

APPLICARE
TARGA
CARATTERISTICHE

INSTRUCTION HANDBOOK



*We wish to thank you for the preference granted to us by purchasing one of **CARPIGIANI** machines.*

*To the best guarantee, since 1993 **CARPIGIANI** has submitted its own Quality System to the certification according to the international Standard ISO 9001, nowadays its production has got UNI-EN-ISO 9001:2008 Certified Quality System.*

Moreover, Carpigiani machines comply with following European Directives:

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

CARPIGIANI

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The purchaser has the right to reprint it for his own office use.

CARPIGIANI policy pursues a steady research and development, thus it reserves the right to make changes and revisions whenever deemed necessary and without being bound to previous statements to the purchaser.

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FOREWORD.....	5
INSTRUCTION HANDBOOK.....	5
PURPOSE.....	5
HANDBOOK STRUCTURE.....	5
ADDITIONAL DOCUMENTATION	5
CONVENTIONAL SYMBOLS	6
SAFETY	7
QUALIFICATION OF THE STAFF	7
WARNING	7

SECT. 1 GENERAL INFORMATION

1.1 GENERAL INFORMATION	9
1.1.1 MANUFACTURER'S IDENTIFICATION DATA.....	9
1.1.2 CLIENT/USER'S IDENTIFICATION DATA.....	9
1.1.3 INFORMATION TO THE USER.....	9
1.2 INFORMATION ABOUT THE MACHINE.....	9
1.2.1 GENERAL DATA.....	9
1.2.2 TECHNICAL FEATURES	10
1.2.3 PRODUCTION DATA	10
1.2.4 OPTIMUM PRODUCTION CONDITIONS	11
1.2.5 LOCATION OF MACHINE GROUPS.....	11
1.3 INTENDED USE.....	12
1.4 NOISE	12
1.5 STORING A MACHINE	12
1.6 DISPOSAL OF PACKING STUFFS.....	12
1.7 WEEE (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT).....	12

SECT. 2 INSTALLATION

2.1 ROOM NECESSARY TO THE MACHINE USE	13
2.2 WATER SUPPLY CONNECTION.....	13
2.3 MACHINE WITH AIRCOOLED CONDENSER.....	13
2.4 MACHINES WITH WATERCOOLED CONDENSER.....	14
2.4.1 WATER VALVE ADJUSTMENT	14
2.5 ELECTRIC CONNECTION	14
2.5.1 REPLACING THE POWER CABLE.....	14
2.6 LOCATION	15
2.7 REFILLING.....	15
2.8 MACHINE TESTING	15

SECT. 3 DIRECTION FOR USE

3.1 MACHINE SAFETY WARNINGS	17
3.2 MACHINE CONFIGURATION	17
3.3 CONTROLS	18
3.3.1 PUSH-BUTTON PANEL	18
3.3.2 PUSH-BUTTON FUNCTIONS	18
3.4 ICE CREAM PRODUCTION	21
3.4.1 ICE CREAM REMOVAL.....	22
3.4.2 USING THE ICE CREAM LEVER.....	23
3.4.3 POST COOLING.....	23
3.5 GRANITA PRODUCTION	23
3.5.1 SICILIAN GRANITA.....	24
3.5.2 FRUIT CREMOLATA.....	24
3.6 TOPPING PRODUCTION	25
3.6.1 TOPPING EXTRACTION.....	25

3.7	CREAM PRODUCTION	26
3.7.1	CREAM EXTRACTION.....	26
3.8	CHOCOLATE PRODUCTION	27
3.8.1	CHOCOLATE EXTRACTION	28
3.9	SPECIALITY PRODUCTION	28
3.9.1	SPECIALITY EXTRACTION	29
3.10	CUSTOMISED PRODUCTION CYCLES	29
3.10.1	EDITING ORIGINAL PRODUCTION CYCLES.....	29
3.10.2	RESTORING DEFAULT PRODUCTION CYCLES	30
3.11	USER SETTINGS.....	30

SECT. 4 SAFETY DEVICES

4.1	ALARMS	31
4.2	POWER FAILURE.....	32

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

5.1	GENERAL DESCRIPTION	35
5.2	WASHING CONDITIONS	35
5.3	SUGGESTIONS	35
5.4	HOW TO USE XSAN DETERGENT/SANITIZER.....	36
5.5	PRELIMINARY CLEANOUT	36
5.6	BEATER DISASSEMBLY	37
5.6.1	SLIDING SHOES DISASSEMBLY	37
5.6.2	STUFFING BOX.....	38
5.7	FRONT LID DISASSEMBLY	38
5.7.1	ICE CREAM DOOR DISASSEMBLY	38
5.7.2	HOPPER COVER DISASSEMBLY	39
5.7.3	ICE CREAM SLID DISASSEMBLY.....	39
5.8	SANITIZATION	39
5.9	HYGIENE.....	39

SECT. 6 MAINTENANCE

6.1	SERVICING TYPOLOGY	41
6.2	WATERCOOLING.....	41
6.3	AIRCOOLING.....	41
6.4	ORDERING SPARE PARTS	41
6.5	ACCESSORIES KIT	42

SECT. 7 TROUBLESHOOT GUIDE

7.1	TROUBLESHOOT GUIDE.....	43
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FOREWORD

INSTRUCTION HANDBOOK

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

PURPOSE

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

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

A significant part of this handbook refers to the conditions necessary to the machine use and to the necessary procedure during cleanout as well as routine and special maintenance.

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

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HANDBOOK STRUCTURE

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

Section

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

Chapter

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

Subchapter

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

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

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

ADDITIONAL DOCUMENTATION

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

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

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



CONVENTIONAL SYMBOLS



CAUTION: ELECTRIC SHOCK DANGER

The staff involved is warned that the non-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.



WARNING DANGER FROM MOVING PARTS

This informs the staff concerned of the presence of moving parts and the risk of injury from failure to comply with safety regulations.



CAUTION CRUSHING HAZARD

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



CAUTION: GENERAL HAZARD

The staff involved is warned that the operation described may cause injury if not performed following safety rules.



NOTE

It points out significant information for the staff involved.



WARNINGS

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



PROTECTIONS

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

QUALIFICATION OF THE STAFF



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.



CARPIGIANI ENGINEER

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

SAFETY

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

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

- 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.



QUALIFICATION OF THE STAFF

Staff attached to the machine can be distinguished according to training and responsibility as follows:

OPERATOR

- A person who has not necessarily a high technical knowledge, just trained for ordinary operation of the machine, such as: startup, stop, filling, basic maintenance (cleanout, simple blocking, instrumentation checkings, etc.).



SKILLED ENGINEER

- A person engaged on more complicated operations of installation, maintenance, repairs, etc.



IMPORTANT!

One must be on the look-out that the staff does not carry out any operation outside its own sphere of knowledge and responsibility.

NOTE:

According to the standard at present in force, a SKILLED ENGINEER is who, thanks to:

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

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

WARNING

When installing the machine, insert a differential magnetothermal protection switch on all poles of the line, adequately sized to the absorption power shown on machine data plate and with contact opening of 0.12 in (3 mm) at least.

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



1. GENERAL INFORMATION

1.1 GENERAL INFORMATION

1.1.1 Manufacturer's identification data

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

Copy of machine data plate to be found on first page of this handbook.

MODEL NO. _____			
SERIAL NO. _____		DATE _____	
VOLTAGE _____		PHASE _____ HZ _____	
MAX. OVERCURRENT/FUSE SIZE _____ AMP			
MINIMUM CIRCUIT AFFINITY _____			
DESIGN PRESS. _____		OPERATING PRESS. _____	
HIGH SIDE PRESS. _____		LOW SIDE PRESS. _____	
REFRIGERANT _____ AND WT. _____ OZ			
	BEATER	COMPRESSOR	FAN
QTY			
HP			
FLA			
LRN			

1.1.2 Client/user's identification data

CLIENT:.....
 ADDRESS:.....
 TELEPHONE:.....
 Machine serial number:.....
 Machine delivered on:.....
 Instr. handbook delivered on:

1.1.3 Information to the user

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



1.2 INFORMATION ABOUT THE MACHINE

1.2.1 General data

MAESTRO machines are built to produce homemade ice cream and patisserie products.

They are electronically controlled machines for professional production of ice cream, custard creams and hardened chocolate. The production cycle can be customised to batch freeze any mix perfectly as well as to produce other speciality mixes. In fact, only with the **MAESTRO** machine is it possible to produce infinite, original ice creams and also fruit cremolata, perfect Sicilian granita and a host of different patisserie products.

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				Beater motor speed n°	Power supply			Rated power	Con-den-ser**	Dimensions in Fig.1			Net Weight	
	Hourly production														
	Mix added lb		Ice cream made gal.			Volt	Hz	Ph			kW	W	D		H
Maestro * HCD	22*	66	2.6	9.2	3	208 230	60	3	3,0	Water	2	2.6	5.5	529	
Maestro ** HCD	33*	99	4.6	13.8	3				5,3	Water	2	2.6	5.5	617	
Maestro *** HCD	44	132	6.1	19.8	3				7,3	Water	2	2.6	5.5	816	
Maestro *** HCD-A	44	132	6.1	19.8	3				7,3	Air	2.4	3.3	5.5	838	

Production changes according to used ingredients

* "Excellent" cycle quantity

** Air cooling available with price surcharge

1.2.3 Production data

		maestro★		maestro★★		maestro★★★	
		Work cycle quantity					
		Min.	Max	Min.	Max	Min.	Max
Input mix	lb	3.3*	11.0	5.5*	16.5	6.6	23.1
Output ice cream	gal.	0.4	1.5	0.7	2.2	0.9	3.3
Granita	lb	4.4	8.8	7.7	14.3	11.0	22.0
Topping	lb	6.6	13.2	9.9	19.8	13.2	23.1
Cream	lb	6.6	13.2	9.9	19.8	13.2	26.4
Chocolate	lb	5.5	11.0	11.0	22.0	16.5	27.5
Yogurt	lb	8.8	13.2	13.2	19.8	13.9	23.1

Production changes according to used ingredients

* "Excellent" cycle quantity

1.2.4 Optimum Production Conditions

To obtain perfect products, the optimum utilisation conditions of Maestro are:

- using ingredients indicated in the recipe book within the minimum and maximum quantities.
- put the ingredients in the machine during the production progress only when requested on the display.
- equipping the Beater with scrapers as indicated in the table.

Unit	Recipe	Metal scraper	Plastic scraper	No scraper
Ice Cream machine	Ice cream	X		
	Cremolata, Sicilian Slush		X	
	Chocolate and Fruit Sauce			X
	Cream sauce	X		
	Chocolate and Fruit Topping			X
	Cream Topping	X		
Cream	Panna cotta, Fruit cream, Gelatine for cakes			X
	Custard, zabaione custard, Bavarian cream	X		
Chocolate	Chocolate, (dark, milk, white), ganache custard, chocolate spread			X
Pastry specialities	Semifreddo base products	X		
	Pochée Fruit, Yogurt, Infusions, Rice cooking, mix crepés			X

1.2.5 Location of machine groups

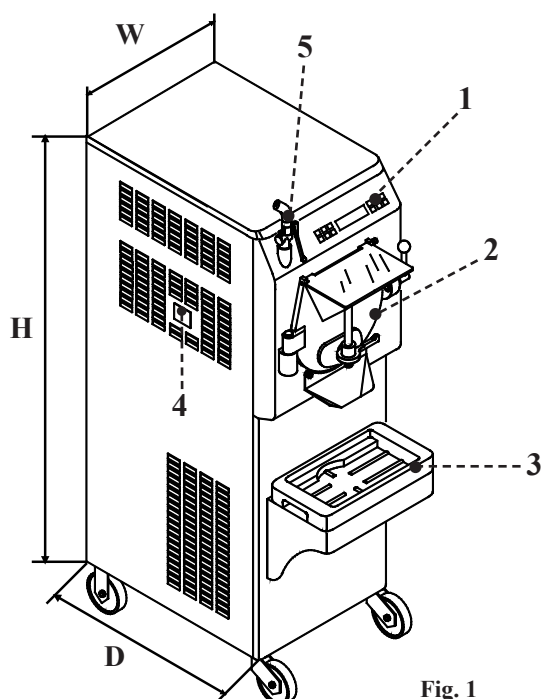


Fig. 1

Legend:

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

1.3 INTENDED USE

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

Voltage:	±10%
Min air temperature:	50°F (10°C)
Max air temperature:	109°F (43°C)
Min water temperature:	50°F (10°C)
Max water temperature:	86°F (30°C)
Min. water pressure:	0,1 MPa (1 bar)
Max water pressure:	0,8 MPa (8 bar)
Max relative humidity:	85%

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

1.4 NOISE

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

1.5 STORING A MACHINE

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

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

1.6 DISPOSAL OF PACKING STUFFS

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

1.7 WEEE (Waste Electrical and Electronic Equipment)

In conformity with the European Directives 2006/66/EC, on batteries and accumulators and waste batteries and accumulators, and 2002/96/EC, also known as WEEE, the presence of the symbol on the side of the product or packaging means that the product must not be disposed of with normal urban waste. Instead, it is the user's responsibility to dispose of this product by returning it to a collection point designated for the recycling/treatment of electrical and electronic equipment waste. Differentiated collection of this waste material 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 6 in (150 cm) in consideration of space taken by opened doors.

ATTENTION

MACHINES WITH AIRCOOLED CONDENSER must be installed no closer than 2 in (50 cm) 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.

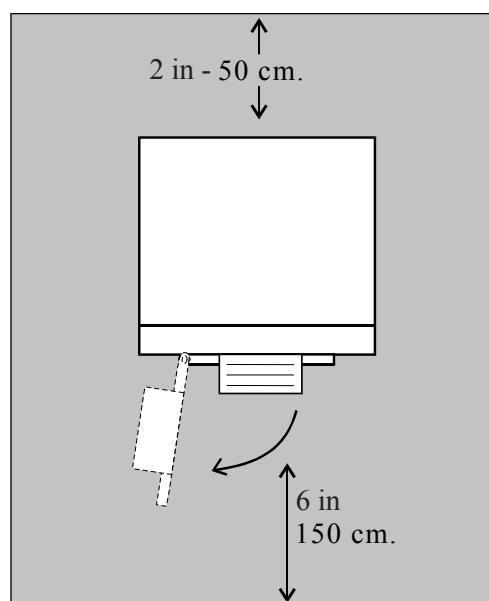


Fig. 2

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 2 in (50 cm) 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



To make the machine run, a watercooled machine must be connected to running water supply, or to a cooling tower.

Water must have a pressure of 0.1 MPa and 0.8 MPa (1-8 bar) at least, and a delivery at least equal to the estimated hourly consumption.

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



2.4.1 Water valve adjustment

IMPORTANT

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

Valve adjustment must be carried out in such a way that no water flows when machine is off and lukewarm water flows when machine is on.

NOTE

Water consumption increases if temperature of entering water is above 68°F (20°C).

ATTENTION

Do not leave the machine in a room with temperature below 32°F (0°C) without first draining water from the condenser.

2.5 ELECTRIC CONNECTION

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

Be sure to install, between the machine and the power mains, a **class D differential circuit breaker** of the correct size for the required power input and with a contact gap of at least 0.12 in (3 mm.) The machines are delivered with a 5 wire cable: blue wire must be connected to the neutral lead.

IMPORTANT

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

2.5.1 Replacing the power cable

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

IMPORTANT

Direction of rotation
Beater rotation is anticlockwise.

NOTE

By threephased machines, it is necessary to check that axial pulley A has clockwise rotation: to do that, watch through slits of rear panel (see picture).

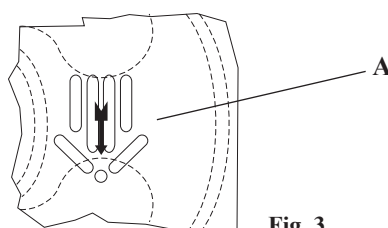


Fig. 3

Reversal of rotation

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

2.6 LOCATION

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

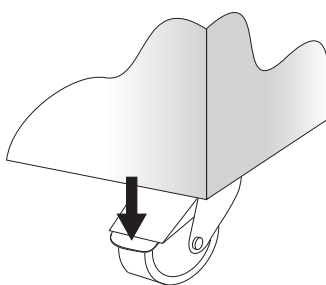


Fig. 4

2.7 REFILLING

Motor installed in the machine is of the type with lubrication for life; no action of checking/replacing or topping up is necessary.

Gas filling necessary to the freezing system is carried out at **CARPIGIANI** works during machine postproduction testing.

If a gas addition happens to be made, this must be carried out by skilled technicians, only, who can also find out trouble origin.

2.8 MACHINE TESTING

A postproduction test of the machine is carried out at **CARPIGIANI** premises; Operation and output functionality of the machine are thoroughly tested.

Machine test at end user's must be carried out by skilled technicians or by one of **CARPIGIANI** engineers.

After the machine positioning and correct connections, also carry out all operations necessary to functional check and test of the machine.



3. DIRECTIONS FOR USE

3.1 MACHINE SAFETY WARNINGS

When using industrial equipment and plants, one must be aware of the fact that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious 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 and heating 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

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

CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.

CAUTION

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



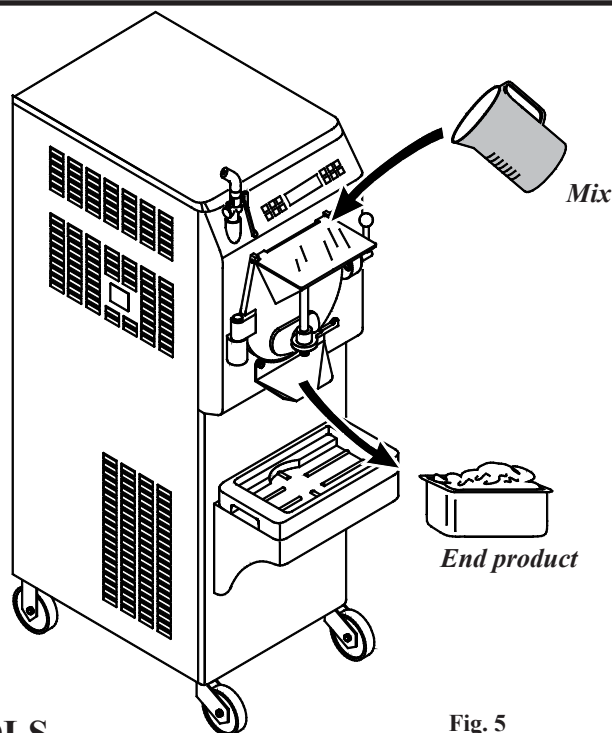


Fig. 5

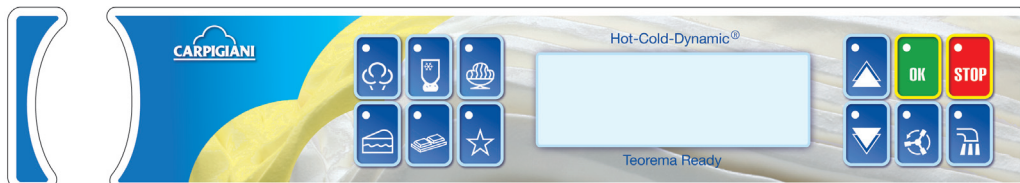
3.3 CONTROLS

3.3.1 Push-button Panel

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



Only for the HCD and HCD A-EFF versions:



3.3.2 Push-button functions



STOP

In this function, the machine is idle.

From this position, it is possible to access other functions.

The display shows:



Maestro 1 star

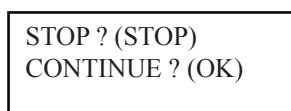


Maestro 2 stars



Maestro 3 stars

To place the machine at Stop during Crème cycles, press the **STOP** key and the display visualises:



When the **OK** key is pressed, the machine will resume its operation from the point of interruption, while if the **STOP** key is pressed, the machine will set itself to stop mode.



OK

When pressed whilst visualising menus, the OK key starts the process selected. This key is used when running programs, to confirm the insertion of ingredients or the continuation of a process after the **STOP** key has been pressed.



INCREASE

Whilst inside any menu (ice cream, slush, etc.), this key is used to select the desired process (selected by the asterisk at the side of the cycle).

Furthermore, it increases the values that can be modified in the functions where permitted. For example; the modification of the process temperature.



DECREASE

This decreases the values that can be edited for those functions where this is permitted, e.g., to change the temperature of the production process.

While production is in progress, holding down this key makes it possible to perform an AUTOSSETUP for the single cycle, i.e., for the current production process, the Temperature, Duration and Speed values are set back to default values.

If this key is held down in STOP mode, an AUTOSSETUP is carried out for all programs.

This key is also used to reset alarm messages.



WATER DISPENSE

When pressed, at any time, this enables the water dispensing function (via the shower on the front of the machine). To stop the water dispensing function, press the **WATER DISPENSE** key or wait for three minutes.

Memorisation of the Water Dispensing Time:

Pressing the Water Dispensing key for approximately 3" (until a beep is heard) whilst dispensing, the dispensation stops and memorises the time past from the activation. From the successive utilisation of the shower, the dispensation time will be that time memorised.

To increase the time, adjust step U14.



CLEANING/EXTRACTION

CLEANING FUNCTION

Pressing the  key from Stop mode will open the following menu:

* CLEAN HOT CLEAN DRY CLEAN
--

and the Cleaning, Increase and Decrease LEDs will switch on.

Using the **INCREASE** and **DECREASE** keys, it is possible to select the type of cleaning required (shown by an asterisk alongside the cycle).

Press the OK key to start the required cleaning program.

CLEANING PROGRAMS:

- **CLEAN**: for traditional machine washing, using the shower (which can be connected to the hot water supply on the premises), it is necessary to fill the cylinder with water and to press the OK button to start beating and therefore, the washing cycle.
- **HOT CLEAN**: as well as the beater, a heating cycle is started up for faster removal of any grease from the cylinder.
- **DRY CLEAN**: After washing the machine, the door is opened and using this program, the cylinder will heat up but the beater will remain still. All moisture will evaporate completely and the machine will be immediately ready to use for tempering chocolate.

During the washing stage, the first row of the display shows the selected washing program, while the second and third rows show any warning messages in case of a boiling hot cylinder (as is the case for the DRY program) and the fourth row displays the beater speed and the required time.



Use the **INCREASE** and **DECREASE** keys to change the beater speed during the wash cycle.

EXTRACTION FUNCTION

When the  key is pressed, the product is dispensed at the recommended speed. In fact, towards the end of the production cycle, the second row of the display will read EXTRACT, for example:

CUSTARD	
Extract	
Storage	
+39°F	+59°F

Pressing the  key will start up the extraction speed as set for that particular product and the display will then show:

CUSTARD	
Extract	
Speed	01

The Increase and Decrease LEDs will switch on and it will be possible to change the Extraction speed using the **INCREASE** and **DECREASE** keys.



CHILLED EXTRACTION from Gelato Excellent, Gelato Simply, Gelato Hot and Gelato Hot Age Cycles:

Once extraction has been started by pressing the  key, the chilling cycle is restarted to maintain the consistency of the ice cream inside the cylinder. This chilling cycle will only start if required so as not to chill the cylinder when it is almost empty, freezing the last ice cream remaining inside. The LED on the key will switch on for the entire chilling time.

CHILLED EXTRACTION from Gelato Speed and Gelato Hard:

Once the extraction has been started for the above cycles, pressing the  key will start ice cream chilling for 20 seconds.



ICE CREAMS

Pressing the **ICE CREAM** key, the following menu appears:

- Gelato Excellent
- Gelato Speed
- Gelato Hard
- Gelato Simply (Submenu)
 - o Cream gelato
 - o Fruit gelato
 - o Fruit ice
- Gelato Hot (Submenu)
 - o Pasteurization
 - o Heating
- Gelato Hot Age



GRANITA

Pressing the **GRANITA** key, the following menu appears:

- Sicilian Granita
- Fruit Cremolata



TOPPING

Pressing the **TOPPING** key, the following menu appears:

- Chocolate sauce
- Cream paste
- Fruit sauce
- Chocolate topping
- Cream topping
- Fruit topping



CREAMS

Pressing the **CREAMS** key, the following menu appears:

- Custard
- Zabaione custard
- Bavarian cream
- Fruit cream
- Panna Cotta
- Gelatine for cakes
- Custard Excellent



CHOCOLATE

Pressing the **CHOCOLATE** key, the following menu appears:

- Chocolate harden (Submenu)
 - o Bitter Choc harden
 - o Milk Choc harden
 - o White Choc harden
- Speed choc harden
- Ganache custard
- Chocolate spread



SPECIALITY

Pressing **SPECIALITY** key, the following menu appears:

- Semifreddo base
- Pochee' Fruit
- Yogurt
- Infusion
- Rice cooking
- Mix Crepes

To select a production cycle, it is necessary to scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

3.4 ICE CREAM PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", pour the required amount of mix into the cylinder through the loading hopper in the door, respecting the minimum and maximum amounts as listed in the table in paragraph 1.2.2.

Before pouring in the mix, make sure that the door and ice cream door are perfectly closed.

Pressing the  key, the following menu appears:

- Gelato Excellent
- Gelato Speed
- Gelato Hard
- Gelato Simply (Submenu)
 - o Cream Gelato
 - o Fruit Gelato
 - o Fruit Ice
- Gelato Hot
 - o Gelato Hot 65-90 Pasteurisation (pasteurisation – whipping)
 - o Gelato Hot 5-55 Heating (heating – whipping)





IMPORTANT

**The Gelato Hot Heating cycle does not pasteurize the mix.
We recommend using the cycle for any addition of fat-based flavouring pastes.**

- Gelato Hot Age (Pasteurization - Ageing – Batch freezing)

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

Production example with "Gelato Excellent":



The display shows:

- The name of the recipe in progress on the first row
- On the fourth row, the value of the HOD consistency to be reached on the left, the current consistency on the right and in the middle, the increasing bars for the HOD consistency.

When preparation commences, the Increase and Decrease LEDs switch on and it is possible to vary the required HOD consistency level using the **INCREASE** and **DECREASE** keys.

The modified value will be memorised and re-proposed at the successive cycle (even if there is a blackout):

In the case of SIMPLY ICE CREAM, select the submenu:



Press **OK** to confirm and the "Simply" preparation menu will open

Use the **INCREASE** and **DECREASE** keys to move the asterisk alongside the required production cycle.



Press the **OK** key to start the production process, which will be completely automatic. The operator will not be able to change the set Hod values in the Gelato Simply cycle.

Note: HOD is a patented Carpigiani system for dynamic control of ice cream consistency.

Note: if the last recipe prepared is in a submenu (for example "Cream Gelato"), the next time the  key is pressed, the display shows the last submenu to be selected: "Cream Gelato". To go back to the main menu, press the  key again.

3.4.1 Ice cream removal

When the production is complete, the ice cream can then be removed from the batch freezing cylinder, proceeding as follows:

- Place the tub on the shelf under the ice cream chute.
- Turn the lever to release the ice cream door to the left (ref. 1).
- Lift the lever and the ice cream door.
- Press the **CLEANING/EXTRACTION** key.
- Select speed 3 by pressing the **INCREASE** key.
- After this stage, press **STOP**.



CAUTION

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

SAFETY WARNING

To avoid unnecessary wear of the scraper sliding block and the cylinder, the machine returns to STOP after 1 minute of continuous functioning in extraction mode.

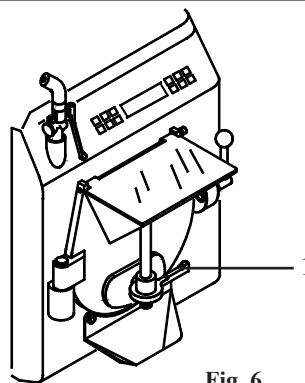


Fig. 6

HIGH EFFICIENCY version:

In the HIGH EFFICIENCY version, the commutation to high speed occurs automatically after the extraction of the first portion of the product when selecting speed 3.

3.4.2 Using the ice cream lever

Locking

Lock the ice cream door by moving the lever (ref. 1) all the way to the right.

Opening

Turn the lever (ref. 1) 90° to the left.

Lift the lever and door.

Lock the door upwards turning the lever (ref. 1) all the way to the right.

Closing

Repeat the opening operation in reverse order.

3.4.3 Post cooling

Present in all MAESTRO versions, this function is extremely useful for the models with greater production capacity (two or more tanks per cycle):

In fact, if each tank of ice cream needs to be externally processed after the extraction, such as garnishing, variegation or anything else, the ice cream that is still inside the machine, remains in beating mode at extraction high speed and tends to lose its initial consistency before being put into storage.

For the Excellent Ice Cream, Simply Ice Cream and Hot Age Ice Cream, the MAESTROs are equipped with an automatic post cooling system (intelligent post cooling).

To activate this system during the extraction phase, press the PRODUCTION key to continue to cool the product. The compressor will start and stop automatically when the value of consistency is less than the prefixed value.

For the Speed and Hard cycles, the post cooling system activates when the PRODUCTION key is pressed and the cooling remains active for 20”.

HIGH EFFICIENCY version:

Speed and Hard cycles:

The post cooling system is active for 20” whether during slow speed cycles or high speed cycles.

Excellent ice cream, Simply ice cream and Hot age ice cream cycles:

Being automatic, the post cooling system functions only when high speed is activated and does not function during slow speed phases.

3.5 GRANITA PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", pour the required amount of mix into the cylinder through the loading hopper in the door, respecting the minimum and maximum amounts as listed in the table in paragraph 1.2.2.

Before pouring in the mix, make sure that the door and little door are perfectly closed.

Pressing the  GRANITA key, the following menu appears:

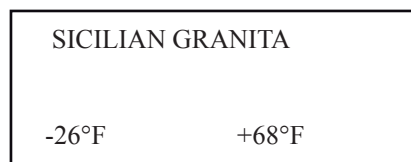
- Sicilian Granita
- Cremolata Fruit

Scroll through the menu with the INCREASE and DECREASE keys until the asterisk is alongside the required process and then confirm by pressing the OK key.



3.5.1 Sicilian Granita

While preparing Sicilian Granita, the display will read:



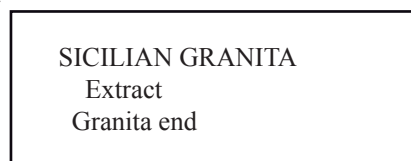
The display will show:

- The first row shows the name of the production in progress
- The fourth row shows the temperature to be reached on the left and the current temperature of the granita on the right.

It is possible to vary the required temperature using the **INCREASE** and **DECREASE** keys.

Sicilian Granita extraction

When the recipe is finished, an intermittent acoustic signal will be heard and the display will read:



The correct temperature for the end of chilling depends on the amount of sugar in the granita and if it is made with coffee, on the coffee blend used.

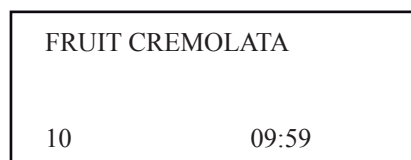
At this point, it is possible to extract the granita by pressing the  key or opening the cylinder door and using the spatula supplied.

CAUTION

To make cremolata extraction easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.

3.5.2 Fruit cremolata

During preparation of the Fruit Cremolata recipe, the display will read:



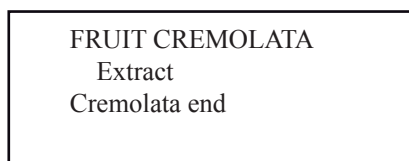
The display shows:

- The name of the production cycle in progress on the first row
- On the fourth row, the total production time set in minutes and seconds and on the right, the production time for the Cremolata, counting down.

By pressing the **INCREASE** and **DECREASE** keys, it is possible to change the Cremolata production times.

Fruit Cremolata extraction

When the set time is up, the buzzer will sound continuously to indicate that the cremolata is ready for extraction and the display will read as follows:



At this point, it is possible to extract the fruit cremolata by pressing the  key or opening the cylinder door and using the spatula supplied.

CAUTION

To make cremolata extraction easier, only use the plastic spatula supplied. Never use metal spatulas as these could damage the machine.

3.6 TOPPING PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", make sure that the door and LITTLE door are perfectly closed.

Pressing the  **TOPPING** key, the following menu appears:

- Chocolate sauce
- Cream paste
- Fruit sauce

- Chocolate topping
- Cream topping
- Fruit topping

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

CHOCOLATE SAUCE
 * CREAM PASTE
 ... FRUIT SAUCE
 CHOCOLATE TOPPING

The display will read

CREAM PASTE
 Water+EggYolk OK?
 Heating

 +104°F +97°F

The display shows:

- On the first row, the name of the production in progress
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause.

3.6.1 Topping extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:

- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door
- Press the  key to start beating at the recommended speed
- At the end of this stage, press STOP.

CAUTION

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

CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.

CAUTION

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





3.7 CREAM PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", make sure that the door and little door are perfectly closed.

Pressing the  CREAMS key will open the menu:

- Custard
- Zabaione custard
- Bavarian cream
- Fruit cream
- Panna Cotta
- Gelatine for cakes
- Custard Excellent

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

CUSTARD
ZABAIONE CUSTARD
* BAVARIAN CREAM
FRUIT CREAM

The display will read:

BAVARIAN CREAM
Sugar + Eggs OK?
Mixing
+00 00:04:58 +34

The display shows:

- The name of the recipe in progress on the first line
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause

3.7.1 Cream extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:

- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door. Pay attention to hot product.
- Press the  key to start beating at the recommended speed
- At the end of this stage, press STOP.

CAUTION

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

CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.

CAUTION

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



3.8 CHOCOLATE PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", proceed as follows:

- Open the machine door
- Press the  key from Stop mode and use the INCREASE and DECREASE keys to move the asterisk alongside the DRY program before pressing the OK key to start the program.

CLEAN
HOT CLEAN
* DRY CLEAN

Once drying starts, the cylinder will heat up but the beater will remain idle. All moisture will evaporate completely and the machine will be immediately ready to use for tempering chocolate. The display will read:

DRY CLEAN
HOT CYLINDER!
Don't touch!
Speed 0 00:59

- Close the door and the small product outlet door.

Pressing the  **CHOCOLATE** key, the following menu appears:

- Chocolate harden (Submenu)
 - o Bitter Choc harden (dark chocolate)
 - o Milk Choc harden (milk chocolate)
 - o White Choc harden (white chocolate)
- Choc harden
- Ganache custard
- Chocolate spread

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

* CHOCOLATE HARDEN
SPEED CHOC HARDEN
GANACHE CUSTARD
CHOCOLATE SPREAD

Will open the tempering menu:

* BITTER CHOC HARDEN
MILK CHOC HARDEN
WHITE CHOC HARDEN

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

The display will read:

BITTER CHOC HARDEN
Chocolate OK?
Heating
+00 00:02:58 +24

The display will read:

- The name of the production in progress on the first row
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.





- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause.

Note: if the last recipe prepared is in a submenu (for example "Bitter choc harden"), the next time the  key is pressed, the display shows the last submenu to be selected: "Bitter choc. harden". To go back to the main menu, press the  key again.

3.8.1 Chocolate extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:

- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door
- Press the  key to start beating at the recommended speed
- At the end of this stage, press STOP.

CAUTION

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

CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.

CAUTION

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

3.9 SPECIALITY PRODUCTION

After washing, sanitizing and thoroughly rinsing the machine immediately before use, as described in Sect. 5 "Cleaning", make sure that the door and little door are perfectly closed.

Pressing  **SPECIALITY** will open the menu:

- Semifreddo base
- Poche Fruit
- Yogurt
- Infusion
- Rice cooking
- Mix Crepes

Scroll through the menu with the **INCREASE** and **DECREASE** keys until the asterisk is alongside the required process and then confirm by pressing the **OK** key.

* SEMIFREDDO BASE
POCHE FRUIT
YOGURT
INFUSION

The display will show:

SEMIFREDDO BASE
Yolks+Wat+Sugar OK?
Mixing
+00 00:02:58 +24

The display will read:

- The name of the production in progress on the first row
- The ingredient to add during the stage in progress, followed by "OK?" on the second row. Pressing the OK key will confirm the ingredient and the question mark will disappear. In some particularly delicate stages, the introduction of the ingredient will be signalled by an intermittent acoustic signal, which will switch off when the OK key is pressed, and only when the insertion of the ingredient is confirmed can the recipe continue.
- The type of stage in progress (or auxiliary messages) on the third row
- On the fourth row, on the left, the temperature to be reached, on the right, the temperature of the product and in the middle, the temperature up or down bars or the duration of any pause.

3.9.1 Speciality extraction

When the set time is up, which is signalled by an acoustic warning, the product can be extracted as follows:

- Place the tub on the shelf under the product dispensing chute
- Turn the lever for releasing the small discharge door on the left
- Lift the lever and the small door
- Press the  key to start beating at the recommended speed
- At the end of this stage, press STOP.

WARNING

When making YOGURT use the beater WITHOUT scrapers.

CAUTION

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

CAUTION

Pay high care during hot product cycling and/or distribution, for it may cause injuries. Do not open neither door neither discharge door during product cycling.

CAUTION

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



3.10 CUSTOMISED PRODUCTION CYCLES

3.10.1 Editing original production cycles

On Maestro model machines, it is possible to edit the temperature and times for each stage in the production cycle. To make these changes, proceed as follows:

- After selecting the cycle to be edited, press the **OK** key to start it.
- Press the production key (Ice Cream, Slush, Topping, Crème, Chocolate or Speciality) and the first parameter will appear; if the LEDs on the **INCREASE** and **DECREASE** keys are lit, then the value can be changed.
- Pressing the production key a second time will show the second parameter, "Temperature"; if the LEDs on the **INCREASE** and **DECREASE** keys are lit, then the value can be changed.
- Pressing the production key a third time will show the third parameter "Duration", if the LEDs on the **INCREASE** and **DECREASE** keys are lit, then the value can be changed.
- To return to the main menu, press the production key again or wait 10 seconds without pressing any key.

The new production cycle will be stored to memory and carried out using the new settings.



3.10.2 Restoring default production cycles

To restore the default production cycle, hold down the **DECREASE** key for a few seconds while the production cycle is in progress. In this way, the temperature and duration of each stage in the production cycle will return to their default settings.

3.11 USER SETTINGS



To gain access to User Programming, press the **STOP** and **DECREASE** keys (with the machine at STOP) simultaneously and release them immediately.

The message "Manager Menu" and the software version "SW ver. MaestroTC25 (or successive versions)" appear, followed by:

Time
Step U01 15

Use the **INCREASE** and **DECREASE** keys to change the time setting, if required.

Press **STOP**, which will open the steps for the following table in sequence; these settings can all be edited using the **INCREASE** and **DECREASE** keys.

Step	Display	Note	U.M.	MIN	MAX	Default
U01	Hour		hour	0	23	
U02	Minutes		min	0	59	
U03	Day of the Week		gg	Sun	sat	
U04	Day of the Month		gg	1	31	
U05	Month		mm	1	12	
U06	Year		yyyy	2000	2099	
U07	Language	Ita, Eng, Fra, Deu, Esp	n°	Ita	Eng	Ita
U08	HOT-Crema Simply		N	000	120	100
U09	Hot-Frutta Simply		N	000	120	90
U10	Hot-Sorbetto Simply		N	000	120	80
U11	Set TEC GRANITA	Not used				
U14	Water dispenser time period		Sec	015	300	180
U15	Backlight time period		Min	000	030	003

Steps U08, U09 and U10 relate to the HOT set of the Simply Cream, Simply Fruit and Simply Sorbetto cycles.

Step U14 is the time set for the dispensing of water.

Step U15 are the minutes that have passed after which the backlight of the display switches OFF when the machine is in Stop mode. The backlight lights up again by activating a function in Programming or pressing the OK key. If the step is at 0, the display is always illuminated.

To quit the programming stage, wait approximately 30 seconds without pressing any key or press the  **BEATING** key to force quitting.

Changed settings are automatically stored to memory.

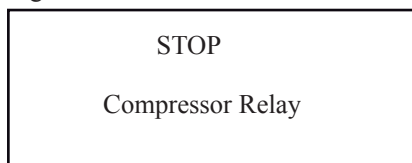
4. SECURITY DEVICES

4.1 ALARMS

Maestro machines are equipped with a set of safety devices to protect the machine and the staff using it. Each time the protective system intervenes, there is a corresponding alarm signal on the control panel.

The alarm is shown on the fourth row of the display.

E.g. :



To delete the message after resetting the alarm, press the DECREASE key. If the alarm does not reset, this means it is still triggered.

The following is a list of ALARMS:

Display	Description
Slow Beater Relay	Slow Beater thermal relay intervention This alarm intervenes to set the machine to Stop.
Fast Beater Relay	Fast Beater thermal relay intervention This alarm intervenes to set the machine to Stop.
Compressor Relay	Compressor relay intervention. This alarm intervenes to set the machine to Stop.
Pressure switch	Safety pressure switch intervention This alarm intervenes to stop the compressor. If the pressure switch intervenes 3 times in a row or if it is open for 2 consecutive minutes, the machine will enter Stop mode. The display will read "Pressure switch". Check the inlet and outlet pipes to make sure that water can circulate freely while the compressor is running. For air-cooled machines, it is necessary to make sure that the condenser fan is operating when the compressor is switched on or to make sure that the air-cooled condenser is not clogged; clean with a jet of compressed air, if necessary
TEC sensor alarm	TEC temperature sensor interrupted or in short circuit (cylinder) Alarm visualised during Group cycles: Ice Cream Machine only for: Hot Ice Cream and Hot Age Ice Cream/Slush/Crème/Chocolate/Speciality. The alarm places the machine in Stop. As long as the alarm remains active, the above-mentioned cycles cannot be carried out.
T_Ric Alarm	T_Ric temperature sensor interrupted or in short circuit Alarm visualised during Group cycles: Ice Cream Machine only for: Hot Ice Cream and Hot Age Ice Cream/Slush/Crème/Chocolate/Speciality. The alarm places the machine in Stop. As long as the alarm remains active, the above-mentioned cycles cannot be carried out.
Inverter Alarm	Inverter Alarm Alarm visualised during Group cycles: Ice Cream Machine only for: Hot Ice Cream, Hot Age Ice Cream, Hard Ice Cream/Slush Only for: Sicilian Slush/Crème/Chocolate/Speciality. The alarm places the machine in Stop. As long as the alarm remains active, the above-mentioned cycles cannot be carried out. To reset the alarm, disconnect and reconnect the electrical power supply of the machine.
T_IN Sensor Alarm	Alarm visualised during Ice Cream Machine cycles. The alarm places the machine in Stop. As long as the alarm remains active, the following cycles of the ICE CREAM MACHINE Group cannot be carried out: Excellent Ice Cream/Slushes 1-2-3/Simply/Hot Ice Cream/Hot Age Ice Cream.



T_OUT Sensor Alarm	“TOUT” temperature sensor “ interrupted or in short circuit Alarm visualised during Ice Cream Machine cycles. The alarm places the machine in Stop. As long as the alarm remains active, the following cycles of the ICE CREAM MACHINE Group cannot be carried out: Excellent Ice Cream/Slushes 1-2-3/Simply/Hot Ice Cream/Hot Age Ice Cream.
Prd Timeout	Timeout Prod (Difficulty in cooling) Intervenes when the machine does not cool. If the compressor remains ON continuously for more than 20’ during the whipping process (Ice Cream cycles), the machine is placed in Stop by the “Timeout Prd” alarm on the display. The alarm can be reset by pressing the DECREASE key. One of the possible causes of this type of problem could be the lack of gas in the system.

The list of INDICATIONS that are non-blocking signals and are therefore NOT considered as ALARMS is reported below:

Display	Description
Service	Indication for Programmed Maintenance The machine requires maintenance. The indication does not inhibit the functioning of the machine and is reset after the intervention of a technician.
Service GR	Indication for Gr Programmed Maintenance The machine requires maintenance. The indication does not inhibit the functioning of the machine and is reset after the intervention of a technician.
ATTENTION – BOILING HOT!	Indication of a hot product in the cylinder In the case that the cylinder sensor detects a temperature greater than 40° whilst the machine is in Stop and during processing or in washing programmes, the flashing message “ATTENTION – BOILING HOT!” appears on the display.
Door open	Door open The intervention of this alarm places the machine in Stop and automatically resets the closure of the door.

4.2 POWER FAILURE

In the case of a blackout, the machine behaves in different modes, depending on the function in which it was at the moment of the blackout.

When the electrical power returns, the machine restarts in Stop from the functions/cycles of Stop, Cleaning, Slush and all Ice Cream Machine cycles, except Gelato Hot Age. If the machine was in an ice cream whipping phase at the moment of the blackout, the machine returns to Stop and activates (if necessary) the AUTO-DEFROST function.

From the Gelato Hot Age cycle:

- When the electrical power returns during the heating and pause phase, the machine continues with the heating phase without any message visualised on the display. The event “Blackout” is recorded.
- When the electrical power returns during the cooling phase, the machine continues the interrupted phase and checks the TEC temperature and the duration of the blackout. If the time is greater than that indicated in the blackout table, the machine repeats the Hot Age Ice Cream cycle from the start and visualises the message “Restart Cycle-BLK” (memorising it in the events) to advise the user that the cycle was repeated due to a blackout and it could cause the mixture to alter. If the time is less than that indicated in the blackout table, the machine displays no message, but records the “Blackout” event.
- During Pause and Storage phases, the machine continues with the interrupted phase and checks how much the TEC has moved from its Set temperature. If the difference is less than the amount fixed by the manufacturer, the “Blackout” event is recorded and no message is displayed. If the difference is greater, the machine repeats the cycle from the start and visualises the message “Restart Cycle-BLK” (memorising it in the events) to advise the user that the cycle was repeated due to a blackout and it could cause the mixture to alter.

From all other cycles:

- When the electrical power returns during the heating and mixing phases, the machine continues with the interrupted phase without any message visualised on the display. The “Blackout” event is recorded.
- When the power supply returns during Cooling phases, the machine continues with the interrupted phase and checks the TEC temperature and the duration of the blackout. If the difference is greater than that indicated in the Blackout table, the machine visualises the message “Blackout-cooling” (memorising it in the events) to advise the user that the mixture could have altered due to the blackout. If the time is less than that indicated in the Blackout table, the machine does not display any message. The “Blackout” event is recorded.
- During the Storage and Thermostat phases, the machine continues with the interrupted phase and checks how much the TEC has moved from its Set temperature. If the difference is less than the amount fixed by the manufacturer, the “Blackout” event is recorded and no message is displayed. If the difference is greater, the machine visualises the message “Blackout-cooling” (memorising it in the events) to advise the user that the mixture could have altered due to the blackout.

TEC temperature	Time
>122°F (>50°C)	30 minutes
120°F ÷ 59°F (49°C ÷ 15°C)	10 minutes
57°F ÷ 50°F (14°C ÷ 10°C)	20 minutes
48°F ÷ 39°F (9°C ÷ 4°C)	2 hours

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

5.1 GENERAL DESCRIPTION

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

Giving dirt the time to dry out can greatly increase the risk of rings, marks and damage to surfaces. Removing dirt is much easier if it is done immediately after use because there is the risk that some elements containing acid and saline substances can corrode the surfaces. A prolonged soaking is recommended.



5.2 WASHING CONDITIONS

- **Avoid using solvents, alcohol or detergents that could damage the component parts, the machine or pollute the functional production parts.**
- When manually washing never utilise powder or abrasive products, abrasive sponges or pointed utensils; 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 ever use metal scouring pads or synthetic abrasives to stop any scouring action that could remove ferrous parts that could cause oxidation or make the surfaces vulnerable.
- Avoid using detergents that contain chlorine and its composites. The use of these detergents such as bleach, ammoniac, hydrochloric acid and decalcifiers can attack the composition of the steel, marking it and oxidising it irreparably and causing damage to the “plastic” parts.
- Do not use dishwashers and their detergent products.



5.3 SUGGESTIONS

- Use a non-aggressive detergent solution to wash the parts.
- Manually wash the parts in water (max 140°F/60°C) using a non-aggressive detergent and the cleaning brushes supplied as standard.
- Use drinking water (bacteriologically pure) to rinse the parts.
- To sanitise leave the disassembled parts in sanitised tepid water for 10-15 minutes (**use the sanitising product following the instructions of the manufacturer**) and rinse them before reassembling.
- When the washing procedure has been completed and before the reassembly of each component dry thoroughly with a clean and soft cloth that is suitable for coming into contact with foodstuffs, to avoid leaving any humidity rich in mineral salts and chlorine that could attack the metal surfaces and leave opaque traces.



Carpigiani recommends the use of XSAN sanitising detergent to wash the machine because it has been checked and approved by our laboratories.

The use of XSAN permits optimising the washing and sanitising process inasmuch that it eliminates two phases of the procedure (a rinse and a washing phase). Substantially, the use of XSAN saves time facilitating and simplifying the washing/sanitising procedures.

ATTENTION

It is also essential that each time the machine is washed and parts in contact with the ice cream mix are removed, to make a visual check of all parts in thermosetting materials, plastics, elastomers, silicone and metal that come into contact with the product (for example, scrapers, pump gears, beaters, etc...).

Each part must be whole, not worn and without cracks or splits, or opaque, if originally polished/transparent.

Carpigiani refuses to accept any liability for damage caused through imperfection and/or failures not found and promptly solved, including with the use of original replacement parts, and is happy to provide help and consultation for all specific customer requests.





5.4 HOW TO USE XSAN DETERGENT/SANITIZER

Prepare a water-based solution (at a temperature between 113°F/45°C and 140°F/60°C) and XSAN at a concentration between 1 and 3%, according to water hardness.

Washing/sanitizing by soaking

- Remove larger residues by hand.
- Remove finer residues with a jet of water.
- Soak the parts to be cleaned in the XSAN solution.
- Leave the solution to act for about 10-15 minutes.
- Rinse the parts with care, using plenty of clean drinking water.

5.5 PRELIMINARY CLEANOUT



1. When the machine is idle, with the beater unit door closed, fill the batch freezer chamber with water using the hose on the front of the machine and pressing the “**WATER DISPENSE**” key.
2. Press the **CLEANING** key from Stop and the following menu will open:

* CLEAN
HOT CLEAN
DRY CLEAN

and the Cleaning, Increase and Decrease LEDs will switch on.

Using the **INCREASE** and **DECREASE** keys, it is possible to select the type of cleaning required (shown by an asterisk alongside the cycle).

Press the **OK** key to start the required cleaning program.

Cleaning programs:

- CLEAN: beating is enabled
- HOT CLEAN: beating and heating are enabled
- DRY CLEAN: heating is enabled

Pressing the **OK** key will start the selected cleaning program (e.g. HOT CLEAN) and the display will show:

HOT CLEAN

Speed 2 00:59

The first row shows the name of the washing program, while the second and third rows are used for warnings in the event of boiling **hot cylinder** (as is the case for the DRY CLEAN program), and the fourth line is used to display the speed (this can be changed in CLEAN and HOT CLEAN modes) and the 1-minute timer counting down.

3. Open the ice cream door (ref. 1) to drain out all the water inside the cylinder.
4. Once the batch freezing cylinder has been emptied, it is advisable to open the door (ref.2) and to clean the cylinder by directly spraying on water, while keeping the beater locked in its seating.
5. Remove the drip tray (Ref. 3) and wash and sanitize it.
6. Remove the tub shelf (Ref. 4) and wash and sanitize it.
7. Wipe clean and sanitize the machine exterior.

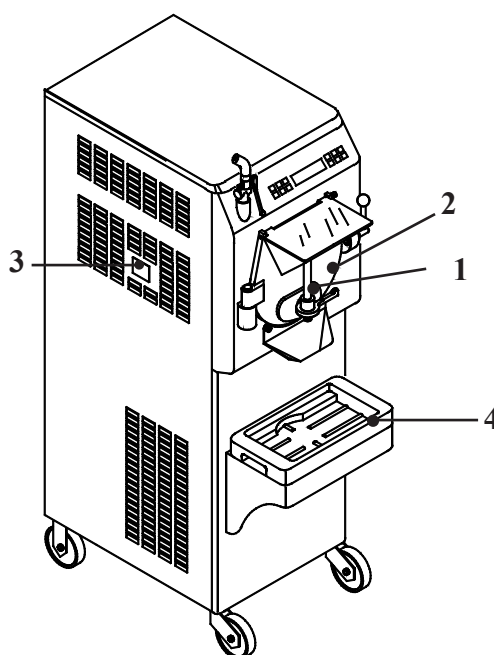


Fig. 7



5.6 BEATER DISASSEMBLY

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

WARNING

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

- Fully disassemble the sliding shoes.
- Withdraw the stuffing box from its seat on the beater shaft pos. 28.
- Proceed with washing the disassembled pieces using a solution of XSAN or similar and then rinse thoroughly.
- Reassemble all parts previously disassembled, minding to grease the stuffing box with a film of edible fat.

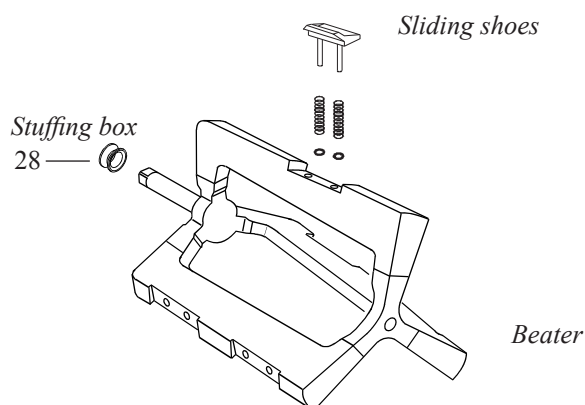


Fig. 8

When reassembling the beater, catch it with both hands and push the sliding shoes in order to insert it easily.

WARNING

Carry out this operation being careful of the cutting edges on the scrapers.

Push to the beater to the bottom and at the same time let it turn in order to fully insert the beater shaft into its seat.

5.6.1 Sliding shoes disassembly

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

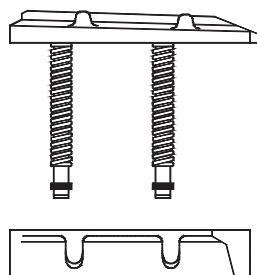


Fig. 9





5.6.2 Stuffing box

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

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

IMPORTANT

Stuffing box must be replaced with an original spare part each time ice cream drops are found on withdrawing drip drawer placed at the machine side.

Keeping on operating the machine after finding ice cream drops brings about a bigger leakage from stuffing box, thence a malfunctioning of the machine which consequently affects production..

CAUTION

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

5.7 FRONT LID DISASSEMBLY

- Lift lid locking lever and shift it towards right.
- Open the lid by rotating it on its hinge.
- Remove lid while lifting it.
- To carry out cleaning operations, remove all movable parts and seal with barrel.
- Proceed with washing the disassembled pieces using a solution of XSAN or similar and then rinse thoroughly.
- Reassemble all parts previously disassembled, minding to grease the OR and the support rif. 362 with a film of edible fat.

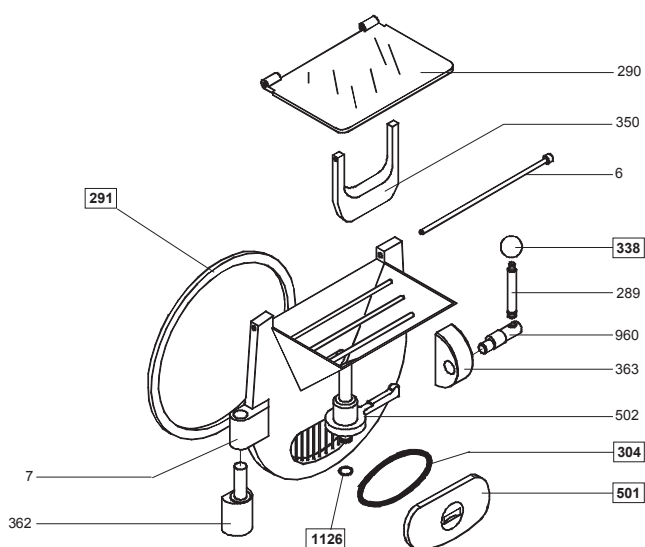


Fig. 10

5.7.1 Ice cream door disassembly

- Lift the lid by turning the lever (ref. 1) by 90° towards the left.
- Lift the lever and the door and lock the lid upwards by turning the lever rightwards till its stop.
- Remove the OR from the lid sliding rod, now, and take it out, in order to release the lever, as well.
- Remove the OR of the lid itself.
- Proceed with washing the disassembled pieces using a solution of XSAN or similar and then rinse thoroughly.



- Reassemble all parts previously disassembled, minding to grease the OR with a film of edible fat.

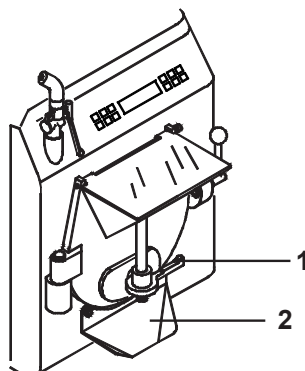


Fig. 11

5.7.2 Hopper cover disassembly

To clean the mix filling area, withdraw the cover fixing rod (pos. 6) and remove it. The cover is provided with a small panel to prevent ice cream from going back to the hopper, which must be disassembled to be cleaned. Proceed with washing the disassembled pieces using a solution of XSAN or similar and then rinse thoroughly.

5.7.3 Ice cream slid disassembly

- Release the slide from its fixing knobs by rotating it.
- Proceed with washing the chute using a solution of XSAN or similar and then rinse thoroughly.

5.8 SANITIZATION

This operation is required after each production cycle.

- With the machine idle, the beater on and the door closed, pour in the sanitizing solution. This solution is made using XSAN diluted in water at 113-140°F/45-60°C.
- Press the "CLEANING" key.
- Use the INCREASE and DECREASE keys to select the WASH function.
- Press the OK key
- Leave the machine running for 10-15 seconds.

WARNING

Too long running at "AGITATION" position with empty barrel or with water and cleansing solutions will wear out beater sliding shoes very quickly.

- Let the XSAN solution act into the cylinder about 10/15 minutes.
- Fully draining the sanitizing solution from the freezing cylinder.

ATTENTION

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

WARNING

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

5.9 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.**



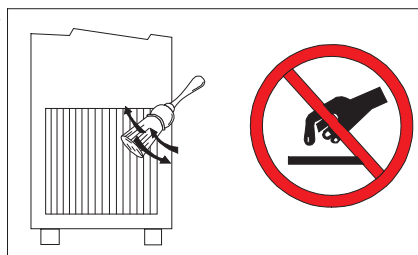
6.2 WATERCOOLING

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

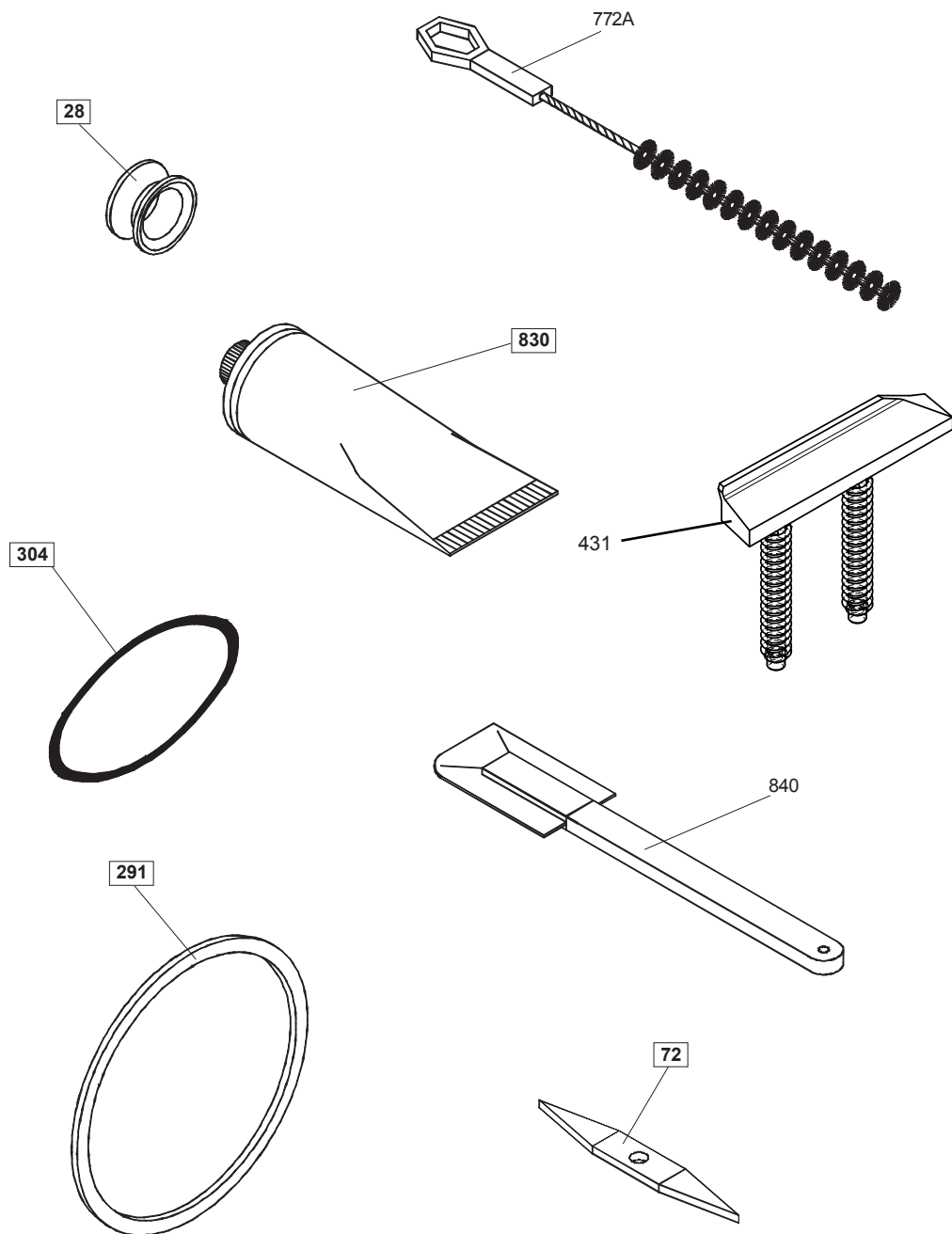


Fig. 12

Description	Position number
Beater stuffing box	28
O-ring extractor	72
Hose adapter	291
Gaskets for hose adapter	304
Self-adjusting scraper	431
Brush	772A
Food-grade lubricant tube	830
Ice cream spatula	840

7. TROUBLESHOOT GUIDE

IRREGULARITY	CAUSE	PROCEDURE
Machine does not start	Main switch is off	Switch it on
	Machine unplugged	Check and plug in
	Machine is not set at for PRODUCTION is lit	Check push button
	Front lid is not closed well	Check front lid closure
PRODUCTION		
Compressor starts and then stops after a few seconds without ice cream being thick	Watercooled machine: water does not circulate	Open water tap
	squashed nor doubled up.	Check that hose is neither
	Aircooled machine: air does not circulate	Check that rear of machine is at least 2 in (50 cm) from wall
	obstructions	Clean condenser from
After 30 minutes processing mix has not frozen and the machine returns to Stop	No gas	Contact Technical Assistance.
	Pressure switch has broken down	Contact Technical Assistance.
Machine runs but no ice cream comes from ice cream door	No sugar in the mix	Wait for the ice cream in the cylinder to defrost or activate the drying programme and then modify or change the mixture.
Machine works but ice cream is too soft	Too much sugar in the mix	Modify or replace the mix
Mix in drip drawer	Stuffing box missing or ruined	Install if missing Replace if ruined
Ice cream comes out from behind front lid	Gasket missing or not properly installed	Check and fix or replace
Bacteria tests show too high bacteria charge	Too high bacteria charge in the mix containers, spoons, etc., and have mix analyzed before pouring it into the machine	Improve preparation procedure by sanitizing all
	Machine not clean enough	Empty and thoroughly wash the machine.
	chapter 5 of manual.	Carry out sanitization as per
The machine displays the “Service” message	The number of hours that the machine has functioned requires that the machine is serviced.	The machine can be used normally. To reset the optimum settings of the machine, contact the authorised technical assistance.

