CARPIGIANI

APPLICARE

TARGA

CARATTERISTICHE

INSTRUCTION HANDBOOK

Ready

*We wish to thank you for the preference granted to us by purchasing one of* ***Carpigiani*** *machines.*
*To the best guarantee, since 1993* ***Carpigiani*** *has submitted its own Quality System to the certification according to the international Standard ISO 9001, nowadays its production has got UNI-EN-ISO 9001:2008 Certified Quality System.*

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The purchaser has the wright to reprint it for his own office use.
**CARPIGIANI** policy pursues a steady reasearch and development, thus it reserves the right to make changes and revisions whenever deemed necessary and without being bound to previous statements to the purchaser.



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| **Issue:** 02 | **Date:** 2016/06 | **Changes:** 3. |
| **Issued by:** AM | **Checked by:** EZ | **Approved by:** RL |

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# FOREWORD

## INSTRUCTION HANDBOOK

Editing this handbook, it was taken into due account European Community directions on safety standards as well as on free circulation of industrial products within E.C.

## PURPOSE

This handbook was conceived taking machine users' needs into due account.
Topics relevant to a correct use of the machine have been analyzed in order to keep unchanged in the long run quality features charachterizing CARPIGIANI machines all over the world.
A significant part of this handbook refers to the conditions necessary to the machine use and to the necessary procedure during cleanout as well as routine and special maintenance.
Nevertheless, this handbook cannot meet all demands in details. In case of doubts or missing information, please apply to:

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# HANDBOOK STRUCTURE

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

**Section**
A section is the part of the handbook identifying a specific topic related to a machine part.
**Chapter**
A chapter is that part of a section describing an assembly or concept relevant to a machine part.
**Subchapter**
It is that part of a chapter detailing the specific component of a machine part.

It is necessary that each person involved in the machine operation reads and clearly understands those parts of the handbook of his/her own concern, and particularly:

- The Operator must read the chapters concerning the machine star-up and the operation of machine components.
- A skilled technician involved in the installation, maintenance, repair, etc., of the machine must read all parts of this handbook.

## ADDITIONAL DOCUMENTATION

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

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

**Before using the machine read carefully the instruction handbook.**
**Pay attention to the safety instructions.**



# CONVENTIONAL SYMBOLS



**CAUTION: ELECTRIC SHOCK DANGER**
The staff involved is warned that the non-obsevance of safety rules in carrying out the operation described may cause an electric shock.



**CAUTION DANGER FROM HIGH TEMPERATURES**
This warns the staff involved that failure to abide by safety rules in carrying out the operation described involves the risk of burns and scalds.



**CAUTION CRUSHING HAZARD**
This warns the staff involved that failure to abide by safety rules in carrying out the operation described involves the risk of suffering crushed fingers or hands.



**CAUTION: GENERAL HAZARD**
The staff involved is warned that the operation described may cause injury if not performed following safety rules.



***NOTE:***
*It points out significant information for the staff involved.*



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



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

**SYMBOLOGY QUALIFICATION OF THE STAFF**

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



**MACHINE OPERATOR**
Identify unqualified personnel, those without any specific technical abilities who are capable of carrying out simple jobs, such as: operating the machine using the commands available on the keypad, the loading and unloading of products used during production, the loading of any consumable materials, basic maintenance operations, (cleaning, simple blockages, controls of the instrumentation, etc.).



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




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

# SAFETY



When using industrial equipment and plants, one must be aware of the fact that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damage to persons and things.
Who is in charge of plant safety must be on the look-out that:

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

To achieve the above, the following is necessary:

- at the working place an instruction manual relevant to the machine should be available;
- tuch documentation must be carefully read and requirements must conse quently be met;
- only adequately skilled personnel should be assigned to electrical equipment;



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



***NOTE:***
*According to the standard at present in force, a SKILLED ENGINEER is who, thanks to:*
*- training, experience and education,*
*- knowledge of rules, prescriptions and interventions on accident prevention,*
*- knowledge of machine operating conditions,*
*is able to realize and avoid any danger and has also been allowed by the person in charge of plant safety to carry out all kinds of interventions.*

# WARNING



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

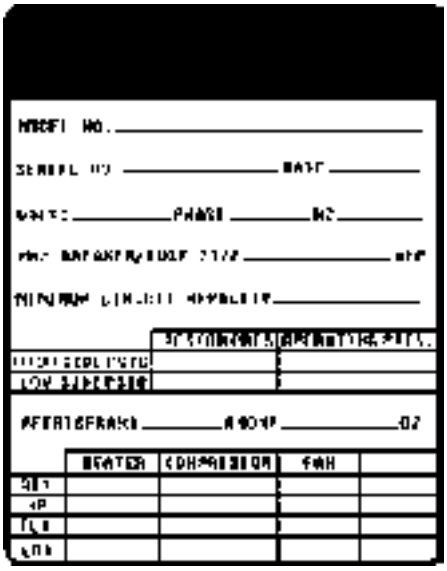
- Never put your hand into the machine, alike during production and cleaning operations. Before carrying out any maintenance operation, make sure that the machine is in “**STOP**” position and main switch has been cut out.
- It is forbidden to wash the machine by means of a bolt of water under pressure.
- It is forbidden to remove panels in order to reach the machine inside before having disconnected the machine.
- **CARPIGIANI** is not responsible for any accident that might happen during operation, cleaning and/or servicing of its units, if this warning has not been fully complied with.

# 1. GENERAL INFORMATION

## 1.1 GENERAL INFORMATION

### 1.1.1 Manufacturer's identification data

The machine has a data plate carrying manufacturer data, machine type and serial number, assigned when it is manufactured.
Copy of machine data plate to be found on first page of this handbook.



### 1.1.2 Information about service

All operations of routine maintenance are here described in section "Maintenance"; any additional operation requiring technical intervention on the machine must be cleared with the manufacturer, who will also examine the possibility of a factory technician field intervention.

### 1.1.3 Information to the user

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




## 1.2 INFORMATION ABOUT THE MACHINE

### 1.2.1 GENERAL DATA

The Ready models are ice cream producers that mix, heat and freeze the ice cream in one single cylinder.

**CARPIGIANI** recommends to always use high quality mix for ice cream production in order to satisfy your customers, even the hardest-to-please ones. Any saving made to the prejudice of quality will surely turn into a loss much bigger than the saving itself.
Bearing in mind the above statements, please take heed of the following suggestions:

- Make your mixes yourselves from high quality natural ingredients or buy them from reliable companies.
- Follow closely instructions given by your mix supplier for the preparation of the mixes.
- Do not alter your mix supplier's recipies, by adding, for instance, water or sugar.
- Taste ice cream before serving it and start selling it only if entirely satisfactory.
- Make sure your staff always keeps the machine clean.

Have your machine serviced always by companies authorized by **CARPIGIANI**.

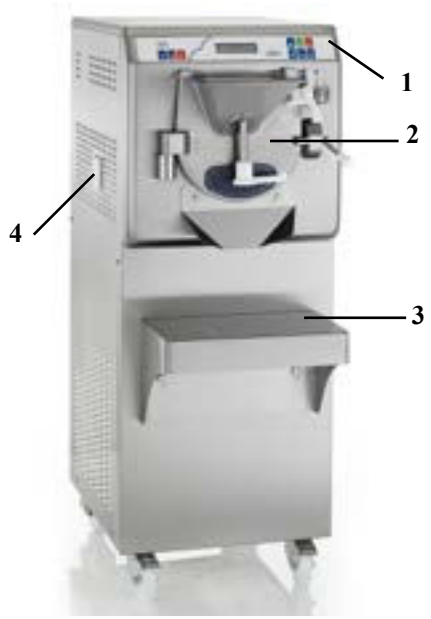
## 1.2.2 Technical features

| MODEL | Production output | | Mix q.ty per batch | | electric spec.* | | | Rated Power | Condenser** | Dimensions | | | Net weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | kg<br>lb | litres<br>Qt | Min.<br>kg<br>lb | Max.<br>kg<br>lb | Volt | Hz | Ph | kW<br>HP | | Width<br>cm<br>in | Depth<br>cm<br>in | Height<br>cm<br>in | kg<br>lb |
| Ready 30 45 DF | 30/45<br>60/99 | 42/60<br>38/54.4 | 3,5<br>7.7 | 7,5<br>16.5 | 208-230 | 60 | 3 | 5.2<br>6.9 | Water | 52<br>20.4 | 65<br>25.5 | 140<br>55 | 290<br>639 |

The quantity per cycle and hourly production change according to the mixes used.
The values "Max" refer to the Italian classic easy-to-work ice-cream.
* Other voltages and cycles available with an extra cost.
** The air-cooled condenser is available with an extra charge.
The following characteristics are purely indicative, Carpigiani reserves the right to make all the changes whenever necessary and without being bound to previous statements to the purchaser.



### 1.2.3 Location of machine groups




*Caption:*

**1** Control panel
**2** Cylinder front lid
**3** Shelf for drip tray
**4** Drip drawer

## 1.3 INTENDED USE

The **Ready** must only be used for the production of ice cream, with the respect of what indicated in 1.2.1 "General information", within the limits indicated here under.

| | |
|---|---|
| Voltage: | ±10% |
| Min air temperature : | 50°F |
| Max air temperature: | 109°F |
| Min water temperature: | 50°F |
| Max water temperature: | 86°F |
| Min. water pressure: | 0,1 MPa (1 bar/14.5 PSI) |
| Max water pressure: | 0,8 MPa (8 bar/116 PSI) |
| Max relative humidity : | 85% |

This machine has been designed for its use in rooms not subject to explosion-proof laws; its use is thus bound to complying rooms and normal atmosphere.

## 1.4 NOISE

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

## 1.5 STORING A MACHINE

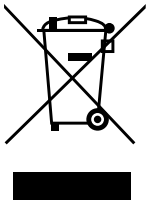
The machine must be stored in a dry and dump-free place.
Before storing the machine, wrap it in a cloth in order to protect it against dust and else.

## 1.6 DISPOSAL OF PACKING STUFFS

When opening the packing crate, separate packing stuffs per type and get rid of them according to laws in force in machine installation country.

## 1.7 WEEE (Waste Electrical and Electronic Equipment)

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



For more information concerning the correct disposal of this product, please contact your local authority or the retailer where this product was purchased.

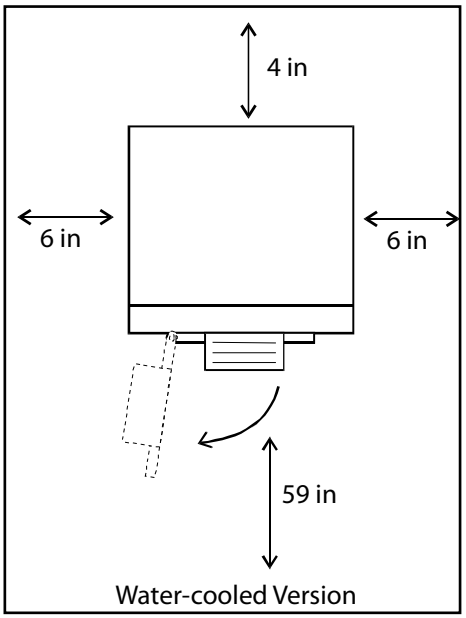
# 2. INSTALLATION

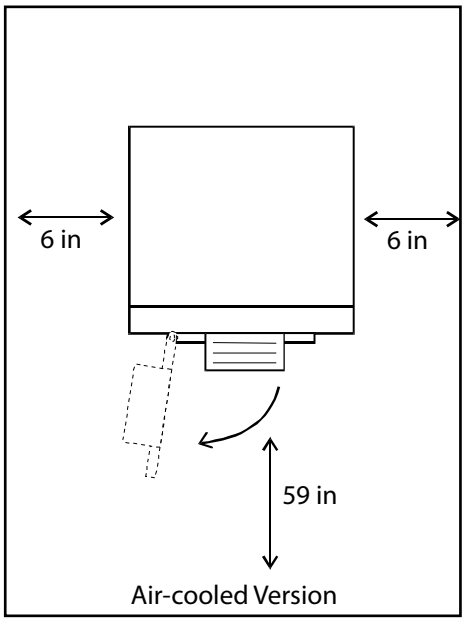
## 2.1 ROOM NECESSARY TO THE MACHINE USE

The machine must be installed in such a way that air can freely circulate all around.
Rooms for the approach to the machine must be left free in order to enable the operator to act without constraint and also to immediately leave working area, if need be.
The minimum approach room to working area should be at least 59 in. in consideration of space taken by opened doors.

**ATTENTION**
**Machines with air-cooled condenser must have 6 in. of free space along the sides in order to allow free air circulation around the condenser.**

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




## 2.2 WATER SUPPLY CONNECTION

The machine must be connected to running water which pressure must not be higher than 0,8 MPa (8 bars/116PSI).
By aircooled machines, water connection for drinking water (for machine wash) is placed under the machine.
By watercooled machines water connections (for machine wash and gas cooling) are placed on upper panel.

**ATTENTION**
**The equipment is to be installed with adequate backflow protection to comply with applicable federal, state, and local codes.**

## 2.3 MACHINE WITH AIRCOOLED CONDENSER

Machines with air-cooled condenser must have 6 in. of free space along the sides in order to allow free air circulation around the condenser.

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

## 2.4 MACHINES WITH WATERCOOLED CONDENSER

To make the machine run, a watercooled machine must be connected to running water supply, or to a cooling tower.
Water must have a pressure of 0.1 MPa and 0.8 MPa (1-8 bar / 14.5-116 PSI) at least, and a delivery at least equal to the estimated hourly consumption.
Connect inlet pipe marked by plate "Water Inlet" to water supply installing a shut-off valve, and outlet pipe marked by plate "Water Outlet" to a drain pipe, installing a shut-off valve.

### 2.4.1 Water valve adjustment

**IMPORTANT**
If water valve needs be reset, this operation will have to be carried out by skilled personnel, only.
Valve adjustment must be carried out in such a way that no water flows when machine is off and lukewarm water flows when machine is on.

**NOTE:**
***Water consumption increases if temperature of entering water is above 68°F.***

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

## 2.5 ELECTRIC CONNECTION

Before connecting the machine to the mains, check that machine voltage indicated in data plate corresponds with the mains.
Insert a differential magnetothermal protection switch adequately sized to absorption capacity required and with contact opening of 3 mm at least.
The machines are delivered with a 5 wire cable: blue wire must be connected to the neutral lead.

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

### 2.5.1 Replacing the power cable

Should the machine main cable be damaged, it must be replaced immediately through one with similar features.
Replacement shall be carried out by skilled technicians, only.

**IMPORTANT**
**Direction of rotation**
**Beater rotation is anticlockwise**

**Reversal of rotation**
Should direction of rotation be wrong, reverse it by exchanging two of the three phases which start at the differential magnetothermal protection switch.

## 2.6 LOCATION

The machine is provided with castors for an easy positioning; a mechanical block system, once engaged, prevents machine from moving and keeps it standstill.

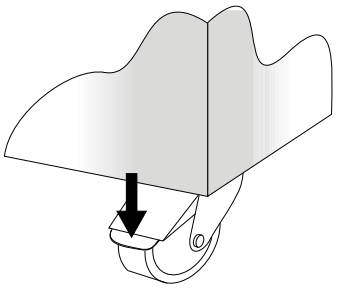


**Fig. 4**

## 2.7 REFILLING

Motor installed in the machine is of the type with lubrication for life; no action of checking/replacing or topping up is necessary.
Gas filling necessary to the freezing system is carried out at **CARPIGIANI** works during machine postproduction testing.
If a gas addition happens to be made, this must be carried out by skilled technicians, only, who can also find out trouble origin.

## 2.8 MACHINE TESTING

A postproduction test of the machine is carried out at **CARPIGIANI** premises; Operation and output functionality of the machine are thoroughly tested.
Machine test at end user's must be carried out by skilled technicians or by one of **CARPIGIANI** engineers.
After the machine positioning and correct connections, also carry out all operations necessary to functional check and test of the machine.

# 3. DIRECTIONS FOR USE

## 3.1 MACHINE SAFETY WARNINGS



When using industrial equipment and plants, one must be aware of the fact that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damages to persons and things.
Who is in charge of plant safety must be on the look-out that:

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

To achieve the above, the following is necessary:

- At working place an instruction manual relevant to the machine should be available.
- Such documentation must be carefully read and regulations must consequently be followed.
- Only adequately skilled personnel will have to be assigned to electrical equipment.

## 3.2 MACHINE CONFIGURATION




The machine has a motor to drive the beater, and a cooling system with water or air-cooled condenser and a heating system.
Feed mix (ready-made liquid mix, mix to be re-hydrated and mix to be brought to 194°F) into the cylinder and start the automatic production cycle, until ice cream reaches the ideal consistency set by CARPIGIANI; use the minimum and maximum mix quantity per cooling cycle specified in the chart under paragraph 1.2.2. When the cycle ends, the ice cream is ready to be extracted through the spigot door and dispensed directly into a tub.

**WARNING**

**In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.**



**WARNING**

**To make product dispensing easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.**



## 3.3 CONTROLS

This machine is provided with an electronic control keyboard; every key relates to a machine function. For a correct use of the keys, press on the symbol or in the middle of the key; every key has a LED (light emitting diode) which lights up when relevant function is inserted.

### 3.3.1 Electronic control keyboard







**STOP**
In this function, the machine is not working and the relevant red LED is on. The display shows STOP. After 3 minutes, the display backlighting turns off and the display turns on when pressing any key.



**CLEANING**
If Cleaning button is pressed, the display shows:

| |
|---|
| *CLEAN<br>HOT CLEAN |

Use the Increase and Decrease keys to select the desired function and press OK to activate it.
The available functions are:
- Clean
- Hot Clean
- Dry clean

**Clean**
In this function, only the slow beater is enabled for 1 minute, then the machine automatically sets back to STOP in order to avoid the excessive wear of cylinder and beater; the display shows the decreasing timer on the top line and the speed on the bottom line.

| |
|---|
| TIMER 01:00<br>SPEED 01 |

Press the Increase key to enable the quick beater. The timer continues its count:

| |
|---|
| TIMER 01:00<br>SPEED 02 |

It is possible to reset slow beating by pressing the Decrease key.

**Hot clean**
Beater with speed 1 (that can be changed from 1 to 2) and heating are enabled for 1'.

**Dry clean**
Heating is activated for 1'.



**INCREASE**
This increases the values that can be edited for those functions where this is permitted, e.g., to change the freezing timer.
Moreover, it allows changing the Beating speed in the Cleaning and Extraction functions.



**DECREASE**
This decreases the values that can be edited for those functions where this is permitted, e.g., to change the freezing timer.
It is also used to reset alarm messages.
Moreover, it allows changing the Beating speed in the Cleaning and Extraction functions.




**OK**
If pressed when viewing the menus, this starts up the selected cycle.
It is used during cycles to confirm that ingredients have been introduced or to confirm the continuing of a process after the Stop button has been pressed. Skip to the next phase by holding it down for a prolonged period during a pause (timer) or in the heating phase.



**WATER DELIVERY**
It can be accessed from any function.
The relevant LED turns on, water delivery is activated for a fixed time of 3' or until Stop or the Water Delivery Key are pressed.

**Water Delivery Time Storage**
If the Water Delivery Button is pressed for approx. 3" (until you hear a "beep") during water delivery, this latter is stopped and the time elapsed since its activation is stored. When the sprayer is used again, the delivery time will be the stored one.
To increase time, use user step U14.



**GELATO PRODUCTION**
By pressing the Gelato Production key the display shows:

| |
|---|
| * GELATO<br>GELATO FRUIT |

Use the Increase and Decrease keys to move the asterisk selecting the required cycle.
The available cycles are:

- Gelato
- Gelato Fruit
- Slush Fruit
- Cool. in Standby

Press OK to activate the selected cycle.




**GELATO DF PRODUCTION**
By pressing the Dry Filling Gelato Production key the display shows:

| |
|---|
| * GELATO DF<br>GEL FRUIT DF |

Use the Increase and Decrease keys to move the asterisk selecting the required cycle.
The available cycles are:

- Gelato DF
- Gelato Fruit DF
- Gelato Milk
- Gelato HOT DF
- G Fruit HOTDF
- Gel Milk HOT

Press OK to activate the selected cycle.



**GELATO HOT PRODUCTION**

By pressing the Gelato HOT Production key the display shows:

| |
|---|
| * GELATO HOT |

Press OK to activate the selected cycle.

In these cycles, when the temperature in the cylinder reaches 104°F, a "WARNING HOT" message is displayed alternated with the set temperature.

| |
|---|
| SET 185 °F<br>MIX 108 °F |

| |
|---|
| WARNING HOT<br>MIX 108 °F |



**EXTRACTION**



The function can be accessed from Gelato and Fruit Gelato cycles only.
In this function the relevant LED turns on, only the slow beating motor is enabled and the display shows a time countdown.

| |
|---|
| TIMER 03:00<br>Speed 1 |

Press STOP or wait 3' (fixed) to stop beating.
From Extraction mode it is possible to access the Cooling extraction function by pressing the Gelato Production key. In this case, the Production LED turns on for 20" fixed; at the end of such time the machine sets back to simple extraction unless the 3 total minutes of extraction have already passed; in this case the machine sets to STOP.

Press the Increase key to activate quick beating. To enable slow beating again press the Decrease key.

## 3.4 GELATO PRODUCTION

After cleaning, sanitizing and completely rinsing the machine right before the use, according to the instructions in sec. 5 Cleaning, make sure spigot door and ice cream outlet spigot door are properly closed and proceed as follows:



### 3.4.1 "Gelato" production

Take the mix, pour the required quantity into the cylinder, through the hopper of spigot door respecting the minimum and maximum quantities indicated in the table under paragraph 1.2.2.
By pressing the Gelato Production key the display shows:

```
* GELATO
  GELATO FRUIT
```

Use the Increase and Decrease keys to move the asterisk selecting the required cycle.
The available cycles are:
- Gelato
- Fruit Gelato
- Fruit Slush
- Cooling in Standby

Press OK to activate the selected cycle.

**Gelato and Fruit Gelato (sherbet) Cycle**

The product is cooled in the cylinder till its consistency value is reached. According to the selected cycle, Gelato or Fruit Gelato, the proper Consistency Set is automatically set.
In case of Gelato cycle the display shows:

```
SET  100
GELATO  005
```

While in case of Fruit Gelato Cycle:

```
SET  060
GEL.FRU  005
```

SET = the consistency to reach (it can be changed using the Increase/Decrease keys)
GELATO and FRU GEL. = the current consistency
Consistency is displayed in real time.
Once the desired consistency is reached (also called Set HOT), the beater keeps running emitting an intermittent sound in order to indicate that the ice cream is ready; from this moment on, the SET cannot be changed.

**Fruit Slush Cycle**

The product is cooled in the cylinder till its consistency value is reached. The display shows:

```
SET  10:00
SLUSH  09:56
```

SET are the total freezing minutes. This time can be changed, during freezing, using the Increase and Decrease keys in steps of 1 minute from a minimum of 2 to a maximum of 20 minutes.
SLUSH is the decreasing time.
The last minute of freezing will only be beating.
At the end of freezing an intermittent beep will be emitted.

**Cooling in Standby**

Press Ice Cream button  and scroll the menu using the Increase and Decrease buttons to move the asterisk next to the required program:

```
  FRUIT SlUSH
* COOL. IN STANDBY
```

confirm with OK.
This function allows storing ice cream residues inside the machine in case of production stand-by times.

### 3.4.2 "Gelato DF" production

By pressing the Dry Filling Gelato Production key, the display shows:

```
* GELATO DF
  GEL FRUIT DF
```

Use the Increase and Decrease keys to move the asterisk selecting the required cycle.
The available cycles are:

- Gelato DF
- Gelato Fruit DF
- Gelato Milk
- Gelato HOT DF
- G Fruit HOTDF
- Gel Milk HOT

Press OK to activate the selected cycle.

**Gelato DF Cycle**

The display will read:

```
Set  qt  00.00
    OK ?
```

Use the Increase and Decrease keys to set the amount of water to deliver in number of liters.

```
Set   qt  01.00
    OK ?
```

Press OK to activate water dispensing. When the counter reaches half the set quantity, dispensing stops and the display shows:

```
    Solids?
```

Press OK to enable the beater and insert the solids (mix powder or paste).
Once the solids have been inserted, the display shows:

```
    End Solidis?
```

Press OK to activate water delivery for the remaining half.
At the end of delivery, the machine sets to Beating, the Beating time can be changed pressing the Increase/Decrease keys from 1 to 4':

```
    Beating
  TIMER  02:59
```

The set time is stored.
At the end of beating, the machine will start the freezing cycle.

```
    SET  100
  GELATO  043
```

**Fruit Gelato DF Cycle**

The cycle is very similar to the Gelato DF cycle but using the Fruit Gelato cycle freezing parameters.

**Milk Gelato Cycle**

The cycle is very similar to the Gelato DF Cycle but displaying the following message:

```
    1/2  Milk ?
```

both at cycle start and after inserting the solids.

**Gelato HOT DF Cycle**
The "HOT" cycles are used for hot processing.

**WARNING**
**In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.**



The cycle is similar to Gelato DF cycle but at the beginning of the cycle the temperature is set:

```
SET  122 °F
OK ?
```

it can be changed using the Increase and Decrease keys, press OK to confirm. Then the display shows the number of liters that can still be changed using the Increase and Decrease keys:

```
Set  qt  00.40
OK ?
```

Press OK to activate water dispensing.
When the counter reaches half the set quantity, dispensing stops and the display shows.

```
Solids?
```

Press OK to enable beating and insert the solids (powders).
Once the solids have been inserted, the display shows:

```
End Solids?
```

Press OK to activate water delivery for the remaining half.
A 3' (+ heating) beating function is activated. The display shows:

```
Beating
TIMER  03:00
```

At the end of delivery (or by pressing OK), the machine sets to Heating:

```
SET  122 °F
MIX  050 °F
```

Once set is reached, the machine sets to Cooling until 39°F

```
SET  039 °F
MIX  124 °F
```

Once 39°F are reached, the machine starts the freezing cycle.

```
SET  100
GELATO  043
```

**Gelato Fruit HOT DF Cycle**
The cycle is very similar to the Gelato HOT Cycle with the Fruit parameters and hot processing.

**WARNING**
**In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.**



**Gelato Milk HOT Cycle**
The cycle is very similar to the Milk Gelato Cycle with the hot processing.

**WARNING**
**In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.**



### 3.4.3 "Gelato HOT" production

Pour the required quantity of mix into the cylinder, through the hopper of spigot door respecting the minimum and maximum quantities indicated in the table under paragraph 1.2.2.
By pressing the Gelato HOT Production key the display shows:

| |
|---|
| * GELATO HOT |

Press OK to activate the selected cycle.

**Gelato HOT Cycle**
Pasteurization cycle with the possibility to set the pasteurization set.




**WARNING**
**In any case, do not touch the door during the heating stage or the stages immediately after, since it can reach very high temperatures.**

The control unit automatically counts the pause time (for example 185°F pause of 1', 149°F pause of 30 minutes).
The display will read:

| |
|---|
| SET 185 °F<br>MIX 068 °F |

On the top there is the temperature to reach and on the bottom the mix current temperature.
Once the heating set is reached, cooling activates and the display shows for example:

| |
|---|
| SET 039 °F<br>MIX 176 °F |

Once 39°F are reached, the machine automatically sets to Gelato cycle and displays:

| |
|---|
| SET 100<br>GELATO 042 |



**WARNING**
**User takes full responsibility for the manual control of pasteurization, complying with prevailing local regulations on mix handling in case they are not pasteurized.**

### 3.4.4 Ice cream dispensing

At the end of the freezing cycle, the ice cream can be extracted from the cylinder as follows:

- Set tub on the support, under the ice cream outfeed chute.
- Turn locking lever to the left (ref. 1).
- Raise lever and spigot door.
- Lock spigot door up by taking lever fully home to the right.
- Select the EXTRACTION function (the speed can be changed using the Increase and Decrease keys).

**SAFETY REMARK**

**The machine sets to STOP after 3 minute of continuous operation in extraction mode in order to avoid early wear of scrapers and cylinder**

### 3.4.5 Using the ice cream dispensing lever

**Locking**

Lock ice cream outfeed by taking lever (ref. 1) fully down and rotating it fully to the right.

**Opening**

Turn lever (ref. 1) to the left by 90°.
Raise lever and spigot.
Lock spigot up by taking lever (ref. 1) fully home to the right.

**Closing**

Repeat the opening procedure in the reverse sequence to close.

### 3.4.6 Spigot door closing cam (ref. 2)

To open:
Push the knob towards the front and pull it to the right.

To close:
Close the spigot door, push the knob to the left and lower it.




### 3.4.7 Using the shower and the shower support

Open the hopper cover, rotate the shower support (ref. 3) and lay it on the spigot door hopper as shown in the figure. Remove the shower (ref. 4) from its seat and insert it in the suitable seat of the shower support.



## 3.5 USER PROGRAMMING



To access user programming with the machine in STOP mode, press the STOP and DECREASE keys at the same time; hold them until the display shows "Manager Menu" and the Software version. Then the display shows the first step of programming and the relevant value.
The values can be changed using the INCREASE and DECREASE keys.

| Step | Display | Notes | U.M. | MIN | MAX | Typical |
|---|---|---|---|---|---|---|
| U01 | Hours | | hr | 0 | 23 | |
| U02 | Minutes | | min | 0 | 59 | |
| U03 | Day of the week | | dd | Sun | Sat | |
| U04 | Day of the month | | dd | 1 | 31 | |
| U05 | Month | | mm | 1 | 12 | |
| U06 | Year | | yyyy | 2000 | 2099 | |
| U07 | Language | Ita, Eng, Fra, Deu, Esp | | Ita | Esp | Ita |
| U08 | Fahrenheit | | Y/N | No | Yes | No |
| U09 | Quart | | Y/N | No | Yes | No |
| U14 | Water Time | | Sec | 015 | 300 | 180 |
| U15 | Timer BackLight | | Min | 000 | 030 | 003 |

U01-U06: Date and time setting.

U07: Language setting

U08: Settings °C (No) / °F (Yes)

U09: Settings Liters (No) / Quart (Yes). 1 Quart = 1136 ml. The liter display is L whereas the Quart display is qt.

U14: Setting of water delivery time from the shower.

U15: Setting of the minutes after which display backlighting turns off with machine set to Stop. It can be turned back on by activating any function, in Programming or pressing OK. If this step is set to 0, display backlighting is always on.

To exit user programming, wait for about 30 seconds without pressing any button or press CLEANING/EXTRACTION to force quit.

# 4. SAFETY DEVICES

## 4.1 SPIGOT DOOR MICROSWITCH



On the closing spigot door of the cylinder, in which the beater unit is located, there is a microswitch which immediately controls machine stop if the spigot door is opened.



**WARNING**
**It is absolutely forbidden to tamper with or eliminate any devices in place to ensure operator's safety.**



**WARNING**
**CARPIGIANI can not be held liable for any loss or damage or injury to persons and/or the machine, in case any safety-related devices are tampered with.**

## 4.2 ALARMS



The machine signals possible alarms by displaying them on line two and flashing the message on the display.
If an alarm was triggered and then reset, the alarm remains visible on the display in a steady way (not flashing).
To delete the message after restoring the alarm, press the Decrease button. If the alarm will not reset, this means it is still active.

Alarms are listed in the table below:

| | |
|---|---|
| **Alarm PR** | Pressure switch<br>This alarm stops the compressor.<br>If pressure switch trips 3 times in a row or if it stays open for 2 consecutive minutes, the machine sets to Stop. The display reads "Alarm PR". |
| **Alarm RTC** | Compressor Thermal Relay<br>When the Compressor thermal relay triggers, all outputs are disabled and the machine sets to Stop. The display reads "Alarm RTC" until the alarm is active. |
| **Alarm RTL** | Slow Beater Thermal Relay<br>When the Slow Beater thermal relay triggers, all outputs are disabled and the machine sets to Stop. The display reads "Alarm RTL" until the alarm is active. |
| **Alarm RTV** | Quick Beater Thermal Relay<br>When the Quick Beater thermal relay triggers, all outputs are disabled and the machine sets to Stop. The display reads "Alarm RTV" until the alarm is active. |
| **Alarm TEC** | "TEC" temperature probe switched off or short-circuited.<br>Alarm enabled in the heating cycles.<br>This alarm triggers machine Stop.<br>As long as alarm is active, none of the above-listed cycles can be started.<br>Check TEC temperature probe and replace it if necessary. |
| **Alarm TES** | TES Safety thermostat<br>When the TES Safety Thermostat trips, the machine enters STOP mode and the display reads “TES Alarm”. |

| | |
|---|---|
| **Spigot Open** | Magnetic Safety Switch (IMS) or Spigot Door Open<br>The machine sets to Stop from any function.<br>In Programming, the open spigot door is not signaled.<br>When the spigot door is closed again "Spigot Door Open" is no longer displayed. |
| **Power On** | Power back on<br>After a blackout the display shows "Power back on".<br>If the machine needs an autodefrost, the alarm appears only for a few seconds and then shows the Autodefrost display. |
| **Timeout Product.** | Timeout Production (Cooling fault)<br>It is triggered when the machine cooling is faulty. If compressor remains on continuously for over 15', during freezing, and HOT does not reach the threshold of the relevant cycle, the machine sets to Stop with displayed "Timeout Prod." alarm. It can be reset by pressing the Decrease key.<br>One of the possible causes for this type of problem could be no gas in the system. |

### 4.2.1 Blackout

In case of blackout, the machine will behave differently based on the function it was carrying out upon blackout.

From the Stop, Clean, Extraction, Production and Dry Filling modes, the machine restarts in Stop mode once the power returns.

From Heating and/or Pause cycle, the machine sets back to Heating and displays "Power back on".

If, upon blackout, the machine was in ice-cream freezing cycle (once back to STOP mode) it will enable (if necessary) the AUTODEFROST function which is cylinder defrost.

From the Cooling mode, the machine sets back to Cooling if the Time/Temp parameters go back to the ones on the Blackout table and the display shows "Power back on".

From the Heating mode, the machine sets back to Heating if the Time/Temp parameters do NOT go back to the ones on the Blackout table and the display shows "Power back on".

Blackout table

| **TEC Temperature** | **Time** |
|---|---|
| >122°F | 30 minutes |
| 120°F ÷ 59°F | 10 minutes |
| 59°F ÷ 50°F | 20 minutes |
| 48°F ÷ 39°F | 2 hours |



**WARNING**

**If the blackout occurs during the heating stage and lasts for over 90 minutes, user takes the responsibility for checking if the product in the machine is still suitable for consumption.**

# 5. CLEANOUT DISASSEMBLING AND REASSEMBLING OF PARTS IN CONTACT WITH THE PRODUCT

## 5.1 GENERAL DESCRIPTION



Cleaning and sanitisation are operations that must be carried out habitually and with maximum care at the end of each production run to guarantee the production quality and respect the necessary hygienic norms.
Giving dirt the time to dry out can greatly increase the risk of rings, marks and damage to surfaces. Removing dirt is much easier if it is done immediately after use because there is the risk that some elements containing acid and saline substances can corrode the surfaces. A prolonged soaking is recommended.

## 5.2 WASHING CONDITIONS



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

## 5.3 SUGGESTIONS



- Use a non-aggressive detergent solution to wash the parts.
- Manually wash the parts in water (max 140°F) using a non-aggressive detergent and the cleaning brushes supplied as standard.
- Use drinking water (bacteriologically pure) to rinse the parts.
- To sanitise leave the disassembled parts in sanitised tepid water for 10-15 minutes (use the sanitising product following the instructions of the manufacturer, the type and concentration of sanitizing agent shall comply with 40 CFR §180.940 for example Kay-5 sanitizer) and rinse them before reassembling.
- When the washing procedure has been completed and before the reassembly of each component dry thoroughly with a clean and soft cloth that is suitable for coming into contact with foodstuffs, to avoid leaving any humidity rich in mineral salts and chlorine that could attack the metal surfaces and leave opaque traces.

**Carpigiani recommends the use of a cleaning/sanitising solution to wash the machine.**
The use of a cleaning/sanitising solution optimises the washing and sanitising procedures in that it eliminates two phases of the procedure (a rinse and a washing phase). In substance the use of a cleaning/sanitising solution saves time by facilitating and simplifying washing/ sanitising procedures.

**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 the parts manufactured in thermoset materials and metal such as sliding shoes, pump gears, beaters, etc. All parts must be integral and not worn, without cracks or splits, or opaque if originally polished/transparent.**
**Carpigiani declines all responsibility for any damage caused by imperfections and/or undetected breakages and not promptly solved by the substitution of original spare parts and is available for consultation and for any specific requests made by the customer.**

## 5.4 HOW TO USE CLEANING/SANITISING SOLUTION

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

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

## 5.5 OUTSIDE CLEANOUT

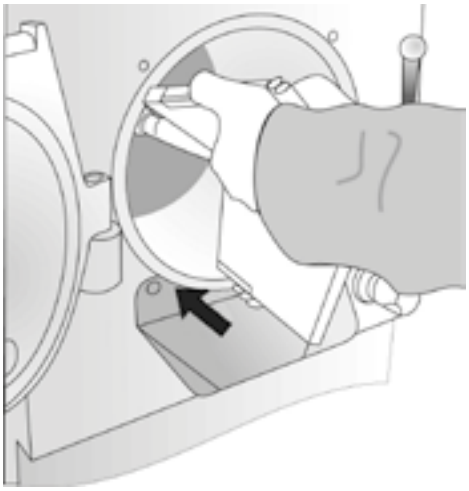
Clean the machine from dust and material its has been strewed with before shipment. Use water only and add a mild detergent, such as soap and a smooth cloth.

## 5.6 PRELIMINARY CLEANOUT

With machine off and beater front lid closed, let water in the barrel.
Select the function **CLEANOUT** and let the beater run the least in order avoid a useless wear of sliding shoes and cylidner.
Drain all water from the cylinder, open its lid so as to remove the beater.

## 5.7 BEATER DISASSEMBLY

Remove the agitator by pulling gently outwards.
Be careful not to damage the scraping palettes and dent the cylinder walls with the agitator shaft.



**WARNING**
**Carry out this operation with utmost care, since beater may be damaged in case it falls to the ground.**

When reassembling the beater, catch it with both hands and push the sliding shoes in order to insert it easily. Push to the beater to the bottom and at the same time let it turn in order to fully insert the beater shaft into its seat.

- Fully disassemble the sliding shoes.
- Withdraw the stuffing box from its seat on the beater shaft.
- Wash all parts with cleaning/sanitizing solution, then rinse.
- Reassemble all parts previously disassembled, minding to grease the stuffing box with a film of edible fat.

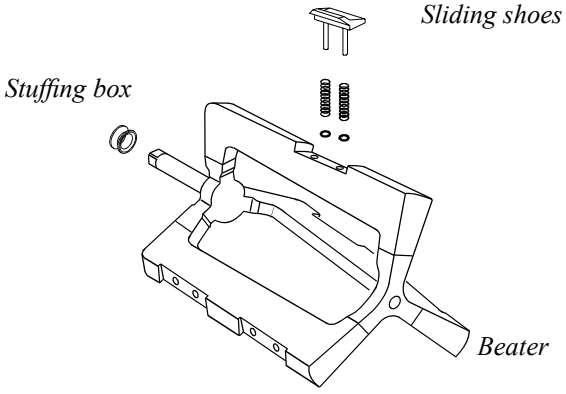



**Fig. 11**

### 5.7.1 Sliding shoes disassembly

Sliding shoes mounted on beater are "self-adjusting". An accurate cleaning secures full working order of the system.

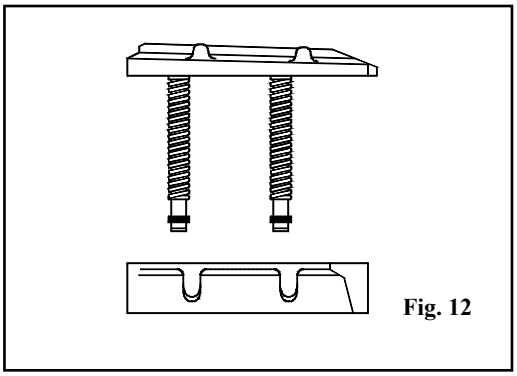


Fig. 12

### 5.7.2 Stuffing box

On disassembling beater also check wholeness of stuffing box; depending on machine operation length, it is necessary to replace it through the spare one to be found in the accessory kit inside machine packing.

- Remove beater assembly
- Remove stuffing box from its seat
- Lubricate spare stuffing box
- Mount the new stuffing box
- Clean and lubricate the old stuffing box and put it away for recovery of its elasticity.

**IMPORTANT**

Stuffing box must be replaced with an original spare part each time ice cream drops are found on withdrawing drip drawer placed at the machine side.
Keeping on operating the machine after finding ice cream drops brings about a bigger leakage from stuffing box, thence a malfunctioning of the machine which consequently affects production.

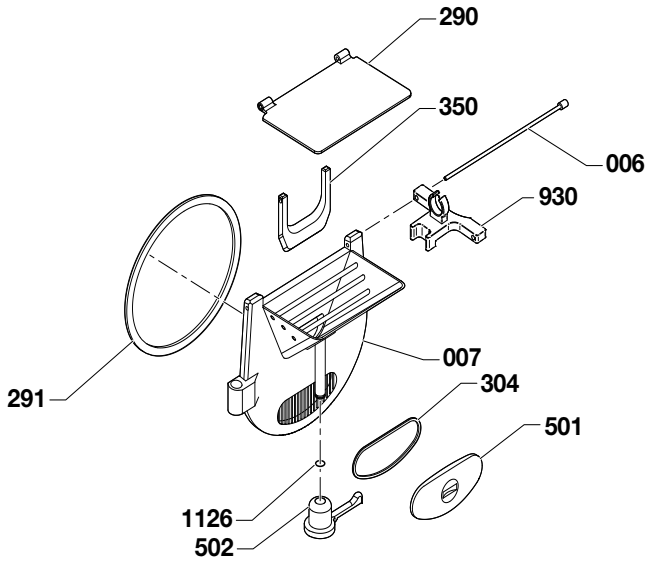
**CAUTION**

When you do not use the machine, leave beater lid open in order to avoid stuffing box buckling.

## 5.8 SPIGOT DOOR REMOVAL

- Lift the lever (pos. 289) locking the spigot door and move it to the right.
- Open spigot door pivoting on the hinge (pos. 362).
- Lift spigot door to remove.
- Remove all mobile parts, including the cylinder seal.
- Wash all removed parts using water and cleaning/sanitizing solution and rinse.
- Reinstall all removed parts taking care to smear with some food-grade lubricant all O-rings and spigot door support shaft pos. 362.




### 5.8.1 Ice cream outfeed spigot removal

- Lift the spigot door (pos. 501) rotating the lever (pos. 502) by 90° on the left.
- Lift lever and spigot door and lock spigot door up by turning lever fully home to the right.
- Now remove the bottom O-ring (pos. 1126) from spigot door pivot and remove it, in this way lever is released as well.
- Remove the O-ring (pos. 304) the spigot.
- Wash all removed parts using water and cleaning/sanitizing solution and rinse.
- Reinstall all removed parts taking care to smear all O-rings with some food-grade lubricant.

### 5.8.2 Hopper cover removal

To clean mix feeding area, with machine stopped, slide out cover retaining shaft (pos. 006) and remove it.

Cover features a small baffle preventing ice cream from going up the hopper, which must be removed and cleaned.

Wash all removed parts using water and cleaning/sanitizing solution and rinse.

**WARNING**

**During assembly of the hopper cover, mount carefully the cover retaining shaft (pos. 6), if mounted in the absence of the dispenser water support (pos. 930), its length may damage the panel front of the machine**



### 5.8.3 Product chute removal

In order to make easier the removal of any ice-cream residue, remove the ice-cream chute using both hands and turn it anti-clockwise so as to release it from its seat.
Wash the disassembled pieces with water and cleaning/sanitizing solution and then rinse



## 5.9 SANITIZATION

- Operation required before each production process.
- With the machine switched off and the beater lid closed, pour the detergent/sanitising solution into the whipping cylinder.
- Press the **"CLEAN"** button and start the **"CLEAN"** programme. Let the machine run for 10/15 seconds.

**WARNING**
**Prolonged operation on the "CLEAN" setting with the cylinder empty or containing water/sanitising solution will cause the beater sliding shoes to wear quickly.**

- Let the detergent/sanitising solution react in the cylinder for the time indicated on the label of the product being utilised.
- Fully drain the detergent/sanitising solution from the whipping cylinder.
- Rinse utilising abundant clean water.

**ATTENTION**
**Do not touch the sanitized parts with the hands, cloths or anything else.**

**WARNING**
**Before starting again with the ice cream production, rinse thoroughly with water so as to remove any residues of the sanitizing solution.**

## 5.10 HYGIENE

Ice cream fat contents are ideal fields for proliferation of mildew and bacteria.
To eliminate them, parts in contact with mix and ice cream must be thoroughly washed and cleaned.
Stainless steel materials as well as plastic and rubber ones used for the construction of these parts and their particular design make cleaning easy, but cannot prevent the growth of mildew and bacteria if not properly cleaned.

# 6. MAINTENANCE

**CAUTION**

**Never put your hands into the machine, either during the operation or during cleaning. Before servicing, make sure the machine has been set in "STOP" position and the main switch has been cut out.**



## 6.1 SERVICING TYPOLOGY

**ATTENTION**

**Any servicing operation requiring the opening of machine panels must be carried out with machine set to stop and disconnected from main switch!**
**Cleaning and lubricatingmoving parts is forbidden!**
**"Repairs to the wiring, mechanical, air supply or cooling systems, or to parts of same must be carried out by qualified personnel with permission to do so and if necessary, according to the routine and extraordinary maintenance schedules as envisaged by the customer with reference to specific intervention methods, according to the use for which the machine is destined".**



**WARNING**

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



Operations necessary to proper machine running are such that most of servicing is completed during production cycle. Servicing operations, such as cleaning of parts in contact with the product, replacing of stuffing box, disassembling of beater assembly are to be carried out at the end of a working day, so as to speed up serving operations required.
Herebelow you can find a list of routine servicing operations:

- **Cleanout and replacement of stuffing box**
  Cleaning should be carried out at the end of a working day, whilst replacement only after checking of stuffing box and in the event product drips inside drip drawer.
- **Cleanout of beater**
  At the end of a working day
- **Cleaning the metal sheets and drip tray**
  To be carried out daily with neutral soap , seeing to it that cleaning solution never reaches beater assembly at its inside.
- **Cleanout and sanitization**
  At the end of each working day, according to procedures described in section 5 of this manual.
- **Sprayer maintenance**
  If there is a water leak from the sprayer, we advice you to replace the seals (ref. 1, 2, and 3) in case they are broken, see the drawing. In order to replace the seals (ref. 1 and 2) it is enough to undo the front white plug. On the other hand, to replace the seal (ref. 3) it is necessary to undo the front white plug and remove the handle pin (ref. 4).





## 6.2 WATERCOOLING

By machines with watercooled condenser, water must be drained from condenser at the end of selling season in order to avoid troubles in the event that the machine is stored in rooms where temperature may fall under 32°F. After closing water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.



## 6.3 AIRCOOLING

Clean condenser, periodically, so as to remove dust, paper and what can prevent air from circulating. For cleanout, use a brush with long bristles or a bolt of compressed air.



**ATTENTION**

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



*NOTE:*

***nevere use sharp metal objects to carry out this operation. Good working of a freezing plant mostly depends on cleaning of condenser.***



## 6.4 ORDERING SPARE PARTS

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

## 6.5 ACCESSORIES KIT

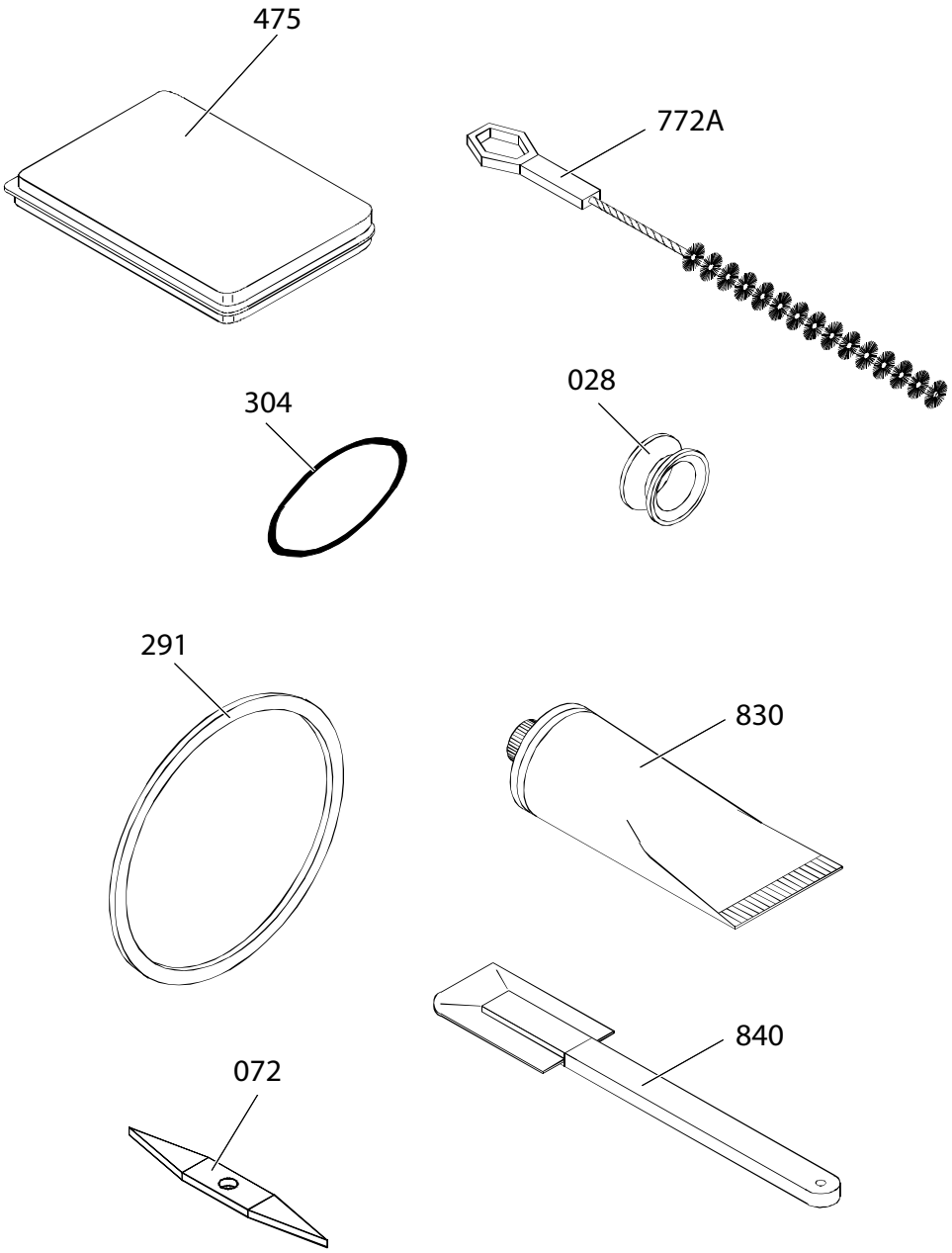



**Fig. 15**

| Description | Position number |
|---|---|
| Beater stuffing box | 28 |
| O-ring extractor | 72 |
| Lid gasket | 291 |
| Door seal | 304 |
| Accessories case | 475 |
| Brush | 772A |
| Food-grade lubrificant tube | 830 |
| Ice cream spatula | 840 |

# 7. TROUBLESHOOT GUIDE



| IRREGULARITY | CAUSE | PROCEDURE |
|---|---|---|
| **Machine does not start** | Machine unplugged. | Check and plug in. |
| | Front lid is not closed well. | Check front lid closure. |
| **Compressor starts and then stops after a few seconds without ice cream being thick** | Watercooled machine: water does not circulate. | Open water tap. |
| | | Check that hose is neither squashed nor doubled up. |
| | Aircooled machine: air does not circulate | Check that rear ofmachine is at least 19,6 in from wall. |
| | | Clean condenser from obstructions. |
| **After 30 minutes processing mix has not frozen and the machine returns to Stop** | No gas. | Check leakage and weld. |
| | Pressure switch has broken down. | Check connection and replace, if need be. |
| **Mix in drip drawer** | Stuffing box missing or ruined. | Install if missing. Replace if ruined. |
| **Ice cream comes out from behind front lid** | Gasket missing or not properly installed. | Check and fix or replace. |