# Soft ice cream dispenser “K 503”
# Equipment Operating Manual

*Manufactured by:*

**Carpigiani**

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| | | |
|---|---|---|
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# Conventional Symbols

**WARNING: ELECTRIC SHOCK HAZARD**
The staff involved is warned that the in observance of safety rules in carrying out the operation described may cause an electric shock.

**WARNING: GENERAL HAZARD**
The staff involved is warned that the operation described may do harm if not carried out in the observance of safety rules.

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

**WARNING**
The staff involved is warned that the in observance of information may cause a loss of data and damages to the machine.

**PROTECTIONS**
This symbol placed by description side means that the operator must use personal protections against an implicit risk of accident.

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

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

**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 damages to persons and things.
Who is in charge of plant safety must be on the look-out that:
- an incorrect use or handling is avoided;
- safety devices must neither be removed nor tampered;
- only original spare parts are to be used especially as far as those components with safety functions are concerned (e.g.:protection micro switches, thermostats).

To achieve the above, the following is necessary:
- an instruction manual relevant to the machine should be available at the working place;
- such documentation must be carefully read and regulations must consequently be followed;
- only adequately skilled personnel will have to be assigned to electrical equipment.

**WARNING**
The machine must be exclusively installed by authorized technicians. When installing the machine, insert a differential magnetothermal protection switch on all poles of the line, adequately sized to the absorption power shown on machine identification plate and with a contact opening of 3 mm at least. This switch is used to cut off the power supply. Any replacement of the power cable must be carried out only by a specialized and authorized technician.

- Never put your hand into the machine, both during production and cleaning operations. Before carrying out any maintenance operation, make sure that the machine is in "**STOP**" position and that the main switch has been cut out.
- It is forbidden to wash the machine by means of a stream of water under pressure.
- Disconnect electrical power before removing any side or rear panel.
- **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.

# REMOVING MACHINE FROM PACKAGING

1. Check the Shock-watch label which indicates whether the goods have been mishandled; inspect the cardboard shipping carton for signs of damage.(see fig. 1).
2. Cut the metal straps (beware of snapping metal), lift the cardboard carton up and off of the pallet (see fig. 2).
3. Remove bag and Styrofoam protection. Inspect the machine again for signs of shipping damage or rough handling. If damage is visible, notify the restaurant manager and/or the shipping company (see fig. 3).


**Fig. 1**

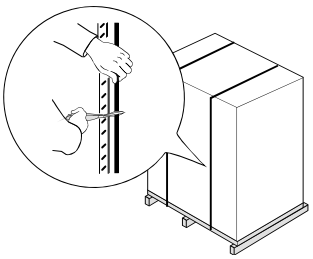


**Fig. 2**

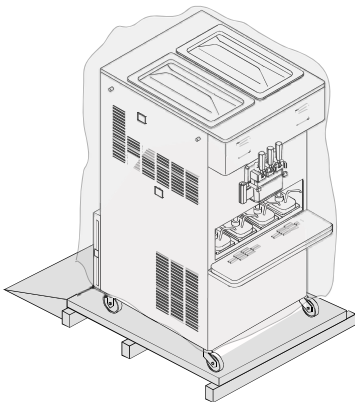
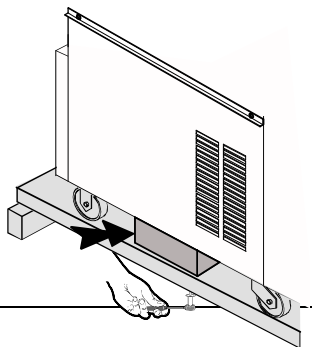


**Fig. 3**

**WARNING**
**Removal from the pallet must be carried out by two qualified persons in material handling and in compliance with the safety rules.**

4. The machine is attached to the pallet by 4 bolts. The bolt heads are on the bottom side of the pallet and they tighten into threaded holes on the bottom of the machine. The two wooden shims, placed sideways under the machine, enable to keep the wheels ¼" of the surface of the pallet (see fig. 4).
5. Now loosen the packing bolts from the bottom side of the pallet, on one side only, and let them drop to the floor. It is not necessary to remove the side panels of the machine to do this (see fig. 4).
6. Slightly, incline the machine on one side and remove the wooden block. Please be careful. The wood blocks keep the machine wheels off the pallet by ¼", therefore their removal will cause the machine to drop that distance (see fig. 5).
7. Repeat the same procedure on the other side.
8. After the removal of the wooden blocks, the machine will directly rest with its wheels on the pallet.
9. In order to unload the machine from the pallet, use the wooden ramps supplied with the machine. Place the wooden ramps against the rear side of the machine and push the machine from the FRONT SIDE moving it to the rear. Two persons, one in front and one in the rear, must handle and control the machine (see fig. 6).



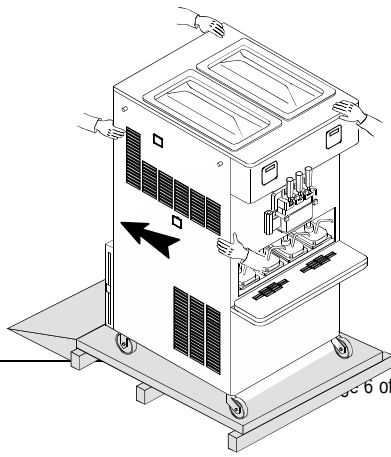


Fig. 4 Fig. 5 Fig. 6

# 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.

# Troubleshooting Bacteria Contamination

Product samples should be taken periodically by a qualified expert in order to assess the bacteria count in the product. The bacteria count in the samples should be below the figures given below:

Standard Plate Count (SPC)……..50,000
Coliform ……10

Should the bacteria counts exceed the figures listed above then there is a source of bacterial contamination. The source of contamination must be identified and corrected. High bacteria counts indicate that a product is not safe for consumption. You must inform the machine operator on how to prevent bacterial contamination of the product.

**Note**: The soft yogurt will have high bacteria counts. This is normal and helps define the product. However, coliform bacteria contamination is NOT ACCEPTABLE in any food product. The information given below will help prevent coliform bacteria contamination problems.

**The following list contains possible bacteria contamination sources along with methods of prevention.**

| SOURCE OF CONTAMINATION | PREVENTION |
|---|---|
| **1 -** Contact with the operator. | **1a -** Wash hands and forearms thoroughly.<br>**1b -** Wear rubber gloves if cuts or skin conditions exist.<br>**1c -** Wash hands periodically throughout the day. |
| **2 -** Mix residue/deposits (milkstone build-up). | **2a -** Use the brushes supplied with the machine.<br>**2b -** Thoroughly brush clean all parts and components to prevent the formation of milk lumps, which will house bacteria and contaminate fresh mix. |
| **3 -** Worn or damaged parts. | **3a -** Lubricate all rubber parts in contact with the mix with a food grade lubricant.<br>**3b -** Inspect o-rings for damage. Only replace with factory approved parts.<br>**3c -** Regularly check drip troughs for excessive leakage. |
| **4 -** Incorrect cleaning and sanitation procedures. | **4a -** The container where cleaning is carried out must be perfectly clean and contain enough solution to cover the biggest component. Brush clean and sanitize the freezer on a regular basis.<br>**4b -** Use the correct brushes, lubricants, and single service towels.<br>**4c -** Store and use chemicals according to the instructions on their labels.<br>**4d -** Use a few good employees to follow the cleaning procedure correctly and consistently. Allow the employee uninterrupted time to complete the cleaning procedure.<br>**4e -** Leave the sanitizing solution in the hopper and in the cylinder for a few minutes.<br>**4f -** Wash and sanitize the lubricant tube after each use. Always replace the cap on the tube.<br>**4g -** Machine components and brushes should be air-dried overnight. Do not put them back in the machine if they are still wet.<br>**4h -** Always follow daily cleaning procedures. Regularly wipe down the outside of the machine and dispensing spouts with a sanitized towel. |

| SOURCE OF CONTAMINATION | PREVENTION |
|---|---|
| **5 -** Improperly stored mix. | **5a -** Use mix stock with oldest date first. Observe expiration dates.<br>**5b -** Place the mix directly in the cooler. Do not stack mix outside or under direct sunlight before placing it in the cooler.<br>**5c -** Always leave one inch between the mix and other products in the cooler to allow air to circulate.<br>**5d -** Mix must not remain at room temperature for long periods of time.<br>**5e -** Hopper storage must maintain a temperature of 40°F (4,4°C). Storage temperatures above 45°F will allow bacteria to multiply to dangerous levels in less than one hour.<br>**5f -** Once the mix is placed in the hopper, the hopper covers must be used to maintain the correct temperature and minimize mix contamination. |

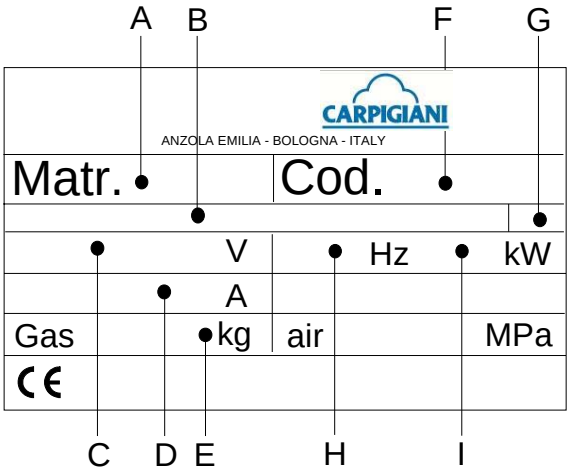
# 1. INTRODUCTION

## 1.1 GENERAL INFORMATION

### 1.1.1 MANUFACTURER IDENTIFICATION DATA

The machine has a plate indicating manufacturer data, machine type and serial number.

***LEGEND:***
**A**= Serial number
**B**= Machine type
**C**= Voltage
**D**= Main switch ampere rating
**E**= Gas type and weight
**F**= Machine code
**G**= Condensation type
**H**= Frequency
**I**= Power input



## 1.2 INFORMATION ABOUT THE MACHINE

### 1.2.1 GENERAL INFORMATION

Electronic, heat-treatment, floor standing machine, for the production and immediate distribution of ice cream having the following main features:

- refrigerated upper hoppers;
- pasteurization system to treat the mix inside the hopper and inside the cylinder during pause periods (only for pasteurizing version);
- electronic consistency control system hard-o-tronic;
- two containers for hot toppings, with heating temperature control;
- two containers for room temperature toppings.

### 1.2.2 INTENDED USE

The **K-503** machine must only be used for the production of ice cream, within the functional limits listed below:

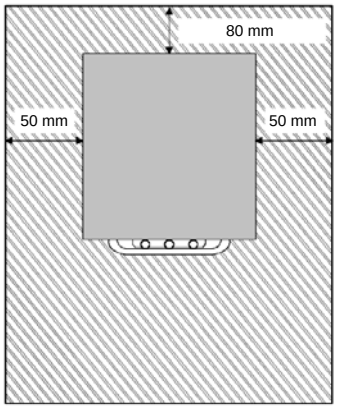
- Voltage: ±10%
- Min. ambient temperature: 50°F (10°C)
- Max. ambient temperature: 109°F (43°C)
- Max. ambient relative humidity: 85%

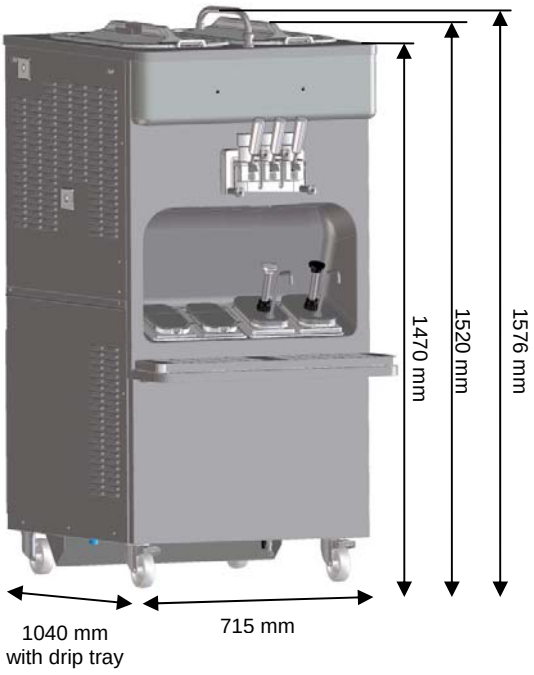
This machine is designed to be used in closed places not subject to explosion-proof standards. As a matter of fact, it shall be used in places complying with normal atmosphere.

### 1.2.3 NOISE

The continuous level of acoustic radiation pressure, which has been weighed and called A on working place, turns out to be lower than 70 dB(A), both by air-cooled and water-cooled units.

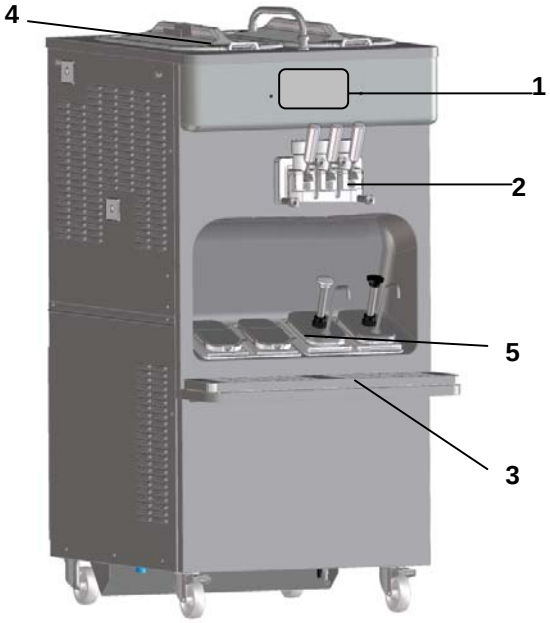
## 1.2.4 TECHNICAL FEATURES




| MODEL | Hourly production * 80 gr. portions | Hopper capacity liters | Flavours | Electrical supply | | | Installed power | Net weight Kg |
|---|---|---|---|---|---|---|---|---|
| | | | | Volt | Phase | Cycle | kW | |
| K-503 | 2 x 430 | 2 x 18 | 2 + 1 | 400 | 3 | 50 | 6 | 398 |

## 1.2.5 MACHINE ASSEMBLY IDENTIFICATION




***LEGEND:***

**1** Control panel
**2** Cylinder front spigot door
**3** Drip tub
**4** Mix hopper cover
**5** Topping area

### 1.2.6 PASTEURIZATION AUTOMATIC CYCLE (ONLY FOR PASTEURIZING VERSIONS)

The machine is pre-set to automatically start the heat-treatment cycle every night at 2 a.m.. The automatic pasteurization can be set at different times (see chapter 2.3 of the Manager Menu, step U09).

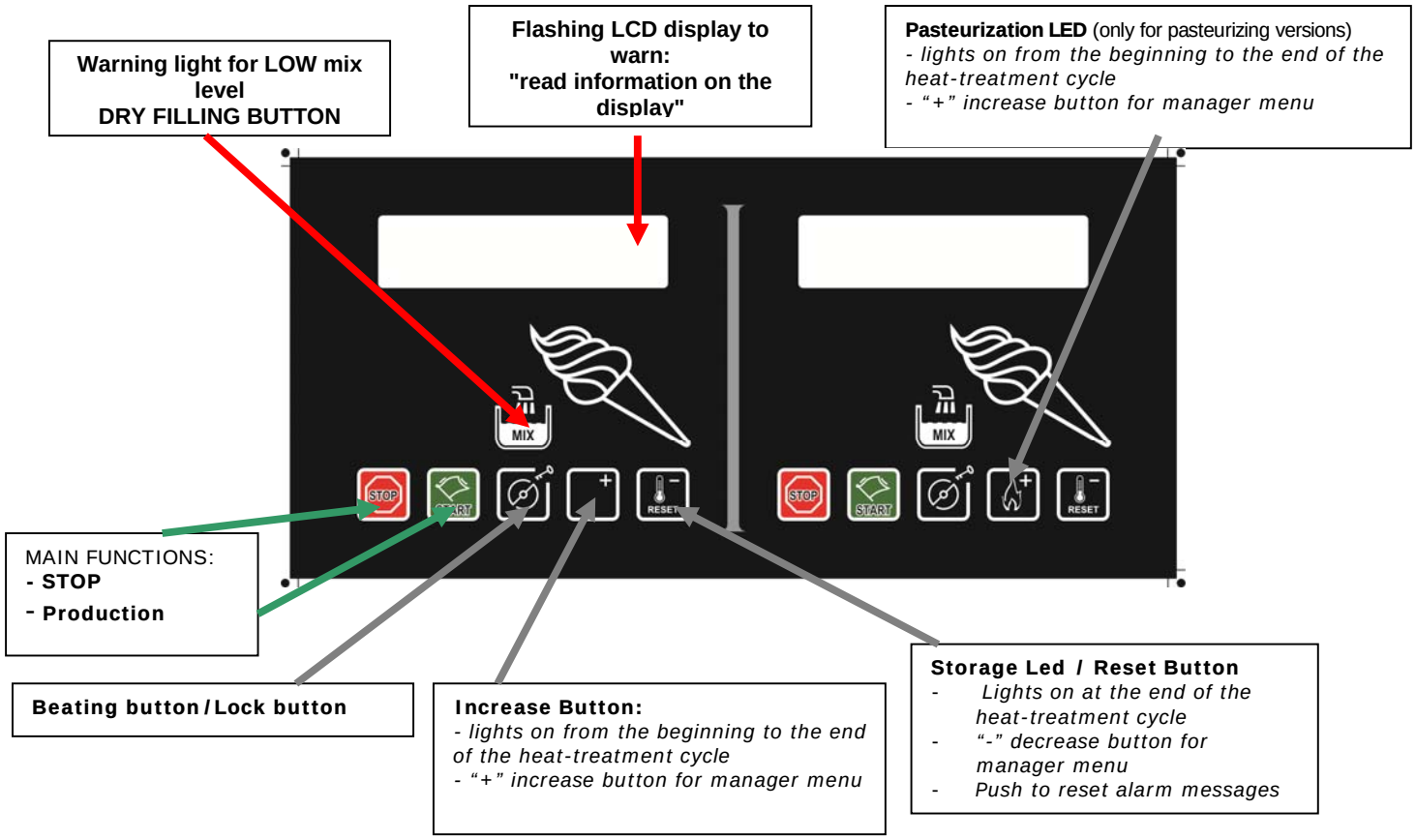
### 1.2.7 TEMPERATURE CHECK (ONLY FOR PASTEURIZING VERSIONS)

1. When the machine is in STOP mode, the temperature in the hopper is checked: if it is equal to or higher than 15°C (59°F) the pasteurization program is enabled.

# 2. INSTRUCTIONS FOR USE

## 2.1 CONTROLS

The **K-503** machine is equipped with a front push-button panels.




**IMPORTANT**
**Push-buttons are activated keeping the finger (not the nail) pressed on it for at least 1/2 second.**

**WARNING**
**TO REDUCE BEATER BLADE WEAR (POS. 430) USE THE BEATER FUNCTION ONLY FOR THE NECESSARY TIME.**

### 2.1.1 FUNCTIONS


**STOP BUTTON**

By pressing this push-button during operation, the machine stops (LED on).

| | DISPLAY | Notes |
|---|---|---|
| | 10:33:21 Fri | When the machine is in STOP, the display shows Time and Date. |
| | 10:33:21 Fri<br>Overload Beater | In case is an ALARM activated, the backlight of the LCD display will flash, and the display indicates the kind of ALARM. |


**START / PRODUCTION BUTTON**

Press START button to start the production mode (LED on). The motor and compressor are automatically controlled by HARD-O-TRONIC system.

By pressing this button from STOP, the display indicates:

| KEY | DISPLAY | Notes |
|---|---|---|
| 1  | Do Not Serve !<br>Wash In 14 days | When the soft ice cream is not ready, the display shows: "DO NOT SERVE". |
| | Sundae Ready !<br>Wash In 14 days | When the soft ice cream has reached the desired consistency the display shows “READY“. |
| | Do Not Serve !<br>Overload Beater | In case of ALARM, it will be displayed on the second row. |
| 2  | Hopper 🡻 +14°C<br>Cylinder 🡻 +13°C | While in Production mode, it’s possible to go to the next page of the display by pushing PROD key. Temperatures are indicated. |
| 3  | Set=090 Hot=085<br>MIR = 0 | Pushing PROD again, we move to the next page showing actual consistency and the SET to be reached. The second row shows MIR = 0 when the handle is closed and MIR=1 when the handle is opened. |
| 4  | Cones today<br>1543 | Pushing PROD again, we move to the next page showing the cones today counter. |
| 5  | Total Cones<br>123456789 | Pushing PROD again, we move to the next page showing the total cones counter. |
| 6  | TEV=+10 TGV=-22<br>TEC=+13 TE1=-12 | Pushing PROD again, we move to the next page showing the temperature in the hopper and in the cylinder. |
| 7  | TET=+60 | Pushing PROD again, we move to the next page showing the actual Topping temperature. |

Pushing PROD again, we move to the next page that is the first page.

**HOT TOPPING**

In PROD. function the hot topping container is heated automatically to reach the desired temperature. In case the water level in the bainmarie is too low the display will indicate an alarm in order to refill with water.

**BEATING BUTTON**

By pressing this button from STOP, the led turns on. The beater and the mix pump motor get ON until you press STOP or after 3 minutes. The display indicates:

| KEY | DISPLAY | Notes |
|---|---|---|
| 1  | HOT=58 TEC=+13<br>Beater + Pump ON | **Pushing one time this button**, the beater motor and the mix pump motor will turn ON. |
| 2  | HOT=58 TEC=+13<br>Pump ON | **Pushing a second time this button**, the beater motor will STOP whereas the mix pump remains ON. |
| 3  | HOT=58 TEC=+13<br>Beater ON | **Pushing a forth time this button**, the beater pump will STOP whereas the beater turns ON. |
| 4  | HOT=58 TEC=+13<br>Beater + Heating | **Pushing a forth time this button**, the cylinder is heated up to the Set value (default 30°C) in order to melt the ice cream before cleaning. |

**LOCK BUTTON**

To clean the keyboard panel with a clean towel it is recommended to block the keys of the keyboard as follows:

Push for 3 seconds  button, the respective LED will flash indicating that the keyboard is blocked. At this stage you can clean the keyboard without any risk. To reactivate the keyboard push for 3 seconds  button, the LED will get off.

**PASTEURIZATION FUNCTION / INCREASE FUNCTION** (only for pasteurizing version)

**The heat-treatment function can be activated only if the mix in both hoppers is above the Medium Level ("ADD MIX" message on display must be off).**

***AUTOMATIC HEAT-TREATMENT CYCLE:*** while the machine is in production (both sides - LED on) and the mix is above the medium level in both sides, the heat-treatment cycle starts automatically at a certain time (as programmed in the Manager Menu normally at 2:00 AM).

While the display indicates "HEAT-TREATMENT CYCLE" the mix in the hopper and in the cylinder is heated up to 68°C, kept at 68°C for 30 minutes and then cooled down to the storage temperature.

When both sides reach the storage temperature, the display shows **"PASTO END"** followed by date and hour of termination. The machine passes automatically to STORAGE function.

To serve soft ice cream, press STOP then the PROD button.

***Note: once the heat-treatment cycle has started, it can't be interrupted. The complete heat-treatment cycle will take less than 4 hours to be completed.***

***During the heating and Pause cycles, the mix in the machine is very hot. Do not attempt to draw mix or disassemble the machine.***
***The heat-treatment cycle is performed on both sides simultaneously. It is not possible to perform heat-treatment in one side only.***

**WARNING**
**Do not draw soft ice cream or disassemble the machine during the heat-treatment because the product is very hot and under pressure.**

This button is also used to start a heat-treatment cycle manually on both sides (left and right).

This button is used to increase the value in the manager menu or water quantity setting.


**STORAGE / DECREASE FUNCTION / RESET ALARM MESSAGES**
The Storage Led lights ON as soon as the heat-treatment cycle ends. The machine preserves the mix at the storage temperature in the hopper and in the cylinder.
- This button is used to decrease the value in the manager menu.
- This button is also used to RESET the ALARM MESSAGES on the display.
- This button is also used to start a STORAGE cycle manually on the desired side (left or right).


**DRY FILLING BUTTON**
A Dry Filling cycle can only start from Production.
The cycle is enabled with mix below Medium or Low levels.

**Production with mix below medium level and low level covered**

1. The display will read:

| **Add Mix** |
|---|

An intermittent acoustic signal is activated.

Press the DF key 

.
The Increase and Decrease keys turn on and the display shows:

| **Liters 00.10** |
|---|

The quantity of water can be modified pressing the Increase  and Decrease 

keys in steps of 0.05 liters, within 5" after the DF key is pressed.
If no key is pressed for 10", quantity selection phase will be quit and the display goes back to the previous screen.

2. Confirm water quantity of water with the DF key 


3. Now water dispensing starts. The procedure can be interrupted at any time by pressing STOP.

4. At the end of water dispensing, there is a first mixing phase.
Fast beating in the hopper is enabled for a set time. The display will show the timer decreasing on the second line:

| Dry Filling<br>Please Wait 2:59 |
|---|

The procedure can be interrupted at any time by pressing STOP.

5. At the end of the first mixing phase, there is a second mixing phase.

6. At the end of mixing, DF ends. The machine goes back to standard Production.

**Production with mix below low level**

The display will read:

| Carry out Dry<br>Filling |
|---|

An intermittent acoustic signal is activated.

The Dry Filling phases are the same described before, but with the following differences:

- Production is never enabled and at the end of the DF procedure the machine will automatically Stop
- The quantity can be modified in steps of 0.10 liters.
- During the second mixing phase (phase 5) Production is not enabled and the display will show:

| Dry Filling<br>Mix 7:59 |
|---|

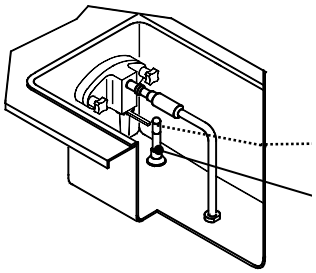
When the timer times out, beating is disabled and the machine will Stop.
During this phase if the medium level is not covered an intermittent acoustic signal is activated

.


**MIX LEVEL SIGNAL**
Every hopper features 2 level sensors: MEDIUM level and LOW level.
- When the MIX LEVEL LED flashes, it means that the mix level in the hopper is lower than the medium mix level sensor.

- When the MIX LEVEL LED is on, it means that the mix level in the hopper is lower than the minimum mix level sensor.

The display indicates ADD MIX or MIX OUT




When the LCD back light is blinking, that means an alarm has tripped.
When the alarm has reset, the back light of the LCD display becomes solid on. Reset the indication on the display by pressing RESET button 

.

## 2.2 EVENTS

In order to read the events, the machine should be in STOP then push 

until ****READ EVENTS**** is displayed.

| | | |
|---|---|---|
| | 02:00:00 06 APR<br>START PASTEUR. | |

The first event will appear on the display. Push  or 

in order to scroll UP or DOWN the events list.

Push 

to exit the events reading and go to STOP.

## 2.3 GEAR REPLACEMENT

The machine counts the number of portions served. When this counter reaches a SET value, then a message will appear on the display (every time you pull down the handle) in order to remind you that you should change the gears of the mix pump. The gears are considered as parts subject to wear so they must be replaced regularly as suggested on the display.

## 2.4 MANAGER MENU

1) To access the manager menu push simultaneously both keys 

and 

**then release immediately.**

On the display you will read the first step of the Manager Menu:

| | |
|---|---|
| | step U01<br>Hour 10 |

The first row indicates the step number, and the second row indicates the description and value.

2) Push  or 

in order to increase or decrease the value.
3) Push STOP to move to the next step.
4) To exit the Manager Menu push BEATING key  .

The following table illustrates all the steps of the manager menu:

| Step (first row) | Display ENG (second row) | Min | Max | **Default** |
|---|---|---|---|---|
| U01 | Hours | 00 | 23 | |
| U02 | Minutes | 00 | 59 | |
| U03 | Day of Week | Sun | Sat | |
| U04 | Day of Month | 01 | 31 | |
| U05 | Month | Jan | Dec | |
| U06 | Year | 2000 | 2099 | |
| U07 | Language | Dut | Por | **Chi** |
| U08 | Start Prod. Time | 00 | 23+no+ auto | **08** |
| U09 | Pas-M/Sto-S Time | 00 | 23+NO | **02** |
| U10 | HOT 1 | 000 | 120 | **100** |
| U11 | Set Topping | 000 | 070 | **055** |

**Note**: The STEP U09 value must be set to the same value in both sides of the machine.

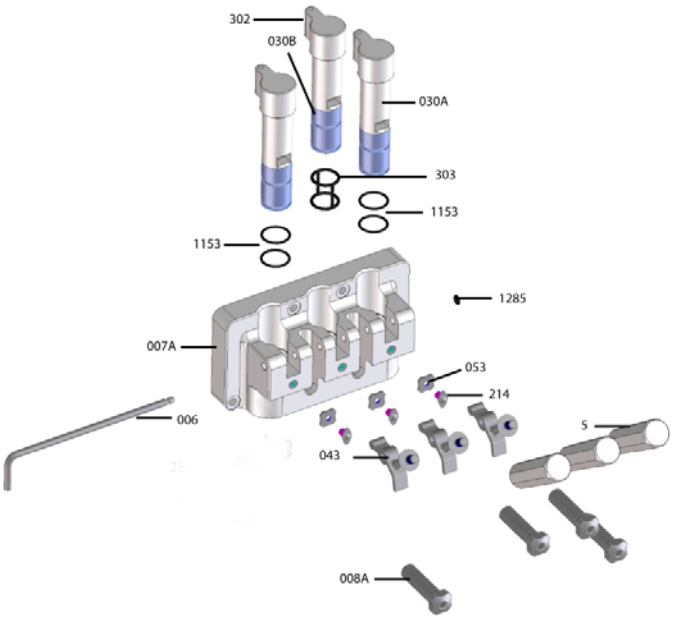
***THE MACHINE IS READY FOR START-UP ONLY AFTER IT HAS BEEN PERFECTLY CLEANED AND SANITIZED.***

***FOR HYGIENIC AND SAFETY REASONS, HANDS SHOULD NEVER BE PLACED INSIDE THE MIX HOPPER DURING THE MACHINE OPERATION.***

## 2.5 OPERATION

### 2.5.1 ICE CREAM DISPENSING

In order to dispense soft ice cream, place a cup or a cone under the spout and slowly pull down the dispensing handle. As soon as the soft ice cream comes out, twist the cup or the cone to make a nice shape ice cream.
When the portion has reached the desired size, close the dispensing handle and quickly pull the cone or the cup down in order to sharpen the tip.




### 2.5.2 DISPENSING SPEED

The flow of ice cream coming out from the spigot door can be controlled by regulating properly the bolt and nut (no. 056 and no. 214). The nut blocks the bolt in its positions.

- If you want to **increase** the dispensing speed unscrew the nut to release the bolt, then **screw** the bolt so that the handle opens more, then block the bolt.

- If you want to **decrease** the dispensing speed unscrew the nut to release the bolt, then **unscrew** the bolt so that the handle opens less, then block the bolt.

## 2.6 PROGRAMMED CLEANING CYCLE

The machine is equipped with an **automatic system** that calls for washing of the parts in contact with the product at least **every 14 days (or 3 days for no pasteurizing versions).**

In PROD. the second row of the display indicates the days remaining to the next cleaning.

```
Sundae Ready !
Wash in 14 days
```

## 2.7 POWER ON

In the event of Power On, if the machine was:

- in Cleaning mode, when the power is supplied again, it sets to STOP.
- in Pasteurization Heating phase or Pause during Pasteurization (only for pasteurizing versions) or Production, when power is supplied again, the machine will continue with the function it was performing when the blackout occurred (the display will show the message Power On).
- In Pasteurization Cooling mode (only for pasteurizing machines), when the power is supplied again, the machine checks the temperature in the hopper and the duration of the blackout; if the time is greater than certain parameters, the machine will completely repeat pasteurization, memorizing the message "Power On" in the "event log"; otherwise, it will set to the function in which it was before the blackout.
- In Production or Storage mode, the machine checks the temperature of the hoppers. If the temperature is below the one set by the manufacturer, the machine sets to the function in which it was before the blackout; or the machine checks the temperature in the hopper and the time the blackout lasted. If it lasted as long as indicated in the table below, the machine completely repeats pasteurization and "Power On" is memorized in the event log.
-

| TEV Temperature | Time |
|---|---|
| 68°C ÷ 50°C | 30 minutes |
| 49°C ÷ 15°C | 10 minutes |
| 14°C ÷ 10°C | 20 minutes |
| 9°C ÷ 4°C | 2 hours |

**WARNING**

**If a blackout exceeds four hours, to avoid health hazards in the dispensed product, it is ary to disassemble, to wash, to rinse and to sanitize the machine as indicated in Section 7 of this manual.**

# 3. DAILY CLOSING PROCEDURES

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

**PREPARE THE MACHINE FOR THE OVERNIGHT HEAT-TREATMENT CYCLE** (only for pasteurizing versions)

1. Open the hopper covers to verify the mix level.
2. Fill the hopper with sundae mix (or make a dry filling) to the Max level. The “ADD MIX” message on the display must be off.

**DO NOT FILL ABOVE “MAX LEVEL”.**

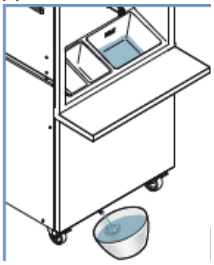
3. Keep the machine in “PRODUCTION” Mode (green button light ON).

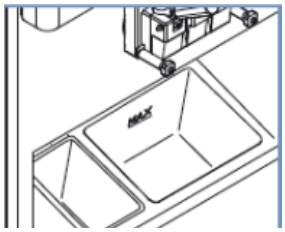


**WARNING**
**If the mix in one of the two hoppers is below the medium level ("ADD MIX" message on the display), the heat-treatment cycle will not start in both sides.**

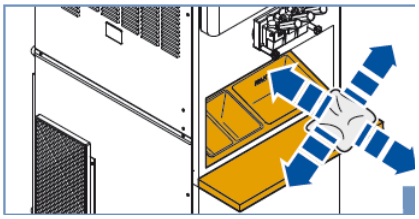
**TOPPING PUMPS CLEANING**

4. Remove topping containers and pumps.
5. Open the drain shut-off valve to drain the water in the hot topping hopper.





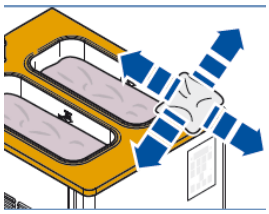
6. Use the clean and sanitized towels to clean the topping area.



**DISASSEMBLE AND CLEAN THE COMPONENTS**

7. Remove hopper covers. Wash, rinse and sanitize them at the sink.

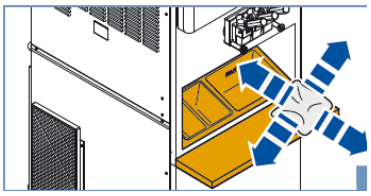
8. Using a clean, sanitized towel, carefully wipe the outside area and the rim of the hoppers. Make sure that no debris falls into the hopper.



9. Place back the sanitized hopper covers on the machine.

10. Remove the drip tray and the two drip trays from the sides of the machine. Wash, rinse, sanitize and dry them at the sink.

11. Clean the shelf under the drip tray with a clean sanitized towel and place back the drip tray and the drip drawers to their positions.



**CLEAN THE SPIGOT DOOR AREA.**

12. Fill an empty pail with Sanitizer prepared in water 70-90°F (21-32°C) (follow the instructions of the sanitizer manufacturer).
13. Return to the machine with a small amount of sanitizer solution in a pail.
14. Dip the door spout brush in the pail of sanitizer and brush clean the dispensing spouts.
15. Spray the sanitizing solution on the dispensing area and on the spigot door, under the piston lid and all around the spigot door.
16. Clean the spigot door with a sanitized cloth as well as the front panel area around the spigot door and all the surrounding areas.

***NOTE:***
*when cleaning the keyboard panel with a clean, sanitized towel it is recommended that you lock the keys of the keyboard as follows.*

*Press the*  *key for five seconds. Its LED will flash indicating that the keyboard is locked. At this stage you can clean the keyboard without any risk. To unlock the keyboard press the*  *key for another five seconds and the LED will turn off.*


# 4. DAILY OPENING PROCEDURES

Only for pasteurizing version:

- Check that the heat-treatment cycle has been successfully completed and both displays indicate the message "PASTO END", followed by the time and day of completion.
- If the heat-treatment cycle was not successfully completed the machine will be locked down. Check the reason by reading the alarm messages and press 

to reset the message on the display. Press the STOP button of the both sides and then the PROD button of the both sides to run a manual heat-treatment cycle. If the heat-treatment cycle is successfully completed, the lockdown resets automatically and the machine is ready to start production. No product can be dispensed during the heat cycle (approximately 4 hours).

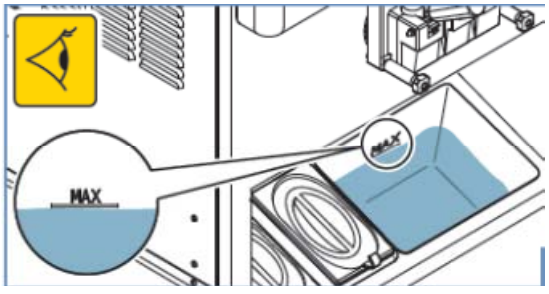

Make sure your hands are clean and sanitized before performing the following procedures.

### SANITIZE THE DOOR AREA

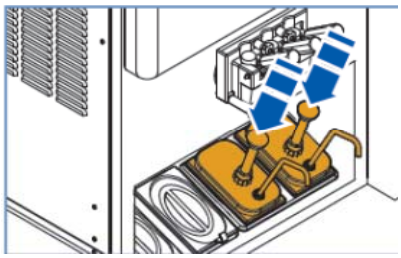
- Fill an empty pail with Sanitizer prepared in water 70-90°F (21-32°C) (1 package in 2-1/2 gallons (9-1/2 liters) of water = 100 PPM] and mix the powder).
- Return to the machine with a small amount of sanitizer solution in a pail
- Soak the brushes in the sanitizing solution and rub the spigot door dispensing area, the spigot door itself, the lever area and all around the spigot door including the dispensing spouts.
- Spray the spigot area and spigot spouts with sanitizer.
- Wipe exterior of machine with clean sanitized towel.

### PREPARE THE HOT TOPPING

- Make sure that the drain tap is closed then refill hot-topping bainmarie with clean water to reach the level indicated. Fill in the hot topping hopper with water until the indicated level is reached. Inside the topping hopper there is a level sensor, and when the water level is low, an alarm appears on the display until the proper level is restored.




- Refill containers with toppings if needed.
- Place back the topping covers and the pumps (press the dispensing pistons and remove the first product dispensed). As soon as the machine is in PROD and the water level is sufficient the topping heaters will automatically turn on.



- As soon as the machine is in PROD and the water level is sufficient the topping heaters will automatically turn on.

**START THE MACHINE**

The machine is in STORAGE function. Push STOP and PROD to start the machine. Within a few minutes the sundae is ready to be served.


# 5. CLEANING OF PARTS IN CONTACT WITH THE PRODUCT

**IMPORTANT**

*Cleaning and sanitation must be carried out at the end of every working day as a habit and with utmost care in order to guarantee the production quality in the observance of necessary healthy rules.*

If dirt is left enough time to dry out, this increases the risk of stains, marks and damage to surfaces. Removing dirt is much easier if done immediately after use. Since there is also a risk that some elements containing acid or saline substances can damage the surfaces, prolonged soaking is not recommended.

**WARNING**

**Never use solvents, alcohol, or detergents that can damage the machine parts or pollute production functional parts.**

Never use powder or abrasive cleaning products, scourers or pointed tools when cleaning by hand. There is a risk of leaving the surfaces opaque or of removing or weakening the protective film on the surface, scratching it.
Never use metal or synthetic scouring pads under any circumstances to prevent any abrasion or removal of ferrous parts leading to problems of surface oxidation or weakening.

Do not use detergents containing chlorine or chlorine compounds; using these detergents, which include bleach, ammonia, hydrochloric acid and scale removers can attack the steel compound used, causing it to stain or oxidize permanently.

At the end of washing and before refitting any parts, always dry them with a clean, soft cloth that is suitable for use with foods; since any type of moisture with a high mineral or chlorine content can attack metal surfaces and leave opaque traces.

# 6. WEEKLY CLEANING

***On a weekly basis, certain machine parts must be disassembled, washed, sanitized and re-assembled. The following is the list of operations to be performed weekly in addition to the regular daily cleaning procedure.***

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

## 6.1 WASHING AND SANITIZING OF THE TOPPING CONTAINERS

### 6.1.1 CLEANING THE TOPPING CONTAINERS:

a) Remove the topping pumps and containers from the machine and take them to the sink.
b) Discard the toppings weekly to break the bacterial cycle.
c) Wash the containers thoroughly with detergent and hot water 122-140°F (50-60°C), eliminating any product residue.
d) Place the containers into the Sanitizer solution prepared in water 70-90°F (21-32°C) for 1 minute (follow the instructions of the sanitizer manufacturer).
e) Make sure that the containers are empty and leave them out to air-dry.

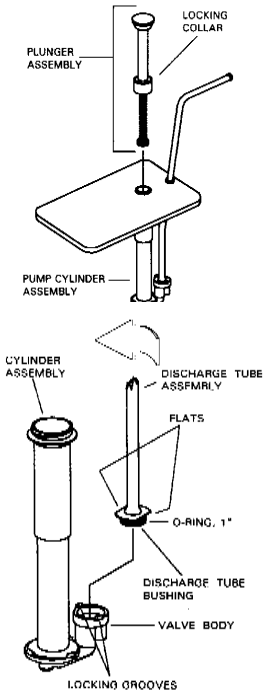
### 6.1.2 CLEANING THE TOPPING HOPPER

a) Place an empty container under the drain shut-off valve inside the syrup cabinet.
b) Open the shut-off valve and drain the water completely from the topping hopper (warning: water is hot).
c) Close the shut-off valve.

## 6.2 DISASSEMBLY, WASHING AND SANITIZING OF THE HOT TOPPING PUMPS

**Clean the hot-topping pumps:**

place the lower end of the pump into a container of clean warm water and operate the pump until the water being discharged is clear.




- **DISASSEMBLY**

**STEP 1**
Loosen the locking collar until the plunger assembly can be removed from the pump cylinder.

***NOTE***
*The plunger spring is slightly compressed so use care when removing the knob.*

**STEP 2**
Remove the discharge tube assembly by rotating it counterclockwise until the flats on the discharge tube bushing clears the valve body locking grooves, then carefully pull the discharge tube assembly from the valve body.
**STEP 3**
Separate the O-ring from the discharge tube bushing by squeezing on the O-ring and sliding it in the bushing groove until the O-ring can be rolled out from the groove.
**STEP 4**
Remove the cylinder assembly from the valve body by applying down pressure on the cylinder assembly while rotating it counterclockwise direction until the tabs of the cylinder assembly clear the locking grooves on the valve body.
**STEP 5**
Remove the O-ring from the valve body.
**STEP 6**
Place all parts in a clean container.

- **WASHING**

***NOTE***

*DO NOT use tools that can scratch polished surfaces. Do use clean and sanitized brushes.*

**STEP 1**

Wash all pump components in the detergent and hot water 122-140°F (50-60°C).

**STEP 2**

Rinse them with clear water. Use the supplied brushes to clean the discharge tube assembly and the valve body. It is recommended that the small parts be washed in a pan or other container so they will not be lost.

**STEP 3**

Sanitize the pump components immersing them in a container with Sanitizer prepared in water 70-90°F (21-32°C) and please wait for 1 minute (follow the instruction of the sanitizer manufacturer).

**STEP 4**

Allow the pump parts to air-dry after sanitizing.

- **REASSEMBLY**

**STEP 1**

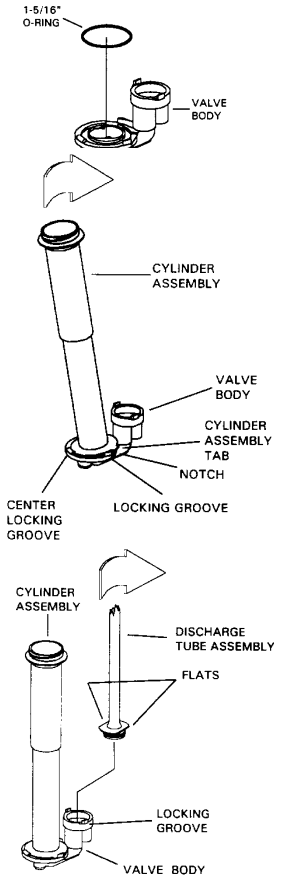
Lubricate and position the knob O-ring in its groove on the knob. Set the knob aside.

**STEP 2**

Assemble the washer, the spring, the head insert, and the head tube on the piston and stem assembly.

**STEP 3**

Slip the gaging collars (if they are used) onto the head tube, then place the locking collar on the head tube.




**STEP 4**

Hold onto the head tube and push the piston and stem assembly into the head tube, compressing the spring. When the threaded end of the stem projects through the head tube, thread the knob onto the piston and stem assembly.

**STEP 5**

Set the assembled plunger assembly aside.

**STEP 6**

Lubricate the O-ring with approved lubricant and install the O-ring in its groove on the discharge tube assembly bushing. Temporarily set the discharge tube assembly aside.

**STEP 7**

Lubricate the O-ring with food grade lubricant and install the O-ring in its groove in the valve body.

**STEP 8**

Align the tabs on the cylinder flange with the notches in the valve body. Tilt the cylinder assembly slightly and slide the widest section of the flange under the center locking groove of the valve body. Rotate the cylinder assembly clockwise while applying down pressure on the cylinder assembly until the flange tabs fully engage the locking grooves of the valve body.

**STEP 9**

Position the discharge tube assembly on the valve body, aligning the flats on the discharge tube assembly bushing with the locking tabs on the valve body. Push down on the discharge tube assembly until it is seated. Rotate the discharge tube assembly clockwise to lock it in place.

**STEP 10**

Slide the lid onto the discharge tube assembly and the cylinder assembly and secure the lid with the discharge tube nut.

**STEP 11**

Apply food grade lubricant to the discharge fitting O-ring and install the O-ring on the discharge tube fitting. Install the fitting in the discharge tube by pushing the fitting into the discharge tube and rotating it in a clockwise direction.

**STEP 12**

Apply a small amount of food grade lubricant to the seal flare, install the plunger assembly in the pump body assembly, and tighten the locking collar.

## 6.3 CHECK TOPPING PUMP TEMPERATURE AND VOLUME

***NOTE:*** *this procedure should be performed on a morning after the pumps were disassembled and cleaned.*

**STEP 1**
Dispense one serving of topping into a soft ice cream cup. Discard this sample.
**STEP 2**
Dispense second serving into a soft ice cream cup.
**STEP 3**
Insert the digital thermometer into the topping. Let the digital thermometer stabilize for 20 seconds.

***NOTE****: topping temperature should be between 115° and 125°F (46° and 52°C) and must be this temperature before the pump calibration can begin. Water bath temperature should be between 135° and 145°F (57° and 63°C).*

**STEP 4**
If the temperature is too cold or too warm, call service to adjust.
**STEP 5**
Hold the small chamber of the calibrating cup under the dispensing nozzle.
**STEP 6**
Push the dispensing handle down for one full stroke. The topping should be directed to the bottom of the calibrating cup.Do not allow the topping to fall on the sides of the cup.

***NOTE****: The amount of dispensed topping should be one fluid ounce (29.6 ml).*

**STEP 7**
If the amount of dispensed topping is not correct, consult the troubleshooting section of your equipment manual.
**STEP 8**
Repeat for the other topping pump.

# 7. CLEANING EVERY 14 DAYS

**After at least every 14 days (or 3 days for no pasteurizing version) from the last brush cleaning, the machine must be thoroughly washed and restarted. This system inhibits the production function at the end of the 14th day. Every time product is dispensed the display indicates the number of days to the next scheduled cleaning.**
**The following is the list of operations to be performed on the 14th day in addition to the regular daily and weekly cleaning procedure.**

**NOTE**
**MAKE SURE YOUR HANDS ARE CLEAN AND SANITIZED**

## 7.1 DISASSEMBLING AND CLEANING

### 7.1.1 DRAINING AND CLEANING THE ICE CREAM

Remove the covers to wash rinse and sanitize.
**Drain the machine.**
**STEP 1**
Place an empty pail under the SOFT ICE CREAM spouts.
**STEP 2**
Push the “STOP” button.
**STEP 3**
Pull the dispensing handles and drain the ice cream.
**STEP 4**
Press the  key.
**STEP 5**
When the product coming out becomes liquid, push the “STOP” button and leave the spouts open.
**STEP 6**
**Remove the pressure tubes**
In the hoppers, disconnect the pressure pipes from the mix pumps, turn then counter clockwise and pull them up to remove them from their seat and let the product flow completely out.
**Remove the mix pumps:**
Grasp the pumps and turn them in a clockwise direction of 45° then pull them out towards you. Make sure that the pumps drive shafts and seals are taken out with the pumps.
**Remove the mix beaters:**
Remove the beaters by pulling them upwards.
**STEP 7**
**Rinse the machine**
Close the dispensing handles, pour 2.5 gallons (9.5 liters) of cool, clean water into the mix hoppers.
Use the white hopper brush to scrub the mix hopper, mix level sensor and the outside the beater shaft. Use the small brush to clean the mix inlet hole and the drive hub of the mix pump.
**Drain rinse water from hopper and cylinder**
Place an empty pail under the spout. Open the dispensing handles and let the water drain out.
**STEP 8**
Rinse with warm water until the solution runs clear.
**STEP 9**
Press  button and let the beater run for 10 seconds.
**STEP 10**
Turn the machine off by pushing the “STOP” button and let the water flow out.

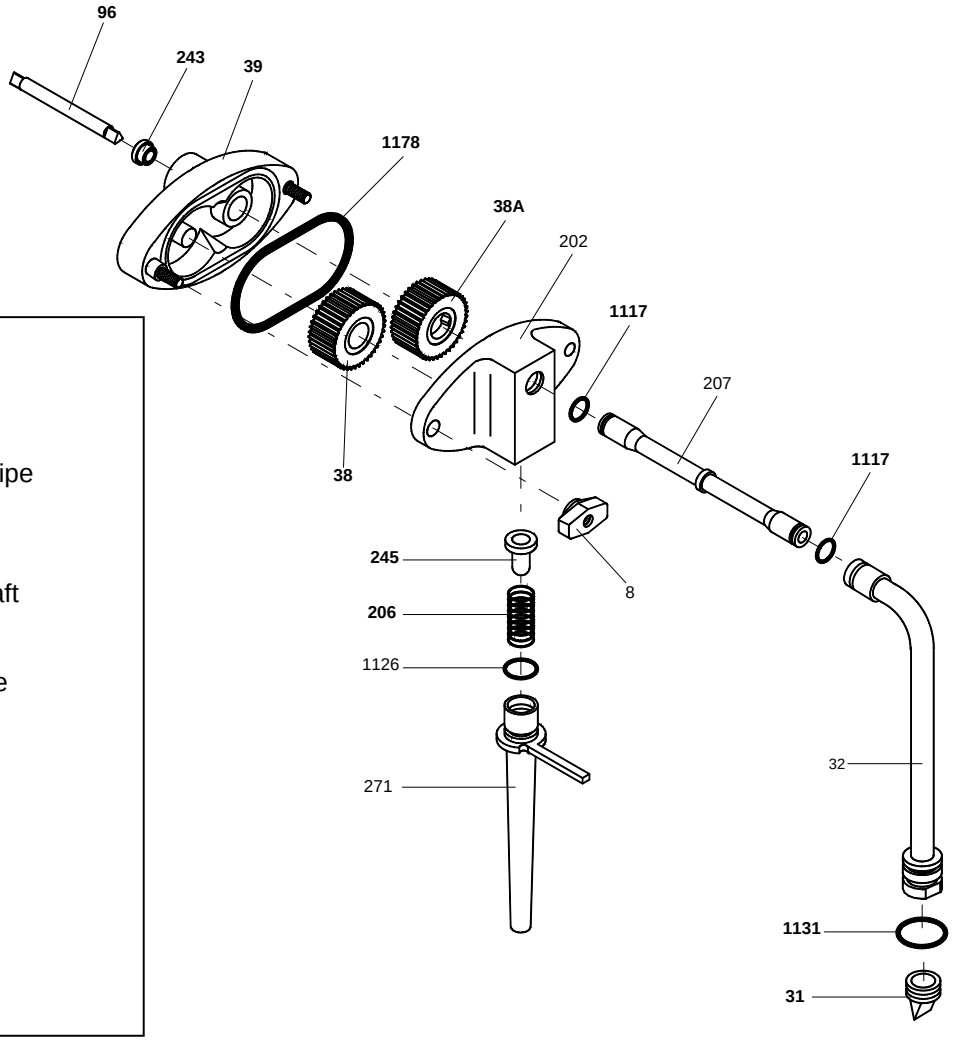
**STEP 11**
**Clean the machine**

Fill the hopper with 2-1/2 gallons (9-1/2 liters) of warm all purpose cleaning solution.

**STEP 12**
Clean the hopper walls, the level sensor and outside of the beater shaft using the supplied brushes.
**STEP 13**
Pull the dispensing handles and let the liquid flow out completely.
**STEP 14**
**Rinse the machine**
Rinse with clear water, pull the spigot handle and let the water flow out.
**STEP 15**
**Sanitize the machine**
Fill the hopper with Sanitizer prepared in water 70-90°F (21-32°C) (follow the instruction of the sanitizer manufacturer).
**STEP 16**
Press  button and let the beater run for 10 seconds.
Use the white hopper brush to scrub the mix hopper, mix level sensor and the outside of the beater shaft.
Use the small brush to clean the mix inlet hole and the drive hub of the mix pump.
**STEP 17**
Push the “STOP” button. Let the Sanitizer solution stand for a minimum of 1 minute.
**STEP 18**
Pull the dispensing handle and let the water flow completely out.

### 7.1.2 DISASSEMBLING THE MIX PUMP

**STEP 1**
Remove the drive shaft (no. 96) and the seal (no. 243).
**STEP 2**
Keeping the feeding tube (no. 271) upward turn it counterclockwise and pull it out.
**STEP 3**
Pull the spring (no. 206) and the back flow valve (no. 245) out. Using the o-ring extractor, remove the large O-ring (no. 1126).
**STEP 4**
Unscrew the 2 knobs (no. 8) and separate the cover (no. 202) from the pump body (no. 39).
**STEP 5**
Using the o-ring extractor, remove the large O-ring (no. 1178). Tapping the pump body against the palm of your hand, remove the pump gears (no. 38-no. 38A).
**STEP 6**
Disconnect the connection tube (no. 207) from the pressure pipe. Remove the O-rings (no. 1131, 1117 and 1126).
**STEP 7**
Remove the duck bill valve (no. 31) from the pressure pipe.



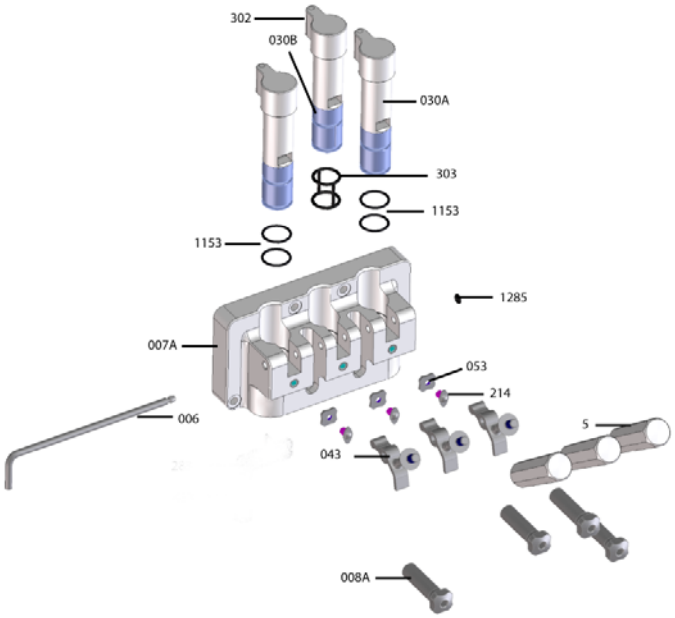

| Pos. | Description |
|---|---|
| **8** | Knobs |
| **31** | Valve |
| **32** | Compression pipe |
| **38** | Driven gear |
| **38A** | Driving gear |
| **39** | Pump body |
| **96** | Pump drive shaft |
| **202** | Pump cover |
| **206** | Spring |
| **207** | Connection pipe |
| **243** | Seal |
| **245** | Valve |
| **271** | Feeding tube |
| **1117** | O-ring |
| **1126** | O-ring |
| **1131** | O-ring |
| **1178** | O-ring |

### 7.1.3 DISASSEMBLING THE SPIGOT DOOR

***WARNING***

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

| Pos. | Description |
|---|---|
| **5** | Dispensing handle |
| **6** | Handle pin |
| **7A** | Spigot door |
| **8A** | Knob |
| **30A/B** | Piston |
| **43** | Piston handle |
| **056** | Nut |
| **214** | Dispensing handle adjustment screw |
| **302** | Central piston |
| **303** | Central dispensing piston O-ring |
| **1153** | O-ring |
| **1285** | O-ring |




**STEP 1**
With the machine in STOP mode, remove the four retaining knobs (no. 8A) and pull the spigot door towards you sliding it off the front panel studs.
**STEP 2**
Remove the pivot O-ring (no. 1285).
**STEP 3**
Pull the dispensing handles (no. 5) so the pistons (no. 30 and 302) raise in its housing and pull the pivot pin (no. 6) out releasing the dispensing handles (no. 5).
**STEP 4**
Using the dispensing handle, pull the pistons (no. 30 and 302) out completely.
**STEP 5**
Using the o-ring extractor, remove:

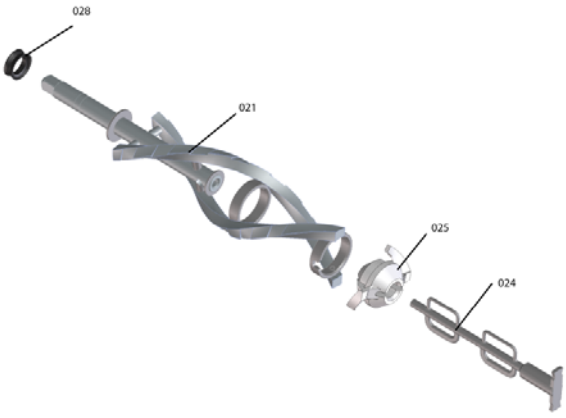
a) the 2 piston O-rings (no. 1153 and 303);
b) spigot door O-ring (no. 1188).

### 7.1.4 BEATER REMOVAL

**STEP 1**
Pull the beater (no. 21) out of the cylinder; please be careful not to hit the cylinder with the shaft of the beater.
**STEP 2**
Slide the beater seal (no. 28) out of the beater shaft. Check the beater seal and don't forget it in the cylinder.

***WARNING***

**The beater seal is very important. It must be checked regularly for wear and tear. It must always be on the beater shaft and properly lubricated, during operation, otherwise mix will leak in the drip tray.**




**STEP 3**
Pull out and remove the idler (no. 24) and the pusher beater end (no. 25).

## 7.2 DISASSEMBLING AND CLEANING THE OTHER COMPONENTS:

7.2.1 Remove the drip tray and the drip troughs to wash, rinse and sanitize.

7.2.2 Disassemble, clean and sanitize the topping pumps and containers (follow the procedure described at section 5).

## 7.3 WASHING AND SANITIZING COMPONENTS

**STEP 1**
Fill a clean sink with the sanitizer solution.

**STEP 2**
Wash the disassembled parts with the detergent solution and scrub them thoroughly with the brushes provided with the machine. As you proceed, rinse with hot water. Make sure all lubricant and mix film is removed from parts.

**STEP 3**
Fill another sink with sanitizer prepared in water 70-90°F (21-32°C) (follow the instructions of the sanitizer manufacturer).

**STEP 4**
Soak the components in the sanitizing solution. Leave them for at least 1 minute.

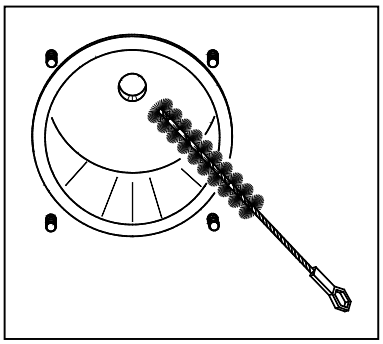
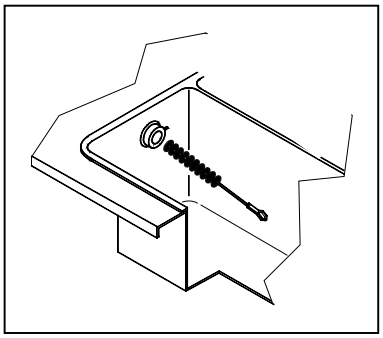
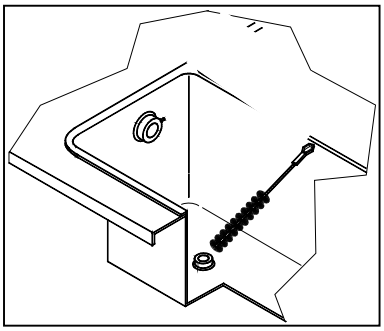
**STEP 5**
Place the components on the soft ice cream tray to air-dry.

**STEP 6**
Return to the machine with a small amount of Sanitizer.

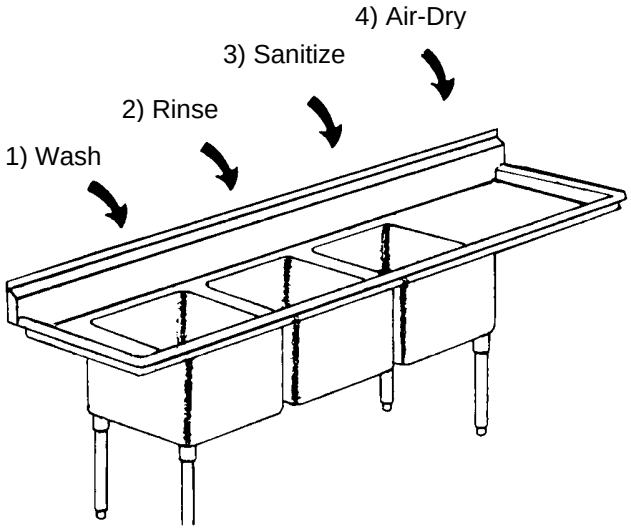
**STEP 7**
Dip a brush into the sanitizer and thoroughly brush the freezing cylinder.

**STEP 8**
Dip a brush into the sanitizer and thoroughly brush clean the mix inlet hole and the pump drive hub openings in the rear of the mix hopper.

**STEP 9**
Spray the back of cylinder with sanitizer.

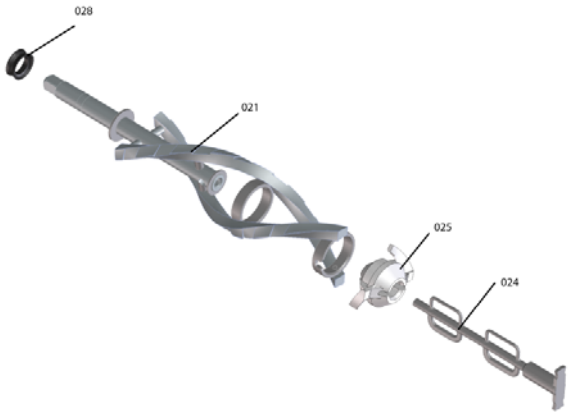
**Repeat steps 7 , 8 and 9 several times.**




## 7.4 REASSEMBLY OF WASHED AND SANITIZED COMPONENTS

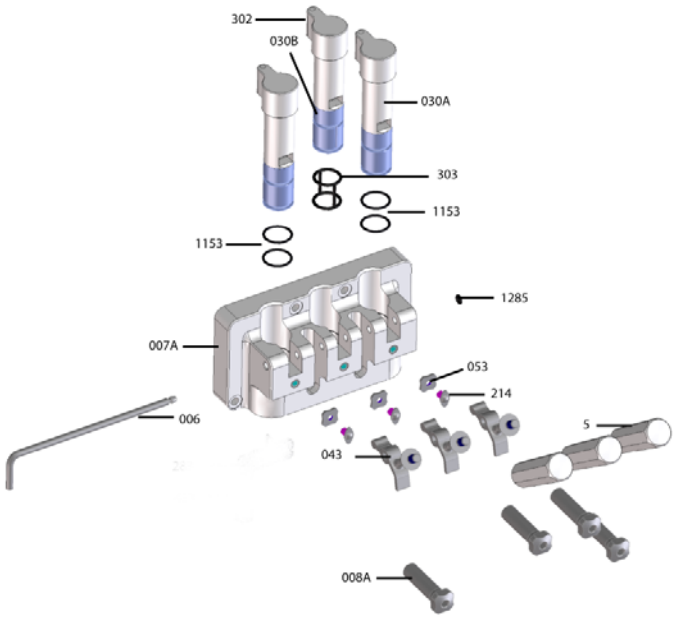
### 7.4.1 REASSEMBLY OF THE BEATER

**STEP 1**
Put the pusher beater end (no. 25) on the beater (no. 21) and align the idler shaft groove with the frame front slot and insert the end of the idler shaft in the rear housing.
**STEP 2**
Lubricate the sides of the beater seal (no. 28) and slide it onto the beater shaft.
**STEP 3**
Insert the beater assembly into the cylinder. Push it while turning it clockwise until it engages in its rear hub, otherwise the dispensing head cannot be fastened properly, mix can flow out and serious damage may occur.



### 7.4.2 REASSEMBLY OF THE SPIGOT DOOR

**STEP 1**
Lubricate and slide the 2 piston O-ring (no. 1153 and 303) into their seats.
**STEP 2**
Lubricate the piston (no. 30 and 302) and insert them, pointed end down, in the dispensing head (no. 7A) making sure that the piston square notch lines up with the rectangular opening on the spigot front.
**STEP 3**
Position the dispensing handle (no. 5) on the spigot door (no. 7A) and insert the pivot pin (no. 6) in its housing through the handle hole. Lubricate and slide the O-ring (no. 1289) into its seat on the pivot pin. Lubricate and slide into its seat the large dispensing door O-ring (no. 1188).
**STEP 4**
Insert the dispensing spigot door onto the front panel studs and fasten it with the knobs (no. 8A), hand tight.

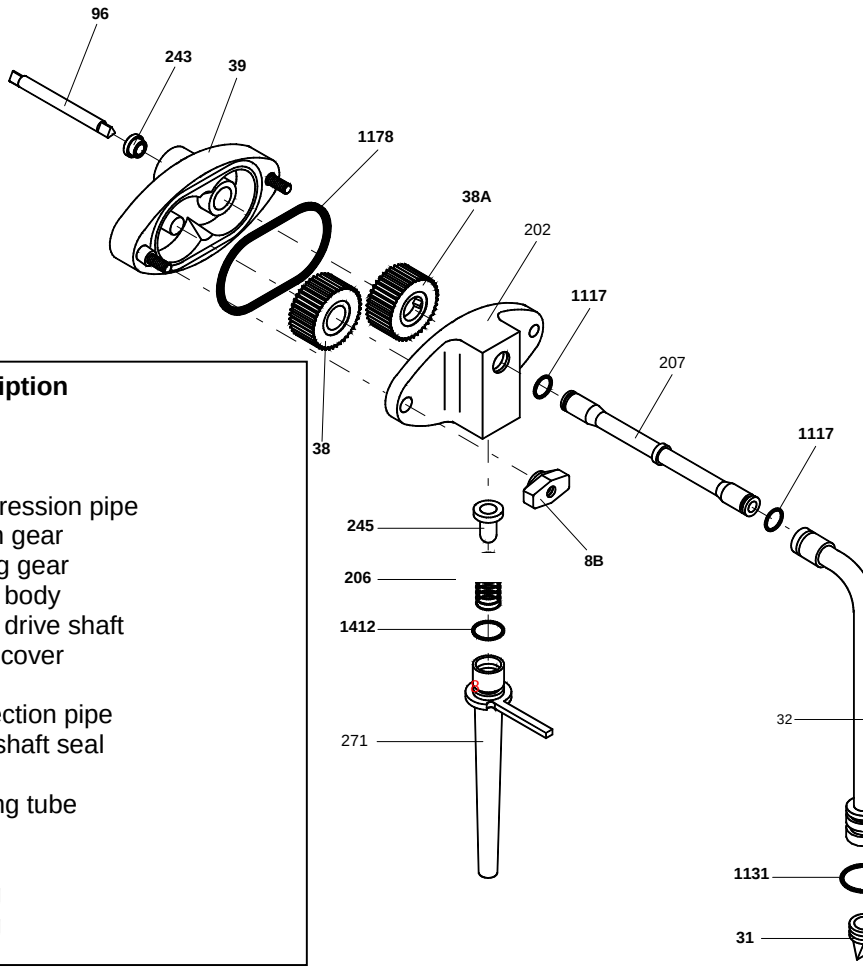


### 7.4.3 REASSEMBLY OF THE MIX PUMP

**STEP 1**
Lubricate and place back the two O-rings (no. 1117) on the connection tube (no. 207).
**STEP 2**
Lubricate and place back the O-ring (no. 1131) and the duck bill valve (no. 31) on the pressure pipe (no. 32).
**STEP 3**
Insert the connection tube assembly in the pressure pipe (no. 32).
**STEP 4**
Place the pressure pipe in a sanitizing solution or leave it in the hopper to be mounted after the sanitization of the whole machine.
**STEP 5**
Lubricate the surface of the pump gears (no. 38-no. 38A) and insert the pump gears into the pump body (no. 39).
**STEP 6**
Lubricate and place back the pump body O-ring (no. 1178).
**STEP 7**
Lubricate and place back the drive shaft seal (no. 243) into the pump body (no. 39).
**STEP 8**
Lubricate and place back the O-ring (no. 1412) on the feeding tube (no. 271).
**STEP 9**
Hold the pump cover (no. 202) upside down and insert the back flow valve (no. 245) and spring (no. 206) in their pump cover housing.
**STEP 10**
Insert the feeding tube (no. 271) in the pump cover: push and turn it clockwise.
**STEP 11**
Lubricate the drive shaft (no. 96). Place back the drive shaft into the rear of mix hopper, pushing it towards the back and rotating it slightly until it engages in the drive hub. Hold the pump body assembly, with the blocking pin hook on the right, keep your thumbs over the pump gears so that they remain in place, push and turn the pump clockwise until the drive shaft matches with the driving gear. Now turn the pump counter clockwise until it locks onto the blocking pin.
**STEP 12**
Assemble the pump cover (no. 202) with the feeding tube downwards onto the pump body and turn the two knobs (no. 8B) tightly.

### 7.4.4 REASSEMBLY BEATER HOPPER

**STEP 1**
Place back the beater in its seat in the hopper: make sure to engage it onto its shaft correctly.




| Pos. | Description |
|---|---|
| **8** | Knob |
| **31** | Valve |
| **32** | Compression pipe |
| **38** | Driven gear |
| **38A** | Driving gear |
| **39** | Pump body |
| **96** | Pump drive shaft |
| **202** | Pump cover |
| **206** | Spring |
| **207** | Connection pipe |
| **243** | Drive shaft seal |
| **245** | Valve |
| **271** | Feeding tube |
| **1117** | O-ring |
| **1126** | O-ring |
| **1131** | O-ring |
| **1178** | O-ring |

## 7.5 SANITIZATION OF THE WHOLE MACHINE

The machine must be sanitized before mix is poured in.

### 7.5.1 SANITIZE THE HOPPER

- With the machine in STOP mode, fill the hopper to the maximum level with Sanitizer prepared in water 70-90°F (21-32°C) (follow the instructions of the sanitizer manufacturer) and allow to drain into the cylinder.
- Using the brush, clean the mix level probes, the entire surface of the mix hopper, the surface of the mix pump and the outside of the hopper beater.

### 7.5.2 SANITIZE THE PUMP AND CYLINDER

- Press the  button and let the beater run for about 5 seconds. Press the STOP button. The cylinder and the pump are now filled with the sanitizing solution.
- Return to the machine with a small amount of sanitizer solution in a pail.
- Dip the door spout brush in the pail of sanitizer and brush clean the dispensing spout. Repeat the operation 2 times.
- Wipe the exterior of machine with clean sanitized towel. Repeat the operation 2 times.
- Please wait for at least 5 minutes before proceeding with the next instructions.

### 7.5.3 DRAIN THE SANITIZER

- Place an empty pail under the dispensing shut-off valve.
- Allow all of the sanitizer to drain and pull dispensing handles down.
- If the sanitizing solution does not flow out completely, keep the dispensing handles down and press the  button, keep the beater running for 5 seconds so that the last solution residues flow out then push STOP.

**WARNING**

**Do not keep the beater running for more than the time strictly needed to complete cleaning and sanitization. Without the lubrication of mix butterfat the beater blades wear out quickly.**

### 7.5.4 PREPARING THE TOPPING AREA

- Make sure that the drain shut-off valve is closed then fill the hot topping hopper with clean water; don't exceed the max water level (if you should exceed the max water level in the topping hopper, use the shut-off-valve to drain the water in excess).


- Reassemble the sanitized topping pumps and containers.
- Reassemble on the machine the sanitized drip tray and drip troughs.

## 7.6 MIX LOADING - HOW TO MAKE A DRY FILLING AFTER CLEANING AND SANITIZING THE MACHINE

Make sure your hands are clean and sanitized.

- Take the mix pressure pipe from the sanitizing solution and insert it in its position in the bottom of the hopper. Connect it to the pump.
- Rotate the water shut-off-valve in the direction of the hopper.
- The machine is in STOP mode cleaned and sanitized; push Production (START button).
- The display will show the message "Perform Dry-Filling".
- Press the DF key 

.
The Increase and Decrease keys turn on and the display shows:

| Liters 00.10 |
|---|

The quantity of water can be modified pressing the Increase  and Decrease 

keys in steps of 0.10 liters, within 5" after the DF key is pressed.
If no key is pressed for 10", quantity selection phase will be quit and the display goes back to the previous screen.

- Confirm water quantity of water with the DF key 

- Now water dispensing starts. The procedure can be interrupted at any time by pressing STOP.
- At the end of water dispensing, there is a first mixing phase.
Fast beating in the hopper is enabled for a set time. The display will show the timer decreasing on the second line:

| Dry Filling<br>Please Wait 2:59 |
|---|

The procedure can be interrupted at any time by pressing STOP.

- At the end of the first mixing phase, there is a second mixing phase.
- At the end of mixing, DF ends. Machine sets to STOP mode.

### *7.7* MIX LOADING - HOW TO FILL THE MACHINE WITH LIQUID MIX AFTER CLEANING AND SANITIZING THE MACHINE

Make sure your hands are clean and sanitized.

- Pour the liquid mix in one hopper.
- Only when the mix stops bubbling from the bottom of the hopper, reassemble the pressure pipe in its position in the bottom of the hopper. Make sure your hands are clean and sanitized.
- Press the  button and let run the beater for only five seconds just to check that the pump works well, then push STOP.
- Turn the pressure pipe towards the pump and connect the tube to the pump.
- Replace on the machine the sanitized hopper cover.
- Fill the second hopper with mix following the steps described above.
- Set to Production both sides of the machine pushing START Button so the heat-treatment cycle automatically starts.
- At the end of the Pasteurization, press Stop and then press START Button to start the Automatic freezing operation. When the HOT reaches the set value, the product is ready to be dispensed.

# 8. PREVENTIVE MAINTENANCE

**WARNING**

**Never put your hands into the machine, neither during the operation nor during cleaning. Before servicing, make sure the machine has been set in "STOP" and the main switch has been cut out.**

**WARNING**

**Any servicing operation requiring the opening of machine panels must be carried out with machine set to stop and disconnected from main supply!**
**Cleaning and lubricating moving parts is forbidden!**
**"Repairs to units and parts of the electrical, mechanical, air supply and cooling systems must be carried out by specialist technicians approved by the manufacturer and if necessary, according to agreed routine and special maintenance schedules as provided by the customer with reference to specific intervention methods and according to the intended use of the machine".**

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 every 14th days cleaning.

### 8.1 CHECK UP LIST

During cleaning operations, check carefully the integrity of parts subject to wear: if they appear worn out or not totally functional replace them. Carpigiani offers programmed maintenance plans that include the periodical replacement of parts subject to wear.

| CHECK | SUGGESTED ACTION |
|---|---|
| **PUMP**<br>• Integrity of O-ring and stuffing box<br>• Try the rotation of the gears in their seats. | • If they show cuts, replace them.<br>• If they do not turn well or turn too freely, replace them or have them checked by a technician. |
| **SPIGOT DOOR**<br>• Check integrity of O-ring, check smoothness of piston. | • Replace if they show damage. |
| **CYLINDER BEATER**<br>• Check if beater terminal and idler show dents and check their integrity.<br>• Check integrity of beater seal (no. 28).<br>• Check the wear of the idler beater. | • Replace if broken or cracked.<br>• Replace if damaged.<br>• See note 8.2. |

## 8.2 PERIODICAL CHECK-UP AND MAINTENANCE

The wearing of the parts depends on the use and the care during cleaning.
Replacement is suggested to:

- the rubber parts in contact with the food (O-ring, beater seal) every 6 months;
- the mix pump gears (no. 38 and 38A) every 100,000 portions;
- the pusher beater end (no. 25) every year.

## 8.3 WATER COOLING

By machines with watercooled condenser, water must be drained from condenser at the end of selling season in order to avoid troubles in the event that the machine is stored in rooms where temperature may fall under 0°C. After closing water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.

## 8.4 AIR COOLING

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

**WARNING**

**When using compressed air, use personal protective devices in order to avoid accidents; wear protective glasses!**

*NOTE: never use sharp metal objects to carry out this operation. Good working of a freezing plant mostly depends on cleaning of condenser.*

# 9. TROUBLESHOOTING

## 9.1 ALARMS

The machine is provided with a self-diagnosis function, which indicates any failure during operation.

**The display blinks when an alarm is active and becomes on solid when an alarm was detected and then reset. Push RESET button in order to refresh the display when the alarm has been reset.**

Use the following table to determine whether a service call is required (critical alarm). If a service call is required, write down the alarm message and inform the service company.
The machine can dispense product in case a non-critical alarm is active.

| ALARM | DESCRIPTION | CORRECTIVE ACTION |
|---|---|---|
| **Add Mix** | Mix level is lower than the medium level sensor. | **Pour the mix in the hopper** |
| **Mix Out** | Mix level is lower than the low level sensor. | **Pour the mix in the hopper** |
| **Safety Therm.Cyl (TESC)** | Cylinder safety thermostat tripped. The machine switches to Stop without completing the heat-treatment cycle. The mix is NOT pasteurized (only for pasteurizing version). | **CALL FOR SERVICE** |
| **Safety Therm.Hop TESV** | Hopper safety thermostat tripped. The machines switches to Stop without completing the heat-treatment cycle. The mix is NOT pasteurized (only for pasteurizing version). | **CALL FOR SERVICE** |
| **Overload Beater (RTA)** | Thermal relay of beater motor has tripped. | **CALL FOR SERVICE** |
| **Pressure Switch (PR)** | Pressure switch for high gas pressure has tripped. | Check air flow to the condenser, if not blocked. **CALL FOR SERVICE** |
| **Overload Compres RTC** | Thermal relay of compressor motor has tripped. | **CALL FOR SERVICE** |
| **Al.Hopper probe (TEV)** | Hopper temperature sensor is out of order. | **CALL FOR SERVICE** |
| **Al.Cyl Probe TEC** | Cylinder temperature sensor is out of order. | **CALL FOR SERVICE** |
| **Al. IceHop. Probe TGV** | Hopper evaporator sensor is out of order. | **CALL FOR SERVICE** |
| **Spigot Opened (IMS)** | Faceplate is open or disassembled. | Install the faceplate. |
| **Al.Evapor.Probe (TE)** | Temperature probe on cylinder out of order. | **CALL FOR SERVICE** |
| **Power on** | A black out has occurred | |
| **Ice Cylinder (ICE)** | Bad heat exchange in the cylinder, | check mix pump efficiency, check the scraper blades, etc. |
| **Timeout Prd.** | Cooling problem, the product is not getting hard while cooling; | **if this alarm appears frequently CALL FOR SERVICE** |
| **Belt Alarm** | The hopper beater is not turning. | Check that the mixer is positioned correctly, otherwise **CALL FOR SERVICE** |
| **Wash within 14 days** | It indicates the days remaining for next cleaning; when wash today appears the machine must be disassembled, cleaned and sanitized. Press RESET button to reset the message on the display. | |
| **Do Not Serve !** | Product under process; | please wait and don't serve yet. |
| **No Topping Water** | The water in the topping container is lower than the sensor level. | Add water in the topping container. |
| **Al.Topping Probe** | Temperature probe for topping heating is out of order. | **CALL FOR SERVICE** |
| **Pasto needed!** (only for pasteurizing version) | The machine is in soft lock condition; the mix must be pasteurized. | Run a heat-treatment cycle until PASTO END appears to unlock the machine. Push STOP and PROD. |

| | | |
|---|---|---|
| **Check Connection** | If serial communication between master and slave is active and master does not receive data from slave for longer than 20”, a communication timeout fault occurs. The display shows “Check Connection” and machine sets at Storage. | Reset the alarm with Storage/Reset key and check the serial connection. |
| **Replace Gears** | Every T84x100 dispensed cones, in Production, the display shows the message “Replace Gears” for 5” when a cone is dispensed.<br>This message will appear for T83x100 cones or until the relevant cones counter will be reset (see step T86). | |
| **No more cones** | In Production, when the low level sensor switches on, the machine can dispense T17 cones.<br>Then the machine will stop cooling cylinder with “No more cones” message. | |