

03/2019

# **Mod: MCV/5C-N**

**Production code: CONTINUO 5**



## Operating and maintenance manual

### MCV/5 C - N

Translation of the original instructions



*Thank you for choosing this machine. Please read this manual which will allow you to use the machine in a way that is safe for you and for others. While reading the manual, take the time to familiarise yourself with the new machine and you will be able to appreciate all of its advantages. You will see that it is user-friendly and how it can easily change your working process, optimising it and making it more profitable. You will understand how the technology used will be of great help to your business. DIAMOND machines are the product of years of experience manufacturing machines for processing foodstuffs. The quality of our machines makes them competitive, reliable, user-friendly, low maintenance, quiet, safe and ergonomic.*

*To keep your machine in proper working order, you must carry out the routine maintenance indicated in the manual. Daily cleaning is fundamental and ensures that machines remain reliable.*

*To allow us to make sure that the manuals we issue are complete and cover all possible subjects, please send us any comments based on your direct experience of using the machine.*

*For operator safety and machine integrity, the machine must only be used for the purpose for which it was built. Therefore, any modifications to the machine, any part of its design, safety device or system is strictly forbidden. Such changes will void any guarantees. The manufacturer declines all responsibility in the event of substitution of components with non-original parts, improper use, tampering, lack of maintenance, removal of safety devices and, more generally, any change made to the original design. Our qualified technical assistance service is always available to you if you have any questions.*

*Please contact your dealer to solve any technical issues. Do not attempt to solve them yourself, since this may result in serious danger.*




*All of the staff at DIAMOND and its dealers hope that you will enjoy working with our machines!*

*This operating and maintenance manual is part of the machine and must always be kept with it, even if the machine is sold to a new buyer.*



## **CONTENTS**

<b>1 GENERAL INFORMATION</b>	<b>7</b>
1.1 General safety instructions	7
1.2 Information about precautions, specific warnings and symbols	7
1.3 Testing, guarantee and liability	8
1.4 Purpose of the manual	8
• 1.4.1 Structure of the manual	8
• 1.4.2 Modifications and additions	9
1.5 Manufacturer identification	9
• 1.5.1 Requesting help – Technical assistance service	9
• 1.5.2 Ordering spare parts	10
• 1.5.3 Downloading the technical manual	10
1.6 Machine identification data - CE marking	10
1.7 Intended uses	11
• 1.7.1 Reasonably foreseeable improper use	11
1.9 Packaging, transportation and storage	12
• 1.9.1 Transportation, lifting and handling	12
• 1.9.2 Machine storage	12
<b>2 TECHNICAL SPECIFICATIONS</b>	<b>13</b>
2.1 General description of the machine	13
2.2 Illustration of the machine as a whole and its components	14
2.3 Working and control position	16
2.4 Machine technical data	16
2.5 Noise	17
2.6 Items supplied with the machine	18
<b>3 GENERAL SAFETY REGULATIONS</b>	<b>18</b>
3.1 General instructions	18
3.2 Safety symbols and stickers	20
3.3 Personal Protective Equipment (PPE)	20
• 3.3.1 Clothing	20
• 3.3.2 Gloves (hand protection)	20
• 3.3.3 Hair cover	20
<b>4 INSTALLATION INSTRUCTIONS</b>	<b>21</b>
4.1 General requirements	21
4.2 Ambient conditions	21
4.3 Spaces needed for use of the machine	22
4.4 Installation and assembly sequences of machine components	22
4.5 Electricity supply	23
4.6 Air-cooled machine	23

<b>5 MACHINE OPERATION</b>	<b>24</b>
5.1 Controls	24
5.2 Switching on and starting the machine	25
5.3 Programming	26
• 5.3.1 "P1" Dispensing 1: 	27
• 5.3.2 "P2" Dispensing 2: 	27
• 5.3.3 "P3" Manual or Continuous Dispensing: 	27
• 5.3.4 "P4" Adjusting the Temperature of the Refrigeration Tank:	27
• 5.3.5 "P5" Setting the temperature measurement unit:	28
5.4 Production	28
5.5 Adjusting the air valve	30
5.6 Defrosting the refrigeration tank	32
<b>6 WASHING</b>	<b>33</b>
6.1 Washing and sanitising	33
• 6.1.1 Sanitising steps	33
<b>7 ROUTINE MAINTENANCE</b>	<b>40</b>
7.1 Type of checks and interval between them	40
7.2 Maintenance work	41
7.3 Maintenance intervals and time needed	41
7.4 Maintenance sheets	42
<b>8 TROUBLESHOOTING</b>	<b>44</b>
8.2 Troubleshooting – flowchart	46
<b>9 INACTIVITY</b>	<b>50</b>
9.1 Keeping the machine efficient if it remains inactive	50
<b>10 DECOMMISSIONING THE MACHINE</b>	<b>51</b>
10.1 Description of disposal method	51



## **Declaration of Conformity**

(according to 2006/42/EC, Annex II, No.1 A)

**Supplier:**.....

**Address:**.....

.....

**Tel:**.....

**Fax:**.....

*We hereby declare that the*

<b>Type of machine</b>	
<b>Name of the model</b>	Cream whipper
<b>Year of production</b>	
<b>Serial number</b>	

### **FULFILS**

*All relevant provisions of Directive 2006/42/EC.*

*The machinery is also in compliance with all a relevant provisions of the following directives:*

***Reg. EC n. 1935/2004***

***2011/65/EU***

***2014/30/EU***

***2014/35/EU***

*Materials intended to come into contact with food;*

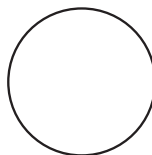
*RoHS 2 directive;*

*Electromagnetic compatibility;*

*Low voltage directive.*

Address

Date



*Signature of an authorised person*



---

# 1 GENERAL INFORMATION

## 1.1 General safety instructions

Before using the machine, carefully read all of this manual, which is an integral part of the machine.

Knowing the information and instructions in this manual is essential for users to use the machine correctly and safely.

The manufacturer declines all responsibility in the event of modifications, tampering or any operations carried out in a way that does not coincide with what is specified in this manual, since they may put the health and safety of personnel and/or objects at risk. The manufacturer reserves the right to take legal action against anyone who modifies its machines without written permission.

The person in charge of machine use and/or the employer must make sure that users are trained and aware of all information and instructions in the documentation supplied.

Users are only permitted to carry out work on the machine which is within their area of responsibility and for which they have been trained.

The user shall be held fully responsible for any modifications he makes to the machine.

Only operators with the appropriate professional technical qualifications may carry out checks or repairs on the machine. Reliable operation and optimised machine performance are only guaranteed by the use of original spare parts. The manufacturer reserves the right to make any changes considered appropriate to the machine described without prior notice.

The user is responsible for all operations needed to keep the machine efficient during its use.

## 1.2 Information about precautions, specific warnings and symbols

Where necessary, this manual includes information alongside machine operating and maintenance instructions or procedures.



There are also indications marked with the “Caution/Danger” symbols, shown in bold type and upper case letters to make them clearly visible.

The “GENERIC CAUTION/DANGER” symbol is used to indicate that failure to comply with the safety regulations described in this manual could result in **“Damage to the machine and/or objects and injury to machine users”**.





## 1.3 Testing, guarantee and liability

### Testing

Before being sent to the customer, the machine must successfully pass testing by the manufacturer.

### Guarantee

DIAMOND guarantees the machines put on the market for 12 months from the date of delivery. During the guarantee period the seller undertakes to substitute, free of charge ex works, any parts which may develop a fault due to obvious manufacturing defects or poor quality materials. Parts substituted remain the property of DIAMOND and must be returned to its premises, free of all charges. If the substitution of defective machine parts requires work by technical personnel, labour costs and any travel and accommodation expenses will be charged to the buyer. Top ups of refrigerant gas are not covered by the guarantee. The guarantee shall be void if the machine is used in a way that does not conform to what is indicated in the manufacturer's "operating and maintenance manual". The guarantee shall be void if the user, deliberately or inadvertently, damages, modifies, disassembles and/or repairs (even only partly), the machine, without written permission from the manufacturer. The guarantee shall also be void if the electric and water connections used to supply the machine, (which are the buyer's responsibility), are made in a way that does not conform to what is indicated in the machine "operating and maintenance manual". Interruption of the payment agreed in the sales proposal and accepted by the seller will result in suspension of the guarantee.

### Liability

DIAMOND declines any responsibility and obligation for any incident involving persons and objects resulting from use of the machine in any way that does not conform to what is indicated in the "operating and maintenance manual" and/or due to manufacturing defects of the components/materials present in the machine. It shall also be considered expressly excluded from any other claim for reimbursement for lost earnings attributable to any failure to operate.

## 1.4 Purpose of the manual

This manual was drawn up with the aim of providing all machine users, in the most complete and clearest way possible, with all information necessary for machine installation, use and maintenance, from the time the machine reaches the market until the day it is decommissioned and/or scrapped.

It also lists all procedures useful for dealing with emergencies which may arise during use of the machine as described by the manufacturer and those which are reasonably foreseeable.

**IMPORTANT NOTE: THE MANUAL DOES NOT SUBSTITUTE TECHNICAL TRAINING FOR PERSONNEL WHO WILL USE THE MACHINE. IT SHOULD BE CONSIDERED A GUIDE TO THE USE OF MACHINE FUNCTIONS.**

### 1.4.1 Structure of the manual

The manual consists of a single document drawn up in descriptive language and with all figures necessary for correct interpretation and implementation of the activities required for machine operation and maintenance.

This manual includes all instructions with which the user must be familiar and information which the user may consult in order to achieve the aims of the manual.



### **1.4.2 Modifications and additions**

This manual reflects the state of the machine at the time it reached the market and is considered an integral part of the machine.

Any modifications, improvements or adjustments applied to machines subsequently marketed do not oblige DIAMOND to apply such changes to a machine previously supplied, nor to consider it and the related manual lacking and inadequate.

DIAMOND reserves the right, should it deem it appropriate and for valid reasons, to update the manuals already on the market, sending its customers sheets of technical and/or operating updates which must be considered and kept in the manual.

## **1.5 Manufacturer identification**

Information for identifying the manufacturer:

**DIAMOND EUROPE**

### **1.5.1 Requesting help – Technical assistance service**

Any request for action by the Technical Assistance Service must be sent by fax or e-mail to the dealer from which the machine was purchased.

When requesting help or technical assistance, always specify:

1. type of machine, model, product code, serial number and year of construction;
2. faults found;
3. dealer through which the machine was purchased;
4. tax document indicating the date of machine purchase by the user.



### 1.5.2 Ordering spare parts

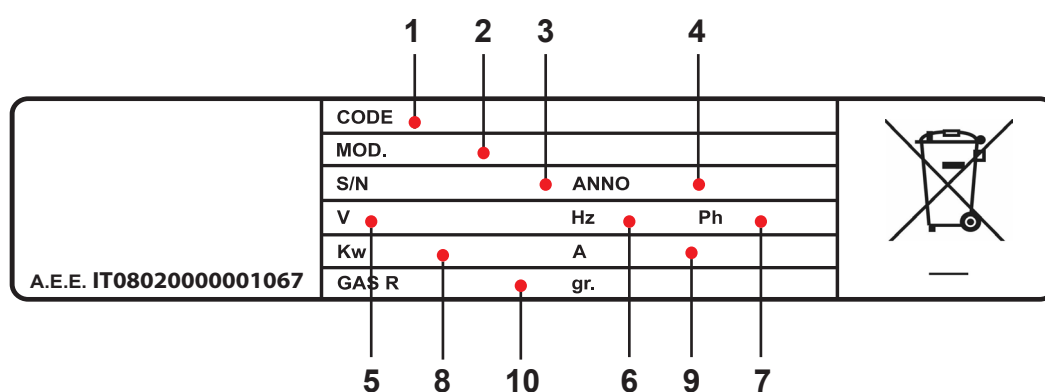
When requesting spare parts, contact your dealer or consult the up-to-date list of authorised service centres on the official DIAMOND website.

### 1.5.3 Downloading the technical manual

Hard copy technical manuals have been replaced by “PDF” files which can be downloaded directly from the website [www.diamond-europe.com](http://www.diamond-europe.com)

## 1.6 Machine identification data - CE marking

The data plate with CE marking is located at the top of the machine rear panel and shows all of the data needed for machine identification.



- 1. Machine code;
- 2. Model – type of machine;
- 3. Machine serial number;
- 4. Date of production (Year);
- 5. Electric power supply voltage;
- 6. Electric power supply frequency;
- 7. Number of phases;
- 8. Max. power;
- 9. Max. current drawn;
- 10. Type and quantity of refrigerant gas.

This data must be indicated in all information documents, for example for every request for technical assistance or when requesting spare parts.



**REMOVAL OF OR TAMPERING WITH THE IDENTIFICATION PLATE IS STRICTLY PROHIBITED.**



## 1.7 Intended uses

The "MCV/5C-N" machine is designed to:

1. transform (whip) liquid cream into whipped cream.
2. store the liquid cream at a set temperature of 3°C.

The machine dispenses whipped cream in the following ways:

- a) programmed dose "P1" of approximately 50 g.
- b) programmed dose "P2" of approximately 100 g.
- c) it is possible to set manual (PU) or continuous (CO) dispensing.



**THE MACHINE CANNOT BE USED FOR OTHER PURPOSES WITHOUT DIAMOND'S AUTHORISATION. DIAMOND WILL NOT BE RESPONSIBLE FOR DIRECT OR INDIRECT DAMAGES DUE TO IMPROPER USE OF THE MACHINE.**

### 1.7.1 Reasonably foreseeable improper use

Based on experience using the machine in actual operating conditions, we recommend that you follow these instructions:

1. Do not start the machine if it is empty (i.e. there is no liquid cream in the tub), as this could damage the pump.
2. Do not press the ON button repeatedly as this may block and/or damage the refrigeration system compressor. If the machine has been switched off, wait for approximately 5 minutes before starting it again.

**Note.** If the compressor is blocked due to repeated turning on, the refrigeration unit will be disabled. The machine seems to be operating because you can hear the fan running, but neither the refrigeration unit nor its consequent "cold" production is active.

3. Do not pour liquid cream into the refrigeration tank but into the special collection tub, so the cream doesn't freeze.

## 1.8 Information for personnel authorised to use the machine

This manual contains the information needed by authorised personnel to correctly use the machine.

A knowledge of and compliance with the general safety instructions and danger warnings contained in this manual are the conditions for proceeding, in minimal risk conditions, with installation, putting into service, operating and maintenance of the machine.

Personnel authorised to use the machine:

**OPERATOR:** a person trained for routine operation of the machine, that is to say, loading products to be processed, running recipes, cleaning and routine maintenance.

**QUALIFIED TECHNICIAN:** a person whose training and professional education gives him a knowledge of machine service conditions, and who is able to work on the machine and recognise and avoid any dangerous conditions.



## 1.9 Packaging, transportation and storage

The machine is packaged in a wooden or cardboard crate on a pallet having dimensions and features suitable for the type and weight of the machine. The machine will be delivered packaged, ensuring that it is protected from the elements.

Each package is marked with the following information:

- Type of machine, model and serial number
- Net and gross weight
- Machine destination

Labels are applied on the package to indicate the following:

- Handle with care
- This way up
- Protect from rain
- Do not stack
- Protect from heat sources
- Fragile



### 1.9.1 Transportation, lifting and handling



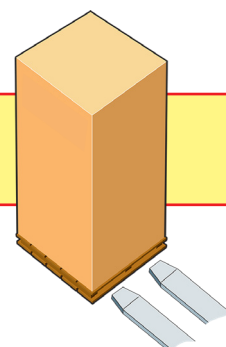
**THE PACKAGE MUST ONLY BE HANDLED BY QUALIFIED TECHNICAL PERSONNEL.**

When the machine is delivered, check that during transportation in addition to visible damage no other damage was caused which could compromise correct operation. On the delivery note, write "Subject to approval" to show that acceptance of the machine is subject to checks. If any damage is found, within 48 of receiving the machine, report the damage to the haulier and the manufacturer.

Use a pallet truck or a fork-lift truck, inserting the forks in the holes in the pallet. Use equipment with suitable load-bearing capacity.



**MOVE THE MACHINE USING LIFTING EQUIPMENT WITH A SUITABLE LOAD-BEARING CAPACITY. DO NOT ATTEMPT TO LIFT THE MACHINE BY HAND.**



### 1.9.2 Machine storage

The package must not be subjected to impacts, vibrations and other loads.

The machine must be stored indoors, in an area free of aggressive agents, at a temperature not lower than +2 °C, not higher than +55 °C and with a humidity level of between 10% and 95% (without condensation).



---

## **2 TECHNICAL SPECIFICATIONS**

### **2.1 General description of the machine**

The "MCV/5C-N" is a cream whipper for continuously dispensing portions of whipped cream, generally from 50 to 100 g.

The liquid cream, in the extractable tub, and the aspirated air, which can be dosed using a special air regulator, and are pumped forward by a rotary pump with vanes in the labyrinth that transforms them into whipped cream at the end of transit.

Both the liquid and whipped cream are cooled as required during their entire transit through the machine to the dispensing point.

The extractable tub is cooled indirectly using the refrigeration tank. The tub is easy to remove so it can be properly washed.

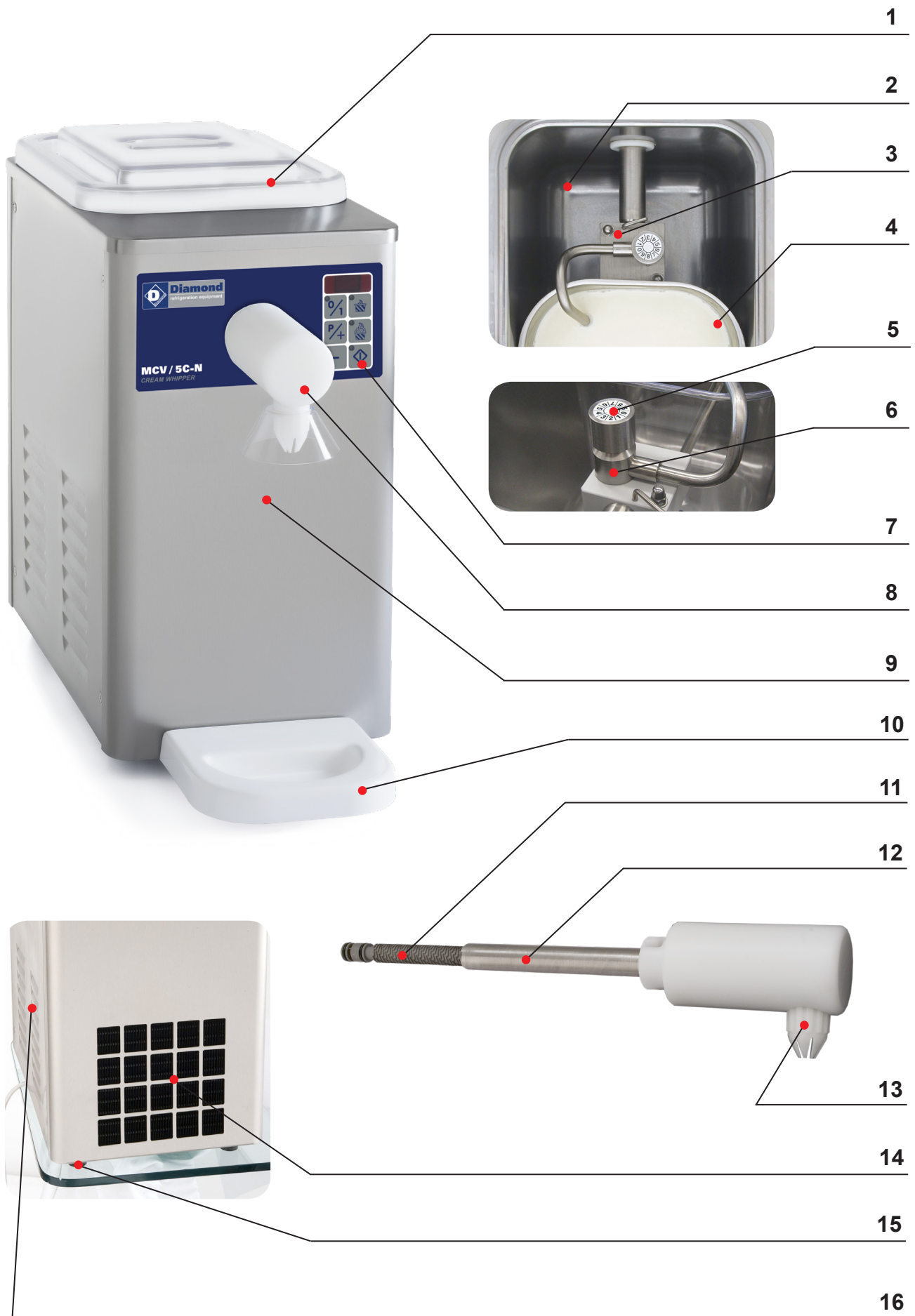
The "MCV/5C-N" model has an extractable tub with a maximum capacity of 5 litres of liquid cream.

The liquid cream, cooled in the extractable tub, can be stored in the machine for the length of time required, but obviously not beyond the product's expiry date.



## **2.2 Illustration of the machine as a whole and its components**

1. Refrigeration tank cover
2. Refrigeration tank
3. Rotary pressure pump
4. Extractable product reserve tub
5. Air valve adjustment knob
6. Air regulator
7. Control panel
8. Dispensing tap
9. Splash guard
10. Drip tray
11. Labyrinth
12. Labyrinth tube
13. Outlet nozzle
14. Air condenser grille
15. Support feet
16. Outer panels



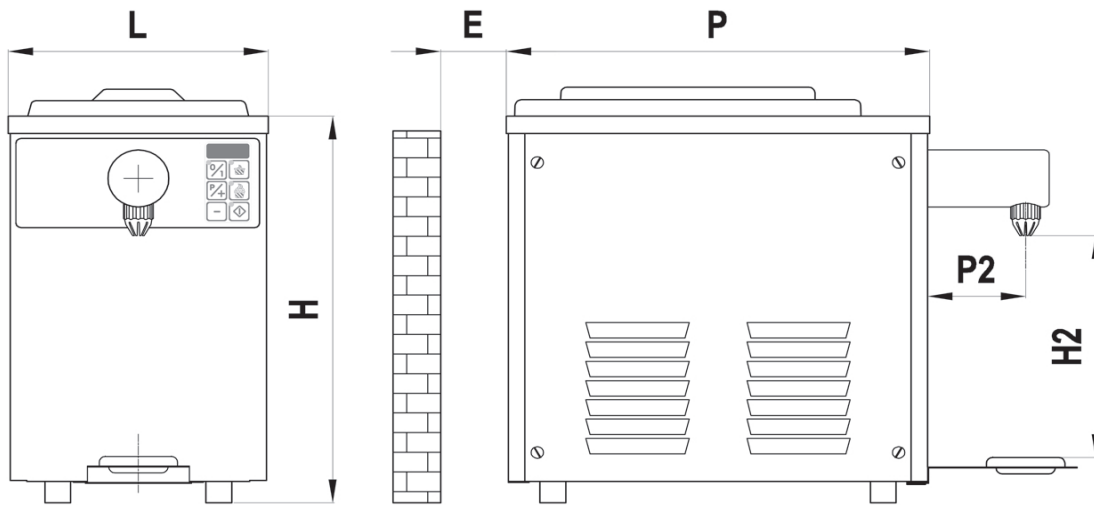


## 2.3 Working and control position

The operator must stand in front of the machine and load the ingredients, programme the recipe, start the processing and unload the processed product at the end of the recipe.

## 2.4 Machine technical data

<b>Model</b>		MCV/5C-N
Net weight	kg	32
Refrigerant gas	(type)	R134A
For air version (quantity)	g	130
Reserve tub capacity (max)	L	5
Hourly production	L	150
Max ambient temperature	°C	+35
AIR version machine: (refrigerant gas pressure)	bar	9.8 to 10.3
"CONDENSATION" (refrigerant gas temperature)	°C	+42 to +45
AIR version machine: (refrigerant gas pressure)	bar	0.2 to 0.1
"EVAPORATION" (refrigerant gas temperature)	°C	-22 to -25



<b>Model</b>	MCV/5C-N	
<b>Dimensions</b>	L (mm)	250
	P (mm)	450
	H (mm)	450
	H2 (mm)	200
	P2 (mm)	95
	E (mm)	200

**RATED POWER / RATED CURRENT**

Power supply voltage (Volts)	Frequency (Hz)	Phases	MCV/5C-N
110	50	1	0.4 kW - 7 A
115	60	1	0.4 kW - 7 A
230	50	1	0.4 kW - 4 A
220	60	1	0.4 kW - 5 A

## 2.5 Noise

The machine is designed and built to conform to the requirements of the regulations in force.

The machine's exposure limit and action limit values, relative to the level of daily exposure to the peak noise and acoustic pressure, are respectively less than 80 dB(A) and 135 dB(C). Test documents and certificates for the instruments used for the measurements are filed at DIAMOND and are available to monitoring authorities.



**TEST DOCUMENTS AND CERTIFICATES FOR THE INSTRUMENTS USED FOR THE MEASUREMENTS ARE FILED AT DIAMOND AND ARE AVAILABLE FOR THE MONITORING AUTHORITIES.**



## 2.6 Items supplied with the machine

The machine is supplied together with the following items:

1. Operating and maintenance manual.
2. Kit of gaskets and packet of food-safe lubricating grease
3. Tube brush for cleaning.
4. Paddle for stirring the liquid cream in order to make it smooth and even.

---

## 3 GENERAL SAFETY REGULATIONS

### 3.1 General instructions



**THE INSTRUCTIONS LISTED BELOW MUST BE CAREFULLY READ SO THAT USERS ACT APPROPRIATELY ON A DAILY BASIS WHEN OPERATING THE MACHINE AND CARRYING OUT MAINTENANCE. THIS PREVENTS ANY KIND OF ACCIDENT LINKED TO SITUATIONS INVOLVING POTENTIAL RISK FOR PEOPLE AND/OR OBJECTS.**

***For the safety of machine users, the following safety instructions must be complied with:***

1. Do not attempt to start the machine until you have acquired a suitable understanding of how it operates, by reading this manual.
2. In case of doubts, even after carefully reading this manual, contact the technical assistance service.
3. Make sure that all personnel involved in using the machine are aware of the safety instructions.
4. Before starting the machine, the operator must check for any faults and/or defects visible on the safety devices and on the machine. If any faults are found, immediately report them to the manufacturer or to the nearest authorised service centre.
5. The machine must only be used for the purposes for which it was intended and in accordance with the manufacturer's instructions.
6. Every day, check that all safety devices on the machine are operating correctly (see sections 3.2 and 8.5 of this manual).
7. Safety devices must not be removed or bypassed for any reason.
8. Any tampering with or modification of the machine not authorised in advance by the manufacturer shall release the manufacturer from any responsibility for injury/damage to people and/or objects.
9. The identification plate and safety symbols/stickers applied to the machine must be kept in perfect condition. If they are damaged, they must be promptly substituted.
10. Work on electrical connections must only be carried out by qualified technical personnel.
11. The operator must be familiar with the machine controls as described in section 5.1 "Controls".
12. The operator must not carry out any operations which are not described in this manual.
13. Only purchase and use original spare parts, which are guaranteed by the manufacturer. Contact the dealer or the nearest service centre to replace faulty or damaged components.
14. Do not wear clothing, jewellery and accessories which may become tangled in machine moving parts.
15. Keep the area around the machine clear and free of obstructions.
16. Do not put fingers and/or objects in the machine slots or holes.
17. Do not use the machine with damp or wet hands.
18. Always wear suitable gloves and a hair cover for hygiene.



19. Pay maximum attention to all caution and danger signs on the machine.
20. The machine must be installed in a location protected from rain and sun.
21. Do not allow water and/or liquids to penetrate the machine.
22. Do not open the machine panels, since the machine contains components/parts which cannot be maintained by the user.
23. Do not lean or sit on the machine while it is operating.
24. Do not apply to the machine other devices which are not part of the kit supplied by the manufacturer.
25. Clean the machine outer panels with soft cloths moistened with detergent for food-safe machines. Do not use water jets, as they may damage components/parts inside the machine.
26. Do not use any kind of solvent, such as spirit, benzene or thinner to clean any of the machine surfaces.
27. Do not operate the machine while under the effects of alcohol, mental health medications or medications in general.
28. This machine must not be used by persons under the age of 18.
29. Improper use of the machine may cause hazards for operators and/or may damage the machine.
30. If the machine develops any problems not covered in this manual, contact the Technical Assistance Service.
31. Use of the machine is not permitted in places with a potentially explosive atmosphere and in places with ambient conditions not envisaged in point 4.2 of this manual.
32. The machine is not designed to be used by people with reduced physical, sensory or mental capacity.



## 3.2 Safety symbols and stickers

On the machine there are symbols/stickers for highlighting: what you must not do, important information and warnings:

This symbol indicates the presence of an electric shock hazard.

It indicates to the relevant personnel that they risk an electric shock if they do not work in compliance with safety regulations.



## 3.3 Personal Protective Equipment (PPE)

The employer must inform personnel about the following safety-related issues:

- 1 Accident risks.
- 2 Operator safety equipment.
- 3 General accident-prevention rules envisaged by the regulations in place in the country for which the machine is intended.

**The operator must always:**

1. Pay maximum attention to all caution or danger symbols/stickers on the machine.
2. Not wear clothing, jewellery or accessories which may become tangled in machine parts.

**Personal protective equipment to be used by personnel authorised to use the machine:**

### 3.3.1 Clothing

Operators must wear clothing made of material resistant to the type of product to be processed. The clothing must allow perfect movement for the operations that the operator must perform.



### 3.3.2 Gloves (hand protection)

Gloves must be suitable for the machine operating conditions and the operator's hands. They must guarantee a secure, rapid grip as well as high performance in resisting the product to be handled. They must guarantee adequate comfort, absorb sweat and protect against heat and cold.



### 3.3.3 Hair cover

Hair covers must be the correct size and must hold the hair inside. They must be breathable to allow for scalp sweating.



**PPE MUST CONFORM TO THE SAFETY REQUIREMENTS OF THE REGULATIONS IN FORCE IN THE COUNTRY WHERE THE MACHINE IS USED.**



## 4 INSTALLATION INSTRUCTIONS

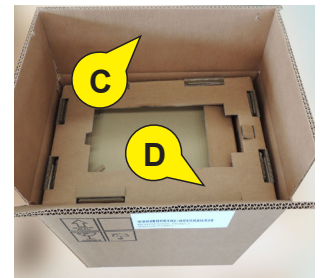
### 4.1 General requirements



**INSTALLATION MUST ONLY BE PERFORMED BY QUALIFIED TECHNICAL PERSONNEL.**

Once the package has been deposited in the machine installation area, cut the straps (A) or remove the metal points (B), open the case (C) and remove the internal protection cards (D).

Remove the documents and accessories located on the outside of the machine.



**Take care when removing the straps, as they may accidentally hit the operator when cut.**

Lift the machine out of the case using hoisting equipment suitable for the weight of the machine.



**During lifting pay special attention to the power cable, taking care not to damage it.**



### 4.2 Ambient conditions

Ambient conditions required for machine operation:

- Temperature: +2°C to +30°C (35.6°F to 86°F)
- Humidity: 10% - 95% (with no condensation)



**THE MACHINE MUST BE POSITIONED IN A LOCATION PROTECTED FROM RAIN AND SUN.**

Ambient conditions other than those specified may cause serious damage to the machine and in particular to the electrical equipment and the refrigerating system.



**OPERATING THE MACHINE IN AMBIENT CONDITIONS THAT DO NOT CONFORM TO THE INDICATIONS IN THIS MANUAL WILL VOID THE GUARANTEE.**

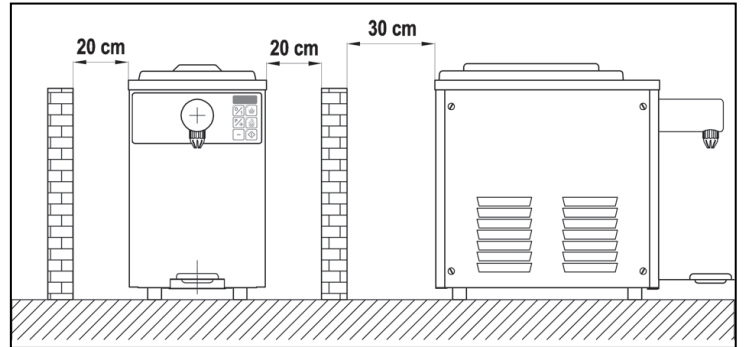
**USE OF THE MACHINE IN POTENTIALLY EXPLOSIVE ATMOSPHERES IS STRICTLY PROHIBITED.**



### 4.3 Spaces needed for use of the machine

The machine must be positioned on a solid, level and even floor that can bear its weight and must not be near heat sources or be directly exposed to sunlight.

Keep the machine air inlets clear to allow adequate air circulation around it.

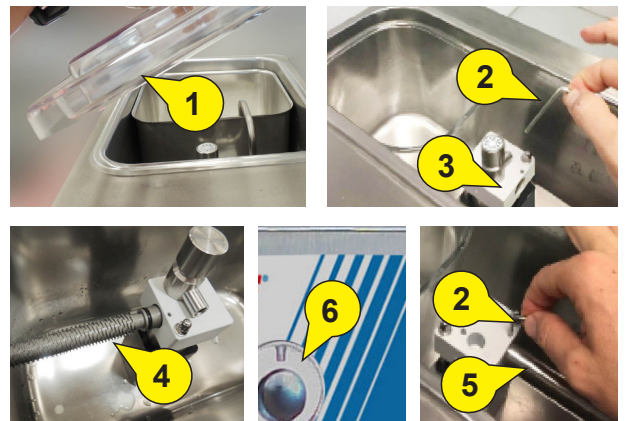


### 4.4 Installation and assembly sequences of machine components

For safety reasons and to avoid damage during transportation, some machine components are removed from it. Therefore, the machine user must follow these assembly instructions for machine components:

#### 1 Labyrinth and labyrinth tube

- Remove the refrigeration tank cover (1) and the fixing rod (2) from the rotary pressure pump cover (3).
- Insert the labyrinth (4) and the labyrinth tube (5) in the pump cover hole, through the opening (6) on the front panel.
- Position the fixing rod (2) in its housing to lock the labyrinth (4) in place.



#### 2 Dispensing tap complete with outlet nozzle

- Position the dispensing tap (7) so the slot (8) on the rear side is aligned with the pin (9) located on the opening of the front panel.
- Insert the dispensing tap completely and turn it in an anti-clockwise direction, so the outlet nozzle (10) is located in a dispensing position (turned downwards).



#### 3. Drip tray and drip tray holder

- Insert the drip tray (11) in the slot (12) on the bottom part of the front panel.





## 4.5 Electricity supply



**WORK ON ELECTRICAL CONNECTIONS MUST ONLY BE CARRIED OUT BY QUALIFIED TECHNICAL PERSONNEL.**

The machine must be powered at the voltage shown on the data plate at the top of the rear panel. Connect the machine only to a power supply using a suitable earth connection.

The mains socket must be protected by fuses with specifications suitable for the machine's absorbed current indicated on the rating with the required identification data.



**THE ELECTRIC SYSTEM THAT WILL POWER THE MACHINE MUST BE DESIGNED IN ACCORDANCE WITH THE REGULATIONS IN FORCE AND INSTALLED BY QUALIFIED, CERTIFIED TECHNICAL PERSONNEL. THE SOCKET MUST BE CONTROLLED BY A RESIDUAL CURRENT OPERATED CIRCUIT BREAKER, AND MUST HAVE AN EFFECTIVE EARTH CONNECTION.**



**THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY AN UNSUITABLE ELECTRICITY SUPPLY SYSTEM OR EARTHING.**



**THE USE OF EXTENSION LEADS WHICH HAVE A CROSS-SECTION DIFFERENT TO THAT OF THE MACHINE POWER CABLE MAY RESULT IN THE FOLLOWING FAULTS:**

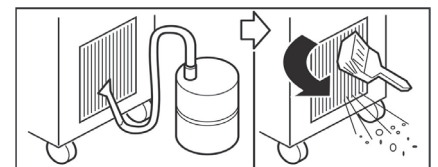
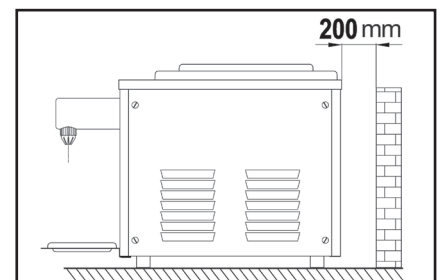
1. SLOW MOTOR START WITH TRIPPING OF OVERLOAD SWITCHES
2. MOTOR OVERHEATING WITH A DROP IN POWER
3. FAILURE OF MACHINE SWITCH ON - SWITCH OFF DEVICE

## 4.6 Air-cooled machine

The machines are designed with an air cooling system and must be installed with a minimum distance from the walls of at least 200 mm to allow free circulation of condensation air.



Every day, clean the area around the machine to prevent foreign bodies (for example: build-up of dust, bits of paper, etc.) from blocking the regular inflow of air. Monthly, thoroughly clean the condenser grille, removing any dust residues, bits of paper, etc., to allow the machine to operate correctly.



Remove dust from the condenser grilles "dry" with a vacuum cleaner and, if necessary, a brush, so that the dust is removed outwards.



**DO NOT USE LIQUIDS BECAUSE THEY WOULD FIX THE DUST ON THE CONDENSER.**



**REMOVE DUST FROM THE CONDENSER GRILLES OUTWARDS TO AVOID COMPROMISING THE PERFORMANCE OF THE REFRIGERATING SYSTEM.**



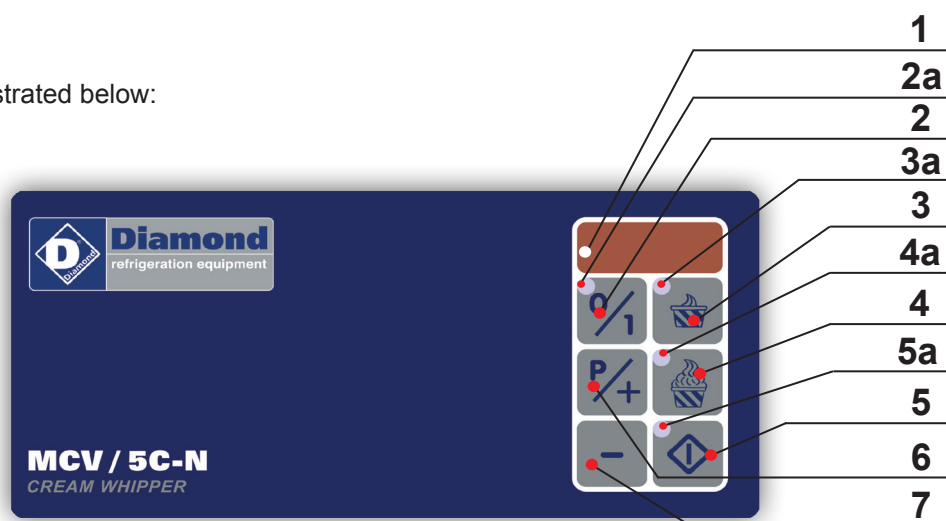
**INADEQUATE MACHINE VENTILATION COULD COMPROMISE CORRECT OPERATION AND ITS PRODUCTION CAPACITY.**



## 5 MACHINE OPERATION

### 5.1 Controls

The control panel functions are illustrated below:



#### 1. Digital display

The adjustment parameters (P1, P2, P3, P4 and P5) and their respective set values can be viewed on the digital display. The temperature of the cream in the reserve tank is also displayed.

#### 2. ON/OFF button

For switching the machine on and off. When the machine is turned on, the following values are shown on the digital display (1) in this sequence: the factory set conservation temperature for liquid cream (+3°C) and then the temperature of the internal surface of the refrigeration tank.

#### 2a. Power LED

Power ON light. When lit the LED indicates that the machine is supplied with electricity.

#### 3. "Dispensing P1" button

Timed dispensing button. The factory setting is 5 which corresponds to a quantity of about 50g. After the P1 parameter has been displayed, press the "6" button to set a value between 1 and 90 for the automatic dispensing of the whipped cream. The value is set using adjustment buttons 6 and 7. Setting a value of 1 corresponds to a dispensing time of 0.5 seconds, and values can be set up to 90 - equivalent to a dispensing time of 45 seconds. When the button is active, its warning LED (3a) comes on.

#### 4. "Dispensing P2" button

Timed dispensing button. The factory setting is 10 which corresponds to a quantity of about 100 g. After the P2 parameter has been displayed, press the "6" button to set a value between 1 and 90 for the automatic dispensing of the whipped cream. The value is set using adjustment buttons 6 and 7. Setting a value of 1 corresponds to a dispensing time of 0.5 seconds, and values can be set up to 90 - equivalent to a dispensing time of 45 seconds. When the button is active, its warning LED (4a) comes on.

#### 5. "Dispensing P3" button

This button allows the whipped cream to be dispensed:  
- In manual mode, if a "PU" parameter has been set in "P3" programming. Dispensing will last until the "P3 Dispense" button is released.  
- In continuous mode, if a "CO" parameter has been set in "P3" programming. Dispensing will last until the "Dispensing P3" button is pressed again. When the button is active, its warning LED (5a) comes on. The factory setting of the "P3" dispensing button is "CO" continuous mode.

#### 6. "+" Programming/Adjustment button

Dual function button:  
a) press and hold this button down for several seconds to show the adjustment parameters (P1, P2, P3, P4 and P5) and the relative set values on the digital display (see section 5.3 "Programming").  
b) press this button to increase the value selected in the various programming functions.



**7. “-” Adjustment Buttons**  
reduce the selected value.

This button is only active during programming functions. Press it to

## 5.2 Switching on and starting the machine

Connect the machine power cable to a mains socket and press the 0/1 ON/OFF button (1).

When the machine comes on, the following values are shown on the digital display (2) in this sequence: the factory set conservation temperature for liquid cream (+3°C) and then the temperature of the internal surface of the refrigeration tank.

Before starting whipped cream production, carefully check the following:

- Check that the machine is positioned with the required space between it and the walls and that there are no foreign bodies obstructing air flow.

- Check that the pump cover is fitted with an air regulator and an aspiration tube for the liquid cream in the extractable tub.



**Do not start machine production until you have put the liquid cream in the extractable reserve tub. The machine must not operate with no product inside it, as this would risk damaging the rotary pressure pump.**

- Having checked all these conditions, pour liquid cream into the extractable reserve tub.



**Do not pour liquid cream into the refrigeration tank but into the special collection tub, so the cream doesn't freeze.**



## 5.3 Programming



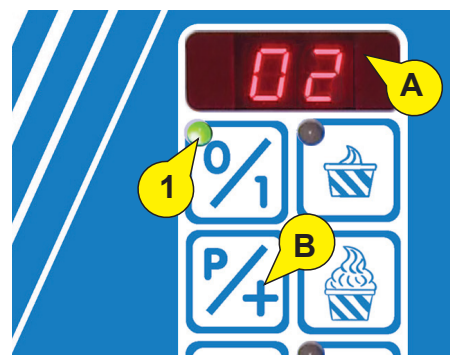
DURING ITS FACTORY INSPECTION, THE MACHINE HAS BEEN PROGRAMMED WITH OPTIMAL OPERATING PROGRAM PARAMETERS.

DO NOT CHANGE PROGRAMMING UNLESS IT IS STRICTLY NECESSARY.



IF PARAMETER VALUES DO NEED TO BE ALTERED, MAKE ANY NECESSARY MACHINE PROGRAMMING CHANGES BEFORE STARTING PRODUCTION.

- Check that the power LED (1) is on and press the machine ON/OFF 0/1 button.
- The machine prepares for operation and the refrigeration tank temperature is shown on the digital display (A).
- Press the “PROGRAMMING/ADJUSTMENT +” button (B) and hold it down for a few seconds to access the 5 machine programming parameters:



Code      Function

P1      Dispensing 1



P2      Dispensing 2



P3      Manual or Continuous Dispensing



P4      Adjusting the temperature of the refrigeration tank

P5      Setting the temperature measurement unit:



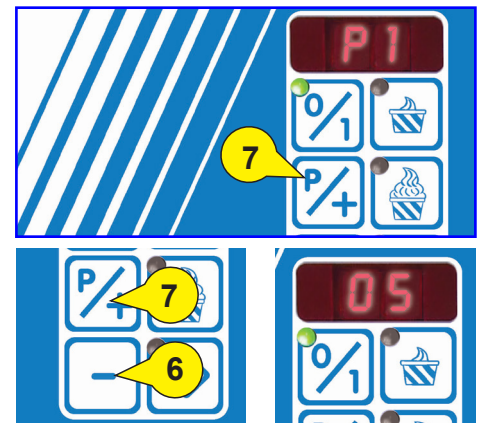
HAVING PRESSED THE “PROGRAMMING/ADJUSTMENT +” BUTTON (B), THE SHIFT FROM ONE PARAMETER TO ANOTHER TAKES PLACE AUTOMATICALLY EVERY 5 SECONDS.

AT THE END OF PROGRAMMING THE SYSTEM EXITS FROM THE PARAMETERS AUTOMATICALLY AND THE REFRIGERATION TANK TEMPERATURE IS SHOWN ON THE DIGITAL DISPLAY.



### 5.3.1 "P1" Dispensing 1:

- Having pressed the "PROGRAMMING/ADJUSTMENT +" button (7), the P1 code flashes on the digital display. A few seconds later, a numerical value indicating the dispensing time set appears on the display. Press adjustment buttons (6) and (7) to increase or reduce the dispensing time from 1 to 90. Setting a value of 1 corresponds to a dispensing time of 0.5 seconds, and values can be set up to 90 - equivalent to a dispensing time of 45 seconds. The factory set value is 5 (approx. 50 g).



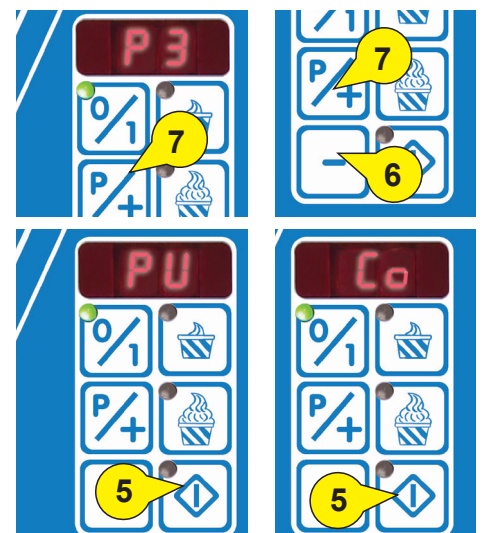
### 5.3.2 "P2" Dispensing 2:

- Having pressed the "PROGRAMMING/ADJUSTMENT +" button (7), the P2 code flashes on the digital display. A few seconds later, a numerical value indicating the dispensing time set appears on the display. Press adjustment buttons (6) and (7) to increase or reduce the dispensing time from 1 to 90. Setting a value of 1 corresponds to a dispensing time of 0.5 seconds, and values can be set up to 90 - equivalent to a dispensing time of 45 seconds. The factory set value is 10 (approx. 100 g).



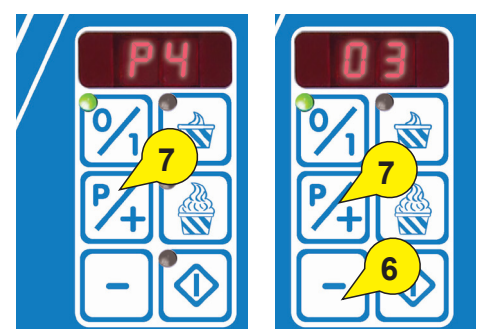
### 5.3.3 "P3" Manual or Continuous Dispensing:

- Having pressed the "PROGRAMMING/ADJUSTMENT +" button (7), the P3 code flashes on the digital display to indicate the type of dispensing. After the P3 parameter has been displayed, press adjustment buttons (6) or (7) to select between PU and Co dispensing:
  - **PU**, indicates manual dispensing. Dispensing will last until the "DISPENSE" button (5) is released.
  - **Co**, indicates continuous (Co) operation. Dispensing will last until the next time the "DISPENSE" button (5) is pressed. The factory setting of the "P3" dispensing button is "Co" continuous mode.



### 5.3.4 "P4" Adjusting the Temperature of the Refrigeration Tank:

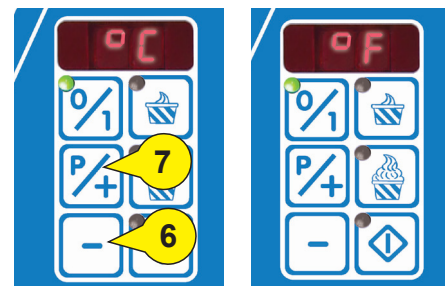
- Having pressed the "PROGRAMMING/ADJUSTMENT +" button (7), the P4 code flashes on the digital display to indicate the temperature of the refrigeration tank. After the P4 parameter has been displayed, press adjustment buttons (6) or (7) to adjust the refrigeration temperature. The temperature can be adjusted within a range of +1°C and +10°C. The factory set value is +3°C.





### 5.3.5 "P5" Setting the temperature measurement unit:

- Having pressed the "PROGRAMMING/ADJUSTMENT +" button (7), the P5 code flashes on the digital display to indicate the temperature measurement unit of the refrigeration tank. After the P5 parameter has been displayed, press adjustment buttons (6) or (7) to set the measurement unit (°C or °F).



## 5.4 Production



**BEFORE STARTING PRODUCTION, THOROUGHLY WASH AND SANITISE THE MACHINE, AS INDICATED IN SEC. 6 (WASHING).**

- Press the "Machine ON/OFF 0/1" button.

- When the machine comes on, the following values are shown on the digital display in this sequence: the factory set conservation temperature for liquid cream (+3°C) and then the temperature of the internal surface of the refrigeration tank.



We suggest waiting for the refrigeration tank to cool to a temperature of approximately +4/+5°C, before pouring the liquid cream into the extractable tub in the tank.



**DO NOT ADD "GRANULATED" SUGAR TO THE CREAM (USE SUGAR SYRUP IF NECESSARY).**

- Pour the quantity of liquid cream corresponding to the capacity of the machine into the extractable reserve tub.

- Adjust the air valve to obtain the rise in volume required for the whipped cream. See section 5.5 of this manual: "Adjusting the air valve".

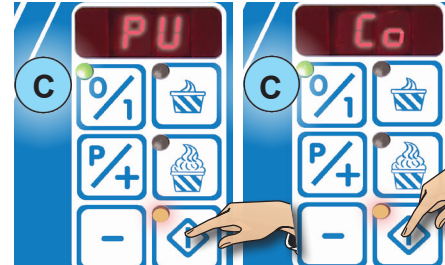
- Select the "DISPENSING" mode: The machines are designed to dispense whipped cream in the following ways:

A) Dispensing 1 (approx 50g).

B) Dispensing 2 (approx 100g).

c) Setting Manual or Continuous dispensing:

- PU**, manual dispensing. Dispensing will last until the "DISPENSE" button is released.
- Co**, continuous (Co) operation. Cream is dispensed until the "P3 DISPENSE" button is pressed again. The factory setting of the "P3" dispensing button is "CO" continuous mode.





**Note:** We suggest dispensing a small amount of cream to begin with to check its consistency. If the consistency is correct, you can then begin dispensing it for customers.

For optimum machine performance, the following indications should be observed:



**We suggest using liquid creams with a fat content of between 33 and 35%.**

**Notes:** Cream with a fat content of less than 33% is defined as “low-fat” and tends not to increase volume.

Cream with a fat content of more than 35% is defined as “full-fat” and tends to increase volume until it begins to “churn”.

Long-life cream should be mixed and amalgamated before being processed in order to avoid lumps of fat forming. Use the paddle supplied to amalgamate the liquid cream.



**We suggest using a percentage of sugar that does not exceed 5% of the quantity of liquid cream used, as otherwise it may “churn”.**

- ! *The recommended temperature for dispensing whipped cream is between +2°C and +4°C. Temperatures of more than +5°C will not guarantee the required increase in volume (“whipping”) of the liquid cream. Temperatures of less than +2°C tend to separate the fats and freeze the liquid cream.*
- ! *Regularly check the level of the liquid cream in the extractable reserve tub. Top it up if it begins to run out.*
- ! *If **no whipped cream is dispensed** for longer than 2 hours, the different components of the cream begin to separate. We, therefore, suggest that the liquid cream in the tub is stirred with the paddle supplied with the machine, to make it homogeneous again.*

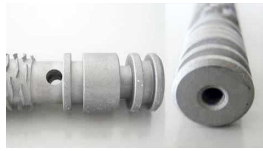
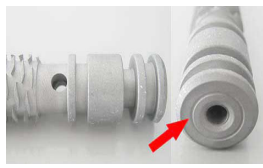
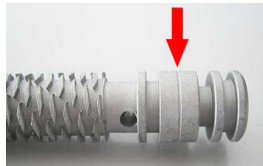



**The liquid cream, cooled in the extractable tub, can be stored at +3°C for the length of time required, but obviously not beyond the product’s expiry date.**

The liquid cream, in the extractable tub, and the aspirated air, can be dosed using the air regulator, and are pumped forward by a rotary pump with vanes in the labyrinth that transforms them into whipped cream.



The instructions for using the “labyrinths” are indicated in the table below according to the percentage of fat in the cream. A labyrinth (1.5 measurement) is supplied with the machine for normal cream (33...35% of fat). If other types of cream are used, a specific labyrinth must be ordered from the retailer or directly from the manufacturer.

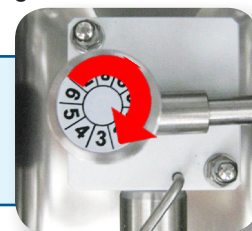
LABYRINTH MEASUREMENT	CODE	WEIGHT OF LABYRINTH	TYPE OF CREAM	SYMBOLS
1.4	A13.010	324 g	Low fat cream (29...32% of fat)	
1.5	A13.015	312 g	Normal cream (33...35% of fat)	
1.6	A13.012	314 g	Full fat cream (36...40% of fat)	
1.8	A13.011	294 g	High fat cream and dairy mousses (>40% of fat)	

## 5.5 Adjusting the air valve

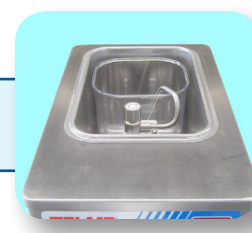
The function of the air valve is to regulate the required increase in volume of the liquid cream by adding different amounts of air.



The air valve adjustment field ranges from “0 to 9”. In the “0” position the valve is closed and no air is pumped into the product. To increase the amount of air in the liquid cream, turn the air valve knob in an anticlockwise direction.



The air valve position should only be read when standing directly in front of the machine.

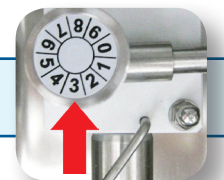




**Note:** Using a liquid cream with a fat content between 33 and 35% and a cooling temperature of between +2°C and +4°C, the valve regulation is generally set in a position between 2 and 5 (standard operating condition).



The air adjustment valve is factory-set at position “3”.



The air valve should be adjusted according to the type of cream used (for example, animal or plant-based cream) and the relative percentage of fat, in order to increase the volume of the dispensed cream as required.

**Note:** If the air valve has been adjusted because not enough air was being pumped in, the cream dispensed may become excessively wet and not stiff enough (liquid-not stiff).

- In this situation, turn the valve knob in an anticlockwise direction to obtain the rise in volume required for the dispensed cream.



**Note:** If the air valve has been adjusted because too much air was being pumped in, the cream dispensed tends to “churn”. Churned cream obstructs the labyrinth and may block the machine. In this situation, turn the valve knob in a clockwise direction until it reaches the “0” position.

- Press the “P3 DISPENSE” button until all the liquid cream has been dispensed, and then adjust the air valve to obtain the rise in volume required for the dispensed cream.



- If the labyrinth does become blocked, turn the machine off, disassemble the dispensing tap and labyrinth and proceed with the washing operations described in section 6.





## 5.6 Defrosting the refrigeration tank

If the machine is used in continuous mode and not turned off for several days, the refrigeration tank should be defrosted as described below.



As the refrigeration tank acts as an evaporator, the inside surface tends to freeze on account of the humidity in the surrounding environment. To avoid the excessive build up of frost/ice on the surface of the refrigeration tank, turn off the machine by pressing the “ON/OFF 0/1” button, until the tank has been completely defrosted.

- Turn the aspiration tube until it is pointing upwards (or remove it from its housing in the air regulator), remove the tub and put it in a refrigerator to keep any cream left inside it chilled and then let the refrigeration tank defrost at room temperature.
- Before reusing the machine, dry off any condensation water inside the tank with a cloth or sponge.



**DO NOT REMOVE ICE OR FROST BY SCRAPING THE SURFACE OF THE REFRIGERATION TANK AS THIS MAY DAMAGE IT.**



## 6 WASHING

### 6.1 Washing and sanitising



Sanitising includes all activities intended to make the components that come into contact with foods hygienic.

Aims of sanitising:

- To remove all traces of product residues
- To reduce the microbial load without leaving chemical residues of the products used on the surface treated.  
-To eliminate germs.

Sanitising consists of the following phases:

1. Rinsing with drinking water
2. Washing with detergent
3. Thorough rinsing to remove detergent residues
4. Disinfection
5. Final rinse to remove disinfectant residues

#### 6.1.1 Sanitising steps

FREQUENCY: at the end of operations, in accordance with the regulations in force in the Country where the machine is used.

AUTHORISED OPERATOR: 1 Operator

TIME NEEDED: -



Before starting the washing and sanitising process, remove any liquid cream left in the reserve tub by pouring it into a suitable container and putting it in a refrigerator.



During the washing phase, keep the air valve knob set in a standard operating condition position (between 2 and 5).

During the washing phase, we recommend using the programming function to set the "P3" parameter to continuous dispensing mode (Co). Keep dispensing active until the washing solution in the reserve tub has run out. See section 5.3 of this manual for how to make this setting.



## 1. RINSE PHASE:

At the end of operations, thorough rinsing is needed, to completely remove any product residues.

Proceed as follows:

- Pour drinking water, at room temperature, into the reserve tub until it is  $\frac{1}{2}$  full.
- Position a suitable container under the dispensing tap.
- Press the "P3 DISPENSE" button to drain the rinse water from the tub into the container located under the dispensing tap.
- Press the "P3 DISPENSE" button again to disable continuous operation.



**THE MACHINE MUST NOT OPERATE WITH NO PRODUCT INSIDE IT, AS THIS WOULD RISK DAMAGING THE ROTARY PRESSURE PUMP.**

## 2. WASHING WITH DETERGENT PHASE:



For washing, use a specific non-foaming food-safe detergent, normally alkaline. The dose used should comply with the instructions on the label, including the contact times.

- Pour a detergent solution, at a temperature NOT HIGHER THAN 40°C, into the reserve tub until it is  $\frac{1}{2}$  full.
- Position a suitable container under the dispensing tap.
- Press the "P3 DISPENSE" button to drain the detergent solution from the tub into the container located under the dispensing tap.
- Press the "P3 DISPENSE" button again to disable continuous operation.



**THE MACHINE MUST NOT OPERATE WITH NO PRODUCT INSIDE IT, AS THIS WOULD RISK DAMAGING THE ROTARY PRESSURE PUMP.**



**THE PRESSURISATION PUMP DOES NOT NEED TO BE REMOVED, AS IT IS WASHED BY THE DETERGENT SOLUTION AS IT PASSES THROUGH.**



To thoroughly wash with detergent all the components installed on the machine, remove them and proceed as follows:

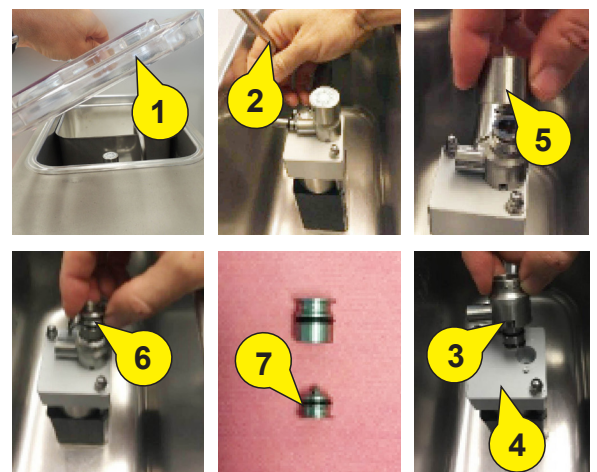


**TURN OFF AND ISOLATE THE MACHINE POWER SUPPLY BEFORE PERFORMING THE FOLLOWING OPERATIONS. TURN OFF THE MACHINE BY PRESSING THE 0/1 ON/OFF BUTTON AND SET THE MAIN ON/OFF SWITCH TO "0".**

**a) Disassembling components:**

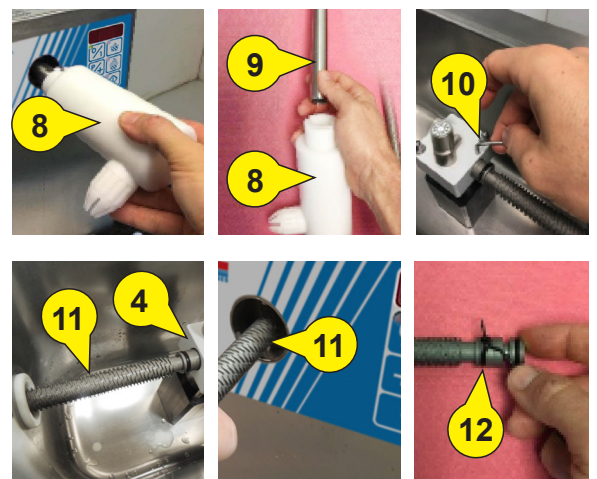
**• Disassembling the aspiration tube and rotary pressure pump air regulator**

- Remove the cover (1) located on the refrigeration tank, remove the aspiration tube (2) and unscrew the air regulation knob (5) in an anti-clockwise direction.
- Extract the valve holder (6) vertically and remove the adjustment valve (7) from it by sliding it out from the bottom.
- Extract the air regulator (3) vertically from the pump cover (4).



**• Disassembling the dispensing tap, labyrinth tube and labyrinth**

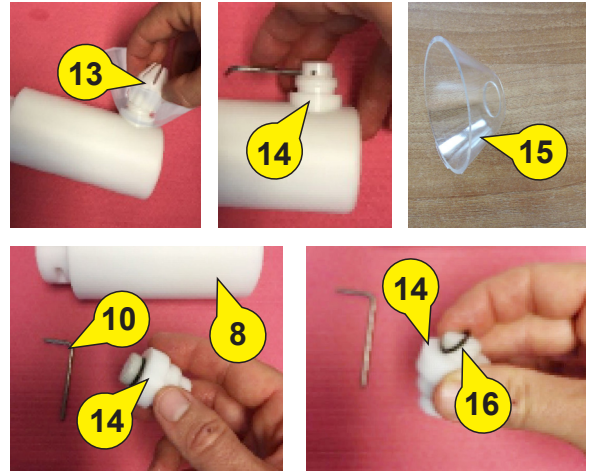
- Rotate the dispensing tap (8) by 45°, in a clockwise direction, and remove it from the machine.
- Remove the labyrinth tube (9) from the dispensing tap (8).
- Remove the labyrinth (11) fixing rod (10) from the pump cover (4).
- Remove the labyrinth (11) from the machine.
- Remove the gaskets (12) on the labyrinth (11) using a non-metallic pointed tool, taking care not to damage the gasket housing.





• **Disassembling the outlet nozzle, splash guard and cream distributor**

- Remove the outlet nozzle (13) from the cream distributor (14) by unscrewing it in an anticlockwise direction.
- Remove the splash guard (15).
- Remove the cream distributor (14) from the dispensing tap (8), by unscrewing it in an anticlockwise direction using the labyrinth fixing rod (10).
- Remove the gasket (16) on the cream distributor (14) using a non-metallic pointed tool, taking care not to damage the gasket housing.

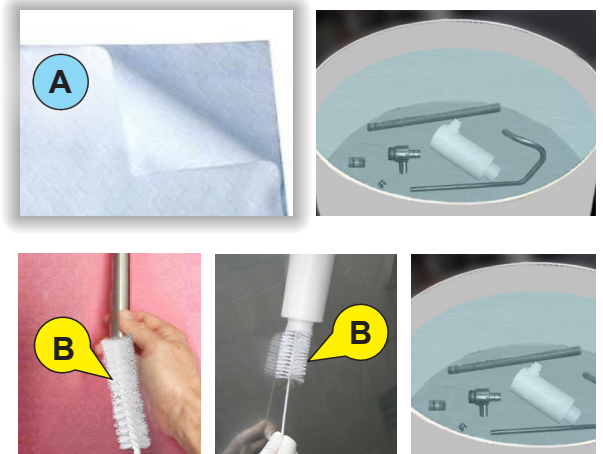


**b) Washing with detergent:**



**Note: For washing, use a specific non-foaming food-safe detergent, normally alkaline. The dose used should comply with the instructions on the label, including the contact times.**

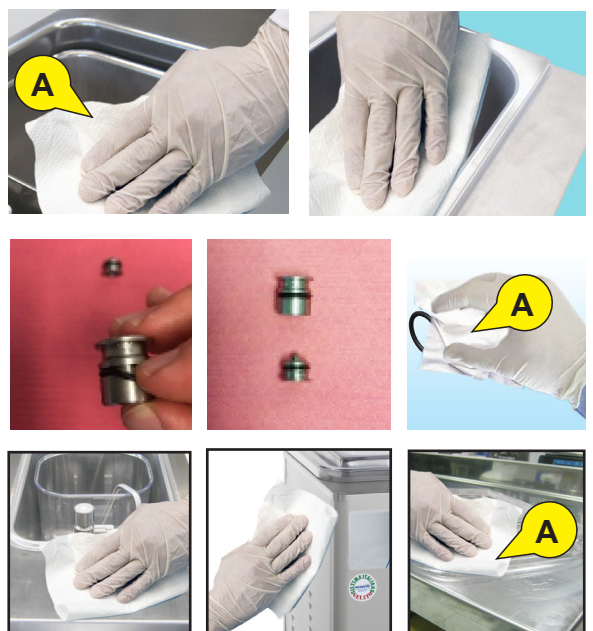
- Wash all of the components removed with a disposable cloth (A) in a suitable container using a detergent solution that is not hotter than 40°C.
- To clean the inside of the labyrinth tube and dispensing tap, use the tube brush (B) supplied. Clean all the cream distributor dispensing holes thoroughly too.
- Then, using a disposable cloth, carry out the same washing operation on both the reserve tub and the inner surface of the refrigeration tank.



**Always wear suitable protective gloves.**

You must also:

- Clean the air regulation valve thoroughly by removing any solidified cream deposits/residues
- Thoroughly wash and degrease all gaskets with a disposable cloth (A) and detergent.
- Use a disposable cloth (A) to clean the upper surface and the outer machine panels.
- Use a disposable cloth (A) to clean the refrigeration tank cover.





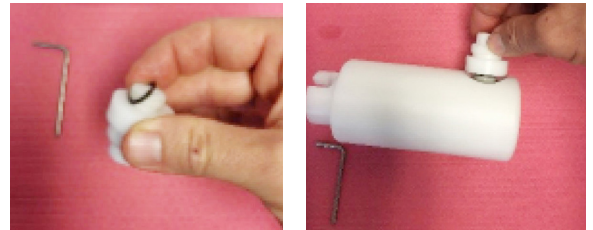
### 3. RINSING PHASE TO REMOVE DETERGENT:

After washing with detergent, all the parts must be thoroughly rinsed.

- Use room temperature drinking water to rinse all components previously removed and washed separately.



Always wear suitable protective gloves.



### c) Refitting the components:

After washing, re-fit all of the machine components as described below:

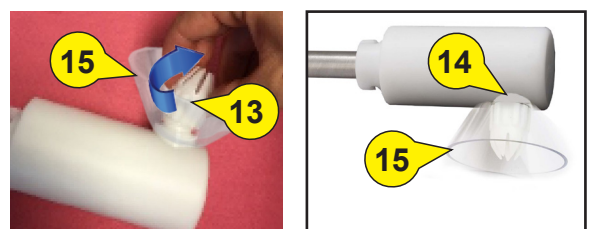
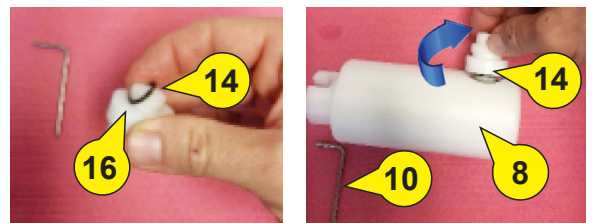
- Reassembling the outlet nozzle, splash guards and cream distributor

**Note:** Regularly check the integrity of the gaskets and substitute them if they are broken, worn or swollen.



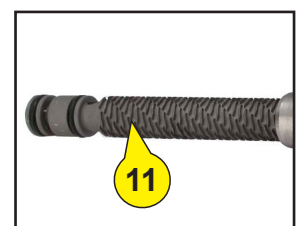
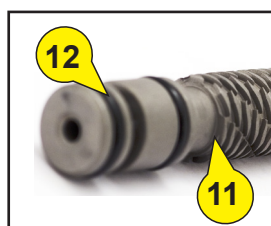
Only use original gaskets, made of food-safe rubber. The gaskets and their seats must be carefully lubricated before re-use. A full spare set of all gaskets is supplied with the machine, plus a tube of food-safe grease for lubricating them.

- Position the gasket (16) on the cream distributor (14).
- Screw the cream distributor (14) onto the dispensing tap (8) by turning it in a clockwise direction using the labyrinth fixing rod (10).
- Position the splash guards (15) and then screw the outlet nozzle (13) onto the cream distributor (14) by turning it in a clockwise direction.



- Reassembling the dispensing tap, labyrinth tube and labyrinth

- Position the gaskets (12) in the housings on the labyrinth (11).





**Note:** Regularly check the integrity of the gaskets and substitute them if they are broken, worn or swollen.

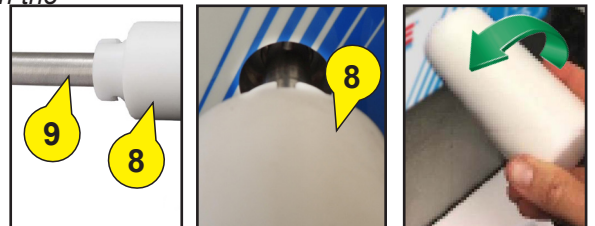
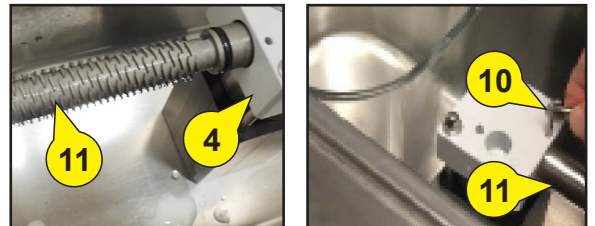
**Only use original gaskets, made of food-safe rubber.**



**The gaskets and their housings must be carefully lubricated before re-use.**

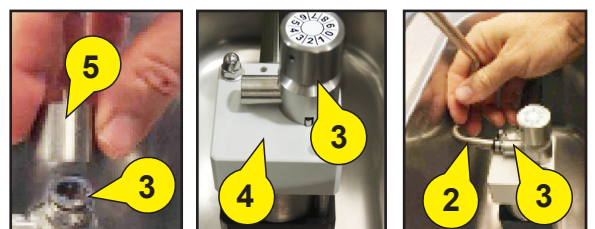
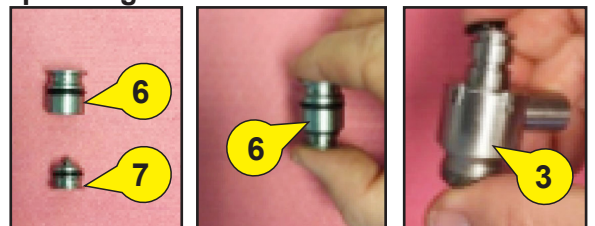
**A full spare set of all gaskets is supplied with the machine, plus a tube of food-safe grease for lubricating them.**

- Insert the labyrinth (11) in its housing in the pump cover (4).
- Insert the fixing rod (10) in its housing hole to lock the labyrinth (11) in place.
- Insert the labyrinth tube (9) in the dispensing tap (8).
- Fit the slot in the dispensing tap (8) onto the pin located on the hole in the machine's front panel.
- Then turn it by 45°, in an anticlockwise direction, to lock the dispensing tap (8).



#### • Reassembling the aspiration tube and rotary pressure pump air regulator

- Insert the adjustment valve (7) in the valve holder (6).
- Insert the valve holder (6) in the air regulator (3).
- Screw the air regulation knob (5) onto the air regulator (3) by turning it in a clockwise direction.
- Insert the air regulator (3) in its housing on the pump cover (4).
- Insert the aspiration tube (2) in the air regulator (3).





#### 4. DISINFECTION PHASE:

After re-fitting all of the components in the machine, carry out the disinfection phase.



**For the disinfection phase, purchase a food-safe chemical disinfectant. The dose used should comply with the instructions on the label, including the contact times.**

- Pour a disinfectant solution, at a temperature NOT HIGHER THAN 40°C, into the reserve tub until it is ½ full.
- Position a suitable container under the dispensing tap.
- Press the “P3 DISPENSE” button to drain the disinfectant solution from the tub into the container located under the dispensing tap.
- Press the “P3 DISPENSE” button again to disable continuous operation.



**THE MACHINE MUST NOT OPERATE WITH NO PRODUCT INSIDE IT, AS THIS WOULD RISK DAMAGING THE ROTARY PRESSURE PUMP.**

**Note: After the disinfection step do not touch the disinfected parts and do not dry them with cloths or paper.**

#### 5. RINSE TO REMOVE DISINFECTANT PHASE:

Follow the instructions on the disinfectant packaging and if necessary thoroughly rinse the machine to completely remove disinfectant residues.

- Pour drinking water, at room temperature, into the reserve tub until it is ½ full.
- Position a suitable container under the dispensing tap.
- Press the “P3 DISPENSE” button to drain the rinse water from the tub into the container located under the dispensing tap.
- Press the “P3 DISPENSE” button again to disable continuous operation.

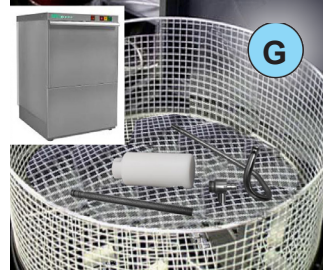


**THE MACHINE MUST NOT OPERATE WITH NO PRODUCT INSIDE IT, AS THIS WOULD RISK DAMAGING THE ROTARY PRESSURE PUMP.**



Alternatively, all components removed from the machine may be washed and disinfected using an industrial dishwasher.

- Place all removable components and parts in the dishwasher (G), removing any gaskets (H), then wash them.



**DO NOT PUT GASKETS IN THE INDUSTRIAL DISHWASHER, AS THE HIGH TEMPERATURES COULD DEFORM THEM, MAKING THEM UNUSABLE.**

**DO NOT USE WATER JETS, AS THEY MAY DAMAGE COMPONENTS INSIDE THE MACHINE.**

**DO NOT USE ANY KIND OF SOLVENT, SUCH AS SPIRIT, BENZINE OR THINNER TO CLEAN ANY OF THE MACHINE SURFACES.**



FOR CORRECT GASKET CLEANING, USE A DISPOSABLE CLOTH AND A DETERGENT FOR ITEMS AND MACHINES USED FOR FOOD PREPARATION.



CLEAN THE MACHINE OUTER PANELS WITH SOFT CLOTHS MOISTENED WITH DETERGENT FOR FOOD-SAFE MACHINES.

## 7 ROUTINE MAINTENANCE

### 7.1 Type of checks and interval between them

Regular checks of the operation of the parts of the machine most subject to stresses and wear can prevent faults and help to maintain maximum productivity levels, guaranteeing lasting constant operation.



## 7.2 Maintenance work

Maintenance is the set of organised operations which must be carried out on machine parts in a regular, systematic way.

Routine maintenance:

- 1) checking the integrity of parts subject to wear, such as the seal gaskets.
- 2) checking that the machine reaches and maintains the programmed temperatures without difficulty.
- 3) checking that the machine does not make any unusual noises.
- 4) keeping outer panels and the area near to and under the machine clean. Dust, scraps of paper or other small objects may get into the equipment through the air inlets and/or block the regular inflow of air to the condenser, quickly compromising correct machine operation.

## 7.3 Maintenance intervals and time needed

The interval calculated for each piece of maintenance work and the time needed to do the work are approximate and allow the creation of a maintenance programme.

**Correct machine operation can only be guaranteed by methodical, regular maintenance.**

The table below shows the type of work involved in routine maintenance and the intervals between jobs:

When?	Where?	How?
Daily	Air adjustment valve	Unscrew the air regulator knob, extract the valve holder and then remove the valve holder and perform the washing procedure described in section 6.1.1, point "b".
Every 500 hours or quarterly	Gaskets present on: a) air regulator b) valve holder and air adjustment valve c) aspiration tube d) cream distributor e) dispensing tap and labyrinth	Replace
Yearly	All internal machine parts	They must be checked and tested by a qualified technician



## 7.4 Maintenance sheets

### Replacing the gaskets

**S01**

CHECKING INTERVAL: 500 hours or quarterly

AUTHORISED OPERATOR: 1 Operator

TIME NEEDED: 5 minutes

TOOL: Non-metallic pointed tool

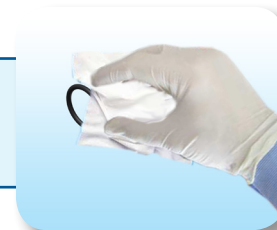
- Regularly check the integrity of the gaskets and substitute them if they are broken, worn or swollen.
- Only use original gaskets, made of food-safe rubber.
- A full spare set of all gaskets is supplied with the machine, plus a tube of food-safe grease for lubricating them.



**DO NOT PUT GASKETS IN THE INDUSTRIAL DISHWASHER, AS THE HIGH TEMPERATURES COULD DEFORM THEM, MAKING THEM UNUSABLE.**

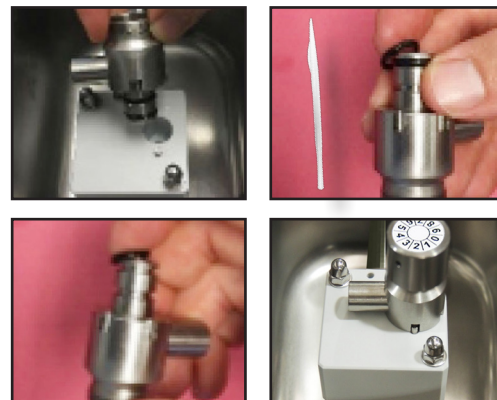


**FOR CORRECT GASKET CLEANING, USE A DISPOSABLE CLOTH AND A DETERGENT FOR ITEMS AND MACHINES USED FOR FOOD PREPARATION.**



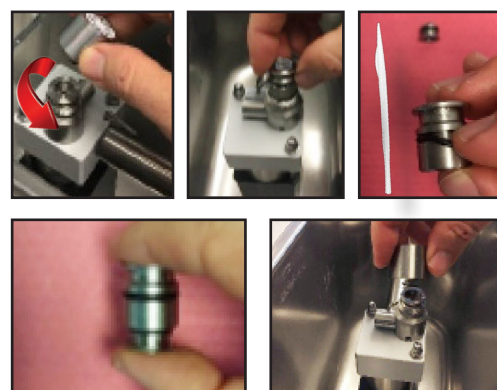
#### Air regulator gaskets:

- Remove the air regulator from the pump cover and take out the worn gaskets using a non-metallic pointed tool, taking care not to damage the housing.
- Eliminate any product residues from the housings and fit the new gaskets, lubricating them with the food-safe grease supplied.
- Refit the air regulator on the pump cover.



#### Valve holder and air adjustment valve gaskets:

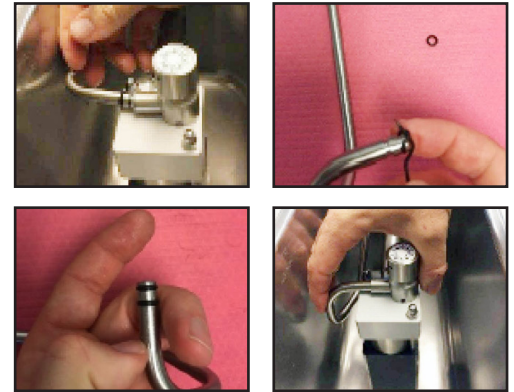
- Unscrew the air regulator knob by turning it in an anticlockwise direction and slide out the valve holder and regulator valve vertically. Remove the worn gaskets from the valve holder and valve using a non-metallic pointed tool, taking care not to damage the housing.
- Eliminate any product residues from the housings and fit the new gaskets, lubricating them with the food-safe grease supplied. Reposition the valve holder and valve in the air regulator and screw on the knob.





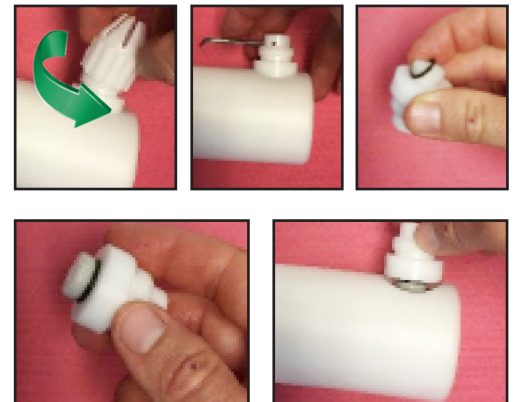
### Aspiration tube gaskets

- Remove the aspiration tube from the air regulator and take out the worn gaskets using a non-metallic pointed tool, taking care not to damage the housing.
- Eliminate any product residues from the housings and fit the new gaskets, lubricating them with the food-safe grease supplied. Reposition the aspiration tube in the air regulator.



### Cream distributor gasket:

- Unscrew the outlet nozzle from the cream distributor by turning it in an anticlockwise direction, using the labyrinth fixing rod and unscrew the cream distributor from the dispensing tap. Remove the worn gasket from the distributor using a non-metallic pointed tool, taking care not to damage the housing.
- Eliminate any product residues from the housing and fit the new gasket, lubricating it with the food-safe grease supplied. Screw the cream distributor back onto the dispensing tap and then the outlet nozzle.



### Dispensing tap and labyrinth gaskets

- Rotate the dispensing tap by 45°, in a clockwise direction, and remove it from the machine and then remove the labyrinth tube. Remove the worn gasket from the tap using a non-metallic pointed tool, taking care not to damage the housing.
- Eliminate any product residues from the housing and fit the new gasket, lubricating it with the food-safe grease supplied.
- Remove the labyrinth fixing rod from the pump cover and extract the labyrinth from the machine. Remove the worn gasket from the labyrinth using a non-metallic pointed tool, taking care not to damage the housing.
- Eliminate any product residues from the housing and fit the new gasket, lubricating it with the food-safe grease supplied.
- Reposition the labyrinth in the pump cover and lock it in place using the fixing rod. Insert the labyrinth tube in the dispensing tap and then fit the slot in the tap onto the pin located on the hole in the machine's front panel. Then turn it by 45°, in an anticlockwise direction, to lock the dispensing tap.





---

## 8 TROUBLESHOOTING

Most faults and problems during machine operation are promptly automatically indicated by the machine.



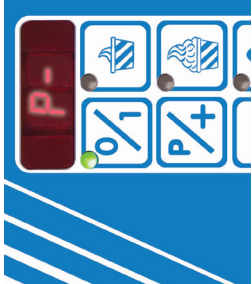



**ALARMS STOP THE MACHINE, WITH AN EMERGENCY STOP MESSAGE DISPLAYED ON THE CONTROL PANEL. TO RESTART THE MACHINE, YOU MUST ELIMINATE THE CAUSE OF THE EMERGENCY.**

### People involved in troubleshooting:

- **Operator:** person trained in the ordinary operation of the machine who performs initial fault-finding and if possible, by following the instructions in Chapter 7 (Routine maintenance), removes the causes of the fault and restores correct machine operation.
- **Technical assistance service:** qualified technician, called to work on the machine after a request for help, as specified in sec. 1.5.1 of this manual.

## 8.1 General alarm indications displayed on the control panel – causes and solutions

This section shows the machine alarms, which can be viewed on the digital display, together with possible causes and solutions.

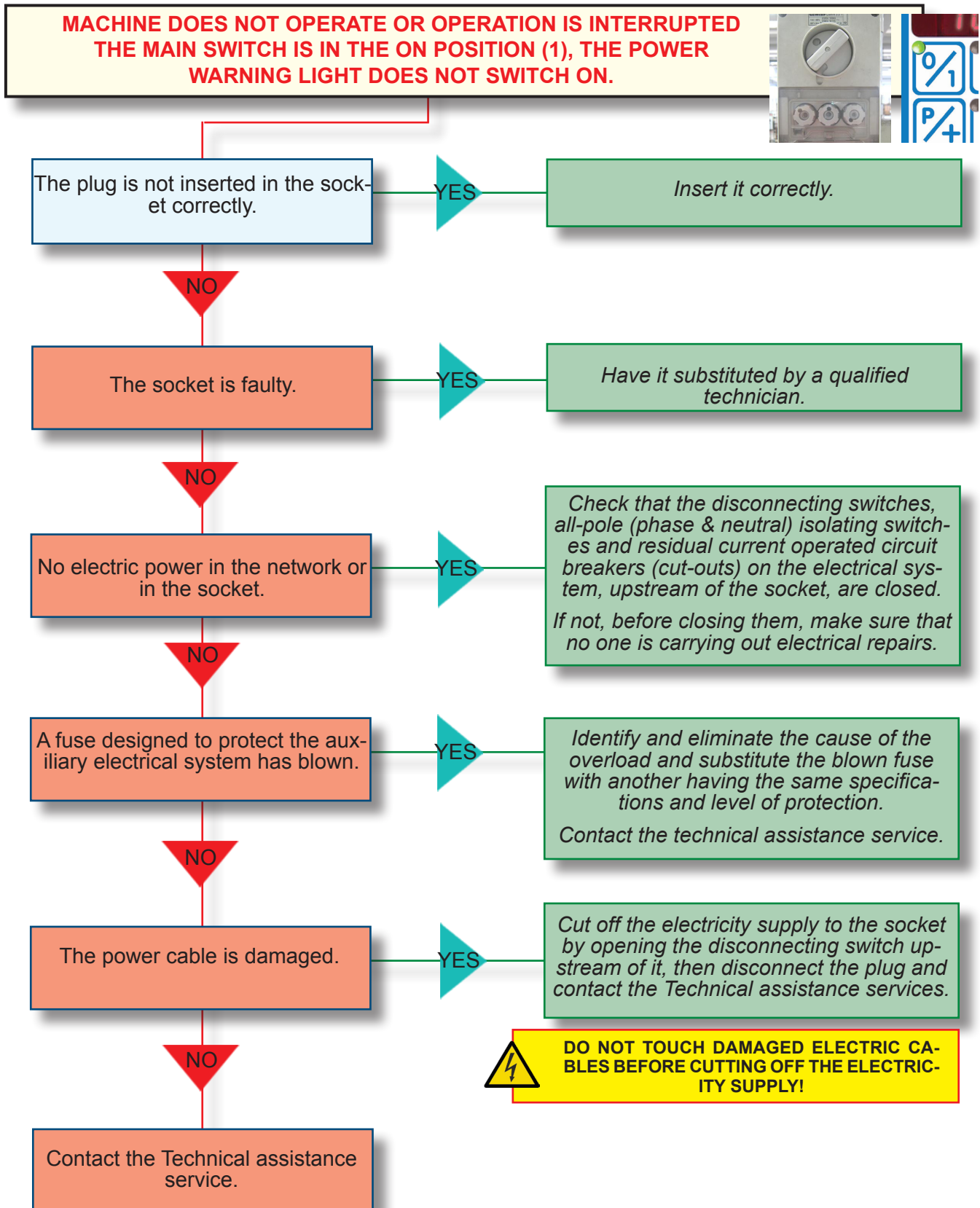
FAULT/ PROBLEM	INSTRUCTIONS FOR THE OPERA- TOR	POSSIBLE CAUSES	SOLUTIONS
<p><b>!“P-” alarm warning:</b></p> 		<ul style="list-style-type: none"> <li>The refrigeration tank temperature probe is faulty (interrupted or out of tolerance) and/or its wiring is damaged. The probe indicates a temperature higher than the safety limits.</li> </ul>	<ul style="list-style-type: none"> <li>Contact the <i>Technical Assistance Service</i>.</li> </ul>
<p><b>!“PE” alarm warning:</b></p> 		<ul style="list-style-type: none"> <li>The refrigeration tank temperature probe is faulty (short-circuited) and/or its wiring damaged. The probe indicates a temperature lower than the safety limits.</li> <li>The control circuits do not allow disconnection of power for the compressor (which keeps operating). The related control contactor is probably jammed.</li> </ul>	<ul style="list-style-type: none"> <li>Contact the <i>Technical Assistance Service</i>.</li> <li>Contact the <i>Technical Assistance Service</i>.</li> </ul>

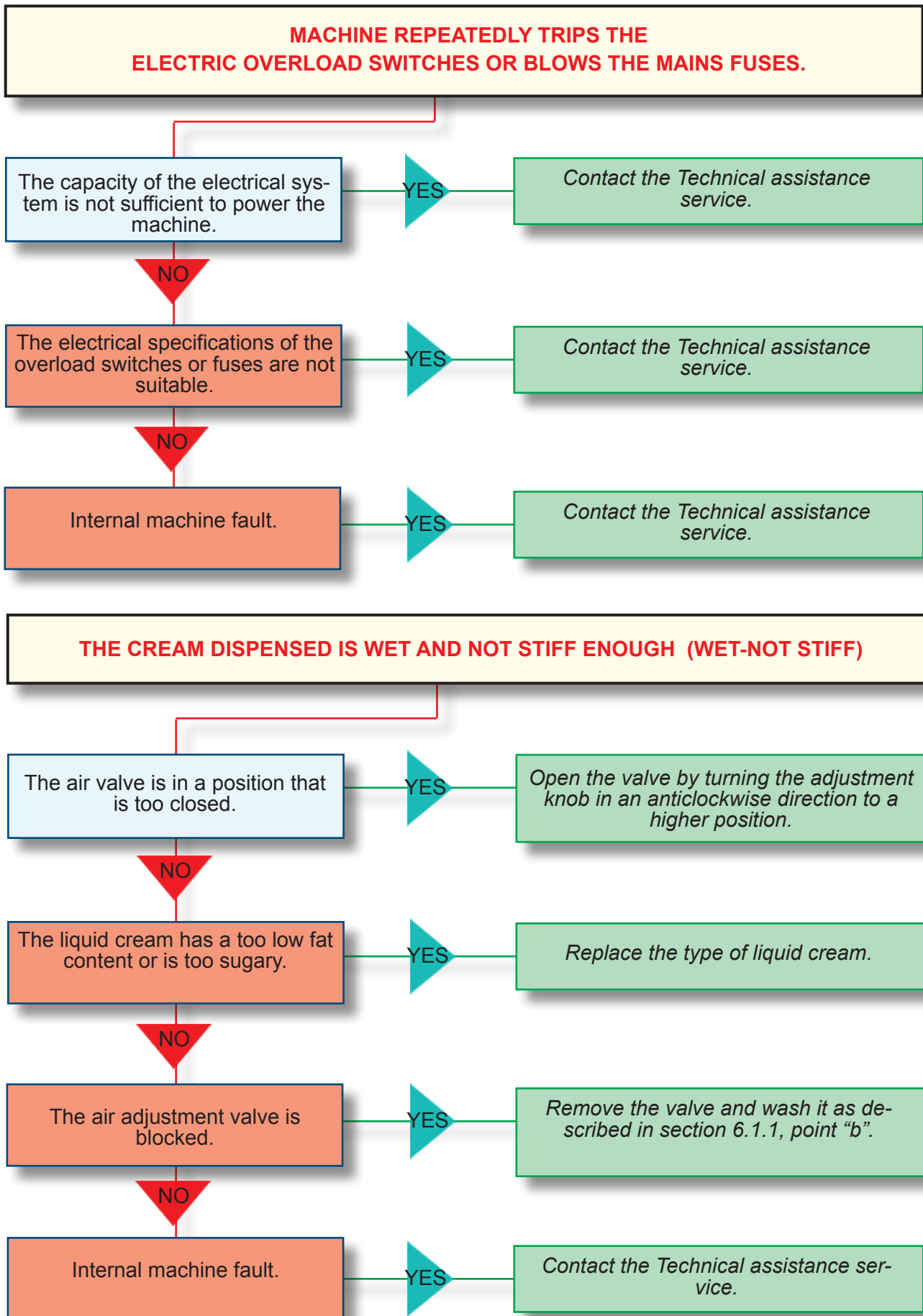




## 8.2 Troubleshooting – flowchart

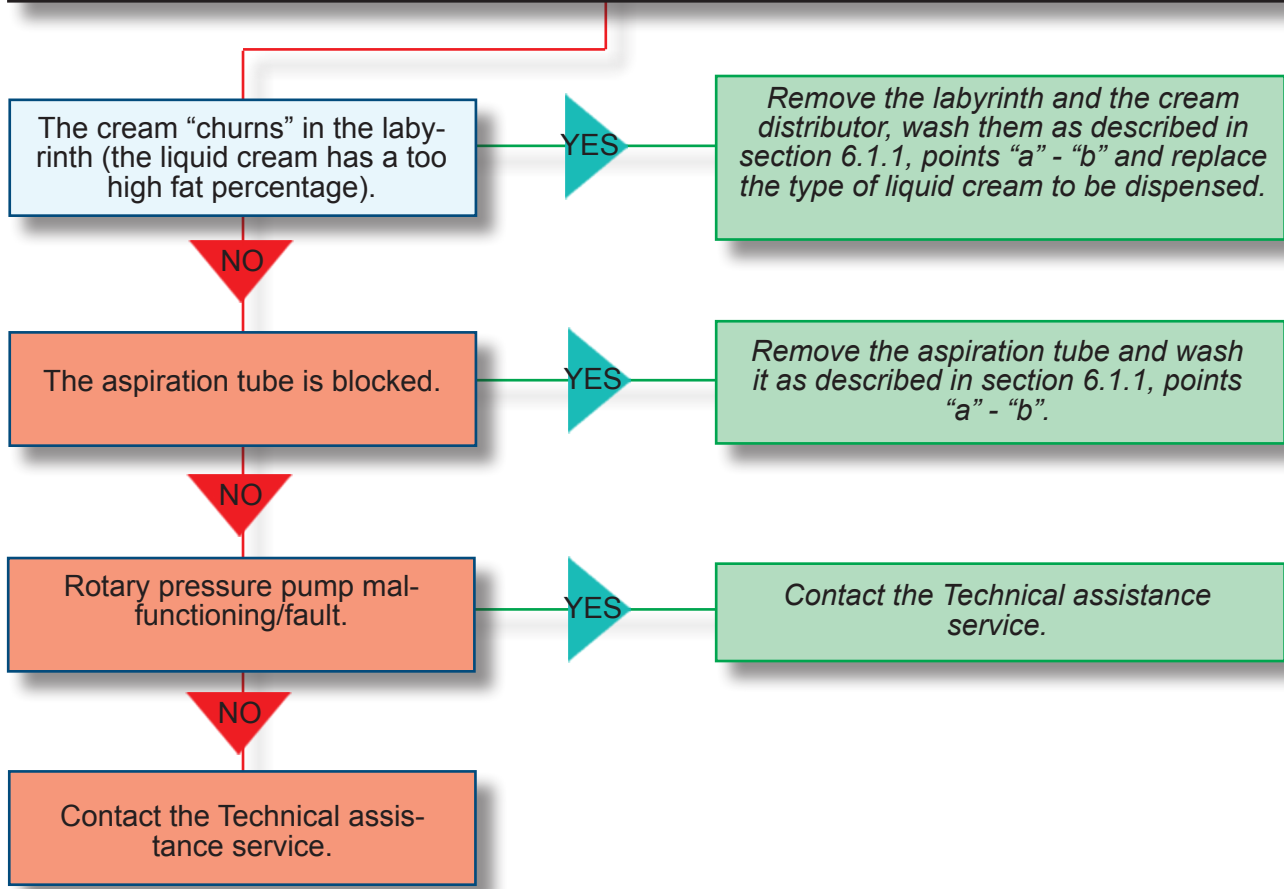
In abnormal conditions the machine may malfunction, as specified below:



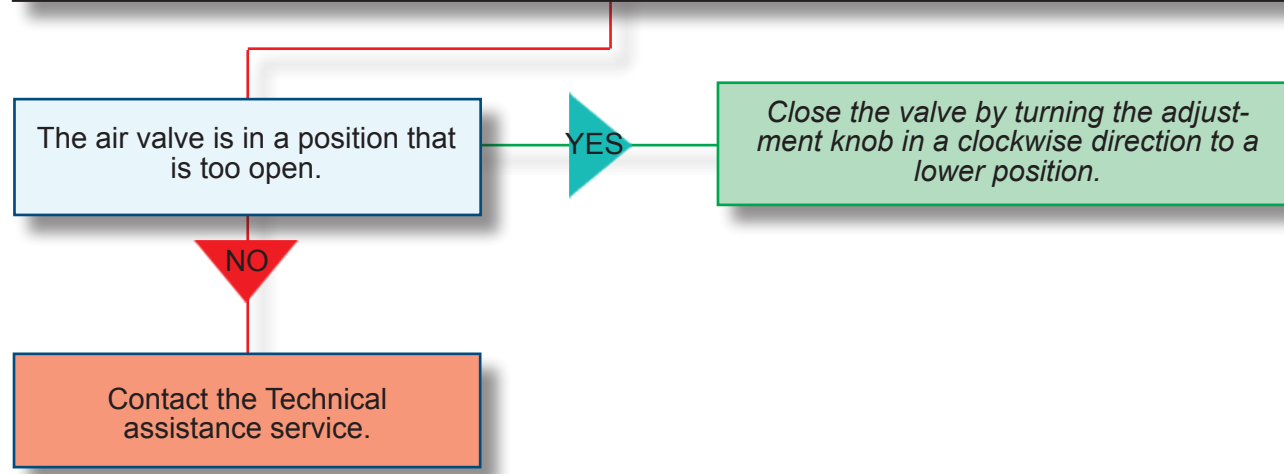


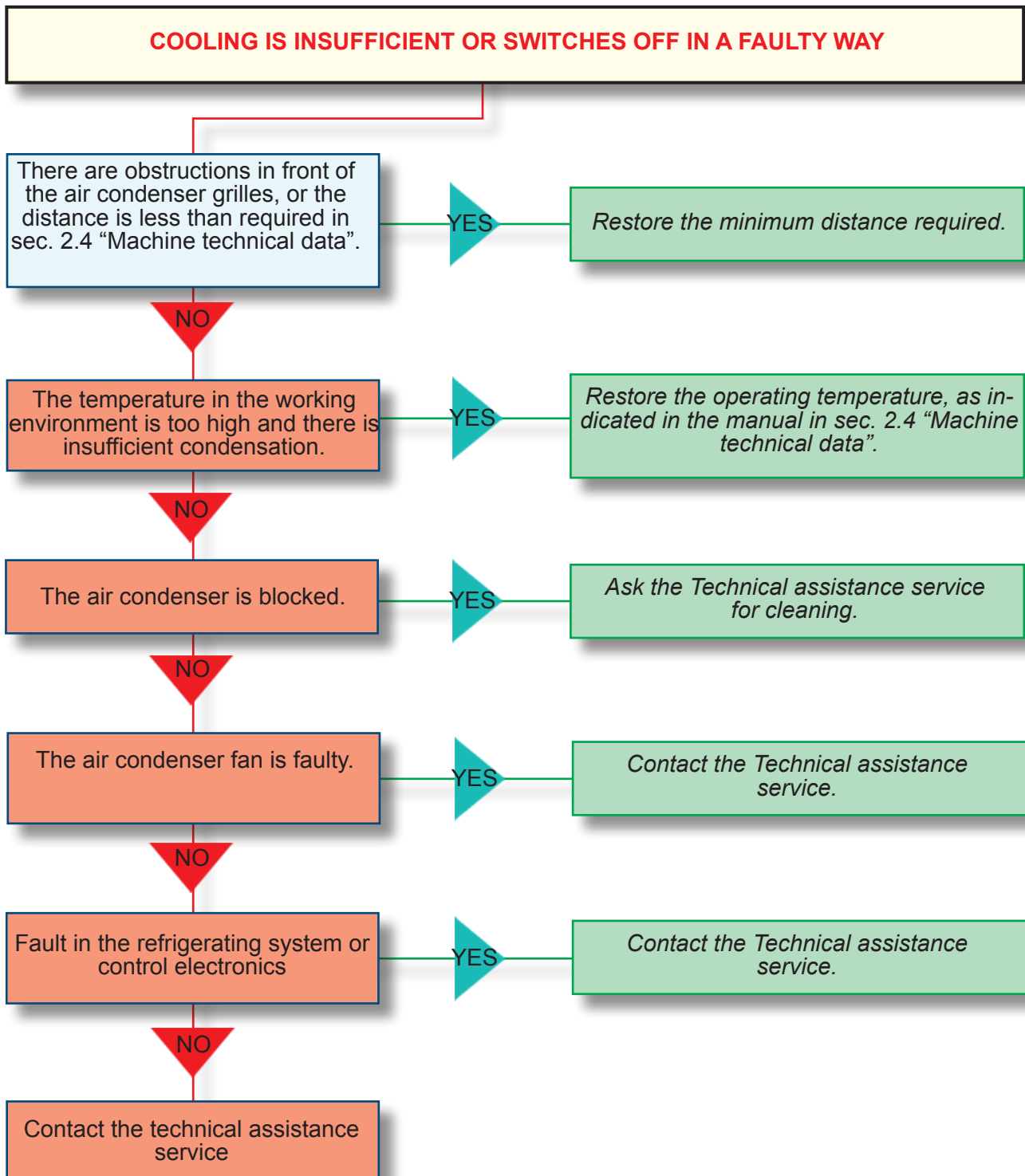


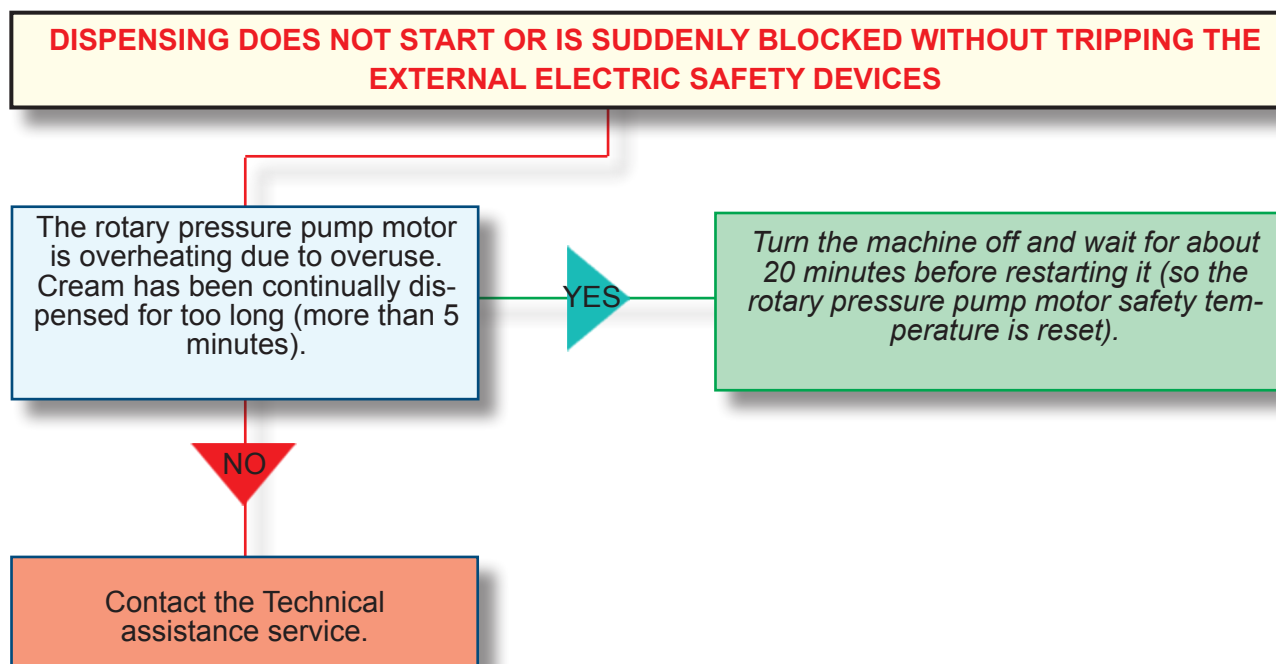
**NO CREAM IS DISPENSED**



**SPURTS OF AIR/PRODUCT FROM DISPENSING TAP**







## 9 INACTIVITY

### 9.1 Keeping the machine efficient if it remains inactive

If the machine will not be used for a lengthy period, follow these instructions:

- Sanitise the machine as described in sec. 6.1.
- Switch off the machine using the I/O - ON/OFF button, power down at the mains master switch and take the plug out of the socket.

*If the machine that will be inactive has a water-cooled condenser, close the Water In tap and discharge the water pressure in the delivery tube by unscrewing the end connector. Remove both the delivery tube and the drainage tube and empty the water from them. Before using again after a long period of inactivity, check the connector gaskets for damage, substituting them if necessary.*



**BEFORE STORING A MACHINE THAT HAS A WATER-COOLED CONDENSER IN ENVIRONMENTS WITH TEMPERATURES BELOW 0°C, COMPLETELY EMPTY THE WATER FROM THE MACHINE COOLING SYSTEM, AS IT COULD FREEZE INSIDE IT, CAUSING VERY SERIOUS DAMAGE.**

*If a machine with an air-cooled condenser has been inactive, before switching it on remove dust from the condenser grilles "dry" with a vacuum cleaner and, if necessary, a brush, so that the dust is removed outwards.*



**DO NOT USE LIQUIDS BECAUSE THEY WOULD FIX THE DUST ON THE CONDENSER. REMOVE DUST FROM THE CONDENSER GRILLES OUTWARDS TO AVOID COMPROMISING THE PERFORMANCE OF THE REFRIGERATING SYSTEM.**


# 10 DECOMMISSIONING THE MACHINE

## 10.1 Description of method of disposal

The lifetime of the machine estimated by the manufacturer is 20,000 hours (10 years) of operation under normal operating conditions, described in this operating manual. At the end of its lifetime the machine must be disposed of in accordance with the regulations in force in the country where it was used, concerning the disposal of waste electrical and electronic equipment.

**WHEN DISPOSING OF THE MACHINE ALWAYS COMPLY WITH THE REGULATIONS IN FORCE IN THE COUNTRY WHERE IT WAS USED.**



	CODE			 —
	MOD.			
	S/N	ANNO		
	V	Hz	Ph	
	Kw	A		
	GAS R	gr.		



Notes:

---



Notes:

.....



Notes:

.....

### INFORMATION FOR USERS

In accordance with Directives 2011/65/EU and 2012/19/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) and waste electrical and electronic equipment (WEEE), we hereby inform you that:

“the crossed bin symbol on the device or on its packaging indicates that, at the end of its life, the product must be disposed of separately from other waste”.

Separate collection of this equipment when it has reached the end of its life is organised and managed by the manufacturer.

Users who want to dispose of this equipment should contact the manufacturer and follow the instructions for separate collection of the device at the end of its life.

To dispose of the machine, users must comply with the regulations on waste electrical and electronic equipment (WEEE) in force in the country of use.

Adequate separate collection for the future use of the equipment assigned for recycling, treatment and environmentally compatible disposal helps to prevent possible negative effects on the environment and on human health, and promotes recycling and/or reuse of the materials of which the equipment is composed.

Illegal disposal of the product by the owner shall be subject to the administrative sanctions provided for under the regulations in force.

DIAMOND EUROPE



**Made in Italy**