automatically start. If set to “no”, automatic Production is disabled. If set to “auto”, Production will start as soon as Pasteurisation is completed.</p> <p><b>U09 - Start Past-Stor.Time:</b></p> <p>For Pasteurising machines: Set the time at which Pasteurisation will automatically start. If set to “no”, automatic Pasteurisation is disabled.</p> <div style="background-color: yellow; text-align: center; padding: 5px; border: 1px solid black;"> <span style="font-weight: bold; font-size: 1.2em;">ADVERTÊNCIA</span> </div> <p style="background-color: yellow; text-align: center; padding: 2px; border: 1px solid black;"><b>User takes full responsibility for the manual control of pasteurization, complying with prevailing local regulations on mix handling in case mixes are not pasteurized.</b></p> <p>For non-Pasteurising machines: Set the time at which Storage will automatically start. If set to “no”, automatic Storage is disabled.</p> <p><b>U10 - Lev. Beep Enable:</b> If set to “YES”, the machine will beep intermittently when the level is less than half full, except in Stop mode, when it will not beep even if the function is enabled.</p> <p><b>U14 - Mixer Timer:</b> The amount of time in seconds the mixer will run when the corresponding key is pressed.</p> <p><b>U15 - Hopper Extra Beat.:</b> Enable/disable hopper rotor periodical activation in Production and Storage functions</p> <p>To exit from user programming, do not press any key for approximately 30 seconds or press   on the display. At this point the machine returns to the previous menu. On exiting user programming, if the table has been updated, the message “Table Updated M.” appears on the display.</p>	Step	Display ITA	Display ENG	Min	Max	Default	Notes	U07	Linguaggio	Language	Ita	Esp	Ita		U08	Ora Avvio Prod.	Start Prod. Time	00	23+no+auto	08		U09	Ora Avvio Pas-Con	Start Pasto Time	00	23+no	02		U10	Abilita Beep Liv	Lev. Beep Enable	No	Yes	Yes		U12	Tempo Mixer	Mixer Time	0	20	0		U15	Extra Agitaz.Vas	Extra Hop.Agit.	No	Yes	Yes	
Step	Display ITA	Display ENG	Min	Max	Default	Notes																																												
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U15	Extra Agitaz.Vas	Extra Hop.Agit.	No	Yes	Yes																																													





































BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>INFO from Production mode</b></p>  <p>Functions that can be selected from INFO whilst the machine is in Production mode:</p> <ul style="list-style-type: none"> <li>• Cones and Software Versions</li> <li>• Setting</li> <li>• Modify Set Hot</li> <li>• Key locking</li> </ul>	<p>Pressing the  key whilst in <b>Production</b> mode, the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Cones and Software Versions </li> <li>• Setting (if present) </li> <li>• Modify Set Hot </li> <li>• Key locking </li> </ul>  <p>Use the  key to return to the previous page.</p>
<p><b>INFO – CONES AND SOFTWARE VERSIONS</b></p>  <p>With the machine in production mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• CONES AND SOFTWARE VERSIONS</li> </ul>	<p>Pressing the Cones and Software Versions  key, the display visualises the only read page that reports the following data:</p> <ul style="list-style-type: none"> <li>• Daily cones</li> <li>• Total cones</li> <li>• SW versions</li> </ul>  <p>To return to the previous function press the  key.</p>
<p><b>INFO - SETTING (if present)</b></p>  <p>With the machine in production mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• SETTINGS</li> </ul>	<p>Pressing the Setting  key, access is gained to the whipping cycle selection menu (if present).</p> <p>To return to the previous function press the  key or wait 15 seconds.</p>






























































BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>INFO - MODIFY SET HOT</b></p>  <p>With the machine in production mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• MODIFY SET HOT</li> </ul>	<p>Pressing the Modify Set Hot  key, the background of the key becomes grey and the  and  arrow keys light up to permit the modification of the value.</p>  <p>After having set the desired value, to confirm press the button on the display to deselect it.</p> <p>If the  key isn't pressed again, the value is not memorised.</p>
<p><b>INFO - KEY LOCKING</b></p>  <p>With the machine in production mode press:</p> <ul style="list-style-type: none"> <li>• INFO</li> <li>• KEY LOCKING</li> </ul>	<p>Pressing the Key locking  key for 10 seconds all keys are disenabled to permit the leaning of the front panel without accidentally activating any functions.</p>  <p>To re-enable the keys, press any key and the window with the lock appears. Pressing the Key locking key for 10 seconds, all keys are re-enabled.</p>
<p><b>INFO whilst in Cleaning mode</b></p>  <p>Functions that can be selected whilst in INFO mode with the machine in Cleaning mode:</p> <ul style="list-style-type: none"> <li>• Key locking</li> </ul>	<p>Pressing the  key whilst in <b>Cleaning</b> mode, the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Key locking </li> </ul> <p>Pressing the Key locking  key for 10 seconds all keys are disenabled to permit the cleaning of the front panel without accidentally activating any functions.</p> <p>To re-enable the keys, press any key and the window with the lock appears. Pressing the Key locking key for 10 seconds, all keys are re-enabled.</p> <p>Using the  key the menu returns to the previous page.</p>

BUTTONS	DESCRIPTION OF FUNCTIONS						
<p><b>INFO whilst in Pasteurisation mode</b></p>  <p>Functions that can be selected whilst in INFO mode with the machine in Pasteurisation mode:</p> <ul style="list-style-type: none"> <li>• Key locking</li> </ul>	<p>Pressing the  key whilst in <b>Pasteurisation</b> mode, the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Key locking </li> </ul> <p>Pressing the Key locking  key for 10 seconds all keys are disenabled to permit the cleaning of the front panel without accidentally activating any functions.</p> <p>To re-enable the keys, press any key and the window with the lock appears. Pressing it for 10 seconds, all keys are re-enabled.</p> <p>Using the  key the menu returns to the previous page.</p>						
<p><b>INFO whilst in Storage mode</b></p>  <p>Functions that can be selected whilst in INFO mode with the machine in Storage mode:</p> <ul style="list-style-type: none"> <li>• Key locking</li> </ul>	<p>Pressing the  key whilst in <b>Storage</b> mode, the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Key locking </li> </ul> <p>Pressing the Key locking  key for 10 seconds all keys are disenabled to permit the cleaning of the front panel without accidentally activating any functions.</p> <p>To re-enable the keys, press any key and the window with the lock appears. Pressing the Key locking key for 10 seconds, all keys are re-enabled.</p> <p>Using the  key the menu returns to the previous page.</p>						
<p><b>CLEANING</b></p>  <p>Functions that can be selected whilst in Cleaning mode:</p> <ul style="list-style-type: none"> <li>• Beating</li> <li>• Heated beating</li> <li>• Pump</li> <li>• Water dispensing</li> </ul>	<p>Pressing the Cleaning  key the display visualises the following functions that can be selected directly on the touch screen:</p> <ul style="list-style-type: none"> <li>• Beating </li> <li>• Heated beating </li> <li>• Pump </li> <li>• Water dispensing (if present) </li> </ul> <table border="1" data-bbox="742 1489 1061 1736"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td> 20° 4°</td> <td></td> </tr> </table> <p>The last line visualises the temperature of the cylinder and the consistency of the product  20° 4°.</p> <p>The keys that can be activated have a coloured icon (blue or red) and once pressed the background becomes grey.</p> <p>The keys that cannot be activated have a grey icon. Refer to the key  on the above display.</p> <p>The 2  and  functions can be activated simultaneously.</p>					 20° 4°	
							
							
 20° 4°							

BUTTONS	DESCRIPTION OF FUNCTIONS
<p><b>CLEANING – BEATING</b></p>  <p>Press:</p> <ul style="list-style-type: none"> <li>• CLEANING</li> <li>• BEATING</li> </ul>	<p>Pressing the Beating  key the beater motor is activated/deactivated.</p> <p>When the motor is functioning, the background of the relative function becomes grey.</p>  <p>After 3 minutes the symbol returns to a white background and the motor switches off.</p> <p>The Beating function is utilised to wash the cylinder and facilitate the emptying of the product from the cylinder.</p>
<p><b>CLEANING - HEATED BEATING</b></p>  <p>Press:</p> <ul style="list-style-type: none"> <li>• CLEANING</li> <li>• HEATED BEATING</li> </ul>	<p>Pressing Heated Beating  the beater motor with heating is activated/deactivated.</p> <p>When Heated Beating is activated the background of the function becomes grey.</p> <p>The cylinder is heated until a set temperature is reached.</p> <p>On reaching this temperature the symbol changes back to the white background and Heated Beating is deactivated.</p>
<p><b>CLEANING – PUMP</b></p>  <p>Press:</p> <ul style="list-style-type: none"> <li>• CLEANING</li> <li>• PUMP</li> </ul>	<p>Pressing the Pump  key (only machines with a pump), the pump motor is activated/deactivated.</p> <p>When the motor is functioning, the background of the relative function becomes grey.</p> <p>After 30 seconds the symbol returns to a white background and the pump switches off.</p> <p>The function is utilised to load the mix from the tank to the cylinder and to pressurize the cylinder to facilitate the dispensing of the product.</p>
<p><b>CLEANING - WATER DISPENSING</b></p>  <p>Press:</p> <ul style="list-style-type: none"> <li>• CLEANING</li> <li>• WATER DISPENSING</li> </ul>	<p>Pressing the Water Sprayer  key activates/deactivates (only if present) the dispensing of water via the Water Sprayer positioned inside the cabinet of the machine. The maximum dispensing time is 3 minutes. To stop the water dispensing before 3 minutes, press the Water Sprayer key again.</p> <p>When Water Sprayer is active, the background of the function becomes grey; when it is deactivated the symbol changes back to the white background.</p>

BUTTONS	DESCRIPTION OF FUNCTIONS																												
<p><b>PRODUCTION</b></p> 	<p><b>Production can be accessed only when the minimum level is covered.</b></p> <p>Pressing the key  the display visualises:</p> <div style="text-align: center;"> <table border="1" data-bbox="746 376 1061 609"> <tr> <td></td> <td>TEMP 4°</td> </tr> <tr> <td>100 </td> <td>100 ↓</td> </tr> <tr> <td></td> <td></td> </tr> </table> </div> <p>Where:</p> <table border="1" data-bbox="406 676 1396 1467"> <tr> <td></td> <td>The tank level.</td> </tr> <tr> <td> : minimum and medium covered,  : medium uncovered,  : minimum uncovered.</td> <td></td> </tr> <tr> <td>-10 </td> <td>Number of cones that can be dispensed with the level uncovered. It appears only if the minimum level becomes uncovered.</td> </tr> <tr> <td>4°</td> <td>Temperature in the tank. If &lt;40°C the temperature visualised is blue. If &gt;=40°C the temperature visualised is red.</td> </tr> <tr> <td>4° ↓</td> <td>Arrow lit: when the tank is cooling.</td> </tr> <tr> <td>100</td> <td>Set consistency to be reached.</td> </tr> <tr> <td></td> <td>Product cannot be sold yet.</td> </tr> <tr> <td></td> <td>When it reaches consistency it becomes .</td> </tr> <tr> <td>100 %</td> <td>Current consistency.</td> </tr> <tr> <td>100 % ↓</td> <td>Arrow lit: if the cylinder is cooling.</td> </tr> <tr> <td> 14</td> <td>Number of days left to Cleaning.</td> </tr> </table> <p>The machine brings set ice cream in the cylinder to the right consistency every 10 minutes. Press the  key to force this time. The consistency will conform to the set value.</p>		TEMP 4°	100 	100 ↓				The tank level.	 : minimum and medium covered,  : medium uncovered,  : minimum uncovered.		-10 	Number of cones that can be dispensed with the level uncovered. It appears only if the minimum level becomes uncovered.	4°	Temperature in the tank. If <40°C the temperature visualised is blue. If >=40°C the temperature visualised is red.	4° ↓	Arrow lit: when the tank is cooling.	100	Set consistency to be reached.		Product cannot be sold yet.		When it reaches consistency it becomes  .	100 %	Current consistency.	100 % ↓	Arrow lit: if the cylinder is cooling.	 14	Number of days left to Cleaning.
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BUTTONS	DESCRIPTION OF FUNCTIONS								
<p><b>PRODUCTION VERSIONS WITH WATER DISPENSING AND MIXER</b></p> 	<p><b>VERSIONS WITH WATER DISPENSING AND MIXER</b> The display third line (at the bottom), shows what follows:</p> <table border="1" data-bbox="483 338 1418 1019"> <tr> <td data-bbox="483 338 948 470"> <p><b>Basic machine.</b> The cone indicates that the machine is in Production mode. The key is not active.</p> </td> <td data-bbox="948 338 1418 470">  </td> </tr> <tr> <td data-bbox="483 470 948 633"> <p><b>Machine with a water dispenser.</b> The cone indicates that the machine is in Production mode. The key is not active. The water sprayer is not active key (gray).</p> </td> <td data-bbox="948 470 1418 633">  </td> </tr> <tr> <td data-bbox="483 633 948 797"> <p><b>Machine with a mixer.</b> The cone indicates that the machine is in Production mode. The grey key is not active. The mixer is an active (blue) key.</p> </td> <td data-bbox="948 633 1418 797">  </td> </tr> <tr> <td data-bbox="483 797 948 1019"> <p><b>Machine with a mixer and a water dispensing.</b> The cone indicates that the machine is in Production mode. The key is not active. The mixer is an active (blue) key. The water sprayer is not active key (gray).</p> </td> <td data-bbox="948 797 1418 1019">  </td> </tr> </table>	<p><b>Basic machine.</b> The cone indicates that the machine is in Production mode. The key is not active.</p>		<p><b>Machine with a water dispenser.</b> The cone indicates that the machine is in Production mode. The key is not active. The water sprayer is not active key (gray).</p>		<p><b>Machine with a mixer.</b> The cone indicates that the machine is in Production mode. The grey key is not active. The mixer is an active (blue) key.</p>		<p><b>Machine with a mixer and a water dispensing.</b> The cone indicates that the machine is in Production mode. The key is not active. The mixer is an active (blue) key. The water sprayer is not active key (gray).</p>	
<p><b>Basic machine.</b> The cone indicates that the machine is in Production mode. The key is not active.</p>									
<p><b>Machine with a water dispenser.</b> The cone indicates that the machine is in Production mode. The key is not active. The water sprayer is not active key (gray).</p>									
<p><b>Machine with a mixer.</b> The cone indicates that the machine is in Production mode. The grey key is not active. The mixer is an active (blue) key.</p>									
<p><b>Machine with a mixer and a water dispensing.</b> The cone indicates that the machine is in Production mode. The key is not active. The mixer is an active (blue) key. The water sprayer is not active key (gray).</p>									
<p><b>STORAGE/ALARM RESET</b></p> 	<p>Storage has the function of bringing the product in the tank and the cylinder to a temperature of 4°C.</p> <p>Once entering the Storage cycle the display shows as follows:</p> <table border="1" data-bbox="815 1167 1139 1406"> <tr> <td data-bbox="815 1167 979 1245">  </td> <td data-bbox="979 1167 1139 1245"> <p>TEMP 4°</p> </td> </tr> <tr> <td data-bbox="815 1245 979 1323">  </td> <td data-bbox="979 1245 1139 1323"> <p>4°</p> </td> </tr> <tr> <td data-bbox="815 1323 922 1406">  </td> <td data-bbox="922 1323 1139 1406"> </td> </tr> </table> <p style="text-align: center;">  </p> <p>To start Storage manually press the key  .</p> <p>The button allows also to reset the alarms that might be shown on the display.</p>		<p>TEMP 4°</p>		<p>4°</p>				
	<p>TEMP 4°</p>								
	<p>4°</p>								
									

BUTTONS	DESCRIPTION OF FUNCTIONS																		
<p><b>PASTEURISATION</b></p> 	<p><b>Pasteurisation can be accessed only when the medium level is covered.</b></p> <p>Pressing the Pasteurisation  key for 5 seconds, the display visualises:</p> <div style="text-align: center;"> <table border="1" data-bbox="742 436 1061 672"> <tr> <td></td> <td>TEMP 4°</td> </tr> <tr> <td></td> <td>4°</td> </tr> <tr> <td></td> <td></td> </tr> </table> </div> <p>Where:</p> <table border="1" data-bbox="406 705 1356 1377"> <tr> <td></td> <td>The tank level.  : minimum and medium covered,  : medium uncovered,  : minimum uncovered.</td> </tr> <tr> <td>TEMP 4°</td> <td>Temperature in the tank. If &lt;40°C the temperature visualised is blue. If &gt;=40°C the temperature visualised is red.</td> </tr> <tr> <td></td> <td>Arrow lit to one side of the temperature: Up if the tank is in heating mode and Down if in cooling mode.</td> </tr> <tr> <td>4°</td> <td>Temperature in the cylinder. If &lt;40°C the temperature visualised is blue. If &gt;=40°C the temperature visualised is red.</td> </tr> <tr> <td></td> <td>Function active: heating. Do not remove product.</td> </tr> <tr> <td></td> <td>Water Sprayer where applicable.</td> </tr> </table> <p><b>If the machine pasteurises, the Pasteurisation cycle occurs automatically every day at a predetermined time (if set in User Programming).</b></p> <p>When the machine is in Production or Storage mode at the time set for pasteurisation, it automatically goes into Pasteurisation mode.</p> <p>To activate Manual Pasteurisation, keep the  key pressed for 5" seconds.</p> <p>If the Pasteurisation cycle is not successfully completed, the machine CANNOT gain access to Production mode until a Pasteurisation cycle is completely carried out.</p> <p>During the Pasteurisation cycle, the product in the tank or in the cylinder is heated to 65°C, maintained at this temperature for 30 minutes (fixed) and then cooled until the storage temperature is reached.</p> <p>At the end of the cycle, the display visualises  with the hour and the day of the week, which means that the pasteurising process has been carried out correctly.</p>		TEMP 4°		4°				The tank level.  : minimum and medium covered,  : medium uncovered,  : minimum uncovered.	TEMP 4°	Temperature in the tank. If <40°C the temperature visualised is blue. If >=40°C the temperature visualised is red.		Arrow lit to one side of the temperature: Up if the tank is in heating mode and Down if in cooling mode.	4°	Temperature in the cylinder. If <40°C the temperature visualised is blue. If >=40°C the temperature visualised is red.		Function active: heating. Do not remove product.		Water Sprayer where applicable.
	TEMP 4°																		
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	Arrow lit to one side of the temperature: Up if the tank is in heating mode and Down if in cooling mode.																		
4°	Temperature in the cylinder. If <40°C the temperature visualised is blue. If >=40°C the temperature visualised is red.																		
	Function active: heating. Do not remove product.																		
	Water Sprayer where applicable.																		

### 3.4 Dispensing handles



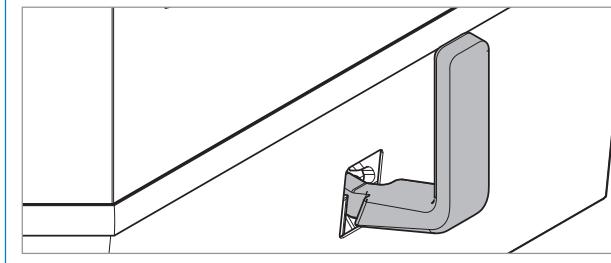
To dispense the product, place a cup or a cone underneath the dispensing door and, with the machine in production mode, slowly lower the dispensing handle.

As soon as the product starts to come out, move the cup or cone with a circular motion to give the ice cream a conical shape.

Once a sufficient amount of product has been dispensed, close the dispensing handle and move the cup or cone quickly downwards to give the portion a pointed tip.

The product dispensing handle can also be easily removed by lifting it upwards. In this way it can also be used as a key to stop the machine being used.

Fig. 07



#### 3.4.1 Modifica quantità prodotto erogato

To modify the quantity of dispensed product from the different handles, proceed as follows:

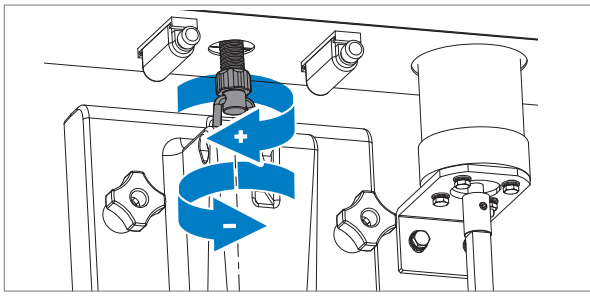
- Disassemble spigot door covering panel
  - Press the two keys on the side of the panel
  - Push the panel downwards
  - Pull the panel from the front and remove it from the machine.

Fig. 08



- Turn knob counter clockwise to reduce the quantity of dispensed product, or clockwise to increase it.

Fig. 09



### 3.4.2 Self closing

The machine is equipped with an automatic return system that brings the ice cream dispensing handle to rest automatically.

This occurs via a spring system connected to the dispensing piston.



## NOTA

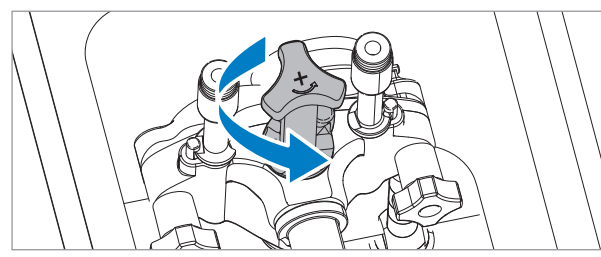


In production, when symbol  is displayed, dispense a cone by lowering dispensing handle all the way down, then take handle back to closed position.

### 3.5 Machines fed by pump and semi-submersible pump

The pump allows a variation in the proportion of air/mix sent to the cooling cylinders. Therefore, within certain limits, it allows to adjust the volume increase (overrun) suitable to the type of mixed used. By turning the middle handle counter-clockwise the overrun is increased.

Fig. 10

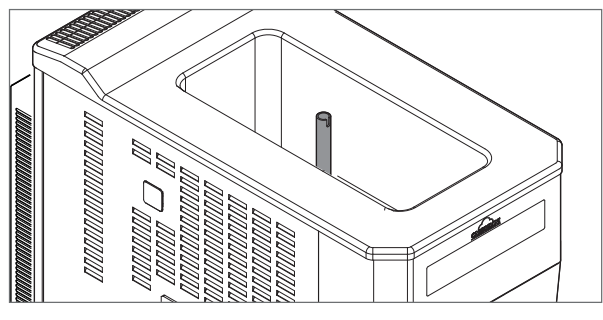


### 3.6 Gravity-fed machines - feeding needle

How to obtain and how to keep quality performances.

- Maintain a big mix level inside the hopper (above the half of the hopper itself). Mix storage temperature inside hopper is +4°C, both during production and storage.
- 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.
- A fluid mix without particles has to be used. A very thick mix with big particles could close the slot of the feeding needle thus blocking mix from entering the cylinder.
- Keep the feeding needle slider (pos. 52) in a position as to allow for a smooth mix flow from the hopper to the cylinder. By rotating the slider slot to the hole with smaller diameter, the quantity of mix to the tank will decrease, and vice versa.
- Set the feeding needle in such a way that inlet hole is turned towards the middle of the hopper.
- Never exceed production limit specified in paragraph 1.2.2 and dispense cones and cups in the most regular way. If the indicated production limits are reached the machine could block and the display shows the alarm signal “ICE”. If this occurs, please operate as follows to reset the machine operation:
  - stop the machine (in STOP position);
  - remove the feeding needle to enable a quick drop of mix into the cylinder;
  - set machine in “cleaning” mode for a few minutes;
  - make sure that the product dispensed from the spigot body is liquid;
  - position the feeding needle again making sure the slider is sufficiently open;
  - start the machine setting it in Production mode, wait until it stops before start dispensing again.

Fig. 12





### 3.7 Preliminary operations, washing and sanitising

**Before using the machine for the first time**, thoroughly clean all component parts as well as sanitising the parts that come into contact with the ice cream.

Refer to section 5 of this manual for machine disassembly and cleaning procedures.

NOTE

**Cleaning and sanitisation are operations that must be carried out with maximum care to ensure production quality and compliance with required hygienic norms.**

### 3.8 Commissioning the machine

After installing the machine in compliance with the instructions contained in the “Installation” chapter of this manual and after thoroughly washing and sanitising the machine, proceed as follows:

#### 3.8.1 Starting machines with pump

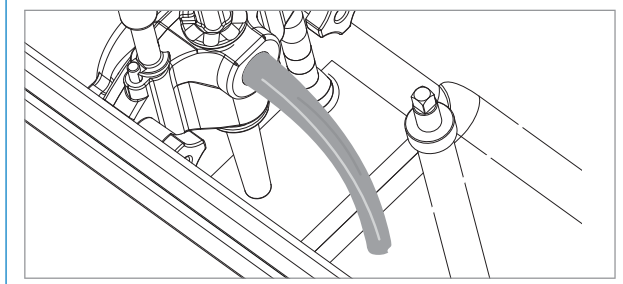
Take pressure pipe from tray and plunge it into the cleaning/sanitising solution for the time indicated by the manufacturer of the product used.

##### Loading the tank:

- Take a tub of mix from the refrigerator.  
**N.B. Load a mix that has a temperature of 4-5°C.**
- Place a pail under the spigot door, and pour a small quantity of mix (approximately 100 ml.) into the tanks, lower the ice cream dispensing levers and dispose of a small amount of mix poured so as to eliminate any residues of water and detergent/sanitising solution. Bring the ice cream dispensing levers back to the original position and continue to pour the mix so that it fills the cylinder by gravity.
- When the cylinder is full and the tank almost empty,

press the key and then press the key to verify the correct functioning of the pump (the mix must flow at over 15 mm). In the event of malfunctioning, refer to paragraph 6.1. To deactivate the function press the key again.

Fig. 11



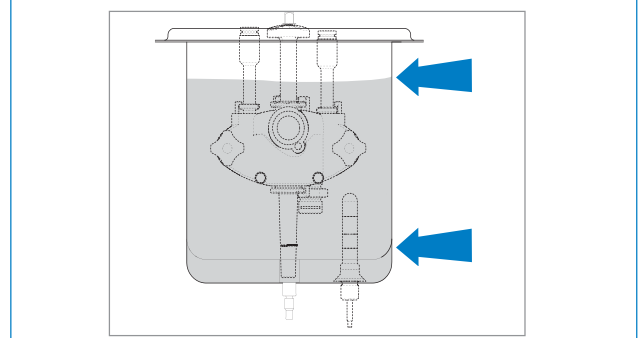
##### Assembling the compression tube:

- With clean and sanitised hands (or wearing disposable gloves), take compression pipe out of the cleaning/sanitising solution making sure that pipe is empty, then insert it on hopper bottom.
- Rotate the compression tube counter-clockwise in order to align it with the pump. Insert the connecting tube (pos. 207) into the pump and rotate it until it is fastened.
- Pour the mix into the tank until it is full.

NOTE

**The level of mix in the tank must not exceed the maximum level indicated on the tank wall.**

Fig. 12



- Place the tank lid.
- Place the machine in Production mode by pressing the key.
- After few minutes the product can be dispensed.

#### 3.8.2 Avviamento macchine a gravità

Take the feeding needle from tray and plunge it into the cleaning/sanitizing solution for the time indicated by the manufacturer of the product used.

##### Prime Hopper:

- Retrieve one bag of mix from the refrigerator.  
**NOTE: Mix to be poured at a temperature of 4-5°C.**
- Place a bucket under the spigot door and pour a small quantity of mix (about 100 ml) in the hoppers, lower the ice cream dispensing handles and let a little bit of mix come out in order to eliminate any water and cleaning/sanitizing solution residues. Bring the ice cream dispensing handles back to the original position and pour the mix so that it fills the cylinder by gravity.
- In this phase it is necessary to fill the cylinders only, the hopper must remain almost empty in order to carry out the following procedures.

##### Feeding needle assembly:

- With clean and sanitized hands (or wearing disposable gloves), take feeding needle out of the sanitizing solution making sure that pipe is empty, then insert it in hopper bottom.

- Pour mix in the tanks until filling them completely.

**NOTA**

**Il livello di miscela nelle vasche non deve mai superare l'altezza dell'ago di alimentazione.**

- Refit hopper lid.
- Set the machine to Production mode by pressing the key
- After a few minutes it will be possible to dispense ice cream.

### 3.8.3 Dry Filling

**WARNING**

**The machines predisposed for the dry filling function must have an exclusive connection to the drinking water mains system. If the microbiological characteristics of the water are not periodically checked and/or the powdered food preparatives utilised are not sterile, CARRYING OUT PASTEURISATION HEAT TREATMENT IS HIGHLY RECOMMENDED each time they are loaded and topped up.**

#### LOADING THE MIX - How to carry out a Dry Filling after cleaning and sanitising machine

Carrying out a DF procedure must take place only once the machine has been cleaned. The DF procedure is enabled if the Medium level or the Minimum level is uncovered (and consequently the Medium level). With clean, sanitised hands (or wearing disposable gloves) proceed as described below.

- Turn shut-off valve located onto machine upper side towards hopper.
- The machine is in Stop mode. Press the key.

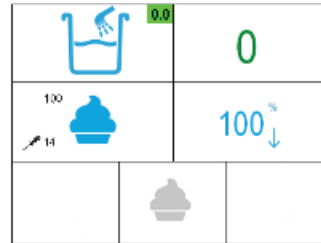
The display visualises:



- By pressing the key the display shows:

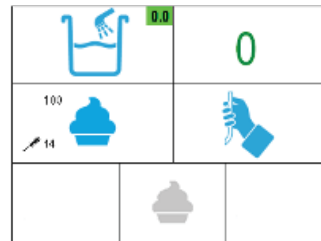


- By pressing the key the display shows:



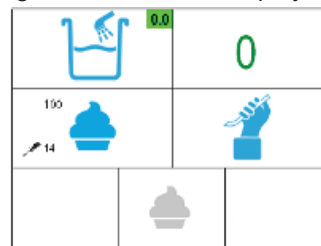
- The and keys lights up to allow the modification of the quantity in litres shown on display.
- The quantity is therefore modifiable by using the and arrow keys in steps of 0.1 litres.

- To start the DF procedure, press the key.
- At this point add the powdered mix. In the meantime, clean the upper part of the machine with a sanitised cloth and close the lid of the tank.
- If the DF procedure is carried out with the minimum level uncovered (and the previous function was Stop), after completing the DF procedure, the mixing and the loading for 30" with pump, the display visualised as follows:



to indicate to bleed the cylinder by pulling its lever.

- After pulling the lever, on the display is shown:



- After a few minutes the beating stops and the machine is ready for production.














### 3.9 Production

Production can be accessed only when the minimum level is covered.

Pressing the key  the display visualises:






Where:

	The tank level.  : minimum and medium covered,  : medium uncovered,  : minimum uncovered.
	Number of cones that can be dispensed with the level uncovered. It appears only if the minimum level becomes uncovered.
	Temperature in the tank. If <40°C the temperature visualised is blue. If >=40°C the temperature visualised is red.
	Arrow lit: if the tank is cooling.
	Set consistency to be reached.
	Product cannot be sold yet. When it reaches the consistency it becomes  .
	Actual consistency (HOT).
	Arrow lit: if the cylinder is cooling.
	Number of days left to Cleaning. 14

#### Versions with water dispenser and mixer

Where:

<b>Basic machine.</b> The cone indicates that the machine is in Production mode. The key is not active.	
<b>Machine with a water dispenser.</b> The cone indicates that the machine is in Production mode. The key is not active. The water sprayer is not active key (gray).	 

#### Machine with a mixer.

The cone indicates that the machine is in Production mode.

The grey key is not active.

The mixer is an active (blue) key.



#### Machine with a mixer and a water dispenser.

The cone indicates that the machine is in Production mode. The key is not active.

The mixer is an active (blue) key.

The water sprayer is not active key (gray).




**NOTE**

During production, it is recommended to enable the "Touchpad Lock" function described in paragraph 3.3.2 of this manual.

**NOTA**

If level indicator turns on, machine will allow you to dispense the set number of portions, only; then dispensing keys will be locked until hopper is filled with mix.

**NOTA**

In production, when symbol  is displayed, dispense a cone by lowering dispensing handle all the way down, then take handle back to closed position.

### 3.10 Pasteurisation

The machine is equipped with a system that allows to carry out Pasteurisation automatically every day at an established time.

Pasteurisation can also be activated manually by pressing the pasteurisation key.

The product, whether in the tank or the cylinder, is heated to 65°C and maintained at this temperature for 30 minutes. Then it's cooled until the storage temperature has been reached.

At the end of the cycle the display visualises " - Pasto End - " which means that the pasteurisation process has been carried out correctly.

Pasteurisation cannot be started if the mix in the tank is less than half full.

### 3.11 Daily cleaning – Opening and closing procedures

#### 3.11.1 Daily closing procedures

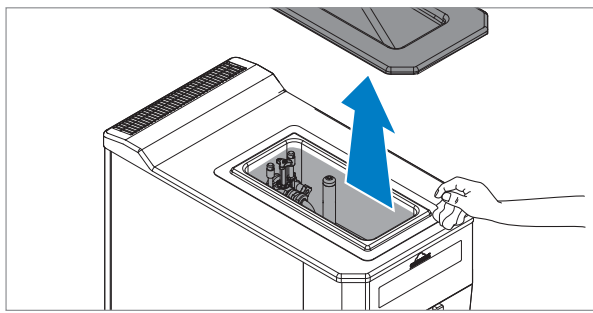
With clean, sanitised hands (or wearing disposable gloves) carry out the following procedures.

- Keep the machine in Production mode.

#### Disassembly and cleaning of the components:

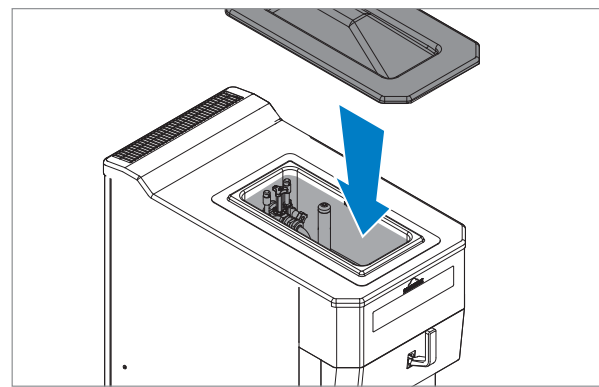
- Remove the tank cover, then wash, sanitise and rinse it in a container.
- Clean the outside part of the tank by using a clean, sanitised cloth.

Fig. 13



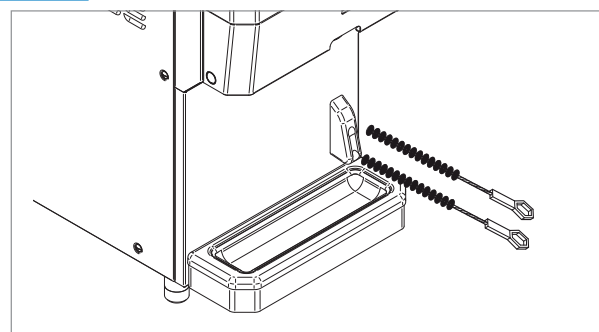
- Replace the cover onto the tank after having sanitised it.

Fig. 14



- Remove the drip drawers on the side of the machine, then wash, sanitise and rinse them.

Fig. 15



NOTE

**Notify an authorised technician if any mix leaks from the drip tray.**

- Disassemble spigot door covering panel
  - Press the two keys on the side of the panel
  - Push the panel downwards
  - Pull the panel from the front and remove it from the machine.

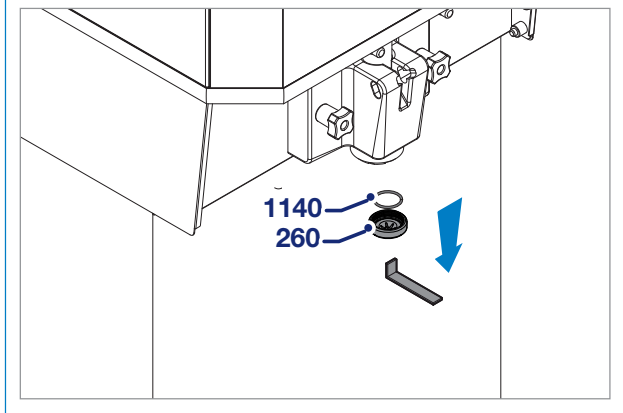
Fig. 16



- Disassemble ice-cream dispensing handle.

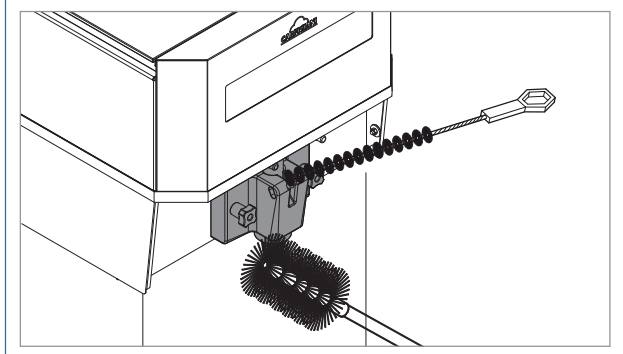
- Using the suitable supplied tool, unscrew the spigot door nozzle unit (260), remove it from the spigot door and pull the O-Ring (1140) out.

Fig. 19



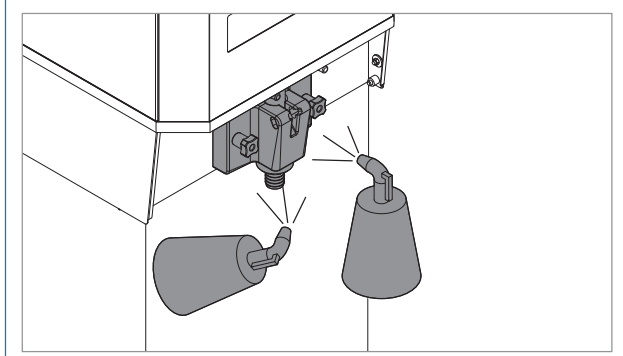
- Clean and sanitize the spigot door covering panel, the ice cream dispensing handle, the spigot door nozzle unit and the relevant O-Rings.
- Fill a bucket with cleaning/sanitising solution. Immerse the supplied brush into the cleaning/sanitising solution and clean the door dispenser and the area of the door plunger several times.

Fig. 19



- Spray the cleaning/sanitising solution on the door dispenser and the door itself, particularly in the plunger area.

Fig. 20

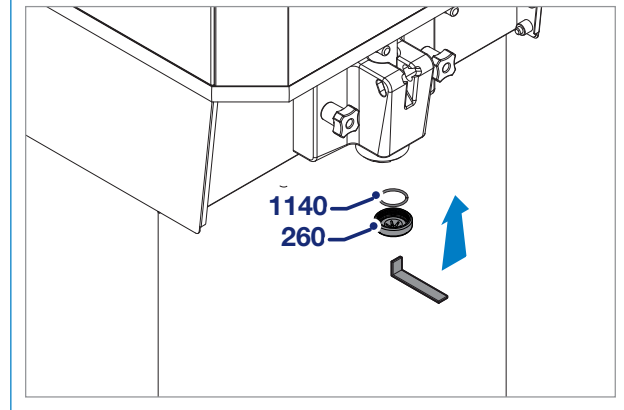


- Using a clean and sanitised cloth, clean spigot door area, the steel area underneath, machine front side and any other “splash” area, making sure to remove

any humidity, product or cleaning/sanitising solution residues.

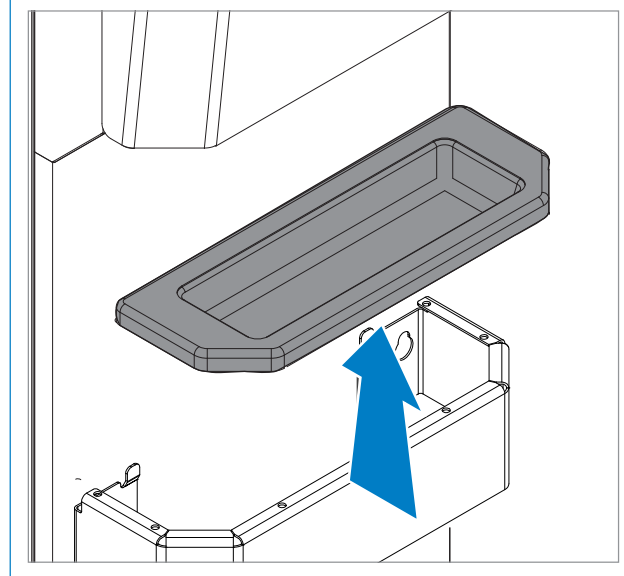
- Fit the O-Ring (1140) inside the spigot door nozzle unit and, using the suitable supplied tool, screw the nozzle unit back on the spigot door.

Fig. 19



- Reassemble the spigot door covering panel and the dispensing handle.
- Remove the drip tray and its cover; wash, sanitise, rinse it and then reassemble the machine.

Fig. 22



**Prepare the machine for the pasteurisation night cycle (for “SP” machines)**

- Open the lid of the tanks to check the level of the mix.
- Fill the tanks with mix at least up to the medium level.
- Keep the machine in Production mode.

**WARNING**

**If the mix in the tank is below the medium level the Pasteurisation cycle will not start.**

The Pasteurisation cycle is automatic and occurs overnight at the set time.

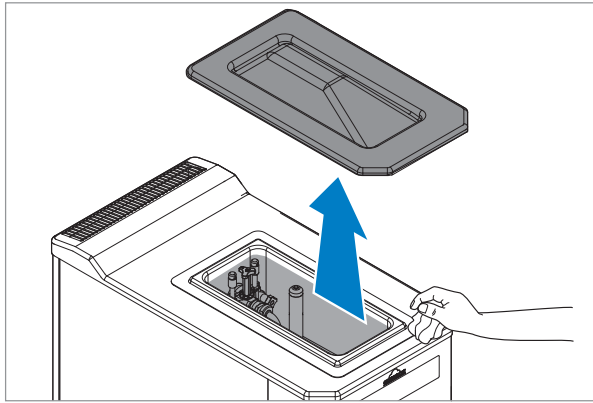
### 3.11.2 Daily opening procedure

With clean, sanitised hands (or wearing disposable gloves) carry out the following procedures.

#### Disassembly and cleaning of the cover:

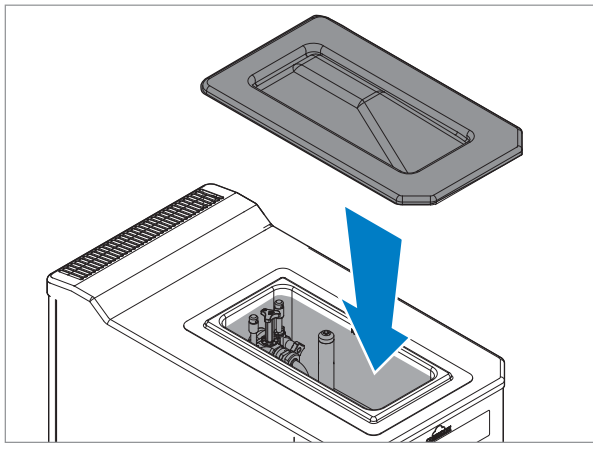
- Remove the tank cover, wash, sanitise and rinse it in a container.
- Clean the outside part of the tank by using a clean, sanitised cloth.

Fig. 23



- Reposition the lid onto the tank after sanitization.

Fig. 24



#### Door area sanitising:

- Disassemble spigot door covering panel
  - Press the two keys on the side of the panel
  - Push the panel downwards
  - Pull the panel from the front and remove it from the machine.

Fig. 25

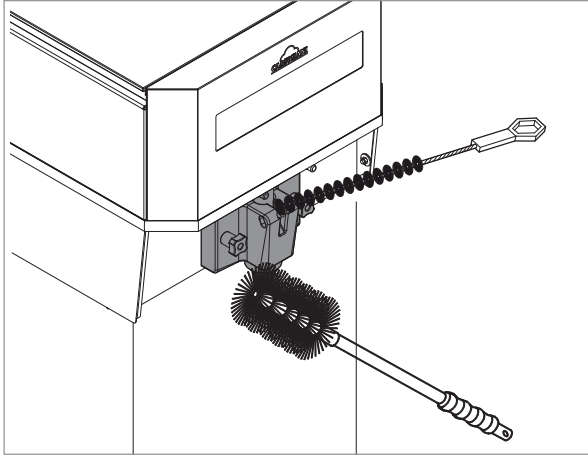


- Remove ice-cream dispensing handle.
- Wash and sanitise the spigot door covering panel and the dispensing handle.



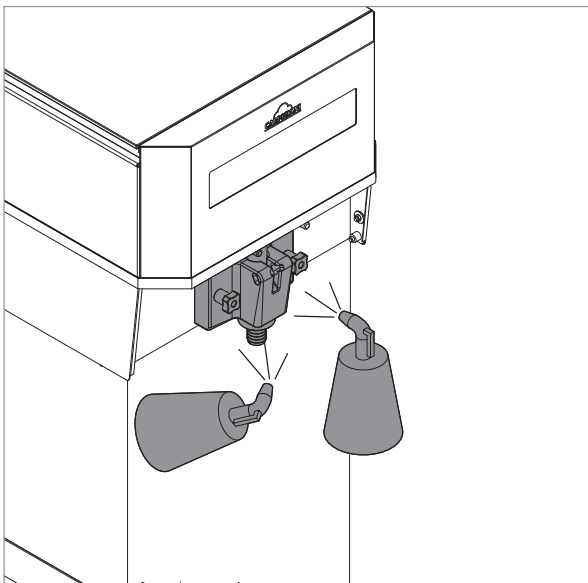
- Fill a bucket with cleaning/sanitising solution. Immerse the supplied brush into the cleaning/sanitising solution and clean the door dispenser and the area of the door plunger several times.

Fig. 28



- Spray the cleaning/sanitising solution on the door dispenser and the door itself, particularly in the plunger area.

Fig. 29



- Clean the door area, and the machine front with a clean, sanitised cloth, carefully removing any kind of dampness and remains of product or cleaning/sanitising solution.
- Reassemble the front panel and the dispensing handle.
- Make sure the machine is in Production mode and ready to serve.


## 4. SAFETY DEVICES

### 4.1 Alarms

The machine signals possible alarms visualising them on the display with a flashing triangle.






If an alarm is triggered but then correct functioning is restored, the alarm remains visible on the display, as does the fixed (not flashing) warning triangle.








To delete the alarm message from the display press the  key.



The machine can be used in Production mode even if an alarm message is being visualised. If it is a critical alarm, the machine stops access to Production mode. In this case, press Stop and do not use the machine until the machine has been repaired.

The list of alarms is reported in the following table:

 <b>ALARM</b>	<b>DESCRIPTION</b>
 <b>Mix Out</b>	The display indicates  when the minimum mix level is uncovered.
 <b>Add Mix</b>	When the medium level is uncovered the display visualises its symbol  .
<b>Safety Therm.Cyl (TESC)</b>	Cylinder safety thermostat released. The machine goes into Stop mode.
<b>Safety Therm.Hop (TESV)</b>	Tank safety thermostat released. The machine goes into Stop mode.
<b>Overload Beater (PTMA)</b>	Bi-metal circuit breaker switch of the beater motor released. The machine goes into Stop mode.
<b>Pressure Switch (PR)</b>	Pressure switch released. The machine goes into Stop mode: <ul style="list-style-type: none"> <li>• after established number of interventions.</li> <li>• if the contact of the pressure switch remains open for as long as 2 minutes at a time.</li> </ul> Repeat pasteurisation if the machine is in Pasteurisation mode.
<b>Overload Compres (RTC)</b>	Compressor motor thermal relay released. The machine goes into Stop mode.
<b>Overload MP (ptmp)</b>	Pump motor thermal relay. The machine sets to Stop mode.
<b>Al.Hopper Probe (TEV)</b>	Faulty Tank sensor. Being a critical alarm the machine goes into Stop mode whether in Production mode, Storage mode or Pasteurisation mode.



 <b>ALARM</b>	<b>DESCRIPTION</b>
<b>Al. Cylind.Probe (TEC)</b>	Faulty Cylinder sensor. Being a critical alarm the machine goes into Stop mode whether in Production mode, Storage mode or Pasteurisation mode.
<b>Al. IceHop.Probe (TGV)</b>	Faulty Tank evaporator sensor. The alarm places the machine into Stop mode.
<b>Spigot Opened (IMS)</b>	Magnetic circuit breaker safety switch.
<b>Al. Evapor.Probe (TE)</b>	Cylinder evaporator sensor alarm. The alarm places the machine into Stop mode.
<b>Power On</b>	Voltage return after a blackout. Checking of No Voltage table in Pasteurisation and Production. The event is recorded in any function.
<b>Ice Cylinder (ICE)</b>	Anti-ice cylinder. The alarm may appear due to poor feeding into the cylinder.
<b>Timeout Prd.</b>	Refrigeration problems; the product does not harden. Check loading of mix into cylinder, the tank pump and the refrigeration implant.
<b>Al.Heat.Exchange (DELTA TGV-TEV)</b>	The tank beater does not rotate. Check the insertion of beater in its seat.
 14 <b>Wash in n days (Wash)</b>	“  14 ” is visualised in Production mode which means there are nth days (14 for example) left before cleaning machine. The Wash can be activated even with the machine in Stop mode with the level covered for 24 hours (1 hour for Japan version). See sec. 5.
 <b>Do Not Serve !</b>	In Production mode, every time the consistency drops below the programmed value, the symbol on the display becomes  .
<b>Switch Phases</b>	It is necessary to cut machine power and invert the two phases on the three-phase cable so that the beater turns in the correct direction.
<b>Pasto Needed!</b>	When the machine is positioned in Stop mode for more than 60 minutes with the low level covered, the temperature is checked. If it is greater or equal to 15°C, a Pasteurisation cycle is required. Pressing the Production key, the machine goes automatically into Pasteurisation mode (per le vers. Giappone l'allarme Pastorizzare ! viene generato anche quanto trascorrono più di 24 ore dall'ultima pastorizzazione).
<b>Why in STOP ??</b>	If the machine is left in Stop with mix in the hopper, after 1 minute (20 minutes for Japan version) the flashing message “Why in STOP ??” will appear on the display, accompanied by a periodic beeping sound. This alerts the operator to select either Production, Pasteurization, or Storage mode. The message disappears when Storage is pressed.
<b>Table Updated M.</b>	Message shown every time the programming table is changed.

 <b>ALARM</b>	<b>DESCRIPTION</b>
<b>Table Updated R.</b>	The message disappears when Storage is pressed.
<b>Communic.Error P</b>	Communication problems with the keypad.
	In production, when the symbol on the side is displayed, dispense a cone by lowering dispensing handle all the way down, then take handle back to closed position.
<b>Pasto Fail (For Japanese version only)</b>	If pasteurization is not completed in 4 hours, the machine stops, a beep is emitted and the "Past fail" alarm is displayed.
<b>MWG OK</b>	For the machines featuring the TEOREMA teleservice system, upon machine installation, in STOP function, press the increase key for 10" in order to check the connection to the teleservice control unit. Message "MWG OK" indicates successful operation. This check can be repeated every time the data transmission check between TC control unit and teleservice control unit, also known as MWG control unit, proves to be necessary and operator must make sure to turn machine power off and back on before carrying out this test.
<b>NO MWG</b>	It indicates that the aforementioned test has been unsuccessfully performed.

#### 4.1.1 Blackout

When the electricity returns after a blackout occurring while the machine was in Cleaning mode, the machine goes into Stop mode.

When the electricity returns while the machine is in Heating mode of a Pasteurisation cycle or Pause during a Pasteurisation cycle, the machine restarts in the function it was in before the blackout (with "**Power On**" written on the display).

If the machine was in Cooling mode of a Pasteurisation cycle, when electricity comes back the machine checks the TEV temperature and the duration of the blackout. If the time is more than that indicated in the table, the machine completely repeats the pasteurisation cycle and memorises the alarm "**Power On**" in its 'events list'.

If the time is less than that indicated in the following table, the machine returns to the function it was in before the blackout.

<b>TEMPERATURE TEV</b>	<b>TIME</b>
68°C ÷ 50°C	30 minutes
49°C ÷ 15°C	10 minutes
14°C ÷ 10°C	20 minutes
9°C ÷ 4°C	2 hours

If the machine was in Production or Storage mode, check the TEV temperature when the electrical power supply returns and if it is less than the threshold set by the manufacturer the machine returns to the same function visualizing the "Power On" alarm. If the TEV is greater than the threshold set by the manufacturer and the time exceeds that of the above table, the Pasteurisation cycle is repeated.

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

### 5.1 General description



Cleaning and sanitisation are operations that must be carried out with utmost care on a routine basis and at the end of each production run to guarantee production quality and compliance with required hygienic norms.

Letting soiling dry out can greatly increase the risk of ringmarks, spots and damage to surfaces.

Removing soiling is much easier if it is done immediately after use some elements containing acid and saline substances can corrode the surfaces. Prolonged soaking is recommended.

### 5.2 Washing conditions

**Avoid using solvents, alcohol or detergents that could damage the component parts, the machine or pollute the functional production parts.**

When manually washing never utilise powder or abrasive products, abrasive sponges or pointed utensils which can dull surfaces, remove or deteriorate the protective film that is present on the surface thus scoring the surface.

Never ever use metal scouring pads or synthetic abrasives whose scouring action could remove ferrous parts and risk causing oxidisation or making the surfaces vulnerable.

Avoid using detergents that contain chlorine and its composites. The use of these detergents such as bleach, ammoniac, hydrochloric acid and decalcifiers can attack the composition of the steel, marking it and oxidising it irreparably and causing damage to the “plastic” parts.

Do not use dishwashers and their detergent products.

The use of a cleaning/sanitising solution allows to optimize the washing and sanitising process

since it avoids two procedure phases (i.e. a rinse and a washing phase); in substance the use of a cleaning/sanitising solution allows saving time by facilitating and simplifying washing/sanitising procedures.

### 5.3 Suggestions

Use a non-aggressive detergent solution to wash the parts.

Manually wash the parts in water (max 60°C) using a non-aggressive detergent and the provided cleaning brushes.

Use drinking water (bacteriologically pure) to rinse the parts.

To sanitise, leave the disassembled parts in sanitised tepid water for the time recommended by the manufacturer of the sanitising product (**utilise the sanitising product following the instructions of the manufacturer**) and rinse them before reassembling.

When the washing procedure has been completed and before reassembling components, dry each one thoroughly with a clean, soft cloth suitable for use with foodstuffs, in order to remove any traces of 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.

During the cleaning procedures, Carpigiani recommends to use the supplied brushes that must be washed and sanitized before and after use



### WARNING



**Every time the machine is washed and its parts that come into contact with the ice cream mix are disassembled, it is essential to carry out a visual control of all its parts in thermosetting materials; plastics, elastomers, silicone and metal (for example, scrapers, pump gears, beaters, etc...). All parts must be whole, not worn, without cracks or splits, or opaque if originally polished/ transparent.**

**Carpigiani declines all responsibility for any damage caused by imperfection and/or undetected breakages and not promptly solved by the substitution of original spare parts and is available for consultation and for any specific request made by the customer.**

### 5.4 How to use cleaning/sanitising solution



Follow the instructions on the label of the product used to prepare the cleaning/sanitising solution.

#### Washing/sanitisation by immersion of components

- Manually remove the bulk residues utilising the supplied brushes.
- Remove finer residues with a jet of water.

- Dip the parts to clean into the solution.
- Leave the solution to act for the time indicated by the manufacturer of the sanitising product.
- Rinse the parts with care, using plenty of clean drinking water.

### 5.5 Daily cleaning

Cleaning and sanitising procedures have to be carried out on a daily basis at every opening and closing with the utmost care to ensure production quality and compliance with hygienic norms by following the instructions in section 3.10 scrupulously.

### 5.6 Scheduled cleaning

The machine is equipped with an automatic system which activates cleaning of the parts in contact with the product at scheduled times.

Such system, called “WASH”, inhibits the dispensing function when the scheduled time comes.

WARNING

**Cleaning and sanitising procedures have to be carried out with the utmost care on a regular basis according to the scheduled date shown on the machine display to ensure production quality and the compliance with the necessary hygienic rules.**

In Production mode the days left until the next wash are visualised as follows:



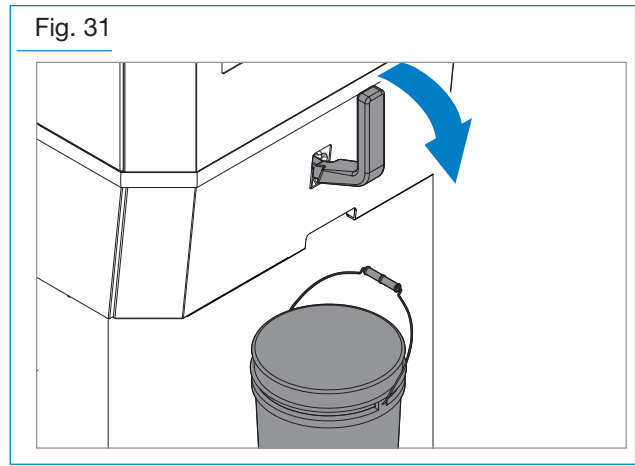
On the day when the machine is to be washed, Production mode is blocked and the machine does not accept the function. The visualisation becomes:



To reset the number of days to the programmed value (Wash Days), machine must be washed.

### 5.6.1 Machine Drainage

- Place a bucket under the dispenser door.
- Press the button .
- Lower the dispensing handle and drain out all the product from the cylinder.



- Select the function and then select .

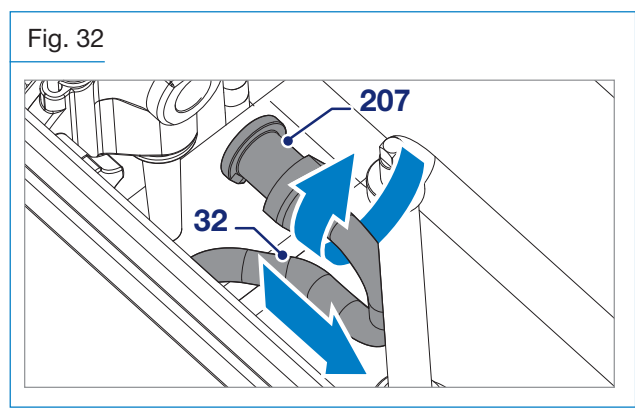
NOTE

**It is recommended to select the Beating Heating to make emptying the cylinder easier if ice cream is still inside.**

- When mix coming out is liquid, press key and continue draining it.
- Remove hopper cover.

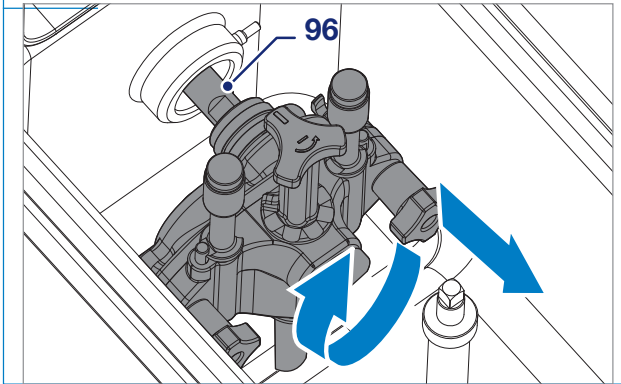
### 5.6.2 Pump feed machine - removal from Hopper

- Rotate the connection tube (207) until its notch is aligned with the pin on the pump, pull it forward so as to disconnect it from the pump.
- Remove the compression tube (32) by rotating it 90° and removing it from its seat in the tank. Continue draining the remaining mix by opening the dispensing handle.



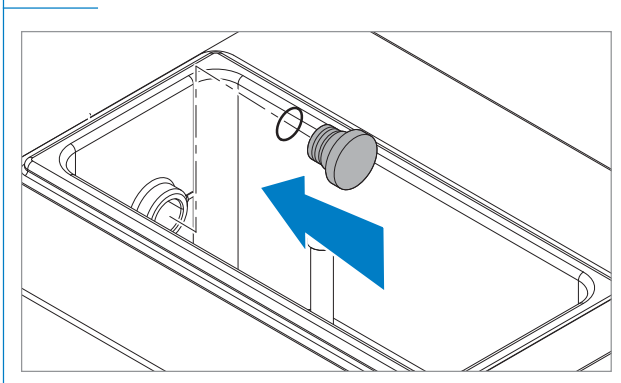
- Disassemble the pump by rotating it of 45° clockwise and by taking it out frontally.
- Remove pump shaft (96) and seal, sliding them out from machine front side.

Fig. 33



- Insert the plug and its O-ring provided with the kit into the pump housing hole so as to close the tank.

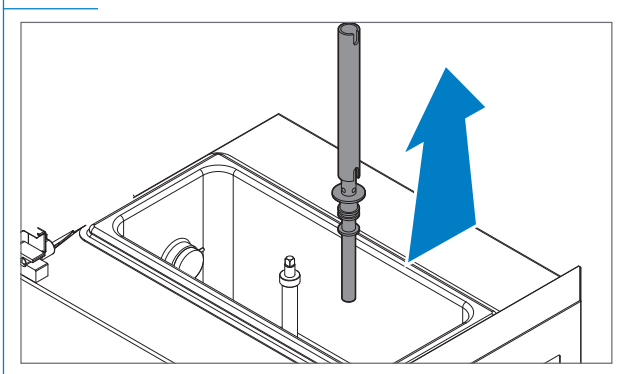
Fig. 34



### 5.6.3 Gravity fed machines - removing feeding needle from hopper

- Remove the feeding needle from the bottom of the hopper.

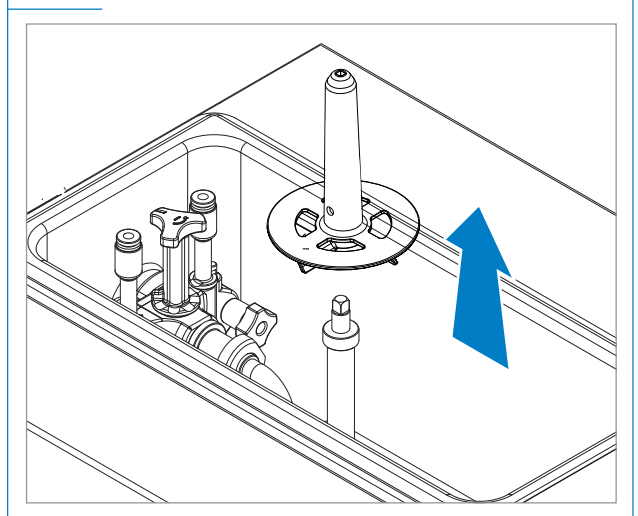
Fig. 37



### 5.6.4 Mix Beaters Removal from Hopper

- Remove the beaters in the tank by pulling them upwards.

Fig. 35



### 5.6.5 Hopper Washing

- Pour clean warm water into the tank.



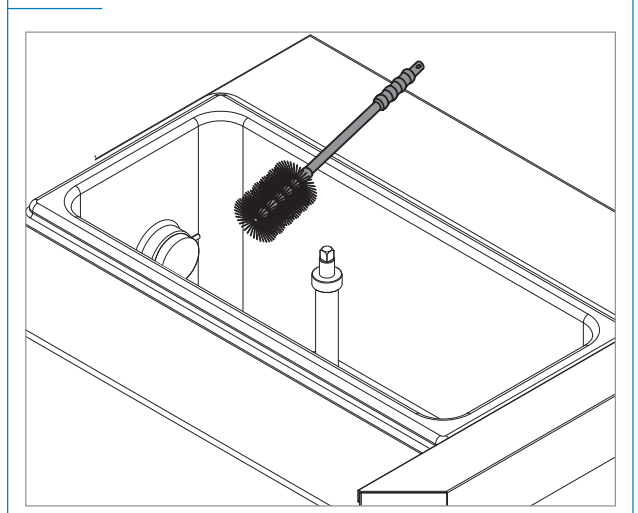
**WARNING**



**Never exceed the maximum level indicated on the tank.**

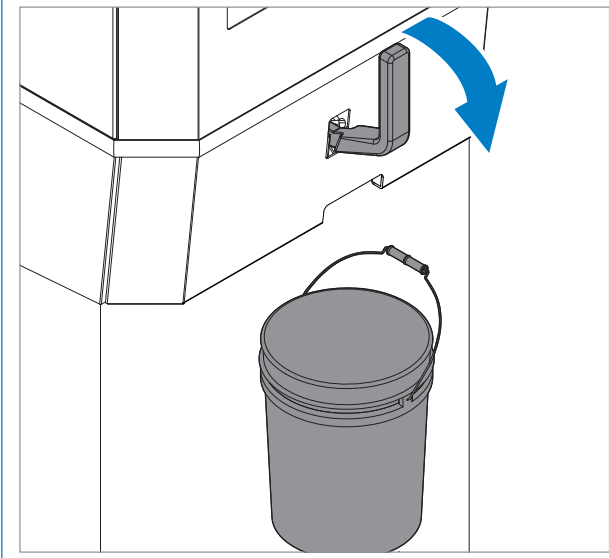
- Use the supplied brushes to clean the sides of the tank, the level sensor, the beater shaft and its interstice and the tank. Using the smallest brush, clean the compression tube seat on the bottom of the tank. Discharge the water from the hopper using the dispensing handle and repeat the operation several times until clean water is obtained.
- Repeat the two previous procedures by using a cleaning/sanitising solution.

Fig. 36



- Position a bucket underneath the door, lower the dispensing handle and allow the solution to flow.

Fig. 37






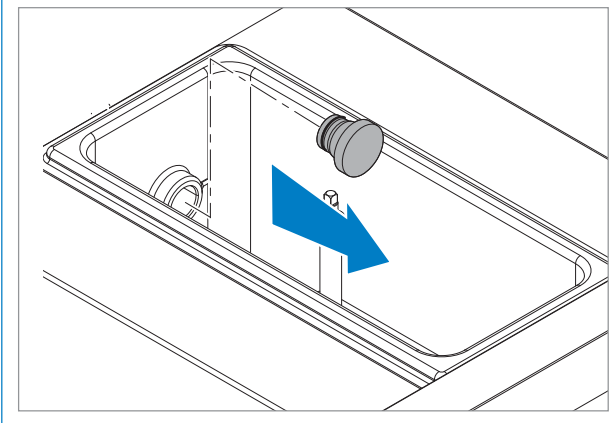
- Select the function  and then select . Let the machine function for 10 seconds.
- Press the button  and discharge the water from the machine.
- Rinse with warm water until clean water comes out.
- Remove the plug from the pump housing hole.

Fig. 38



- Spray the cleaning/sanitising solution around the pump housing hole. Immerse a fine brush in the cleaning/sanitising solution and clean the pump housing hole several times.



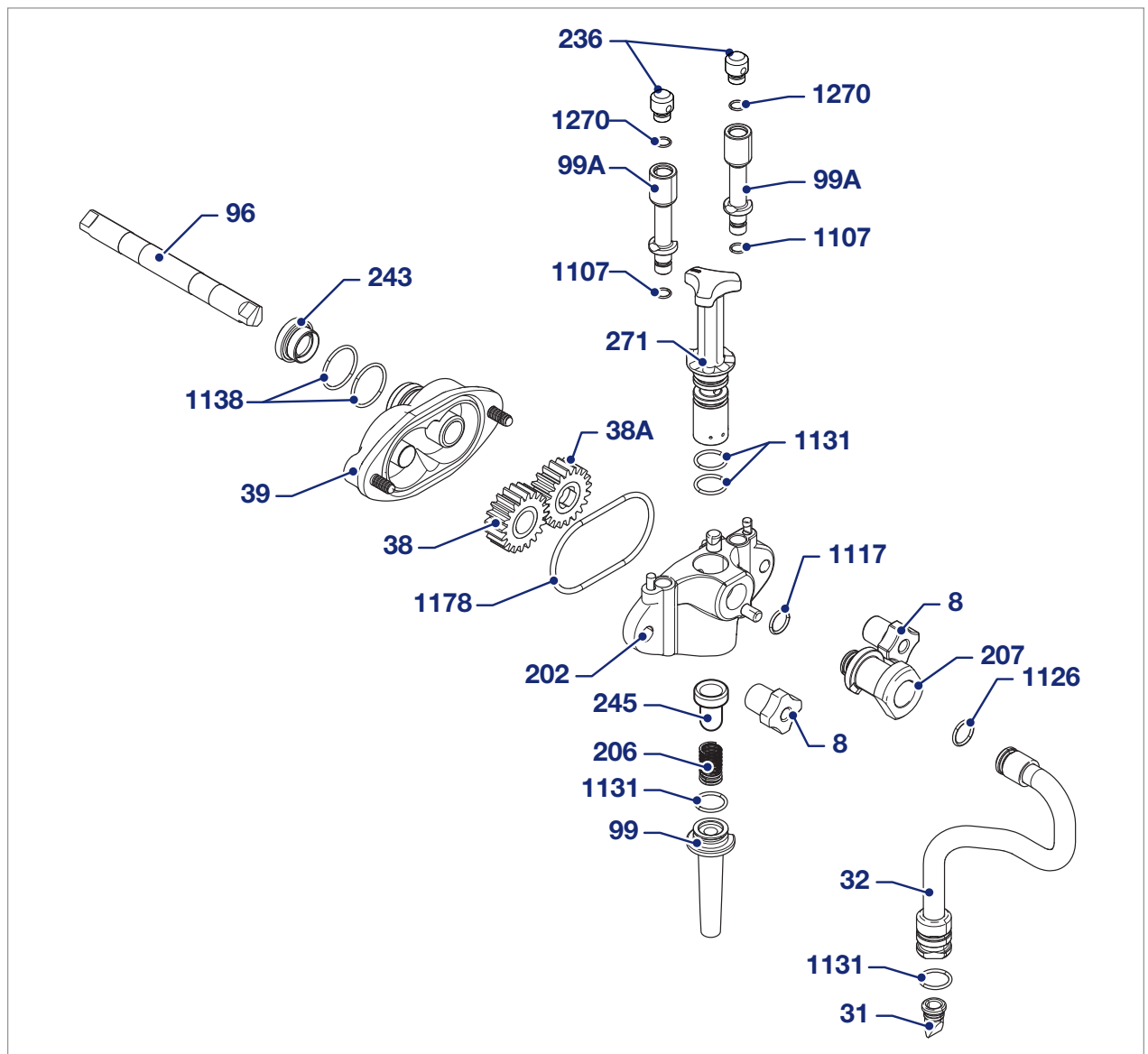
### NOTE



**The plug and its O-ring must be washed and sanitised.**

## 5.6.6 Pump feed machine - disassembly of the pump

Fig. 39

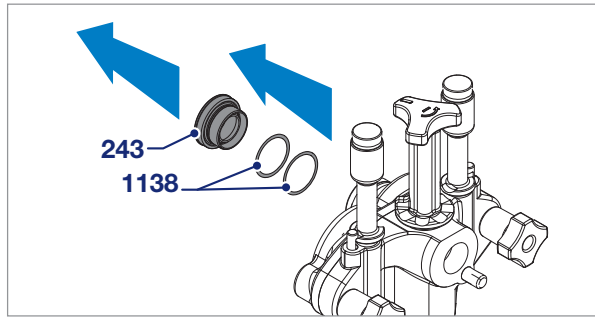


8	Pump knob	236	Plug
31	Membrane valve	243	Pump body seal
32	Compression hose	245	Pump valve
38	Driven gear	271	Pump regulator
38A	Driving gear	1107	O-ring
39	Pump body	1117	O-ring
96	Pump shaft	1126	O-ring
99	Suction pipe	1131	O-ring
99A	Air inlet pipe	1138	O-ring
202	Pump cover	1178	O-ring
206	Spring	1270	O-ring
207	Connection pipe		



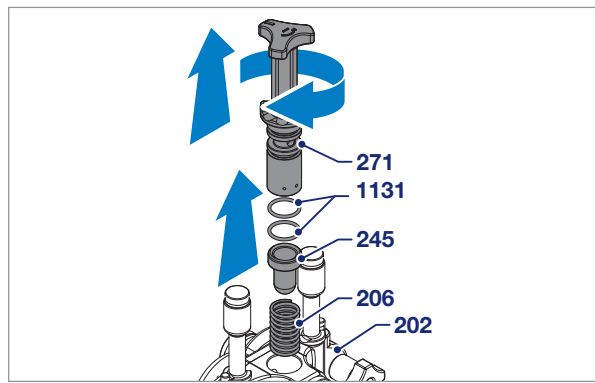
- Remove the seal (243) and the two O-rings (1138).

Fig. 40



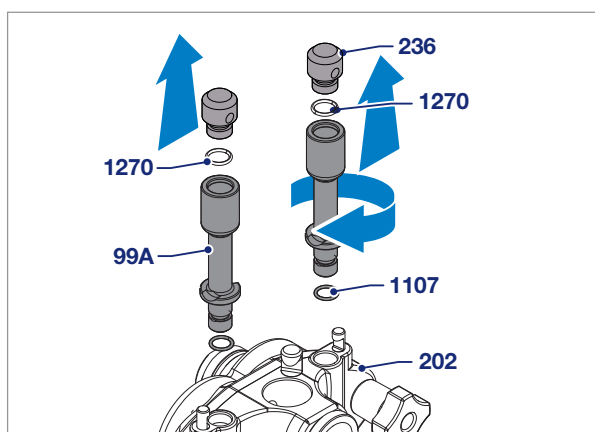
- Remove the pump regulator (271) from the pump cover (202) by rotating it clockwise until the notch is aligned with the pin situated on the pump cover located on the regulator and pull it out. Use the O-ring extractor to remove the two O-rings (1131) located on the pump regulator.
- Remove the spring (206) and the pump valve (245).

Fig. 41



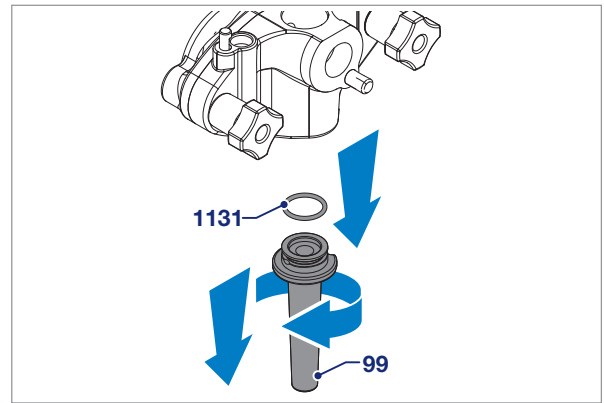
- Remove the two air inlet pipes (99A) from the pump cover (202) by pulling and rotating them until the notches on the pipes are aligned with the pins situated on the pump cover and take them out.
- Remove the plugs (236) and O-ring (1270) from the air inlet pipes (99A).
- Remove the O-rings (1107) from the air inlet tubes (99A).

Fig. 42



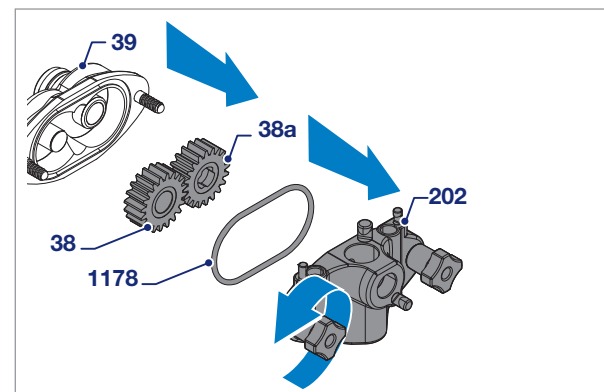
- Keep the suction pipe (99) vertical, rotate it until the notch is aligned with the pin situated on the pump.
- Use an O-ring extractor to take the O-ring (1131) out from the suction pipe (99).

Fig. 43



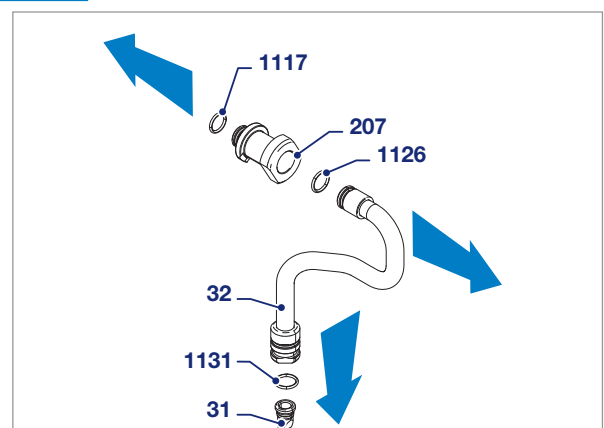
- Unscrew the two knobs (8) and separate the pump cover (202) from the pump body (39).
- Use an O-ring extractor to remove the O-ring (1178).
- Remove the gears (38-38a).

Fig. 44



- Remove the connection tube (207) from the compression tube (32).
- Remove the O-rings (1117), (1126), (1131) and the valve (31).

Fig. 45



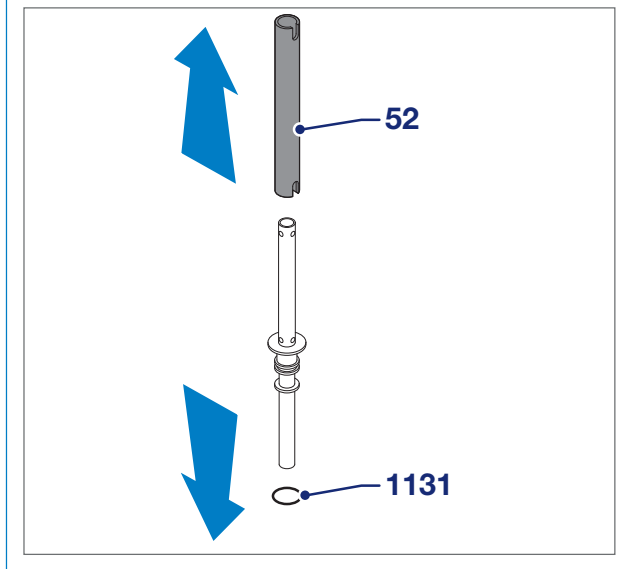


### 5.6.7 Gravity fed machines - disassembling the feeding needle

To disassemble the feeding needle proceed as follows:

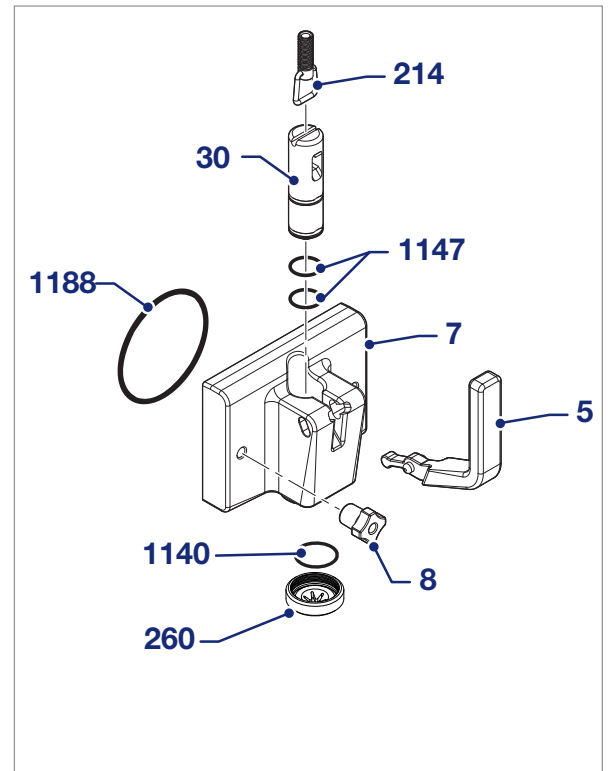
- Remove the feeding needle slider (52).
- Remove the O-ring from the needle (1131).

Fig. 49



### 5.6.8 Disassembly of the door

Fig. 46



- 5 Dispenser levers
- 7 Dispensing door
- 8 Knob
- 30 Piston
- 214 Adjusting screw
- 260 Spigot door nozzle unit
- 1140 O-ring
- 1147 O-ring
- 1188 O-ring



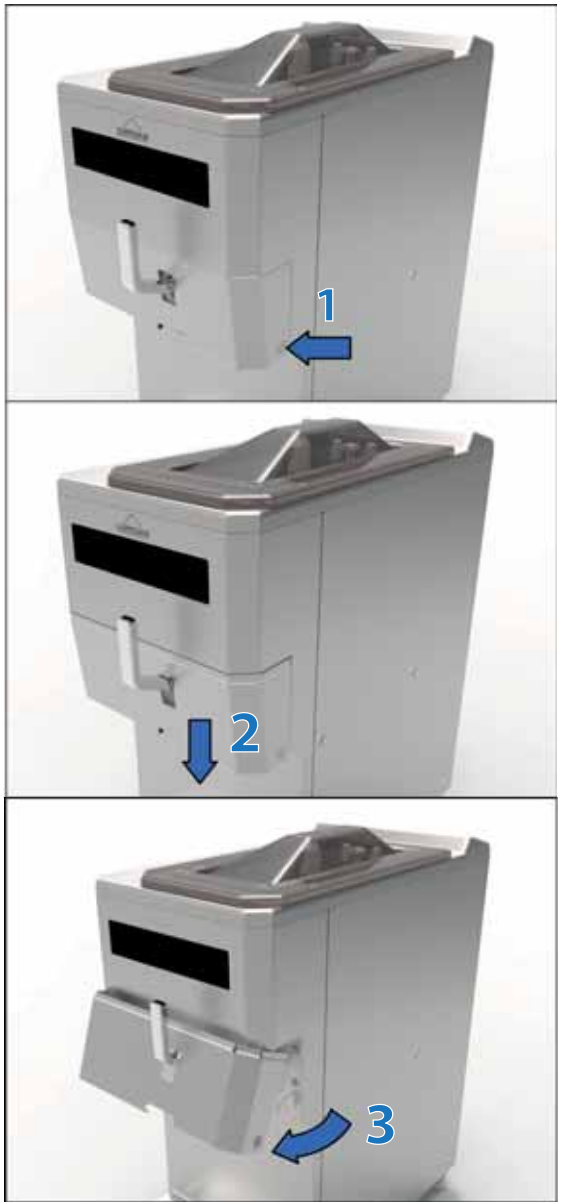
## WARNING



Before disassembling the dispensing door, make sure the hoppers and the cylinders are empty and the machine is STOPPED.

- Disassemble spigot door covering panel
  - Press the two keys on the side of the panel
  - Push the panel downwards
  - Pull the panel from the front and remove it from the machine.

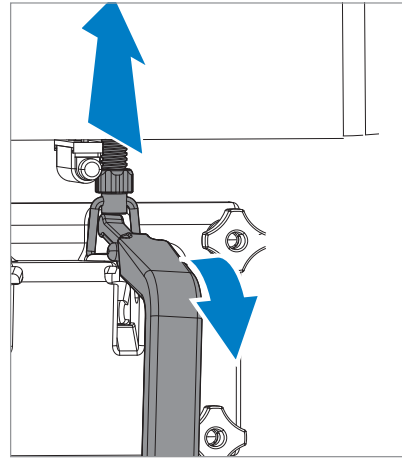
Fig. 47



- Remove ice-cream dispensing handle.

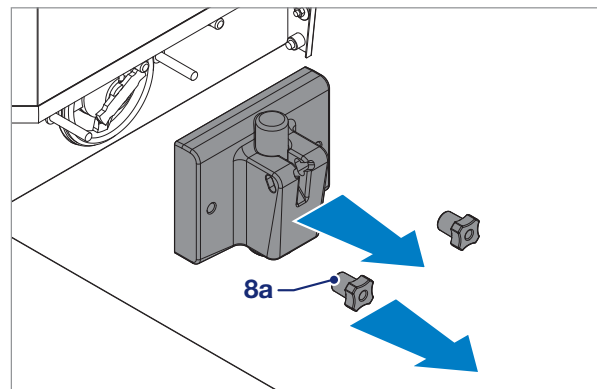
- Using an ice cream dispensing handle (5), push adjuster screw (214) up so as to release ring from its seat on piston (30) and remove the complete screw.

Fig. 50



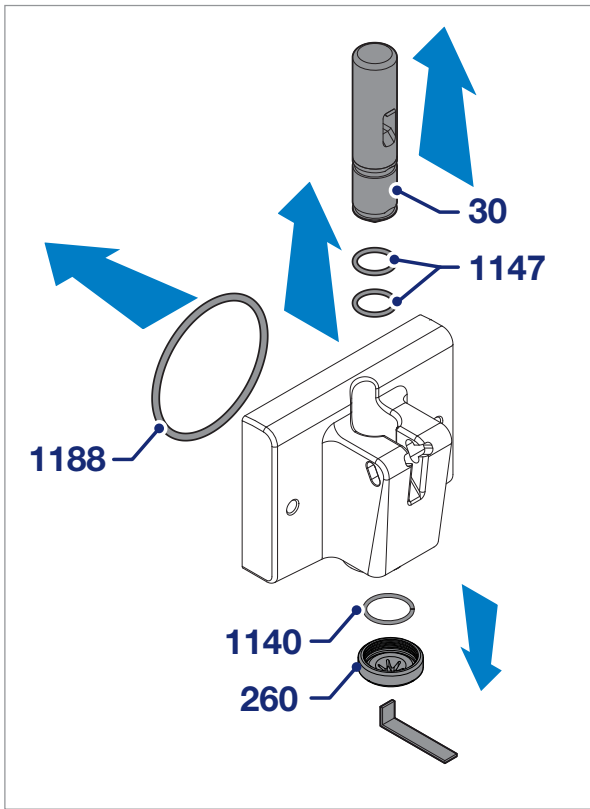
- Loosen the two knobs (8a) and remove dispensing spigot door.

Fig. 51



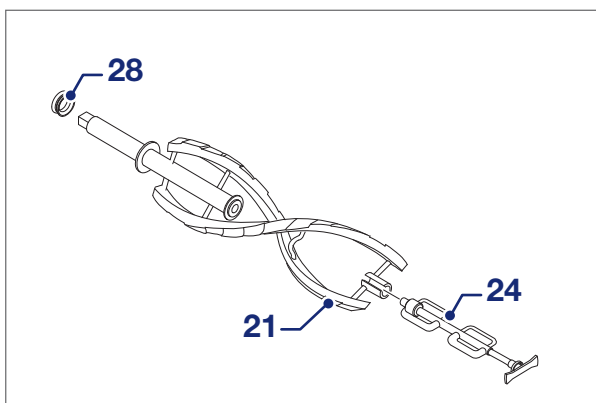
- Take the plunger out.
- Using the suitable supplied tool, unscrew the spigot door nozzle unit and remove it.
- Use an O-ring extractor to take out:
  - The two O-rings (1147) of the plunger.
  - The O-ring of the dispensing door (1188).
  - Spigot door nozzle unit O-Ring (1140).

Fig. 52



### 5.6.9 Disassembly of beaters

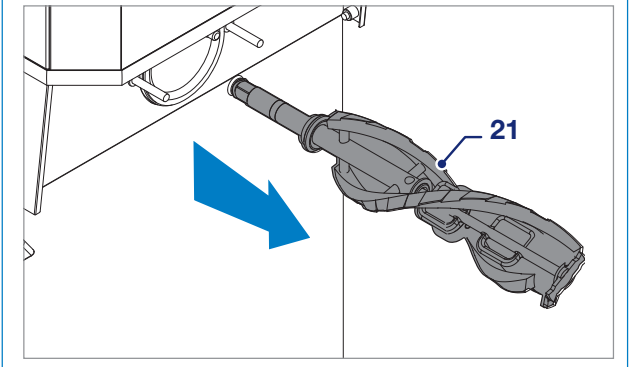
Fig. 53



- 21 Beater
- 24 Idler
- 28 Seal

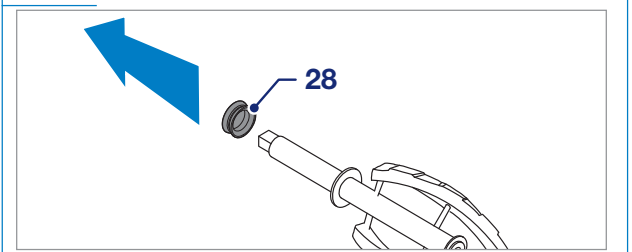
- Remove the beaters (21) from its seat in the cylinder, being careful not to knock the walls of the cylinder.

Fig. 54 with terminal



- Let the seal (28) slide on the beater axle and remove it.

Fig. 55

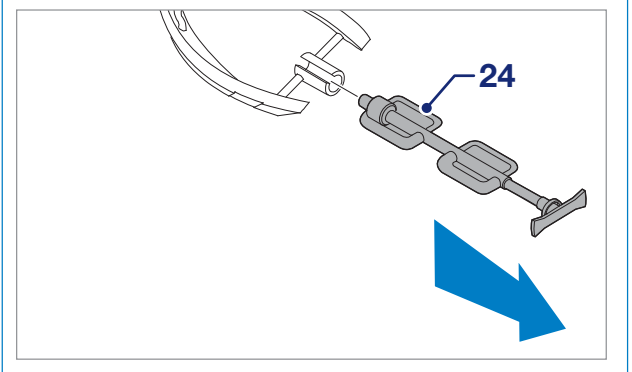


**WARNING**

The seal is very important for cylinder tightness. Check its wear on a regular basis according to the maintenance plan (Refer to paragraph 6.1). Furthermore always lubricate the seal properly during washing operations.

- Remove the idler (24) from the shaft.

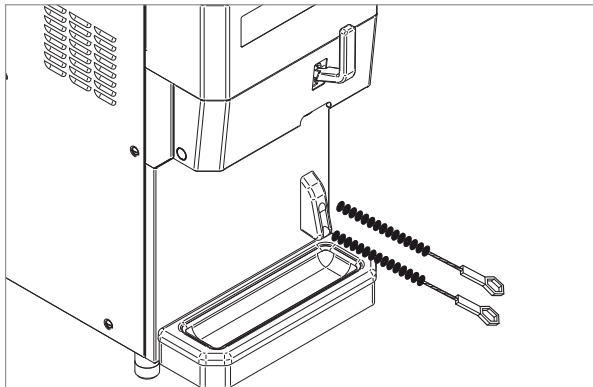
Fig. 56



### 5.6.10 Disassembly of the drip drawer, the drip tray and the hopper lid

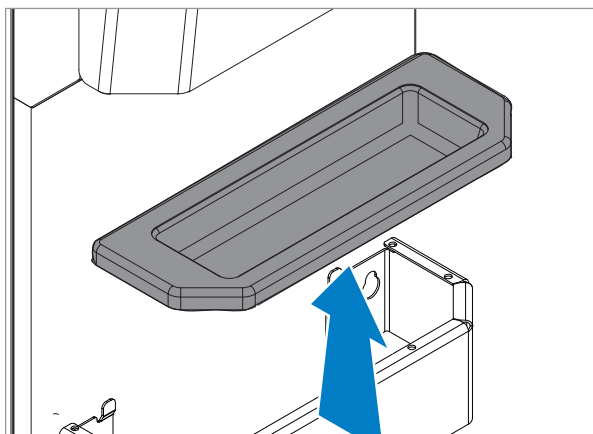
- Use the brush provided (washed and sanitized) to clean the dripping tubes on the front of the machine.

Fig. 58



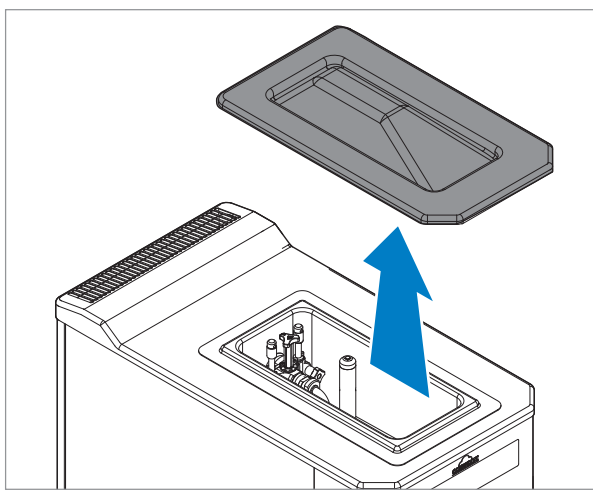
- Remove the drip tray and relevant cover.

Fig. 59



- Remove the tank cover.

Fig. 60



### 5.6.11 Cleaning and sanitising of the components



#### WARNING



As regards the use of cleaning/sanitising solution, refer to the manufacturer's instructions on the label of the solution used.



#### WARNING



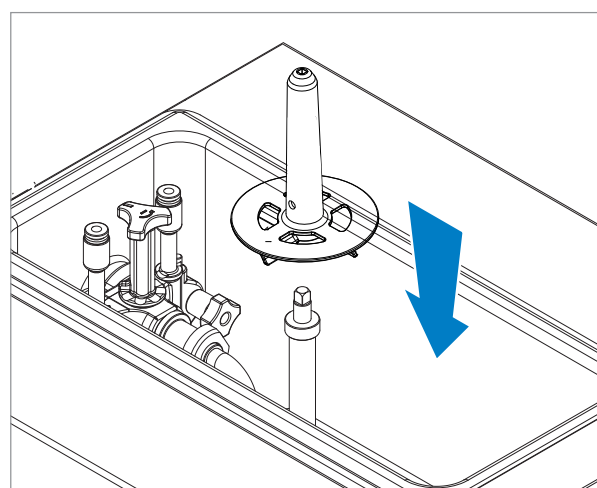
To carry out the following operations, your hands must be clean and sanitized, or you must wear disposable gloves.

- Fill a sink with a cleaning/sanitising solution prepared according to the manufacturer's indications.
- Use the provided brushes and vigorously brush all components and holes found on the same components (the holes on the pump, suction pipes, non-return valves, pump seal and its interstice, beater flaps, etc...).
- Dip the components into the cleaning/sanitising solution and let it work for the time indicated by the manufacturer.
- Rinse the parts with care by using plenty of drinking water.
- Place the components onto a clean, sanitised tray and let them dry in air.
- Dip a big brush into the cleaning/sanitising solution and clean the cylinder.
- Immerse a brush in the cleaning/sanitising solution and clean the pump housing holes, the compression tubes on hopper bottom, and the sides of the hoppers.
- Spray the cleaning/sanitising solution on the bottom of the cylinders and on the tank surface.
- Repeat the last three steps some times.

### 5.6.12 Reassembly of the tank beater

- Reposition the beater (pos. 162) into its seat and make sure it is inserted properly.

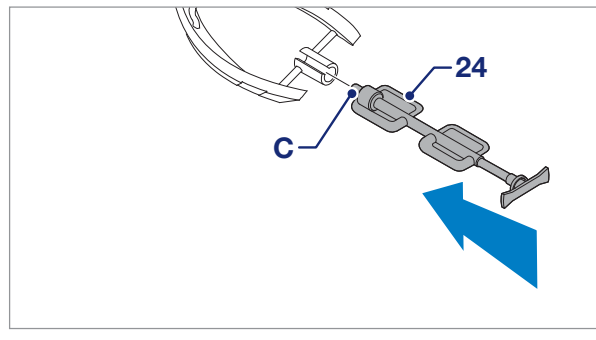
Fig. 61



### 5.6.13 Reassembly of the beater

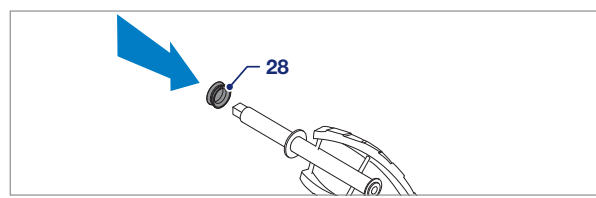
- Insert the idler (24) into the beater.

Fig. 63



- Lubricate the inner sides of the seal (28) and its seat on the beater shaft. Let the seal slide onto the beater shaft.

Fig. 64

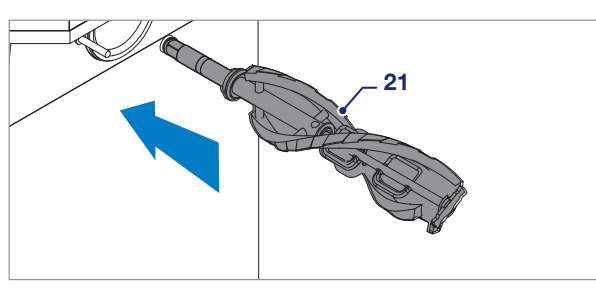


**NOTE**

**Check the beater seal for integrity. Replace if worn or damaged. Refer to the maintenance plan to carry out the replacement.**

- Insert the beater assemblies into the cylinders, turning and pushing them until they engage in rear hub.

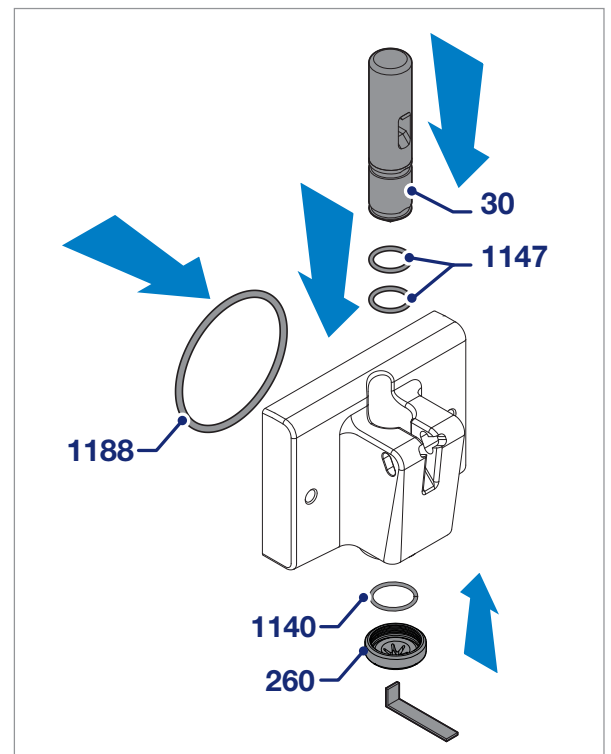
Fig. 65



### 5.6.14 Reassembly of the dispensing door

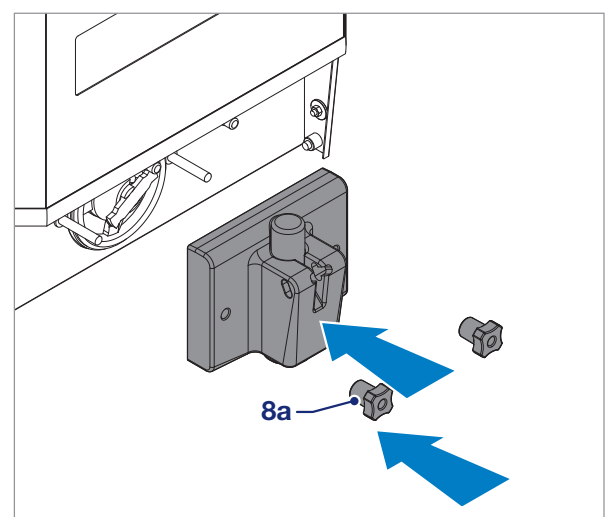
- Lubricate and fit the O-Ring (1140) on the spigot door nozzle unit.
- Using the suitable supplied tool, screw the nozzle unit back on the spigot door.
- Lubricate and fit piston O-rings (1147) .
- Lubricate piston (30) and insert it inside its seat on spigot door, making sure that piston square notch matches with spigot door front rectangular opening.
- Lubricate and fit O-ring (1188) onto spigot door.

Fig. 66



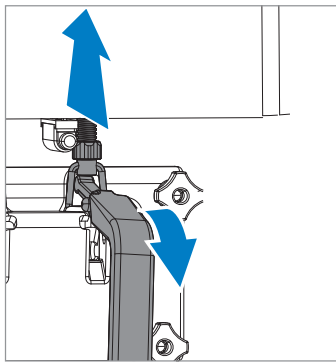
- Insert the door assembly onto the two front panel pins and tighten it properly using the two knobs (8a).

Fig. 67



- Using a dispensing handle (5), refit adjuster screw (214) so as to correctly position ring inside its seat on piston

Fig. 68

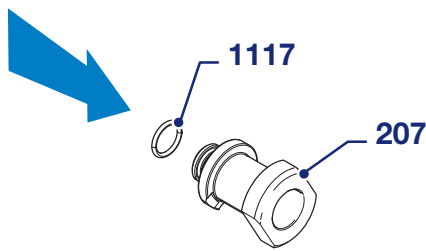


- Refit spigot door covering panel.
- Reassemble the dispensing handles onto the door.

### 5.6.15 Pump feed machine - Reassembly of the pump

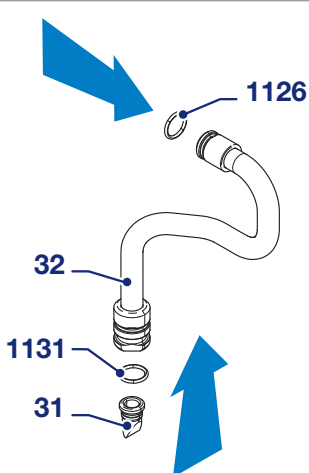
- Lubricate and insert the O-rings (1117) on the connection tube (207).

Fig. 70



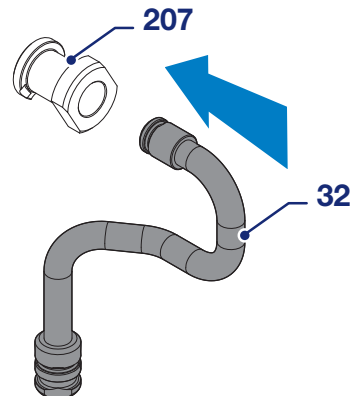
- Lubricate and insert the O-rings (1126), (1131) and the duck bill valve (31) on the pressure pipe (32).

Fig. 71



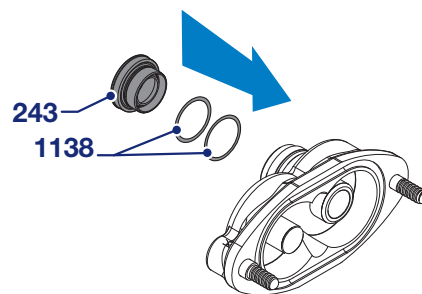
- Insert the connection tube (207) assembly in the pressure pipe (32).

Fig. 72



- Leave the pressure tubes on the clean tray. They will be sanitised and mounted during the “mix preparation procedure”.
- Lubricate and insert the O-rings (1138) onto the body of the pump (39).
- Lubricate and insert the seals (243) into the body of the pump (39).

Fig. 73

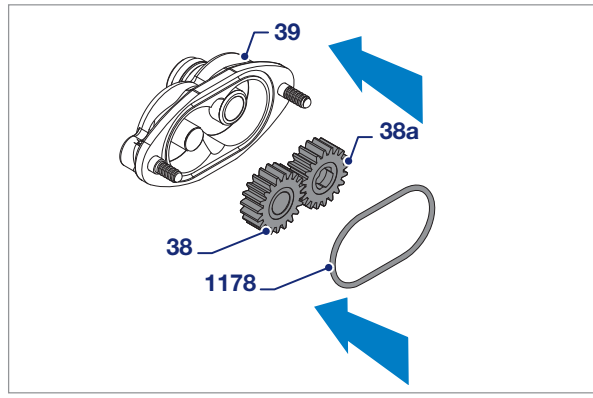


- Lubricate and insert the O-rings of the body of the pumps (1178).
- Lubricate the surface of the pump gears (38-38A) and insert them into the pump bodies (39).

**WARNING**

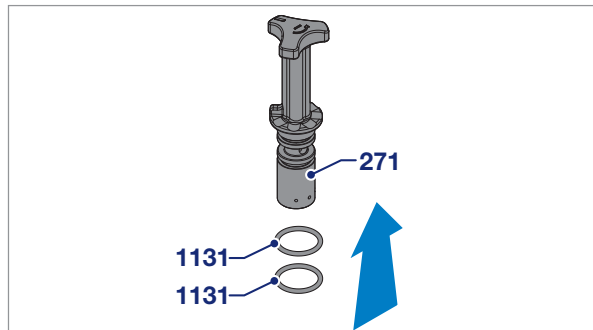
**Do not lubricate gear teeth and carry out checking of wear referring to par. 6.1.**

Fig. 74



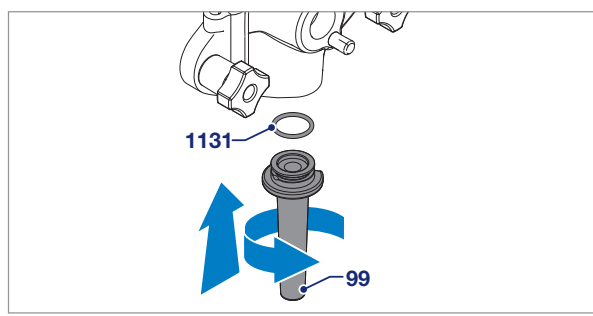
- Lubricate and insert the two O-ring (1131) on the feeding tube (271).

Fig. 75



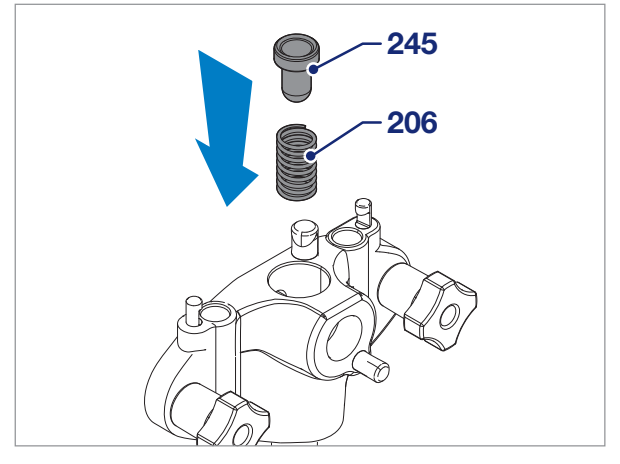
- Lubricate and insert the O-ring (1131) on the feeding tube (99).
- Holding the pump cover (202) insert the feeding tube (99) by pushing and turning it counterclockwise.

Fig. 76



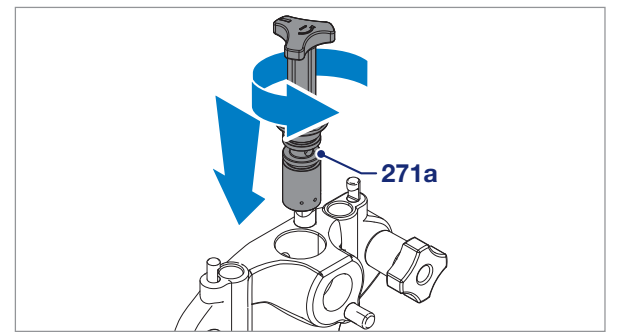
- Insert the spring (206) and the pressure relief valve (245) into the pump cover (202).

Fig. 77



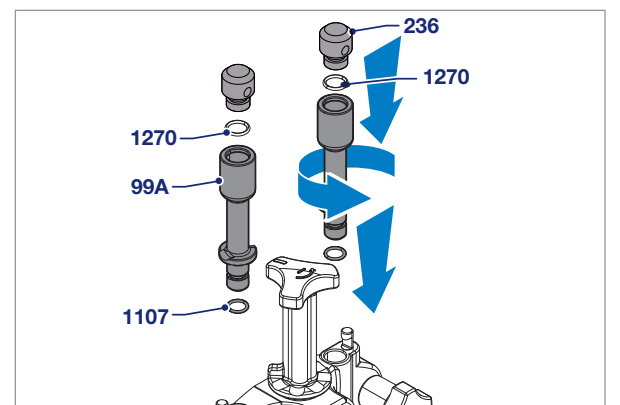
- Insert the pump regulator (271a) on the pump cover (202) aligning the pump regulator notch to the pin on the pump cover and turning to lock it.

Fig. 78



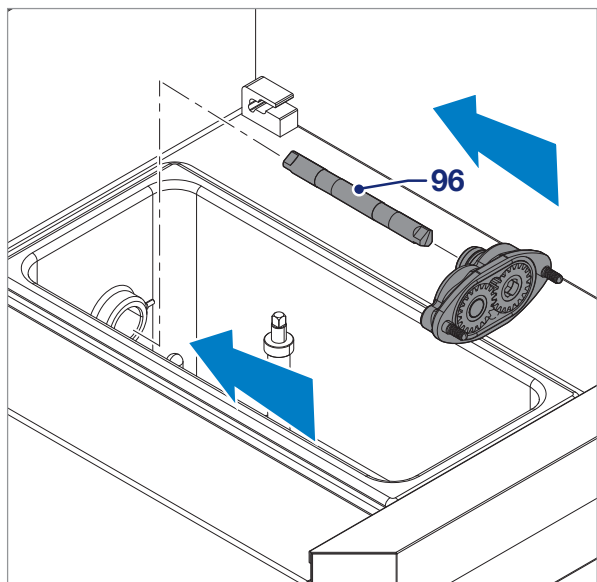
- Lubricate and insert the O-rings (1107) onto the air inlet tubes (99A).
- Insert the two plugs (236) and the O-rings (1270) on the air intake tubes valve holder (99A).
- Insert the two air intake tubes valve holders (99A) on the pump cover (202) aligning the tube notch to the pin on the pump cover and turning the tubes until they are locked.

Fig. 79



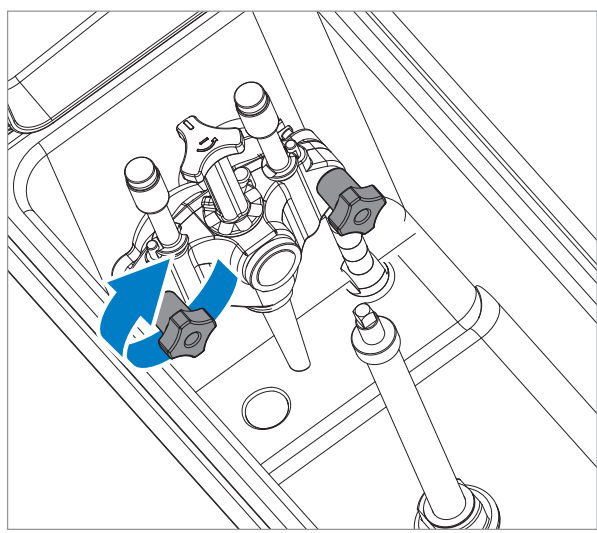
- Make sure that machine is in Stop mode, and lubricate pump shaft (96). Fit shaft inside mix hopper rear hole, push it and slightly turn it so that it engages with driving hub. Hold pump body with locking pin hook on the right side and keep pump gears in their positions with your thumbs, then push and turn pump clockwise to align shaft with gears. Then turn pump counter-clockwise so as to lock it onto pin.

Fig. 80



- Assemble the pump cover (202) with the feeding tube downwards onto the pump body and turn the two knobs (8) tightly.

Fig. 81

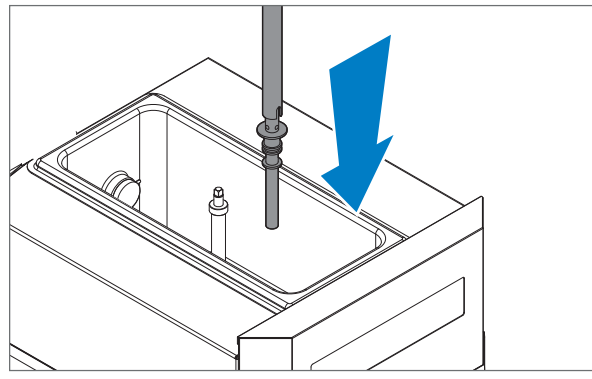


- Reassemble the drip drawer, the drip tray and its cover and the tank cover previously washed and sanitised.

### 5.6.16 Gravity fed machines - refitting the feeding needle

- Lubricate O-ring (1131).
- Reassemble the feeding needle

Fig. 86

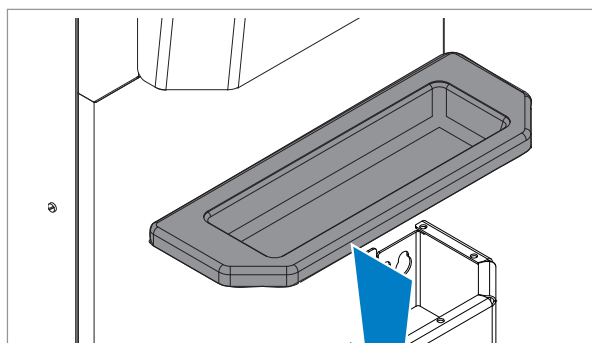


- Leave the sanitized feeding needles on the tray. They will be assembled during the “mix preparation procedure”

### 5.6.17 Drip Tray and Hopper Cover Reassembly

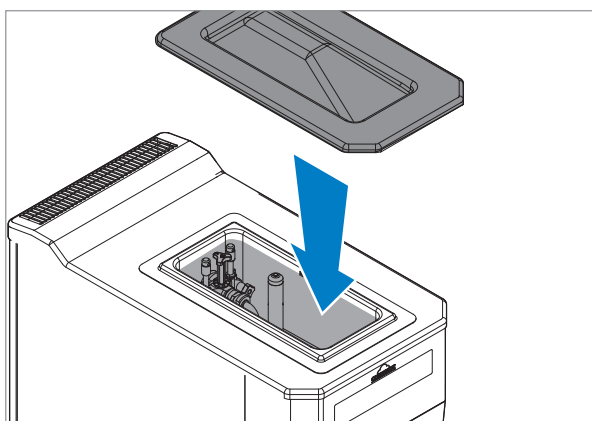
- Refit drip tray and cover.

Fig. 83



- Refit hopper cover.

Fig. 84











### 5.6.18 Complete sanitisation of the machine

The machine must be sanitised before mix is poured into the tank.

**NOTE**

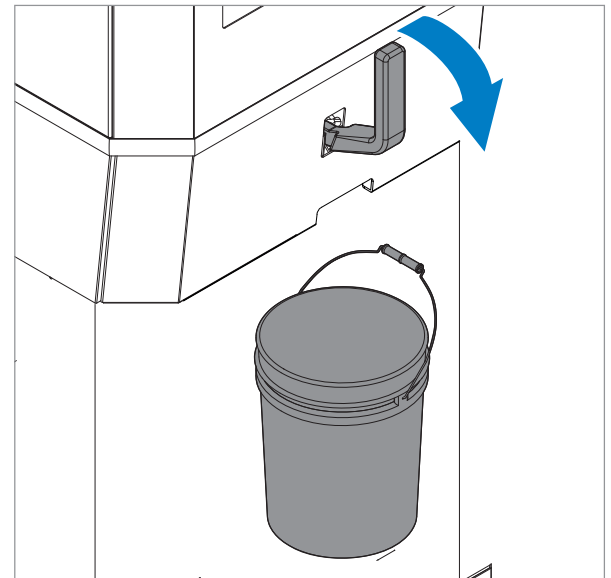
After having cleaned and sanitised the machine and, more precisely, after having closed the front door of the machine, operate the machine in Production mode (by pushing  key) within 60 minutes. After 60 minutes, the machine does not accept the  key anymore and automatically passes to the pasteurisation function. In other words, carry out the “Complete sanitisation of the machine” and “Mix Preparation” within 60 minutes, then push the  key.




- With the machine in Stop mode, fill the cleaning/sanitising solution into the tank up to the maximum level so that it drains into the cylinder.
- Using the brush, clean the mix level sensors, the whole surface of the mix hopper, the surface of the mix pump and the outside of the tank beater.
- Press the  key and then press  and let the beater operate for approximately 5 seconds. Press the  key to stop beating.
- Pour a little cleaning/sanitising solution into a bucket.
- Open the spigot door covering panel, dip the provided brush into the pail of the cleaning/sanitising solution and brush the dispensing spout clean.
- Wipe the exterior of machine with clean, sanitised cloth. Repeat the operation twice and close the spigot door covering panel.
- Leave the cleaning/sanitising solution in the tank for the time indicated by the manufacturer.

### Draining the cleaning/sanitising solution

- Place an empty bucket underneath the door and lower the dispensing handle.

Fig. 85



- Drain all cleaning/sanitising solution, then press key  and then  to let also the last solution residues flow out of the machine. Do not leave beater enabled for more than 5 seconds, then press .
- Fill hopper with drinkable water to thoroughly rinse it, then repeat the above-described drainage operation.

**WARNING**

Do not keep the beater running for more than the time strictly needed to complete washing and sanitisation. Mix butterfat lubricates beater blades; without this lubrication the beater blades wear out quickly.

- Refer to the paragraph 3.8 of this manual for filling the tank and starting production.

## 6. MAINTENANCE



### WARNING



Never put your hands into the machine while it is in Production or Cleaning modes. Before performing any maintenance, make sure the machine has been placed in Stop mode and the main switch has been switched OFF.

### 6.1 Maintenance



### WARNING



Any maintenance operation requiring that the machine's protective panels be opened, must be performed with the machine in Stop mode and with machine disconnected from the electrical power supply! The cleaning or lubricating of moving parts is forbidden! "Repairs on the machine or its electrical, mechanical, pneumatic or refrigeration system must be performed by authorised, qualified personnel and in accordance with scheduled and unscheduled maintenance as agreed with the customer with regards to specific service methods on the basis of destination of use of the machine".



Procedures necessary for the good operation of the machine are such that most maintenance is completed during the Production cycle.

Maintenance operations, such as the cleaning of parts coming into contact with the product and disassembling the beater, are to be normally all carried out at the end of each work shift, thereby keeping maintenance effort at a minimum.

#### Below is a list of normal maintenance operations:

- Cleaning and replacement of beater seal  
Cleaning must be carried out on the set date indicated on the display. The part should be substituted if it is noticeably worn and mix is leaking into drip tray.
- Cleaning of the beater assembly  
Cleaning must be carried out on the set date indicated on the display.
- Cleaning of the dispensing head  
Cleaning must be carried out on the set date indicated on the display.
- Cleaning of the pump unit  
Cleaning must be carried out on the set date indicated on the display.

#### How to check condition of gears:

This check must be carried out during the periodical cleaning of the machine.

Disconnect the compression tube after depressurising the cylinder. If all parts of the pump are correctly assembled and the gears are OK the pump produces a strong stream of mix (fig. 86). If all parts of the pump are correctly assembled but the gears are worn the stream of mix is very weak (fig. 87).

Fig. 86

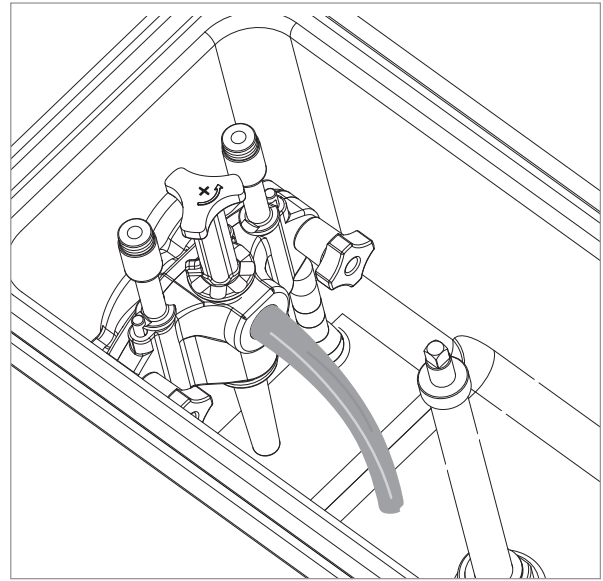
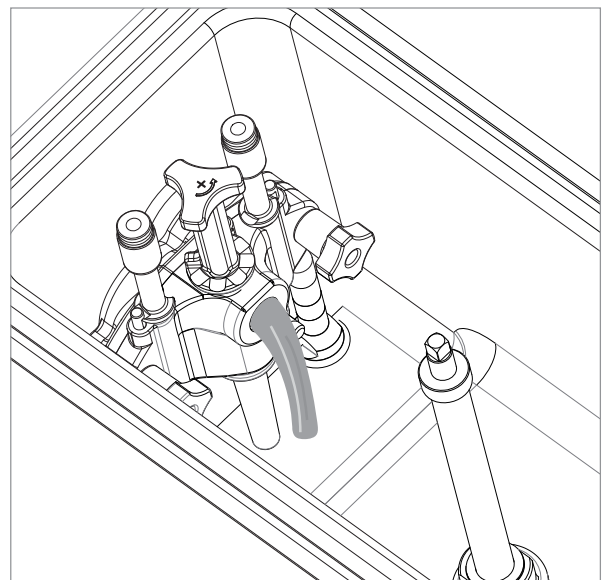


Fig. 87



#### How to avoid wear of the gears:

- Do not operate the pump without mix inside the tank or only with water for more than a few seconds: the fat/grease content of the mix acts as a lubricant for the gears (like the oil of a car). Without the mix the gears would wear much quicker.

- No foreign object or food piece must enter the pump, not even a little piece of plastic, a tomato skin, a piece of straw that may have accidentally fallen into the tank; they could block the feed and damage the gears.
- During cleaning operations handle the gears with care. Their correct functioning could be jeopardised if they are accidentally dropped.
- Cleaning of blades, drip drawer and tray support shelf.

It must be performed daily utilizing neutral soaps and ensuring that detergents never be used inside the beater unit.

- Cleaning and sanitisation:

It must be carried out on the set date indicated on the display according to the procedures indicated in section 5 of the manual.



## WARNING



**To clean the machine and its parts never use abrasive sponges which could scratch the surfaces.**

## 6.2 Water-cooling



For those machines equipped with a water-cooled condenser, all water must be drained out of condenser at the end of selling season to avoid any trouble should the machine be stored in an environment where the temperature may drop below 0°C.

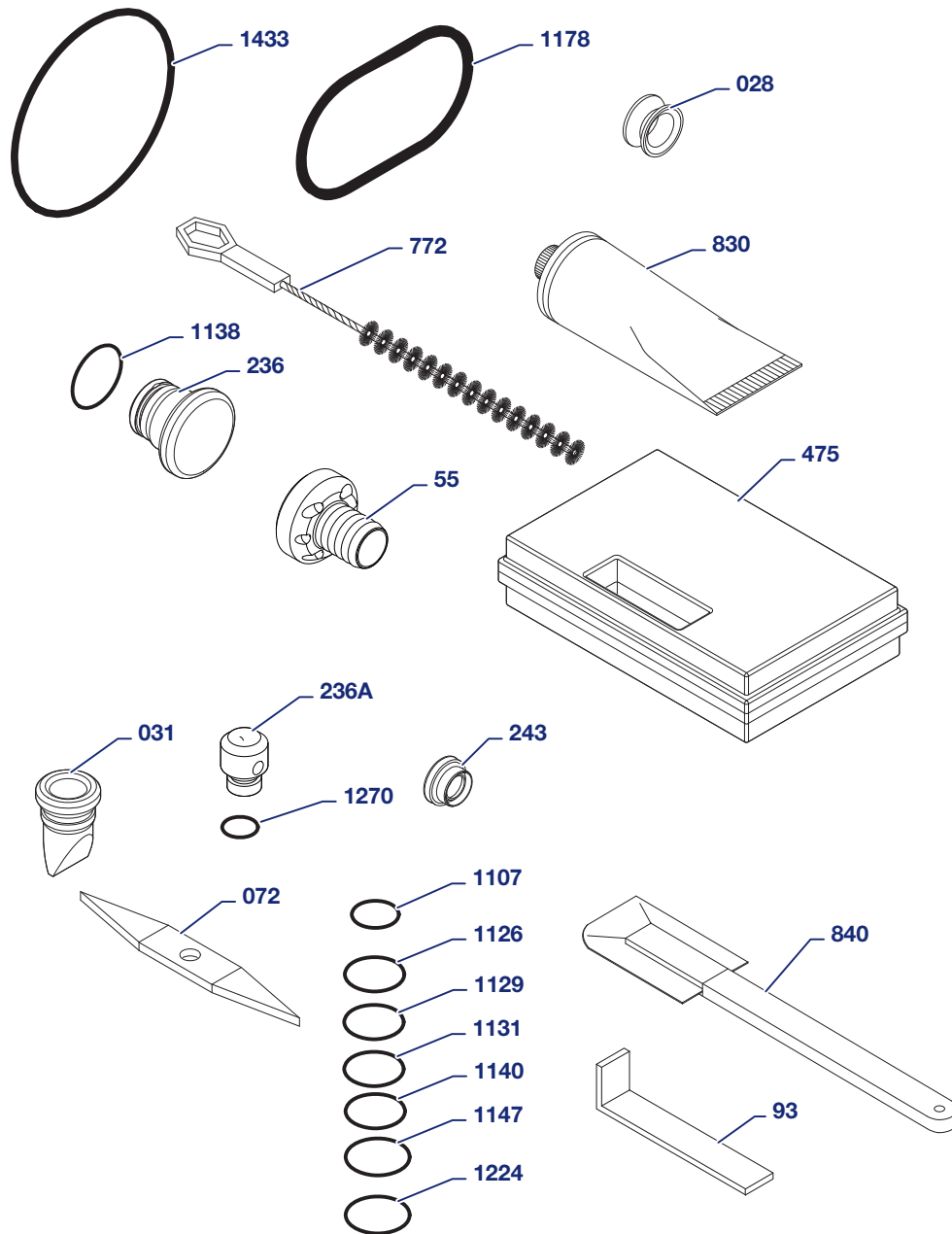
After closing the water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.

## 6.3 Ordering spare parts

When one or more parts are worn out or broken, place the order through your local distributor.

### 6.4 Supplied accessories

Fig. 88



**Legend:**

<b>28</b>	Beater shaft seal	<b>1107</b>	O-ring
<b>31</b>	Membrane valve	<b>1126</b>	O-ring
<b>55</b>	Rubber hose fitting	<b>1129</b>	O-ring
<b>72</b>	O-ring extractor	<b>1131</b>	O-ring
<b>93</b>	Nozzle unit key	<b>1138</b>	O-ring
<b>236</b>	Blanking plug for pump hole	<b>1140</b>	O-ring
<b>236A</b>	Plug	<b>1147</b>	O-ring
<b>243</b>	Body pump seal	<b>1178</b>	O-ring
<b>475</b>	Kit case	<b>1188</b>	O-ring
<b>772</b>	Brushes	<b>1224</b>	O-ring
<b>830</b>	Carpilube tube	<b>1270</b>	O-ring
<b>840</b>	Cleaning spatula	<b>1433</b>	O-ring

## 7. TROUBLESHOOTING GUIDE

IRREGULARITY	CAUSE	PROCEDURE TO FOLLOW
<b>Compressor starts and then stops after a few seconds.</b>	<ul style="list-style-type: none"> <li>If it's a water-cooled machine: the water is not circulating.</li> </ul>	<ul style="list-style-type: none"> <li>Open water inlet cock and check that pipe is not squashed or bent.</li> </ul>
	<ul style="list-style-type: none"> <li>If it's an air-cooled machine: the air is not circulating.</li> </ul>	<ul style="list-style-type: none"> <li>Check that the machine is positioned so that there's enough space for air to circulate freely upwards from below (at least 50 cms of space above the chimney).</li> </ul>
		<ul style="list-style-type: none"> <li>Check the condenser is not blocked by dust or other things and eventually call the customer service for cleaning.</li> <li>Call for service assistance if necessary.</li> </ul>
<b>Mix or ice cream leaks out from above and/or below the plunger even though the door is closed.</b>	<ul style="list-style-type: none"> <li>Piston without O-ring or the O-ring is worn out.</li> </ul>	<ul style="list-style-type: none"> <li>Stop the machine and insert or replace it with a new one if worn out.</li> </ul>
<b>Mix leaks out of the drip drawer.</b>	<ul style="list-style-type: none"> <li>Stuffing box missing or worn out.</li> </ul>	<ul style="list-style-type: none"> <li>Stop the machine and install it if missing. If worn out, replace it with a new one.</li> </ul>
<b>The dispensing handle is hard to operate.</b>	<ul style="list-style-type: none"> <li>Dry sugar on piston.</li> </ul>	<ul style="list-style-type: none"> <li>Stop the machine and wash thoroughly and grease the plunger and the O-ring with edible fat.</li> </ul>
<b>Ice cream comes out from front lid.</b>	<ul style="list-style-type: none"> <li>O-ring missing or not properly fitted.</li> </ul>	<ul style="list-style-type: none"> <li>Stop the machine and check then act accordingly.</li> </ul>
	<ul style="list-style-type: none"> <li>Front lid knobs not tightened evenly.</li> </ul>	<ul style="list-style-type: none"> <li>Stop machine, loosen and tighten them again.</li> </ul>
<b>Low ice cream overrun.</b>	<ul style="list-style-type: none"> <li>Pump not adjusted correctly.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the position of the central knob of the pump.</li> </ul>







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