

CODE: xxxxxxxx**EN**

USE AND MAINTENANCE INSTRUCTIONS



Model:
Serial No.:
Year of manufacture:

MIXPASTO 60/120

00
2013

Conformity:



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1 - GENERAL WARNINGS

1.1 INTRODUCTION

The machine described in this manual is intended for professional use and must not be considered as a household appliance: therefore, personnel in charge must be adequately trained.

Read the entire instructions manual before operating on the machine, in order to protect the operator and avoid damaging the machine.

This manual must be fully integral and legible. All operators in charge of using the machine, the maintenance or adjustment manager must know its location and be able to consult it at any moment.

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This manual cannot be transferred to third party without TECHNOGEL SpA written authorisation.

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The description and illustrations in this manual are not binding.

TECHNOGEL SpA reserves the right to make any changes it considers opportune.

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This manual was edited in accordance with Machinery Directive 2006/42/EC requirements.

1.2 METHODS OF CONSULTATION OF THE MANUAL

1.2.1 Structure of the manual

The manual is divided into chapters gathering all the necessary information for using the machine without risks.

Each chapter is divided into paragraphs containing essential points. Each paragraph may have clarifications entitled with a subtitle and a description.

Each chapter has a right page that recalls the number and title of the chapter.
A chapter, for example chapter 1, contains:

- 1 Heading of the chapter
- 1.1 Title of the paragraph
- 1.1.1 Heading of the subtitle
- 1.1.1.1 Any additional subtitle

The numbering of the figures and tables is reset at every chapter, therefore the progressive prefix indicating the chapter and the number of the figure or table restarts from 1 at the beginning of each chapter.

1.2.2 Description of pictograms

The following symbols are used in the manual to highlight particularly significant indications and warnings:



ATTENTION:

This symbol shows accident-prevention standards for the operator and/or for any exposed people.



WARNING:

This symbol shows the existence of the possibility of damaging the machine and/or its components.



NOTE: This symbol provides useful information.

1.3 WARRANTY

The TECHNOGEL SpA manufactured machines are covered by WARRANTY, as provided by the general selling conditions. In the event that defective or faulty machines parts are found during the validity period, and when these parts are covered by the warranty, TECHNOGEL SpA will repair or replace the part only after having checked it with the distributor from whom the machine was purchased.

TECHNOGEL SpA considers itself responsible for the machine in its original configuration.

All interventions modifying the structure and functioning cycle of the machine must be expressly authorised by TECHNOGEL SpA only.

All technical modifications affecting the functioning or safety of the machine must only be carried out by the manufacturer's technical personnel or by its officially authorised technicians. If this is not the case, TECHNOGEL SpA declines any liability for changes or damages that may derive there from.

TECHNOGEL SpA declines any liability for the machine improper use, for damages caused by operations not addressed in this manual or unreasonable.

1.4 ARRANGEMENTS BY THE CUSTOMER

Detailed operating instructions are provided in chapter 3 of this manual (INSTALLATION).

A simple list of the arrangements by the customer is provided herein.

Except for specific contractual agreements, the following are the customer's responsibility:

- arrangement of premises (including masonry work, foundations or any requested channelling, etc.);
- arrangement of the place of installation and machine installation;
- arrangement of adequate auxiliary services for system requirements (e.g. water, electric mains, etc.);

- any upstream and downstream safety devices of the energy power supply lines (such as residual-current devices, earthing systems, safety valves, etc.) provided by the legislation in force in the country of installation;
- tools and consumption materials required for assembly and installation;
- materials, tools and equipment required for any machine acceptance tests.

1.5 DECLARATION OF CONFORMITY

Attached to this manual.

1.5.1 Identification plate

This machine is manufactured in an EU country and must, therefore, meet the safety requirements of Machinery Directive 2006/42/EC in force since 29 December 2009. The EC Declaration of Conformity is attached to this document. This conformity is certified and the machine has the "EC" marking on the support structure, as shown in figure 1-1. The EC marking and data plate must not be removed or damaged. It shows the data indicated in fig. 1-2:



Fig. 1-1 – Plate position



 technogel ICE CREAM EQUIPMENT AND MACHINES		Via Boschetti, 51 24050 Grassobbio (BG) - ITALY Website: www.technogel.com E-mail: info@technogel.com Tel.: +39 035 4522062 - Fax: +39 035 4522682	
TIPO MACCHINA / Machine Type:		MATRICOLA N° / Serial Number:	
			
ALIMENTAZIONE / Source:	CORRENTE P. C. / Full Load Current:	ANNO / Year:	
POTENZA / Power:	GAS FRIGORIGENO / Refrigerant:	QUANTITA' GAS / Gas Quantity:	

Fig. 1-2 – Data on the plate

1.6 INSTRUCTION FOR REQUESTING ASSISTANCE

Always state the following data whenever contacting the assistance centre:

- type of machine;
- serial number;
- year of manufacture;
- when possible, specify the nature of the detected machine problem or defect, e.g.: electric, mechanical nature or in terms of processing quality.

Contact the technical assistance service through your area dealer or use the details in par. 2.2.

1.7 MACHINE DESCRIPTION

The MIXPASTO 60/120 PASTEURISER machine pasteurises mixes for ice cream by heating the products at 85° for high pasteurisation and break-down everything in the least possible time at 4°C.

The mix must then be preserved at 4°C to 6°C for the entire period of use that can be at a maximum of 72h.

The products are mixed during the process by means of a stirrer in tank that, based on the stirrer speeds and shapes, favours the thermal exchange, gives consistency and different softness to the finished products. The pasteurisation temperature can be lowered to 65°C depending on the ingredients, proportionally extending the maintenance times to the temperature (low pasteurisation).

The machine consists of a 60 or 120 l tank protected by a transparent lid. The tank contains a motor-driven stirrer and a pick-up cock on the bottom.

The machine heats the product through the circulation of a water and glycol mix heated at an adequate temperature in a copper coil wrapped on the tank's outer surface. Cooling is through the circulation of freon gas in another copper coil also wrapped on the tank's outer surface.

The water and glycol mix is heated by an armoured heater in a boiler and is pushed by a pump in the closed circuit.

The water and glycol mix is pressurised in the circuit having an expansion vessel and safety valve (max 0.7 bar). The glycol temperature is electronically controlled by a safety thermostat that interrupts the heaters' power supply if a safety temperature is exceeded (max 120°C).

Opening the lid interrupts stirring, isolating the motor's power supply, the heating/cooling and the glycol circulation. The machine is ready to restart when the lid is closed. Opening the lid causes one or more magnets to move away from the relative magnetic sensor that, in turn, switches off the relay and relative contactors.

1.8 OPERATORS' QUALIFICATION

The operators and maintenance technicians in charge of machine functioning or maintenance must have the specific professional requirements for every provided operation.

They must be trained and aware of the tasks entrusted to them.



WARNING

All technical modifications affecting the functioning or safety of the machine must only be carried out by the manufacturer's technical personnel or by its officially authorised technicians. On the contrary, TECHNOGEL SpA declines any liability for changes or damages that may derive there from.

2 - TECHNICAL FEATURES AND DATA

2.1 TECHNICAL FEATURES

	MIXPASTO 60	MIXPASTO 120
Dimensions and weight		
Machine height	1060 mm	1060 mm
Machine length	1000 mm	1000 mm
Machine width	400 mm	640 mm
Overall weight	200 kg	275 kg
Product load with full load	60 litres	120 litres
Product load with reduced load	20 litres	40 litres
Performance/consumption		
Average water consumption	300 l/h	500 l/h
Min pressure	0.15 MPa	0.15 MPa
Well water min temperature	5°C	5°C
Tower water max temperature	29°C	29°C
Cycle time with full load (*)	(*)	(*)

Tab. 2-1

(*) The value is subject to changes based on the type of processed mix, the volume, the surrounding conditions, etc.

	Electrical system					
MIXPASTO 60	Power circuit	220 V	220 V	400 V	400 V	480V
	Frequency	50 Hz	60 Hz	50 Hz	60 Hz	60Hz
	Type of power supply	Three-phase	Three-phase	Three-phase	Three-phase	Three-phase
	Max absorbed power	7 kW	7 kW	7 kW	7 kW	7 kW
	Max absorption	20 A	20 A	16 A	16 A	16 A
	Section - line cable	4 x 4 mm ²	4 x 4 mm ²	5 x 2.5 mm ²	5 x 2.5 mm ²	5 x 2.5 mm ²

MIXPASTO 120	Power circuit	220 V	220 V	400 V	400 V
	Frequency	50 Hz	60 Hz	50 Hz	60 Hz
	Type of power supply	Three-phase	Three-phase	Three-phase	Three-phase
	Max absorbed power	13 kW	13 kW	13 kW	13 kW
	Max absorption	35 A	35 A	24 A	24 A
	Section - line cable	4 x 6 mm ²	4 x 6 mm ²	5 x 4 mm ²	5 x 4 mm ²

Tab. 2-2

2.2 MANUFACTURER DATA

Name: **TECHNOGEL SpA**

Registered office:

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24050 GRASSOBIO (BG) – Italy
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Comp. Reg. Court of Bergamo
E.A.I. of Bergamo
VAT No. - Tax Code

No. 12583
No. 166982
IT 00709420160

2.3 CHARACTERISTICS OF THE TREATED PRODUCT

The MIXPASTO 60/120 PASTEURISER is designed for preparing bases and mixes for the production of ice cream, which recipe is the responsibility of the machine user.

The manufacturer only prescribes that the percentage of dry product in the mix be less than 42%.

2.4 NOISE

The noise level during normal functioning must never exceed 70 db(A).

2.5 ADMITTED ENVIRONMENTAL CONDITIONS

Install the machine in closed premises with adequate micro-climate for the presence of operators and product processing.

Avoid atmospheres polluted by vapours or gas, float dust, bacterial loads, insects or anything else that might endanger the product's hygienic conditions or the health of operators.

The rear part of the machine must be detached from wall or other impediments for sufficient air to circulate: leave a space of at least 50 cm.

We recommend the work environment temperature to be below + 35°C, without direct exposure to sun and to other heat sources.



ATTENTION

*The machine is not designed to function in potentially explosive atmosphere.
Its installation and use in such environments is, therefore, forbidden.*

3 - INSTALLATION

3.1 GENERAL SAFETY WARNINGS

- Wear suitable protective equipment for the operations to be carried out.
Clothing must adhere to the body and resist to cleaning products.

Avoid wearing ties, necklaces or belts that might get tangled between moving parts; wear a protective helmet in case of lifting and transporting.

- When required, properly tie-up hair to avoid it getting tangled up between moving parts.
- Do not remove the safety devices or accident-prevention protections.
- Lift the machine and its components by carefully following the use and maintenance instructions, using an adequate lifting mean with the utmost attention (for the weight, see paragraph 2.1 "Technical features").
- Do not dismantle machine units or parts without express authorisation and training.
- Make sure the used lifting means have an adequate capacity for the loads to be lifted and that they are in good conditions (for the weight, see paragraph 2.1 "Technical features").
- Do not dismantle machine units or parts without express authorisation and training.
- Follow the environmental protection laws in force to dispose of the different packaging materials.

3.2 MACHINE TRANSPORT



ATTENTION

Purposely trained and authorised personnel must anchor the elements transported to the transport mean.



WARNING:

The machine container must be protected during machine transport against atmospheric agents using protective nylon to prevent water infiltrations and deposits on the elements in question.



ATTENTION

The machine must be fastened to the platform or forklift truck forks using fastening systems (belts or ropes) to avoid unbalances and falls.

The machine in question must be transported respecting the original packaging methods. It is necessary to fasten the machine to the packaging sub-base (pallet with wooden crate) and protect the machine body using the original packaging protections.

Where required, secure the machine container to the transport mean anchoring systems using belts with adequate capacity to the weight to be secured.

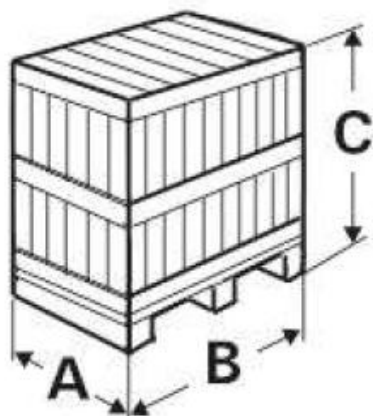
The packaging is designed to perfectly protect the machine against impacts. Transport the packaged machine as close as possible to the place of installation.

Insert the forks underneath the frame base of the machine where indicated to lift using forklift truck or transpallet.

Pay the utmost attention in arranging the belts for lifting with crane or bridge-crane, in order to guarantee machine stability during lifting; use belts with adequate capacity for insertion underneath the machine frame. Pay proper attention in executing this operation to guarantee the required stability during machine handling.

3.3 UNPACKING AND MACHINE HANDLING

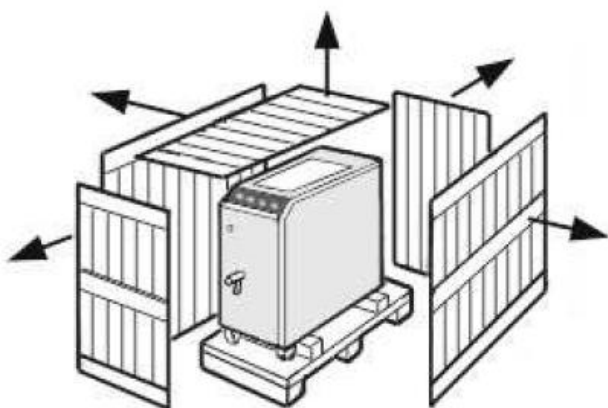
Remove the packaging as follows:



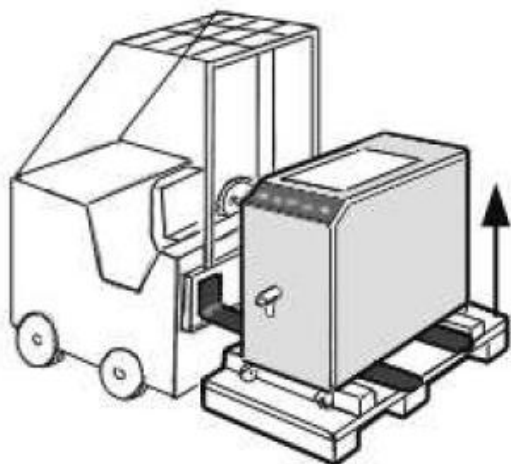
MIXPASTO 60
GROSS WEIGHT = KG. 300
A = 650 mm
B = 1250 mm
C = 1600 mm

MIXPASTO 120
GROSS WEIGHT = KG. 375

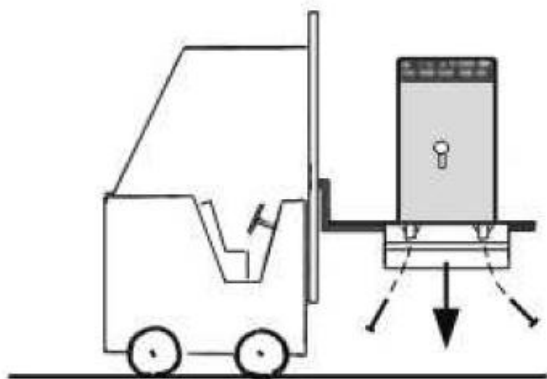
A = 900 mm.
B = 1250 mm.
C = 1600 mm.



Remove all wooden side and top panels from the packing.



Lift the machine using a fork-lift truck introducing the lifting blades between the bottom of the machine and the base of the crate.



Loosen the four bolts blocking the machine from underneath the base of the crate.

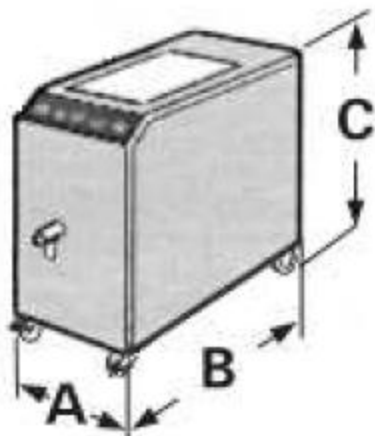
ATTENTION:

After having removed the bolts the bottom of the crate comes away from the machine bottom.

After having removed the crate bottom, lower the lift and deposit the machine on the ground.

The machine can be moved by holding it from the specific handles.

THE TYPE OF WOOD USED FOR THE PACKAGING CRATE IS NATURAL FIR WITHOUT ANY CHEMICAL SUBSTANCE, THEREFORE PERFECTLY RECYCLABLE.

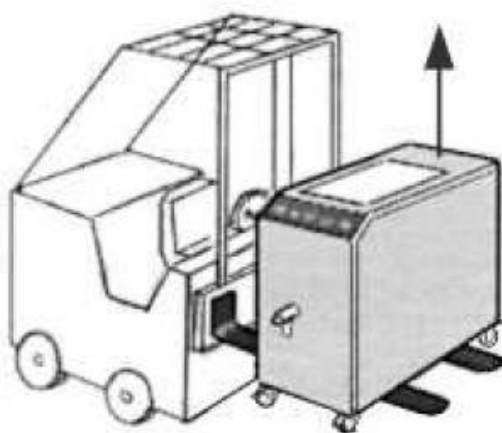


MIXTPASTO 60
NET WEIGHT = KG. 200

A = 400 mm.
B = 1000 mm.
C = 1060 mm.

MIXPASTO 120
NET WEIGHT = KG. 275

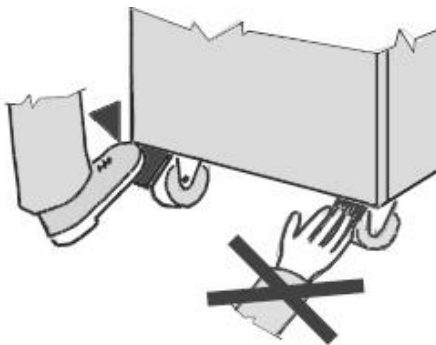
A = 640 mm.
B = 1000 mm.
C = 1060 mm



Lift the machine using a fork-lift truck introducing the lifting blades at the side of the machine, between the front and rear wheels.



Lift the machine using belts, holding them as in figure near the front and rear wheels. The tie-rod lifting the machine must position exactly at the centre of the machine



Move the machine by holding it from the specific handles

Once the machine is in position, block the front wheels brakes using the **feet**

DO NOT USE HANDS!!

N.B.: Visually check the status of integrity. Contact the dealer or manufacturer in case of evident damages.

Properly lift the machine from the base platform and use suitable means to extract the latter. Careful not to damage the power supply cable. Avoid using ropes or chains that might damage the machine.

Now set the packaging materials aside and keep them for future transport. The disposal operation is safe as the packaging is made of fully recycle material.

3.4 GENERAL NOTES ON THE FOUNDATION TECHNIQUES

The machine does not require particular foundation work. Make sure the support base where the machine will be installed is flat, stable and able to support its weight. It is fitted with wheels that cannot be adjusted in height; the front wheels can be blocked with brake and the rear are swivel and cannot be blocked.

3.5 INSTALLATION

The following rules must be respected during installation:

Placement

Place the machine onto a flat and solid surface.

Avoid the direct exposure to sunbeams and nearby heat sources.

Leave at least 50 cm of free space in front of the grids to enable the perfect functioning of the refrigeration system.

Set-up

The machine is supplied with all its parts permanently installed.

Connection to water mains

Connect the water piping of the cooling circuit to the fittings accessible from the rear of the machine and identified by the specific wording (see Fig. 3.2a).

Use water from the well or the mains with temperature below 30°C. The guaranteed flow rate must be ≥ 500 l/h. The machine pressure valve regulates the flow of the condenser's cooling water.

Then connect the water pipe for washing hand shower (fig. 3.2b)



Fig. 3.2a



Fig. 3.2b

Connection to electric mains

The power supply system must have a 5-pole socket for 3N three-phase power supply for 400 V and at 4-poles 3F for 220 V voltages of approved type.

The current socket must be protected by a type B residual current device calibrated at 300 mA, by a circuit breaker suitable for the currents indicated in tab. 2.1, and be equipped with earth connection.

Check the mains voltage and frequency correspond to those required by the machine, indicated on the EC plate or technical manual.

Connect the machine using the power plug to the power supply. This must be close and easily accessible and managed by the operator

A main switch must be provided in the socket or in an easily accessible place, that completely disconnects voltage from the socket (isolation) and enables the interaction or execution of operations requiring access to moving parts (see fig. 3.3.).

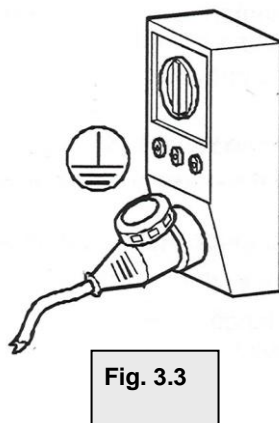


Fig. 3.3

The electrical system for powering the machine must be perfect.

The manufacturer is not liable for inadequate power supply and earthing system and/or non-conform to standards.

Only enabled personnel can connect the electrical parts.

3.6 DEMOLITION AND DISPOSAL

With regard to demolishing and disposal, remember that the materials constituting the machine are not dangerous and mainly consist of:

- stainless steel
- copper
- plastic materials (polycarbonate, various isolators, etc.)
- refrigerant gas R404A
- glycol
- electric motors;
- electric cables with relative sheaths.



ATTENTION

Evacuate and dispose of the materials from the machine demolition by following the relative standards in force for the protection of the environment.

Take the necessary precautions to prevent the dispersion of refrigerant gas from the cooling system into the air. This operation must be carried out by authorised personnel, following the procedures approved by the public authority.

3.6.1 Procedure for dismantling the machine

Proceed as follows should it be necessary to dismantle the machine for its demolition:

- Consult the environmental protection laws in force in the user's country.
- As legally prescribed, activate the inspection procedure by the Body in charge and the consequent reporting of the demolition.
- Group and separate the components according to their chemical nature.
- Proceed with the scrapping in respect of the laws in force in the user's country.
- During dismantling, carefully comply with the health and safety prescriptions of the operators.



ATTENTION

Dismantling must be carried out by qualified personnel.



ATTENTION

Different legislations are in force in different countries. Observe the prescriptions set by the laws and the bodies in charge in the countries where the demolition occurs.

4 - FUNCTIONING AND USE

4.1 DESCRIPTION OF THE FUNCTIONING

4.1.1 Description of controls

The machine controls are placed on its front panel in an ergonomically comfortable position for the operator to access it.

The operator has direct access to the machine.



"START" KEY

Pressing this button switches on the machine placing it in "STAND-BY" while awaiting further commands. The pressed button remains on (green light). This button is used to switch-off the equipment in any functioning cycle mode, with machine on.

The controls are located on the control panel (DISPLAY) enabling the interaction with the micro-processor controlling machine functioning.

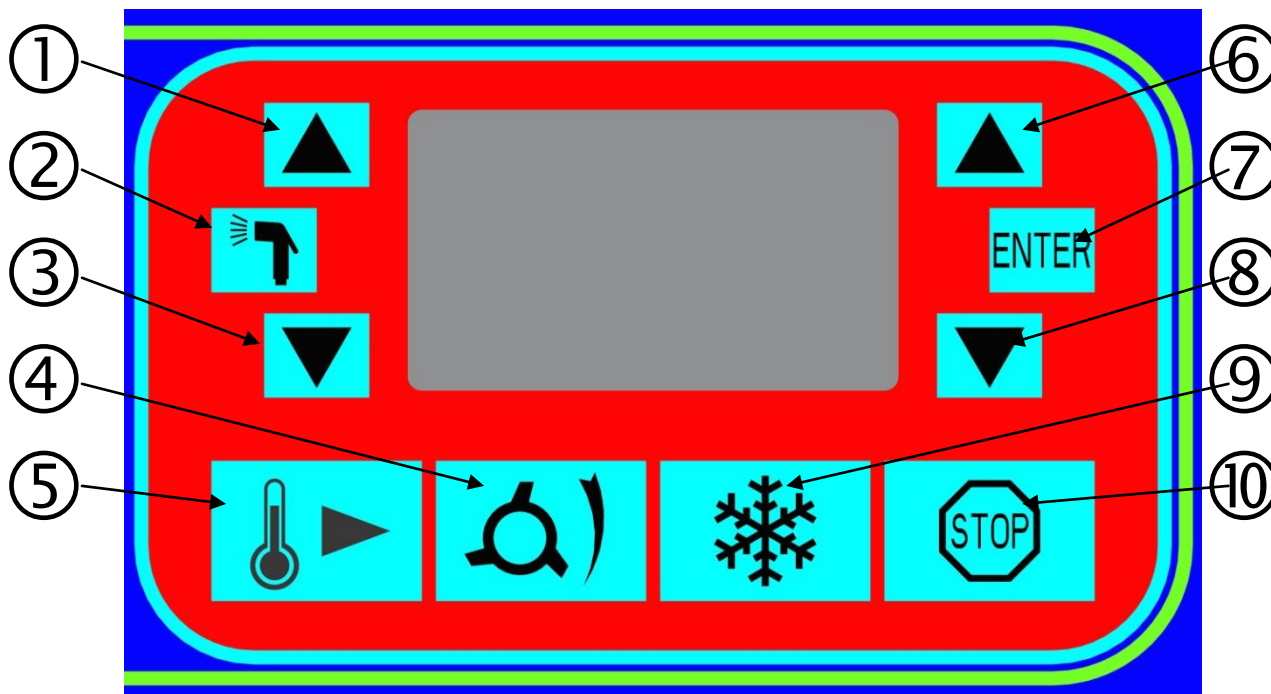


Fig. 4.1 – Control panel

1 - ARROW KEY

Enables moving the display cursor upwards.

2 - HOSE SPRAY KEY

Pressing this key opens the timed passage (3 minutes) of the washing water in the manual hose spray. The water flow is controlled by an hold-down lever of the tap.

3 - ARROW KEY

Enables moving the display cursor downwards.

4 - STIRRER KEY

When pressed it starts the stirrer functioning without heating or cooling phases. It is always active except when the automatic cycle is started or during the refrigerator phase.

5 - CYCLE START KEY

Pressing this key starts the automatic functioning cycle.

6 - ARROW KEY

Enables moving the display cursor upwards.

7 - ENTER KEY

Enables confirming the command selected in the chosen menu.

8 - ARROW KEY

Enables moving the display cursor downwards.

9 - REFRIGERATOR CYCLE KEY

Enables immediately starting the refrigerator cycle without waiting for the times provides by the automatic cycle. It is also active when not in cycle and enables reaching the permanent temperature of 4÷6 °C, at least for as long as the START button is on (machine electrically powered).

10 - STOP KEY

Stops the cycle and brings the machine back in stand-by, without guaranteed temperature specifications.

4.1.2 Operating phases

The MIXPASTO 60/120 is intended for the pasteurisation of mixes for ice cream with heating and cooling cycles controlled by a micro-processor programmable by the user.

The machine provides the following operative treatment phases for the ice cream mix:

1. pasteurisation
2. emulsifying
3. cooling
4. preservation (maturation)

Emulsifying happens by increasing the stirrer speed in view of the product temperature and by making the product bang against the metal elements of a specifically designed grid.

The stirrer speeds are pre-set. There are normally 2 speeds set during heating and 2 during cooling; the speed automatically changes when the mix reaches 55°C, both during heating and during cooling.

The user can request the setting of 3 speeds both during heating and during cooling, from the manufacturer's Technical Service.

The stirrer speed is further reduced during preservation and it automatically intervenes for 1 minute at intervals of 20 minutes.

The user can ask the manufacturer's Technical Service to set the functioning times of the stirrer during preservation differently.

The operator can vary the stirrer speed at any moment by means of the LEFT ARROWS.

The cycle times in the chart of fig. 4.2 refer to laboratory tests with specific products that can differ based on the type of mix and functioning conditions (environment temperature, water temperature, etc.).

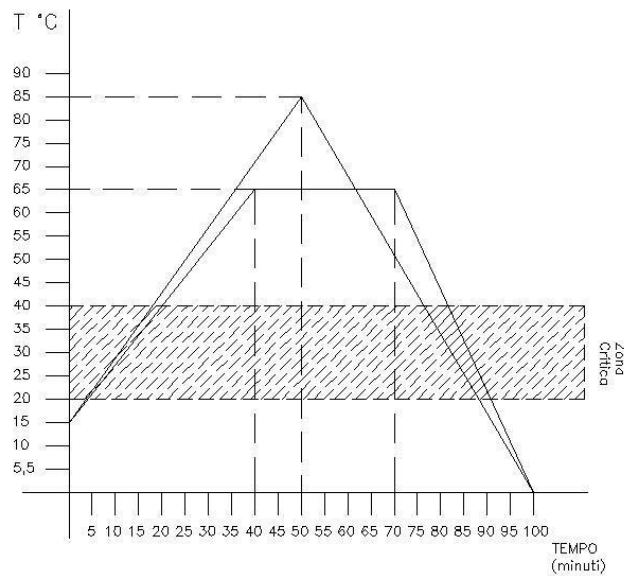


Fig. 4.2

The "bain-marie" method is used with the product tray wrapped by a coil in which a heat-transmitting fluid (glycol+water) flows.

The product is loaded from above by lifting the polycarbonate lid; discharge is through the tap located in the front part of the machine.

The user decides the composition of the mix to be pasteurised: the percentage of the dry part (the density of the mix) can influence the outcome of the cycle: it must not, however, exceed the limit of 42%.



ATTENTION

The machine must never operate empty!

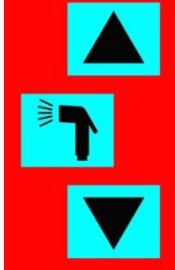


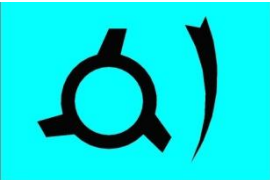



4.1.3 Use of commands

The machine is powered by connecting its plug to the mains; it does not have a main switch.

Pressing the START button activates the electric power supply. The control panel's screen switches on (see fig. 4.1) and show the installed SW + HW upgrade index.




The user interacts with the machine micro-processor by means of the commands shown in fig. 4.1, that is:




- the screen
- the buttons.

	<p>The user can select the entries of the different MENUS through the left arrows: when the wanted entry is highlighted (lights-up), it is automatically selected.</p>	
	<p>The user can vary the value of a parameter using the right arrows (increase = top arrow; decrease = bottom arrow)</p>	
	<p>It enables selecting the entry or value chosen by the user</p>	
	<p>Pressing the STIRRER key opens the specific menu with the spiral symbol. The bottom of the screen shows the time in progress (left) and the set time (right). The stirrer speed can be increased or decreased with the LEFT ARROWS.</p>	
	<p>Pressing the REFRIGERATOR key opens a specific menu with the snow-flake symbol. The stirrer speed can be increased or decreased with the LEFT ARROWS. The current product temperature, that drops to 4°C (refrigerator preservation), appears at the bottom of the screen.</p>	

The user, in addition to the buttons, can use the commands selected on the control panel screen.
The interface between user and machine consists in a series of MENUS with which the operator can set the wanted functioning.
Use the LEFT ARROWS to select "ESC" (top-left of each screen) followed by ENTER, to exit each menu: the previous menu is in this way accessed.

Press ENTER (7, fig. 4.1) after having switched on the panel: the screen shows the machine main menu composed as follows:

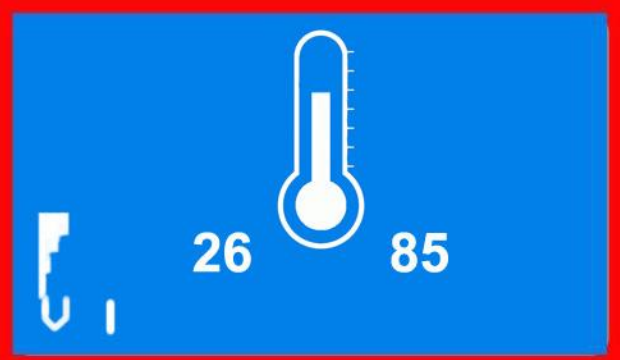

HIGH	High pasteurisation cycle, with heating at 85°C followed by cooling at 4°C	
LOW	Low pasteurisation cycle, with heating at 65°C, maintenance for 30 minutes, followed by quick cooling at 4°C	
CUSTOM	Cycle the user can customise by selecting the temperature from 60°C to 90°C. This cycle is required as some ingredients are sensitive to high temperatures. The user can select the different menus entries using the left arrows (pos. 6 and 8, fig. 4.1). The wanted entry is automatically selected when highlighted (lit-up). Using the left arrows (pos. 1 and 3, fig. 4.1) the "Temperature" in the CUSTOM cycle can be varied (the Temperature in the HIGH and LOW cycles is fixed). The micro-processor automatically defines the Maintenance in temperature time before quick cooling, that is the same for all cycle types.	

SPECIAL	<p>Special programs pre-set by the user can be selected following the methods explained in par. 4.1.4. Once the entry is selected, use the RIGHT ARROWS to select one of the 5 special programs the user can set (see par. 4.1.4) namely:</p> <p>YOGHURT Y CHOCOLATE C PROGRAM P1 PROGRAM P2 PROGRAM P3</p>	
PROGRAM	<p>Press ENTER to access the next menu for setting the special programs as required by the user (see par. 4.1.4)</p>	
ECONOMY	<p>This program enables using the half tank load cycles: use the 20 to 40 l program for the "60" machine; the 40 to 100 l for the "120". Once the entry is selected set "Y" (YES) or "N" (NO) using the RIGHT KEYS. This is the first parameter to be set when the machine production cycle is started, before setting the above cycles.</p>	
TM	<p>The current temperature of the mix always appears bottom-right of the main menu.</p>	

Press the "CYCLE START" key (pos. 2, fig. 4.1) to start the machine, after having selected the wanted cycle.

The thermometer symbol appears on the screen if the program provides a heating phase; the snow crystal symbol appears if it provides a cooling phase.

The stirrer speed can be increased or decreased with the LEFT ARROWS.

4.1.4 Cycle programming

The operator can pre-set 5 customised programs for each of which the process parameters must be fixed.


Select PROGRAM from the main menu and press ENTER: the next menu appears providing 5 rows (see figure at side), to each of which corresponds one of the special programs.

It is possible to customise one of the 5 programs indicated on screen:

YOGHURT	Y
CHOCOLATE	C
PROGRAM	P1
PROGRAM	P2
PROGRAM	P3

Every program is structured in 6 steps or operating phases.


Every step can be set as heating or cooling phase (RAMP) or as maintenance in constant temperature phase (STOP).






Select the chosen program using the LEFT ARROWS and then ENTER (e.g. program Y: the menu relating to STEP 1 appears).

Select the T RAMP entry using the RIGHT ARROWS: when highlighted, the T RAMP and T STOP entries alternate using the LEFT ARROWS.

The user chooses the type of phase to be attributed to the STEP in question, then press ENTER to acquire the setting.



<p>The following screen appears for setting:</p> <ul style="list-style-type: none"> - the TEMPERATURE if the step is a RAMP - the TIME if the STEP is a STOP <p>The temperature can vary between 4°C and 90°C. The maintenance time of the STOP is defined in HOURS (max 9 hours) and MINUTES. Change from HOURS to MINUTES using the LEFT ARROWS. The parameters are selected using the RIGHT ARROWS. Press ENTER to go back to T STOP / T RAMP.</p>	
<p>Select the SPEED using the LEFT ARROWS. This enables defining the stirrer speed during the step in question. Vary the speed expressed in rpm using the RIGHT ARROWS: the program enables choosing the value from those pre-set in the program. Use the LEFT ARROW to select FORWARD and then ENTER. This acquires data from STEP 1. The STEP2 screen appears: proceed with its setting by means of the same methods described for STEP1.</p>	
<p>This for all 6 STEPS of the chosen program. The preservation process is automatically activated by the machine, after the step 6. Note: the program acquires the default values for the non-set steps that might be inconsistent with those set by the operator, if data is not set for all 6 STEPS. The END screen appears after STEP6: the cursor is on ESC and the main menu is accessed by pressing ENTER.</p>	

Example of chocolate program

<p>At the main menu , you select the voice "PROGRAM" and you press ENTER: Appear the next menu which provides 5 lines (watch lateral picture), in each of which correspond one of the special programs. At this time select the voice "CHOCOLATE" → C</p>	<div data-bbox="1069 347 1540 616"> <p>ESC</p> <table> <thead> <tr> <th>MENU'</th> <th>PROGRAMMI</th> </tr> </thead> <tbody> <tr> <td>YOGURT</td> <td>Y</td> </tr> <tr> <td>CIOCCOLATO</td> <td>C</td> </tr> <tr> <td>PROGRAMMA</td> <td>P1</td> </tr> <tr> <td>PROGRAMMA</td> <td>P2</td> </tr> <tr> <td>PROGRAMMA</td> <td>P3</td> </tr> <tr> <td colspan="2">DATI</td> </tr> </tbody> </table> </div> <div data-bbox="1069 638 1540 907"> <p>ESC</p> <table> <tbody> <tr> <td>PROGRAMMA</td> <td>C</td> </tr> <tr> <td>STEP 1</td> <td></td> </tr> <tr> <td>T RAMP</td> <td>9</td> </tr> <tr> <td>VELOCITA'</td> <td>0</td> </tr> <tr> <td>AVANTI</td> <td></td> </tr> </tbody> </table> </div>	MENU'	PROGRAMMI	YOGURT	Y	CIOCCOLATO	C	PROGRAMMA	P1	PROGRAMMA	P2	PROGRAMMA	P3	DATI		PROGRAMMA	C	STEP 1		T RAMP	9	VELOCITA'	0	AVANTI	
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DATI																									
PROGRAMMA	C																								
STEP 1																									
T RAMP	9																								
VELOCITA'	0																								
AVANTI																									
<p>A time at menu "Step", p (4.1.4) and insert the next parameters for the chocolate:</p> <ol style="list-style-type: none"> STEP 1: TRAMPA (35°) , VELOCITA (840); STEP 2: TRAMPA (55°) , VELOCITA (630); STEP 3: TRAMPA (85°) , VELOCITA (1260); STEP 4: TRAMPA (55°) , VELOCITA (840); STEP 5: TRAMPA (25°) , VELOCITA (420); STEP 6: TRAMPA (4°) , VELOCITA (420). 	<div data-bbox="1069 929 1540 1198"> <p>ESC</p> <table> <tbody> <tr> <td>PROGRAMMA</td> <td>C</td> </tr> <tr> <td>STEP 1</td> <td></td> </tr> <tr> <td>T SOSTA</td> <td>9 - 8</td> </tr> <tr> <td>VELOCITA'</td> <td>1120</td> </tr> <tr> <td>AVANTI</td> <td></td> </tr> </tbody> </table> </div> <div data-bbox="1069 1220 1540 1489"> <p>ESC</p> <table> <tbody> <tr> <td>PROGRAMMA</td> <td>C</td> </tr> <tr> <td colspan="2">END</td> </tr> </tbody> </table> </div>	PROGRAMMA	C	STEP 1		T SOSTA	9 - 8	VELOCITA'	1120	AVANTI		PROGRAMMA	C	END											
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T SOSTA	9 - 8																								
VELOCITA'	1120																								
AVANTI																									
PROGRAMMA	C																								
END																									

<p>The last row in the PROGRAMS menu is DATA: press ENTER to access the DATA menu. Below are the entries of this menu:</p>	<div data-bbox="702 302 1220 604"> <p>ESC</p> <table> <tr> <th>MENU'</th> <th>PROGRAMMI</th> </tr> <tr> <td>YOGURT</td> <td>Y</td> </tr> <tr> <td>CIOCCOLATO</td> <td>C</td> </tr> <tr> <td>PROGRAMMA</td> <td>P1</td> </tr> <tr> <td>PROGRAMMA</td> <td>P2</td> </tr> <tr> <td>PROGRAMMA</td> <td>P3</td> </tr> <tr> <td>DATI</td> <td></td> </tr> </table> </div> <div data-bbox="861 638 1372 925"> <p>ESC</p> <table> <tr> <th>MENU'</th> <th>DATI</th> </tr> <tr> <td>SALVA</td> <td>N</td> </tr> <tr> <td>STAMPA</td> <td>N</td> </tr> <tr> <td>REG ALLARMI</td> <td></td> </tr> <tr> <td>EXP REG</td> <td>N</td> </tr> <tr> <td>DATA ORA</td> <td></td> </tr> <tr> <td>SETUP</td> <td></td> </tr> </table> </div>	MENU'	PROGRAMMI	YOGURT	Y	CIOCCOLATO	C	PROGRAMMA	P1	PROGRAMMA	P2	PROGRAMMA	P3	DATI		MENU'	DATI	SALVA	N	STAMPA	N	REG ALLARMI		EXP REG	N	DATA ORA		SETUP	
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STAMPA	N																												
REG ALLARMI																													
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SETUP																													

SAVE	<p>The machine is fitted with USB port at the bottom of the control panel for the connection of an external memory (e.g. USB key 2.0 formatted FAT32) on which it is possible to download the temperature and time registration data of the program to be started. Once the key is inserted, select SAVE using the LEFT KEYS.</p> <p>Select "Y" (YES) with the RIGHT ARROW: the machine starts downloading data on the external memory once out of the DATA menu and after functioning start. The saved data is: time, temperature and other mix cycle data with a frequency of 2 minutes. The downloaded file is called "ci.par" (txt file openable from NOTEPAD or EXCEL).</p> <p>Saving stops when STOP is pressed. The selected work cycle stops.</p>																			
PRINT	<p>This option is only active for machines fitted with a printer.</p> <p>Select PRINT using the LEFT KEYS.</p> <p>Select "Y" (YES) with the RIGHT ARROW: the machine prints its current process data on paper (temperature and work times) during the work cycle.</p>																			
ALARM REG	<p>Select ALARM REG using the LEFT KEYS.</p> <p>Press ENTER to access the ALARMS LOG that displays the codes of the last 20 alarms occurred during functioning. The most recent is found top-left, and the least bottom-right.</p> <p>The alarms coding ("E + 2 digit number") is shown in table 7.1</p>	<div data-bbox="909 1769 1404 2049"> <p>ESC</p> <table> <tr> <th></th> <th>STORICO</th> <th>ALL</th> </tr> <tr> <td>E22</td> <td>E06</td> <td></td> </tr> <tr> <td>E22</td> <td></td> <td></td> </tr> <tr> <td>E06</td> <td></td> <td></td> </tr> <tr> <td>E06</td> <td></td> <td></td> </tr> <tr> <td>E06</td> <td></td> <td></td> </tr> </table> </div>		STORICO	ALL	E22	E06		E22			E06			E06			E06		
	STORICO	ALL																		
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E06																				
E06																				

EXP REG	Select EXP REG using the LEFT KEYS. Insert the key in the USB port (see SAVE). Select "Y" (YES) with the RIGHT ARROW: the machine downloads the ALARM REG. The downloaded file is called " al.par " (txt file openable from NOTEPAD or EXCEL).																						
DATE TIME	Select DATE TIME using the LEFT KEYS. Press ENTER to access the DATE TIME menu where it is possible to set the following parameters: Y year M month D day H time M minute S second Use the LEFT ARROW to select the entry of interest and change the parameter value with the RIGHT ARROW. The new date and time setting is memorised when exiting the menu (ESC top-left).	<div><div>ESC</div><table><thead><tr><th></th><th>DATA</th><th>ORA</th></tr></thead><tbody><tr><td>Y</td><td>13</td><td></td></tr><tr><td>M</td><td>6</td><td></td></tr><tr><td>D</td><td>11</td><td></td></tr><tr><td>H</td><td>15</td><td></td></tr><tr><td>M</td><td>36</td><td></td></tr><tr><td>S</td><td>10</td><td></td></tr></tbody></table></div>		DATA	ORA	Y	13		M	6		D	11		H	15		M	36		S	10	
	DATA	ORA																					
Y	13																						
M	6																						
D	11																						
H	15																						
M	36																						
S	10																						
SETUP	The intervention of a buzzer can be programmed when the set temperature is reached Select SETUP using the LEFT KEYS. Press ENTER to access the BUZZER menu with the entries: BEEPRI (1 and 2) setting of temperature at which the beep must intervene in heating BEEPRA (1 and 2) setting of temperature at which the beep must intervene in cooling Select the wanted entry using the LEFT KEYS (e.g. BEEPRA 1). The RIGHT KEYS adjust the temperature, displayed on the same row. The set values are memorised by selecting ESC (top-left of screen).	<div><div>ESC</div><table><tbody><tr><td>BEEPRI</td><td>1</td><td>40</td></tr><tr><td>BEEPRI</td><td>2</td><td>99</td></tr><tr><td>BEEPRA</td><td>1</td><td>70</td></tr><tr><td>BEEPRA</td><td>2</td><td>99</td></tr></tbody></table></div>	BEEPRI	1	40	BEEPRI	2	99	BEEPRA	1	70	BEEPRA	2	99									
BEEPRI	1	40																					
BEEPRI	2	99																					
BEEPRA	1	70																					
BEEPRA	2	99																					



ATTENTION

The machine must never operate empty!

Product discharge

The product is discharged by the tap on the front of the machine: act anti-clockwise on the control knob, turning twice. The knob has an indicator (dot) to indicate the closed tap position (see fig. 4.3).



Fig. 4.3

Cycle stop

Press STOP to interrupt the functioning cycle (normal/reduced).
See par. 5.4 for the machine stop methods.

4.2 INTENDED AND NON-INTENDED USES

4.2.1 Intended use

The machine is designed and built to pasteurise the bases for ice cream within the limits reported in paragraphs 2.1 "Technical features", 2.3 "Features of treated product" and 2.5 "Admitted environmental conditions".

The operator must apply the correct hygiene procedures for transforming the product, in compliance with the legislation in force.

4.2.2 Non-intended use

The machine must not be used for different purposes to those intended and specified in paragraph 4.2.1 "Intended use". A different use to that for which the machine was designed may cause a danger for the operators/maintenance technicians, for the product consumers, for any exposed people and for the machine itself.



ATTENTION

The machine is not designed to work in potentially explosive atmosphere, its use and installation in said environments is, therefore, absolutely forbidden.



ATTENTION

A different use to that stated in this manual is considered improper and, therefore, forbidden. TECHNOGEL SpA declines any liability for a different use of the machine to that stated in this manual.

4.3 WORK AREAS AND DANGEROUS AREAS



NOTE!

The following definitions are disclosed, in accordance with Directive 2006/42/EC:

- DANGEROUS AREA: any area inside and/or near the machine where the presence of an exposed person constitutes a health and safety risk for that person.
- EXPOSED PERSON: any person fully or in part inside a dangerous area.
- OPERATOR: the person or people in charge with installing, working, adjusting, cleaning, repairing and moving the machine or with servicing it.



ATTENTION

The machine must only be controlled and normally run in the areas set-up for its running. These areas are without risks for the personnel in charge of running and are called "Operator control and command areas".



ATTENTION

It is forbidden for anyone to move or intervene inside the dangerous areas during machine running. Maintenance personnel can work around and inside the machine only after having stopped its functioning and having placed it in safe conditions.

4.3.1 Work areas (machine running)

The work area is near the front control and product supply panel from where the machine functioning can be controlled and managed.

4.3.2 Work areas (maintenance)

The areas set-up for machine maintenance, for performing maintenance and/or adjustments of the different mechanical/electrical activation devices, are all around the machine.

4.3.3 Dangerous areas

Dangerous areas are:

- the entire work area inside and outside the machine, where the work phases occur;
- all areas protected by the specific protective devices composed by the machine casing.

4.4 DANGERS AND RESIDUAL RISKS



ATTENTION

The operator must consider the residual risks described in the following table and adopt the adequate measures, during machine use.

RESIDUAL RISKS OF THE MACHINE	
1.	The operator must carefully read the use and maintenance instructions before using the machine. The operator must be adequately trained on the machine functioning and methods to guarantee its safe use. In particular, he must be aware of the residual risks present and on the methods to prevent dangerous situations thereto related.
2.	Install the machine in an environment that does not create risks for the operator while interacting with the machine.
3.	Prevent product pollution (ice cream mix) by the environment air or machine parts, by running the machine in environments conforming with the proper health and hygiene procedures and guarantee the prescribed cleaning and sanitising cycles.
4.	The operator must be cautious during maintenance (e.g. dismantling of lid, tap, etc.) to avoid the falling of machine parts. The operator must, therefore, always have the prescribed PPE when near the machine.
5.	Contact with hot or cold machine parts (e.g. discharge tap, tank and its lid) is possible during functioning and maintenance: said contact only occurs in case of operator intervention during intermediate phases of the normal work cycle. The same risk applies for contact with the product being processed. The use of adequate PPE is prescribed (gloves)
6.	The electric power supply consists of the red connection plug (isolator identified with socket/plug system): it must be easy for the operator to identify it and disconnect it from the normal work station.
7.	Pay attention not to trip on the power supply cable that must be properly highlighted or protected with a treadable duct.
8.	Clean and sanitise the machine using products compatible with food use.
9.	It is forbidden to run the machine in an explosive environment. The machine must not be run in uncovered areas, exposed to atmospheric agents (e.g. lightning).

10. In case of black-out during the cycle, the operator can manage product quality by controlling the relative signals through the display. When power comes back, the machine restarts the cycle from where it was interrupted. It is important for the operator to manage the situation respecting the correct health and hygiene procedures and applicable laws.
11. The mains current socket of the user must be protected by a residual current device calibrated at 300 mA and by an adequate circuit breaker.
12. Wait 15 seconds for the residue static charge to be discharged if it is necessary to access the inverter of the electric motor or compressor, during maintenance.
13. There is a risk of electrocution due to the presence of cables and electric clamps, if accessing the machine internal parts without disconnecting power.

4.5 PERSONAL PROTECTIVE EQUIPMENT TO BE USED




Wear suitable protective equipment for the operation to be carried out, if having to access the machine work area.

- Clothing must be tight-fitting.
- Avoid wearing ties, necklaces or belts that might get tangled in moving parts.
- When required, properly tie-up hair to avoid it getting tangled up between moving parts.



ATTENTION

The authorised operators and/or maintenance technicians must wear the following personal protective equipment before starting work on the machine.

	Tight-fitted protective clothing.	During all work and maintenance phases.
	Protective gloves.	During the manual work phases (product/tools load and unload) and maintenance.
	Accident-prevention footwear.	During all work and maintenance phases.

Tab. 4-2



NOTE

The clothes to be worn and protective equipment to be used must meet the requirements of Directive 89/686/EEC with regard to personal protective equipment

4.6 SIGNAL PLATES PRESENT ON THE MACHINE



ATTENTION



There are different signal and/or danger plates, shown below, applied on the machine, on the protections and in the different productive cycle areas. The plates are used to warn personnel authorised to intervene on the machine on any dangers, obligations or prohibitions to be observed to avoid dangerous situations for the operators and for any exposed people, and for the machine itself.



ATTENTION

It is strictly forbidden to tamper with or remove the plates.

The user is responsible for periodically checking the integrity of the plates and, where required, replace the damaged ones with equivalent, eventually requesting them from the manufacturer's assistance and spare parts service.

	Danger of electrocution. Attention, disconnect voltage before opening the door.
	Dangerous temperature. Use adequate protections.

Tab. 4-3

5 - USER INSTRUCTIONS

5.1 COMMAND AND CONTROL DEVICES

The controls for enabling and managing the different work phases are arranged in the front part of the machine. The controls and their use are described in chap. 4.

5.2 OPERATORS' TASKS

The tasks concerning the authorised operators refer to:

- work cycle management by means of the controls on the machine body;
- machine transport and handling;
- machine maintenance such as cleaning, adjustments, lubrications and any repairs.

5.3 FUNCTIONING METHODS

The machine has an exclusively manual functioning that can be activated by the operator through the keys on the control panel.

The functioning cycle is only possible as long as all safety and protective systems are installed and active.

5.4 STOPPING METHODS AND RELATIVE RESETS

5.4.1 Voluntary stopping method

The machine functioning interrupts by activating the STOP button (pos.10, fig. 4.1), without interrupting power.

Stop is also possible by activating the START control that disconnects power to the auxiliaries and to the control circuits.

Isolate power by disconnecting the current socket plug: this enables the safe execution of maintenance operations.

5.4.1.1 Reset after a voluntary stop

Once functioning is voluntarily stopped, machine restart is possible by pressing the START button (also see par. 4.1).

5.4.2 Emergency stop

In case dangerous situations for the operator or for any exposed person or for the machine occur during the work cycle, the functioning cycle can be immediately stopped by extracting the power plug from the current socket: **it must, therefore, be easily accessible for the operator.**

5.4.2.1 Reset after an emergency stop

Proceed as follows after having solved the problem that made the emergency stop necessary:

- reset the safety conditions required for production cycle restart;
- insert the current plug in the power supply socket;
- the authorised operator can control the functioning cycle restart as set out above, after having verified there are no dangers for the exposed people.

5.5 CONTROL OF THE SAFETY DEVICES



ATTENTION

Check the correct functioning of the safety devices before the start of every work cycle.

- Check the machine hood is secured to the frame by means of the specific screws, before every machine start.
- Check the lid of the tank is properly closed, before every machine start.
- Check the machine does not start with the lid open and that the alarms intervene: sound (beep) and visual (on display).

5.6 START-UP AND COMMISSIONING

Upon commissioning or after transport, we recommend leaving the machine to stabilise to reset the correct circulation of the oil inside the refrigerator system.

It is essential to have read this manual before start-up and commissioning.
Specifically check the machine is properly installed as described in par. 3.5.

Do not immediately switch-on the machine but leave the heaters to work for at least 30 minutes, after having powered the machine (green START button on).

Upon commissioning, clean and sanitise the machine before product loading.

The machine must remain in vertical position for at least 24 hours if it has been stored or transported in a different position to vertical.

Non-compliance with the above can seriously damage the refrigerator system and its components.



ATTENTION

Before starting their work shift, the authorised operators must wear the personal protective equipment suitable for the operations to be carried out, as stated in paragraph 4.5 "PERSONAL PROTECTIVE EQUIPMENT TO BE USED" in this manual.

6 - ROUTINE MAINTENANCE

6.1 GENERAL SAFETY WARNINGS



The following operations must only be carried out by authorised mechanical maintenance technicians, specifically trained and informed on the contents of this manual. It is necessary to follow the safety warnings in par. 3.1 and chap. 4.

6.2 ROUTINE MAINTENANCE

The following paragraphs describe the main routine maintenance operations of the machine: the use of special tools in addition to the normal machine and mechanical workshop equipment (screwdrivers, pliers, wrenches, etc.), are not provided.

Contact the nearest assistance centre for any materials or spare parts.

6.2.1 Washing and sanitising of the machine



Note: wait for the tank to defrost (the relative temperature is shown on the display) before proceeding with the washing or sanitising operations






This operation results in the cleaning of the machine fixed and mobile parts. The machine must only be washed using water and the subsequent sanitising using water and detergents for food machines. Rinsing with water only does not guarantee hygiene of the equipment.

Bring the machine to OFF state, discharge all product and wait for the tank to defrost.
Disconnect the power supply plug.
Remove the stirrer cap to clean the top end of the rod. Replace the O-ring below, if required.



Loosen the screw fixing the protective cage of the stirrer impeller to the tank and turn it anti-clockwise to release it from the anchoring slots.
Remove the protective cage.



<p>Remove the stirrer by extracting it from the control shaft . Accurately clean the cage, the impeller and the stirrer rod, in and out (using the supplied brush). Dismantle the tank lid: open the lid by about 15 degrees and pull the lid frontally to extract the pins from the hinges.</p>	
<p>Dismantle the tap: loosen the locking ring nut and remove the complete unit. Loosen the piston ring nut and extract it .</p>	
<p>Loosen the grip and remove it from the tap body. Extract the piston from the tap body</p>	 
<p>Remove the O-ring gasket from the piston and from the tap body: make sure not to damage these gaskets. Replace them with the provided ones, if necessary.</p>	 
<p>Any spare parts must be requested from the nearest assistance centre.</p>	

Manually clean the tank from above. Pay particular attention in cleaning the control shaft of the stirrer and of the product discharge duct from the tank to the tap.

We recommend using anti-foaming detergents specific for food machines: carefully follow the manufacturer indications for use and disposal.

Sanitising is an operation similar to washing, but it is to be carried out using warm water and sanitising liquid detergent for food components.

Follow the manufacturer instructions for the methods of use and dose of the sanitiser. If required, at the end rinse with water only.

Close the lid and reassemble the tap after sanitising: do not touch with your hands and dry the parts that come into contact with food.

6.2.2 Cleaning advise

Always accurately clean all parts, specially those that come into contact with food mixes.

- **carry out all operations with power disconnected**
- do not use detergents that are not suitable for food use
- do not use solvents of any kind
- do not use abrasive powder or objects
- avoid wetting the internal parts (e.g. motor, etc.)

Remember to carry out the indicated cleaning to always have the best use of the mix with the machine top performance.

Also keep the external surfaces clean (washing and drying)

6.2.3 Replacing the O-Ring gaskets

All O-Ring gaskets that assure the seal and hygiene of the machine parts coming into contact with the worked product, must be replaced at least once a year:

- no.1 O-Ring on cap of stirrer rod (fig. 6.3)
- no.2 O-Ring on product extraction tap (fig. 6.7 and 6.8)
- no.1 gasket on tap connection fitting (fig. 6.9)

The gaskets must be manually assembled, making sure not to damage the external toroidal surface of the gaskets.

Facilitate assembly by slightly lubricating the sliding surfaces of the gaskets with grease for food use.

Only use original gaskets supplied by the manufacturer, that are compatible for food use. The new machine is fitted with a kit for the first annual maintenance.

6.2.5 Discharging the cooling system

Discharge the cooling water system at the end of season, to prevent damages caused by the water freezing in the piping during the winter season (if the machine is stored in environments where the temperature may drop below 0°C).

After having interrupted the mains water flow (see Fig. 3.2):

- disconnect the water inlet pipe
- disconnect the outlet pipe from the relative fitting

Start the machine: the compressor starts and, after a while, causes the opening of the pressure valve of the external water system.

Blow through the WATER INLET fitting with a compressed air gun, until the water fully flows out of the piping. Switch-off the machine and apply the supplied caps on the water fittings.

6.2.7 Check of glycol level

Remove the left side panel from the machine (front view of machine). The glycol tank is located top-left: in its centre there is a brass fitting with visual indicator of the glycol level (see fig. 6.10).

With machine stopped and at environment temperature, the liquid level is light green (glycol), used to cool the tank. The level must be at about halfway on the level indicator glass.

Contact the manufacturer's Technical Assistance to restore the level.



Fig. 6.10

6.2.8 Glycol safety valve

When the heating/cooling system pressure exceeds the safety pressure, the safety valve opens discharging the liquid (glycol) through a rubber hose directly onto the floor at rear of machine, near the "WASHING WATER" (spray hose) fitting.

The liquid may be hot but not dangerous if it comes into contact with body parts. Use adequate PPE and cloths to clean the leaks.

Contact the manufacturer's Technical Assistance to restore the level.

6.2.9 Replacement of fuses

The electric system fuses can be accessed inside the electrical panel.

Make sure the power supply plug of the machine is disconnected.

Loosen the screws fixing the rear panel of the machine bodywork.

Remove the panel upwards and extract it from the frame.

It is now possible to remove the closure panel of the electrical panel: the lid of the panel itself must be removed to access the electrical system components.

The fuse-holders are located at the top of the panel (fig. 6.10 and 6.11): there are 2 units, one of 3 and one of 2 fuses.

Pull the white lid backwards to access the fuses: extract the fuse and check it is intact.

Correctly identify the position and the type of each (specially of the fuses), refer to the wiring diagram attached hereto.



Fig. 6.10 – Accessibility to fuses

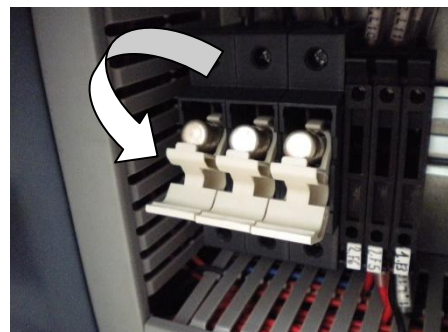


Fig. 6.11 – Accessibility to fuses



The maintenance technician must make sure the power supply is disconnected before servicing the electrical parts inside the machine bodywork.

6.2.5 Periodicity of maintenance operations

ACTIVITY	FREQUENCY OF MAINTENANCE
Washing and sanitising	At the end of every work cycle Before every period of inactivity of the machine
Replacement of O-Ring gaskets	Annually
Draining of water cooling system	At the end of every work season
Glycol level check	At least once a year Every time a leak occurs
Replacement of fuses	When required

7 - DIAGNOSIS

7.1 TROUBLESHOOTING

The possible problems and solutions concerning the machine in question are given below.



The following operations can be carried out by the operator, following an adequate training and knowledge of this manual.

Contact the manufacturer, in case of different situations from those described.

PROBLEMS	POSSIBLE CAUSES	REMEDY
The machine does not switch-on	<ol style="list-style-type: none"> 1. Power supply plug not correctly inserted 2. Faulty current socket or plug 3. Interrupted fuse 4. Faulty power supply cable 	<ol style="list-style-type: none"> 1. Insert the plug in the socket properly 2. Faulty current socket or plug 3. Change the broken fuse 4. Change the power supply cable
The machine switches on but does not start: the display shows one of the alarm messages	See Table 7.1	See Table 7.1
The compressor starts but almost immediately stops: the display shows "E06 + P MAX"	Pressure switch intervention due to cooling water flow interruption	Check water tap opening Check the water supply line is not obstructed. Call the Technical Assistance if the problem persists
The machine works but the mix does not the preservation temperature: the work cycle does not interrupt and the wording "E16 + TMAX F" appears	<ol style="list-style-type: none"> 1. Temperature probe not working 2. Faulty control board 3. Discharged refrigerator system 	Request the Technical Assistance intervention
Ice or thick mix crust formed on the tank walls	<ol style="list-style-type: none"> 1. Stirrer block or malfunctioning 2. Mix quantity below the prescribed minimum (20 l) 	<ol style="list-style-type: none"> 1. Check the stirrer is properly inserted; check the control shaft regularly turns, if not, contact the Technical Assistance 2. Completely discharge the tank
Mix leaking from tap on external wall	Missing, ruined or badly assembled gaskets and O-Rings	Check assembly and eventually replace the tap gaskets
Water leaking from hose spray	Broken flexible hose or damaged gaskets	Replace the hose and/or tap of hose spray

Tab. 7.1 Alarm signals

ALARM	CAUSE	SOLUTION
The display shows the wording: "E04 + lth CMP"	Excessive absorption of the compressor motor	Contact the Technical Assistance
The display shows the wording "E06 + P MAX"	<ol style="list-style-type: none"> 1. Exceeding of max pressure in the refrigerator system and intervention of pressure switch to interrupt the cooling water flow: the machine functioning is interrupted for at least 30 sec 2. Faulty pressure switch functioning 	<ol style="list-style-type: none"> 1. Check water tap opening Check the water supply line is not obstructed. The machine restarts normal functioning upon water flow restoration 2. Contact the Technical Assistance
The display shows the wording "E07 + P MIN"	<ol style="list-style-type: none"> 1. Exceeding of min pressure in the refrigerator system and intervention of pressure switch due to lack of gas in system or faulty solenoid valve: the machine functioning is permanently interrupted until the work conditions are reset 2. Faulty pressure switch functioning 	<ol style="list-style-type: none"> 1. Contact the Technical Assistance 2. Contact the Technical Assistance
The following alarm appears on the display "E05 + T MAX" (Max heating temperature alarm)	<ol style="list-style-type: none"> 1. No glycol in the system 2. Faulty heaters functioning 3. Faulty safety thermostat 	<ol style="list-style-type: none"> 1. Contact the Technical Assistance 2. Contact the Technical Assistance 3. Contact the Technical Assistance
The display shows the wording "E08 + INVERTER"	<p>Intervention of defect relay of the stirrer inverter due to:</p> <ul style="list-style-type: none"> - excessive motor absorption - one power supply phase to motor missing 	<p>Check there is nothing preventing stirrer rotation (turning it by hand); wait a few minutes then power the machine again Call the Technical Assistance if the problem persists</p>
The display shows the wording "E02 + ITH PUMP"	<p>Intervention of the pump thermal relay due to:</p> <ol style="list-style-type: none"> 1. excessive motor absorption 2. mechanical block of impeller 	<ol style="list-style-type: none"> 1. Reset the acoustic alarm by pressing ENTER, wait a few minutes, then press ENTER again and restart the machine. 2. Remove the causes of the block. <p>Call the Technical Assistance if the problem persists</p>
The display shows the wording "E01 + OPEN"	Failed tank lid closure	Close the lid

The display shows the wording "E00 + RETE OFF"	There was a black-out during the cycle: this wording appears upon restart.	When the current is back, the machine automatically starts in the same conditions of when the black-out occurred. Press ENTER: the alarm wording disappears.
The display shows the wording "E11 + PT100-S0"	Faulty tank temperature sensor	The machine locks and cannot be released. Contact the Technical Assistance
The display shows the wording "E12 + PT100-S1"	Faulty inlet glycol temperature sensor	The machine locks and cannot be released. Contact the Technical Assistance
The display shows the wording "E13 + PT100-S2"	Faulty bottom outlet glycol temperature sensor	The machine does not lock, only visual alarm present. Contact the Technical Assistance
The display shows the wording "E14 + PT100-S3"	Faulty top outlet glycol temperature sensor	The machine does not lock, only visual alarm present. Contact the Technical Assistance
The display shows the wording "E15 + TMAX R"	Exceeding of limit time for heating	The machine does not lock, only visual alarm present. Check the stirrer speed in relation to the density of the mix Contact the technical assistance if the alarm repeats
The display shows the wording "E16 + TMAX F"	Exceeding of limit time for cooling	The machine does not lock, only visual alarm present. Check the stirrer speed in relation to the density of the mix Contact the technical assistance if the alarm repeats
The display shows the wording "E21"	Cooling cycle not regularly completed due to: no power supply extension	Assess the possibility of repeating the cycle
The display shows the wording "E22"	Stop cycle not regularly completed due to: no power supply extension	Assess the possibility of repeating the cycle
The display shows the wording "E23"	Preservation cycle not regularly completed due to: no power supply extension	Assess the possibility of repeating the cycle
The display shows the wording "E09 + G MIN"	The glycol level is too low	Contact the technical assistance

8 - ATTACHED DOCUMENTATION

8.1 LIST OF ATTACHED DOCUMENTS

- List of equipment
- EC Declaration of conformity (see Chap. 1)
- Wiring diagram