

**INSTRUCTION MANUAL**

**LB RTX**

**AFFIX**

**PLATE WITH**

**SPECIFICATIONS**

*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 Certified Quality System.*

## **CARPIGIANI**

Via Emilia, 45 - 40011 Anzola dell'Emilia (Bologna) - Italy

Tel. +39 051 6505111 - Fax +39 051 732178

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## FOREWORD

### INSTRUCTION MANUAL

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

### PURPOSE

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

Topics relevant to a correct use of the machine have been analyzed in order to keep unchanged in the long run quality features characterizing **CARPIGIANI** machines all over the world.

A significant part of this manual refers to the conditions necessary for the machine use and to the necessary procedures during cleaning as well as routine and special maintenance.

Nevertheless, this manual cannot cover any possible need in detail. In case of doubts or missing information, please contact:

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**CARPIGIANI**

Via Emilia, 45 - 40011 Anzola dell'Emilia (Bologna) - Italy  
Tel. +39 051 6505111 - Fax +39 051 732178

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### STRUCTURE OF THE MANUAL

This manual is divided in sections, chapters and sub chapters for an easy reference.

#### Section

A section is the part of the manual identifying a specific topic related to a machine part.

#### Chapter

A chapter is that part of a section describing an assembly or concept relevant to a machine part.

#### Sub chapter

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 understands those parts of the manual of his/her own concern, and particularly:

- The Operator must read the chapters concerning machine start-up and operation of machine components;
- a skilled engineer involved in the installation, maintenance, repair, etc., of the machine must read all parts of this manual.

### ADDITIONAL DOCUMENTATION

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

- **Supplied spare parts:** a list of spare parts delivered together with the machine for its routine maintenance.
- **Wiring diagram:** a diagram of wiring connections is placed in the machine.
- **Installation sheet:** To be completed by the installer. Return a copy to the customer, the dealer and the manufacturer in order to activate the machine warranty

**Before using the machine read carefully the instruction manual.  
Carefully read safety instructions.**



## CONVENTIONAL SYMBOLS



### CAUTION: ELECTRIC SHOCK DANGER

The staff involved is warned that the non-observance of safety rules in carrying out the operation described may cause an electric shock.



### CAUTION 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

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



### PERSONAL PROTECTIONS

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

## SYMBOLGY QUALIFICATION OF THE STAFF

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



### MACHINE OPERATOR

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



### QUALIFIED ENGINEER

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



### CARPIGANI ENGINEER

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

## SAFETY

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

The persons in charge of safety must ensure that:

- any incorrect use or handling is avoided;
- the safety devices are neither removed nor tampered with;
- the machine is regularly serviced;
- only original spare parts are used, especially in the case of safety-related components (ex.: protection microswitches, thermostats).
- suitable personal protective equipment is used;
- high care is taken during hot product cycling.

To achieve the above, the following is necessary:

- at the work station an instruction manual relevant to the machine should be available;
- such documentation must be carefully read and requirements must consequently be met;
- only adequately skilled personnel should be assigned to electrical equipment and machineries; this appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety;
- Make sure that no technician will ever carry out interventions outside his own knowledge and responsibility sphere;
- Children should be supervised to ensure that they do not play with the appliance.

### IMPORTANT

Make sure that the personnel do not perform operations out of their range of knowledge and responsibility (refer to “Qualification of the personnel symbols”).

#### NOTE:

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

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

*It 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.*

## WARNINGS

The machine must be installed in compliance with current installation regulations.

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.

- Never perform operations on the machine using your hands, during both production and cleaning. 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 jet of pressurized water.
- It is forbidden to remove panels in order to reach the machine internal parts before disconnecting the machine from the power supply.
- The place of installation must not be exposed to water sprays, high moisture, heat or steam sources.
- The machine must not be installed in an area in which a water jet could be used
- The machine is not for external use
- Do not store explosive substances or spray cans inside the machine, nor aerosol cans containing flammable propellant.
- **CARPIGIANI** is not responsible for any accident that might happen during operation, cleaning and/or servicing of its machines if this warning has not been fully complied with.





# 1. GENERAL INFORMATION

## 1.1 GENERAL INFORMATION

### 1.1.1 Manufacturer 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 manual.

<b>Model No.</b> <b>Serial No.</b>						
		<b>Fac.ID.</b>				
<b>Volts</b>	<b>Phase</b>		<b>Hz</b>			
<b>Max Breaker Fuse Size</b>						
<b>Minimum Circuit Ampacity</b>						
<b>Total Load</b>						
		<b>DESIGN PRE</b>		<b>OPERATING PRE</b>		
<b>HIGH SIDE, PSIG</b>						
<b>LOW SIDE, PSIG</b>						
<b>REFRIGERANT</b>		<b>AMOUNT (OZ)</b>				
<b>REFRIGERANT</b>		<b>QTY</b>	<b>VOLT</b>	<b>HP</b>	<b>FLA/RLA</b>	<b>LRA</b>
<b>COMPRESSOR</b>						
<b>BEATER (HIGH)</b>						
<b>BEATER (LOW)</b>						
<b>FAN MOTOR</b>						

### 1.1.2 Information on maintenance service

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

### 1.1.3 Information for users

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

Machines installed on the floor intended for indoor use only and for commercial purposes such as ice cream and pastry workshops.

**LB RTX** are batch freezers for the production of ice cream. They have a horizontal barrel which facilitates the extraction of ice cream. These machines are electronically controlled to ensure a professional use and best quality of ice cream. It is possible to personalize ice cream production programs in order to get any kind of ice cream and other specialties; only with the **LB RTX** can you really produce an extraordinary variety of ice cream, exclusively tasty cremolata fruit.

**CARPIGIANI** recommends that you always use ingredients of the highest quality when making ice cream as this will allow you to satisfy even the most demanding of customers. Any saving made to the prejudice of quality will surely turn into a loss much bigger than the saving itself. Bearing in mind the above statements, please take heed of the following suggestions:

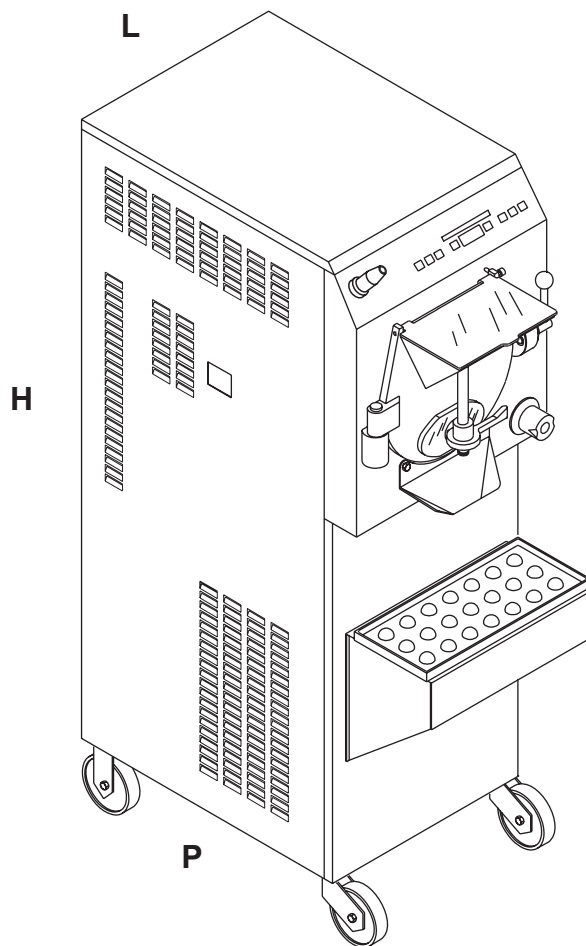
- Make your mixes yourselves from high quality natural ingredients or buy them from reliable companies;
- Follow closely instructions given by your mix supplier for the preparation of the mixes;
- Do not alter your mix supplier's recipes, by adding, for instance, water or sugar;

- Taste ice cream before serving it and start selling it only if entirely satisfactory;
- Make sure your staff always keeps the machine clean.

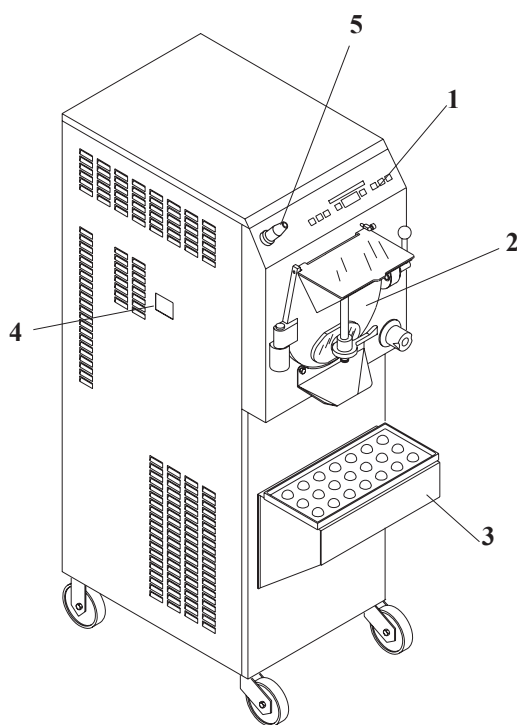
Have your machine serviced always by companies authorized by **CARPIGIANI**.

### 1.2.2 Technical features

MODEL	ICE-CREAM								Cremolata	Beater motor speed nr	Power supply			Rated output	Condenser	Dimensions (in)			Net weight
	Quantity per batch				Hourly output						Quantity per cycles lb	Volt	Hz			Ph	hp	Base	
	Mix batch lb		Ice cream gallons		Mix batch lb		Ice cream gallons		Width (L)					Depth (P)					
	Min	Max	Min	Max	Min	Max	Min	Max											
LB 302 RTX	5.5	16.5	1	3.1	33	99.2	6.3	19	14.3	1	208-230	60	3	3.7	Water/air	20	35	55	484
LB 302 RTX-G	5.5	16.5	0.9	2.7	33	99.2	5.5	16.6	14.3	2	208-230	60	3	3.7	Water/air	20	35	55	528
LB 502 RTX	8.8	30.8	1.7	5.9	52.9	187.3	10.1	35.6	23.1	1	208-230	60	3	6.5	Water/air	24	40	55	650
LB 502 RTX-G	8.8	30.8	1.4	5.1	52.9	187.3	8.9	31.7	23.1	2	208-230	60	3	6.5	Water/air	24	40	55	700
LB 1002 RTX	15.4	44	2.9	8.4	92.5	264.5	17.6	50.7	30.8	1	208-230	60	3	9.5	Water/air	26	47	55	990
LB 1002 RTX-G	15.4	44	2.5	7.3	92.5	264.5	15.8	44.3	30.8	2	208-230	60	3	9.5	Water/air	26	47	55	1052



### 1.2.3 Location of machine groups



#### LEGEND:

- 1 Control panel
- 2 Barrel front lid
- 3 Shelf
- 4 Drip drawer
- 5 Water dispenser

## 1.3 INTENDED USE

The machines must be used solely for the purpose described in chapter 1.2.1, "General information" within the functional limits described below.

- Voltage: .....±10%
- Air min. temperature °C: .....10°C / 50°F
- Air max. temperature °C: .....43°C / 109.4°F
- Water min. temperature .....10°C / 50°F
- Water max. temperature .....30°C / 86°F
- Water min. pressure .....0,1 Pa (1 bar) - 14 PSI
- Water max. pressure .....0,5 Pa (5 bar) - 72 PSI
- Max air relative humidity: .....85%

The machine has been designed for its use in places which are not subject to explosion-proof standards; its use is thus bound to conforming places and normal atmosphere.

## 1.4 NOISE

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

## 1.5 STORING A MACHINE

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

## 1.6 DISPOSAL OF PACKING STUFFS

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





## 1.7 WEEE (Waste Electrical and Electronic Equipment)

In conformity with the European Directives 2006/66/EC 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

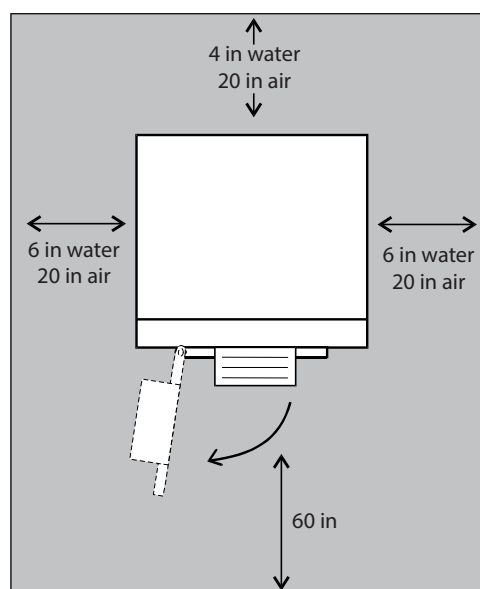
The machine must be installed in such a way that air can freely circulate all around. Rooms for the approach to the machine must be left free in order to enable the operator to act without constraint and also to immediately leave working area, if need be. The minimum approach room to working area should be at least 60 in. in consideration of space taken by opened doors.

#### ATTENTION

**Machines with aircooled condenser must be installed no closer than 20 in. to any wall in order to allow free air circulation around the condenser**

#### NOTE

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



### 2.2 WATER SUPPLY CONNECTION

The machine must be connected to running water which pressure must not be higher than 0,8 MPa (8 bars).

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.

### 2.3 MACHINE WITH AIRCOOLED CONDENSER

Machines with aircooled condenser must be installed no closer than 20 in. to any wall in order to allow free air circulation around the condenser.

#### NOTE:

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





## 2.4 MACHINES WITH WATERCOOLED CONDENSER

The machine must be connected to the water supply respecting the applicable national requirements; moreover the water mains pressure must not exceed 0.5 MPa (5 bar / 72 PSI). The connection pipes are provided by the installer and must comply with IEC61770. Used pipes cannot be reused. Machines fitted with a water-cooled condenser need to be connected to running water supply or to a cooling tower.

Water must have a pressure ranging between 0.1 MPa and 0.5 MPa (1-5 bar / 14-72 PSI), and a flow rate at least equal to the estimated hourly consumption.

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

### 2.4.1 Water valve adjustment

#### WARNING

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

#### NOTE:

*Water consumption increases if temperature of entering water is above 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

The power supply system must comply with the national regulations in force in the place of installation and provided with an efficient ground connection.

The manufacturer is not responsible for any malfunction or for injury to persons and/or damage to property resulting from connection to a non-compliant electrical system.

The appliance must be installed according to the current regulations for electrical installation, by competent and qualified technical personnel meeting the technical and professional requirements provided for by the legislation in force in the country of installation.

Before connecting the machine to the mains, check that the mains characteristics meet those of the machine specified in the identification plate applied to the machine itself.

Check that the power supply network is provided with a disconnection device, in compliance with the installation rules, ensuring complete disconnection from the mains for each pole (differential circuit breaker), in the conditions of overvoltage category III. The opening distance of contacts must be at least 3 mm.

Check that the trip level of the differential circuit breaker is  $\leq 30\text{mA}$ .

The machine is supplied with power cable; in case of three-phase machine with neutral, the blue conductor of the power supply cable must be connected to the system neutral.

#### WARNING

**The machine is fitted with an electric supply cable including a yellow/green cable, which MUST be connected to an appropriate grounding of the electric system.**

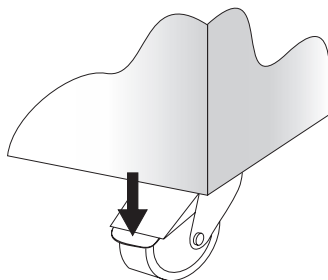
### 2.5.1 Replacing the power cable

If the machine power cable is damaged, replace it immediately with a cable with the same features. Replacement must be carried out by qualified personnel only.



## 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. The machine must be positioned at right angles on a horizontal bearing surface (max. tilt: 2°).



## 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.

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## 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.

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### 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 damage to persons and things.

Who is in charge of plant safety must be on the look-out that:

- Any 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 paid 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;
- Such documentation must be carefully read and requirements must consequently be met;
- Only adequately skilled personnel should be assigned to electrical equipment;
- Be on the look out that no technician will ever carry out interventions outside his own knowledge and responsibility sphere.



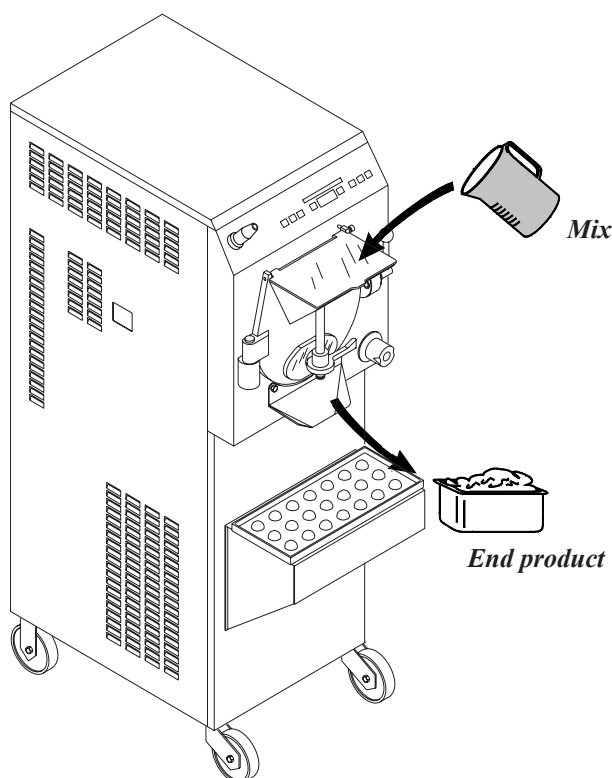
#### 3.2 MACHINE CONFIGURATION

The machine is comprised of a motor-drive section to move the beater unit and a chilling system with air- or water-cooled condenser.

The product is prepared by placing the mix inside the production cylinder and starting up the automatic production cycle, using the minimum or maximum amounts of mix as listed in the table in paragraph 1.2.2. When the cycle has ended, the product is ready to be extracted from the ice cream door, directly into a tub.

#### CAUTION

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



### 3.3 CONTROLS

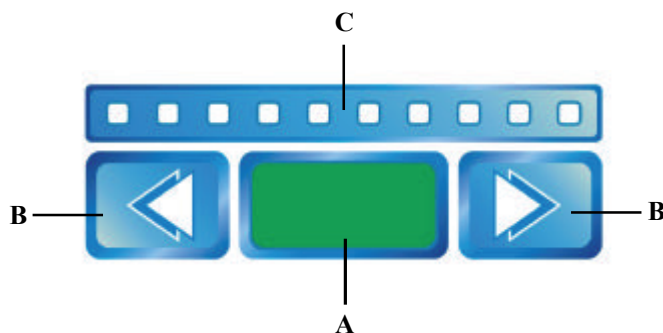
#### 3.3.1 Push-button Panel

The machine has a push-button panel on its front side; each push-button has a symbol representing the corresponding function.



#### 3.3.2 Checking monitor

Ice cream consistency checking monitor (**HARD-O-DYNAMIC**) consists of 3 parts:



- A DISPLAY displaying set values
- B PUSH-BUTTONS for variation of setting values
- C LED BAR for checking that working steps go ahead

#### 3.3.3 Push-button functions



##### STOP

When pressing it, the machine stops.



##### ICE CREAM PRODUCTION (EC-SP)

When pressing it, operation of the beater motor and compressor is automatically controlled.

It is possible to select 2 production types, i.e., **EC** (Excellent Ice cream) to obtain an excellent ice cream, **SP** (Ice cream Speed) and the production cycle is faster. Ice cream consistency is controlled by the exclusive electronic system **CARPIGIANI, HARD-O-DYNAMIC**, to reach the best production values.



##### DISTRIBUTION

When pressed, it controls beater rotation at high speed for an easy distribution of the product.

##### Attention

Three minutes after selecting this function, the machine automatically sets to "STOP" in order to avoid an excessive wear of beater and cylinder



##### CREMOLATA FRUIT (CF)

When pressed, it controls the production of Cremolata by switching the compressor on; the beater runs instead ON/OFF at intervals during the whole production time. The production time must be selected on the display by the user.

##### SICILIAN SLUSH (GS) (for LB RTX "G" 10/30 and 15/45 option only).

By selecting the slush production program, the compressor is on and the beater runs at very slow speed, special for slush. The production time unit shall be selected on the display by the users.

**CLEANING**

When pressed, it just controls beater rotation, whilst freezing system is off.

**Attention**

3 minutes after inserting this function, the machine automatically sets to **"STOP"** in order to avoid an excessive wear of beater and barrel.

**SHOWER**

When pressing it, water inlet is activated by means of the shower onto the machine front side.

**3.3.4 Serial connector**

LB RTX units are provided with a serial connector to be found on the machine rear.

Connection of your PC to the machine allows to look at, to download and to print the machine events.

The connection of your machine to a modem allows to receive and thence to transfer operation data to the service department, directly, in order to have technical diagnosis and remote repairs.

**NOTICE**

**To connect the machine to your PC, it is necessary to place an order of an Easyloader kit to Carpigiani.**

**Code is nr 193.013.520 and includes connection and CD cable with the program allowing PC-machine dialog.**

**To connect the machine to modem, use the cable usually supplied with modem.**

**3.4 ICE CREAM PRODUCTION (PROCESSING)**

After washing, sanitizing and thoroughly rinsing the machine just before its use, as per instructions in Section 5, take the mix from pasteurizing unit, pour the desired quantity of mix into the cylinder through front lid hopper, while following minimum and maximum quantities shown in the table (Sec. 1.2.2).

Before filling the machine with mix, make sure front lid and ice cream door are perfectly closed.

On pressing the push-button **PRODUCTION** ice cream, the display will show the message **EC** that can be changed into **SP** with the arrows-buttons. The two monograms mean the two different kinds of production programs, namely:

**EC**

**GELATO EXCELLENT:** it indicates the program to obtain an "eccellent" product, i.e., a well made, smooth and creamy ice cream with a high overrun, suitable for long display. This program is particularly suitable for small batches and fruit ice cream.

**SP**

**GELATO SPEED:** This program is faster; ice cream is compact and dry; suitable for highest outputs.



The lighting-up sequence of all LEDs on the bar of **HARD-O-DYNAMIC** monitor shows ice cream status during its processing. The blinking of LED bar, as well as an ear signal mean that the cycle is over and ice cream is ready for dispense.



#### NOTE

*If ice cream is not dispensed soon after its preparation due to a temporary engagement of the operator, ice cream is kept under beating and **HARD-O-DYNAMIC** steadily checks its consistency. On a decrease in ice cream consistency, **HARD-O-DYNAMIC** starts up compressor again and processing automatically restarts, thus bringing ice cream back to its best thickness conditions.*



### 3.4.1 Ice cream consistency

**CARPIGANI** sets the best consistency value to 10.

**HARD-O-DYNAMIC** constantly secures a perfect ice cream in relation to the mix used, and yet the operator can set personalized processing cycles through **LB RTX**.

Particularly creamy ice cream may require a higher consistency, whilst ice cream with low fat contents, such as sherbets, requires a lower consistency degree



### 3.4.2 Changing ice cream consistency

To vary final ice cream consistency, press push-button   while machine is processing ice cream.


In order to get a harder ice cream, increase setting value displayed on monitor A by pushing arrow .

To get a smooth ice cream, decrease setting value displayed on monitor A, by pushing arrow



Example:

To vary consistency value from 10 to 8:

- Press push-button for ice cream processing
- Press repeatedly push-button arrow  so decreasing value until number 8 is displayed; the new set value of consistency is immediately stored.
- At the end of processing cycle, i.e. when buzzer will ring and LED bar will blink, ice cream consistency value will be 8 instead of 10.

Typical value is 10, the new value set will be stored until it is not changed again.

The above described operation can be carried out on both **EC** and **SP** programs. By **EC** cycle, the machine control system is able to automatically recognize whether the operator has filled the machine with minimum or maximum batched and whether it is working a fruit or cream product; consistency value can be modified 8 to 12.

In **SP** program, the consistency value can be set 1 to 12.

#### IMPORTANT

**LB RTX** hourly output may vary depending on:

- room and cooling water temperature
- kind and quantity of mix used
- set value of consistency



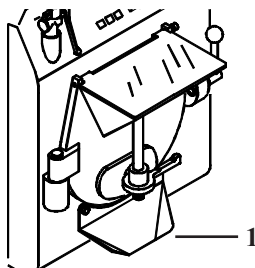
### 3.4.3 Ice cream distribution

When production cycle is over, as it is shown by blinking of LED bar and by the buzzer simultaneously, ice cream can be dispensed from the cylinder as follows:

- Place a container on the shelf, under ice cream door.
- Turn the lid by unlocking lever towards the left (ref. 1).
- Lift handle together with ice cream door (Fig. C).
- Press push-button "**DISPENSE**".
- Last, press "**STOP**".

#### SAFETY NOTE

To avoid a useless wear of sliding shoes and barrel, the machine returns to **STOP** after 3 minutes uninterrupted running in distribution.



### 3.4.4 Use ice cream dispensing handle

#### Locking

Lock ice cream door turning the handle (rif. 1) rightwards till the stop.

#### Opening

Turn the handle (rif. 1) 90° leftwards.

Lift handle and ice cream door.

Lock ice cream door on top turning the handle (rif. 1) rightwards till the stop.

#### Closing

Repeat in the opposite direction opening sequence described above.

### 3.4.5 Aftercooling

This function, which is a peculiarity of all **LB RTX** models, is particularly useful by those models with a bigger output capacity (2 containers per cycle or more).

As a matter of facts, if ice cream in each container needs further preparation, such as garnish and variegation or else before storage, ice cream still inside the machine being left at high speed of dispense may lose its original thickness.

At any moment during **DISTRIBUTION** and upon operator's choice, it is also possible to press push-button **PRODUCTION** in order to cool ice cream again. The result is a steady consistency of ice cream, from beginning to the end of distribution. Starting Post-Cooling from SP (Speed) production program, makes the compressor run 20 seconds only.





### 3.5 CREMOLATA PRODUCTION

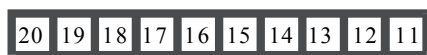
Through front lid hopper, pour slush mix into the barrel.



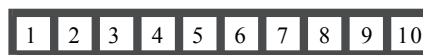
From "STOP" position, press push-button "CREMOLATA PRODUCTION" in order to start cooling intermittently.

Monitor A displays production time set in minutes. All lighted LEDS on bar C dynamically show how many minutes are to cycle ending.

The machine is set with a production time of 12 minutes.



minutes



minutes

When the number set is over 10, LED bar decreases from left to right. If, on the contrary, the number set is below 10, it decreases from right to left.

#### 3.5.1 Variation of cremolata production time

The user can vary production time between 2 and 20 minutes, depending on final product he would like to obtain.

In order to change cremolata production time, it is necessary to act on push-buttons arrow of MONITOR, with the machine in CREMOLATA PRODUCTION. In order to obtain a drier cremolata,

the time must be increased by pressing , and vice versa decreased by pressing .

New time set is displayed on MONITOR.

#### NOTE

*By power failure, time setting remains memorized on last value stored.*

#### 3.5.2 Cremolata extraction

When the production cycle is over, as indicated by the LED bar blinking and the buzzer sound, the machine sets to STOP.

You can take the "cremolata" out, now, by opening the lid and using the special spatula.

#### NOTE

*The best FRUIT CREMOLATAS are obtained when using same or bigger quantities than the ones to be found in table on page 10.*



## 4. SAFETY DEVICES

### 4.1 ALARMS

LB RTX have been provided with a series of safety devices to machine and operators' safeguard. Any tripping of a safety device coincides with an alarm signal on control panel display. Hereunder an ALARMS list:

#### **ALARM Er**

It trips when the machine does not cool the product.

#### **ALARM Pt**

It trips when the machine lid is open.

#### **ALARME rt**

Thermal relay has tripped. If the alarm blinks it means thermal relay has not yet reset. When fixed, it means the thermal relay had tripped but it has also reset. To reset the alarm, press "STOP".

#### **ALARM EE**

Call an engineer.

#### **ALLARME tt**

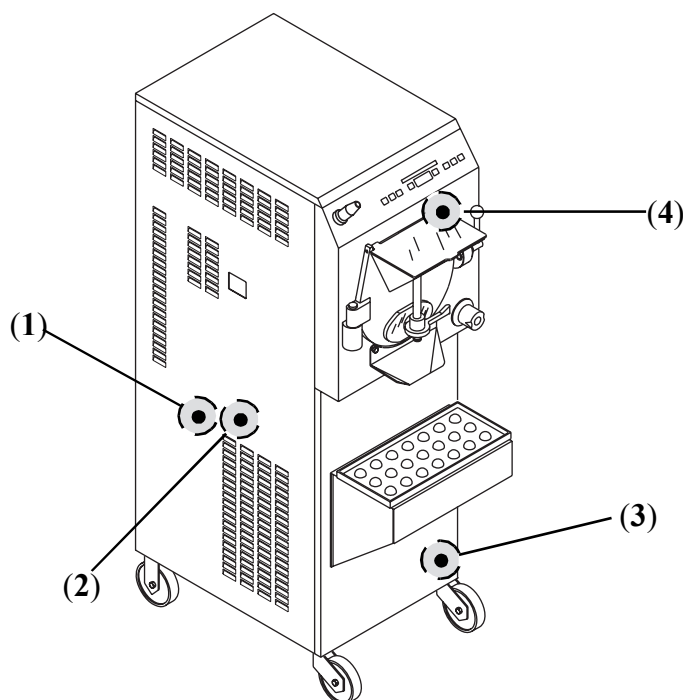
Call an engineer.


#### **ALARM AG**

It trips if the beater is not inserted into its seat or if there is no mix in the cylinder.

### 4.2 MACHINE SAFETY SYSTEMS

The diagram with location of above mentioned safety devices is hereunder illustrated. Safety devices can be seen on right and left sides of the machine, after removing side panel.



 Symbolizes the parts inside the machine.

#### WARNING

IT IS ABSOLUTELY FORBIDDEN TO REMOVE AND TO TAMPER WITH DEVICES TO OPERATOR'S SAFETY.


#### CAUTION

CARPIGIANI will not be responsible for any damages to people and/or to the machine, if safety devices turn to be tampered with or removed.





### THERMAL RELAYS (1)

They take overheating of beater motor and motorcompressor; maximum values of setting bring about machine stop and the machine sets to "STOP", whilst MONITOR blinks,  meaning that THERMAL CUT OUT has tripped.

On automatic resetting of thermal relay, display stops blinking. Before resetting operation, it is necessary to find out reason of tripping. In order to restart the machine, press desired push-button.

### FUSES (2)

They protect control electric circuit against overloads. If they trip, check and eliminate causes of trouble, before replacing them.

### NOTE

*To identify values and features of fuses, refer to machine wire diagram.*

### PRESSURE SWITCH (3)

It is a protection for cooling system and make the circuit cooling compressor stop in the event the circuit has no water (watercooled machines) or in the event of insufficient air circulation in the condenser (aircooled machines). Reset follows automatically.

### WARNING

**Too long running of compressor as well as stop and restart over and over again mean that cooling is insufficient; check reasons.**

### PROTECTIONS FOR THE OPERATOR (4)

#### Magnet switch

On the closing lid of the cylinder in which you find the beater assembly, there is a magnet switch which immediately controls the machine stop on lid opening. The machine sets to "STOP" and

on DISPLAY the message  will be blinking in case the machine was operating, will be steadily on if the machine was already in "STOP".

Reclosing the lid keeps the machine in "STOP" and makes the alarm on display off.

### WARNING

**Before opening front lid, make sure the machine is in STOP position.**



## 5. DISASSEMBLING, WASHING, SANITIZING AND REASSEMBLING THE 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

- Perform all washing and refitting operations using disposable gloves and replacing them when required.
- Use a non-aggressive cleaning solution to wash the parts and the supplied brushes, previously sanitized.
- (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.
- For sanitizing, keep the disassembled parts in warm sanitized water for the time indicated on the label of the product used; use the supplied cleaning brushes to forcefully brush all the components and holes present on the components, then rinse using drinkable water (bacteriologically pure).
- When the washing procedure has been completed and before reassembly, dry each component 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.
- Place the components on a clean and sanitized tray to air-dry.



**Carpigiani recommends the use of a cleaning/sanitizing solution to wash the machine.**

The use of a cleaning/sanitizing solution optimizes the washing and sanitizing procedures in that it eliminates two phases of the procedure (a rinse and a washing phase). In substance the use of a cleaning/sanitizing solution saves time by facilitating and simplifying washing/ sanitizing 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/SANITIZING SOLUTION

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

Washing/sanitizing by soaking

- Remove larger residues by hand.
- Remove finer residues with a jet of water.
- Immerse the assembled parts to be cleaned into the solution.
- Use the supplied brushes to forcefully brush all the components and relevant holes.
- Let the solution react for the time indicated on the label of the product being utilized.
- Rinse the parts with care, using plenty of clean drinking water.

## 5.5 CLEANING THE EXTERIOR OF THE MACHINE

Remove the dust and protective material that was applied before shipment. Use water only with a mild soap-based detergent and apply using a soft cloth.

## 5.6 PRELIMINARY CLEANOUT

With machine off and beater front lid closed, let water in the barrel by means of the hose placed on machine front side and opening shut-off valve.

Press push-button "**CLEANOUT**" and let beater run for the time strictly necessary.

The machine runs about 3 minutes and then it automatically sets to "**STOP**" position, in order to avoid a useless wear of sliding shoes and barrel.

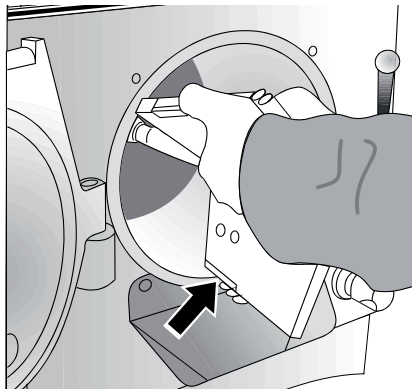
Drain all water from barrel, open the lid so as to remove beater.

## 5.7 BEATER REMOVAL

Remove beater by pulling delicately out and taking care not to damage the scrapers; pay attention not to hit the cylinder walls with beater shaft.

### WARNING

**Act with utmost care, as a fall to the ground might damage the beater.**

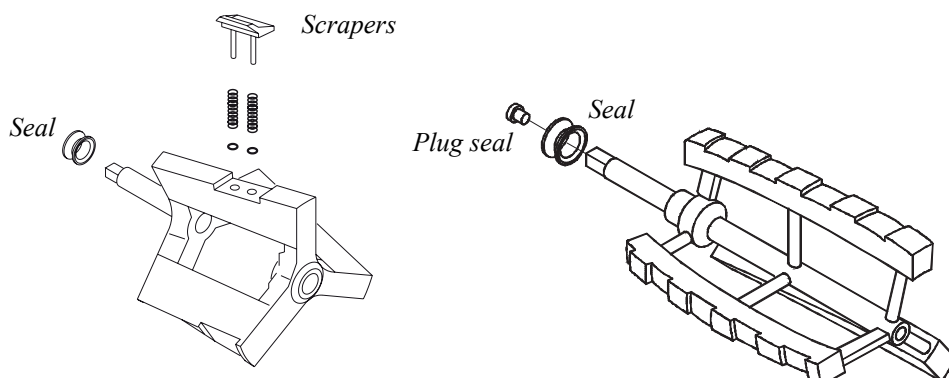


- Completely remove the scrapers.

### WARNING

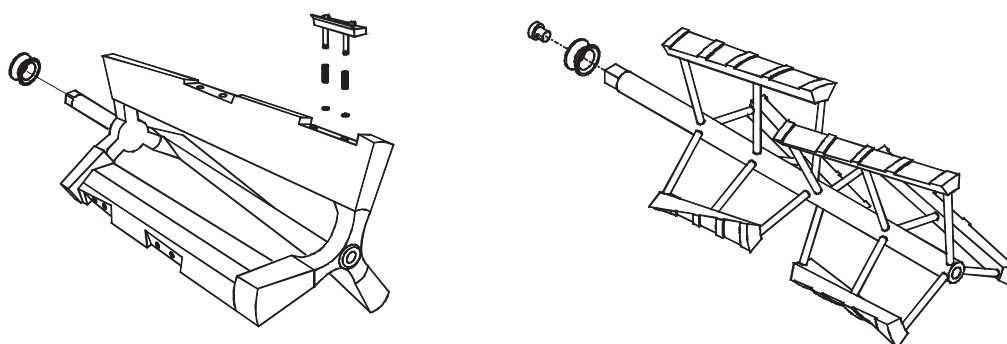
Beater scrapers are "self-regulating". Good cleanliness levels ensure system efficiency.

- Remove seal from its seat on beater shaft.



Beater for LB 202G, LB 302G, LB 502 G

Beater for LB 302, LB 502



Beater for LB 1002 G

Beater for LB 1002

### 5.7.1 Seal

When removing the beater it is necessary to check the seal for wear. Seal can be replaced with the second seal supplied within the machine accessory box, depending on the current machine duty cycle.

- Remove beater unit
- Remove seal from its seat
- Lubricate the replacement seal
- Install the new seal
- Clean and lubricate the replaced seal and store it away to allow it to recover its elasticity.

### IMPORTANT

Change seal with genuine parts any time you notice some ice cream when removing the drip tray on machine side.

Continuing production after this condition could further increase leakage, resulting in machine malfunction possibly affecting production quality.

### PRECAUTIONS

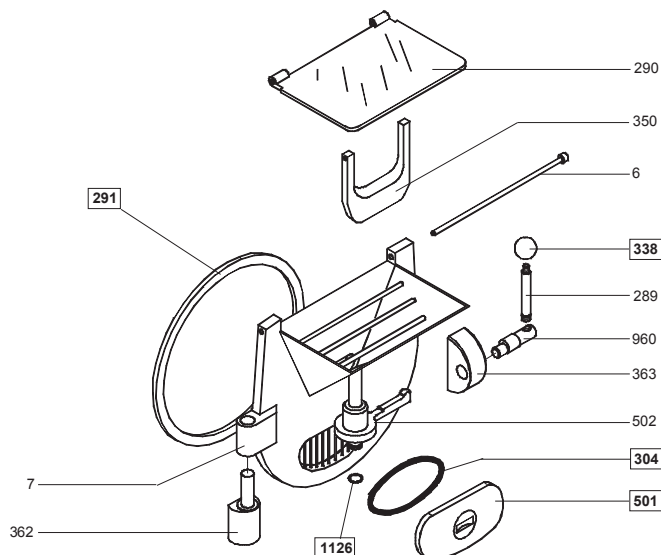
When the machine is not in use, leave beater spigot open to avoid seal compression which could lead to its deformation.





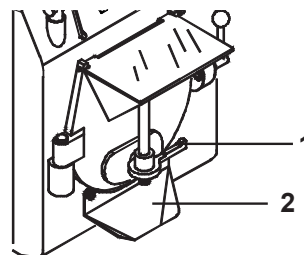
## 5.8 SPIGOT DOOR REMOVAL

- Raise spigot locking lever and move it to the right.
- Open spigot pivoting on the hinge.
- Lift spigot to remove.
- Remove all mobile parts, including the cylinder seal.



### 5.8.1 Ice cream outfeed spigot door removal

- Turn lever (ref. 1) to the left by 90° to lift spigot.
- Lift lever and spigot and lock spigot up by turning lever fully home to the right.
- Now remove the bottom O-ring from spigot door pivot and remove it, in this way lever is released as well.
- Remove spigot O-ring.



### 5.8.2 Hopper cover removal

To clean mix feeding area, with machine stopped, slide out cover retaining shaft (pos. 6) and remove it.

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

### 5.8.3 Product outlet 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.



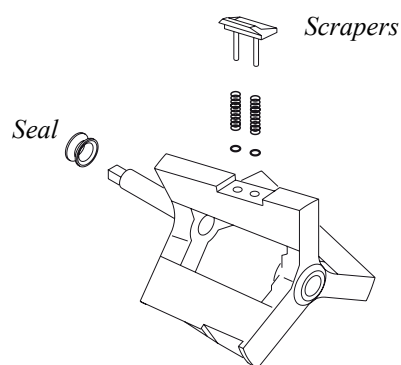
## 5.9 WASHING AND SANITIZING COMPONENTS

1. Remove larger residues by hand.
  2. Remove finer residues with a jet of water
  3. Soak the parts to be cleaned in the cleaning/sanitizing solution.
  4. Use the supplied brushes to forcefully brush all the components and relevant holes.
  5. Leave the cleaning/sanitizing solution to work for the time indicated on the product packaging.
  6. Rinse the parts with care, using plenty of clean drinking water.
  7. Place the components on a clean tray to air-dry.
  8. Soak a brush in the cleaning/sanitizing solution and clean the cylinder and housing hole of the beater.
  9. Spray cleaning/sanitizing solution on the whole internal surface of the cylinder.
- Repeat steps 8 and 9 several times.**
10. Remove drip tray (Ref. 3), clean it, sanitize it and refit it in its seat.
  10. Disassemble tray shelf (Ref. 4), clean it, sanitize it and refit it.
  11. Wipe the exterior of machine with a clean wet sanitized cloth.

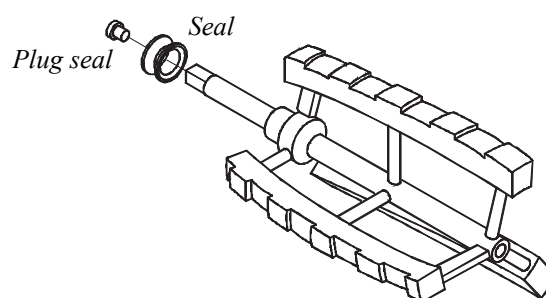


## 5.10 BEATER REFITTING

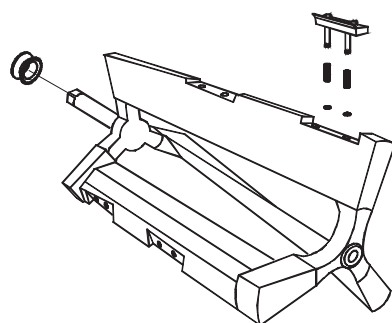
Refit all removed parts taking care to smear seal with some food-grade lubricant.



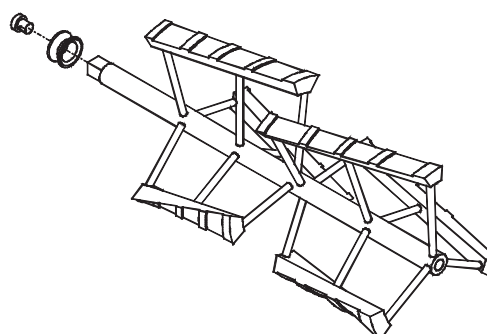
*Beater for LB 202G, LB 302G, LB 502 G*



*Beater for LB 302, LB 502*

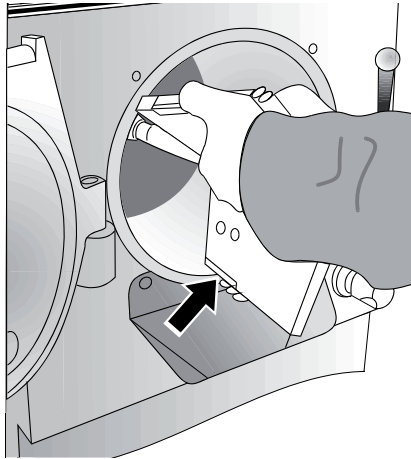


*Beater for LB 1002 G*



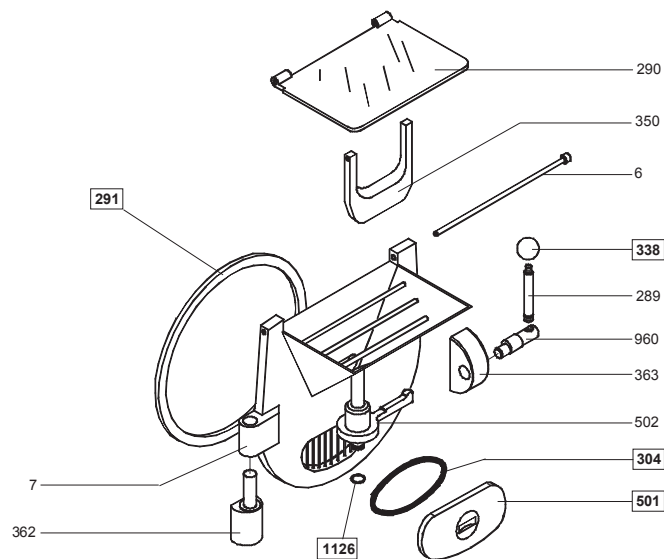
*Beater for LB 1002*

When refitting the beater, grab it with both hands and press scrapers so as to help insertion. Press beater fully home and meanwhile turn it until inserting the shaft fully in its seat.



## 5.11 SPIGOT DOOR REFITTING

- Reinstall all removed parts taking care to smear with some food-grade lubricant all O-rings and spigot door support shaft pos. 362.
- Reposition the assembled spigot door in its seat



### 5.11.1 Product outlet chute repositioning

Reposition the chute on the front panel of the machine turning it clockwise in order to lock it in its seat.



## 5.12 SANITIZATION

Operation required before each production process.

- With the machine stopped, the beater unit enabled and the spigot door closed, pour the cleaning/sanitizing solution in the cylinder. It shall be prepared by following the instructions on the product label.
- Press the "CLEANOUT" button.
- Leave the machine running for 10/15 seconds.

### WARNING

**Operating the machine in "CLEANING" mode for too long with an empty cylinder or just filled with water and sanitizing solution brings about a quick wear of the beater scrapers.**

- Let the cleaning/sanitizing solution react inside the cylinder during the time shown on the product label.
- Completely drain solution from working cylinder.
- Rinse with plenty of clean water.

### WARNING

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

### WARNING

**Before starting again with production, rinse thoroughly with water only, in order to remove any residue of sanitizing solution.**

## 5.13 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 lubricating moving 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”.



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 assembly**

At the end of a working day.

- **Cleanout of sliding shoes**

At the end of a working day.

- **Cleanout of panels**

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.

#### WARNING

**NEVER USE ABRASIVE SPONGES TO CLEAN MACHINE AND ITS PARTS,  
AS IT MIGHT SCRATCH THEIR SURFACES.**



### 6.2 WATERCOOLING

By machines with watercooled condenser, water must be drained from condenser at the end of selling season in order to avoid troubles in the event that the machine is stored in rooms where temperature may fall under 32°F (0°C). After closing water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.

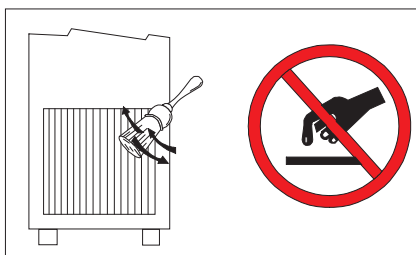


### 6.3 AIRCOOLING

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

#### ATTENTION

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



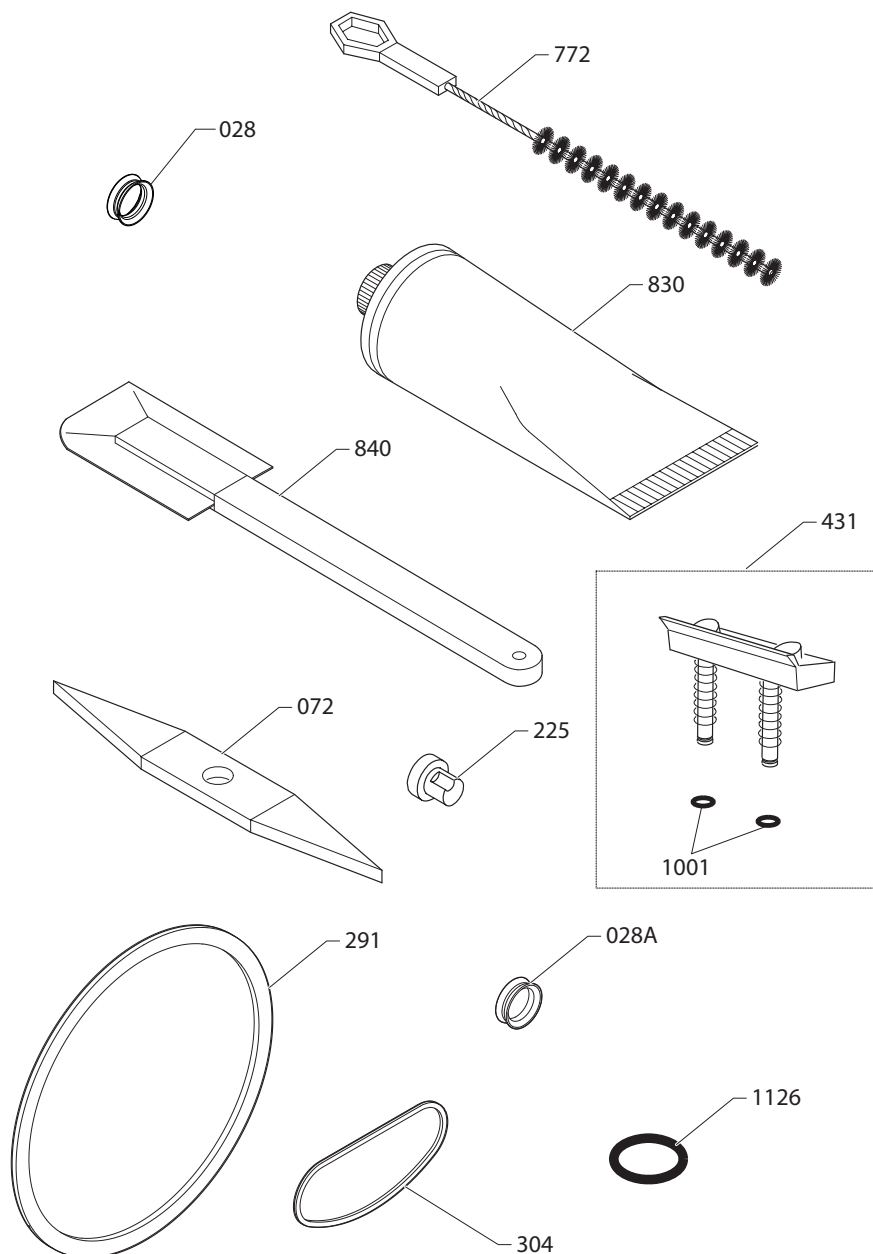
*NOTE: never use sharp metal objects to carry out this operation. Good working of a freezing plant mostly depends on cleaning of condenser.*

### 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



Description	Position number
Beater stuffing box	28/28A
O-ring extractor	72
Seal plug	225
Hose adapter	291
Gaskets for hose adapter	304
Scraper self adjusting	431
Brush	772
Food-grade lubricant tube	830
Ice cream spatula	840
O-ring	1126

## 7. TROUBLESHOOT GUIDE

IRREGULARITY	CAUSE	PROCEDURE
<b>Machine does not start</b>	Main switch is off	Switch it on
	Machine unplugged	Check and plug in
	Machine is not set at PRODUCTION	Check push button for PRODUCTION is lit
	Front lid is not closed well	Check front lid closure
<b>Compressor starts and then stops after a few seconds without ice cream being thick</b>	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 of machine is at least 2 in (50 cm) from wall
		Clean condenser from obstructions
<b>After 15 minutes processing mix has not frozen and the machine returns to Stop</b>	No gas	Contact Technical Assistance.
	Pressure switch has broken down	Contact Technical Assistance.
<b>Machine runs but no ice cream comes from ice cream door</b>	No sugar in the mix	Allow to thaw, then modify or replace the mix
<b>Machine works but ice cream is too soft</b>	Too much sugar in the mix	Modify or replace the mix
<b>Mix in drip drawer</b>	Stuffing box missing or ruined	Install if missing Replace if ruined
<b>Ice cream comes out from behind front lid</b>	Gasket missing or not properly installed	Check and fix or replace
<b>Bacteria tests show too high bacteria charge</b>	Too high bacteria charge in the mix	Improve preparation procedure by sanitizing all containers, spoons, etc., and have mix analyzed before pouring it into the machine
	Machine not clean enough	Empty and thoroughly wash the machine. Carry out sanitization as per chapter 5 of manual.

