

## WEGA MACCHINE PER CAFFÈ S.r.l.

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2006/42/CE Direttiva macchine

# My **CONCEPT** *EVDP*

## ESPRESSO COFFEE MACHINE

Use and maintenance manual. TECHNICIANS instructions.



**IMPORTANT:** Read carefully before use - Store for future reference

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# ESPRESSO COFFEE MACHINE

Use and maintenance manual. TECHNICIANS instructions

# English

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# 1. INTRODUCTION

Read this manual carefully. It provides important information on the safety to the Technician during the operations indicated in this document.

Keep this Manual in a safe place. If you lose it, you can ask the Manufacturer for another copy.

The Manufacturer of the equipment cannot be held responsible for damage caused by failure to oblige to the requirements listed in this manual.



**Before using the machine, read the instructions contained in this publication and follow the guidelines carefully. Keep this manual and all publications attached in an accessible and secure place.**

This document assumes that in the locations where the machine is installed, the relevant safety standards and work hygiene are observed.

The instructions, drawings and documentation contained in this manual are technical and confidential, the sole property of the Manufacturer, and may not be reproduced in any way, either in full, or in part.

The Manufacturer reserves the right to make any improvements and/or modifications to the product. We guarantee that this Manual reflects the technical state of the appliance at the time it is marketed.

We encourage the Qualified Technicians to make any proposals for improvement of the product or the Manual.

## 1.1 Guidelines for reading the Manual

The Manual is divided into separate chapters. The sequence of chapters responds to the temporal logic of the life of the machine.

Terms, abbreviations and pictograms are used to facilitate the immediate understanding of the text.

This Manual is constituted by a cover, an index and a series of chapters. Each chapter is numbered in sequence. The page number is in the footer.

The nameplate of the machine and the CE Declaration of Conformity show the machine identification data, the last page shows the date and revision of the Instructions Manual.

### ABBREVIATIONS

<b>Sect.</b>	=	Section
<b>Chap.</b>	=	Chapter
<b>Par.</b>	=	Paragraph
<b>P.</b>	=	Page
<b>Fig.</b>	=	Figure
<b>Tab.</b>	=	Table

### MEASUREMENT UNIT

The measurement units are those provided by the International System (SI).

### PICTOGRAMS

Descriptions preceded by these symbols contain information/very important requirements, particularly as regards safety. Failure to comply may result in:

- dangers for the safety of those operating the machine;
- injury, also serious (in some cases even death);
- loss of the guarantee;
- manufacturer's liability waiver.



**DANGER** symbol used in case of danger of permanent serious injury that requires hospitalization, or causes death in extreme cases.



**CAUTION** symbol used in case of risk of minor injury that requires medical attention.



**WARNING** symbol used in case of danger of minor injury that can be treated with first aid or the like.



**NOTE** symbol used to provide important information related to the topic.

## 1.2 Storing the Manual

The Instructions Manual must be stored carefully. Storage should be favoured by handling it with care, with clean hands and not depositing it on dirty surfaces. The Manual must be stored in an environment protected from moisture and heat.

Do not remove, tear or arbitrarily modify any of its parts.

At the request of the Qualified Technician, the manufacturer can provide additional copies of the Instructions Manual of the machine.



### 1.3 Method for updating the Instruction Manual

The Manufacturer reserves the right to modify and make improvements to the machine without notifying it and without updating the Manual already delivered.

Moreover, in case of substantial changes to the already installed machine involving the modification of one or more chapters of the Instruction Manual, the Manufacturer will send the Qualified Technicians the chapters affected by the changes or the revision of the entire manual.

It is the Qualified Technicians' responsibility, to replace the old document with the new revision.

The manufacturer is responsible for the Italian descriptions; the translations cannot be fully verified; therefore, in case of inconsistency, users must pay attention to the Italian version and possibly contact the Manufacturer, who will make the appropriate changes.



**If the manual should become illegible or otherwise hard to consult, the Qualified Technicians is obliged to request a new copy from the Manufacturer before carrying out any work on the machine. It is absolutely forbidden to remove or rewrite parts of the Manual. The instructions, drawings and documentation contained in this manual are confidential and the sole property of the Manufacturer, and may not be reproduced in any way, either in full, or in part without prior authorization.**

**Qualified Technicians are responsible for the compliance with the instructions contained in this Manual.**

**For any incident that should occur as a result of incorrect use of these recommendations, the Manufacturer declines any liability.**

### 1.4 Recipients

This Manual is intended for the Manufacturer's Qualified Technicians, to whom the following operations pertaining to the machine are assigned:

- Transport and handling;
- Storage;
- Installation;
- Commissioning;
- Maintenance;
- Cleaning;
- Spare part replacement;
- Emergency operations and faults;
- Decommissioning;
- Dismantling;
- Disposal;

#### QUALIFICATION OF RECIPIENTS

The machine is intended for professional and not generalized use, so it can be used by Qualified Technicians, in particular who:

- Have attended the training courses organized by the Manufacturer relating to the type of machine;
- Have reached the age of majority;
- Are physically and mentally fit for using the machine;
- Are able to understand and interpret the Instruction Manual and the safety requirements;
- Know the safety procedures and their implementation;
- Possess the ability to use of the machine;
- Understand the procedures of use defined by the machine manufacturer.

### 1.5 Glossary and Pictograms

This paragraph lists uncommon terms or terms with different meaning from the ordinary.

Below is an explanation of the abbreviations used and the meaning of the pictograms to indicate the operator qualification and the machine status; their use allows to quickly and uniquely provide the necessary information for proper use of the machine in safe conditions.

#### 1.5.1 GLOSSARY

##### User

The person in charge of the periodic maintenance and cleaning of the machine indicated in the User's Manual.

##### Manufacturer's Qualified Technician

A specialist, specially trained and qualified to make the connection, installation and assembly of the machine; use special equipment (hoists, forklifts, etc.); perform routine or unscheduled maintenance which is particularly complicated or potentially dangerous if performed by the User.

##### Qualification of the User or Qualified Technician

Minimum level of skills an operator must have to carry out the operation described.

##### Danger

A potential source of injury or damage to health.

##### Dangerous area

Any area in the vicinity of the machine where the presence of a person constitutes a risk to the safety and health of that person.

##### Risk

Combination of the probability and severity of an injury or damage to health that can arise in a hazardous situation.

**Guard**

Machine component used specifically to provide protection by means of a physical barrier.

**Protective equipment (PPE)**

A device (other than a guard) which reduces the risk, either alone or associated with a guard.

**Intended use**

The use of the machine in accordance with the information provided in the instructions for use.

**Machine status**

The machine status includes the mode of operation and the condition of the safety devices on the machine.

**Residual risk**

Risks that remain despite adopting the protective measures integrated into the machine design and despite the guards and complementary protective measures adopted.

**Safety component**

- required to perform a safety function;
- whose failure and/or malfunction endangers the safety of persons.

**1.5.2 PICTOGRAMS**

PICTOGRAM	DESCRIPTION
	Electrical hazard
	Equipotential hazard
	Danger of high temperature
	Hand crush hazard
	Prohibition of maintenance with moving parts
	Mandatory use of protective gloves
	Mandatory use of eye protection
	Mandatory use of protective shoes
	Obligation to read the documentation

**1.6 Guarantee**

The machine is covered by a 12-month guarantee on all components, except electrical and electronic components and expendable pieces.

Any action taken on the electronics of the machine when the machine is still supplied with electrical power automatically invalidates any guarantee.

**1.7 Customer service**

## 2. IDENTIFICATION OF THE MACHINE

### 2.1 Make and model designation

The identification and the model of the machine are found on the NAMEPLATE and in the EC DECLARATION OF CONFORMITY provided with the machine.

Below are some of the machine identification data.

### 2.2 General description

The machine object of this Manual consists of mechanical, electrical, and electronic components whose combined action allows to make milk, coffee and water-based beverages.

This product is manufactured in compliance with EU Directives, Regulations and Standards indicated in the EC DECLARATION OF CONFORMITY provided with the machine.

This machine is designed and constructed to operate only after being properly connected to a hydraulic and electrical network and placed so as to be sheltered from atmospheric agents.

### 2.3 Intended use

The espresso coffee machine is designed for the professional preparation of hot drinks such as tea, cappuccino and weak, strong and espresso coffee, etc.

The device is not intended for home use.

The machine can be used in all operational conditions contained or described in the User's Manual and in this document; any other conditions must be considered dangerous.

#### PERMITTED USES

All uses compatible with the technical characteristics, operations and applications described in the User's Manual and in this document that do not endanger the safety of the User or Technician, or cause damage to the machine or the environment.



**All uses not specifically mentioned in the User's and Technician's Manual are prohibited and must be expressly authorized by the Manufacturer.**

#### INTENDED USES

The machine is designed exclusively for professional use.

The use of products/materials other than those specified by the Manufacturer, which can cause damage to

the machine and dangerous situations for the operator and/or those close to the Machine, is considered incorrect or improper.

#### CONTRAINDICATIONS OF USE

The machine must not be used:

- For uses other than those listed in par. 2.3 , or for uses not mentioned in this Manual;
- With materials other than those listed in this Manual;
- With disabled or not working safety devices.

#### INCORRECT USE OF THE MACHINE

The type of use and performance this machine is designed for, imposes a number of operations and procedures that cannot be changed, unless previously agreed with the Manufacturer. All allowed practices are contained in this document, any operation not listed and described in this document is to be considered not possible and therefore dangerous.

#### IMPROPER USE

The only permitted uses are described in the Manual, any other use is to be considered not possible and therefore dangerous.

#### GENERAL SAFETY

The Qualified Technician must be aware of the risk of accidents, the devices designed for safety, and the general rules on the safety provided by EU directives and by the legislation of the country where the line is installed.

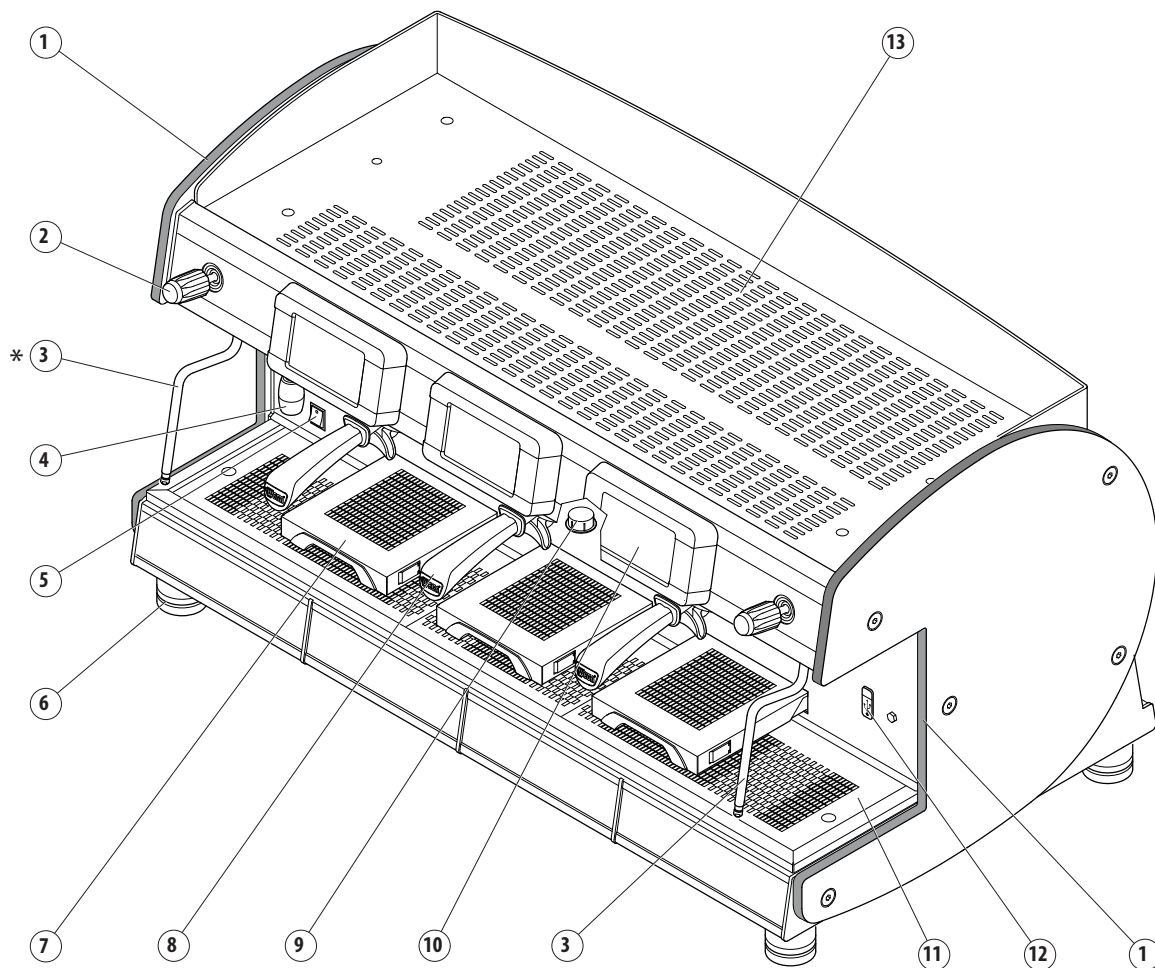
Qualified Technicians should be aware of all machine devices operation.

They must also have fully read this manual.

The maintenance work must be performed after specially preparing the machine.

Tampering or unauthorized substitution of one or more parts of the machine, the use of accessories that modify the use and the employment of materials other than those recommended in this Manual, may become a cause of accidents.

## 2.4 Machine description



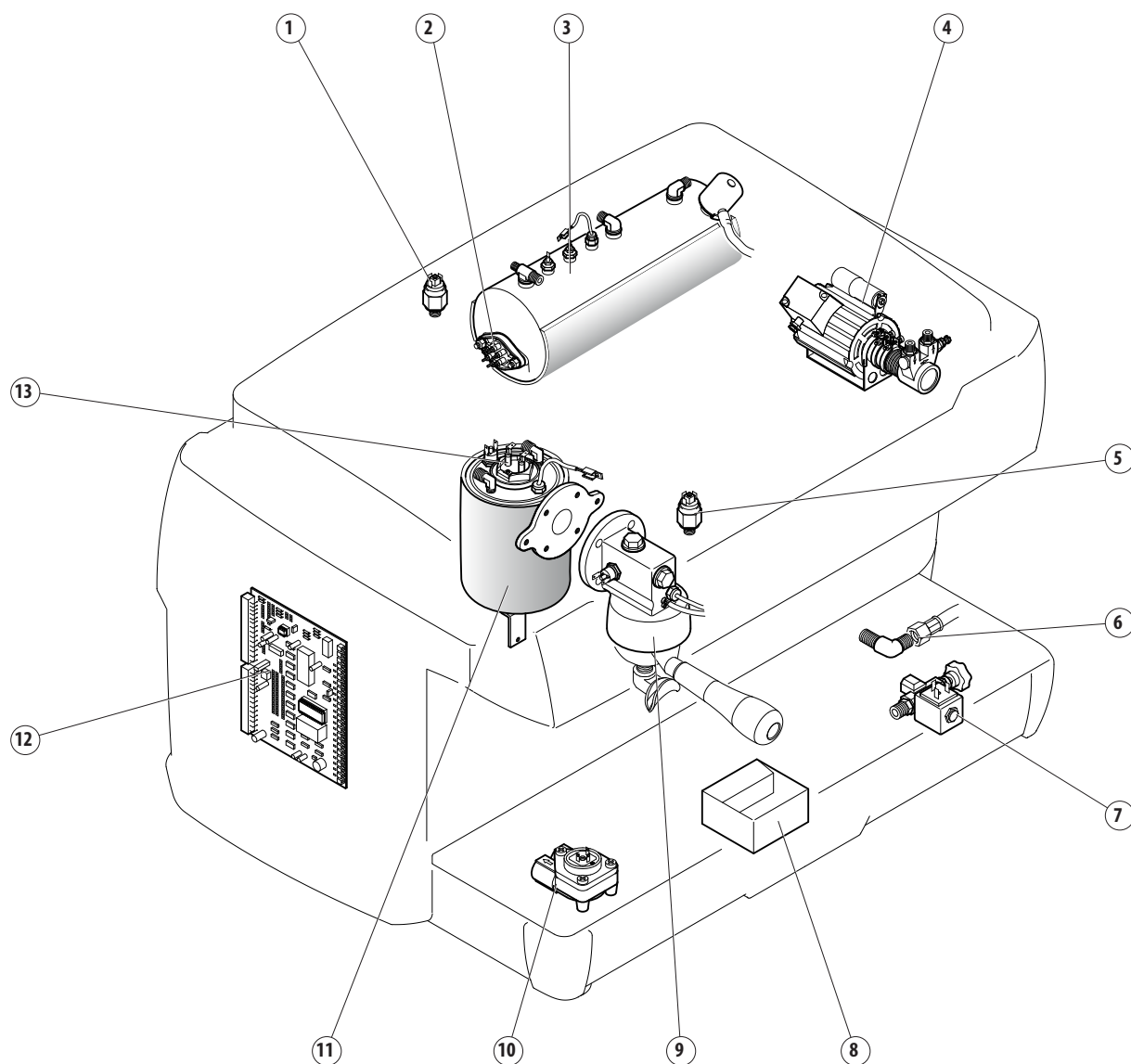
1. Illuminated side edge.
2. Steam knob.
3. Cool touch steam spout (\*).
4. Hot water nozzle
5. ON switch
6. Adjustable foot.
7. Pull-out cup support grille.
8. Filter holder.
9. Dispensing compartment LED light
10. Display touch screen.
11. Cup-rest grid
12. USB socket.
13. Cup heater surface.

(\*) Autosteamer nozzle (optional).



**The USB port (12) must only be used with the specific stick provided to Qualified Technicians. Do not connect external devices (iPhone, iPad, PC, etc.) to the USB port because it could create serious problems in the machine software.**

## 2.5 Internal components



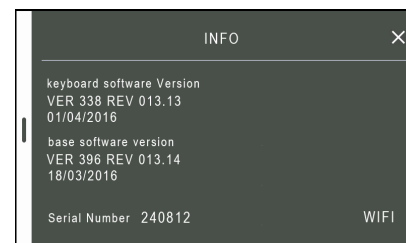
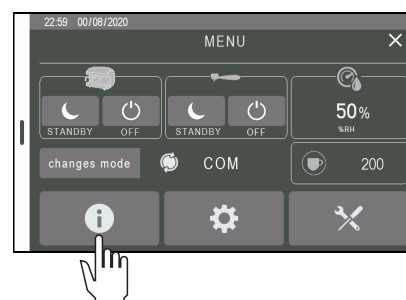
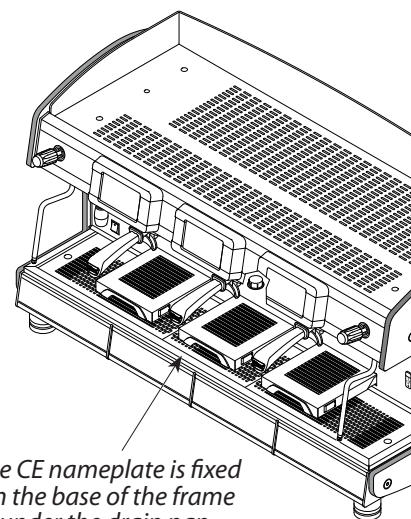
1. Service boiler safety pressure switch.
2. Services boiler heating element.
3. Services boiler.
4. Internal motor pump (if included).
5. Coffee boiler pressure switch.
6. Water inlet connection.
7. Hot water mixer.
8. Drain pad.
9. Dispensing group.
10. Volumetric dispenser.
11. Coffee boiler.
12. Electronic control unit.
13. Coffee boiler heating element.



## 2.6 Data and CE marking

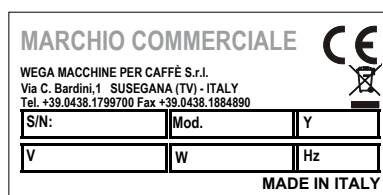
The technical data of the machine is shown in the following table:


TECHNICAL DATA TABLE	2GR		3GR		4GR	
Voltage	230/400 V	240/415 V	230/400 V	240/415 V	230/400 V	240/415 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Max power	4,400 W	4,700 W	5,500 W	6,100 W	7,100 W	7,700 W
Group power	150 W x 2	165 W x 2	150 W x 3	165 W x 3	150 W x 4	165 W x 4
Coffee boiler power	1,000 W x 2	1,090 W x 2	1,000 W x 3	1,090 W x 3	1,000 W x 4	1,090 W x 4
Steam boiler power	3,000 W	3,270 W	3,000 W	3,270 W	5,000 W	5,445 W
Coffee boiler capacity	1,2 l x 2		1,2 l x 3		1,2 l x 4	
Steam boiler capacity	8 l		13 l		13 l	
Width	800 mm		1040 mm		1280 mm	
Depth	580 mm		580 mm		580 mm	
Height	590 mm		590 mm		590 mm	
Net weight	95 kg		117 kg		142 kg	
Safety valve calibration (bar)	1.9 bar					
Steam boiler operating pressure	0.8 - 1.4 bar					
Feedwater pressure	1,5 - 5 bar MAX					
Coffee dispensing pressure	8 - 9 bar					
Operation mode temperature	5 - 40°C    95° MAX R.U.					
Sound pressure level	< 70 dB					



According to the Directive 2006/42/EC, the machine is marked with the CE marking, by which the manufacturer declares, under its own responsibility, that the machine is safe for people and things.

The CE nameplate is affixed to the base of the frame under the drain pan on which the identification data is reported. Below is an example of the nameplate:



By entering the section "Menu" (see instructions in the next chapters) and selecting the key , you can view the machine's serial number.

For any communication with the Manufacturer, always note the following information:

- S/N - machine serial number;
- Mod. - machine model
- Y - year of manufacture;

The data of the appliance can be seen also on the label located on the package of the machine.



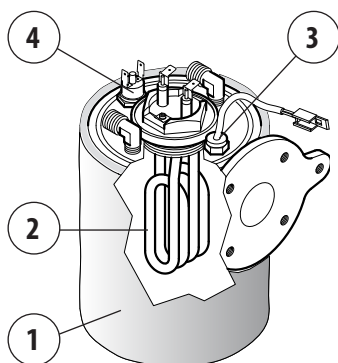
**It is forbidden to remove or damage the nameplate. If it needs replacing urgently, always exclusively contact the Manufacturer.**

### 2.6.1 Coffee boiler

Each dispensing group is equipped with a thermally insulated coffee boiler (1) for coffee hot water dispensing.

Heat is provided by an electric heating element (2). The boiler includes a temperature sensor (3) and a safety thermostat (4).

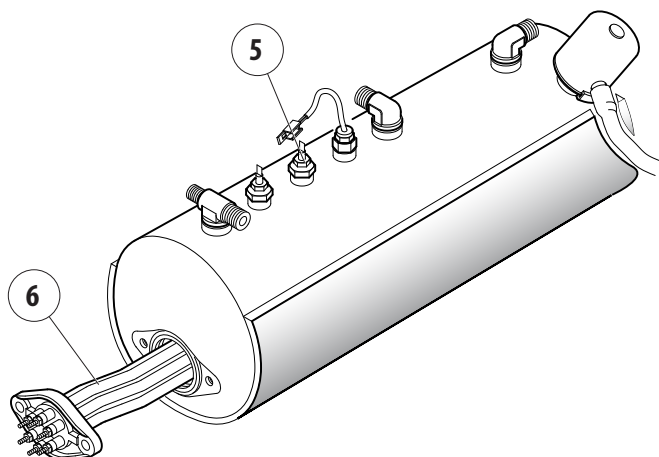
The temperature sensor (3) regulated and stabilizes the water temperature inside the coffee boiler. The safety thermostat (4) intervenes in the event of a malfunction of the heating system. After reaching 150 °C the safety thermostat intervenes to disable the heating element and to report the problem on the display.



### 2.6.2 Services boiler

The totally insulated services boiler (5) is used to produce steam for hot water, for milk frothing with the cappuccino maker or auto steamer (optional), and to heat/foam beverages.

The water in the boiler is heated by an electric heating element (6).

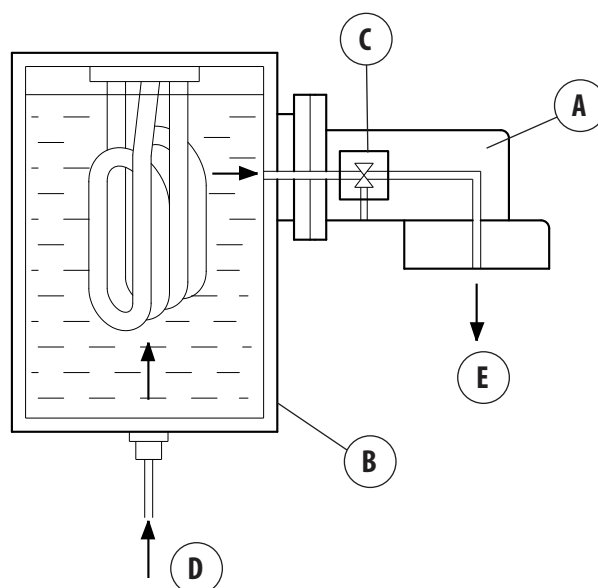
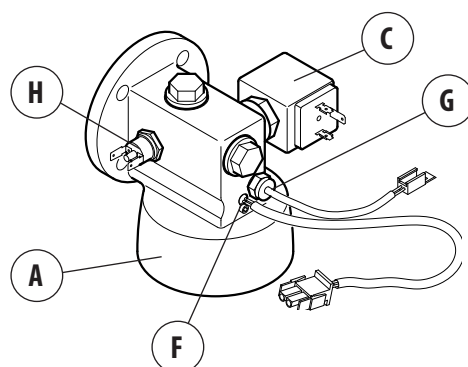


### 2.6.3 Dispensing group

The dispensing group (A) is made up of a metallic block which is hooked onto the coffee boiler (B).


The features of the group are summarized as follows:

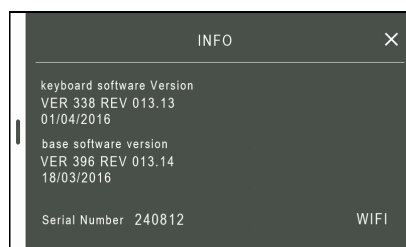
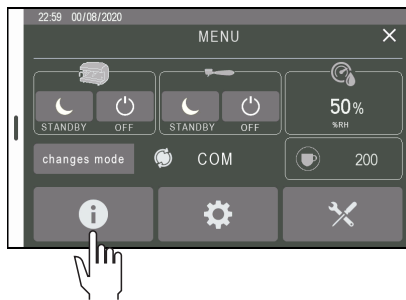
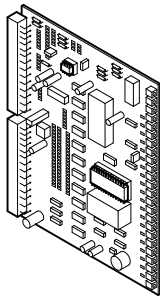
- the activation of the motor pump and solenoid valve (C) located on the side of the group allows the cold water to enter the boiler (D), consequently the hot water in the boiler is carried towards the dispensing group (E);
- the electrical cartridge heating element (F) installed in the group is controlled by an electronic control unit and allows the group to be heated at a programmed temperature;
- the temperature sensor (G) detects the value of the temperature of the group and sends it to the electronic control unit;
- the activation of the safety thermostat (H) prevents risks if there is a failure in the electronic system.



## 2.6.4 Electronic control unit

The electronic control unit is the nerve center of the machine. It monitors and controls all operation of the unit.

By entering the section "Menu" (see instructions in the next chapters) and selecting the key , you can view the information about the installed software (date and version).



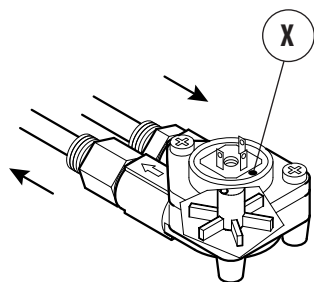
## 2.6.5 Volumetric dosing

The volumetric dispenser serves the purpose of measuring the quantity of water sent to the group for coffee dispensing.

The dispenser generates an electrical pulse which is sent to the electronic control unit.

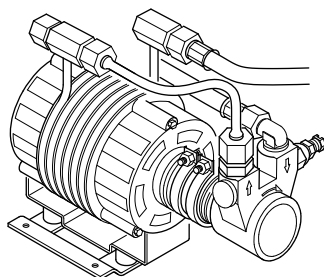
The dispenser generates electrical pulses that are sent to the control unit and counted during programming of the dose.

The flashing of the LED (X) indicates that the electrical impulse has been sent from the dispenser to the control unit.



## 2.6.6 Motor pump

This is a component that feeds the machine, raising the water pressure to 8 - 9 bar for coffee dispensing and automatic filling of the boiler.



## 2.6.7 Automatic Water Entry

The Automatic Water Entry system is for checking the boiler level. It is composed of:

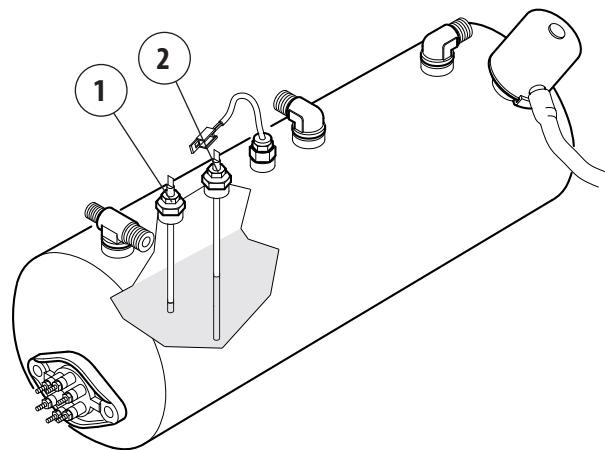
- level probe (short) (1) and safety probe (long) (2) inserted in the boiler, composed of a stainless steel rod;
- electronic control unit;
- hydraulic circuit controlled by a motor pump and solenoid valve controlled by the electronic control unit.

When, during the normal operation of the machine, the water level drops down, the level probe (1) sends a signal to the electronic control unit, which activates the motor pump and the filling solenoid valve, thus restoring the level of water in the boiler.

If the level is very low or there is no water in the boiler (during the machine's installation phase or due to a failure), the safety probe (2) sends a signal to the control unit which de-activates operation of the heating element to keep it from overheating and activates the motor pump and the solenoid valve to restore the level of water in the boiler.

To avoid possible flooding due to machine malfunctions or leaks in the hydraulic circuit, the electronic control unit includes a "Time-out" feature that cuts off automatic filling after a maximum operating time.

During the installation of machines with three or four groups the initial water filling time may exceed the established time limit. In this event, just switch the machine off and then back on to restore normal operating conditions.





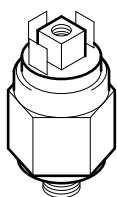
## 2.6.8 Pressure switch

The machine includes two types of pressure switches:

### COFFEE BOILER PRESSURE SWITCH

Each coffee boiler is equipped with a pressure switch to control the pressure.

The calibration is fixed at 2 bars.



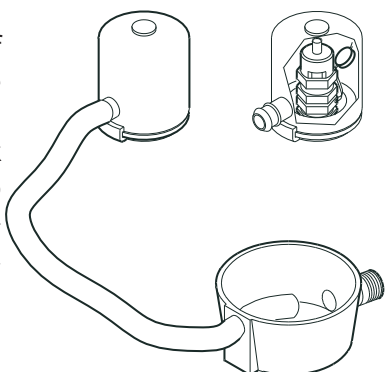
### SERVICES BOILER PRESSURE SWITCH

The services boiler is provided with a pressure safety switch which prevents exceeding the calibration value.

The calibration is fixed at 1.5 bars.

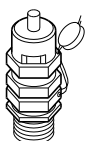
## 2.6.9 Overflow device

The cover installed on the pressure relief valve makes it possible to collect any water and steam which may leak from the boiler due to malfunction and channel it to the drain pad, by means of a special hose.



## 2.6.10 Pressure relief safety valve

The pressure relief safety valve has a calibration of 1.9 bar in order to ensure that the pressure in the boiler services does not exceed the value of 2.1 bar. In case of malfunction, the valve can eliminate all the excess pressure from the boiler.



The safety valve should be checked regularly as indicated in Chapter "10.3 Maintenance" on page 48".

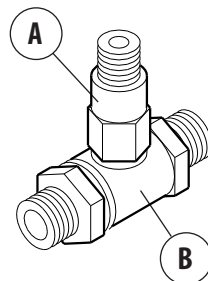


On all machines with 4 groups, two safety valves are installed.

## 2.6.11 Expansion - non-return valve

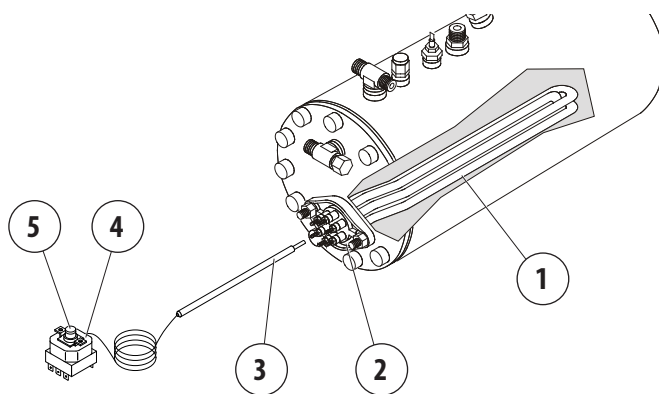
This is a valve consisting of an expansion valve and a non-return valve.

- **expansion valve (A):** the cold water sent from the pump to the coffee boilers is heated. This heating causes an increase in the volume of water. To limit pressure increases in the hydraulic circuit, the valve limits the maximum internal pressure of the circuit to 12 Bar.
- **non-return valve (B):** its function is that of preventing the backflow of water from the coffee boilers in the hydraulic circuit.



## 2.6.12 Safety thermostat

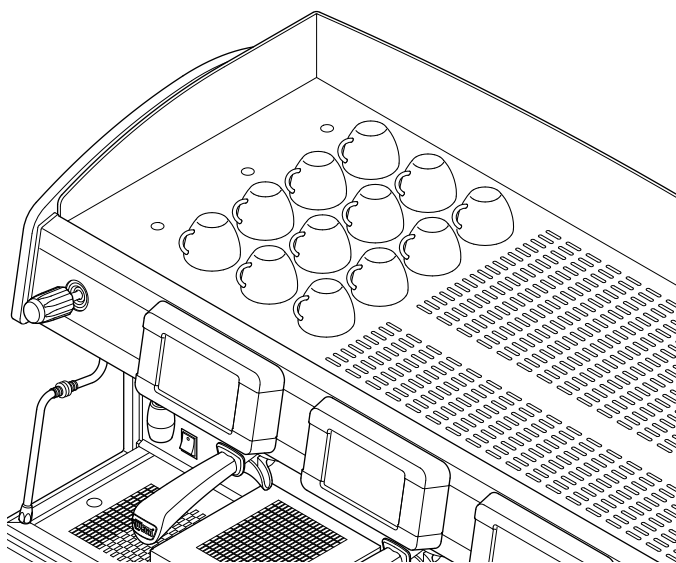
The thermostat allows to avoid damage to the heating element in case of lack of water in the boiler. The thermostat bulb (3) is located inside a sheath (1) placed at the center of resistance. The contacts of the thermostat (4) are connected to the heating element (2). If the heating element is exposed due to failure to load water to the boiler, the temperature of the resistance increases dramatically. At this point, the thermostat interrupts the power supply to the resistance thus preventing damage.



To reset the thermostat, press the center button (5). However, before trying to operate the machine, verify the causes of the blockade of the water feeding the boiler.

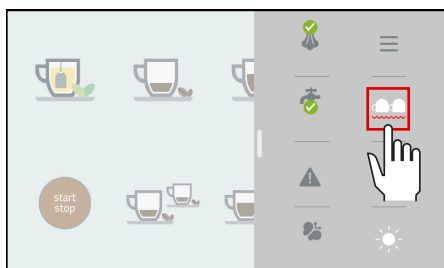
### 2.6.13 Cup heater

The cup heating device is for heating cups before they are used.



To activate the cup heater, press the button .

The ignition of the cup warmer is indicated by the color red of the button.



To adjust the temperature of the cup heater see paragraph "8.4 Services tuning" on page 31.

### 2.6.14 Cappuccino maker (optional)

The cappuccino maker can be optionally installed on the steam nozzle or directly on the tap. This device allows to both heat and foam the milk. For adjusting and cleaning, follow the provisions in the user's manual.

Apply the cappuccino maker, using the appropriate fitting, directly to the steam spout, by replacing the original sprayer, or through the appropriate hose, directly to the steam knob of the machine.

Ensure that seal (1) is present and/or use Teflon tape in order to avoid steam loss which may compromise the cappuccino maker's operation.

Insert the milk drawing hose (3) into the appropriate connection (2) of the cappuccino maker.

To change the temperature of the milk apply the adaptors as shown in the table below.

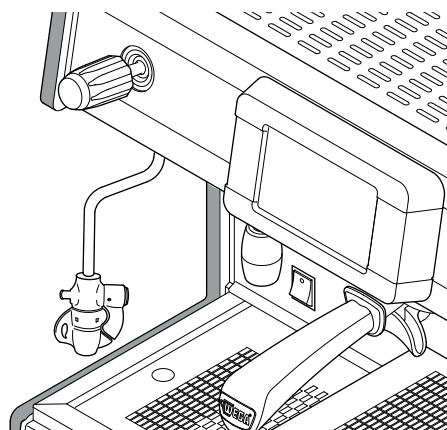
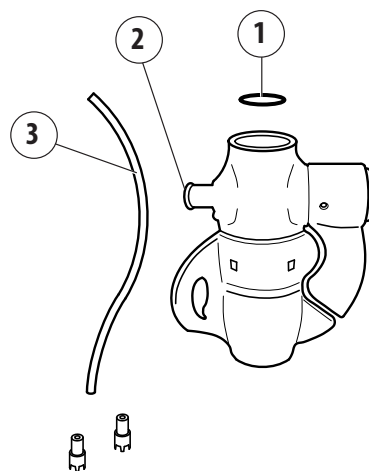



table of temperatures with and without reductions  
(temperatures measured in a pre-heated cup)

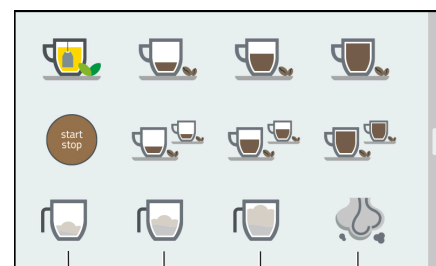
Milk temperature	Without use of adaptor	With WHITE adaptor Ø 1,9mm	With RED adaptor Ø 1,8mm
Room temperature 16°C	55 - 60 °C	60 - 68 °C	68 - 75 °C
Chilled milk 6°C	48 - 56 °C	58 - 63 °C	63 - 70 °C

## 2.6.15 Autosteamer (optional)

This system can be used for automatically heating and foaming milk at the programmed temperature.

Below is listed its operating principle:

- select the desired key on the display, for example  ;
- opening of the solenoid valve (2) with consequent flow of steam from the boiler to the Autosteamer nozzle (9);
- simultaneously, the system activates the air pump (6) which is controlled by the control unit (3) and powered by a processor (8). The regulation of milk foaming can be made by changing the amount of air intake operating the valve (5);
- after passing through the non-return valve (4), the air mixes with the steam in the "Mixing interface" (11);
- leakage of steam from the nozzle (9);
- the probe (10) connected to the electronic unit of the machine detects the temperature of the heating milk;
- Once the set temperature of the milk has been reached, the electronic system blocks the flow of air and steam.



*Short dose automatic heating and foaming*

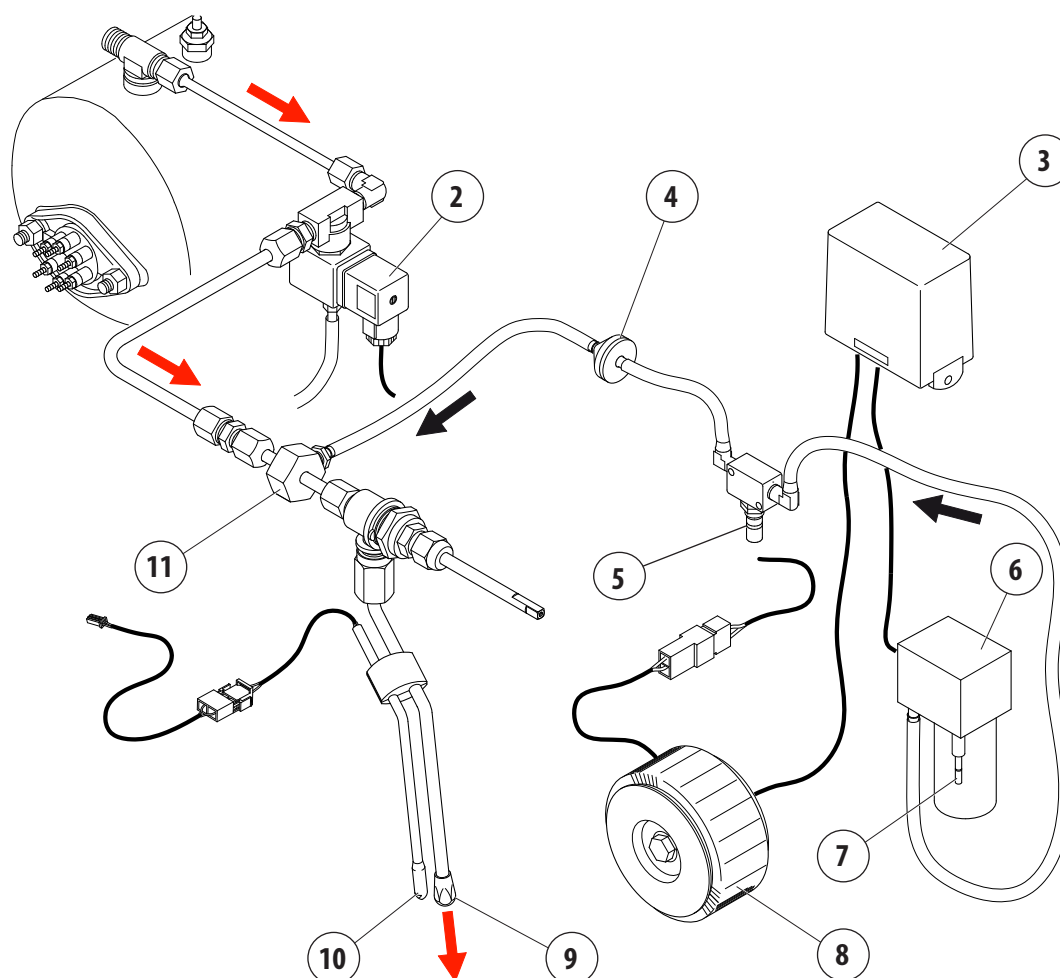
*Long dose automatic heating and foaming*

*Automatic heating*

*Manual heating and frothing continuous dose*



**To adjust the temperature and the milk foaming, see par. "6.4 Autosteamer" on page 24 .**



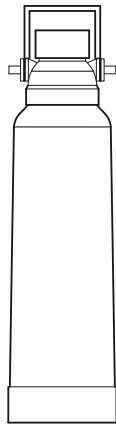
### 2.6.16 Water filter

Mains water contains insoluble salts, which cause the build-up of lime scale deposits in the boiler and other parts of the machine.

Drinking water can also contain traces of heavy metals and substances, such as chlorine, harmful to health.

The filter makes it possible to eliminate or substantially reduce the presence of these mineral salts.

The cartridge contained in the water filter must be replaced at the frequency specified by the manufacturer.

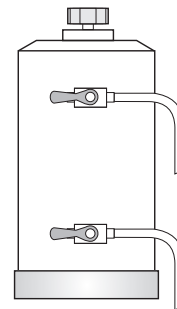


**For the water filter use and maintenance, follow the provisions in par. "10.4 Water filter maintenance" on page 51.**

### 2.6.17 Softener

The resin softener can be used as an alternative to the water filter.

This component has the property of retaining the calcium contained in the water. For this reason, the resins become saturated after a certain period and must be regenerated with coarse kitchen salt (NaCl, sodium chloride) or special water softening salt. It is very important to regenerate the softener within the established times. However, in locations where water is very hard, it will be necessary to regenerate it more frequently. The same is true of places in which there is a large consumption of hot water for tea or other uses.



**For the softener use and regeneration, follow the provisions in par. "10.5 Softener regeneration" on page 53.**

## 3. TRANSPORT AND HANDLING

### 3.1 Safety precautions

Handling operations must always and exclusively be performed by qualified personnel and in compliance with applicable safety and health regulations.

Before starting transport and/or handling, verify the route, dimensions needed, safety distances, places suitable for placement, and appropriate means to the operation.

Handling operations must be carried out by at least 2 people, or with the help of special lifting accessories.

In view of the substantial weight of the equipment, exercise caution and care in handling operations.



The manufacturer is not responsible for any injury or damage caused by attires, lifting equipment and personal equipment not suitable for the type of intervention that the operator must carry. The packaging material must not be left within the reach of children, since it is a potential source of danger.

The following residual risks are present during the handling of the machine and cannot be eliminated:

	Hand crush hazard
--	-------------------

### 3.2 DPI characteristics

During transport of the machine, the following PPE are required:

	Mandatory use of protective gloves
	Mandatory use of protective shoes

### 3.3 Dimensions and weight

MODEL:	2GR	3GR	4GR
Width (W)	800 mm	1040 mm	1280 mm
Depth (D)	580 mm	580 mm	580 mm
Height (H)	590 mm	590 mm	590 mm
Max gross weight	104 kg	126 kg	146 kg

### 3.4 Handling the packed machine

Upon arrival, the machine must be unloaded and handled with care, carefully following the instructions on the packaging, or those contained in this Manual.

If there is an external motor pump (optional), the motor and the pump are provided in a separate package.

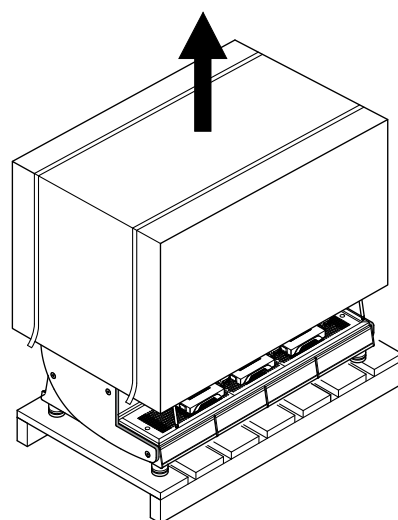


It is very important to verify that the maximum load of the individual lifting equipment, at least corresponds to the loads to be lifted, plus the safety margins required by current standards.

### 3.5 Unpacking the machine

Remove the machine from its packaging only at the moment of installation to prevent accidental collisions that can damage it:

- Open the packaging, taking care not to damage the machine;
- remove and take out the protections of the machine and equipment contained in the package.
- take the machine out;
- dispose of the packaging in compliance with waste regulations.



After uninstalling the machine, check that there are no damaged parts due to transport or missing parts. Otherwise, immediately (no later than 7 days after dispensing) contact the TRANSPORTER and MANUFACTURER communicating the machine data and photographic documentation:

It is advisable to keep the packaging until after the guarantee has expired.

Wood, nails, staples, cardboard: non-polluting material but to be recycled properly.

Plastic: polluting material neither to be burned (danger of toxic fumes), nor dispersed in the environment; to be disposed of according to current regulations.

## 4. STORAGE

### 4.1 Overview

In the waiting period prior to installation, the machine must be stored by the Manufacturer or Authorized Distributor.

### 4.2 Storing the machine after the operation

If the machine is no longer used after a certain period of operation, store in the following conditions:

- Unplug the machine from the water and power mains;
- Empty all the internal circuits of the water.

Store the machine taking the following precautions:

- Store closed;
- Protect from shocks and stresses;
- Avoid contact with corrosive substances.

The machine was designed and built to operate in environments with the following characteristics:

- Room temperature: +5 + 40 °C
- Max relative humidity: 50% (at 40°C)

Any variation in these characteristics may decrease the average life of some components of the machine. Typical examples:

- ambient temperature: premature degrading of the engines.
- RH: premature degrading of seals and electronics.



**If the environmental characteristics are significantly different from those listed, contact the MANUFACTURER before they become a source of problems.**



**After storage, before starting up the machine it is necessary to fully inspect the equipment.**

## 5. INSTALLATION

### 5.1 Safety precautions

**Installation must always and exclusively be performed by qualified personnel and in compliance with applicable safety and health regulations.**

**This appliance is to be considered completely safe only when it is connected to an efficient earthing system which is in compliance with safety standards.**

**The electric system must be equipped with a suitable GFCI (circuit breaker). It is important to have these requirements checked. If in doubt, have the system carefully checked by qualified personnel. The manufacturer cannot be considered responsible for any damage caused by an inadequate electric system.**

**Make sure that the supply power is enough to supply the necessary energy for the operation of the machine.**

**Perform the installation with the machine disconnected from the power supply through the main switch.**

**In case of problems during the installation and/or malfunction, turn off the machine and contact the Manufacturer.**

**The components used during installation must ensure that the hygiene and safety requirements initially provided for the appliance are still met. These are met by using original spare parts only.**

The following residual risks are present during the installation of the machine and cannot be eliminated:

	Electrical hazard
	Equipotential hazard
	Danger of high temperature
	Prohibition to operate with moving parts



**Use of the machine without all the installation operations carried out by Qualified Technical Personnel can result in serious damage to the equipment and people.**






**Any action taken on the electronics of the machine when the machine is still supplied with electrical power automatically invalidates any guarantee.**



## 5.2 DPI characteristics

During installation of the machine, the following PPE are required:

	Mandatory use of protective gloves
	Mandatory use of eye protection
	Mandatory use of protective shoes

## 5.3 Environmental conditions

### 5.3.1 Room temperature

The electrical and electronic equipment mounted on the machine, has been designed and made to function properly in environments where the temperature is between +5 and +40 °C.

### 5.3.2 Relative humidity

The electrical and electronic equipment mounted on the machine, has been designed and made to function properly in environments where relative humidity does not exceed 50% at a temperature of 40 °C, or 90% at a temperature of 20 °C.

## 5.4 Installation space and operating space

Before the arrival of the machine, a suitable environment must be prepared:

- Location suited to the intended use and adequate space for comfortable use of the machine;
- adequate lighting, in accordance with applicable standards;
- earthing system compliant with applicable standards;
- electrical system compliant with applicable standards.

## 5.5 Support base

To ensure a sufficient degree of ergonomics and safety to the machine, it is necessary to provide a support base with the following characteristics (refer to the drawing on the next page):

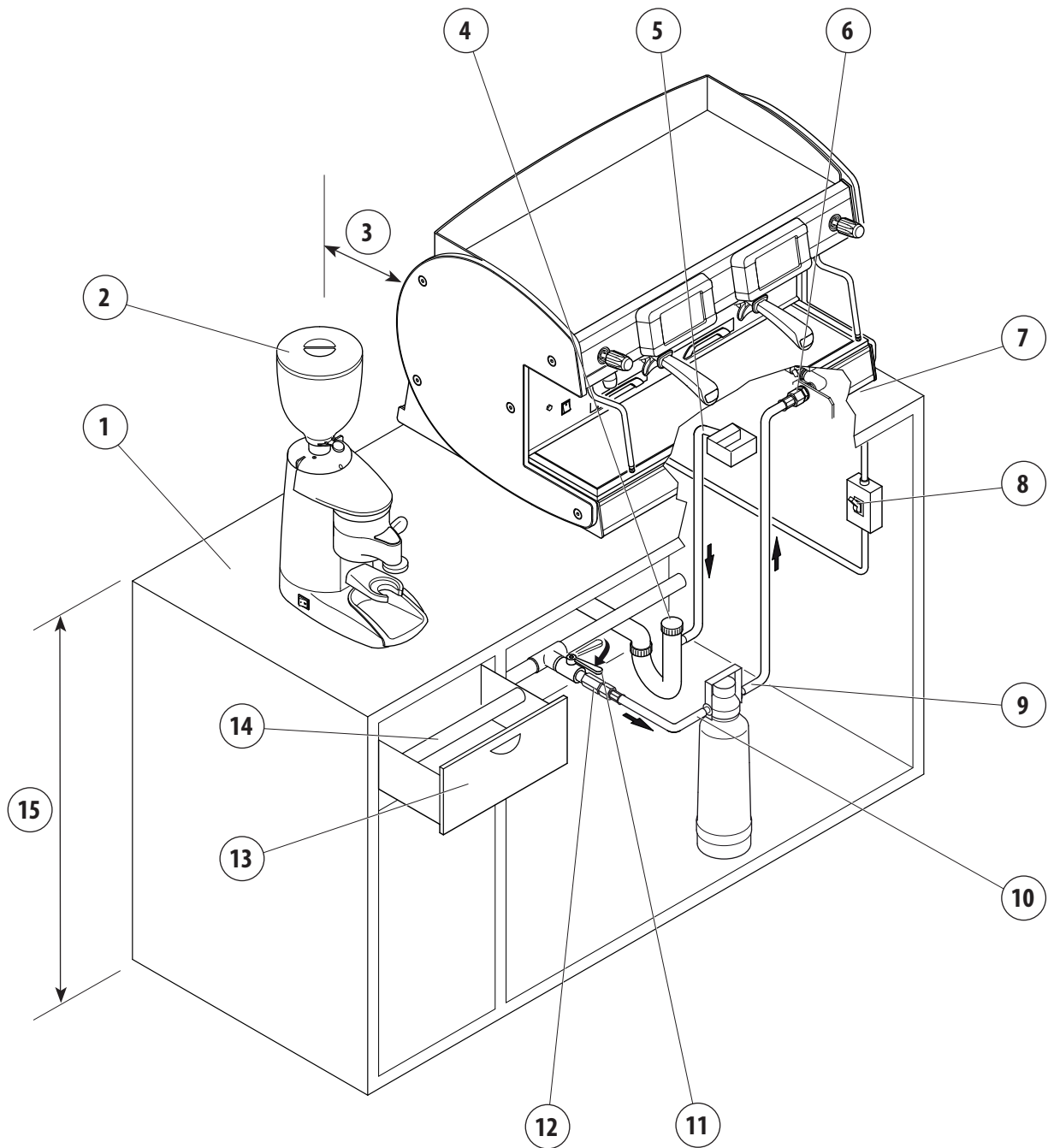
- Make sure that there is sufficient space for placing and correctly using the machine.
- the base (1) should be comfortable and suitable for supporting the weight of the machine and a height of about 90 cm (17);
- the base must be perfectly level and without irregularities;
- The base must be in close proximity to the terminals for the connection to the water mains (11) and to the power supply (8);
- If the machine is positioned next to a wall, ensure a minimum distance of 20 cm between the machine and the wall (3).
- equip the working base of the machine with a drawer (15) for used coffee grounds, preferably with a rubber device (16) for tapping the filter holder.



**For correct operation and to ensure safety, the machine must rest on a perfectly horizontal surface.**

**Any alignment of the machine must be done by adjusting the feet (7).**

**In case of installation of the machine within moving environments (trains, ships, etc.) it is necessary to use special anchor pins, which can be bought from the manufacturer, to the base.**



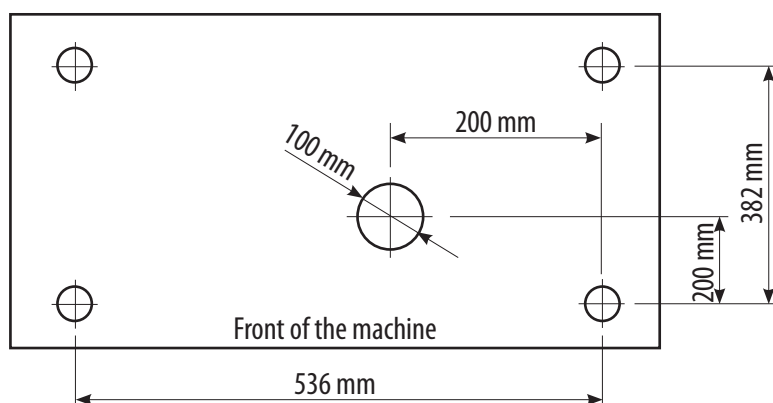
- |  |   |
|--|---|
| 1. Support base  | 11. Water supply tap                      |
| 2. Grinder-dispenser                                       | 12. Water supply non-return valve         |
| 3. 20 cm minimum distance between the machine and the wall | 13. Used coffee grounds drawer            |
| 4. Sewer drain   | 14. Support for tapping the filter holder |
| 5. Discharge tub   | 15. Height of support base 90 cm          |
| 6. Water supply inlet                                      |   |
| 7. Adjustable feet   |   |
| 8. Electric power switch                                   |   |
| 9. Water filter inlet                                      |   |
| 10. Water filter outlet                                    |   |



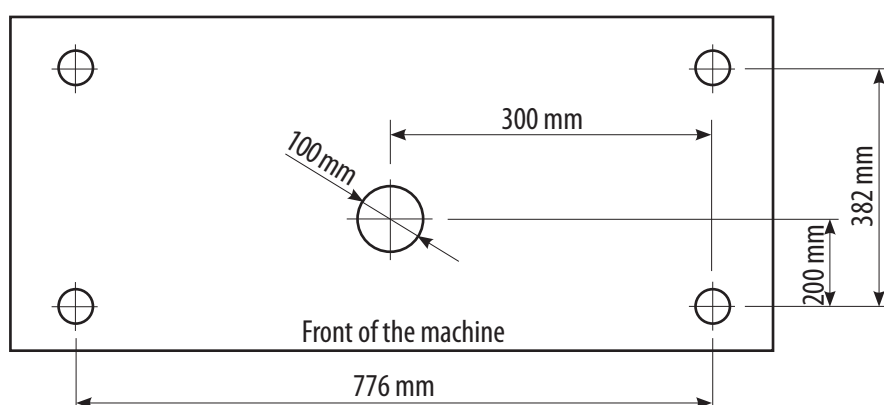
## 5.6 Drilling the support base

If it is necessary to drill holes on the support bench for passing the water inlet and outlet hoses, as well as the electrical supply cables, follow the directions in the drawings below.

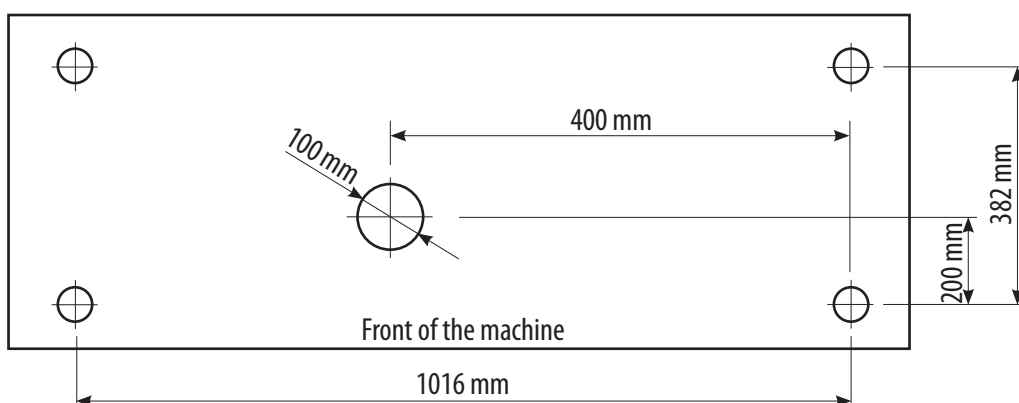
2 GROUPS



3 GROUPS



4 GROUPS



## 5.7 Hydraulic connection

### 5.7.1 Water supply

The water supply of the appliance must be carried out with water which is suitable for human consumption, in compliance with the regulations in force in the place of installation. The owner/manager of the system must confirm to the installer that the water meets the requirements above:

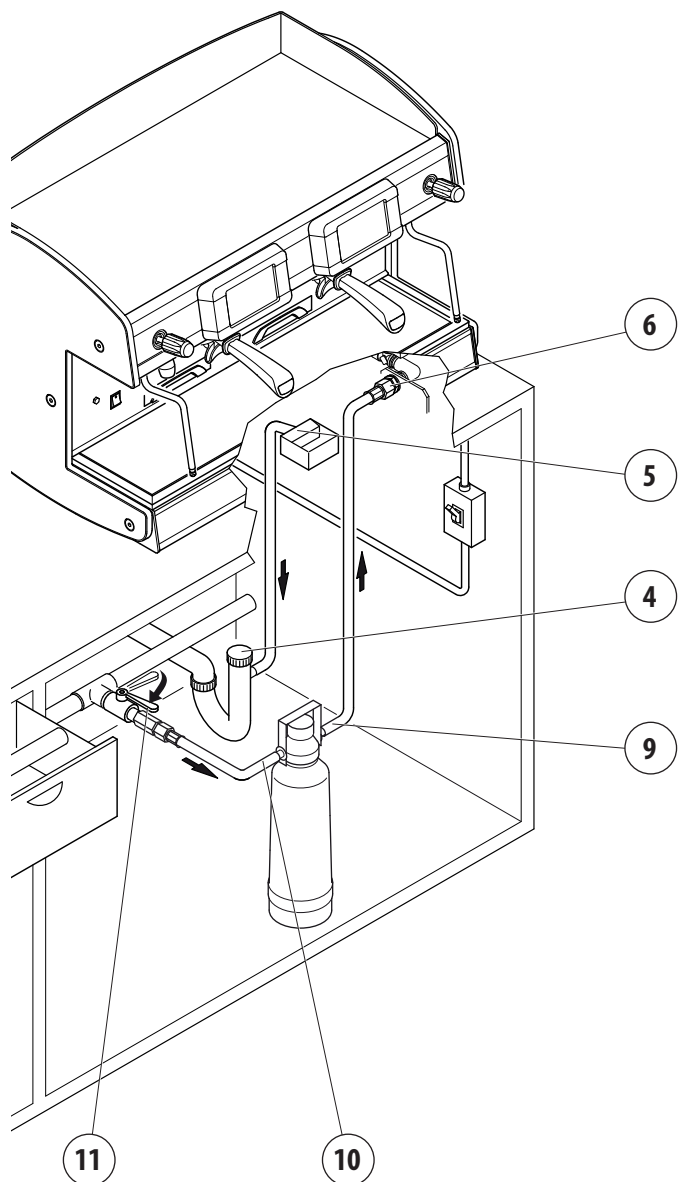
### 5.7.2 Materials to be used

During the installation of the appliance, only the components and materials supplied with the appliance are to be used. Should the use of other components be necessary, the installer must verify their suitability to be used in contact with water used for human consumption.

### 5.7.3 Hydraulic connections

The installer must carry out the hydraulic connections in accordance with the hygiene norms and the hydraulic safety norms for environmental protection in force in the place of installation.

1. Add a tap to the water supply so as to stop water from flowing to the machine;
2. in order to prevent damage, it is advisable to install the water purification filter where it will be protected from accidental blows;
3. if there is no water purification filter (9), connect the water supply (11) directly to the inlet of the machine (6);
4. when connecting the pad of the machine (5) to the sewer drain (4), avoid overly tight curves or kinks, and make sure that there is sufficient inclination for water to flow out of the drain;
5. the drain must be connected to an inspectable siphon that can be periodically cleaned, in order to avoid bad odors;
6. to avoid oxidization and damage to the machine over time, do not use iron connections for the hydraulic system, even if galvanized.



**After installation and before using the machine, the water of the hydraulic circuits must be replaced, as indicated in par. "6.6 Water replacement" on page 26.**



The water supply must provide cold water for human consumption (potable water) at a pressure between 1,5 and 5 bars. If the pressure is higher than 5 bar, connect a pressure reducer before the pump. All filling connections are 3/8 male gas type. The drain pan is connected to a tube with an internal diameter of 20 mm.

If an external tank is used, the connection pipe between the machine and the tank must not exceed 150 cm.

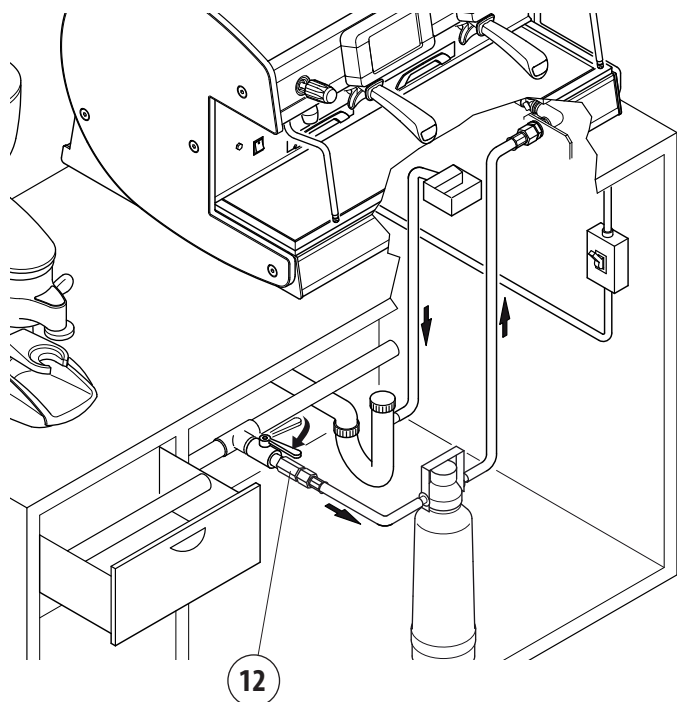
The machines are equipped with a time-limit switch that allows the water to fill the boiler only for a limited time. This function keeps water from flowing out of the boiler's valve (flooding) and keeps the motor pump from overheating.



**FOR THE EUROPEAN COMMUNITY:** for the hydraulic connection to the water mains and also for connection to an external tank, it is necessary to place a non-return valve (12) up the line from the machine as set forth by standards EN 1717.

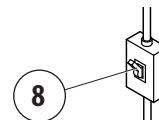


**FOR THE U.S.A. -** The water connections and discharges must be made in accordance with the 2003 International Plumbing Code of the International Code Council (ICC), or with the 2003 Uniformed Hydraulic Code of the IAPMO. The machine must be installed together with an adequate non-return valve, as required by national regulations.



## 5.8 Electrical connection

- Installation must be done in accordance with the safety standards in force in the country of installation. The owner/manager of the system must confirm to the installer that the electrical system meets the requirements above.
- Install a general protection switch (8) as required by current safety regulations suitable to the rated power.
- For the electrical connection of the machine, refer to Chap. 16 on page 64 .
- Do not use power extensions or electrical adaptors for multiple outlets. If their use is absolutely necessary, use only simple adapters and extensions complying with current safety standards. Never exceed the capacity value indicated on the adapter and the extension cord, and that the maximum power indicated on the adapter.
- The access spaces to the machine and main switch must be left clear, in order to allow the user to intervene without any constrictions and be able to leave the area immediately in case of necessity.





We recommend to promptly report to the Manufacturer any problems encountered during installation of the equipment.

## 6. COMMISSIONING

### 6.1 Safety precautions

The following residual risks are present during the commissioning of the machine and cannot be eliminated:

	<p><b>Electrical hazard:</b> When using the electrical appliance, several safety standards must be observed:</p> <ul style="list-style-type: none"> <li>• do not touch the appliance with wet or damp hands or feet;</li> <li>• do not use the appliance if barefooted;</li> <li>• do not pull the power cord to disconnect the appliance.</li> </ul>
	<p><b>Danger of high temperature:</b> Some parts of the machine can reach high temperatures:</p> <ul style="list-style-type: none"> <li>• avoid contact with the dispensing group and water spouts;</li> <li>• do not expose your hands or other body parts to the coffee, steam, or hot water spouts.</li> </ul>

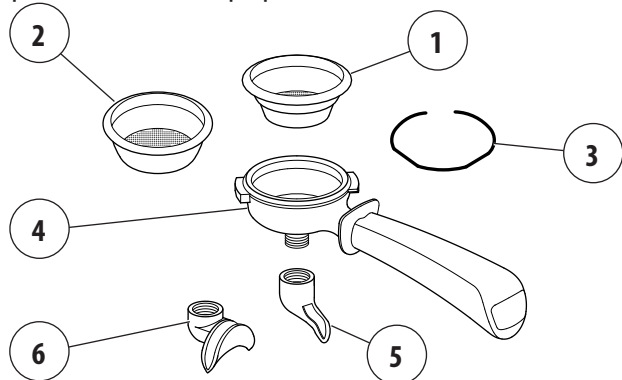
### 6.2 Preparing the filter holder

#### 6.2.1 Filter holder

- In the housing of the filter holder (4) place the spring to stop the filter (2).
- place the single cup (1) or double cup filter (2) pushing it with force into the filter holder.

#### 6.2.2 Spouts

Complete the filter holder by mounting the single cup (5) or double cup spout (6).



Properly connect the single filter with the single spout and the double filter with the double spout.

### 6.3 Coffee grinding

To adjust the coarseness of the ground coffee, use the appropriate regulator located on the hopper of the grinder-dispenser.

### 6.4 Autosteamer

#### 6.4.1 Temperature adjustment

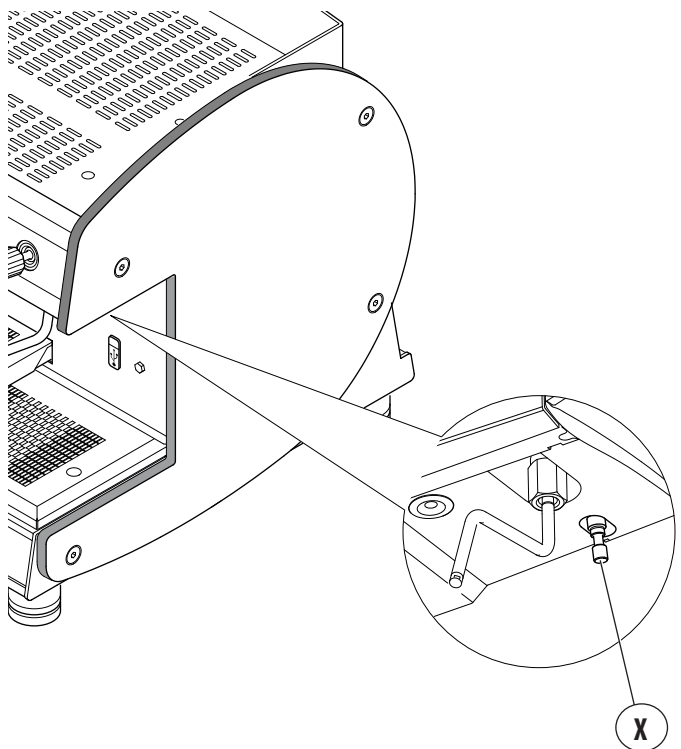
To program the temperature of the milk to be heated see par. "8.4 Services tuning" on page 31 .

However, we recommend not to exceed 60° C.

#### 6.4.2 Milk foaming adjustment

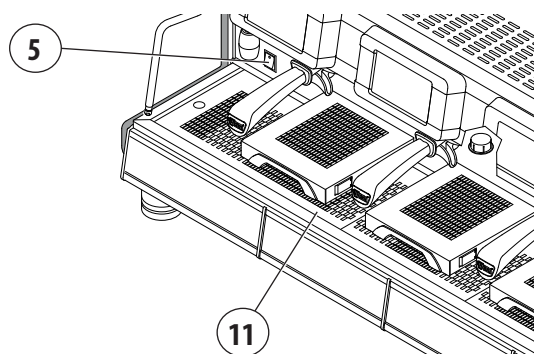
For more or less foam, adjust the special regulator (X).

Turning it clockwise will decrease the consistency, while turning it counter-clockwise will increase it.



## 6.5 Turning the machine on and off

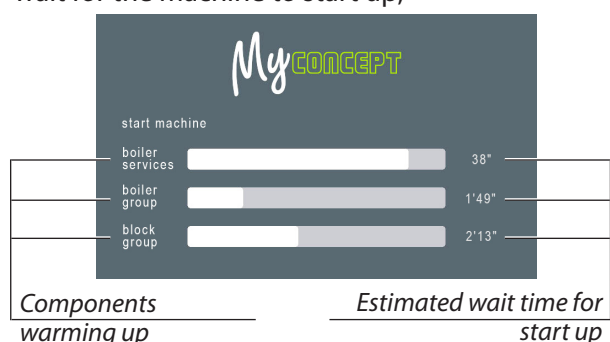
After the electric and water connections have been made, make certain that the drain pan located under the cup support grille (11) is correctly connected to the drain.



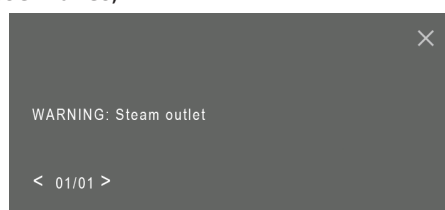
Make sure all steam taps are closed. Turn the machine on using the main switch (5) and follow the indications provided on the machine's display, as described below.



- wait for the machine to start up;



- during start-up, the machine will release water from the assemblies;

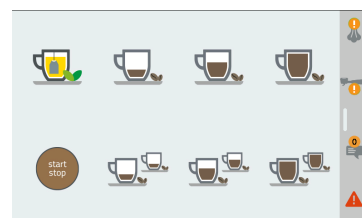


- after start-up, the machine is ready for coffee dispensing and the display will show the screen below; An orange steam icon indicates that it is necessary to wait a few minutes for the steam to be dispensed. A green steam icon indicates that the machine is at the programmed pressure.



**Before using the machine, run dry deliveries with the filter holder attached for a few seconds to release any air which may be in the circuit, so that the dispensing groups are completely heated.**

In some cases, such as, for example, after washing the assemblies, for a short time all selections will be inactive, the display will have reduced brightness and some reports will appear on the right bar



After setting the temperature, the display will return to its normal brightness and the machine will return to being active.

## 6.6 Water replacement

During the installation of the machine, the Qualified Technician must replace the water contained in the hydraulic circuits by following these steps:

- when installation is complete, the appliance has to be started, brought to the nominal working condition and left for 30 minutes in the "ready to operate" condition;
- afterwards, the appliance has to be turned off and emptied of the first water introduced in the whole hydraulic circuit, to eliminate possible initial impurities;
- then, the appliance must be loaded and brought to the nominal working conditions;
- turn off the machine again and empty the water circuit;
- turn on the machine, then load it and bring it to the nominal working conditions;
- when the "ready to operate" status is reached, carry out continuous dispensing for each coffee unit, in order to release at least 0.5 liters from the coffee circuit.
- continuously release steam for at least 1 minute for each steam dispensing point.



**If the machine remains inactive for a time longer than 1 week, the Qualified Technician must renew 100% of the water contained in the hydraulic circuit, as indicated above.**

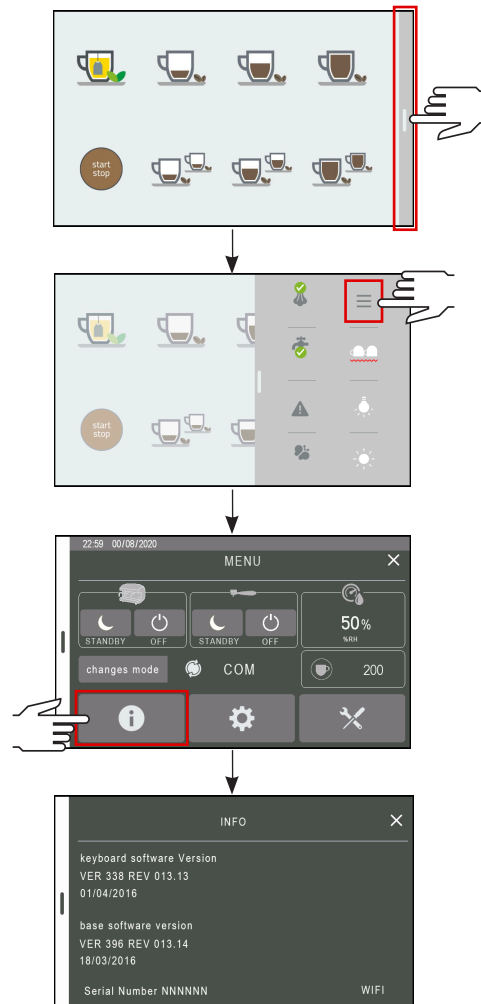


- **Before using the machine, run dry deliveries with the filter holder attached for a few seconds to release any air which may be in the circuit, so that the dispensing groups are completely heated;**
- **before using the machine, dispense a few servings of coffee to test the grinding and to check the operating pressure of the machine**
- **during dispensing of coffee, do not remove the filter holder from the brewing.**

## 7. MACHINE INFORMATION

The machine information is available on display:

- select the bar on the right side of the display;
- select the menu key 
- select the information key



## 8. PARAMETER PROGRAMMING

This paragraph deals with the programming menu that allows the user to program the various functions of the machine.

All these operations are performed using the touch-screen display.

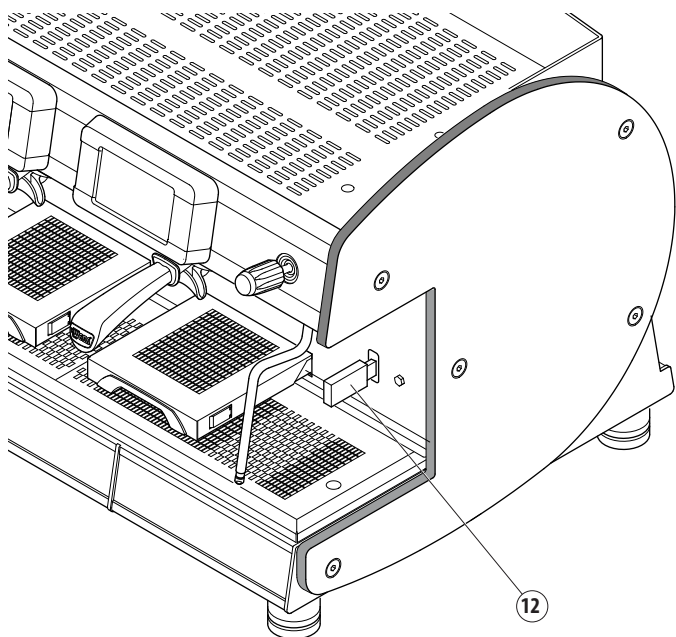
### 8.1 Access

Programming can be accessed in two ways:

- by USB stick.
- by password.

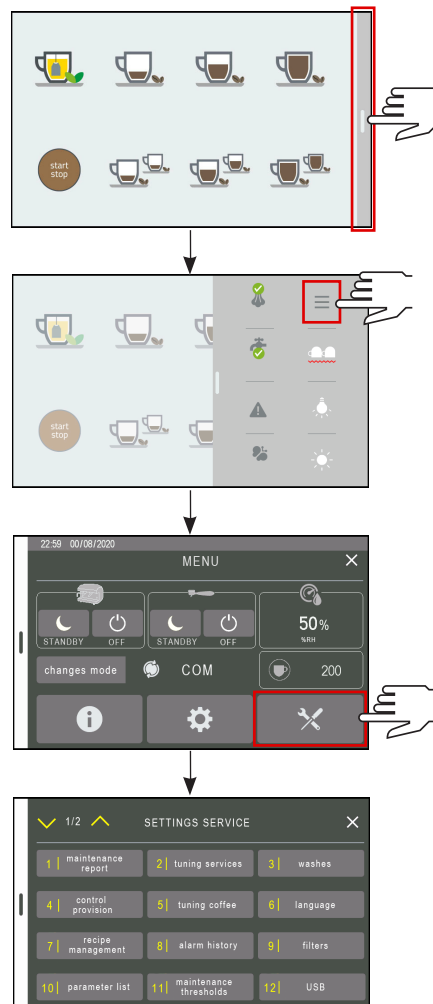


**Access by password does not allow some functions offered by the USB stick, such as updating, loading and/or saving the data.**



#### 8.1.1 Access by USB stick.

- Insert the USB stick into the port (12);
- select the bar on the right side of the display;
- select the menu key ;
- select the service configuration key .

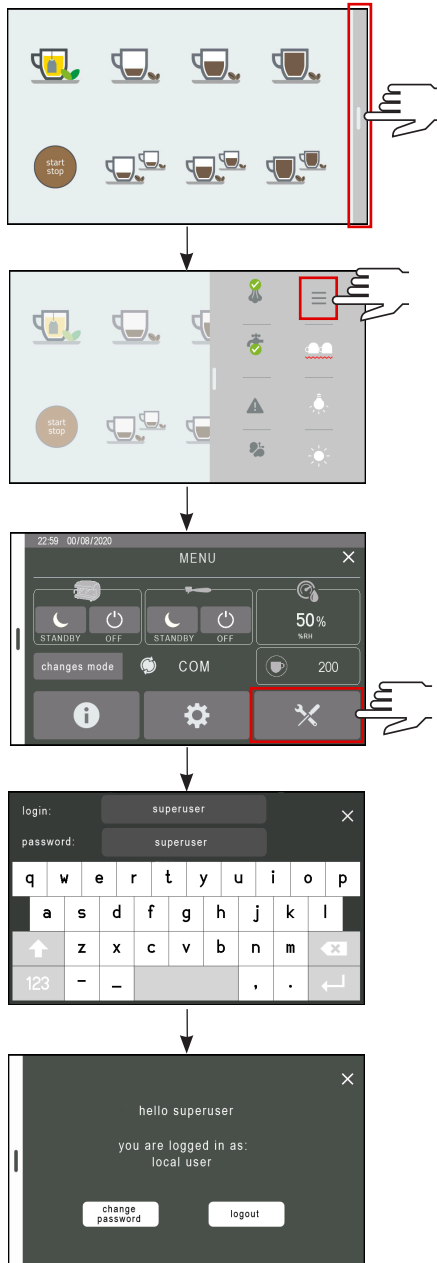


**The USB port must only be used with the specific stick provided to Qualified Technicians. Do not connect external devices (iPhone, iPad, PC, etc.) to the USB port because it could create serious problems in the machine software.**



## 8.1.2 Access by Password

- Select the bar on the right side of the display;
- select the menu key
- select the service configuration key
- enter the password;
- to change the password, press the corresponding button and enter the new one (only possible if this feature is enabled).



The table on the side shows the parameters that can be reset with User password and Installer password.

Parameters can be reset at the user level: (code 3 in the USB stick)

PARAMETER No.	DESCRIPTION
1	MEASUREMENT UNIT
2	PRESSURE
3	VOLUME

Parameters can be reset at the installer level: (code 7 in the USB stick)

PARAMETER No.	DESCRIPTION
6	ENABLE CUP-WARMER OPERATION
8	ENABLE HOT WATER WITH COFFEE
9	ENABLE LONG COFFEE SELECTION
10	ENABLE PRE-INFUSION
11	ENABLE Autosteamer
12	ENABLE AUTOMATIC WASHING
13	ENABLE INITIAL WASHING
14	ENABLE CONNECTION WITH THE CASH REGISTER
15	ENABLE CONTINUOUS COFFEE DISPENSING
16	AUTOMATIC DAYLIGHT SAVING TIME MANAGEMENT
17	USER INTERFACE THEME
18	DISABLE BUZZER SOUND WHEN PRESSING LCD KEYS
19	RELEVANT TIME ZONE
22	SET GRP1 TEMPERATURE
23	SET GRP1 COFFEE BOILER TEMPERATURE
24	GRP1 MINIMUM SET IN STANDBY
25	GRP1 COFFEE BOILER MINIMUM SET IN STANDBY
26	GRP1 TEMPERATURE DELTA SET IN STANDBY
27	GRP1 COFFEE BOILER TEMPERATURE DELTA SET IN STANDBY
32	SET GRP2 TEMPERATURE
33	SET GRP2 COFFEE BOILER TEMPERATURE
34	GRP2 MINIMUM SET IN STANDBY
35	GRP2 COFFEE BOILER MINIMUM SET IN STANDBY
36	GRP2 TEMPERATURE DELTA SET IN STANDBY
37	GRP2 COFFEE BOILER TEMPERATURE DELTA SET IN STANDBY
42	SET GRP3 TEMPERATURE
43	SET GR 3 COFFEE BOILER TEMPERATURE
44	GRP3 MINIMUM SET IN STANDBY
45	GRP3 COFFEE BOILER MINIMUM SET IN STANDBY
46	GRP3 TEMPERATURE DELTA SET IN STANDBY
47	GRP3 COFFEE BOILER TEMPERATURE DELTA SET IN STANDBY
52	SET GRP4 TEMPERATURE
53	SET GR 4 COFFEE BOILER TEMPERATURE
54	GRP4 MINIMUM SET IN STANDBY
55	GRP4 COFFEE BOILER MINIMUM SET IN STANDBY
56	GRP4 TEMPERATURE DELTA SET IN STANDBY
57	GRP4 COFFEE BOILER TEMPERATURE DELTA SET IN STANDBY
99	ENABLE BOILER WATER REPLACEMENT
106	SET CUP-WARMER TEMPERATURE
107	CUP WARMER REGULATION DIFFERENTIAL
108	CUP-WARMER MINIMUM TEMPERATURE
109	CUP-WARMER MAXIMUM TEMPERATURE
110	THRESHOLD FOR GRINDER WEAR INDICATION
135	ENERGY SAVING TYPE
141	GRP1 VISUALIZATION TYPE
142	GRP2 VISUALIZATION TYPE
143	GRP3 VISUALIZATION TYPE
144	GRP4 VISUALIZATION TYPE
148	AUTOMATIC WASHING TIME
165	SET GROUP TEMPERATURE IN DEEP STANDBY
166	SET COFFEE BOILER TEMPERATURE IN DEEP STANDBY
167	SET SERVICES BOILER TEMPERATURE IN DEEP STANDBY
350	SCREENSAVER TIMEOUT
351	DISPLAY BACKLIGHT BRIGHTNESS
400	CLOUD DATA SENDING DURATION
401	CLOUD DATA DOWNLOAD DURATION

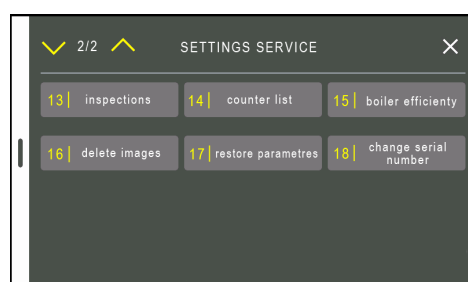
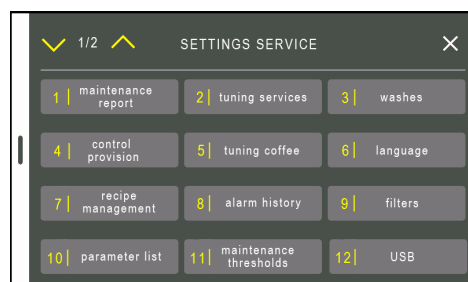


## 8.2 Programming menu

From the two pages of the menu you can access the complete programming of the machine.

Below is a summary of the programming sections, the parameters involved, and the planned operations.

The following paragraphs list all the operations in detail.




1 - maintenance report	<ul style="list-style-type: none"> <li>maintenance cycles type A-B-C → reset</li> <li>date of the next maintenance → set date</li> <li>water consumption (lt) → reset</li> <li>grind wear (kg) → reset</li> <li>energy saved (kWh) → reset</li> </ul>
2 - service tuning	<ul style="list-style-type: none"> <li>boiler pressure → set (bar)</li> <li>boiler temperature in energy saving → set (°C)</li> <li>cup heater temperature → set (°C)</li> <li>boiler boost set → set (bar)</li> <li>boiler boost duration → set (min)</li> </ul>
3 - washes	<ul style="list-style-type: none"> <li>date of last wash → view</li> <li>enable automatic wash → enable</li> <li>wash at each start-up → enable</li> <li>number of washing cycles → set (no.)</li> <li>washing time → set (min)</li> <li>rinsing time → set (sec)</li> <li>minimum interval between 2 starting washes → set (hours)</li> <li>time of automatic washing → set time</li> <li>number of washes performed → reset</li> </ul>
4 - dispensing check	<ul style="list-style-type: none"> <li>view time → enable</li> <li>monitor flow → enable</li> <li>view temperature → enable</li> </ul>
5 - coffee	<ul style="list-style-type: none"> <li>set group N → set (°C)</li> <li>set group N boiler → set (°C)</li> </ul>
6 - language	<ul style="list-style-type: none"> <li>language → set language</li> </ul>
7 - recipe management	<ul style="list-style-type: none"> <li>recipe name → set name</li> <li>set group boiler → set (°C)</li> <li>set group → set (°C)</li> <li>grinding fineness → set</li> </ul>
8 - alarm history	<ul style="list-style-type: none"> <li>alarms by date → reset</li> <li>alarms by type → view</li> </ul>
9 - filters	<ul style="list-style-type: none"> <li>regeneration threshold → set (lt)</li> <li>water consumption → view</li> </ul>
10 - parameter list	<ul style="list-style-type: none"> <li>parameters N → set</li> </ul>
11 - maintenance threshold	<ul style="list-style-type: none"> <li>maintenance threshold type A-B-C → set no. cycles</li> <li>cycles to reach the threshold A-B-C → view</li> <li>date of next maint. threshold A-B-C → view</li> <li>days until maintenance → view</li> <li>short-normal-long dose → set (gr)</li> <li>double short-normal-long dose → set (gr)</li> <li>continuous dispensing dose → set (gr)</li> <li>grinds threshold → set (kg)</li> </ul>
12 - USB	<ul style="list-style-type: none"> <li>update keypads → update</li> <li>update base → update</li> <li>load slide → load</li> <li>set parameters → load</li> <li>save parameters → save</li> <li>import languages → import</li> </ul>
13 - inspections	<ul style="list-style-type: none"> <li>temperatures card-boiler-group → view</li> <li>pump-boiler pressure → view</li> <li>boiler levels → view</li> <li>ambient humidity → view</li> <li>inlet-group flow → view</li> </ul>
14 - counters list	<ul style="list-style-type: none"> <li>no. deliveries per dose → reset</li> </ul>
15 - boiler efficiency	<ul style="list-style-type: none"> <li>time for delta 1 °C last measurement gr-boil → view</li> <li>degrees in 1 minute last measurement gr-boil → view</li> <li>time for delta 1 °C first measurement gr-boil → view</li> <li>degrees in 1 minute first measurement gr-boil → view</li> <li>time for delta 1 °C last measurement gr-boil → view</li> </ul>
17 - reset parameters	<ul style="list-style-type: none"> <li>reset user parameters → load</li> <li>reset technician parameters → load</li> <li>reset manufacturer parameters → load</li> </ul>

## 8.3 Maintenance report

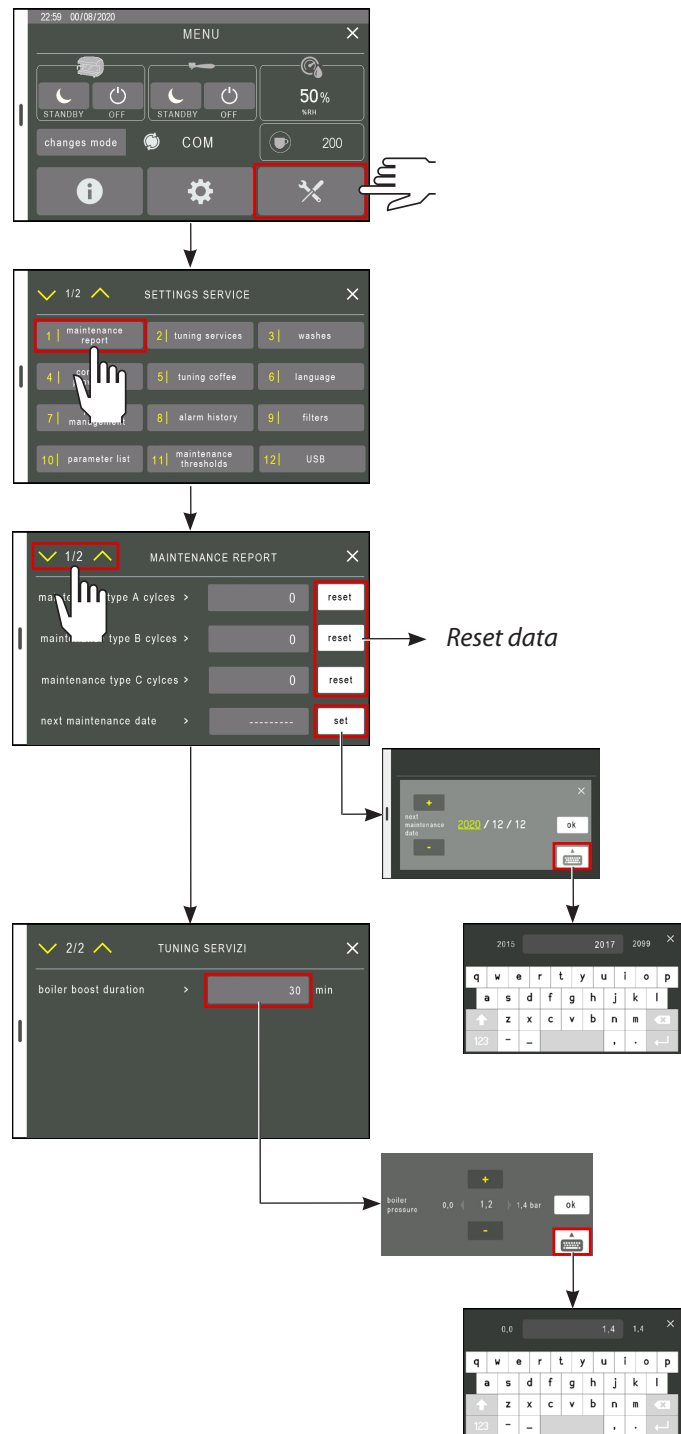
In this section you can view the following data:

- maintenance cycles type A;
- maintenance cycles type B;
- maintenance cycles type C;
- Water consumption (liters);
- grinder wear (kg);
- energy saved (kWh).

To reset the data, select the button reset.

To program the date to request assistance for the machine, i.e. when the display indicates the need to proceed with the scheduled maintenance, press the button set. Use the buttons + and -, or the display keyboard , to enter the desired date.


To switch from one page to another, select the key



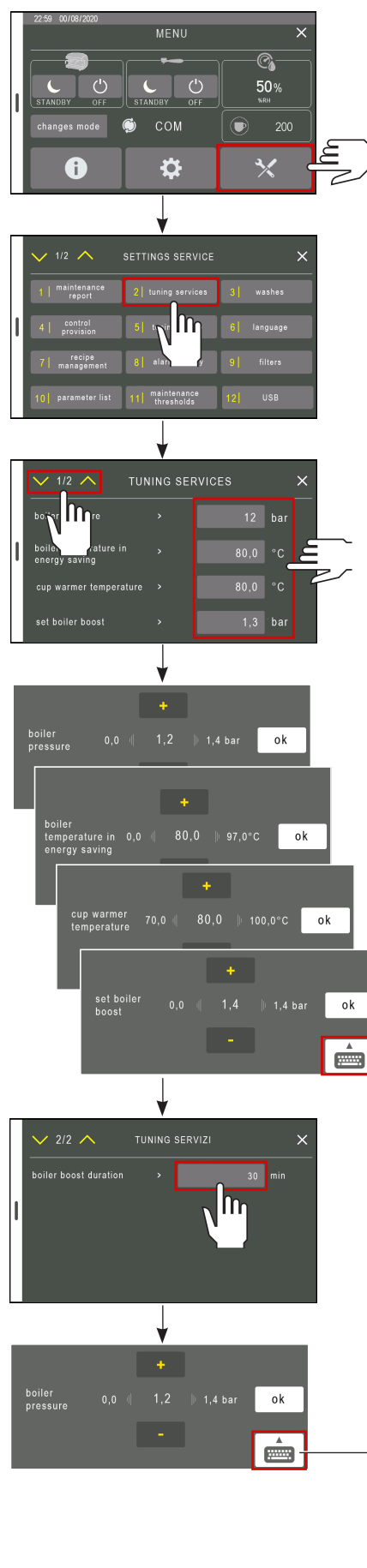
## 8.4 Services tuning

This section allows to program all the parameters related to the machine services and, in particular:

- boiler pressure;
- boiler temperature in the energy saving phase;
- cup-heater temperature;
- boiler pressure during the boost phase;
- duration of the boost phase.

To change the data, use the buttons **+** and **-**, or the display keyboard .


To switch from one page to another, select the key **1/2**.



## 8.5 Washes

This section allows to program the automatic cycle and management of the washes:

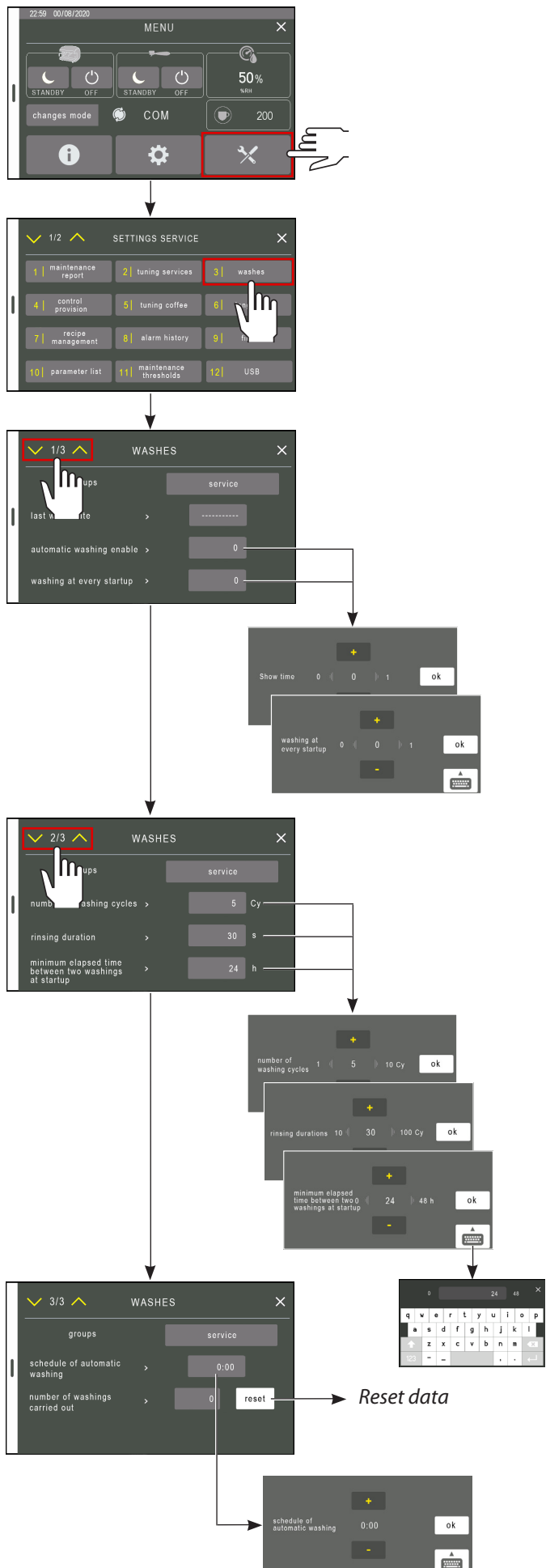
- date of last wash visualization;
- enabling the automatic wash
- enable wash at each start-up;
- wash cycles number configuration;
- wash duration configuration (min);
- rinse duration configuration (sec);
- setting the minimum interval between 2 washes (hours);
- setting the automatic wash time;
- display and reset of performed washes number.

To change the data, use the buttons **+** and **-**, or the display keyboard .

To switch from one page to another, select the key **✓ 1/2 ✓**.

0 = Disabled function

1 = Enabled function



## 8.6 Dispensing control

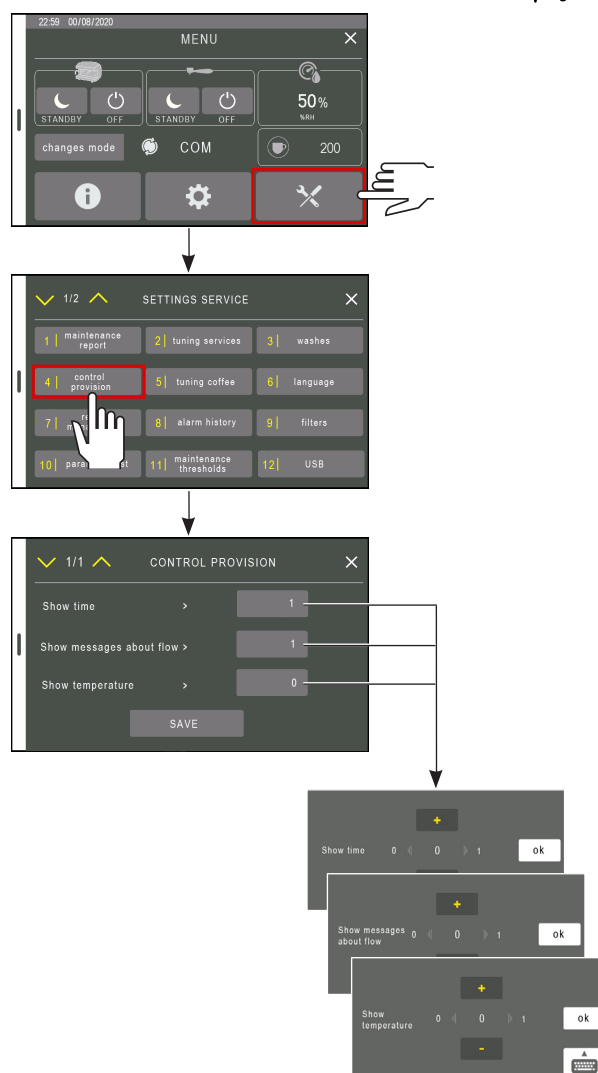
Program this section to view some information displayed during the dispensing of the doses:

- time visualization;
- flow visualization;
- temperature visualization.

Use the keys **+** and **-** to enable or disable the function.

0 = Disabled function


1 = Enabled function



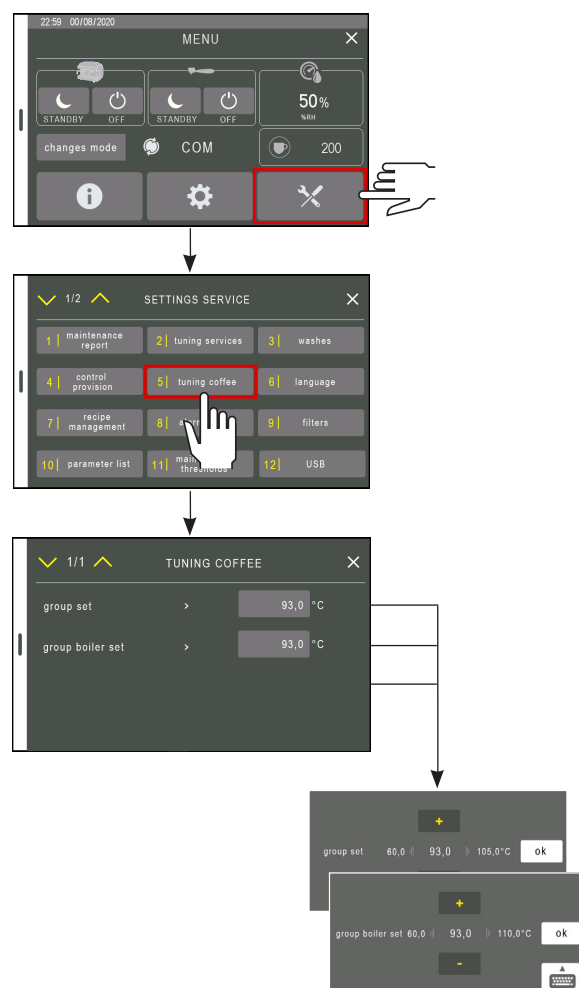
## 8.7 Coffee tuning

This section allows to set some parameters for coffee dispensing and, in particular:

- group temperature;
- group boiler temperature.

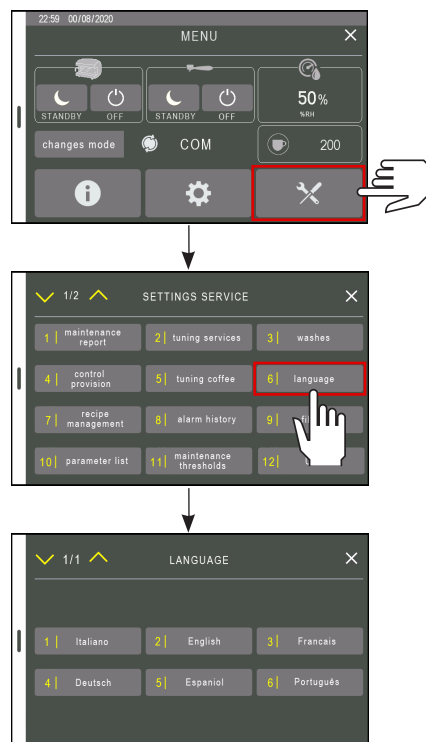
To change the data, use the buttons **+** and **-**, or the display keyboard .

Programming must be carried out for each group.



## 8.8 Language

This section allows to select the language displayed.  
To set the language, select the corresponding button.




## 8.9 Recipe management

This section allows to attach a name to each coffee blend and customize it as follows:

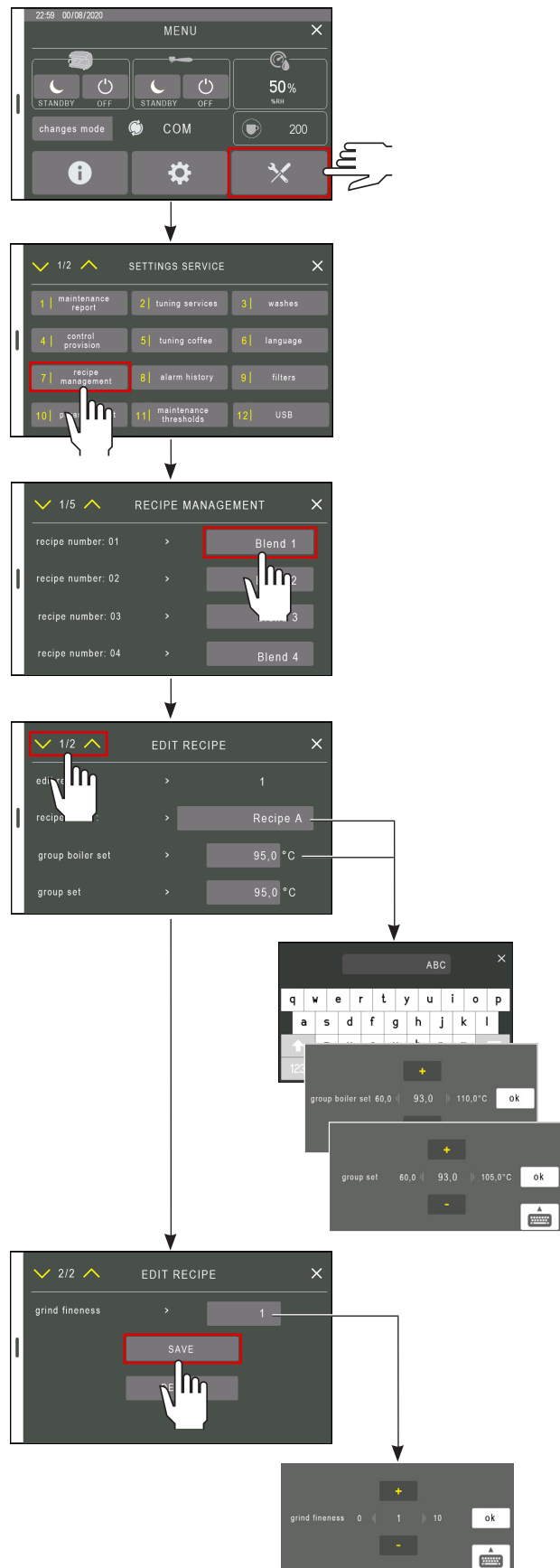
- blend name
- set group boiler
- set group
- grinding degree

This allows the user to select the desired blend any-time without changing any parameters.

To change the data, use the buttons **+** and **-**, or the display keyboard .

To switch from one page to another, select the key .

To confirm all the entered parameters, press the key **SAVE**.



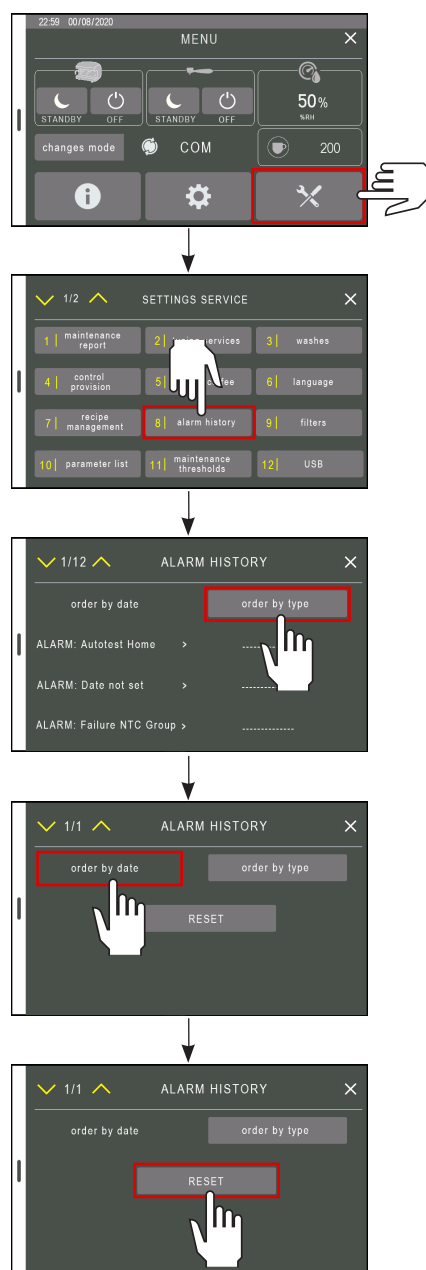


## 8.10 Alarm history

This section allows to check all the machine anomalies over time.

By selecting the button **order by date**, the system displays the list in chronological order by date; by selecting the key **order by type** the list is proposed by type of alarm.


To reset all data, press the key **RESET**.



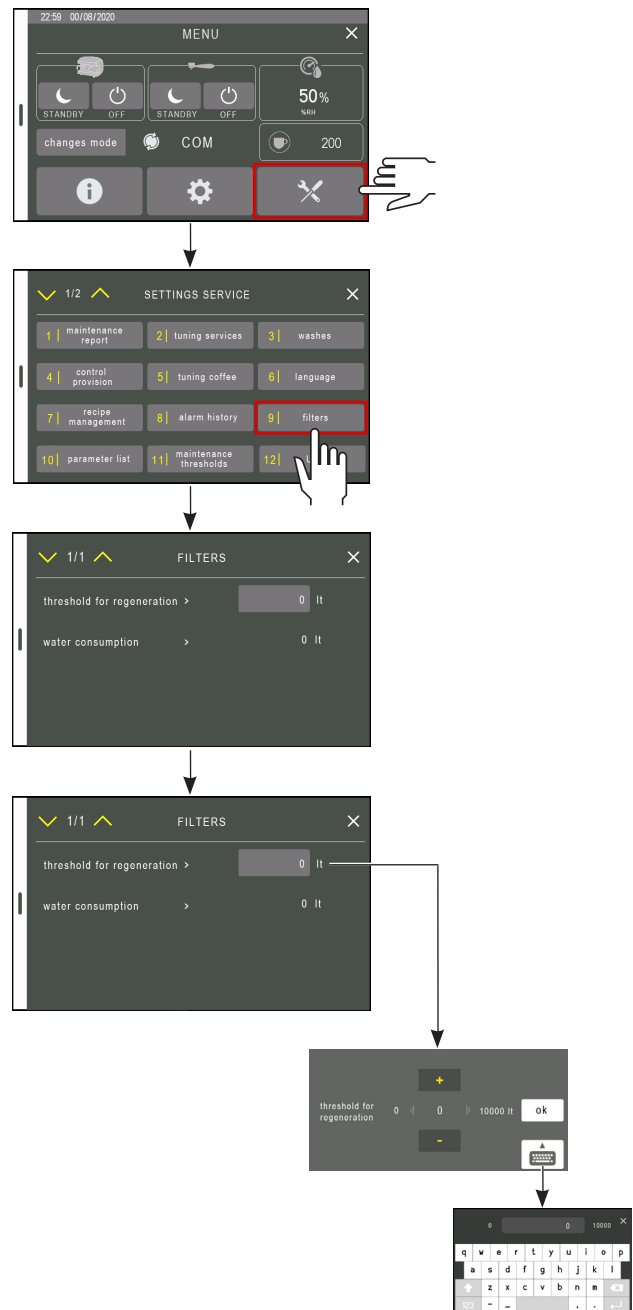
## 8.11 Filters

This section is dedicated to the management of water softeners and water filters. In particular, the system allows to:

- display the water consumption of the machine
- program the water replacement warning.


To set the value, use the buttons **+** and **-**, or the display keyboard .


Setting the value to zero, the warning system will not be active.



## 8.12 Parameter list

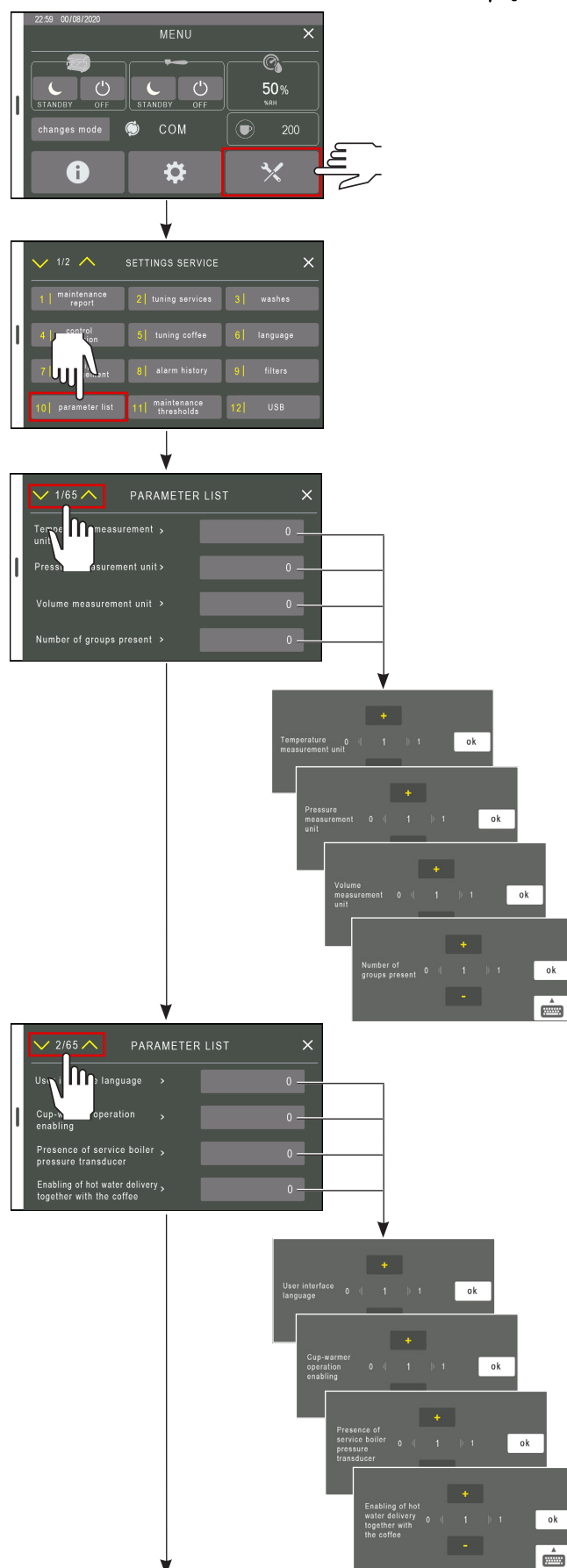
This section allows to program all the machine parameters.

To change the data, use the buttons **+** and **-**, or the display keyboard .

To switch from one page to another, select the key .




The complete list of parameters is given in chap. "18. PARAMETER TABLE" on page 69 .



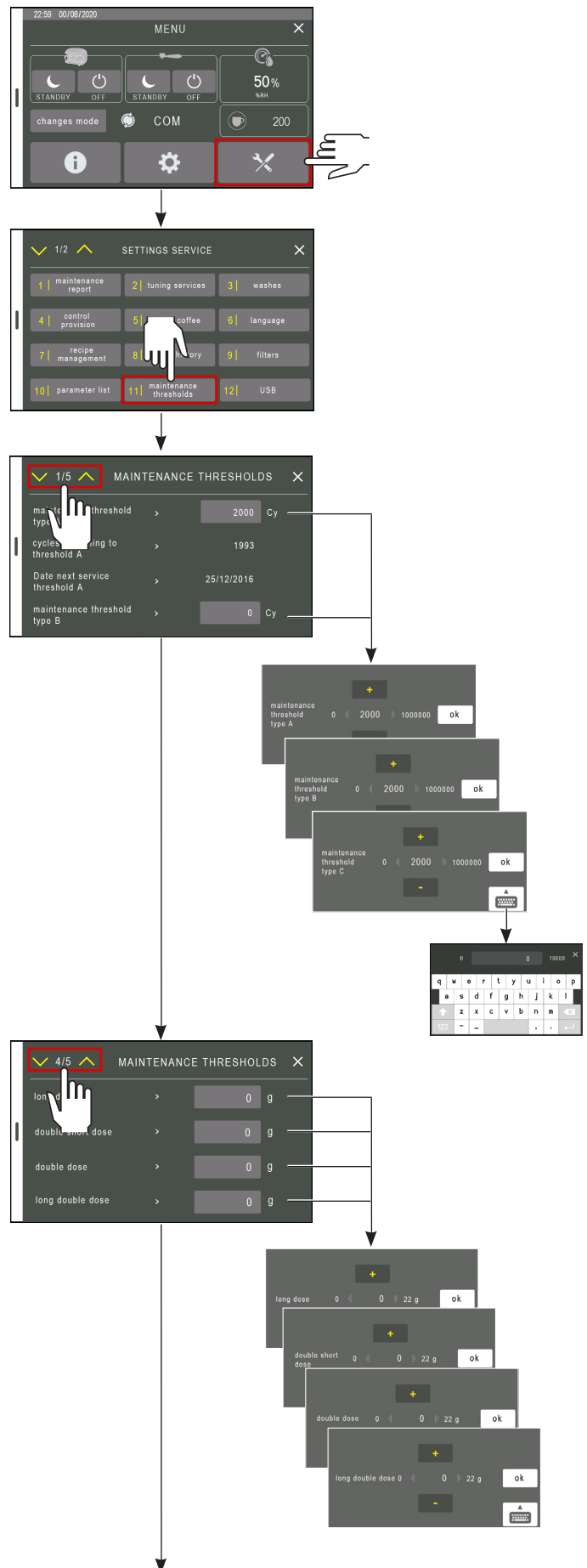
## 8.13 Maintenance thresholds

This section is dedicated to the management of the machine maintenance.

- maintenance threshold type A-B-C;
- display of missing cycles to threshold A-B-C;
- display of threshold A-B-C next maintenance date;
- days until maintenance;
- short-normal-long single doses (grams) configuration;
- short-normal-long double doses (grams) configuration;
- grinder threshold (kg);

To change the data, use the buttons **+** and **-**, or the display keyboard .

To switch from one page to another, select the key **1/2**.



## 8.14 USB

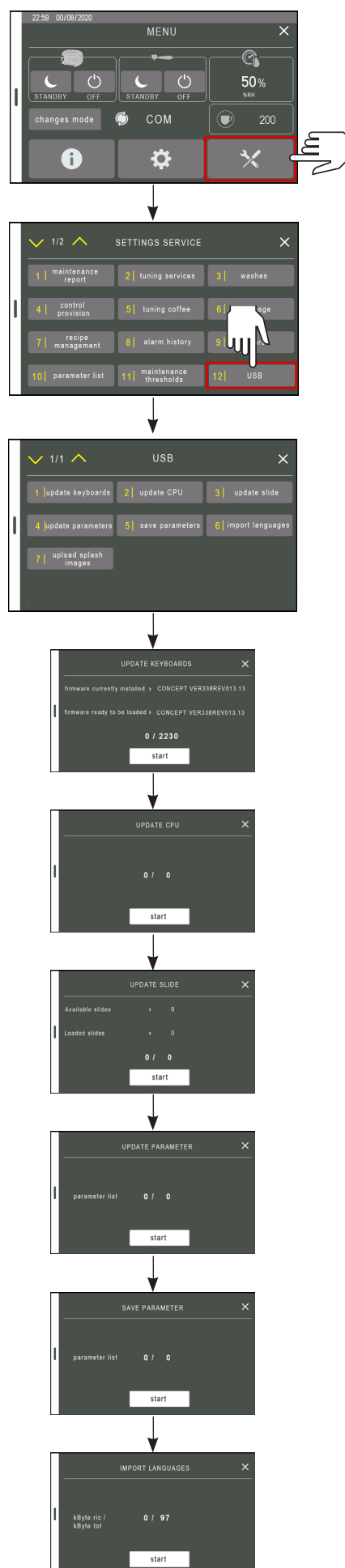
The USB allows to update the machine software and load useful data, in particular:

- updating the keyboards/display software;
- updating the control unit software;
- loading the slide;
- importing the parameters;
- saving the parameters;
- importing the languages.

Press  to perform the operation.



**Keyboard Software and Base Software versions are visible on the display as described in Chapter "7. MACHINE INFORMATION" on page 26.**

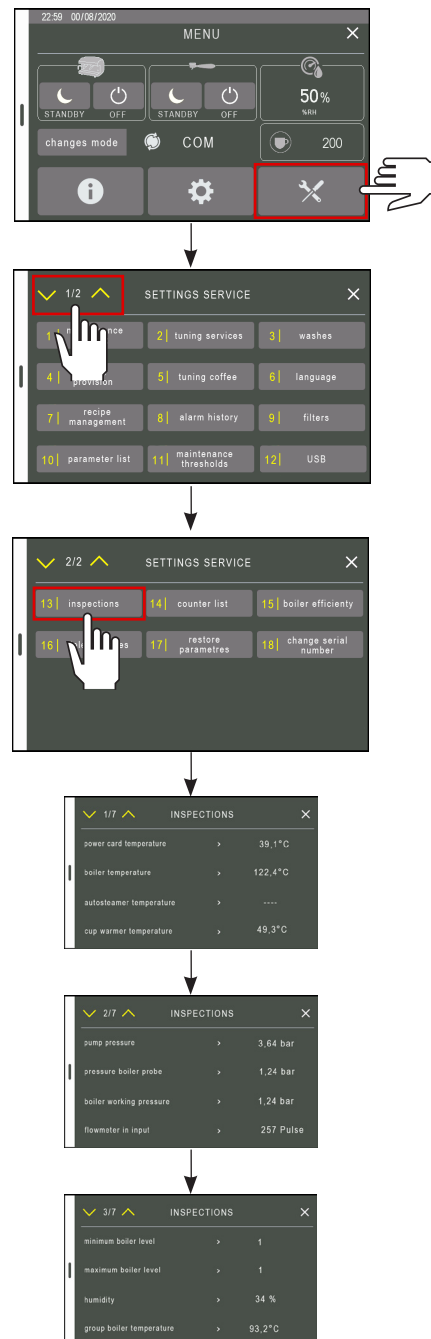


## 8.15 Inspections

This section allows to monitor all the machine operating data in real time, and in particular:

- control unit temperature;
- boiler temperature;
- Autosteamer temperature;
- cup-heater temperature;
- pump pressure;
- boiler pressure probe;
- boiler pressure;
- flow meter inlet;
- minimum level in the boiler;
- maximum level in the boiler;
- ambient humidity;
- group boiler temperature
- group temperature;
- group flow;
- group pressure-switch.

To switch from one page to another, select the key



## 8.16 Counters list

This section lists the count of all the deliveries, and in particular:

- partial number of single coffees dispensed since the previous reset, in the versions: short, normal, and long for each group;
- partial number of double coffees dispensed since the previous reset, in the versions: short, normal, and long for each group;
- total number of single coffees dispensed throughout the life of the machine, in the versions: short, normal, and long for each group;
- total number of double coffees dispensed throughout the life of the machine, in the versions: short, normal, and long for each group;
- partial number of tea doses dispensed since previous reset;
- total number of tea doses dispensed throughout the life of the machine
- total reset of all the partial counters.

To reset all the partial counters, select the button

**reset**.

For total reset of all the partial counts, press the button

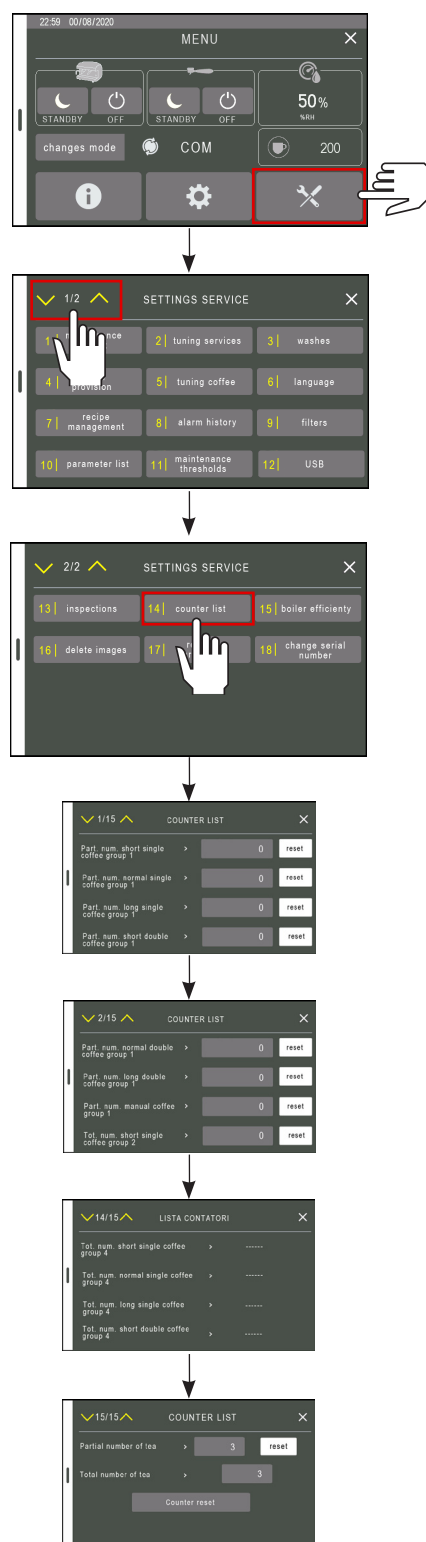
**Counter reset**.

To switch from one page to another, select the key

✓ 1/2 ^



**The total counters (life of the machine) cannot be reset.**



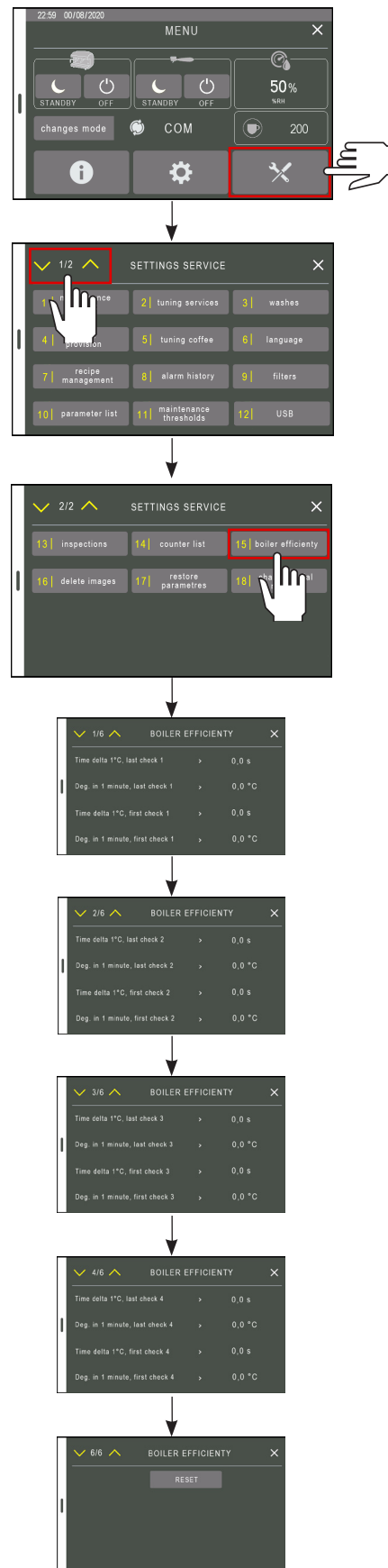
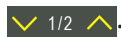
## 8.17 Boiler efficiency

This section allows to check the efficiency of the boilers. The comparison between the different parameters over time allows to assess the state of the boiler operation:

- for each group boiler: time necessary to raise the temperature by 1 °C - last measurement;
- for each group boiler: time necessary to raise the temperature by 1 °C - first measurement;
- for each group boiler: temperature raised in 1 minute - last measurement;
- for each group boiler: temperature raised in 1 minute - first measurement;
- for the services boiler: time necessary to raise the temperature by 1 °C - last measurement;
- for the services boiler: time necessary to raise the temperature by 1 °C - first measurement;
- for the services boiler: temperature raised in 1 minute - last measurement;
- for the services boiler: temperature raised in 1 minute - first measurement;

To reset the values to the factory defaults, select the button **RESET**.

To switch from one page to another, select the key



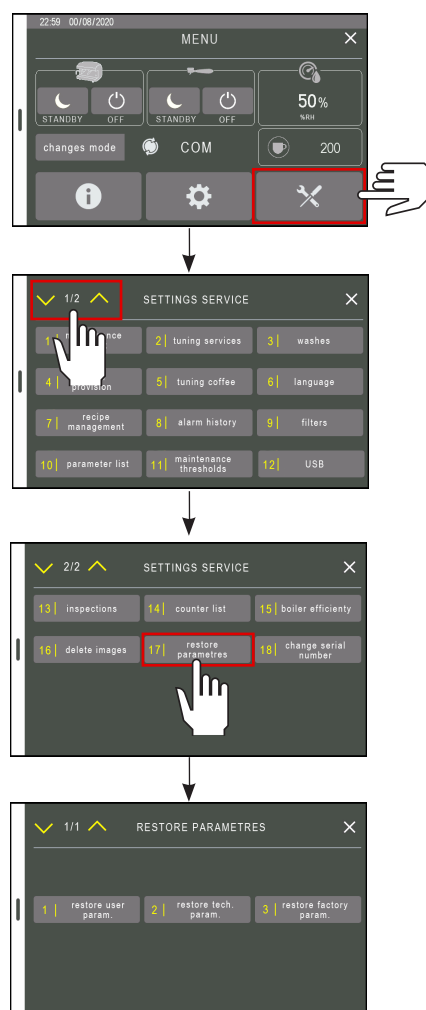


## 8.18 Parameter reset

This section allows to reset the initial programming data, and in particular:

- user parameter reset;
- technician parameter reset;
- manufacturer parameter reset;

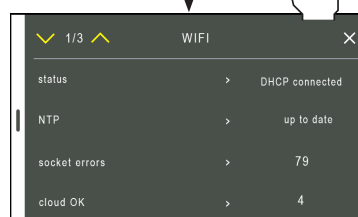
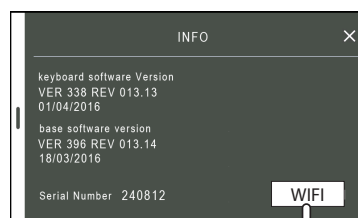
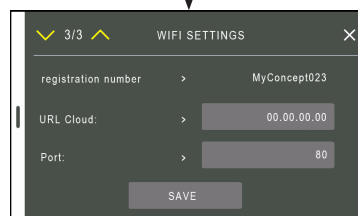
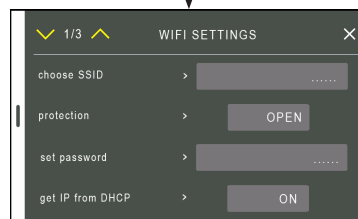
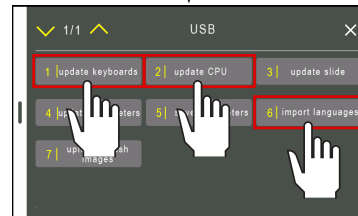
To start resetting, select the desired button.



## 9. WIFI CONNECTION

If the machine is provided with the WIFI service, you can make the connection as follows:

- check if the message **WIFI** that appears on bottom right of the display is inserted inside a white rectangle;
- otherwise, you will need to perform a software update via the USB stick by following the displayed commands sequence 1-2-6 and then 2;
- now check if the displayed message **WIFI** is inserted in a white rectangle;
- choose the WiFi network to connect through the "SSID choice" menu;
- choose the type of WiFi network protection through the "protection type" menu. The WiFi network can require password protection with different standards. Those supported by MyConcept are "open" (no protection), "WPA1" and "WPA2";
- if the WiFi network protection type is different from "OPEN", enter the WiFi network password in the "set password" field;
- the selected WiFi network might include a DHCP server that provides the machine's IP address. In this case in the "get IP from DHCP" field, select "ON", otherwise set to "OFF". In the latter case, you must manually configure the IP network using the fields:
  - "Set the IP address", to set the IP address;
  - "Set the subnet mask", to set the subnet mask;
  - "Set the gateway", to set the IP address of the network gateway;
- enter the IP address of a DNS server in the "Set DNS" menu (e.g.: 8.8.8.8);
- specify the cloudWegaConnects server the machine has to log in to by entering its IP address in the "Cloud URL" (e.g.: 52.17.80.13) and the port in the "Port" menu (e.g. 80);
- press "SAVE";
- check if the machine is connected. Record the number of the machine (e.g. My Concept 023);
- by accessing the INFO menu of the machine and selecting the button **WIFI** you can check the connection status. If the settings are correct, the status is "Connected".



# 10. MAINTENANCE AND CLEANING

## 10.1 Safety precautions




Perform only the maintenance and cleaning operations described in this manual.

If the problem cannot be solved, turn the machine off and contact the Manufacturer.

All maintenance operations must be carried out after disconnecting the power supply, water supply, and after the complete cooling of the machine.


After maintenance and/or repair intervention, the components used must ensure that the hygiene and safety requirements initially provided for the appliance are still met. These are met by using original spare parts only. After repair or replacement of components related to parts in direct contact with water and food, a washing procedure has to be carried out, as in the case of first installation.

The following residual risks are present during the maintenance and cleaning of the machine and cannot be eliminated:

	<p><b>Electrical hazard:</b></p> <p>The maintenance and cleaning operations are subject to the behavioral safety rules:</p> <ul style="list-style-type: none"> <li>• do not carry out the maintenance with the machine in operation;</li> <li>• do not soak the machine in water;</li> <li>• do not spill liquids on the machine or use water jets for cleaning;</li> <li>• do not allow the maintenance and cleaning operations to be carried out by children or incapacitated people;</li> <li>• do not perform maintenance and cleaning operations other than those described in this manual.</li> </ul>
	<p>Equipotential hazard</p>
	<p><b>Danger of high temperature:</b></p> <p>During the cleaning operations, pay attention to the parts of the machine that can become overheated.</p> <ul style="list-style-type: none"> <li>• avoid contact with the dispensing group and water spouts;</li> <li>• do not expose your hands or other body parts to the coffee, steam, or hot water spouts.</li> </ul>

## 10.2 DPI characteristics

During maintenance and cleaning of the machine, the following PPE are required:

	<p>Mandatory use of protective gloves</p>
---	---

## 10.3 Maintenance

### 10.3.1 Scheduled maintenance

Perform routine maintenance as reported in the table below.

In case of intensive use of the machine the checks need to be performed in smaller intervals. The following pages list the required operations.

Component	Type of intervention	Quarterly	Yearly
PRESSURE TRANSDUCER	<ul style="list-style-type: none"> <li>Keep the boiler pressure between 0.8 and 1.4 bar.</li> <li>Periodically check water pressure during coffee dispensing: check the pressure indicated on the display, which must be between 8 and 9 bar inclusive.</li> </ul>	X	
FILTERS and PORTAFILTERS	Check the condition of the filters. Check for any damage on the edge of the filters and check whether any coffee grounds settle in the coffee cup and replace filters and/or filter holders, as required.	X	
DISPENSING GROUP	Replace the perforated disk and under cup seal, as indicated in par. "10.3.4 Dispensing group maintenance" on page 50 .	X	
WATER FILTER	Replace the water filter cartridge at the frequency indicated by the manufacturer. The presence of scale in the hydraulic system indicates the need for its replacement.	X	
WATER SOFTENER	Carry out the regeneration as indicated by the manufacturer. Use care in areas where the water is very hard. It will be necessary to regenerate at more frequent intervals, especially in case of intensive use of the machine.	X	
GRINDER-DISPENSER	<ul style="list-style-type: none"> <li>Check the ground coffee dose (about 7 grams per time); check the degree of grinding. The grinders must always have sharp cutting edges. Their deterioration is indicated by the presence of too much powder in the grounds.</li> <li>You should replace the flat grinders after every 400/500 kg of coffee. For conical grinders, replace every 800/900 kg.</li> <li>If the automatic wear warning of the grinders is enabled, follow the guidelines in par."8.3 Maintenance report" on page 30 .</li> </ul>	X	
BOILER	Replace the water in the boiler as indicated in par. "6.6 Water replacement" on page 26 .	X	
BOILER	<ul style="list-style-type: none"> <li>Replace the heating element in case of failure or malfunctioning.</li> <li>Do not replace the heating element with a more powerful one. Before making any modifications, contact the Manufacturer.</li> <li>If the thermostat of the heating element is triggered, reset it by pressing the central button of the thermostat. However, before trying to operate the machine, verify the causes of the problem.</li> <li>If the boiler insulation needs to be removed, restore the insulation after maintenance</li> <li>Remove and clean the boiler level probes.</li> <li>Verify the presence of lime scale deposits on the heating element.</li> <li>A strong presence of limestone indicates that the water filter has not been replaced, or that the softener has not been regenerated.</li> <li>When replacing any components, always replace the relative gasket as well.</li> </ul>		X
SAFETY VALVE SCNR VALVE	Check that the safety valves and non-return drain valves are operating properly, as indicated in par. 10.3.5 on page 50 and 10.3.6 on page 50. If their replacement becomes necessary due to failure, repeat the check with the new valve installed.		X
HYDRAULIC CIRCUIT	<ul style="list-style-type: none"> <li>Verify the presence of lime scale deposits in the hydraulic circuit.</li> <li>When replacing any components, always replace the relative gasket as well.</li> <li>A strong presence of limestone in the hydraulic circuit of the machine indicates that the water filter has not been replaced, or that the softener has not been regenerated.</li> <li>Use care in areas where the water is very hard. It will be necessary to replace the water filter more frequently, or regenerate the softener at more frequent intervals, especially in case of intensive use of the machine.</li> </ul>		X

Component	Type of intervention	Quarterly	Yearly
DRAIN	<ul style="list-style-type: none"> <li>Check for any leaks on the hydraulic and sewer connections.</li> <li>Check the state of the drain pan and the drain connection tube.</li> </ul>		X
DISPENSING GROUP	Check the condition of the solenoid valve of the dispensing group.		X
WATER AND STEAM NOZZLES	Check the condition of the nozzles and clean the sprayer.		X
DISPENSER	Check and clean the volumetric dispenser by removing any oxidation from the terminals.		X
ELECTRIC SYSTEM	Check and clean the volumetric dispenser by removing any oxidation from the terminals.		X
TOUCH SCREEN	<ul style="list-style-type: none"> <li>Check the proper operation of the touch screen and possibly adjust the parameters.</li> <li>View the machine counts and check the performed work cycles.</li> </ul>		X
MOTOR PUMP	Check the proper operation of the motor pump and make the proper adjustments.		X



**Any action taken on the electronics of the machine when still connected to the power, automatically invalidates any guarantee.**



**On the internet site of the Manufacturer all original spare parts are available. The Manufacturer may provide the list of spare parts recommended for the maintenance of the various versions of the machine.**

### 10.3.2 Maintenance after a short period of inactivity

If the machine is inactive for more than one week, all the water contained in the hydraulic circuits must be replaced, as indicated in par. "6.6 Water replacement" on page 26.

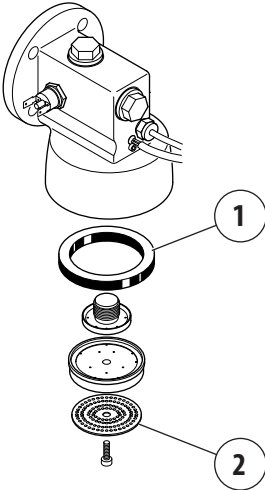
In addition, it is necessary to perform all the scheduled maintenance operations indicated in the above table.

### 10.3.3 Maintenance after a long period of inactivity

If the machine is inactive for more than one month, all the water contained in the hydraulic circuits must be replaced, as indicated in par. "6.6 Water replacement" on page 26, while the machine must be thoroughly checked.

### 10.3.4 Dispensing group maintenance

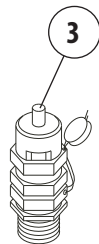
Every 3 months replace the perforated disk (2) and the under cup seal (1) of the dispensing group (use only original spare parts).



### 10.3.5 SAFETY VALVE check

The Pressure relief valve is one of the main components for the machine safety. Therefore, it is important to carry out the following checks:

- Remove the top grill of the machine;
- use pliers to pull the pin of the valve (3) upwards;
- if the pin does not move, it probably means the valve is encrusted with limestone and must be replaced.

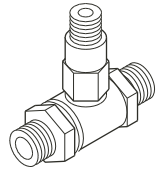


**If you notice any malfunction, replace the valve. Use only the Manufacturer's original Safety Valves.**

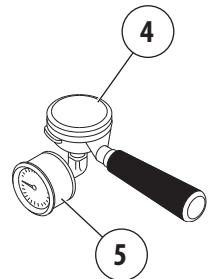
### 10.3.6 NON-RETURN DRAIN VALVE check

The not-return drain valve is an important component for the correct operation of the machine. Perform the check as follows:

- Activate the dispensing groups for about 30 seconds;
- attach a filter holder (4) with a gauge (available on request) to the dispensing group;
- activate the dispensing group, and use the pressure gauge (5), to monitor the pressure as it increases up to 8-9 bar;



- check the increase in the pressure due to the expansion of the heated water up to a value of approximately 12 bar: reaching this value confirms proper operation of the valve, as well as of the gaskets and solenoid valves seal;
- deactivate the deliveries;
- check the other dispensing groups.



**If you notice any malfunction, replace the valve.**

## 10.4 Water filter maintenance

### 10.4.1 Water hardness detection

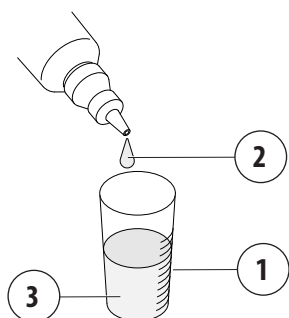
As part of the filter maintenance, it is advisable to test the water beforehand.

To identify the carbonate hardness of the water use the kit specified as follows:

1. Put 10 ml of water to be tested in the test tube (1);
2. add a drop of reagent (2) and mix;
3. proceed in the same way by counting the number of drops until the solution (3) changes color from Blue to Red

**1 DROP = 1°dKH**

**Example: 9 Drops ----> Carbonate hardness 9°dKH**



### 10.4.2 By-pass configuration

Depending on the hardness of the water, adjust the by-pass of the water filter as shown in the table below.  
Example:

Water hardness 9°dKH



By-pass 2 adjustment

Water hardness (°dKH)	Ad-justm. Bypass	Filter capacity (liters)			
		V	M	L	XL
4	3	6,250	9,500	13,000	17,000
5	3	5,000	7,600	10,400	13,600
6	3	4,165	6,330	8,665	11,330
7	3	3,570	5,425	7,425	9,710
8	2	3,125	4,750	6,500	8,500
9	2	2,775	4,220	5,775	7,555
10	2	2,500	3,800	5,200	6,800
12	1	1,865	2,835	3,885	5,080
14	1	1,600	2,430	3,330	4,355
16	0	1,185	1,800	2,465	3,220
20	0	945	1,440	1,970	2,575
24	0	790	1,200	1,640	2,145
≥ 25	0	≤ 755	≤ 1,150	≤ 1,575	≤ 2,060



The values indicated in the table may vary, depending on the filter cartridge type used.

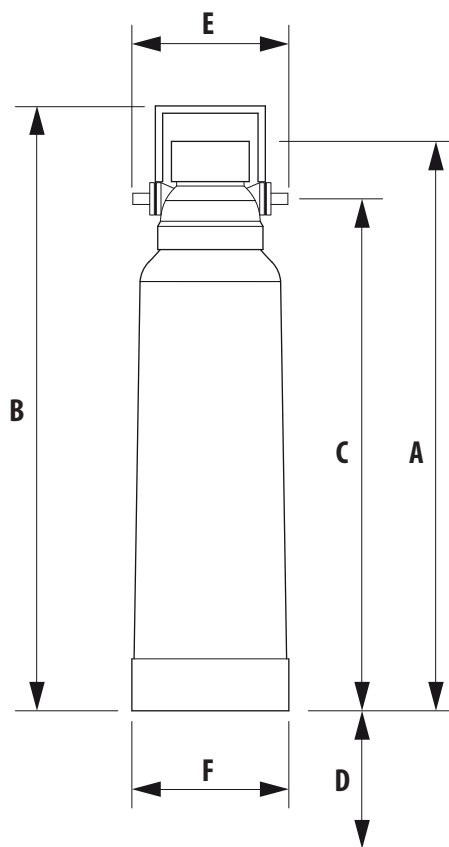
To adjust the by-pass, push the button (4) and turn.





## 10.4.3 Technical data

Model	V	M	L	XL
Connection type	3/8"	3/8"	3/8"	3/8"
Water supply pressure min.-max. (bar)	2-8	2-8	2-8	2-8
Water temperature min.-max. (°C)	4-30	4-30	4-30	4-30
Ambient temperature min.-max. (°C)	4-40	4-40	4-40	4-40
Total height (A) without bracket (mm)	420	475	500	500
Total height (B) with the bracket (mm)	445	500	530	530
Connection (C) height (mm)	370	425	450	450
Distance from the floor (D) (mm)	65	65	65	65
Filter head width (E) (mm)	125	125	125	125
Filter cartridge diameter (F) (mm)	115	130	145	145
Weight (kg) (empty/with water)	2.1/3.2	2.4/4.2	3.4/5.9	3.8/6.0



Replace the water filter cartridge at the frequency indicated by the manufacturer.



For the water filter use and maintenance, follow the indications by the manufacturer.

## 10.5 Softener regeneration

It is very important to regenerate the softener within the established times. The regeneration is to be done regularly every 15 days. However, in locations where water is very hard, it will be necessary to regenerate it more frequently. The same is true of places in which there is a large consumption of hot water for tea or other uses:

Proceed as follows:

- Move levers **(B)** and **(E)** from left to right;
- remove the lid by loosening the knob **(A)**;
- release enough water through the pipe **(C)** to make room for the amount of salt as required depending on the model (see table);
- clean any salt or resin residue from the gasket located on the lid;
- put the cover back in place by screwing the knob **(A)** down securely and move the lever **(B)** back from right to left;
- let the salt water drain from the little hose **(D)** until the water is no longer salty (about 30-60 minutes). The salt allows the accumulated mineral salts to be released;
- switch the lever **(E)** from right to left back to its initial position.



The build-up of lime scale in the hydraulic circuit and boiler inhibit thermal exchange, thus compromising proper operation of the machine. Heavy incrustations in the boiler may cause long machine shutdowns and in any case invalidate any guarantee, because this symptom indicates that regeneration has been neglected.

In order to keep the softener, and hence the machine, in perfect operating condition, it is necessary to regenerate it regularly, based on use of the softener and hardness of the water used. The table below shows the quantity of softened water based on the hardness of the water in the various units of measure:

- °f: French degree
- d°: German degree = 1.8 °f
- mg CaCO<sub>3</sub>

For further information on softener installation, start-up and regeneration, refer to the instruction manual.

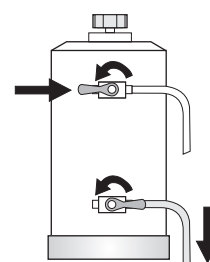
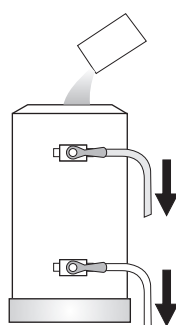
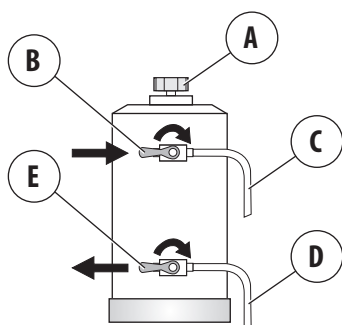
Amount of softened water based on hardness

°f	30	40	60	80	salt
°d	16.5	22	33	44	
mg CaCO <sub>3</sub>	30	40	60	80	
8 litres	1000 liters	900 liters	700 liters	500 liters	1.0 kg
12 litres	1500 liters	1350 liters	1050 liters	750 liters	1.5 kg
16 litres	2100 liters	1800 liters	1400 liters	1000 liters	2.0 kg

Softener model	Amount of salt
8 litres	1.0 kg
12 litres	1.5 kg
16 litres	2.0 kg



For the softener use and regeneration, follow the indications by the manufacturer.



## 10.6 Malfunctions and solutions

Problem	Cause	Action
MACHINE LACKING POWER	<ul style="list-style-type: none"> <li>The general switch is in the "OFF" position</li> <li>The machine switch is defective</li> <li>The mains power supply switch is in the OFF position.</li> <li>The wiring is defective</li> </ul>	<ul style="list-style-type: none"> <li>Place the main switch in the ON position.</li> <li>Replace the main switch.</li> <li>Place the main switch in the ON position.</li> <li>Check for any faulty connections.</li> </ul>
NO WATER IN BOILER	<ul style="list-style-type: none"> <li>The water supply tap is closed.</li> <li>The cut-off tap of the automatic level device is closed.</li> <li>The pump filter is clogged.</li> <li>The motor pump is disconnected or jammed.</li> <li>The water filling solenoid valve is defective.</li> <li>The water inlet solenoid valve filter is clogged.</li> </ul>	<ul style="list-style-type: none"> <li>Open the water supply tap.</li> <li>Open the automatic level device tap.</li> <li>Substitute the pump filter.</li> <li>Check the motor pump.</li> <li>Replace the water filling solenoid valve.</li> <li>Clean or replace the filter of the solenoid valve.</li> </ul>
TOO MUCH WATER IN THE BOILER	<ul style="list-style-type: none"> <li>The solenoid valve of the automatic level device is defective</li> <li>The level probe is out of order (clogged by lime scale)</li> </ul>	<ul style="list-style-type: none"> <li>Replace the solenoid valve of the automatic level device.</li> <li>Replace the level probe.</li> </ul>
WATER LEAKS FROM THE MACHINE	<ul style="list-style-type: none"> <li>The pad does not drain.</li> <li>The drain pipe is broken or detached or the water flow is obstructed.</li> <li>Hydraulic leaks in the hydraulic circuit.</li> </ul>	<ul style="list-style-type: none"> <li>Check the sewer drain.</li> <li>Check and restore the connection of the drain pipe to the pad.</li> <li>Restore the hydraulic seal by replacing the pipe, the gasket or the fitting as necessary.</li> </ul>
WATER LEAKS FROM THE DISPENSING GROUP	<ul style="list-style-type: none"> <li>Worn under cup seal</li> </ul>	<ul style="list-style-type: none"> <li>Replace the seal.</li> </ul>
THE DISPLAY INDICATES UNACCEPTABLE PRESSURE	<ul style="list-style-type: none"> <li>The display is faulty.</li> <li>Incorrect motor pump calibration.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the display.</li> <li>Adjust the calibration of the motor pump.</li> </ul>
THE SAFETY VALVE STARTED OPERATING	<ul style="list-style-type: none"> <li>The electronic control is faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Check for proper operation of the electronic system.</li> </ul>
STEAM DOES NOT COME OUT OF NOZZLES	<ul style="list-style-type: none"> <li>The machine is off.</li> <li>The electrical heating element is faulty.</li> <li>The temperature probe is faulty.</li> <li>The nozzle sprayer is clogged.</li> <li>Safety thermostat deactivated or faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Turn on the machine.</li> <li>Replace the boiler's electrical heating element.</li> <li>Replace the temperature probe.</li> <li>Clean the steam nozzle sprayer.</li> <li>Reactivate the thermostat or replace it.</li> </ul>
STEAM MIXED WITH WATER COMES OUT OF THE STEAM SPOUTS	<ul style="list-style-type: none"> <li>The level of the boiler is too high due to an incorrect location of the level probe in the boiler or due to the presence of limestone.</li> <li>Leakage from boiler filling solenoid valve.</li> </ul>	<ul style="list-style-type: none"> <li>Check the status of the level probe: check if it is positioned correctly and check for any surface lime scale.</li> <li>Clean and replace the filling solenoid valve.</li> </ul>
NO COFFEE DISPENSING	<ul style="list-style-type: none"> <li>No water supply.</li> <li>The group solenoid valve is faulty.</li> <li>The pump is jammed.</li> <li>The group solenoid valve is clogged or dirty.</li> <li>The group filter is clogged.</li> <li>The volumetric dispenser is blocked.</li> <li>The inlet and outlet taps of the dispenser are closed.</li> <li>The output JET of the volumetric dispenser is dirty.</li> </ul>	<ul style="list-style-type: none"> <li>Check that there is water in the mains.</li> <li>Replace the group solenoid valve.</li> <li>Replace the pump.</li> <li>Clean or replace the solenoid valve.</li> <li>Clean or replace the filter.</li> <li>Check/replace the dispenser.</li> <li>Open the taps.</li> <li>Clean or replace the jet.</li> </ul>
WET COFFEE GROUNDS	<ul style="list-style-type: none"> <li>The group solenoid valve drain is clogged.</li> <li>The dispensing group is too cold</li> <li>Coffee is ground too finely.</li> <li>There's not enough ground coffee.</li> </ul>	<ul style="list-style-type: none"> <li>Clean the group drain.</li> <li>Wait for unit to heat up completely.</li> <li>Adjust the grinding of the coffee.</li> <li>Increase the amount of ground coffee.</li> </ul>
GROUNDS IN CUP	<ul style="list-style-type: none"> <li>The filter holder is dirty.</li> <li>The filter holes are worn.</li> <li>The coffee is not ground evenly.</li> <li>The seal under the pad is worn</li> <li>The pressure in the pump is too high.</li> </ul>	<ul style="list-style-type: none"> <li>Clean the filter holder.</li> <li>Replace the filter.</li> <li>Replace the grinders.</li> <li>Replace the seal.</li> <li>Adjust the pressure of the pump</li> </ul>
THE CUP IS DIRTY WITH SPLASHED COFFEE	<ul style="list-style-type: none"> <li>Steam pockets in the dispensing system.</li> <li>Air pockets in the hydraulic circuit.</li> <li>Coffee is ground too coarsely</li> </ul>	<ul style="list-style-type: none"> <li>Reduce the water temperature.</li> <li>Check the cause and eliminate the problem.</li> <li>Adjust the grinding suitably.</li> </ul>

Problem	Cause	Action
COFFEE IS TOO COLD	<ul style="list-style-type: none"> <li>The electrical heating element of the coffee boiler is faulty.</li> <li>The wiring is faulty.</li> <li>Lime scale on the heating element.</li> <li>The heating element protection thermostat intervened.</li> <li>Lime scale has reduced the circulation of water.</li> <li>The dispensing group is cold.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the boiler's electrical heating element.</li> <li>Check for any faulty connections.</li> <li>Clean the machine.</li> <li>Reset the heating element protection.</li> <li>Clean the connections of the exchanger, and clean or replace the two circulation tubes</li> <li>Eliminate air pockets in the hydraulic circuit in the following manner:               <ul style="list-style-type: none"> <li>disconnect the pump from the power supply;</li> <li>close the water tap of the softener;</li> <li>perform a dry dispensing run for a few minutes;</li> <li>connect the pump to the power supply;</li> <li>open the water outlet tap of the softener;</li> <li>dispense until water comes out;</li> <li>wait a few minutes for heating.</li> </ul> </li> </ul>
COFFEE IS TOO HOT	<ul style="list-style-type: none"> <li>Boiler temperature is too high.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce the pressure in the boiler.</li> </ul>
COFFEE IS BEING DISPENSED TOO QUICKLY	<ul style="list-style-type: none"> <li>Coffee is ground too coarsely</li> <li>The diameter of the injector is too large.</li> <li>The dose of ground coffee is too small.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the grinding of the coffee.</li> <li>Replace the injector with one of a smaller diameter.</li> <li>Check the amount (grams) of the ground coffee you are using.</li> </ul>
COFFEE IS BEING DISPENSED TOO SLOWLY	<ul style="list-style-type: none"> <li>Coffee is ground too finely.</li> <li>The injector is clogged.</li> <li>The dispensing group is clogged.</li> <li>The filter holder is dirty.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the grinding of the coffee.</li> <li>Replace the injector.</li> <li>Check and clean the dispensing group.</li> <li>Clean and replace the filters, if necessary.</li> </ul>
SHUTDOWN OF THE ELECTRONIC SYSTEM	<ul style="list-style-type: none"> <li>The control unit fuse is burned out.</li> <li>One of the volumetric dispenser's contacts is grounded.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the main fuse.</li> <li>Check the connection of the volumetric dispenser.</li> </ul>
COFFEE DISPENSING IS NOT CONFORMANT  THE COFFEE DOSE IS NOT MET	<ul style="list-style-type: none"> <li>The connection of the volumetric dispenser is faulty.</li> <li>The connection of the electronic control unit is faulty.</li> <li>The connector of the volumetric dispenser has humidity on it.</li> <li>The volumetric dispenser is faulty: the LED does not flash during dispensing.</li> <li>The coffee is ground too finely: there is not sufficient water flow in the dispenser.</li> <li>The non-return valve loses pressure (the dose is too small).</li> <li>The expansion valves lose pressure (the dose is too small).</li> <li>Water leakage from the group solenoid valve during coffee dispensing or when in stand-by.</li> <li>The volumetric dispenser is partially obstructed.</li> </ul>	<ul style="list-style-type: none"> <li>Check for proper connection of the volumetric dispenser connector.</li> <li>Check for proper connection of the electronic control unit connector.</li> <li>Remove the connector of the volumetric dispenser and thoroughly dry the contacts.</li> <li>Replace the heads of the volumetric dispenser or replace the dispenser.</li> <li>Adjust the grinding suitably and check the grinders, if necessary.</li> <li>Check and replace the non-return valve, if necessary.</li> <li>Check and replace the expansion valves, if necessary.</li> <li>Clean and replace the solenoid valve, if necessary.</li> <li>Clean or replace the volumetric dispenser.</li> </ul>
NON-UNIFORM MILK DISPENSING FROM THE CAPPUCCINO MAKER	<ul style="list-style-type: none"> <li>Out of milk</li> <li>Milk injector obstructed.</li> <li>Cappuccino maker obstructed.</li> <li>Suction pipe clogged.</li> <li>Silicone tube detached.</li> </ul>	<ul style="list-style-type: none"> <li>Refill milk.</li> <li>Clean the milk injector.</li> <li>Clean the cappuccino maker.</li> <li>Clean the milk suction hose.</li> <li>Connect the hose correctly.</li> </ul>
AIR POCKETS IN THE MILK FOAM FROM THE CAPPUCCINO MAKER	<ul style="list-style-type: none"> <li>Air regulator too open.</li> <li>Air aspiration tube disconnected from the cappuccino maker.</li> </ul>	<ul style="list-style-type: none"> <li>Properly calibrate the air regulator.</li> <li>Restore the connection through the hose.</li> </ul>



**If the problem cannot be solved, turn the machine off and contact the Manufacturer.**

## 10.7 Cleaning operations

### 10.7.1 General instructions

For perfect hygiene and efficiency of the unit, a few simple cleaning tasks are required. The indications given here are applicable for normal use of the coffee machine. If the machine is used continuously, then cleaning should be performed more frequently.



**Do not use alkaline detergents, solvents, alcohol or aggressive substances. The used products/detergents have to be suitable for this purpose and must not corrode the materials of the hydraulic circuits.**

**Do not use abrasive detergents which may scratch the surface of the body.**

**Always use perfectly clean and hygienic cloths for cleaning.**

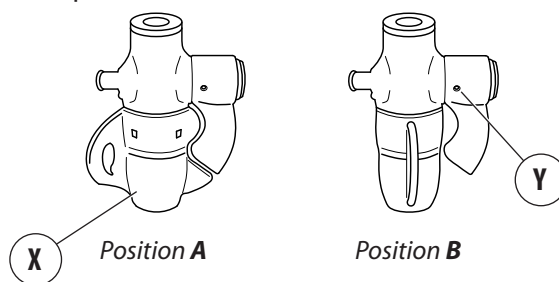
**For washing the filters, filter holders and all machine components, use detergents supplied by the Manufacturer or specific products for cleaning professional coffee machines.**

Cleaning	Daily	Weekly
<b>Cappuccino maker:</b> Clean at least once a day or more often in the case of a continued use of the cappuccino maker, following the instructions of par. 10.7.2.	X	
<b>Body and Grilles:</b> Clean the panels of the body with a cloth dampened in lukewarm water. Remove the drip tray and cup holder grille and wash with hot water.	X	
<b>Filter and filter holder:</b> Wash the filters and filter holders daily and weekly, as indicated in par. 10.7.3.	X	X
<b>Steam nozzle/Autosteamer:</b> Keep the nozzle clean at all times using a cloth dampened in lukewarm water. Check and clean the terminals of the nozzle, clearing out the steam outlet holes with a small needle. Daily wash as described in par. 10.7.7.	X	X
<b>Dispensing group:</b> Wash the dispensing group as described in par. 10.7.4, 10.7.5, 10.7.6.	X	X
<b>Grinder-dispenser and Hopper</b> Clean the hopper and the dispenser inside and out with a cloth dampened with warm water. When finished, dry all parts thoroughly.		X

### 10.7.2 Cappuccino-maker wash

Use special care in cleaning the cappuccino maker, following the procedures indicated below:

- perform a first wash by immersing the suction tube in water and dispense for a few seconds;
- turn the rotating body (X) 90° to position B (closure of milk outlet duct);
- holding the milk suction tube in the air, dispense steam (cappuccino maker dry run);
- wait about 20 seconds to allow for internal cleaning and sterilisation of the cappuccino maker;
- close the steam and put the rotating body back in position A;
- if the air intake hole (Y) is blocked, clear it gently with a pin.



**Clean the cappuccino maker after each continuous use and at least once a day.**

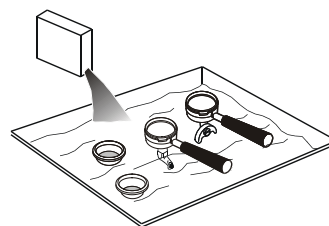
### 10.7.3 Filter and filter-holder cleaning

Daily:

- Soak the filter and filter-holder in hot water so that the fatty coffee deposits can dissolve;
- rinse with lukewarm water.

Weekly:

- Use a screwdriver to detach the filter from the filter holder;
- Soak the filter and filter holder in warm water and cleaning agent for 10 minutes.
- rinse with lukewarm water.



**Caution: Only immerse the filter holder cup, avoid soaking the handle in water.**

**The detergent must be diluted in cold water in the doses indicated on the package (see manufacturer).**





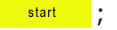

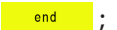
### 10.7.4 Dispensing group scheduled wash

If provided, the machine automatically requests that the daily washing of the dispensing groups be carried out.

To start the washing, proceed as shown on the display. You can always cancel the washing request and resume the normal work.

### 10.7.5 Dispensing group manual wash

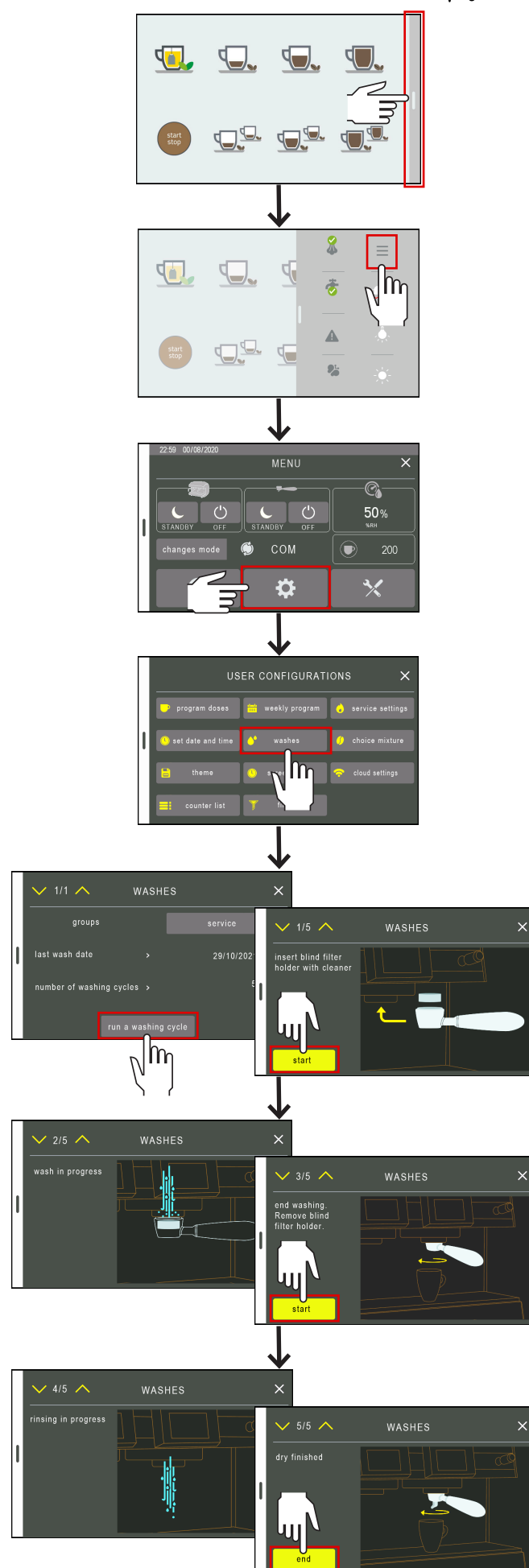
If desired, it is possible to perform the washing of the groups at any time, proceeding in the following way:

- select the bar on the right side of the display;
- press the menu key ;
- select the configuration key ;
- press the  washes key;
- the display will indicate the date of the last washing and the number of washing cycles;
- to start the washing, press the key .
- insert the special detergent in the blind filter holder, fix it to the dispensing group and press ;
- wait for the washing to be performed and then remove the filter holder from the dispensing group and press .
- after the rinse, hook the filter holder of the dispensing group and press .



**During the washing stage, all coffee selections of that group are disabled.**

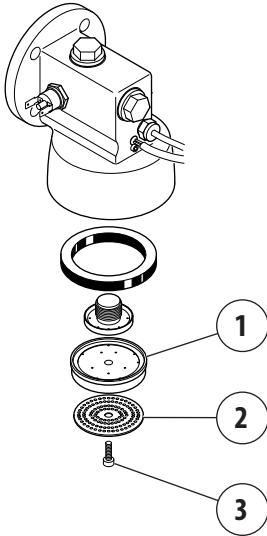
**If washing is interrupted due to machine shutdown, the washing will be reactivated automatically at restart.**



### 10.7.6 Perforated disk and containment ring cleaning

Weekly perform the cleaning of the Perforated disk and containment ring in the following way:

- Loosen the screw (3);
- remove the perforated disk (2) and the containment ring (1);
- carefully wash the two components with hot water;
- replace perforated disk and containment ring to its original position by locking everything with the screw.



## 11. SPARE PARTS

For the replacement of components and/or parts of the machine, refer to the official documentation provided by the Manufacturer.



On the internet site of the Manufacturer all original spare parts are available. The Manufacturer may provide the list of spare parts recommended for the maintenance of the various versions of the machine.

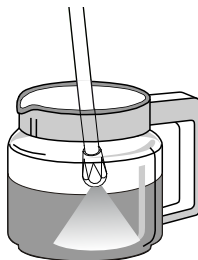


In case of use of parts that are not original, the safety of the machine cannot be guaranteed.  
The Manufacturer reserves the right to void the machine warranty.

### 10.7.7 Steam nozzle/Autosteamer cleaning

Daily perform the cleaning of the Perforated disk and containment ring in the following way:

- Immerse the spout in a jug with water and a specific detergent according to manufacturer's instructions;
- heat the solution with the steam of the spout;
- let the spout cool off keeping it immersed in the solution for at least 5 minutes to allow the detergent to rise inside the spout by cooling effect;
- repeat the operation 2 or 3 times until milk is delivered.





## 12. DISPLAY INDICATIONS

Code	Indication	Cause	Action
A001	ALARM: Initial self-test	<ul style="list-style-type: none"> <li>Negative initialization cycle.</li> </ul>	<ul style="list-style-type: none"> <li>Check the number of groups configured on the machine.</li> <li>Switch the machine off and back on..</li> </ul>
A002	ALARM: date not set	<ul style="list-style-type: none"> <li>No date and time.</li> </ul>	<ul style="list-style-type: none"> <li>Set the Date and Time.</li> </ul>
A003	ALARM: NCT sensor failure on the card.	<ul style="list-style-type: none"> <li>NTC card defective or open.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the machine off and back on again.</li> <li>If necessary, replace the card.</li> </ul>
A004	ALARM: Steam boiler NTC probe failure	<ul style="list-style-type: none"> <li>Services boiler temperature probe disconnected or faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Check for proper connection of the services boiler probe.</li> <li>If necessary, replace the probe.</li> </ul>
A005	ALARM: Cup-warmer NTC probe failure	<ul style="list-style-type: none"> <li>Cup heater temperature probe disconnected.</li> <li>Temperature probe in short circuit.</li> <li>Cup heater overtemperature.</li> </ul>	<ul style="list-style-type: none"> <li>Check for proper connection of the cup heater probe.</li> <li>If necessary, replace the probe.</li> </ul>
A006	ALARM: Autosteamer NTC probe failure	<ul style="list-style-type: none"> <li>Autosteamer temperature probe disconnected.</li> <li>Autosteamer probe in short circuit.</li> <li>Autosteamer probe overtemperature.</li> </ul>	<ul style="list-style-type: none"> <li>Check for proper connection of the Autosteamer probe.</li> <li>If necessary, replace the probe.</li> </ul>
A007	ALARM: Card overheating warning	<ul style="list-style-type: none"> <li>Card above the warning temperature.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the machine off and wait a few minutes.</li> </ul>
A008	ALARM: Card overheating	<ul style="list-style-type: none"> <li>Card above the safety temperature.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the machine off and wait a few minutes.</li> </ul>
A009	ALARM: Inlet dispenser;	<ul style="list-style-type: none"> <li>Volumetric dispenser does not measure the water. 6 seconds have elapsed since the last pulse received by the dispenser.</li> </ul>	<ul style="list-style-type: none"> <li>Check connection on the volumetric dispenser.</li> <li>Check that there is actually water in the mains water supply.</li> <li>Check pump filter / volumetric dispenser filter.</li> <li>Check the 1 mm group output JET.</li> <li>Check the output JET of the 0.5 mm. volumetric dispenser.</li> </ul>
A010	ALARM: Steam boiler heating timeout	<ul style="list-style-type: none"> <li>Services boiler heat circuit disconnected.</li> <li>Safety thermostat open.</li> <li>Fuse F9 burned out.</li> <li>Faulty static relays.</li> </ul>	<ul style="list-style-type: none"> <li>Check services boiler heat circuit, if necessary replace burned out parts.</li> </ul>
A011	ALARM: Steam boiler safety level	<ul style="list-style-type: none"> <li>The water in the services boiler has dropped below the minimum level.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the machine off and back on again.</li> <li>Check that the probe is not dirty with lime-stone.</li> <li>Check for correct connection of the minimum level probe.</li> <li>Check for the smooth passage of water in the boiler.</li> </ul>
A012	ALARM: Initial steam boiler filling timeout	First installation: <ul style="list-style-type: none"> <li>The services boiler has not completed filling in the maximum time (255 seconds).</li> <li>The level probe does not detect the presence of water.</li> </ul>	Check services boiler water filling hydraulic circuit: <ul style="list-style-type: none"> <li>Switch the machine off and back on again.</li> <li>Check that there is actually water in the mains water supply.</li> <li>Check filling solenoid valve / pump filter</li> <li>Check fuse F1 of the control unit.</li> </ul>
A013	ALARM: Steam boiler filling timeout	During operation: <ul style="list-style-type: none"> <li>The services boiler has not completed the filling in the maximum time (45 seconds).</li> </ul>	Check services boiler water filling hydraulic circuit: <ul style="list-style-type: none"> <li>Switch the machine off and back on again.</li> <li>Check that there is actually water in the mains water supply.</li> <li>Check filling solenoid valve / pump filter</li> <li>Check fuse F1 of the control unit.</li> </ul>

Code	Indication	Cause	Action
A014	ALARM: Initial coffee boiler filling timeout	<ul style="list-style-type: none"> <li>The coffee boiler has not reached the filling pressure in the maximum time (90 seconds).</li> </ul>	Check hydraulic circuit of the coffee boiler: <ul style="list-style-type: none"> <li>Check that there is actually water in the mains water supply.</li> <li>Check solenoid valve / pump filter</li> <li>Check volumetric dispenser (filter input / 0.5 mm output JET output).</li> </ul>
A015	ALARM: Inconsistent water levels	<ul style="list-style-type: none"> <li>Boiler level probes detection error.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the machine off and back on again.</li> <li>Check the level and safety probe.</li> </ul>
A016	ALARM: Cash register serial Time-out	<ul style="list-style-type: none"> <li>Broken communication with the cash register.</li> </ul>	<ul style="list-style-type: none"> <li>Check the connection with the cash register.</li> </ul>
A017	ALARM: Services boiler pressure probe failure	<ul style="list-style-type: none"> <li>Services boiler temperature probe disconnected or faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Check for proper connection of the services boiler probe.</li> <li>If necessary, replace the probe.</li> </ul>
A033	ALARM: Group NTC probe failure	<ul style="list-style-type: none"> <li>Group temperature probe disconnected or faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Check the probe connection.</li> <li>If necessary, replace the probe.</li> </ul>
A034	ALARM: Group boiler NTC probe failure	<ul style="list-style-type: none"> <li>Coffee boiler temperature probe disconnected or faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Check the temperature probe connection.</li> <li>If necessary, replace the probe.</li> </ul>
A035	ALARM: Group pre-heating timeout	<ul style="list-style-type: none"> <li>Disconnected group heat circuit.</li> <li>Group heating element interrupted.</li> <li>Safety thermostat open.</li> <li>Fuse F6- F8 burned out.</li> </ul>	<ul style="list-style-type: none"> <li>Check group heat circuit: group heating element; safety thermostat, fuse and triac in the control unit; main switch; connection of the phases for 380 V version.</li> <li>If necessary replace the faulty components.</li> </ul>
A036	ALARM: Group heating timeout	<ul style="list-style-type: none"> <li>Disconnected group heat circuit.</li> <li>Group heating element interrupted.</li> <li>Safety thermostat open.</li> <li>Fuse F6- F8 burned out.</li> </ul>	<ul style="list-style-type: none"> <li>Check group heat circuit: group heating element; safety thermostat, fuse and triac in the control unit; main switch; connection of the phases for 380 V version.</li> <li>If necessary replace the faulty components.</li> </ul>
A037	ALARM: Group boiler pre-heating timeout	<ul style="list-style-type: none"> <li>Group water boiler heat circuit disconnected.</li> <li>Group water boiler coil interrupted.</li> <li>Safety thermostat open.</li> <li>Fuse F2 - F3 - F4 - F5 burned out.</li> </ul>	<ul style="list-style-type: none"> <li>Check group water boiler heating: heating element; safety thermostat, fuses and triac in the control unit; main switch; connection of the phases for 380V version.</li> <li>If necessary replace the faulty components.</li> </ul>
A038	ALARM: Group boiler heating timeout	<ul style="list-style-type: none"> <li>Group water boiler heat circuit disconnected.</li> <li>Group water boiler coil interrupted.</li> <li>Safety thermostat open.</li> <li>Fuse F2 - F3 - F4 - F5 burned out.</li> </ul>	<ul style="list-style-type: none"> <li>Check group water boiler heating: heating element; safety thermostat, fuses and triac in the control unit; main switch; connection of the phases for 380V version.</li> <li>If necessary replace the faulty components.</li> </ul>
A039	ALARM: Group dispenser	<ul style="list-style-type: none"> <li>Volumetric dispenser does not measure the water. 6 seconds have elapsed since the last pulse received by the dispenser.</li> </ul>	<ul style="list-style-type: none"> <li>Check connection on the volumetric dispenser.</li> <li>Check that there is actually water in the mains water supply.</li> <li>Check pump filter / volumetric dispenser filter.</li> <li>Check the 1 mm group output JET.</li> <li>Check the output JET of the 0.5 mm. volumetric dispenser.</li> </ul>
A040	ALARM: Group low pressure group warning	<ul style="list-style-type: none"> <li>The dose was not reached in 90 seconds.</li> </ul>	<ul style="list-style-type: none"> <li>Check the dose.</li> <li>Check for proper operation of the dispenser.</li> <li>Check the grind and the dose.</li> </ul>
A041	ALARM: Group low pressure	<ul style="list-style-type: none"> <li>The dose was not reached in 90 seconds.</li> </ul>	<ul style="list-style-type: none"> <li>Check the dose.</li> <li>Check for proper operation of the dispenser.</li> <li>Check the grind and the dose.</li> </ul>
A042	ALARM: Group water empty warning	<ul style="list-style-type: none"> <li>The pressure has fallen below 2 bar in the coffee boiler.</li> </ul>	<ul style="list-style-type: none"> <li>Wait for the boiler to automatically fill the water.</li> <li>Check that there is actually water in the mains water supply.</li> <li>Check solenoid valve / pump filter</li> <li>Check volumetric dispenser (filter input / 0.5 mm output JET output).</li> </ul>

Code	Indication	Cause	Action
A043	ALARM: Group water empty	<ul style="list-style-type: none"> <li>No water in the coffee boiler.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the machine off and back on again.</li> <li>Check that there is actually water in the mains water supply.</li> <li>Check solenoid valve / pump filter</li> <li>Check volumetric dispenser (filter input / 0.5 mm output JET output).</li> </ul>
A044	ALARM: Group base-keyboard communication timeout	<ul style="list-style-type: none"> <li>Communication error</li> </ul>	<ul style="list-style-type: none"> <li>Check the number of groups configured on the machine.</li> <li>Power cycle the machine (while not being updated).</li> </ul>
M065	ALARM: Dispensing too fast	<ul style="list-style-type: none"> <li>The machine is dispensing coffee too quickly.</li> </ul>	<ul style="list-style-type: none"> <li>Check the grind and the dose.</li> </ul>
M066	ALARM: dispensing too slow	<ul style="list-style-type: none"> <li>The machine is dispensing coffee too slowly.</li> </ul>	<ul style="list-style-type: none"> <li>Check the grind and the dose.</li> </ul>
M067	ALARM: Grinder wear	<ul style="list-style-type: none"> <li>The programmed threshold for replacing the grinders has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M068	ALARM: Water softener regeneration	<ul style="list-style-type: none"> <li>The programmed threshold for regenerating the softener has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M069	ALARM: Threshold A maintenance warning	<ul style="list-style-type: none"> <li>The programmed maintenance threshold has almost been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M070	ALARM: Threshold A maintenance	<ul style="list-style-type: none"> <li>The programmed maintenance threshold has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M071	ALARM: Threshold B maintenance warning	<ul style="list-style-type: none"> <li>The programmed maintenance threshold has almost been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M072	ALARM: Threshold B maintenance	<ul style="list-style-type: none"> <li>The programmed maintenance threshold has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M073	ALARM: Threshold C maintenance warning	<ul style="list-style-type: none"> <li>The programmed maintenance threshold has almost been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M074	ALARM: Threshold C maintenance	<ul style="list-style-type: none"> <li>The programmed maintenance threshold has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M075	ALARM: Plan service warning	<ul style="list-style-type: none"> <li>The programmed Plan service maintenance threshold has almost been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M076	ALARM: Plan service	<ul style="list-style-type: none"> <li>The programmed Plan service maintenance threshold has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>Call the Technical Assistance.</li> </ul>
M077	ALARM: It is recommended to manually empty the services boiler	<ul style="list-style-type: none"> <li>It is necessary to replace the water in the boiler.</li> </ul>	<ul style="list-style-type: none"> <li>Perform the procedure.</li> <li>Call the Technical Assistance.</li> </ul>
M100	ALARM: water and steam release	<ul style="list-style-type: none"> <li>Water and steam are released from the group to eliminate air pockets in the coffee boiler.</li> </ul>	<ul style="list-style-type: none"> <li>Wait for the procedure to be completed (10 seconds).</li> </ul>
M101	ALARM: Steam release	<ul style="list-style-type: none"> <li>Steam is released from the tea nozzle to eliminate air pockets in the boiler.</li> </ul>	<ul style="list-style-type: none"> <li>Wait for the automatic closing.</li> </ul>
M102	ALARM: Coffee boiler water replacement in progress	<ul style="list-style-type: none"> <li>It is necessary to replace the water in the boiler.</li> </ul>	<ul style="list-style-type: none"> <li>Perform the procedure.</li> <li>Call the Technical Assistance.</li> </ul>
M1031	ALARM: Basic communication not found timeout	<ul style="list-style-type: none"> <li>Communication error</li> </ul>	<ul style="list-style-type: none"> <li>Check the number of groups configured on the machine.</li> <li>Power cycle the machine (while not being updated).</li> </ul>



**If the problem cannot be solved, turn the machine off and contact the Manufacturer.**

## 13. DECOMMISSIONING

### 13.1 Short machine downtime

"Short machine downtime" refers to a period of time exceeding one working week.

If the machine is reactivated after this period, the Qualified Technician must replace all the water contained in the hydraulic circuits as indicated in par. "6.6 Water replacement" on page 26.

All the scheduled maintenance operations must also be performed - see par. "10.3.1 Scheduled maintenance" on page 48.

### 13.2 Long machine downtime

"Long machine downtime" refers to a period of time exceeding 30 working days.

In this case, it is necessary to disconnect the machine by unplugging it from the power, hydraulic and gas supply if required, and drain the internal circuits of all the water.

To connect the machine after this period, follow the procedures for the commissioning of the machine.

## 14. DISMANTLING

To dismantle the machine, follow the machine installation procedure in reverse; refer to chap."5. INSTALLATION" on page 18 .

All the disassembled components must be sorted out by material so as to facilitate the later disposal at authorized collection centers, as indicated in section."15. DISPOSAL" on page 63.

## 15. DISPOSAL

### 15.1 Information for disposal

Only for the European Union and the European Economic Area.



This symbol indicates that the product cannot be disposed of with household waste, according to the WEEE Directive (2012/19/EC), the Battery Directive (2006/66/EC) and/or the national laws implementing those Directives.

The product should be handed over to a designated collection point, for example the dealer when purchasing a new similar product, or an authorized collection site for recycling waste electrical and electronic equipment (WEEE), as well as batteries and accumulators. Improper handling of this type of waste can have negative consequences on the environment and human health, due to potentially hazardous substances that are generally associated with this kind of waste.

Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources and avoid incurring the administrative sanctions provided by law. For more information about recycling this product, contact your local authorities, the body responsible for waste collection, an authorized dealer, or your household waste disposal service.

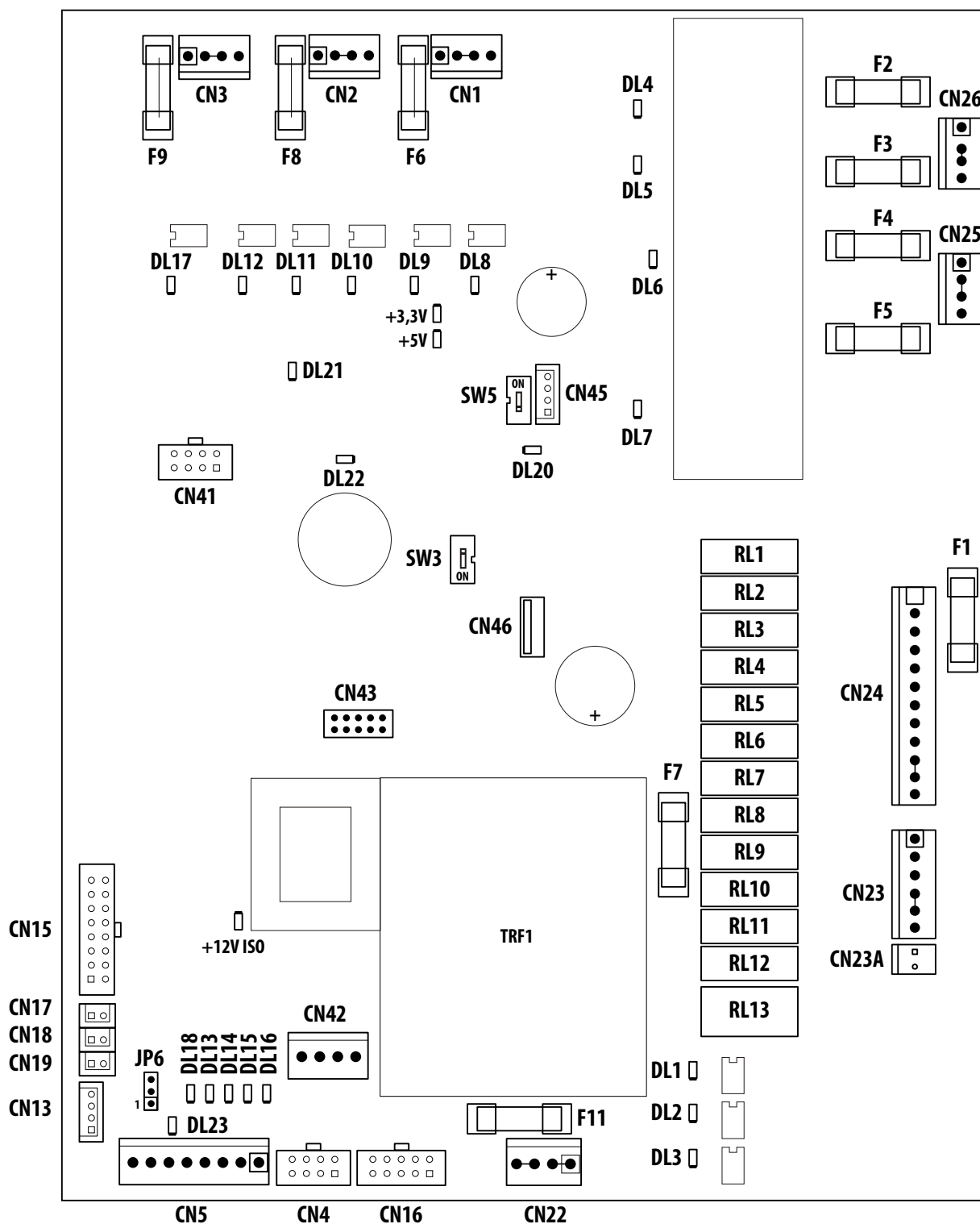
### 15.2 Environmental information

Inside the machine there is a button lithium battery required for the storage of the data that is placed in the electronic card.

Dispose of the battery in accordance with current local regulations.

# 16. WIRING DIAGRAMS

## 16.1 Electronic control unit diagram



Fuse	Description
F1	Fuse 5x20 delayed, 6.3A
F2	Fuse 5x20 FF super rapid, 10A
F3	Fuse 5x20 FF super rapid, 10A
F4	Fuse 5x20 FF super rapid, 10A
F5	Fuse 5x20 FF super rapid, 10A
F6	Fuse 5x20 FF super rapid, 10A
F7	Fuse 5x20 delayed, 1A
F8	Fuse 5x20 FF super rapid, 10A
F9	Fuse 5x20 delayed, 1A
F11	Fuse 5x20 delayed, 125mA

Conn.	Description
CN1	Heating element connection 1 - 3 GR
CN2	Heating element connection 2 - 4 GR
CN3	Services boiler heating element connection
CN4	Connection of coffee boiler pressure switches
CN5	Volumetric dispenser and services boiler level connection
CN13	RS232 serial socket connection
CN15	Coffee boiler pressure NTC connection
CN16	Mains pressure, humidity sensor and boiler press. transducer supply
CN17	Connection of NTC services boiler
CN18	Connection of NTC Autosteamer
CN19	Connection of NTC cup heater
CN22	Wiring of circuit board
CN23	Connection of 230V AC outputs
CN24	Connection of 230V AC outputs
CN25	Boiler heating element connection 2 - 4 GR
CN26	Boiler heating element connection 1 - 3 GR
CN41	Display TFT cable connection
CN42	Level probe connection.
CN43	WiFi module connection
CN45	Not used.
CN46	USB drive connection

Relay	Description
RL1	Pump
RL2	Solenoid valve group 1
RL3	Solenoid valve group 3
RL4	Solenoid valve group 2
RL5	Solenoid valve group 4
RL6	Boiler filling solenoid valve
RL7	Hot water mix solenoid valve
RL8	Tea solenoid valve 1
RL9	Autosteamer steam solenoid valve
RL10	Side LED solenoid valve
RL11	Air solenoid valve
RL12	Tea solenoid valve 2
RL13	Front LED solenoid valve

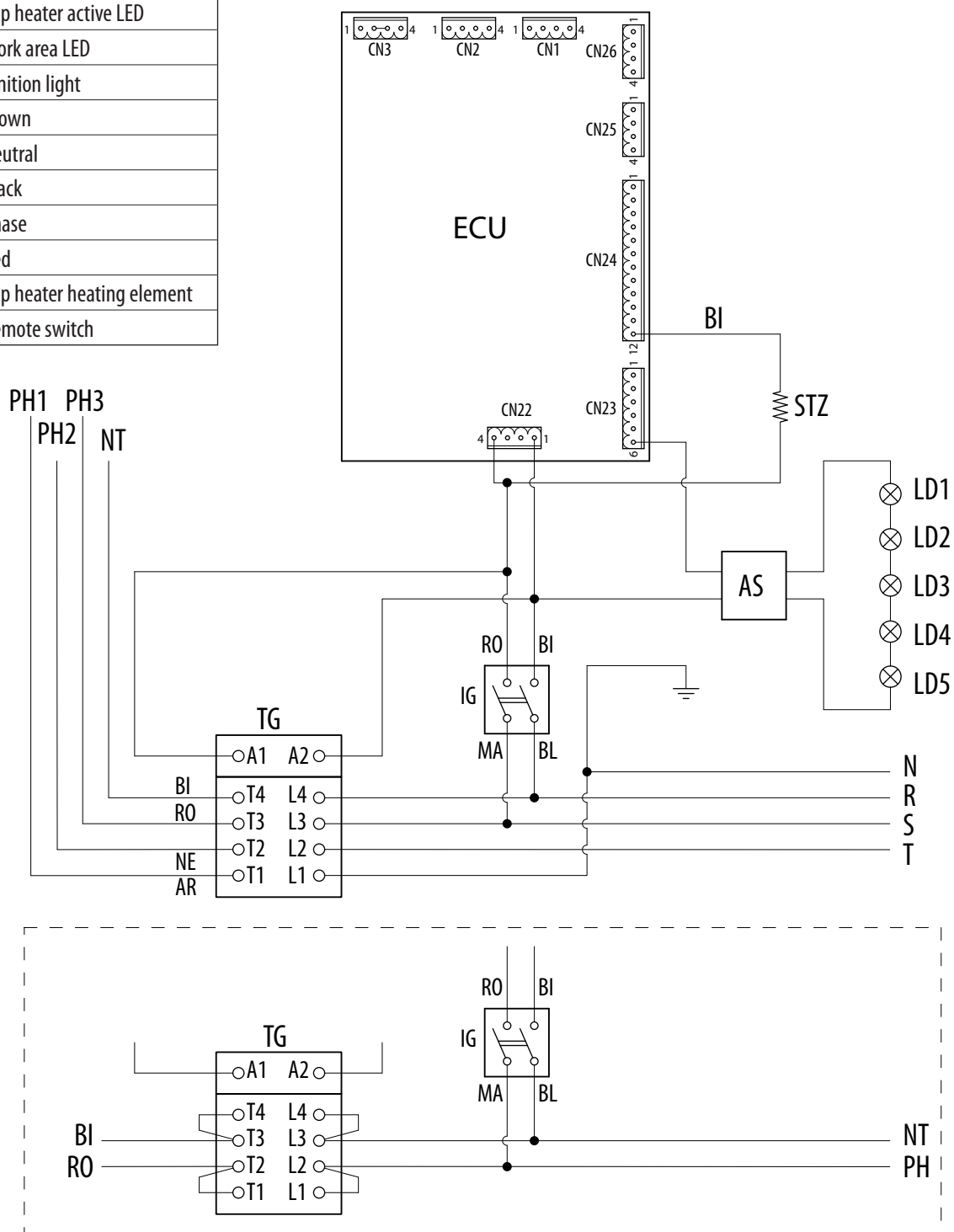
LED	Description
DL1	Front Led
DL2	Side Led
DL3	Cup heater
DL4	Heating element control boiler group 4
DL5	Heating element control boiler group 2
DL6	Heating element control boiler group 3
DL7	Heating element control boiler group 1
DL8	group 1 heating element
DL9	group 3 heating element
DL10	group 2 heating element
DL11	group 4 heating element
DL12	services 1 boiler heating element
DL13	group 4 volumetric counter
DL14	group 3 volumetric counter
DL15	group 2 volumetric counter
DL16	group 1 volumetric counter
DL17	services 2 boiler heating element
DL18	Inlet volumetric counter
DL20	CN45 connection
DL21	Display connection
DL22	Display connection
DL23	Communication RS232 CN13
+5V	+5V Power supply
+9V	+9V Power supply
+12V	+12V Power supply
+24V	+24V Power supply

Jumper	Description
SW3	Micro factory programming
SW5	485 CN45 activation not used
JP6	Serial power management: 1-2=+12V 2-3=+5V

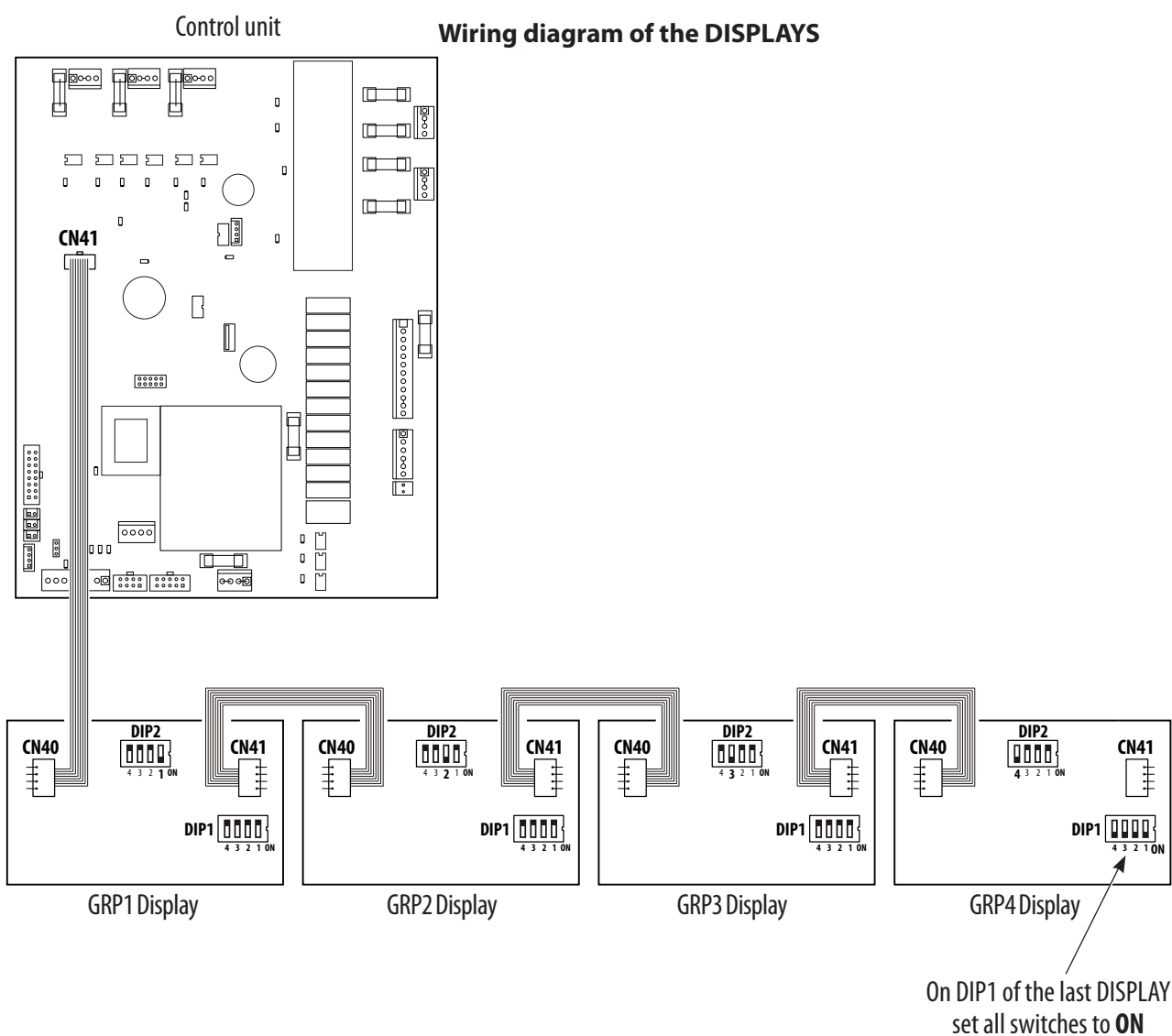
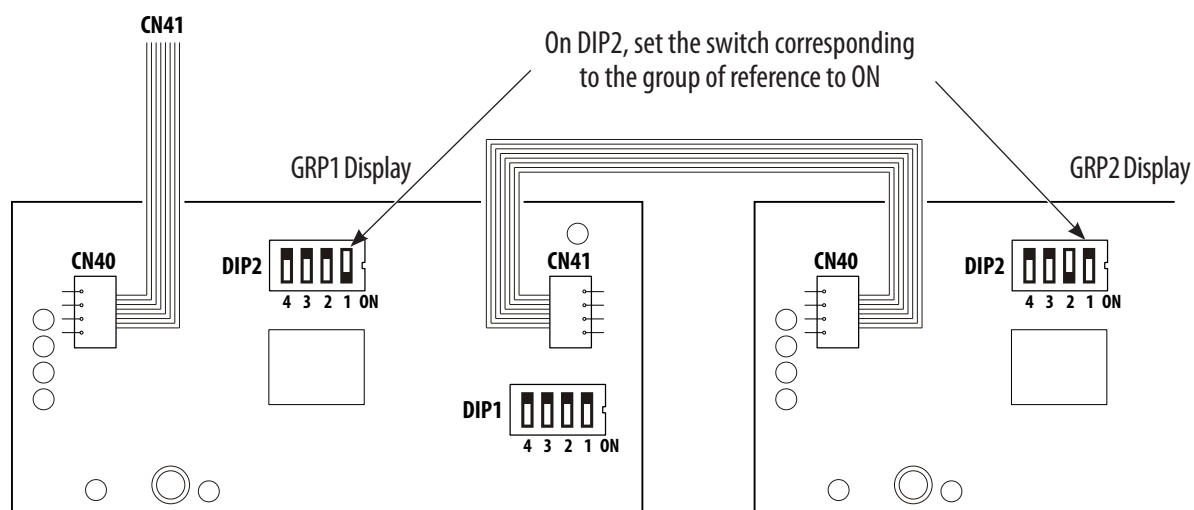


## 16.2 Control unit connection diagram

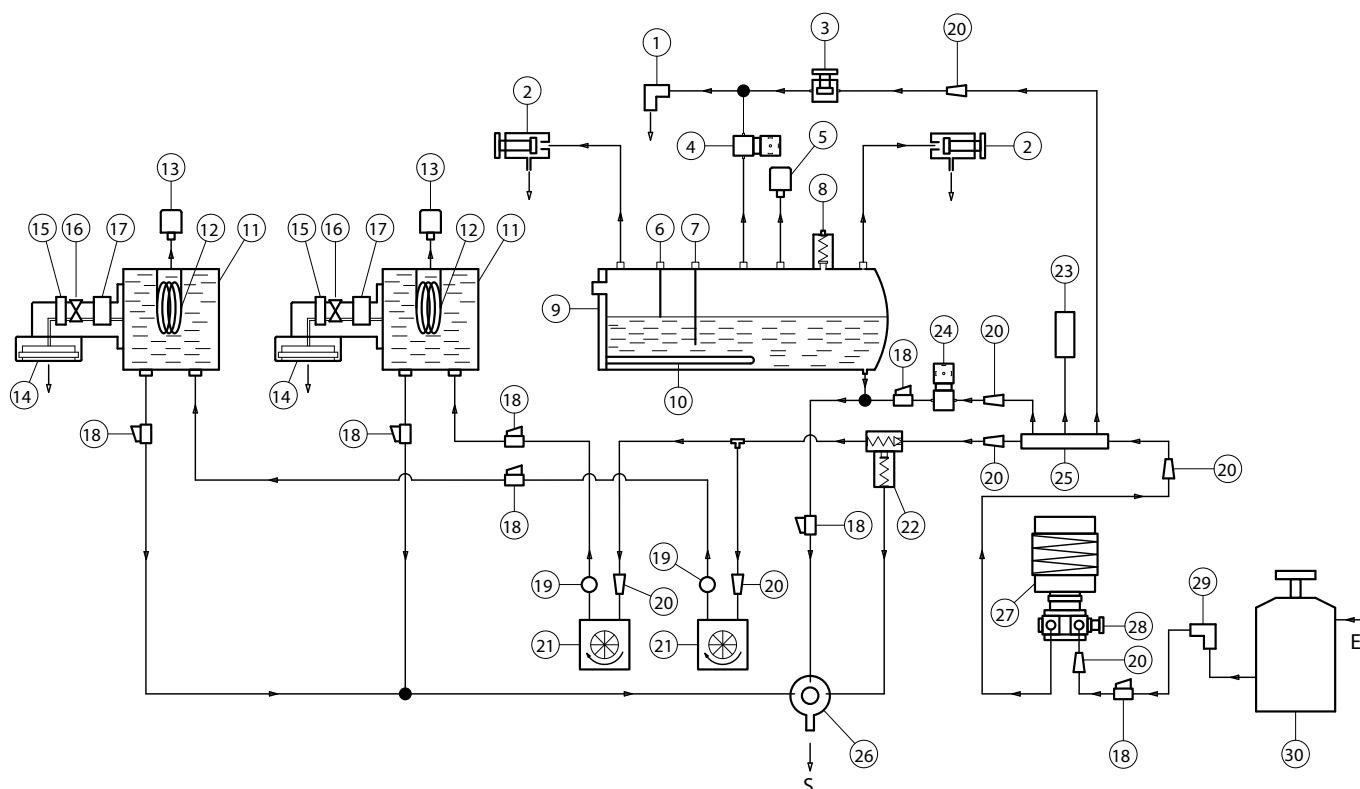
AR	Orange
AS	Stabilized power supply unit
BI	White
CE	Electronic control unit
CN22	Supply connection
IG	Main switch
IS	Cup heater switch
LDS	Cup heater active LED
LD1-2-..	Work area LED
LP	Ignition light
MA	Brown
N	Neutral
NE	Black
PH	Phase
RO	Red
STZ	Cup heater heating element
TG	Remote switch



## 16.3 DISPLAY control unit diagram



# 17. HYDRAULIC DIAGRAM



<b>1</b>	TEA release
<b>2</b>	STEAM release
<b>3</b>	TEA MIX adjustment solenoid valve
<b>4</b>	HOT WATER solenoid valve
<b>5</b>	STEAM boiler safety pressure switch
<b>6</b>	BOILER LEVEL probe
<b>7</b>	SAFETY LEVEL probe
<b>8</b>	SAFETY valve
<b>9</b>	STEAM boiler
<b>10</b>	STEAM boiler heating element
<b>11</b>	COFFEE boiler
<b>12</b>	COFFEE water heating element
<b>13</b>	COFFEE water pressure switch
<b>14</b>	DISPENSING group
<b>15</b>	GROUP filter
<b>16</b>	GROUP Gigueur
<b>17</b>	GROUP solenoid valve

<b>18</b>	MANUAL tap
<b>19</b>	COLD Gigueur
<b>20</b>	MAINS filter
<b>21</b>	VOLUMETRIC dispenser
<b>22</b>	SCNR valve
<b>23</b>	PUMP pressure transducer
<b>24</b>	BOILER FILLING solenoid valve
<b>25</b>	MAINS dispenser
<b>26</b>	DRAIN pad
<b>27</b>	BUILT-IN motor pump
<b>28</b>	MOTOR PUMP pressure adjustment
<b>29</b>	WATER INLET connection
<b>30</b>	Softener
<b>31</b>	STEAM boiler NTC probe
<b>E</b>	Water inlet
<b>S</b>	Water discharge

# 18. PARAMETER TABLE

Par.	Description	min	Def	MAX	Um
P1	Temperature measurement unit 0 = °C 1 = °F	°C	°C	°F	-
P2	Pressure measurement unit 0 = bar 1 = Atm 2 = kPa	0	0	2	
P3	Volume measurement unit 0 = liters, 1 = gallons	0	0	1	
P4	Number of groups present	1	3	4	-
P5	User interface language	0	0	50	N/A
P6	Cup-warmer operation enabling	0	1	1	
	0 = disabled.				
	1 = enabled.				
P7	Presence of service boiler pressure transducer:	0	1	1	N/A
	0 = Absent.				
	1 = Present.				
P8	Enabling hot water dispensing together with the coffee.	0	1	1	N/A
	0 = disabled.				
	1 = enabled.				
P9	Enable long coffee selections.	0	1	1	N/A
	0 = disabled.				
	1 = enabled.				
P10	Enable pre-infusion.	0	0	1	N/A
	0 = disabled.				
	1 = enabled.				
P11	Autosteamer activation	0	0	1	N/A
	0 = disabled.				
	1 = enabled.				
	2 = enabled with automatic cleaning				
P12	Enabling of automatic washing	0	0	1	N/A
	0 = disabled.				
	1 = enabled.				
P13	Enabling of initial washing	0	0	1	N/A
	0 = disabled.				
	1 = enabled.				
P14	Enabling of connection with the cash register	0	0	2	N/A
	0 = No connection with the cash register.				
	1 = First pay mode (CREDIT - DEBIT)				
	2 = First dispensing mode (CREDIT - DEBIT)				
P15	Enable continuous coffee dispensing	0	1	2	N/A
	0 = Stop Start button disabled				
	1 = Stop Start button enabled				
	2 = Start Stop button ON for 3 sec. (Purge)				
P16	Automatic daylight saving time management	0	1	2	N/A
	0 = Manual management				
	1 = Daylight saving time according to European rules				
	2 = Daylight saving time according to USA rules				
P17	User interface theme	0	1	3	N/A
P18	Disable buzzer sound when pressing LCD keys	0	0	1	N/A
	0 = Buzzer operates normally				
	1 = Buzzer excluded				
P19	Relevant time zone	0	2	37	N/A
P20	Minimum group temperature for group 1 dispensing	60	80	105	°C

Par.	Description	min	Def	MAX	Um
P21	Minimum coffee boiler temperature for group 1 dispensing	60	80	110	°C
P22	Group 1 Temperature set	P62	93	P63	°C
P23	Group 1 coffee boiler Temperature set	P60	93	P61	°C
P24	Minimum Temperature set in group 1 standby	0	60	75	°C
P25	Minimum Temperature set in group 1 coffee boiler standby	0	60	75	°C
P26	Temperature Delta set in group 1 standby	0	0	50	°C
P27	Minimum Temperature set in group 1 coffee boiler standby	0	20	50	°C
P30	Minimum group temperature for group 2 dispensing	60	80	105	°C
P31	Minimum coffee boiler temperature for group 2 dispensing	60	80	110	°C
P32	Group 2 Temperature set	P62	93	P63	°C
P33	Group 2 coffee boiler Temperature set	P60	93	P61	°C
P34	Minimum Temperature set in group 2 standby	0	60	75	°C
P35	Minimum Temperature set in group 2 coffee boiler standby	0	60	75	°C
P36	Temperature Delta set in group 2 standby	0	0	50	°C
P37	Minimum Temperature set in group 2 coffee boiler standby	0	20	50	°C
P40	Minimum group temperature for group 3 dispensing	60	80	105	°C
P41	Minimum coffee boiler temperature for group 3 dispensing	60	80	110	°C
P42	Group 3 Temperature set	P62	93	P63	°C
P43	Group 3 coffee boiler Temperature set	P60	93	P61	°C
P44	Minimum Temperature set in group 3 standby	0	60	75	°C
P45	Minimum Temperature set in group 3 coffee boiler standby	0	60	75	°C
P46	Temperature Delta set in group 3 standby	0	0	50	°C
P47	Minimum Temperature set in group 3 coffee boiler standby	0	20	50	°C
P50	Minimum group temperature for group 4 dispensing	60	80	105	°C
P51	Minimum coffee boiler temperature for group 4 dispensing	60	80	110	°C
P52	Group 4 Temperature set	P62	93	P63	°C
P53	Group 4 coffee boiler Temperature set	P60	93	P61	°C
P54	Minimum Temperature set in group 4 standby	0	60	75	°C
P55	Minimum Temperature set in group 4 coffee boiler standby	0	60	75	°C
P56	Temperature Delta set in group 4 standby	0	0	50	°C
P57	Minimum Temperature set in group 4 coffee boiler standby	0	20	50	°C
P60	Coffee boiler minimum temperature.	0	60	P61	°C
P61	Coffee boiler maximum temperature.	P60	110	120	°C
P62	Group minimum temperature.	0	60	P63	°C
P63	Group maximum temperature.	P62	105	120	°C
P65	On time solenoid valve group during pre-infusion.	0	0.5	10	S
P66	Off time solenoid valve group during pre-infusion.	0	1.5	10	S
P67	Coffee boiler full recognition pressure (machines with analog pressure transducer in coffee boilers).	0.1	2	6	bar
P68	Group SV opening time during the coffee boiler filling phase for air evacuation.	0	10	20	s
P69	Delay due to closure of all the group solenoid valves in the initial loading stage.	0	2	20	s
P70	Group heating timeout. (P-band input)	0	45	255	Min
P71	Coffee boiler heating timeout. (P-band input)	0	45	255	Min

Par.	Description	min	Def	MAX	Um
P72	First timeout loading coffee boiler	0	240	255	s
P73	Coffee boiler filling timeout.	0	60	255	s
P74	Coffee boiler filling second phase timeout.	0	120	255	s
P75	Coffee delivery control mode:	0	0	3	
	0 = Null				
	1 = Timer				
	2 = Flow				
	3 = Temperature				
P76	Maximum flow variation percentage	5	15	40	
P77	Time out during dispensing for "coffee water pressure" warning	10	90	250	s
P78	Force end dispensing timeout (single dispensing)	10	120	250	s
P79	Minimum number of pulses to accept dose programming	10	10	250	Pls
P80	Services boiler minimum pressure.	0	0	P81	bar
P81	Services boiler maximum pressure	P80	1.4	2.5	bar
P82	Services boiler pressure setpoint.	P80	1.2	P81	bar
P83	Services boiler minimum pressure for hot water dispensing. 0 = Boiler disabled.	0	0.5	P82	bar
P84	Steam SV opening temperature with machine in Energy Saving.	0	104	255	°C
P85	Pressure set due to steam SV closing and elimination of the steam release warning during steam boiler loading phase (eq. P88 for the machine with pressure transducer).	0	0.01	0.5	bar
P86	Services boiler level detection time lag	0	3	10	s
P87	Temperature set due to steam release warning during steam boiler loading phase.	50	93	150	°C
P88	Temperature set due to steam solenoid valve closing and elimination of the steam release warning during steam boiler loading phase.	50	97	150	°C
P89	Steam SV opening pressure with machine in Energy Saving (eq. P84 for the machine with pressure transducer).	0	0.2	2	Bar
P90	Services boiler temperature threshold, below which the analog pressure transducer must be ignored and only the temperature must be considered.	50	97	150	°C
P91	Steam boiler heating Timeout (entry into P-band).	0	60	255	Min
P92	Steam boiler filling timeout.	0	45	255	s
P93	Steam boiler loading first timeout	0	255	600	s
P94	Set services boiler in Energy Saving	50	80	P90	°C
P95	Delta temperature due to group heating timeout alarm	0	10	20	°C
P96	Maximum duration continuous coffee dispensing (Start/Stop button)	10	120	600	s
P97	Set boiler pressure in boost	P80	1.3	P81	bar
P98	Boost duration	0	30	600	min
P99	Boiler water replacement enabling parameter	0	0	1	
P101	Autosteamer temperature T1 set	50	55	80	°C
P102	Set Temperature T2 Autosteamer	50	65	80	°C
P103	Set Temperature T3 Autosteamer	50	65	80	°C
P104	Autosteamer dispensing timeout.	0	240	600	s
P105	Time window after dispensing with Autosteamer to continue manual dispensing.	0	3	30	s
P106	Set cup-warmer temperature	P108	80	P109	°C
P107	Cup warmer regulation differential	0	0.1	10	°C
P108	Cup-warmer minimum temperature.	0	70	P109	°C
P109	Cup-warmer maximum temperature.	P108	100	120	°C

Par.	Description	min	Def	MAX	Um
P110	Threshold for grinder wear indication.	0	0	2000	kg
	0 = disabled.				
P111	Short coffee weight (for grinder wear)	0	0	22	g
P112	Medium coffee weight (for grinder wear)	0	0	22	g
P113	Long coffee weight (for grinder wear)	0	0	22	g
P114	Double short coffee weight (for grinder wear).	0	0	22	g
P115	Double medium coffee weight (for grinder wear).	0	0	22	g
P116	Double long coffee weight (for grinder wear).	0	0	22	g
P117	Continuous coffee weight (for grinder wear).	0	0	22	g
P120	Service required threshold A.	0	0	1000000	cycles
P121	Service required threshold B.	0	0	1000000	cycles
P122	Service required threshold C.	0	0	1000000	cycles
P123	Delta cycles for assistance request.	0	1000	10000	cycles
P125	Set card temperature warning	0	65	90	°C
P126	Set alarm card temperature	0	70	90	°C
P127	Temperature differential for resumption from alarm	10	15	30	°C
P130	Threshold for regeneration.	0	0	10000	L
P131	Amount of water per second to be added to the count of the water liters consumed by the machine when the filler SV is open.	0	21	255	ml/s
P132	Amount of water per second to be added to the count of the water liters consumed by the machine when the mix SV is open.	0	8	255	ml/s
P133	Delay from the last beverage made for entry into standby.	0	10	255	min
P134	Threshold hourly deliveries for entry into automatic standby	1	5	250	
P135	Energy saving type	0	0	2	
	0 = Only group manual Off				
	1 = Timer management				
	2 = Automatic self-learning				
P136	Weight for calculating auto mode average (operates on old value)	1	5	10	
P137	Pre-setting the number of coffees dispensed within 10 minutes for auto mode dispensing history (initial value of the reference)	0	10	255	
P138	First group to be switched on in AUTO mode	0	0	4	
P139	Second group to be switched on in AUTO mode	0	0	4	
P140	Third group to be switched on in AUTO mode	0	0	4	
P141	Group 1 temperature display	0	0	2	
P142	Group 2 temperature display	0	0	2	
P143	Group 3 temperature display	0	0	2	
P144	Group 4 temperature display	0	0	2	
P145	Washing groups - Number washing cycles	1	5	10	
P146	Washing groups - Rinse time	10	30	100	s
P147	Hours to wait before re-proposing washing upon power on	0	24	48	hours
P148	Automatic washing time	0	0	1	
P150	Coffee boiler, group, and services boiler PID cycle time.	0.5	10	10	s
P152	Coffee group PID proportional band	0.1	5	100.0	°C
P153	Coffee groups PID integrative coefficient	0	60	10000	s
P154	Coffee groups PID derivative coefficient	0	2.0	10.0	s
P156	Coffee boiler PID proportional band	0.1	5.0	100.0	°C
P157	Coffee boiler PID integrative coefficient	0	60	10000	S

Par.	Description	min	Def	MAX	Um
P158	Coffee boiler PID derivative coefficient	0	2.0	10.0	s
P160	Steam boiler PID proportional band	0.01	0.01	10.00	Bar
P161	Steam boiler PID integrative coefficient	0	0	10000	s
P162	Steam boiler PID derivative coefficient	0	0	10.0	s
P163	Services boiler temperature band	0	2	10.0	°C
P165	Set group temperature in deep_standby	P62	65	P63	°C
P166	Set coffee boiler temperature in deep_standby	P62	65	P63	°C
P167	Set services boiler temperature in deep_standby	P62	65	P63	°C
P168	Standby time to go to deep_standby	0	10	255	min
P200	Offset calculation/measurement boiler pressure	-1.00	0.00	-1.00	bar
P201	Offset probe NTC Group 1	-20	-1	20	°C
P202	Offset probe NTC coffee boiler group 1	-20	0	20	°C
P203	Offset probe NTC Group 2	-20	-1	20	°C
P204	Offset probe NTC coffee boiler group 2	-20	0	20	°C
P205	Offset probe NTC Group 3	-20	-1	20	°C
P206	Offset probe NTC coffee boiler group 3	-20	0	20	°C
P207	Offset probe NTC Group 4	-20	-1	20	°C
P208	Offset probe NTC coffee boiler group 4	-20	0	20	°C
P209	Offset probe NTC services boiler	-20	0	20	°C
P210	Offset probe NTC Autosteamer	-20	0	20	°C
P211	Offset probe NTC cup-warmer	-20	0	20	°C
P212	Offset probe NTC base card	-20	0	20	°C
P213	Offset pump pressure measurement	-1.00	0.00	-1.00	bar
P214	Adjustment for Autosteamer T1	0.0	13.0	20.0	°C
P215	Adjustment for Autosteamer T2	0.0	13.0	20.0	°C
P216	Adjustment for Autosteamer T3	0.0	8.0	20.0	°C
P220	Ambient Humidity Ratiometric Value associated at 0%	0	0	100	%
P221	Ambient Humidity Ratiometric Value associated at 100%	0	100	100	%
P222	Pressure Pump Ratiometric Value associated at 0%	0.0	0.0	10.0	Bar
P223	Pressure Pump Ratiometric Value associated at 100%	0.0	16.0	25.0	Bar
P224	Steam boiler Pressure Ratiometric Value associated at 0%	0.0	0.0	10.0	Bar
P225	Steam boiler Pressure Ratiometric Value associated at 100%	0.0	4.0	10.0	Bar
P226	Steam boiler Pressure Ratiometric Voltage associated at 0%	0.0	0.5	5.0	Volt
P227	Steam boiler Pressure Ratiometric Voltage associated at 100%	0.0	4.5	5.0	Volt
P230	Input flow meter litre impulses	0	2000	10000	
P231	Impulses litre flow meter coffee group 1	0	2000	10000	
P232	Impulses litre flow meter coffee group 2	0	2000	10000	
P233	Impulses litre flow meter coffee group 3	0	2000	10000	
P234	Impulses litre flow meter coffee group 4	0	2000	10000	
P235	Presence flow meter inlet	0	0	1	
	0 = Absent				
	1 = Present				
P300	Modbus address for serial RS485 CN32	0	1	127	
P301	Baudrate for serial RS485 CN32	0	1	2	
	0 = 4800 Baud				
	1 = 9600 Baud				
	2 = 19200 Baud				

Par.	Description	min	Def	MAX	Um
P302	Parity for serial RS485 CN32	0	2	3	
	0 = None (with 2 stop bits)				
	1 = ODD (1 stop bit)				
	2 = EVEN (1 stop bit)				
	3 = NONE (1 stop bit)				
P303	Communication timeout for RS485 CN32	1	60	600	s
P305	Modbus address for serial RS485 CN31 (RFID)	0	1	127	
P306	Baudrate for serial S485 CN31 (RFID)	0	1	2	
	0 = 4800 Baud				
	1 = 9600 Baud				
	2 = 19200 Baud				
P307	Parity for serial S485 CN31 (RFID)	0	3	3	
	0 = None (with 2 stop bits)				
	1 = ODD (1 stop bit)				
	2 = EVEN (1 stop bit)				
P308	Communication timeout for RS485 CN31 (RFID)	1	60	600	s
P311	Baudrate for serial RS232 CN12 (cash register)	0	0	5	
	0 = 1200 Baud				
	1 = 2400 Baud				
	2 = 4800 Baud				
	3 = 9600 Baud				
	4 = 19200 Baud				
P312	Parity for serial RS232 CN12 (cash register)	0	2	3	
	0 = None (with 2 stop bits)				
	1 = ODD (1 stop bit)				
	2 = EVEN (1 stop bit)				
P313	Communication timeout for RS232 CN12 (cash register)	0.1	1.0	60.0	s
P320	Baudrate CAN 1	0	2	3	
	0 = 125 Kbit				
	1 = 250 Kbit				
	2 = 500 Kbit				
P321	Baudrate CAN 2	0	2	3	
	0 = 125 Kbit				
	1 = 250 Kbit				
	2 = 500 Kbit				
P350	Screensaver timeout	0	0	60	Min
P351	Display backlight brightness	1	10	10	
P360	Group heating element power	0	150	2000	W
P361	Coffee boiler heating element power	0	1000	2000	W
P362	Services boiler primary heating element power	0	2000	5000	W
P363	Services boiler secondary heating element power	0	1000	3000	W
P364	Cup heater heating element power	0	200	500	W
P365	Power pump motor	0	330	500	W
P400	Cloud data sending duration	1	5	9999	s
P401	Period download data from the Cloud	1	5	250	s

Par.	Description	min	Def	MAX	Um
P500	Dose short coffee groups 1	0	100	1000	Pls
P501	Dose medium coffee group 1	0	120	1000	Pls
P502	Dose long coffee group 1	0	140	1000	Pls
P503	Dose 2 short coffees group 1	0	210	1000	Pls
P504	Dose 2 medium coffees group 1	0	230	1000	Pls
P505	Dose 2 long coffees group 1	0	270	1000	Pls
P510	Dose short coffee groups 2	0	100	1000	Pls
P511	Dose medium coffee group 2	0	120	1000	Pls
P512	Dose long coffee group 2	0	140	1000	Pls
P513	Dose 2 short coffees group 2	0	210	1000	Pls
P514	Dose 2 medium coffees group 2	0	230	1000	Pls
P515	Dose 2 long coffees group 2	0	270	1000	Pls
P520	Dose short coffee groups 3	0	100	1000	Pls
P521	Dose medium coffee group 3	0	120	1000	Pls
P522	Dose long coffee group 3	0	140	1000	Pls
P523	Dose 2 short coffees group 3	0	210	1000	Pls
P524	Dose 2 medium coffees group 3	0	230	1000	Pls
P525	Dose 2 long coffees group 3	0	270	1000	Pls
P530	Dose short coffee groups 4	0	100	1000	Pls
P531	Dose medium coffee group 4	0	120	1000	Pls
P532	Dose long coffee group 4	0	140	1000	Pls
P533	Dose 2 short coffees group 4	0	210	1000	Pls
P534	Dose 2 medium coffees group 4	0	230	1000	Pls
P535	Dose 2 long coffees group 4	0	270	1000	Pls
P540	Dose Tea 1 groups 1	0	10.0	60.0	S
P541	Dose Tea 1 groups 2	0	10.0	60.0	S
P542	Dose Tea 1 groups 3	0	10.0	60.0	s
P543	Dose Tea 1 groups 4	0	10.0	60.0	s
P545	Dose Tea 2 groups 1	0	15.0	60.0	s
P546	Dose Tea 2 groups 2	0	15.0	60.0	s
P547	Dose Tea 2 groups 3	0	15.0	60.0	s
P548	Dose Tea 2 groups 4	0	15.0	60.0	s
P600	Time dose short coffee group 1	0	0.0	60.0	s
P601	Time dose medium coffee group 1	0	0.0	60.0	s
P602	Time dose long coffee group 1	0	0.0	60.0	s
P603	Time dose double short coffee group 1	0	0.0	60.0	s
P604	Time dose double medium coffee group 1	0	0.0	60.0	s
P605	Time dose double long coffee group 1	0	0.0	60.0	s
P610	Time dose short coffee group 2	0	0.0	60.0	s
P611	Time dose medium coffee group 2	0	0.0	60.0	s
P612	Time dose long coffee group 2	0	0.0	60.0	s
P613	Time dose double short coffee group 2	0	0.0	60.0	s
P614	Time dose double medium coffee group 2	0	0.0	60.0	s
P615	Time dose double long coffee group 2	0	0.0	60.0	s
P620	Time dose short coffee group 3	0	0.0	60.0	s
P621	Time dose medium coffee group 3	0	0.0	60.0	s
P622	Time dose long coffee group 3	0	0.0	60.0	s
P623	Time dose double short coffee group 3	0	0.0	60.0	s
P624	Time dose double medium coffee group 3	0	0.0	60.0	s
P625	Time dose double long coffee group 3	0	0.0	60.0	s
P630	Time dose short coffee group 4	0	0.0	60.0	s

Par.	Description	min	Def	MAX	Um
P631	Time dose medium coffee group 4	0	0.0	60.0	s
P632	Time dose long coffee group 4	0	0.0	60.0	s
P633	Time dose double short coffee group 4	0	0.0	60.0	s
P634	Time dose double medium coffee group 4	0	0.0	60.0	s
P635	Time dose double long coffee group 4	0	0.0	60.0	s

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