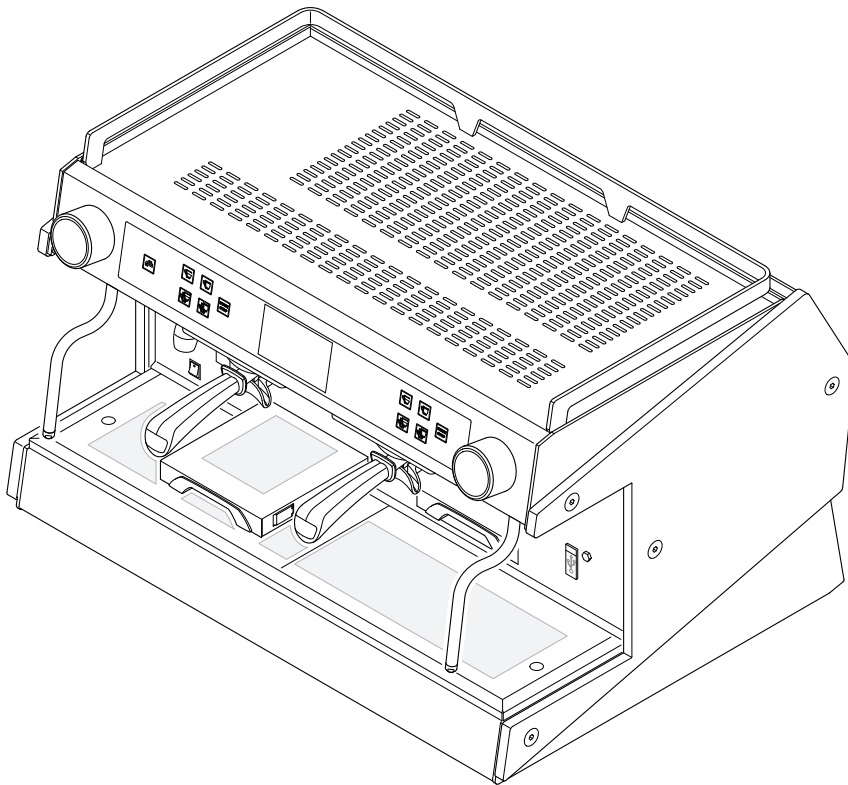




URBAN

EVDP



EN

ESPRESSO COFFEE MACHINE

Use and Maintenance Manual. **TECHNICIANS'** instructions.



IMPORTANT: Read carefully before use. Store for future reference.

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I. SAFETY PRECAUTIONS

I.I. LEVEL OF TRAINING AND KNOWLEDGE REQUIRED OF THE TECHNICIAN

The Technician is a specialised person that has been specially trained and authorised to carry out the following operations in accordance with current regulations: transport and handling, storage, installation, commissioning, maintenance, decommissioning, dismantling and disposal of the machine.

The Technician must be properly trained and informed regarding any residual risks present during these operations and while the machine is operating.

The Technician must be able to apply all the good practices in compliance with food hygiene principles.

 Any unauthorised tampering with any parts of the machine renders the guarantee null and void and relieves the manufacturer of any liability should the machine malfunction or any user accidents occur.

I.II. SAFETY PRECAUTIONS

Even though the machine is provided with all safety devices required to eliminate possible risks for the Technician, there are still certain residual risks.

These so-called residual risks are related to machine parts that may pose a risk to the Technician, if used improperly, evaluated or deactivated incorrectly, because the prescriptions contained in this Manual were circumvented.

The machine is also equipped with appropriate warnings placed on residual risk areas, which must be scrupulously observed.

Attention must be paid to the residual risks that are present during the operations described in

the following paragraphs as they cannot be eliminated:

Compliance with the installation and machine's safety standards is dependent on the use, installation, maintenance and correct operation of the machine. These factors are the responsibility of the purchaser, Technician and Technician's employer.

The Technician's employer is responsible for hiring and training personnel to correctly install, run and perform maintenance work on the machine and its protection systems.

I.III. TRANSPORT AND HANDLING



Hand crushing hazard

Handling operations must always and exclusively be performed by the Technician and in compliance with the current health and safety regulations.

Before starting the transport and/or handling manoeuvres, check the route, dimensions needed, safety distances, places suitable for placing the load down, and the appropriate equipment for the operation.

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

In view of the substantial weight of the equipment, exercise great caution during the handling operations.

The Manufacturer is not responsible for any injury or damage caused by clothing, lifting equipment and personal equipment which was not suitable for the type of intervention that the operator had to carry out.

The packaging material must not be left within the reach of children, since it is a potential source of danger.

I.IV. INSTALLATION



Electrical hazard



High temperature hazard



Risk of explosion



It is prohibited to perform maintenance on moving components

Installation operations must always and exclusively be performed by the Technician and in compliance with the current health and safety regulations.

The appliance's water supply must provide water which is suitable for human consumption, and must conform with the regulations in force in the place of installation.

The Technician must carry out the hydraulic connections in accordance with the hygiene and hydraulic safety standards regarding environmental protection which are in force in the place of installation.

To ensure electrical safety, the appliance must be connected to an effective earthing system, and the system in which it is installed must be equipped with a suitable differential circuit breaker, in compliance with the safety laws and standards.

The effectiveness of the earthing system and functionality of the differential circuit breaker - both of which are fundamental for guaranteeing the appliance's electrical safety - are the responsibility of the person in charge of the electrical system on which the equipment is installed.

The manufacturer cannot be considered responsible for any damage caused by an inadequate electric system.

Make sure that the electric mains power is enough to supply the energy needed for the machine to correctly operate.

The appliance installation operations must be carried out with the electrical mains switched off. To make the electrical system safe and be

able to carry out operations when the machine is not powered, the Technician must apply the rules prescribed by current technical standards (disconnect the power supply, avoid reclosures, check that there is no voltage, etc.).

I.V. MAINTENANCE AND CLEANING



Electrical hazard



High temperature hazard



Risk of explosion



The only personnel authorised to access the service area are those who are knowledgeable about and have practical experience using the appliance, particularly in regards to safety and hygiene.

Maintenance and cleaning operations must always and exclusively be performed by the Technician and in compliance with the current health and safety regulations.

The maintenance and cleaning operations must comply with the safety regulations:

- Do not carry out maintenance work when the machine is in operation.
- Do not immerse the machine in water.
- Do not spill liquids on the machine or use water jets when cleaning.
- Do not allow maintenance and cleaning operations to be carried out by children or incompetent people.
- Do not perform maintenance and cleaning operations other than those described in this manual.

When cleaning, pay attention to the parts of the machine that can become hot:

- Avoid contact with the dispensing group, water spouts and steam nozzles.
- Do not place your hands or other body parts near the steam, hot water or milk dispensing nozzle tips.

Only perform the maintenance and cleaning operations indicated in this manual.

If the problem cannot be resolved, switch off the machine and contact the Manufacturer.

All maintenance operations must be carried out when the power supply has been turned off, the water mains has been closed off, and the machine has completely cooled down.

After maintenance and/or repair work, the components that are used must ensure that the hygiene and safety requirements initially provided for the appliance are still met. These are met by only using original spare parts. When components which come into contact with water or food are repaired or replaced, a washing procedure has to be carried out, as if it were the first installation.



It is the task of the Technician to inform the User about the methods of periodic testing of pressure equipment and safety devices in accordance with the legislation in force in the country of installation.

I.VI. EMERGENCY SITUATIONS

Should an emergency situation occur as a result of a machine malfunction, adopt the measures provided for in the emergency plan posted in the premises and in any case, proceed to immediately carry out the actions based on the type of problem.

SHORT CIRCUIT FIRE

In the event of a fire caused by the machine's electrical system malfunctioning, adopt the following behaviours:

- Disconnect the machine from the power mains via the main switch.
- Call the fire and rescue service.
- Get everyone a safe distance away from the premises.
- Extinguish the flames using a CO₂ fire extinguisher.

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1. INTRODUCTION

Read this manual carefully. It provides important safety information to the Technician regarding 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 appliance cannot be held responsible for any damage caused due to the non-observance of the requirements listed in this manual.



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

This document assumes that the machine is installed in a location where the current work safety and hygiene standards are observed.

The instructions, drawings and documentation contained in this Manual are technical and confidential. They are the sole property of the Manufacturer, and may not be fully or partially reproduced in any way.

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 was released to the market.

We encourage the Technicians to make any proposals in regards to improving the product or its Manual.

1.1 Guidelines for reading the Manual

This Manual is divided into separate chapters. The chapter order is linked 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 consists of cover, index and series of chapters. Each chapter is sequentially numbered. The page number is shown in the footer.

The machine identification data is displayed on the machine's nameplate and the EU declaration of Conformity, whilst the date and revision of the Instruction Manual is provided on the last page.

Abbreviations

Sec.	=	Section
Chap.	=	Chapter
Para.	=	Paragraph
P.	=	Page
Fig.	=	Figure
Tab.	=	Table

Units of measurement

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

1.2 Storing the Manual

The Instruction Manual must be stored carefully. The manual should be stored, handled with care with clean hands and not placed 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.

On the Technician's request, the manufacturer can provide additional copies of the machine's Instruction Manual.

1.3 Method for updating the Instruction Manual

The Manufacturer reserves the right to modify and make improvements to the machine without providing notice or updating the Manual that has already been received.



Should the Manual become illegible or otherwise hard to read, the Technicians must request a new copy from the Manufacturer before carrying out any operations 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. They may not be reproduced in any way, either in full, or in part without prior authorisation.

The Technician is responsible for complying with the instructions contained in this Manual.

Should any incident occur as a result of these recommendations being used incorrectly, the Manufacturer declines any liability.

This manual is also available on the manufacturer's website (indicated on the cover of the manual).

1.4 Recipients

This Manual is intended for the Technician who is responsible for carrying out the following operations on the machine:

- Transport and handling;
- Storage;
- Installation;
- Commissioning;
- Maintenance;
- Cleaning;
- Spare part replacement;
- Emergency operations and faults;
- Decommissioning;
- Disassembly;
- Disposal (refer to the retailer if not directly responsible).

RECIPIENT QUALIFICATIONS

The machine is intended for a professional non-generalised use, therefore the Technician must:

- Have attended the training courses organised by the Manufacturer relating to the type of machine;
- be aged 18 and over;
- be physically and mentally fit to use the machine;
- be able to understand and interpret the Instruction Manual and the safety requirements;
- know the safety procedures and how they are implemented;
- be able to use the machine;
- have understood the procedures of use as defined by the machine's manufacturer.

1.5 Glossary and Pictograms

This paragraph lists uncommon terms or terms whose meanings are different than those most commonly used.

Abbreviations are explained below, as well as the meaning of pictograms describing the operator's qualification and the machine status; they are used to quickly and uniquely provide the information needed to correctly and safely use the machine.

1.5.1 Glossary

User

The person in charge of operating the machine and performing the routine cleaning operations indicated in this manual.

Technician

A specialised person who has been specially trained and authorised to carry out the following operations in accordance with current regulations: transport and handling, storage, installation, commissioning, maintenance, decommissioning, dismantling and disposal of the machine.

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.

Personal protective equipment (PPE)

Clothing or equipment worn by someone to protect their health or safety.

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 machine's safety devices.

Residual risk

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

Safety component:

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

1.5.2 Pictograms

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

- A safety risk for those operating the machine.
- User injury, including serious injury (in some cases even death).
- The guarantee being rendered null and void.
- The Manufacturer waiving liability.



GENERAL DANGER symbol used when there is a risk of permanent serious injury that would require hospitalisation, or in extreme cases, even cause death.



ELECTRICAL HAZARD symbol used when there is a risk of permanent serious injury that would require hospitalisation, or in extreme cases, even cause death.



HIGH TEMPERATURE HAZARD symbol used when there is a risk of permanent serious injury that would require hospitalisation, or in extreme cases, even cause death.



HAND CRUSHING RISK symbol used when there is a risk of permanent serious injury that would require hospitalisation, or in extreme cases, even cause death.



EXPLOSION RISK symbol used when there is a risk of permanent serious injury that would require hospitalisation, or in extreme cases, even cause death.



CAUTION symbol used when there is a risk of minor injury that could require medical attention.



WARNING symbol used when there is a risk of minor injury that could be treated with first-aid or similar measures.



NOTE symbol used to provide important information about the topic.



It is prohibited to perform maintenance on moving components as there is a risk of permanent serious injury that could require hospitalisation.



Mandatory symbol indicating that safety gloves must be worn; used when there is a risk of permanent serious injury that would require hospitalisation.



Mandatory symbol indicating that eye protection must be used when there is a risk of permanent serious injury that would require hospitalisation.



Mandatory symbol indicating that safety shoes must be used when there is a risk of permanent serious injury that would require hospitalisation.



Mandatory symbol indicating that the documentation must be read; used to make the Technician aware of the importance of this action for their safety.

1.6 Guarantee

All of the machine's components are covered by a 12-month guarantee, except for electrical and electronic components and parts prone to wear and tear.

If any work is carried out on the machine electronics when the machine is still live, any guarantee will automatically be invalidated.

2. MACHINE IDENTIFICATION

2.1 Make and model designation

The machine and model ID information is found on the machine's NAMEPLATE and in the provided EU DECLARATION OF CONFORMITY.

2.2 General description

The machine described in this Manual consists of mechanical, electrical, and electronic components which, when used together, produce milk, coffee and water-based beverages. This product is manufactured in compliance with the EU Directives, Regulations and Standards indicated in the EU DECLARATION OF CONFORMITY provided with the machine.

2.3 The manufacturer's customer support service



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 Email: info@wega.it - Website: www.wega.it

2.4 Intended use

The espresso coffee machine has been designed to professionally prepare hot beverages such as tea, cappuccinos and weak, strong and espresso coffee, etc. The appliance is not intended for domestic use, it is intended for professional purposes only.

The machine can be used under all the conditions set forth, contained or described in this document; any other conditions must be considered dangerous. The machine must be installed in a place where its access is restricted to qualified personnel only who have received suitable training (coffee shops, restaurants, etc.).

Permitted uses

All uses compatible with the technical features, operations and applications described in this document, in addition to those that do not endanger the safety of users or cause damage to the machine or its surrounding environment.



All uses not specifically mentioned in this Manual are prohibited and must be expressly authorised by the Manufacturer.

Intended uses

The machine has been 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 be dangerous for the operator and/or those in close proximity to the Machine, is considered incorrect or improper.

Contraindications of use

The machine must not be used:

- for uses other than those indicated in this paragraph or for uses that differ from or are not mentioned in this Manual.
- with materials other than those listed in this Manual.
- with safety devices that have been disabled or are not working.

Incorrect use of the machine

The type of application and performance that this machine has been designed for, requires a number of operations and procedures that cannot be changed, unless previously agreed with the Manufacturer. All permitted behaviours are indicated in this document; any operation not listed and described herein is to be considered improper and therefore, hazardous.

Improper use

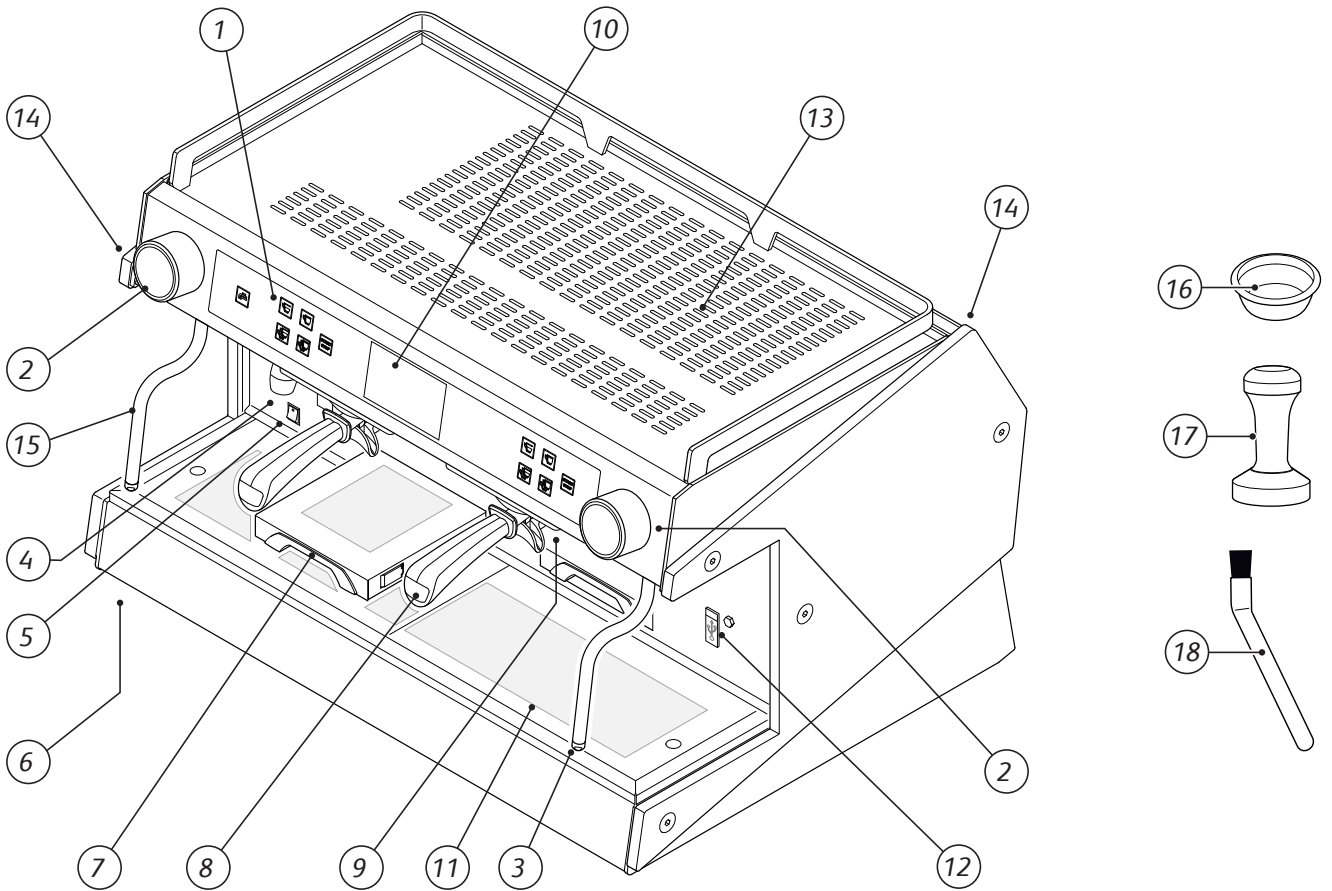
The only permitted uses are described in the Manual; any other use is considered improper and therefore, hazardous.

General safety features

The Technician must be aware of accident risks, safety devices and the general safety rules set forth in EU directives and by the legislation of the country where the machine is installed. The Technician must know how all the machine's devices work. They must also have fully read and understood this Manual. Maintenance work must be performed by the Technician after the machine has been properly prepared. The tampering or unauthorised replacement of one or more machine components, the use of accessories which modify its use and the use of materials other than those recommended in this Manual, can cause accidents.

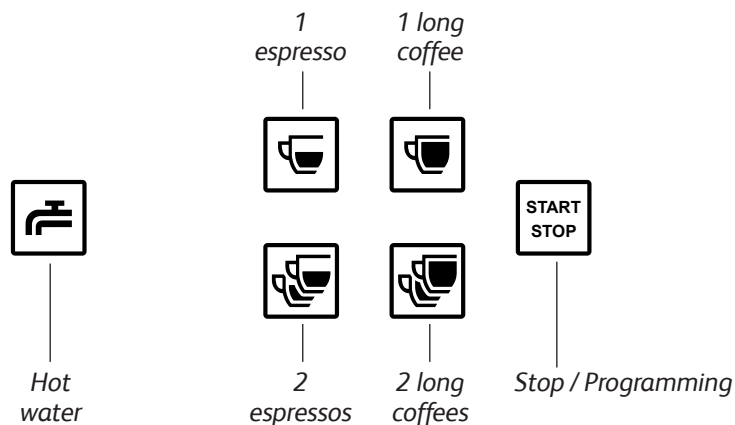
2.5 Machine diagram

- | | |
|---------------------------------|---|
| 1. Pushbutton panel | 10. Display touch screen |
| 2. Steam knob | 11. Cup holder grille |
| 3. Steam nozzle | 12. USB port |
| 4. Hot water nozzle | 13. Cup warmer shelf |
| 5. ON switch | 14. Illuminated side panels |
| 6. Adjustable foot | 15. Steam nozzle/automatic steam wand (if fitted) |
| 7. Pull-out cup holder grille | 16. Blind filter |
| 8. Filter holder | 17. Tamper |
| 9. Dispensing compartment light | 18. Cleaning brush |



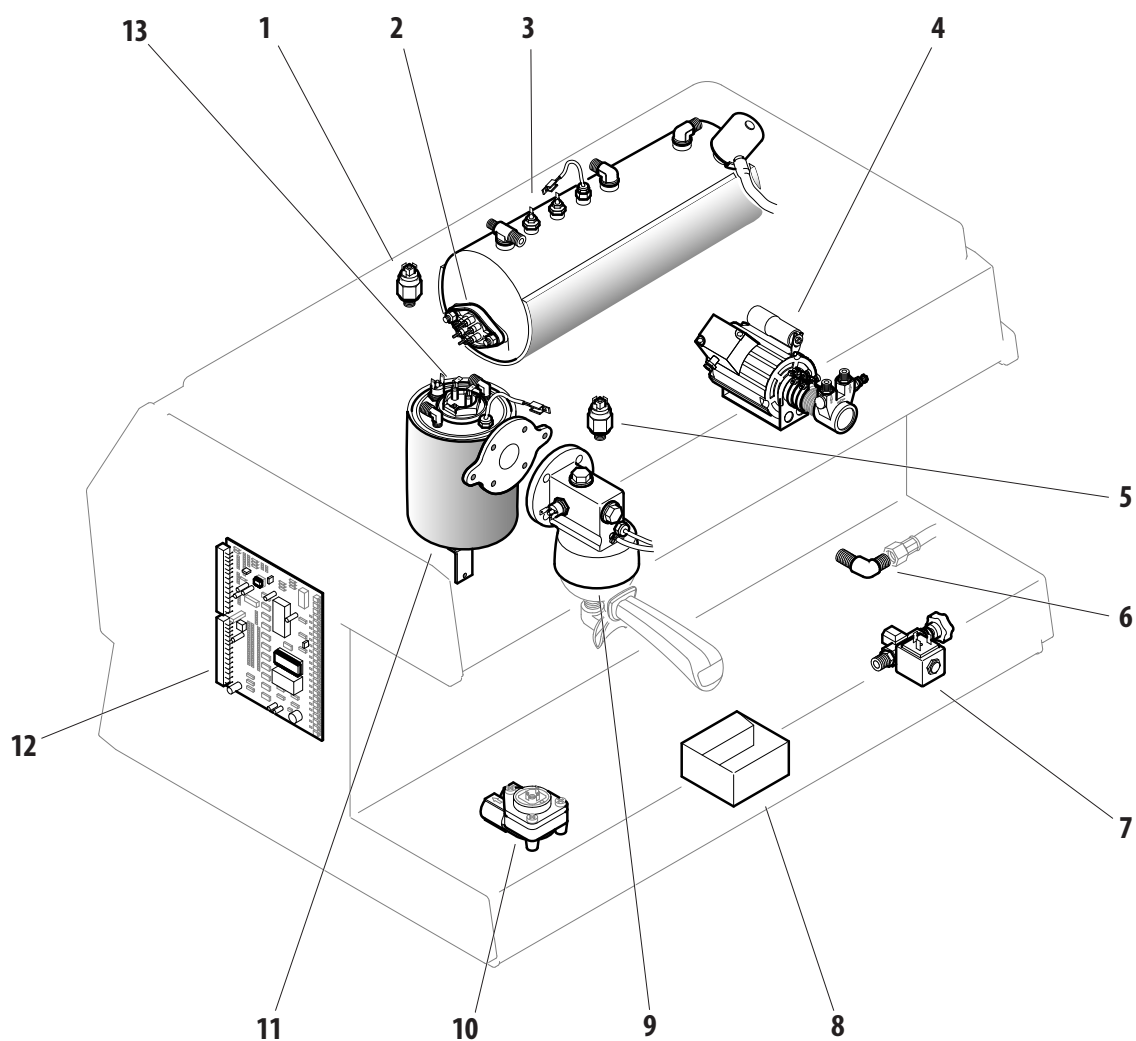
The only stick that can be used in the USB port (12) is the USB stick provided exclusively to the Technician. Do not connect external devices (iPhones, iPads, PCs, etc.) to the USB port because it could create serious machine software problems.

2.6 Pushbutton panel



2.7 Internal components

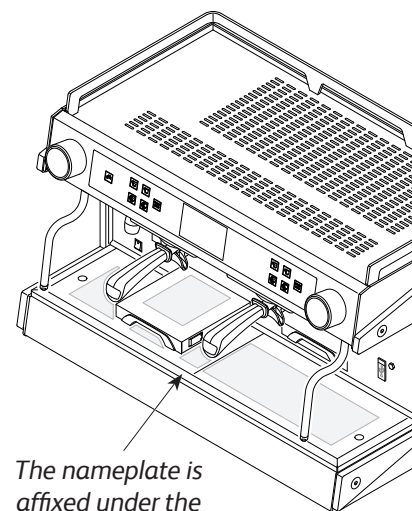
1. Steam heating unit safety pressure switch
2. Steam heating unit heating element
3. Steam heating unit
4. Internal motor pump (if included)
5. Coffee heating unit pressure switch
6. Water inlet connection
7. Hot water mixing system
8. Drain tray
9. Dispensing group
10. Volumetric dosing device
11. Coffee heating unit
12. Electronic control unit
13. Coffee heating unit heating element



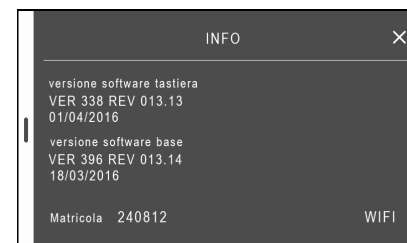
2.8 Data and marking

The machine's technical data is shown in the following table:

TECHNICAL DATA		2GR	3GR	4GR
220-240 V	Power	4400-5900 W	5500-7000 W	7100-7750 W
380-415 V				
Frequency		50-60 Hz	50-60 Hz	50-60 Hz
Steam heating unit		8 L	13 L	13 L
Safety valve calibration		0.19 MPa (1.9 bar) +/- 0.015 MPa		
Heating unit operating pressure		0.08 - 0.14 MPa (0.8 - 1.4 bar)		
Mains water pressure		0.15 - 0.6 MPa max. (1.5 - 6 bar max.)		
Coffee dispensing pressure		0.8 - 0.9 MPa (8 - 9 bar)		
Working environment temperature		5 - 35°C 95° MAX. R.H.		
Sound pressure level		< 70 dB		



The nameplate is affixed under the drain tray

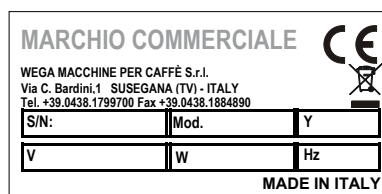



In compliance with directive 2006/42/CE, the machine is marked with the CE code with which the manufacturer declares under his responsibility that the machine is safe for persons and things.

Alternative markings can be affixed according to the target markets, provided they comply with current product regulations.

The nameplate which provides the appropriate markings, identification data and specific technical data, is affixed under the drain tray.

An example of a nameplate is provided below:



Enter the "Menu" section (see the instructions in the following chapters) and select the  button to view the machine's serial number.

When contacting the Manufacturer, always provide the following information:

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

The appliance data can also be found on the label located on the machine's packaging.



It is forbidden to remove or modify the nameplate. Should it deteriorate or become illegible, contact the Manufacturer.



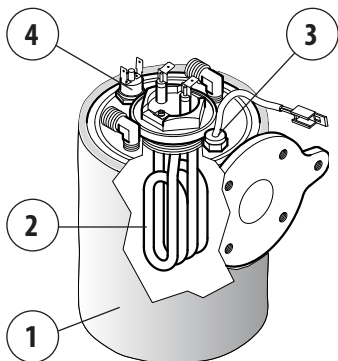
To correctly connect the machine to the electric mains, refer to Chap. 15.

2.8.1 Coffee heating unit

Each dispensing group is fitted with a thermally-insulated coffee heating unit (1) for dispensing hot water for coffees.

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

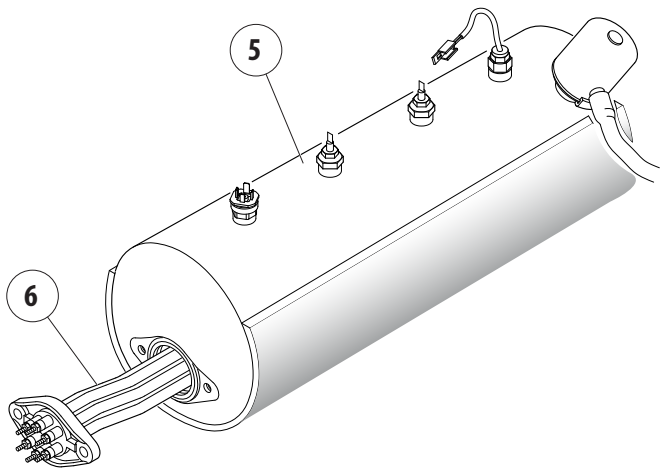
The temperature sensor (3) regulates and stabilises the water temperature inside the coffee heating unit. The safety thermostat (4) intervenes in the event of a heating system malfunction. If the temperature reaches 150°C, the safety thermostat intervenes by disabling the heating element and reporting the problem on the display.



2.8.2 Steam heating unit

The fully-insulated steam heating unit (5) is used to produce steam for dispensing hot water, frothing milk via the cappuccino maker or steam wand (optional), and for heating/ frothing beverages.

The heating unit's water is heated by an electric heating element (6).

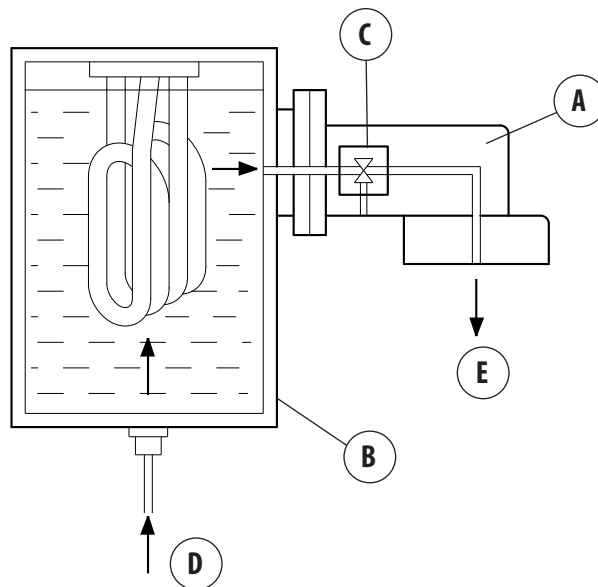
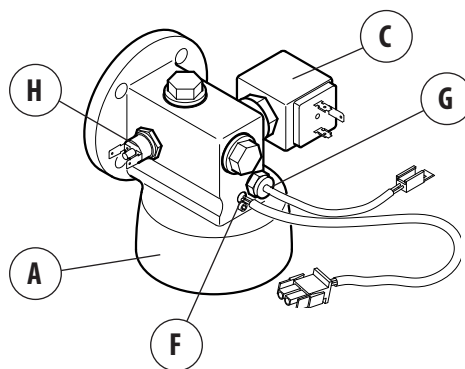


2.8.3 Dispensing group

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


The functions of the group are summarised as follows:

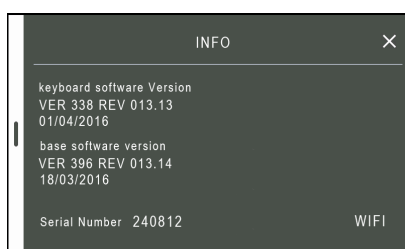
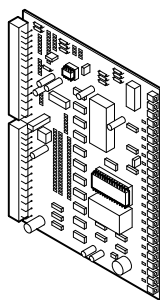
- When the motor pump and solenoid valve (C) are activated, which are located on the side of the group, this allows cold water to enter the heating unit (D), and consequently the hot water in the heating unit is carried towards the group to be dispensed (E).
- The electric cartridge heating element (F) which is installed inside the group, is controlled by the electronic control unit and heats the group at a programmed temperature.
- The temperature sensor (G) detects the group's temperature and sends it to the electronic control unit.
- The safety thermostat (H) cuts in to prevent any risks if there is a failure in the electronic system.



2.8.4 Electronic control unit

The electronic control unit is the machine's "brain", since it monitors and controls the appliance's full operation.

Enter the "Menu" section (see instructions in the next chapters) and select the  button to view the installed software information (date and version).

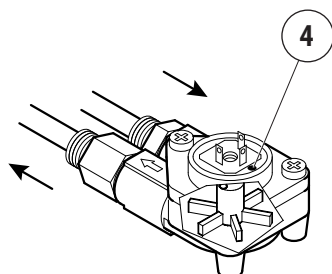


2.8.5 Volumetric dosing

The volumetric dosing device measures the quantity of water sent to the group in order to dispense coffee.

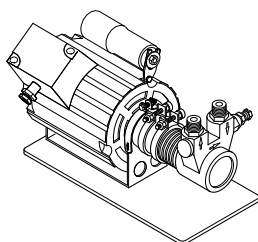
The dispenser generates electrical impulses which are sent to the electronic control unit. These impulses are read by the control unit and counted while the dose is being programmed.

The flashing LED light (4) indicates that the electrical impulse has been sent from the dosing device to the control unit.



2.8.6 Motor pump

This component feeds the machine by increasing the water pressure to 0.8-0.9 MPa (8-9 bar) in order to dispense coffee and automatically fill the heating unit.



2.8.7 Automatic Water Entry

The Automatic Water Entry system is designed to check the water level in the heating unit. It consists of:

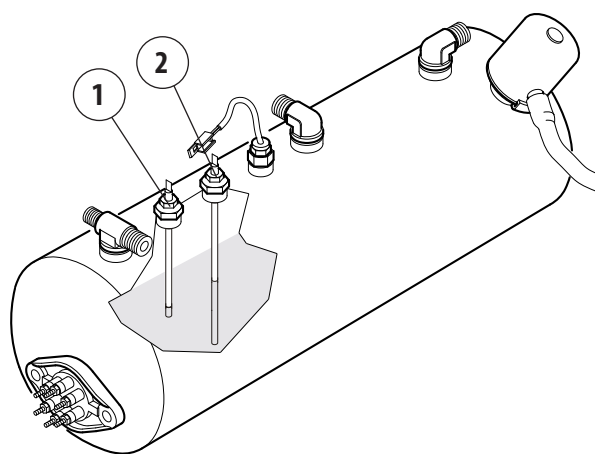
- A level probe (short) (1) and safety probe (long) (2) - comprising a stainless steel rod - inserted in the heating unit.
- An electronic control unit.
- A hydraulic circuit with a motor pump and solenoid valve which are controlled by the electronic control unit.

If the water level drops while the machine is operating normally, the level probe (1) sends a signal to the electronic control unit, which activates the motor pump and the filling solenoid valve, which in turn restores the water level in the heating unit.

If the level is very low or there is no water in the heating unit (during the machine's installation or due to a failure), the safety probe (2) sends a signal to the control unit which deactivates 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 heating unit.

To prevent any flooding caused by machine malfunctions or leaks in the hydraulic circuit, the electronic control unit has a "Timeout" device which stops the automatic water filling operation after a maximum operating time.

When machines with three or four groups are being installed, the initial water filling time may exceed the established timeout limit. Should this occur, simply turn the machine off and then back on to restore normal operating conditions.



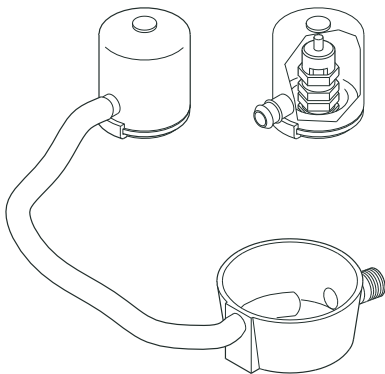
2.8.8 Pressure switch

The machine has two types of pressure switches:

- **COFFEE HEATING UNIT PRESSURE SWITCH**
Each coffee heating unit is equipped with a pressure switch to adjust the pressure. The calibration is set to 2 bar.
- **STEAM HEATING UNIT PRESSURE SWITCH**
The steam heating unit is instead fitted with a safety pressure switch which prevents the calibration value from being exceeded. The calibration is set to 1.5 bar.

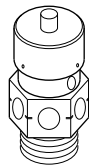
2.8.9 Overflow device

The cover installed on the pressure relief valve makes it possible to collect any water and steam which may leak from the heating unit due to a malfunction and channel it to the drain tray, via a special hose.



2.8.10 Pressure relief safety valve

The pressure relief safety valve has a calibration of 0.19 MPa (1.9 bar) +/- 0.015 MPa in order to ensure that the pressure in the steam heating unit does not exceed 0.21 MPa (2.1 bar). Should a fault occur, the capacity of the valve is such as to be able to eliminate all the excess pressure in the heating unit.



The safety valve should be checked regularly as indicated in para. 10.3.5.

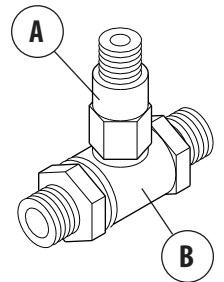


Two safety valves are installed on all machines with 4 groups.

2.8.11 Expansion valve + check valve

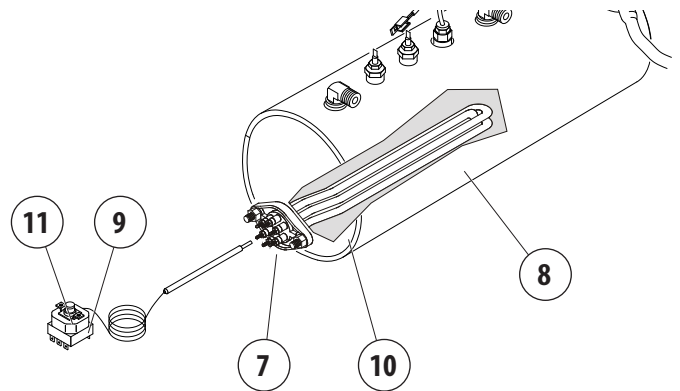
This is a valve consisting of an expansion valve and a check valve.

- **Expansion valve (A):**
the cold water sent from the pump to the heat exchangers 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 1.2 MPa (12 bar).
- **Check valve (B):**
its function is to prevent the water back-flowing into the hydraulic circuit exchangers.



2.8.12 Safety thermostat

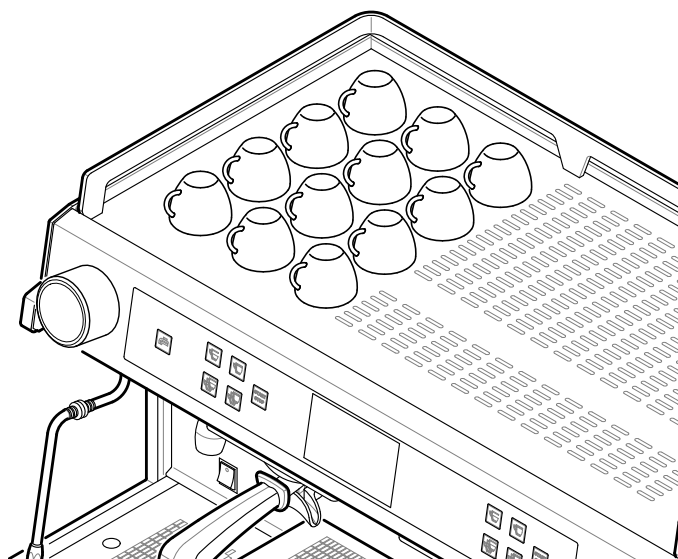
The thermostat prevents any damage occurring to the electrical heating element if there is no water in the heating unit. The thermostat bulb (7) is located inside a sheath (8) in the middle of the heating elements. The thermostat contacts (9) are connected to the electric heating element (10). If the electric heating element is exposed due to a failure to fill the heating unit with water, the temperature of the heating element increases dramatically. At this point, the thermostat cuts the power supply to the heating element in order to prevent damage occurring.




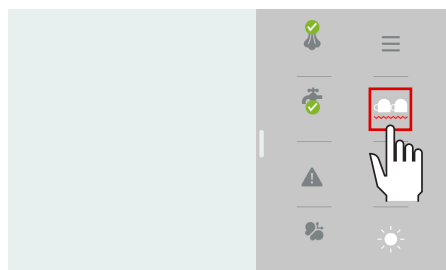
To reset the thermostat, press the centre button (11). However, before starting the machine up again, identify what prevented the water from being fed into the heating unit.

2.8.13 Cup warmer

The cup warmer device warms the cups before they are used.



To activate the cup warmer, press the  button. When the bottom of the button turns red, the cup warmer is on.



To change the cup warmer temperature, see para. 8.4.3.

2.8.14 Cappuccino maker (optional)

The cappuccino maker can be installed as an optional extra onto a steam nozzle or installed directly onto the tap itself. This device can both heat and froth the milk. To adjust and clean the cappuccino maker, follow the instructions in the user manual.

Using the appropriate fitting, attach the cappuccino maker directly to the steam nozzle, by replacing the original sprayer. Otherwise, attach it via the appropriate hose, directly onto the machine's steam valve.

Ensure that the sealing gasket (1) is present and if so, use Teflon tape in order to prevent any steam loss which could negatively effect the cappuccino maker's operation.

Insert the milk suction hose (3) into the cappuccino maker's appropriate coupling (2).

To change the temperature of the milk, attach the reducers as shown in the table below.

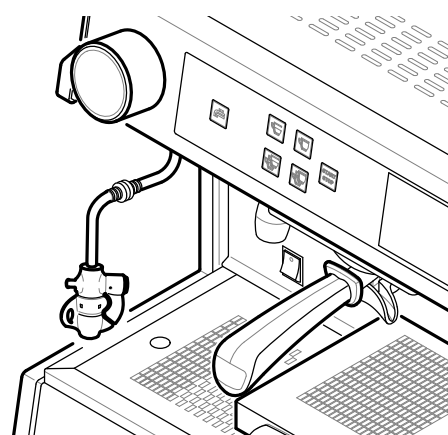
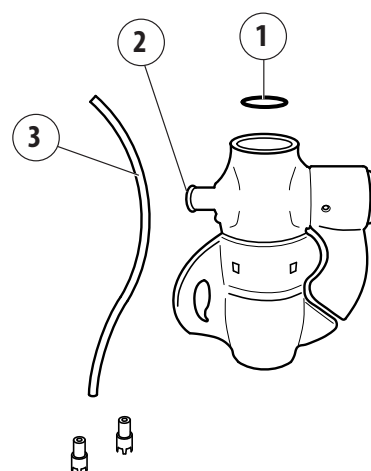



Table of temperatures with and without reducers (temperatures measured in a pre-heated cup)

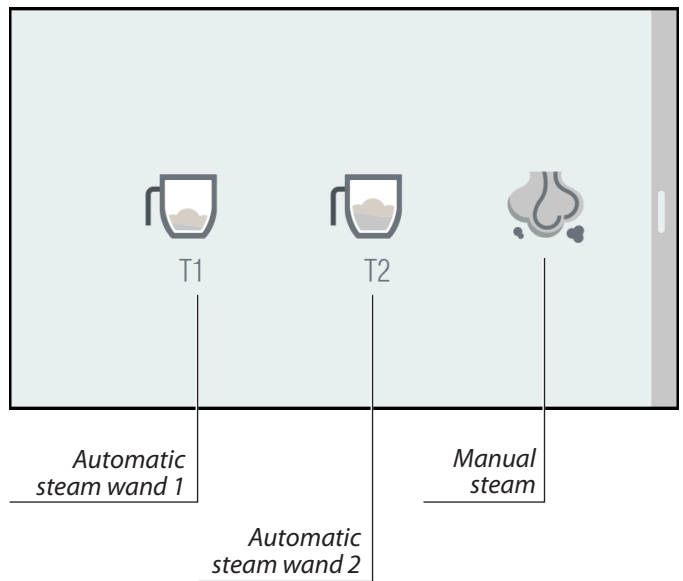
Milk temperature	Without use of an adaptor	With a WHITE adaptor Ø 1.9 mm	With a RED adaptor Ø 1.8 mm
Ambient temperature 16°C	55 - 60°C	60 - 68°C	68 - 75°C
6°C chilled milk	48 - 56°C	58 - 63°C	63 - 70°C

2.8.15 Automatic steam wand (optional)

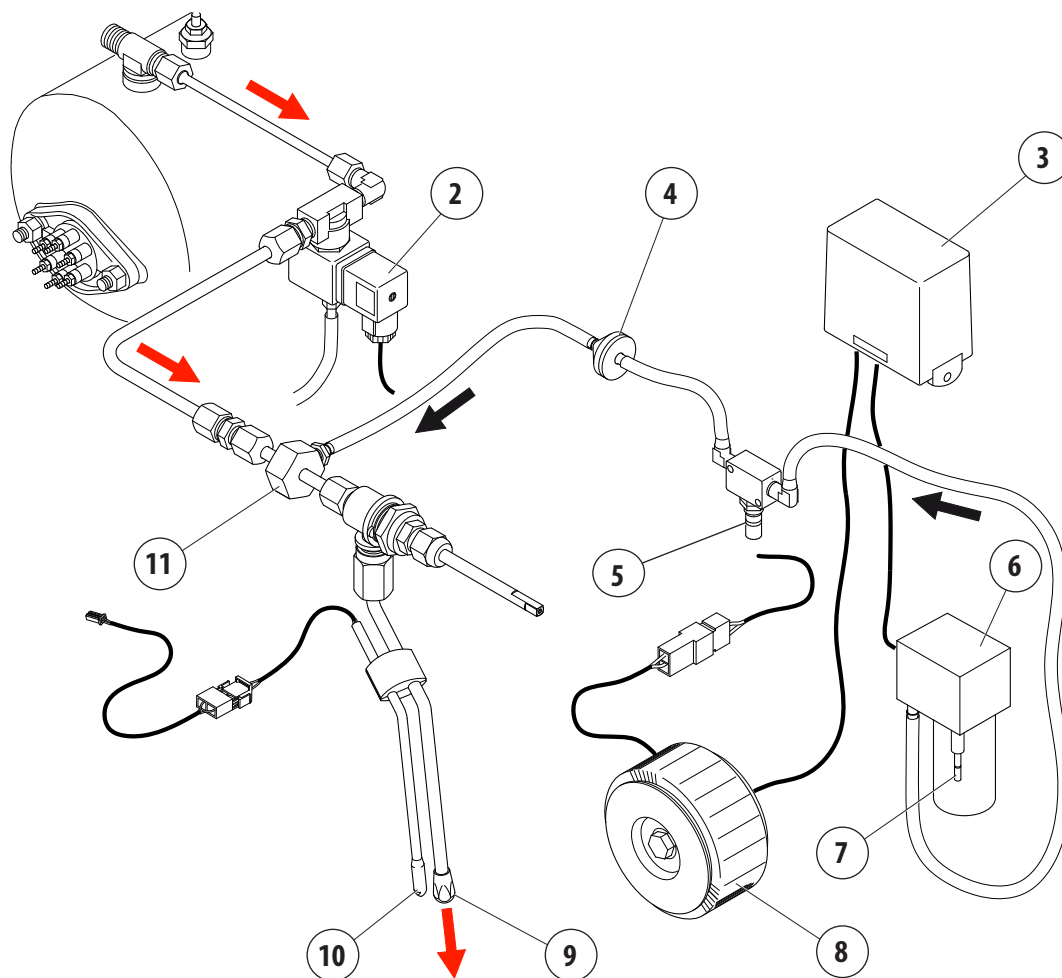
This system automatically froths milk at the programmed temperature.

The operating principle is listed below:

- Select the desired button on the display, e.g. the  button.
- The solenoid valve opens (2) which consequently allows the steam to flow from the heating unit to the automatic steam wand 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 milk froth can be adjusted by changing the quantity of air sucked in, by turning the valve accordingly (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 milk temperature has been reached, the electronic system stops the air and steam from being dispensed.



To adjust the milk temperature and froth, see para. 8.4.3.



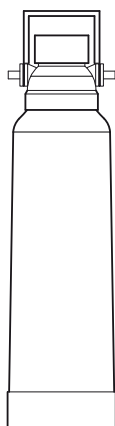
2.8.16 Water filter

In the mains water, non-soluble salts are present which cause limestone to form in the heating unit and other parts of the machine.

Drinking water can also contain heavy metals and substances, such as chlorine which are 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.

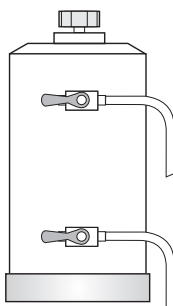


To use and maintain the water filter, follow the instructions provided in para. "10.4 Water filter maintenance" on page 56.

2.8.17 Water 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 the water is very hard, it will be need to be regenerated more frequently. The same rule can be applied to locations where there is a large consumption of hot water (for tea, etc.).



To use and regenerate the water softener, follow the instructions provided in para. "10.5 Water softener regeneration" on page 58.

3. TRANSPORT AND HANDLING

3.1 Safety precautions



Carefully read the instructions provided in chapter "I. SAFETY PRECAUTIONS" on page 3.

3.2 PPE features

When transporting the machine, the following PPE is required:



The use of protective gloves is mandatory.



The use of safety shoes is mandatory.

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
Maximum 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.

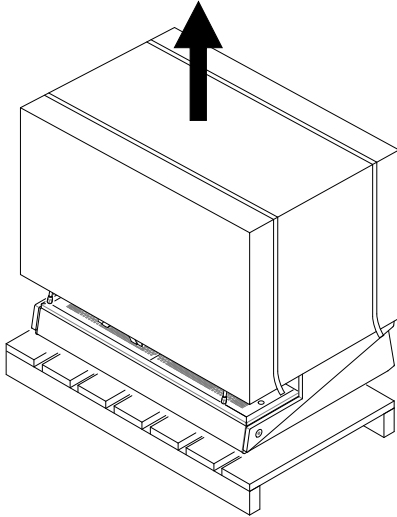


It is very important to check that the maximum load capacity of each piece of lifting equipment, is at least equal to the weight of the loads to be lifted plus the safety margins which are required by current standards.

3.5 Unpacking the machine

Only remove the machine from its packaging when it is ready to be installed, in order to prevent accidental collisions which could damage it:

- Open the packaging, taking care not to damage the machine.
- Remove and take out the machine guards and equipment inside the packaging.
- Remove the machine.
- Dispose of the packaging in compliance with the current waste regulations.



i After unpacking the machine, check that there are no damaged parts due to transport or missing parts. Should there be any, immediately inform (no later than 7 days after delivery) both the CARRIER and the MANUFACTURER, by indicating the machine data and providing photographic evidence.

We recommend that you keep the packaging until the guarantee has expired.

Wood, nails, staples, cardboard: non-polluting material which must be recycled properly.

Plastic: polluting material that must not be burned (danger of toxic fumes), nor disposed of as normal waste; 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 an Authorised Distributor.

4.2 Storing the machine after operation

If the machine is not used after a certain period of time, store it in the following conditions:

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

Store the machine taking the following precautions:

- Store in a closed environment.
- Protect it 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°C - +35°C
- Max. relative humidity: 50 % (at 40°C)

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

- Room temperature: premature degrading of the motors.
- Relative humidity: premature degrading of seals and electronics.



If the environmental features are significantly different than those listed, contact the MANUFACTURER before they become a potential problem.



Before starting the machine up after it has been placed in storage, the equipment must be fully inspected.

5. INSTALLATION

5.1 Safety precautions



Carefully read the instructions provided in chapter "I. SAFETY PRECAUTIONS" on page 3.



If the technician has not performed all the installation operations and the machine is then used, this may result in serious damage to the appliance and people.



If any work is carried out on the machine electronics when the machine is still live, any guarantee will automatically be invalidated.

5.2 PPE features

When installing the machine, the following PPE is required:



The use of protective gloves is mandatory.



The use of eye protection is mandatory.



The use of safety shoes is mandatory.

5.3 Environmental conditions

5.3.1 Room temperature

The electrical and electronic equipment that has been installed on the machine, has been designed and made to function properly in environments where the temperature is between +5 and +35°C.

5.3.2 Relative humidity

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

5.3.3 Altitude

The altitude of the installation site must not exceed 2000 m.

5.4 Installation and operation spaces

Before the machine arrives, a suitable environment must be prepared:

- The appliance is not suitable for installation in an area where a water jet may be used.
- The machine is not suitable for outdoor use.
- The machine must not be used inside kitchens.
- The room must be suited for the intended use with adequate space to comfortably use the machine.
- The lighting must be adequate and conform with current standards.
- The earthing system must comply with current standards.
- The electrical system must comply with current regulations.

5.5 Support base

To ensure a sufficient degree of ergonomics and machine safety, a support base with the following features must be made available (reference drawings on the next page):

- Ensure that there is sufficient space for the machine to be positioned and used correctly.
- The worktop (1) must be comfortable and able to withstand the machine's weight. The height of the upper section of the machine (15) must be at least 150 cm from the floor.
- The base must be perfectly level and have no irregularities.
- The terminals for connecting to the water mains (11) and electrical mains (8) must be in the immediate vicinity of the support base.
- The machine can also be positioned against a wall, but please leave enough space - at least 50 cm (3) - on the right and left for easy access during cleaning operations.
- Fit a drawer under the worktop (13) which will be used to deposit used coffee grounds and if possible, fit a rubber support as well (14) to knock the filter holder against.

1. Support base
2. Grinder-dispenser
3. 50 cm minimum distance between the machine and the wall
4. Sewer drain
5. Drain tray
6. Water mains inlet
7. Adjustable feet of the machine
8. Electrical mains switch
9. Water filter inlet
10. Water filter outlet
11. Water mains valve
12. Water mains check valve
13. Used coffee grounds drawer
14. Support for knocking out the grounds in the filter holder
15. The minimum height of the machine top from the floor must be 150 cm



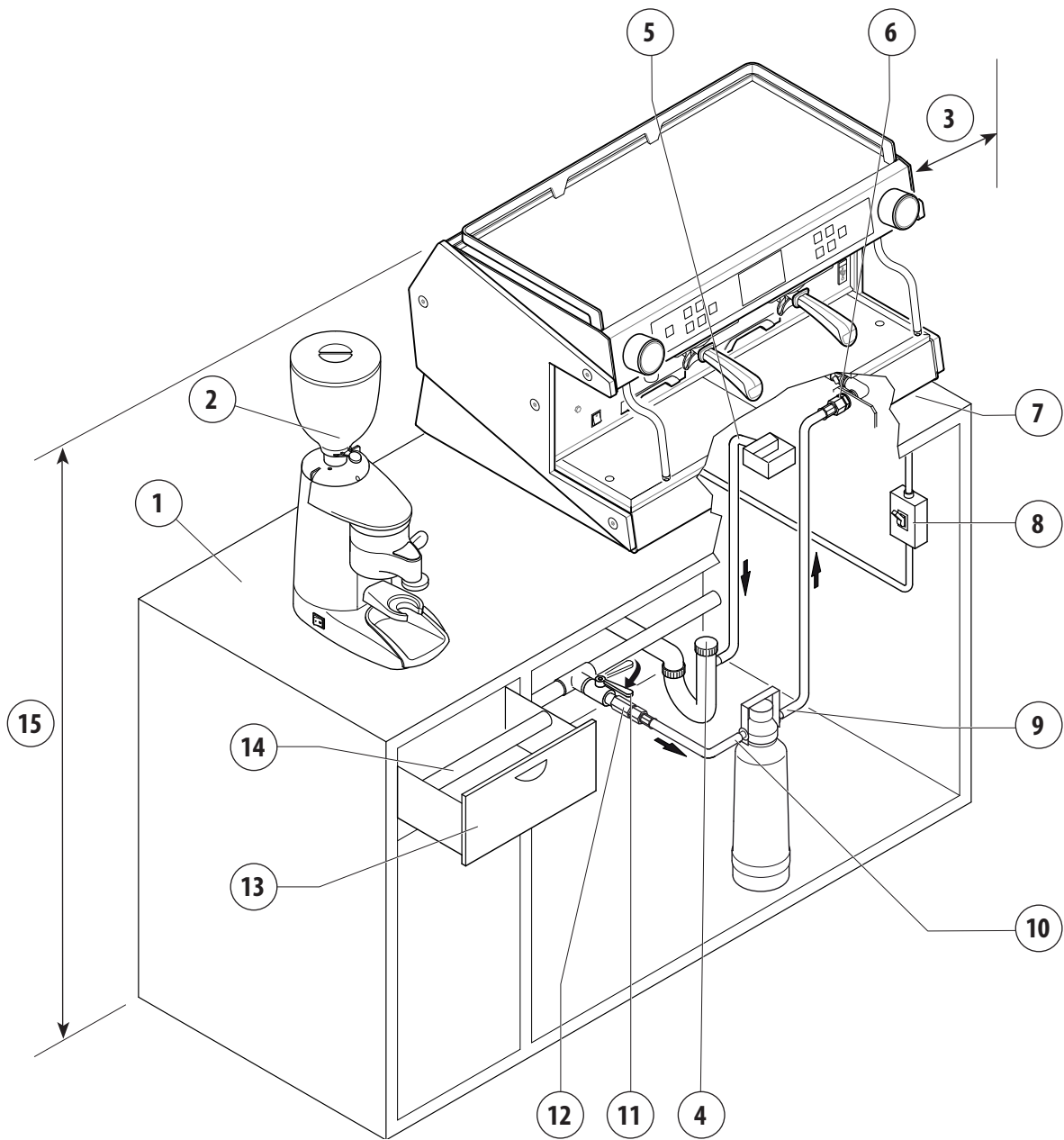
FOR THE USA: Replace the machine's feet (7) with the raised ones supplied.

The new feet must be firmly fastened to the machine by means of the specific nut.



In order to work properly and ensure safety, the machine must rest on a perfectly horizontal surface.

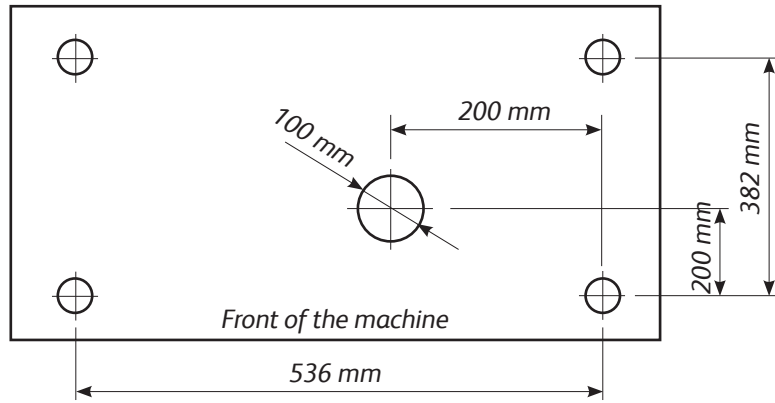
Any machine alignment adjustments must be done by adjusting the feet (7).



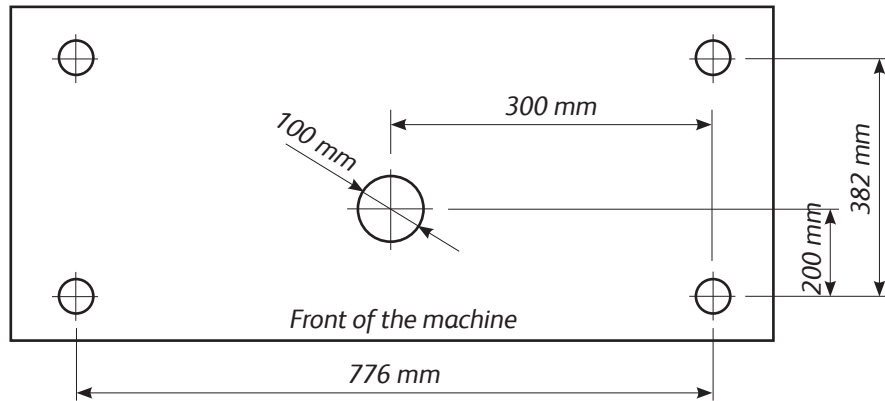
5.6 Drilling the support base

If holes need to be drilled into the support base to let the water inlet hoses, outlet hoses and power cables pass through, follow the directions given in the drawings below.

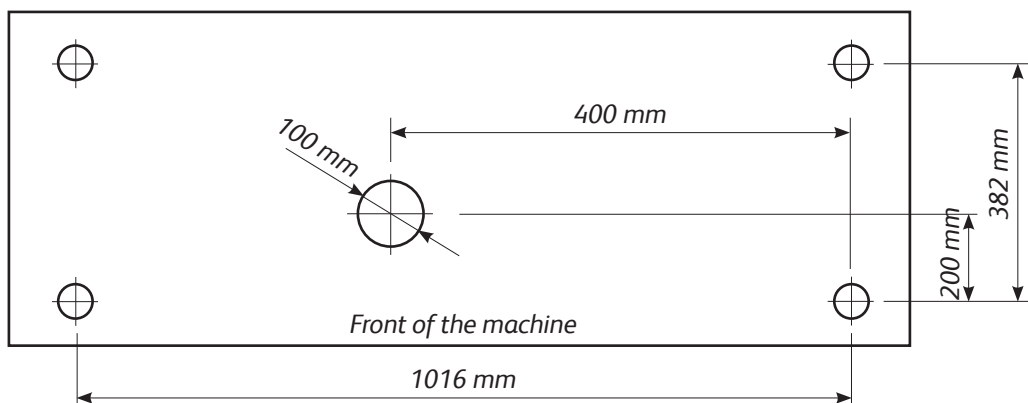
2 GROUPS



3 GROUPS



4 GROUPS



5.7 Hydraulic connection



Before connecting the hydraulic system, make sure the appliance has been disconnected from the electrical mains.

5.7.1 Water supply

The appliance's water supply must provide water which is suitable for human consumption, and must conform with the regulations in force in the place of installation. The owner/manager of the system must provide the Technician with confirmation that the water meets the above requirements.

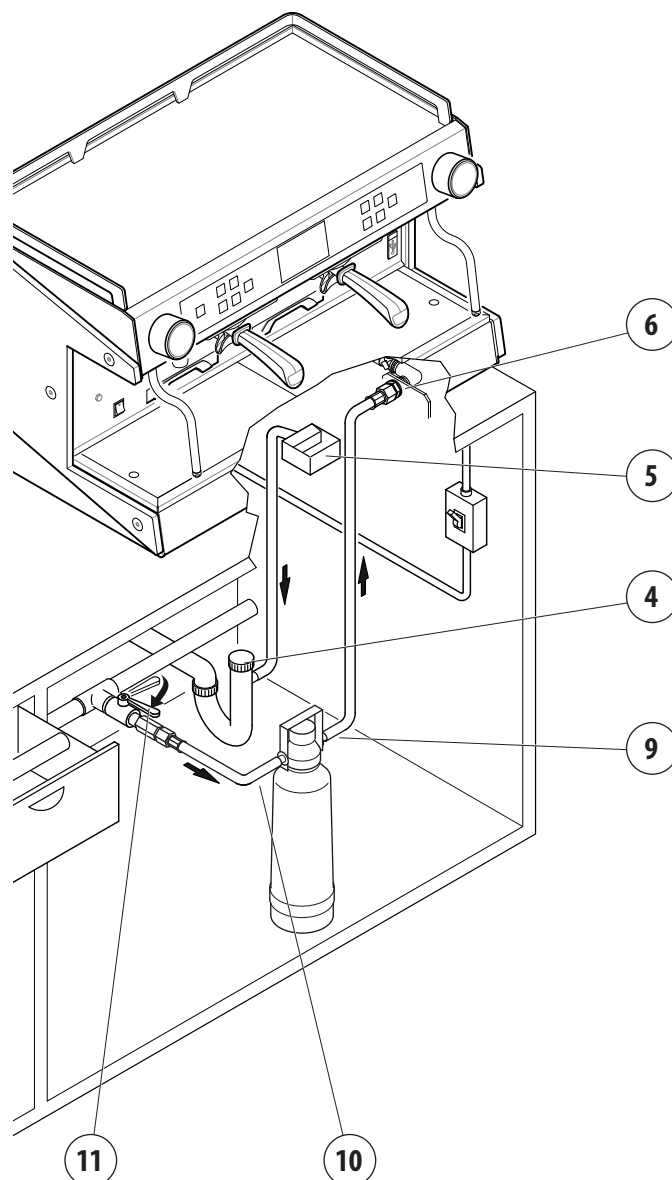
5.7.2 Materials to be used

When installing the appliance, only the components and materials supplied with the appliance are to be used. Should the use of other components be necessary, the Technician must verify that these are suitable for coming into contact with water used for human consumption.

5.7.3 Hydraulic connections

The Technician must carry out the hydraulic connections in accordance with the hygiene and hydraulic safety standards regarding environmental protection which are in force in the place of installation.

- Add a valve to the water supply in order to stop water flowing to the machine.
- In order to prevent damage, it is advisable to install the water purification filter where it will be protected from accidental blows.
- If there is no water purification filter (9), connect the water mains (15) directly to the machine's water inlet (6).
- When connecting the machine's tray (5) to the sewer drain (4), avoid overly tight curves or kinks, and make sure that there is sufficient inclination for water to flow to the drain.
- The drain must be connected to a siphon that can be inspected and periodically cleaned, in order to prevent unpleasant odours returning.
- To avoid oxidation building up and damage to the machine over time, do not use iron connections for the hydraulic system, even if they are galvanised.



After installation and before using the machine, the water in the hydraulic circuits must be replaced, as indicated in para. 6.7.



New connecting pipes must be used every time that the machine is newly installed. Do not use old connecting pipes.



The water mains must supply cold water fit for human consumption (potable water) at a pressure between 0.15-0.6 Mpa (1.5 and 6 bar). If the pressure is higher than 0.6 MPa (6 bar), connect a pressure reducer before the pump.

All the filling couplings are 3/8 male gas types. The drain tray is connected to a pipe 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.

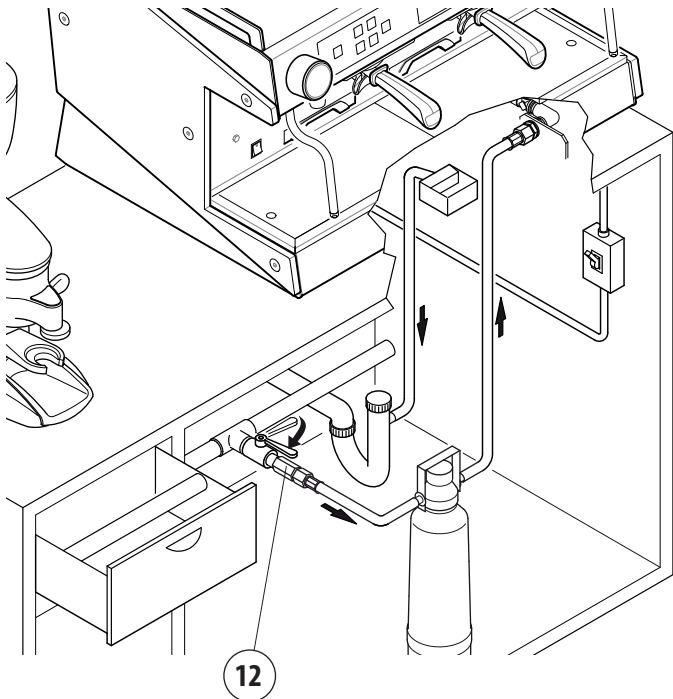
The machines are fitted with a "Timeout" device which allows the heating unit to be filled up with water within a maximum time. This function prevents water from flowing out of the heating unit's valve (flooding) and keeps the motor pump from overheating.



FOR THE EUROPEAN COMMUNITY: when connecting to a water mains or an external tank, a non-return valve (12) must be positioned upstream from the machine, as set forth by the EN 1717 standard.

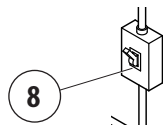


FOR THE USA - The water connections and drains must be made in accordance with the 2003 International Plumbing Code of the International Code Council (ICC), or the 2003 Uniformed Hydraulic Code of the IAPMO. The machine must be installed with a suitable non-return valve as set forth by the national standards.



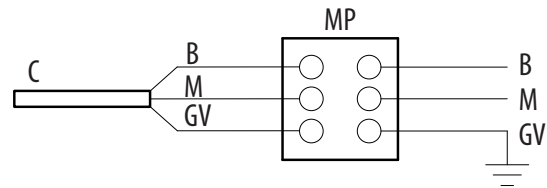
5.7.4 Electrical connection

- The conformity of the electrical system, effectiveness of the earthing system and functionality of the differential circuit breaker - all of which are fundamental for guaranteeing the appliance's electrical safety - are the responsibility of the person in charge of the electrical system on which the equipment is installed.
- Before installation, make sure that the electrical system is equipped with the protection device (8), as indicated in the safety notes.
- To connect the machine to the electric mains, refer to Chap. 15.
- Do not use extension leads or electrical adapters for multiple outlets.
- 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 leave the area immediately when needed.



If an external motor pump is being used, proceed as follows:

- Connect the motor pump cable (with the smaller cross-section) to the connector of the external motor as shown in the diagram below.
- Connect the machine's power cable (with the larger cross-section) as indicated in Chap. XX.



B	Blue
C	Motor pump power cable
GV	Yellow-green
M	Brown
MP	Motor pump terminal



Every electrical connection operation must be carried out with the mains off and the power supply disconnected. The Technician must also check that there is no voltage present, by using a multimeter, for example.



The electrical system must be equipped with a protection device (8) that ensures an omnipolar disconnection from the mains with a contact opening distance in overvoltage category III conditions and which guarantees a suitable residual-current device, equal to 30 mA, in compliance with current laws and safety regulations.



Always connect the motor pump cable before the machine power supply cable, by following the diagram provided. Failure to comply with the instructions given above may cause serious damage to the machine and/or motor pump and will invalidate any guarantee. We recommend that you promptly report any problems encountered during the appliance's installation to the Manufacturer.

6. COMMISSIONING

6.1 Safety precautions



Carefully read the instructions provided in chapter "I. SAFETY PRECAUTIONS" on page 3.

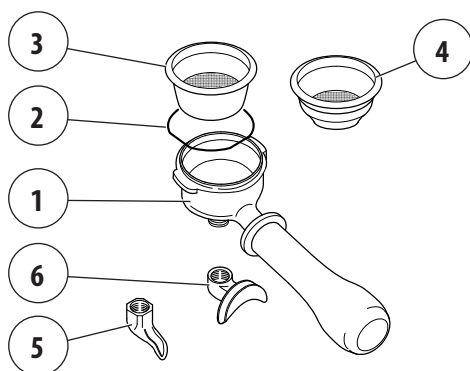
6.2 Preparing the filter holders

6.2.1 Filter holders

- Place the filter-holding spring (2) in the housing of the filter holder (1).
- Take the (3) or (4) one-cup filter and press it firmly into the filter holder.

6.2.2 Spouts

Finish preparing the filter holder by fitting the spout for one cup (5) or two cups (6).

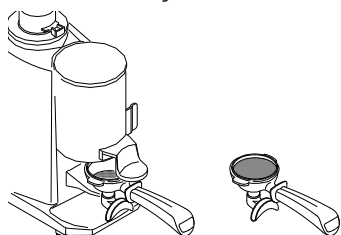


Properly connect the single filter with the single spout and the double filter with the double spout.

6.3 Grinding and dosing coffee

It is important to have a grinder-dispenser next to the machine so that the coffee can be ground on a daily basis. To adjust the coarseness of the ground coffee, use the appropriate regulator located on the grinder-dispenser hopper. The coffee must be ground and dispensed according to instructions provided by the manufacturer of the grinder-dispenser. The following points should also be kept in mind:

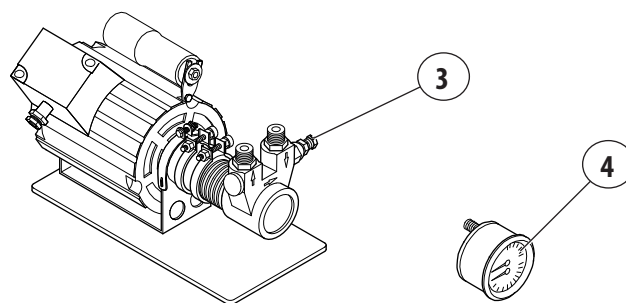
- To obtain a good espresso it is not recommended that you store large amounts of coffee beans. Comply with the expiry date indicated by the producer.
- Never grind large volumes of coffee, it is advisable to prepare the amount that can be held in the dosing device and if possible, use it by the end of the day.
- Do not buy pre-ground coffee, as it perishes quickly. If necessary, buy coffee in small vacuum-sealed packs.



6.4 External motor pump adjustment

To adjust the operating pressure, proceed as follows:

- Press a coffee dispensing switch.
- Adjust the pressure by turning the screw located on the pump (3) so as to obtain a value between 0.8 and 0.9 Mpa (8 and 9 bar): tightening the screw increases the pressure, and loosening it reduces the pressure. Check the pressure by means of the pressure gauge (4) located on the front of the machine.
- Switch off the dispensing switch.



6.5 Automatic steam wand (if applicable)

6.5.1 Adjusting the temperature

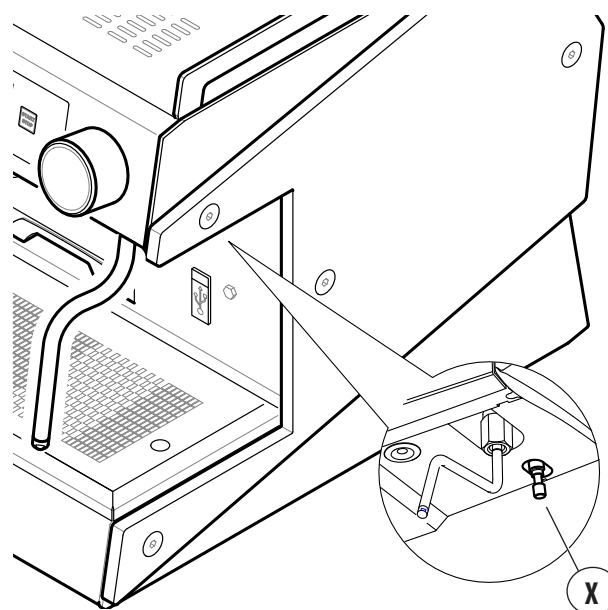
To programme the temperature of the milk to be heated, see para. 8.4.3.

However, we recommend that this does not exceed 60°C.

6.5.2 Adjusting the milk froth

To increase or decrease the froth consistency, slightly turn the specific regulator (X).

Turning it clockwise will decrease the consistency, whilst turning it anti-clockwise will increase the amount of froth.



6.6 Turning the machine on and off

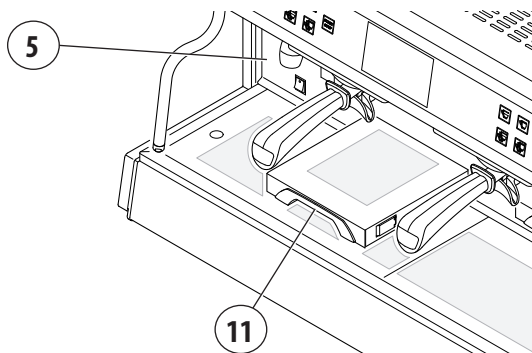


During the machine's heating-up phase, the negative pressure valve will release steam for a few seconds until the valve closes.



If the machine is inactive for longer than a week, the Technician must replace 100% of the water inside the hydraulic circuits.

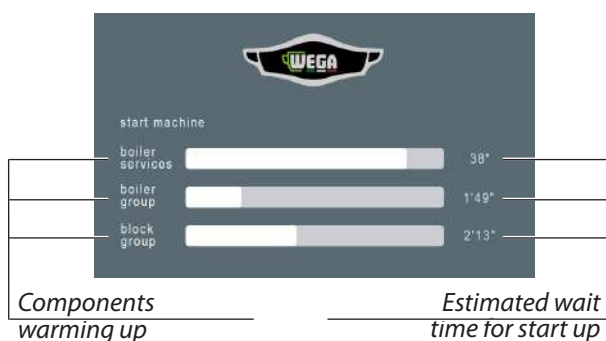
After the hydraulic and electrical mains have been connected, make sure that the drain tray under the cup holder grille (11) is correctly connected to the drain.



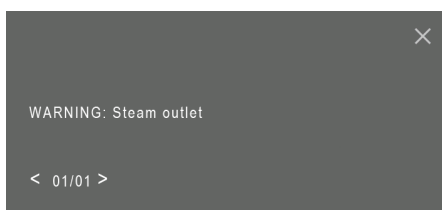
Check that all the steam valves are closed. Turn the machine on using the main switch (5) and follow the instructions provided on the display, as described below.



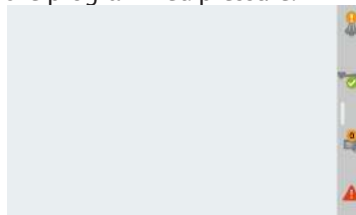
Wait for the machine to start up.



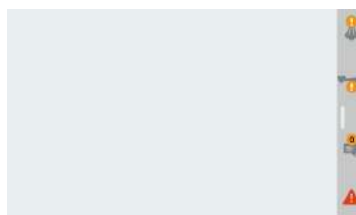
During start-up, the machine will release water from the groups:



After start-up, the machine is ready to dispense coffee, 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.



In some cases, such as, for example, after the groups have been washed, all selections will be inactive for a short time, the display will have reduced brightness and some messages will appear on the right bar.



After the temperature has been regulated, the display will return to its normal brightness and the machine will return to its active status.

6.6.1 Turning the machine off

Switch the machine off via the main switch (5).

6.7 Water renewal

When the machine is being installed, the Technician must replace the water inside the hydraulic circuits by following these steps:

- When the installation is complete, the appliance must be started, brought to the nominal working condition and left in the “ready-to-operate” status for 30 minutes.
- Next, the appliance has to be turned off and fully emptied of the first water introduced into the entire hydraulic circuit, in order to eliminate any initial impurities.
- The appliance must then be filled again with water and brought to nominal working conditions.
- Upon reaching the “ready-to-operate” status, the following dispensing operations must be performed:
 - Continually dispense from each coffee group, in order to empty at least 0.5 litres from the coffee circuit. If there are several dispensing points attached to the same exchanger/coffee heating unit, divide the volume by the number of dispensing points.
 - Empty the heating unit of all its hot water by continuously dispensing through the specific nozzle. If there are multiple dispensing points, divide the volume by the number of dispensing points.
 - Continuously release steam for at least 1 minute from each steam dispensing point.



If the machine remains inactive for longer than a week, the Technician must renew 100% of the water inside the hydraulic circuits, as indicated above.



Before using the machine, run a few empty dispensing cycles with the filter holder attached for a few seconds to release any air inside the circuit and in turn, allow the dispensing groups to fully heat up.

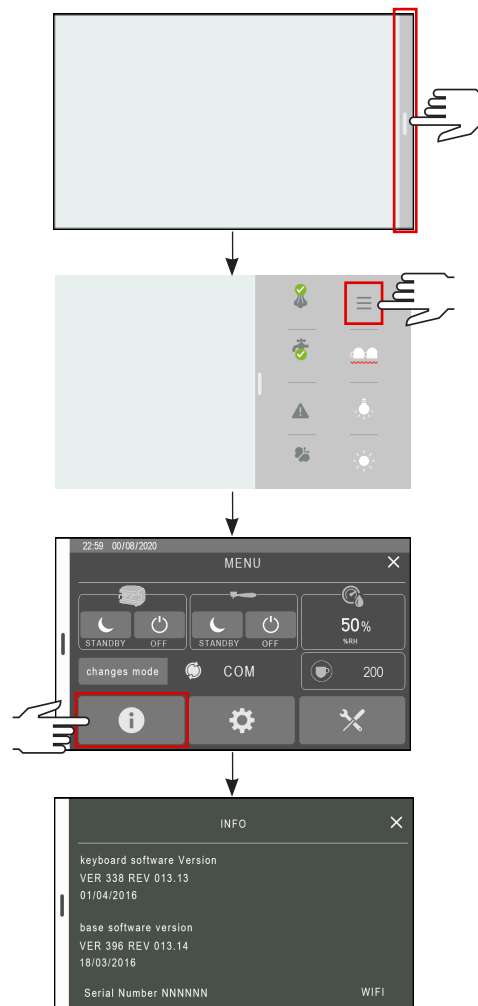


Before using the machine, dispense a few coffees to test the grind fineness and to check the operating pressure of the machine.

7. MACHINE INFORMATION

The machine information is available on the display:

- Select the bar on the right side of the display;
- Select the menu button
- Select the information button





8. PARAMETER PROGRAMMING

This paragraph shows all of the programming menus where the various machine functions can be set. All these operations are carried out via the touchscreen display.

8.1 Access

The programming mode can be accessed via two different menus:

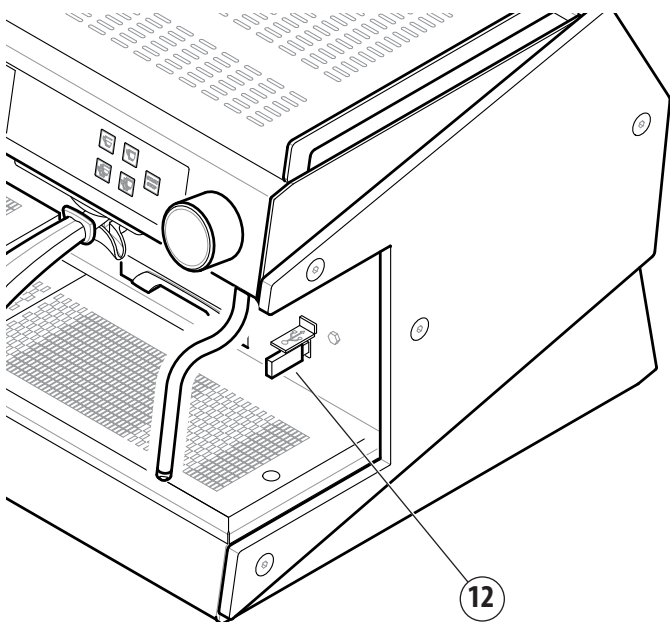
- USER CONFIGURATION 
- SERVICE SETTINGS 

The latter menu can only be accessed in the following way:


- with the supplied USB stick;
- via the password.

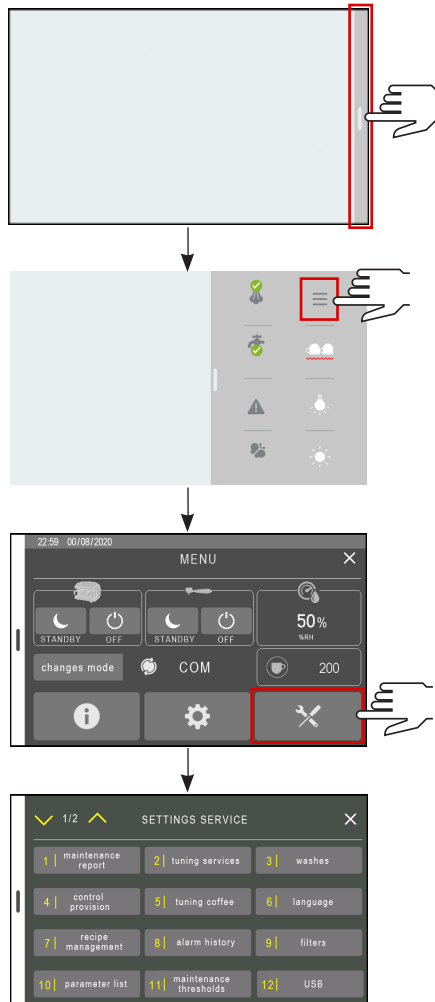


Some of the USB features cannot be performed if you access via the password, such as updates or uploading and saving data.





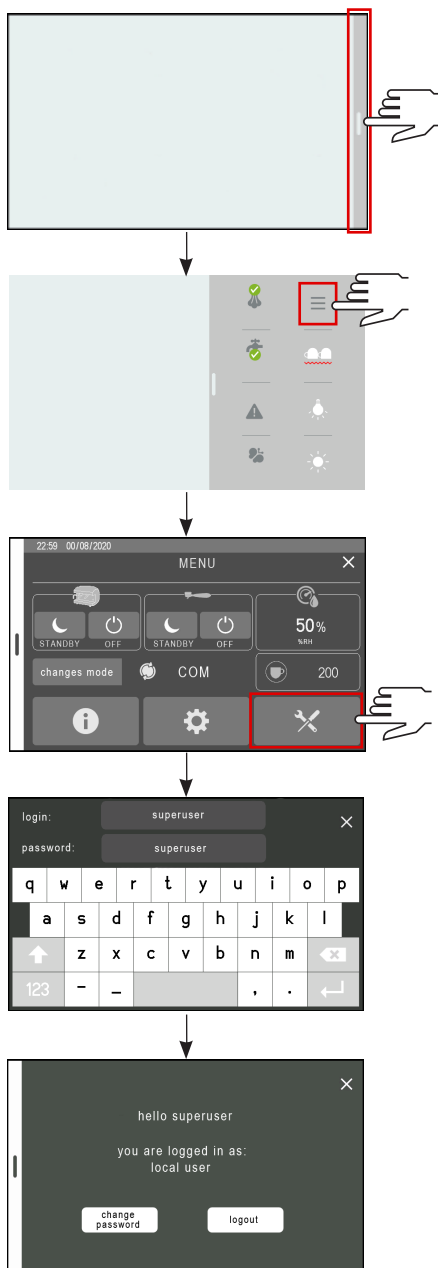
8.1.1 Access via the USB Stick

- Insert the specific USB stick into the reader (12).
- Select the bar on the right side of the display;
- Select the menu button .
- Select the service settings button .



8.1.2 Access via Password

- Select the bar on the right side of the display;
- Select the menu button  ;
- Select the service settings button  ;
- Enter the access password;
- To change the password, press the corresponding button and enter the new password (this option is only available if the function has been enabled).



The alongside table lists the parameters that can be reset with the User password and Installer password.

User-resettable parameters: (code 3 on the memory stick)	
PARAMETER NO.	DESCRIPTION
1	UNITS OF MEASUREMENT
2	PRESSURE MEASUREMENT
3	VOLUME MEASUREMENT


Installer-resettable parameters: (code 7 on the memory stick)	
PARAMETER NO.	DESCRIPTION
6	CUP WARMER ON
8	HOT WATER WITH COFFEE ON
9	LONG COFFEE SELECTION ON
10	PREBREWING ON
11	AUTOMATIC STEAM WAND ON
12	AUTOMATIC WASH ON
13	PRE-WASH ON
14	TILL CONNECTION ON
15	CONTINUOUS COFFEE DISPENSING ON
16	AUTOMATIC DAYLIGHT SAVING TIME MANAGEMENT
17	USER INTERFACE THEME
18	BUZZER SOUND OFF WHEN LCD KEYPAD BUTTONS ARE PRESSED
19	RELEVANT TIME ZONE
22	GR1 SETPOINT TEMPERATURE
23	GR1 COFFEE HEATING UNIT SETPOINT TEMPERATURE
24	GR1 MINIMUM SETPOINT IN STANDBY MODE
25	GR1 COFFEE HEATING UNIT MINIMUM SETPOINT IN STANDBY MODE
26	GR1 DELTA SETPOINT TEMPERATURE IN STANDBY MODE
27	GR1 COFFEE HEATING UNIT DELTA SETPOINT TEMPERATURE IN STANDBY MODE
32	GR2 SETPOINT TEMPERATURE
33	GR2 COFFEE HEATING UNIT SETPOINT TEMPERATURE
34	GR2 MINIMUM SETPOINT IN STANDBY MODE
35	GR2 COFFEE HEATING UNIT MINIMUM SETPOINT IN STANDBY MODE
36	GR2 DELTA SETPOINT TEMPERATURE IN STANDBY MODE
37	GR2 COFFEE HEATING UNIT DELTA SETPOINT TEMPERATURE IN STANDBY MODE
42	GR3 SETPOINT TEMPERATURE
43	GR3 COFFEE HEATING UNIT SETPOINT TEMPERATURE
44	GR3 MINIMUM SETPOINT IN STANDBY MODE
45	GR3 COFFEE HEATING UNIT MINIMUM SETPOINT IN STANDBY MODE
46	GR3 DELTA SETPOINT TEMPERATURE IN STANDBY MODE
47	GR3 COFFEE HEATING UNIT DELTA SETPOINT TEMPERATURE IN STANDBY MODE
52	GR4 SETPOINT TEMPERATURE
53	GR4 COFFEE HEATING UNIT SETPOINT TEMPERATURE
54	GR4 MINIMUM SETPOINT IN STANDBY MODE
55	GR4 COFFEE HEATING UNIT MINIMUM SETPOINT IN STANDBY MODE
56	GR4 DELTA SETPOINT TEMPERATURE IN STANDBY MODE
57	GR4 COFFEE HEATING UNIT DELTA SETPOINT TEMPERATURE IN STANDBY MODE
99	HEATING UNIT WATER RENEWAL ON
106	CUP WARMER SEPOINT TEMPERATURE
107	CUP WARMER ADJUSTMENT DIFFERENTIAL
108	CUP WARMER MINIMUM TEMPERATURE
109	CUP WARMER MAXIMUM TEMPERATURE
110	BURR WEAR WARNING THRESHOLD
135	ENERGY SAVING TYPE
141	GR1 VIEWING TYPE
142	GR2 VIEWING TYPE
143	GR3 VIEWING TYPE
144	GR4 VIEWING TYPE
148	AUTOMATIC WASH TIME
165	GROUP DEEP STANDBY SETPOINT TEMPERATURE
166	COFFEE HEATING UNIT DEEP STANDBY SETPOINT TEMPERATURE
167	STEAM HEATING UNIT DEEP STANDBY SETPOINT TEMPERATURE
350	SCREENSAVER TIMEOUT
351	DISPLAY BACKLIGHT BRIGHTNESS
400	PERIOD FOR SENDING DATA TO CLOUD
401	PERIOD FOR DOWNLOADING DATA FROM CLOUD

8.2 Energy Saving Management

Three "Energy Saving" operating modes are available:

- **COM** : manual activation
- **PROG** : programmed operation
- **ECO** : self-learning management

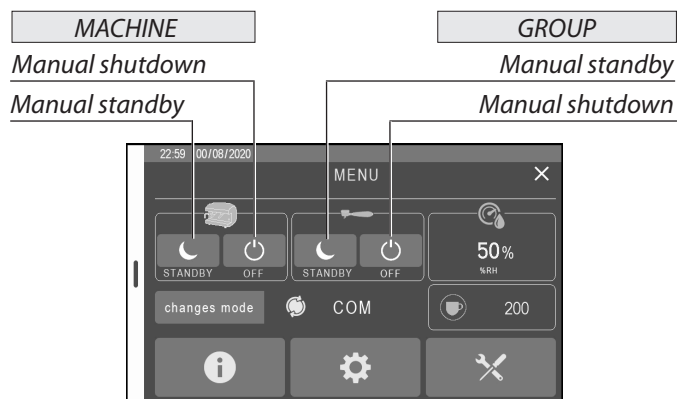
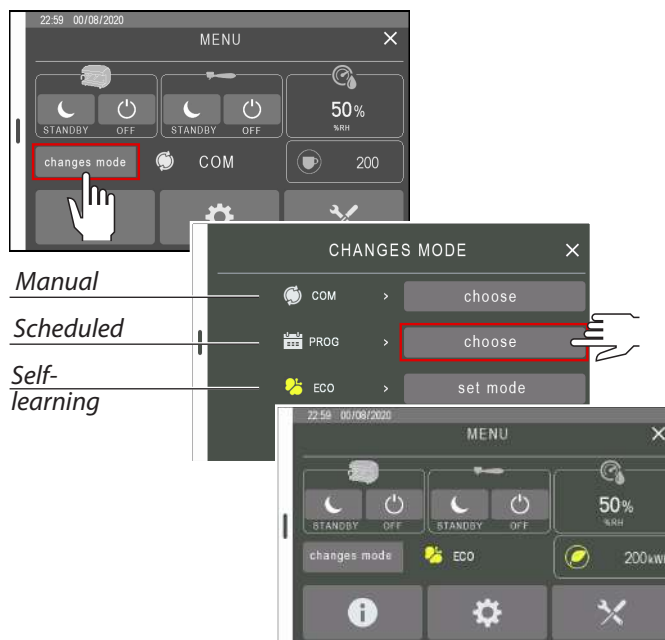
To turn off the machine or activate the Energy Saving mode, proceed as follows:

- Select the bar on the right side of the display;
- Select the menu button  ;
- Select the desired function.

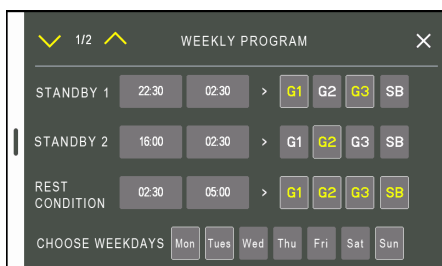
If the machine is off or in "Energy Saving" mode, simply tap the display to resume operation. The machine will return to full operation within 1 minute.

In any case, the system will continue to follow the configured energy-saving settings.

- **COM** The Energy Saving features can only be enabled manually by selecting the machine or group icon, as shown in the figure.




- **PROG** The Energy Saving functions are enabled according to the programmed parameters (see para. 8.4.1).

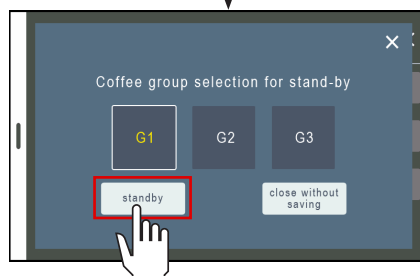
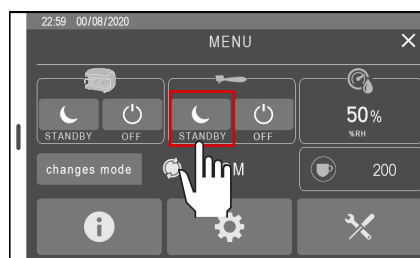



- **ECO** The Energy Saving functions are enabled and in self-learning mode, the system automatically manages energy saving by lowering the temperature based on the cycles performed in previous days and weeks.
- To enable the "Energy Saving" system, press the **changes mode** button and select the desired mode:

8.3 Manually activating the ENERGY SAVING mode

To manually put one or more dispensing groups in standby, follow these steps:

- Access the menu (see para. 8.1).
- Select the standby button for the groups.
- Select the dispensing group or groups to put in standby.
- Confirm by pressing the  button.




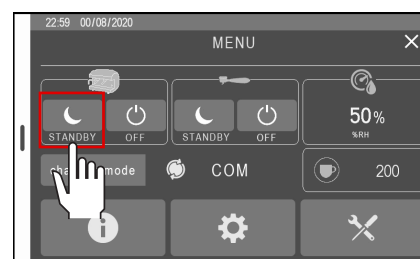
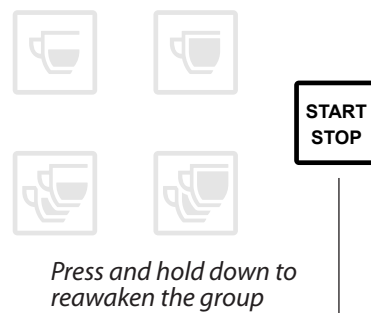
i Similarly, you can turn off the dispensing groups by selecting the OFF button . To awaken the dispensing groups from the STANDBY mode or OFF, press and hold the START/STOP button of the corresponding groups.

To manually put the entire machine (dispensing groups and steam heating unit) in standby, follow these steps:

- Access the menu (see para. 8.1).
- Select the machine's standby button.




i Similarly, you can turn off the machine by selecting the OFF button . To awaken the machine from STANDBY mode or OFF, tap the touchscreen display.




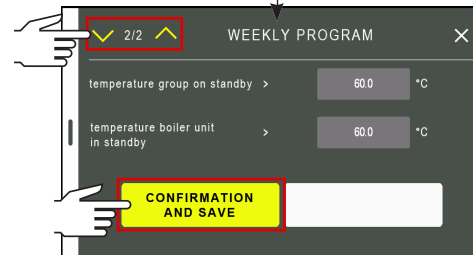
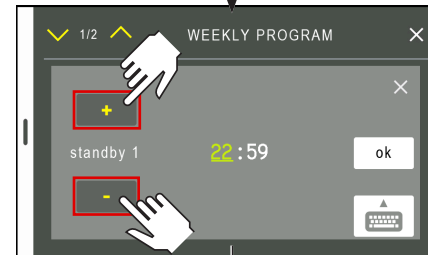
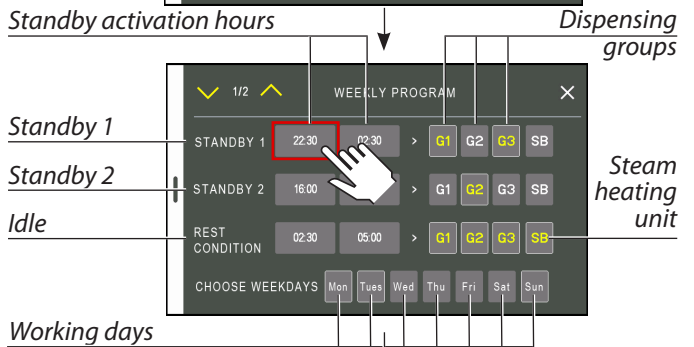
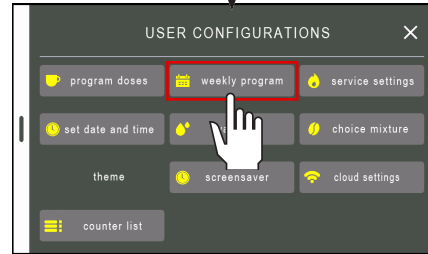
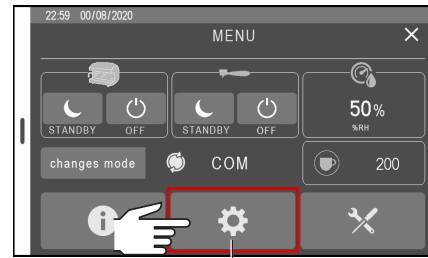
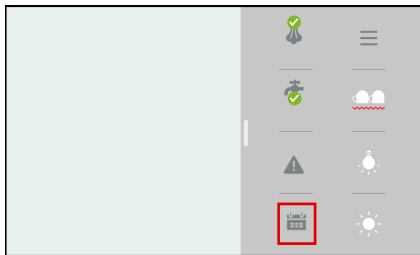
8.4 User Configuration Menu

8.4.1 ENERGY SAVING setup in PROG mode

With the Energy Saving system in **PROG** mode, proceed with the following steps to programme the standby and idle cycle for the week:


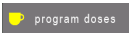





- Access the menu (see para. 8.1).
- Select the configuration button .
- Press the **weekly program** button.
- Select the time buttons and use **+** and **-** to set the standby and idle activation periods.
- Select the groups being programmed and, if necessary, the steam heating unit as well.
- Activate the working days by selecting the corresponding buttons.
- To confirm the programmed, go to the second page and select the **CONFIRMATION AND SAVE** button.

 **Energy Saving programming is only active when the machine is set to PROG. The PROG mode is indicated on the display as shown in the drawings below.**



8.4.2 BEVERAGE DOSE programming

To programme coffee and hot water doses, proceed as follows:

- Access the menu (see para. 8.1);
- Select the configuration button  ;
- Press the dose programme button  ;
- Select the dispensing group;
- Select the desired dose button (e.g. “1 espresso” );
- Start dispensing by pressing the **start** button;
- To confirm and stop the dose, press the **stop** button;
- Repeat this operation for the other dose buttons;
- You can copy the dose settings for the other groups by pressing the  button;
- To delete the dose settings, press the  button;
- To manually adjust your dose press  and .



Do not remove the filter holder from the dispensing group when coffee is being dispensed.








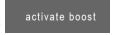


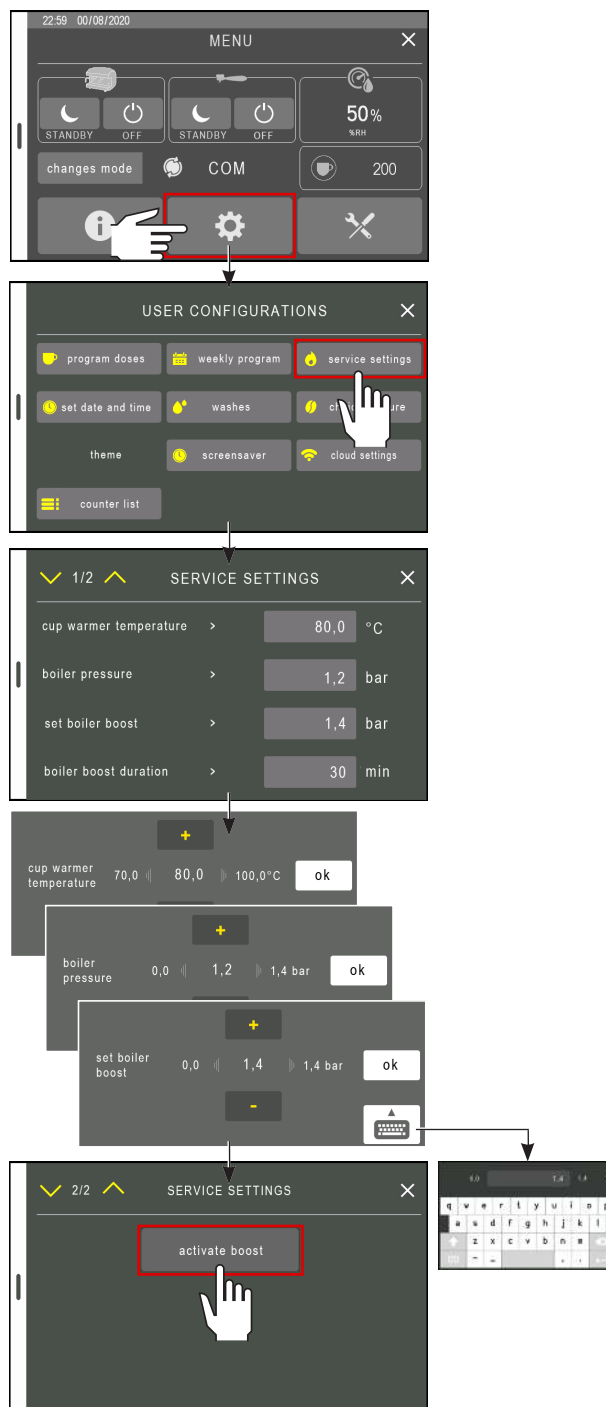
Each dose must be programmed with ground coffee and not with previously-used coffee grounds.



8.4.3 SERVICE PARAMETER programming








To adjust the parameters of some of the machine's services, proceed as follows:

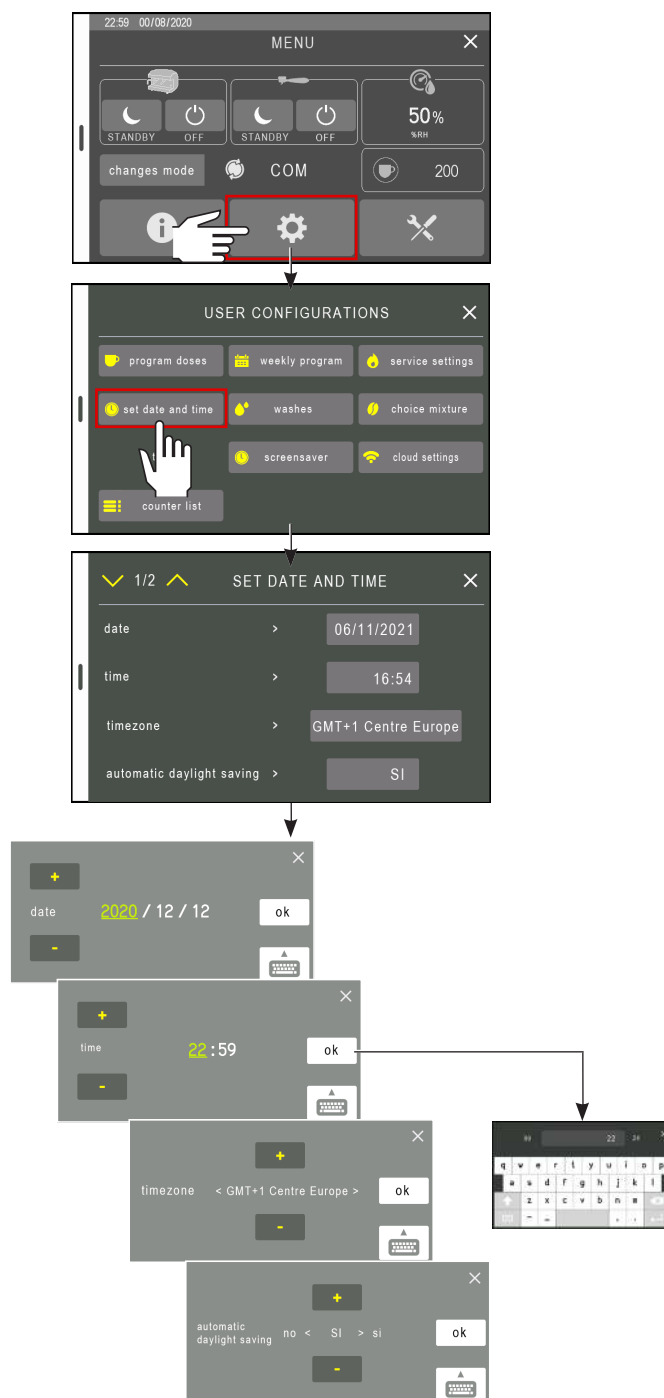
- Access the menu (see para. 8.1).
- Select the configuration button .
- Press the  button.
- Select the button of the parameter to be modified.
- Press the  and  buttons to change the desired value and confirm with the  button. The adjustable parameters are:
 - Cup warmer temperature.
 - Steam heating unit pressure (max 1.4 bar).
 - Steam heating unit pressure during the steam production boost phase if high demand warrants it.
- Select the  button to enable the keypad where you can directly enter the desired value. Confirm the value by pressing the .
- Select the  button on page 2 to enable the steam production boost function.



8.4.4 DATE and TIME settings


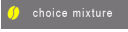


To set the date and time on the machine, proceed as follows:

- Access the menu (see para. 8.1).
- Select the configuration button .
- Press the  button.
- Select the button of the information you would like to modify.
- Press the  and  buttons to modify the selected parameter and confirm via the  button. The adjustable parameters are:
 - Date
 - Time
 - Time zone
 - Automatic Daylight Saving Time
- Select the  button to enable the keypad where you can directly enter the desired value. Press the  button to confirm the value.



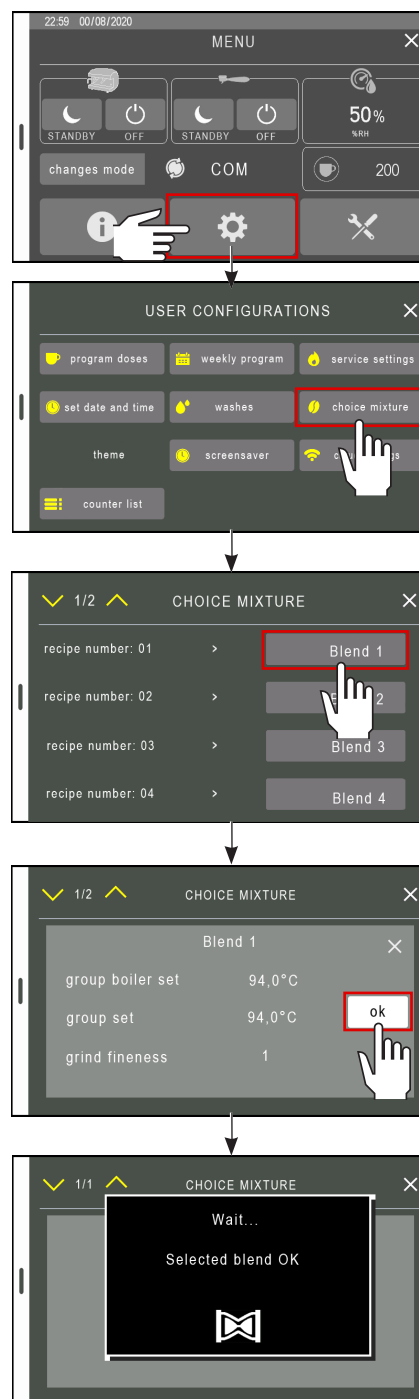
8.4.5 COFFEE BLEND selection

To set the machine according to the type of coffee blend used, proceed as follows:

- Access the menu (see para. 8.1).
- Select the configuration button  .
- Press the  button.
- Select the desired blend button, e.g.  .
- Press the  button to confirm the selection.
- Wait a few moments and then the machine will be ready to brew the new blend.
- The various dispensing groups can be programmed for different blends. In this case, the display will show the blend type.














The coffee blends can only be chosen if they have already been set up in the machine's system.







8.5 SCREENSAVER configuration

To set the display screensaver, proceed as follows:

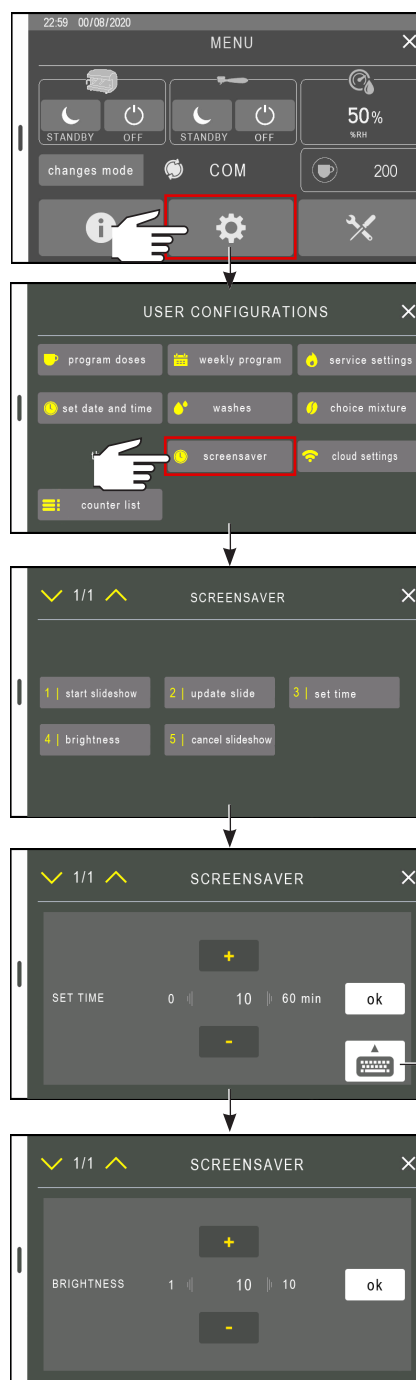
- Access the menu (see para. 8.1).
- Select the configuration button  .
- Press the  button.
- To set how long after the machine's last operation to activate the screensaver, select the  button.
- Press the  and  buttons to change the screensaver activation time and confirm with the  button. The value can be entered directly by selecting the  button and using the keypad.
- To set the screensaver's brightness, select the  button.
- Use the  and  buttons to adjust the display brightness and confirm via the  button.

It is possible to upload new images to use as screensaver, with the following procedure:

- Store the images to be uploaded onto a memory stick and plug it into the drive.
- Delete the images in the memory and the confirmation screen will appear if you press the  button.
- Press "confirm" to start deleting the images.
- Press the  button to load the new images and confirm with "start" on the next screen.
- Once they have finished loading, test the new screensaver via the  button.


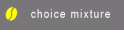


 **Up to 10 different images can be uploaded. Refer to the table below for the format and name of the images. The images will be placed in the main folder of the USB memory stick (not in a subfolder).**

Name	Format	Resolution.	Colour depth
from "slide01.jpg" to "slide10.jpg"	jpeg	800x480 pixels 72 dpi	24 bit



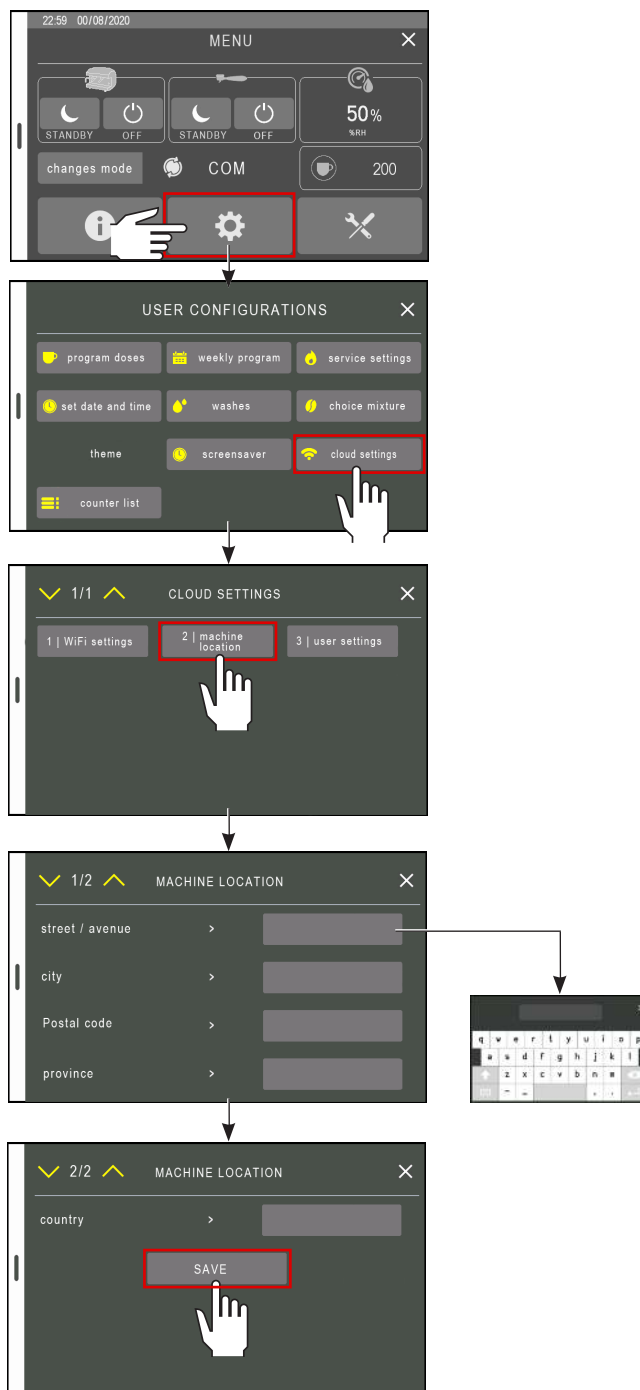
8.5.1 CLOUD configuration

To set up the machine's cloud, proceed as follows:

- Access the menu (see para. 8.1).
- Select the configuration button .
- Press the  button.
- Select the  button.
- Use the keyboard to enter the information in the various fields (Street, City, Postcode, County, Country).
- To confirm, press the  button.






The cloud is only active if the machine is fitted with a Wi-Fi card. Consult chap. 15 for the Wi-Fi connection instructions.



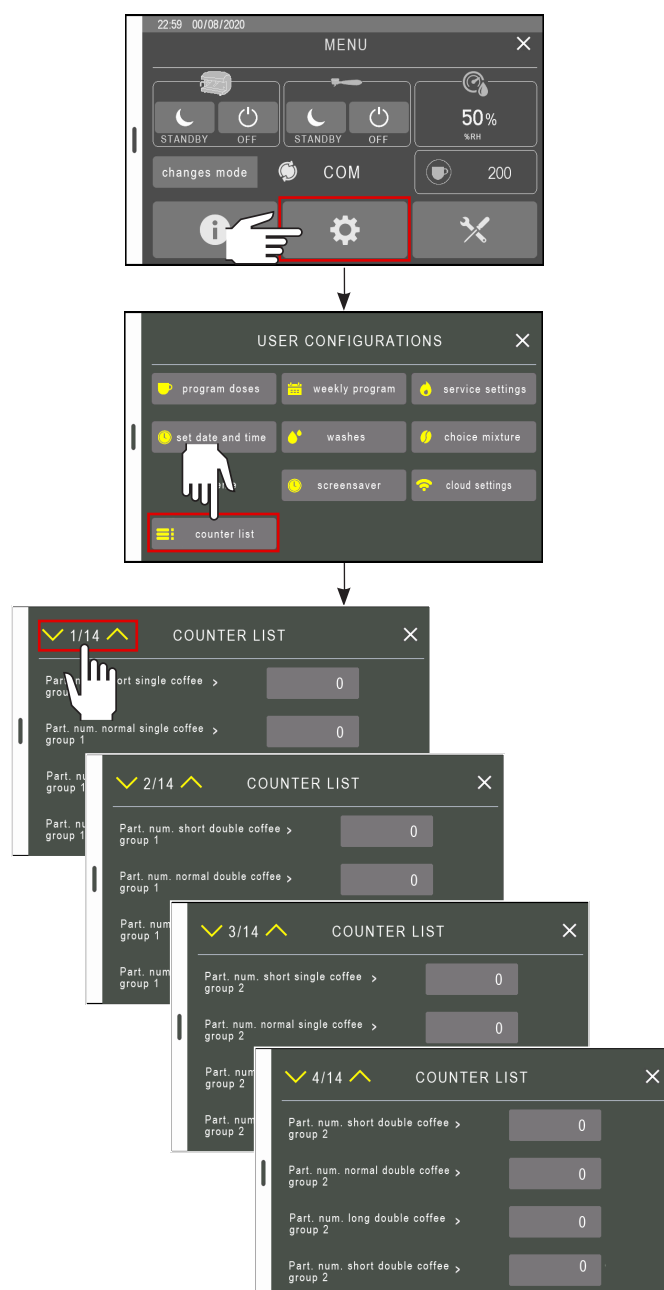
8.5.2 BEVERAGE COUNTER list

To view the beverages dispensed by the machine, proceed as follows:

- Access the menu (see para. 8.1).
- Select the configuration button .
- Press the  counter list button.
- Use the  buttons to scroll through the various pages and view the counts.



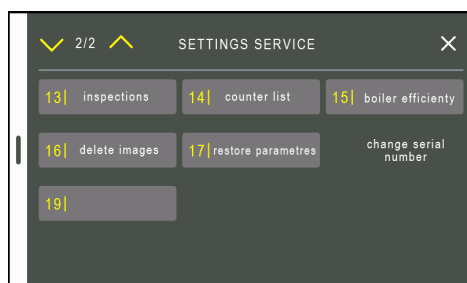
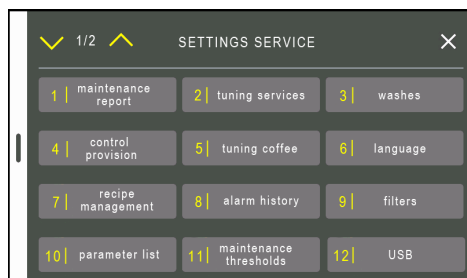
To reset the counter list, see para. 8.5.14.



8.5.3 Service Settings Menu

You can access the machine's full programming mode from the two menu pages.

The following is a summary diagram of the programming sections, the parameters involved and the operations envisaged. All the work operations are outlined in detail in the following paragraphs.



1 Maintenance report	A-B-C maintenance cycles -----reset Date of the next maintenance -----set date Water consumption (L) -----reset Burr wear (kg) -----reset Energy saved (kWh) -----reset
2 Tuning services	Heating unit pressure -----set (bar) Heating unit temperature in energy saving mode--set (°C) Cup warmer temperature -----set (°C) Heating unit boost setpoint-----set (bar) Heating unit boost duration -----set (min)
3 Washes	Date of last wash -----view Enable the automatic wash -----enable Wash at each start-up -----enable Number of wash cycles -----set (No.) Wash duration -----set (min) Rinse duration -----set (sec) Minimum interval between the start of 2 washes--set (hours) Automatic wash time -----set the time Number of washes performed -----reset
4 Dispensing check	View the time -----enable Monitor the flow -----enable View the temperature -----enable
5 Coffee tuning	No. of groups setpoint -----set (°C) No. of group heating units setpoint -----set (°C)
6 Language	Language -----set language
7 Recipe management	Recipe name -----set name Group heating unit setpoint -----set (°C) Group setpoint -----set (°C) Grind fineness -----set
8 Alarm history	Warnings by date -----reset Warnings by type -----view
9 Filters	Regeneration threshold-----set (L) Water consumption -----view
10 Parameter list	No. of parameters -----set
11 Maintenance threshold	A-B-C maintenance cycles -----set No. of cycles Cycles remaining until the A-B-C threshold ---view Date of next A-B-C threshold maint. -----view Days remaining until maintenance -----view Short-normal-long dose -----set (g) Short-normal-long double dose -----set (g) Continuous dispensing dose -----set (g) Burr threshold -----set (kg)
12 USB	Update keypads -----update Update base -----update Load slide -----load Set parameters -----load Save parameters -----save Import languages -----import Load Splash images -----load
13 Inspections	Group-heating unit-board temperatures-----view Heating unit-pump pressures -----view Heating unit levels -----view Ambient humidity -----view Group-inlet flow -----view
14 Counter list	No. of dose dispenses -----reset
15 Heating unit efficiency	Gr-H.U 1°C Delta temperature - last measurement--view Gr-H.U degrees in 1 minute - last measurement----view Gr-H.U 1°C Delta temperature - first measurement--view Gr-H.U degrees in 1 minute - first measurement----view Gr-H.U 1°C Delta temperature - last measurement--view
16 Delete Splash images	Delete Splash images -----reset
17 Parameter restore	Restoring the user parameters-----load Restoring the technician parameters -----load Restoring the manufacturer parameters -----load
19 Simplified parameters	No. of parameters -----set

8.5.4 Maintenance report

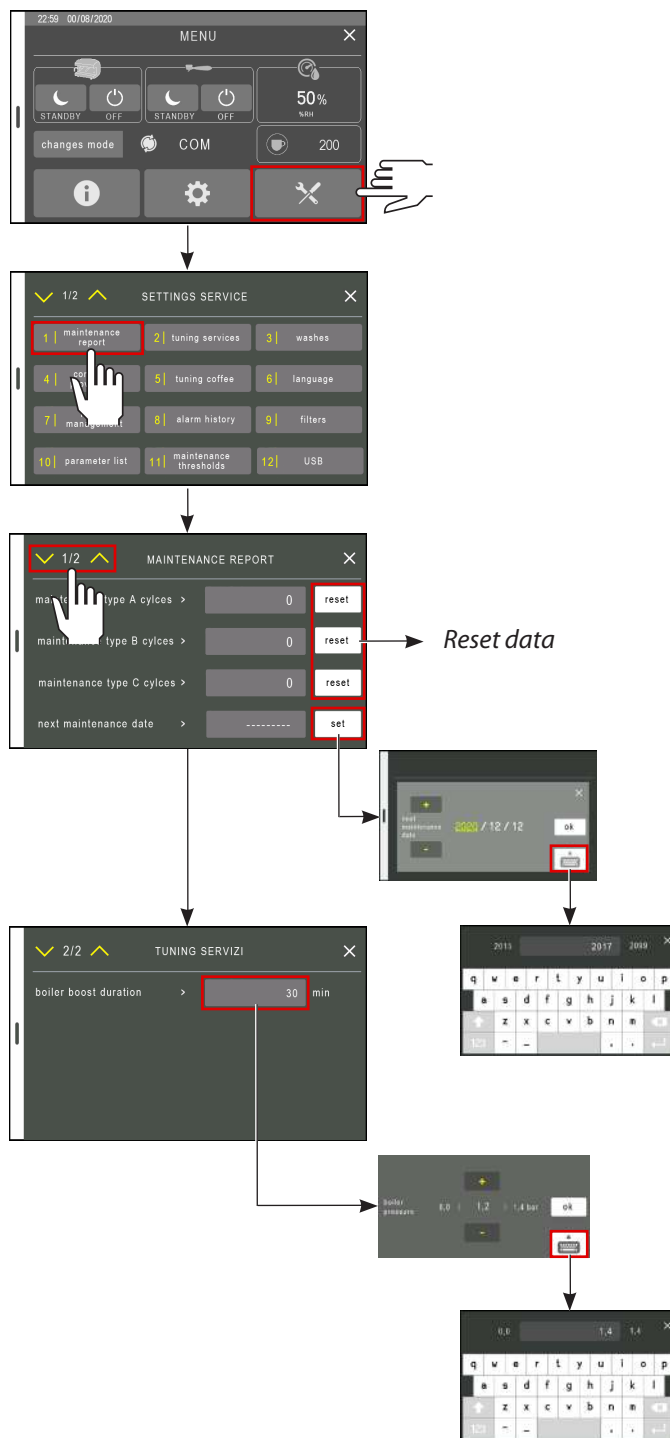
The following information can be viewed in this section:

- Type A maintenance cycles;
- Type B maintenance cycles;
- Type C maintenance cycles;
- Water consumption (litres);
- Burr wear (kg);
- Energy saved (kWh).

To reset the data to zero, select the **reset** button.

To programme the date for machine assistance prompts, e.g. when the display notifies you that the scheduled maintenance must be performed, press the **set** button. Using the **+** and **-** buttons or the display keyboard, enter the desired date.


To go from one page to another, select the **1/2** buttons.



8.5.5 Service tuning

The parameters regarding machine services can be set up in this section, such as:

- Heating unit pressure;
- Temperature of the heating unit in energy saving mode;
- Cup warmer temperature;
- Heating unit pressure during the boost phase;
- Duration of the boost phase.

The **+** and **-** buttons, or the display keyboard  can be used to edit the information.


To go from one page to another, select the **1/2** buttons.



8.5.6 Washes

In this section you can programme the automatic wash cycles and the wash management:

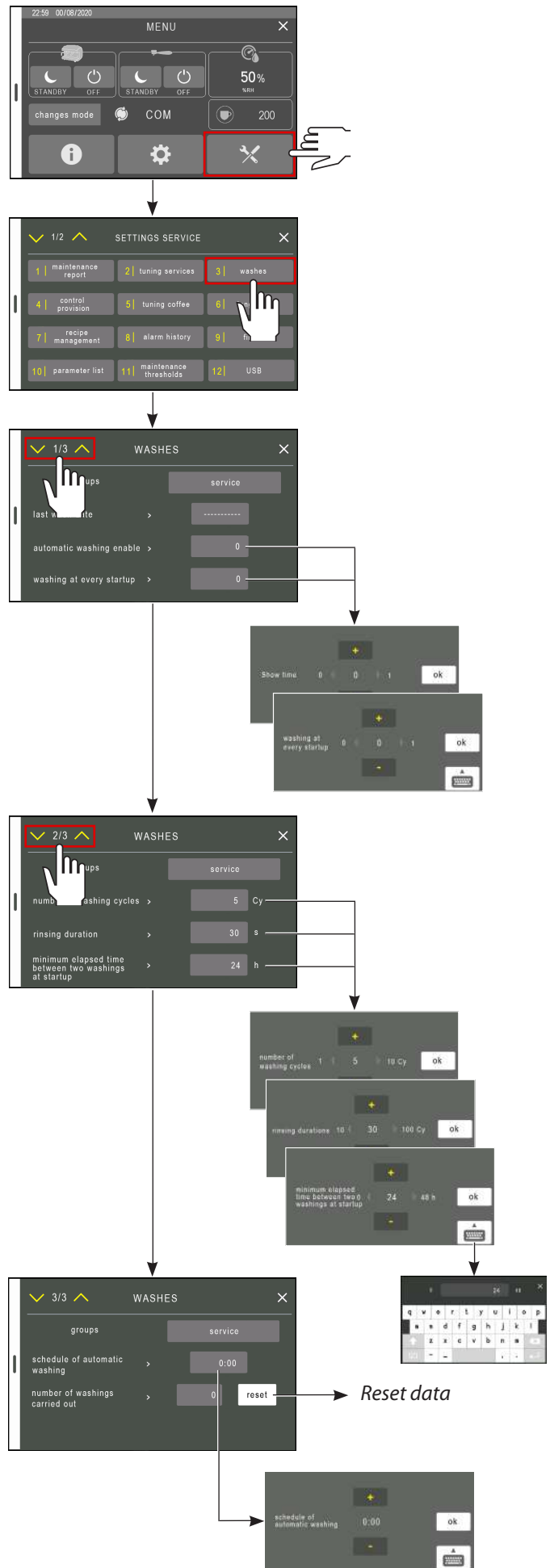
- Viewing the date of the last wash;
- Enable the automatic wash;
- Enable the automatic wash at each start-up;
- Set the number of wash cycles;
- Set the wash duration (in minutes);
- Set the rinse duration (in seconds);
- Set the minimum interval between the start of 2 washes (in hours);
- Set the automatic wash time;
- View and reset the number of washes performed.

The **+** and **-** buttons, or the display keyboard  can be used to edit the information.

To go from one page to another, select the **1/2** buttons.

0 = Function disabled

1 = Function enabled



8.5.7 Checking the dispensing cycle

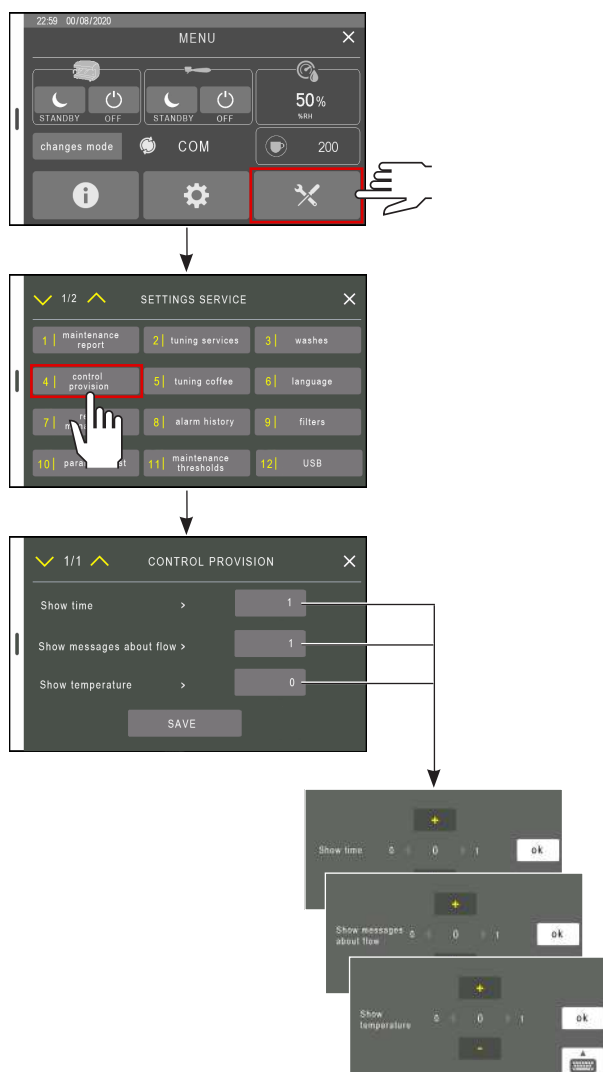
In this section of the programming mode, you can enable which information is displayed while doses are being dispensed:

- Viewing the time;
- The flow rate;
- The temperature.

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

0 = Function disabled


1 = Function enabled



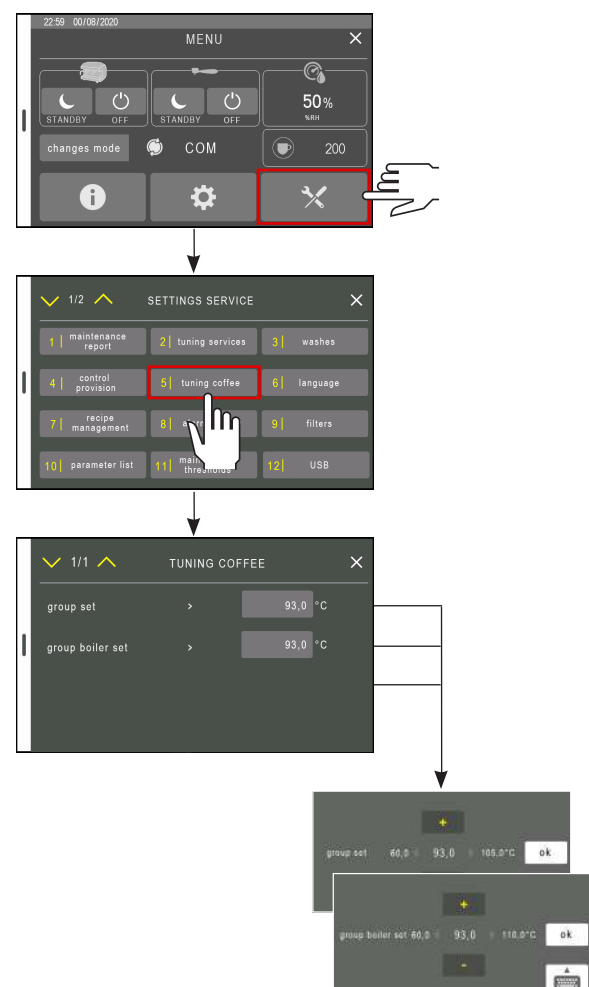
8.5.8 Coffee tuning

In this section some coffee dispensing parameters can be set, such as:

- The group temperature.
- The temperature of the group's heating unit.


The **+** and **-** buttons, or the display keyboard  can be used to edit the information.

Each group has to be programmed individually.



8.5.9 Parameter list

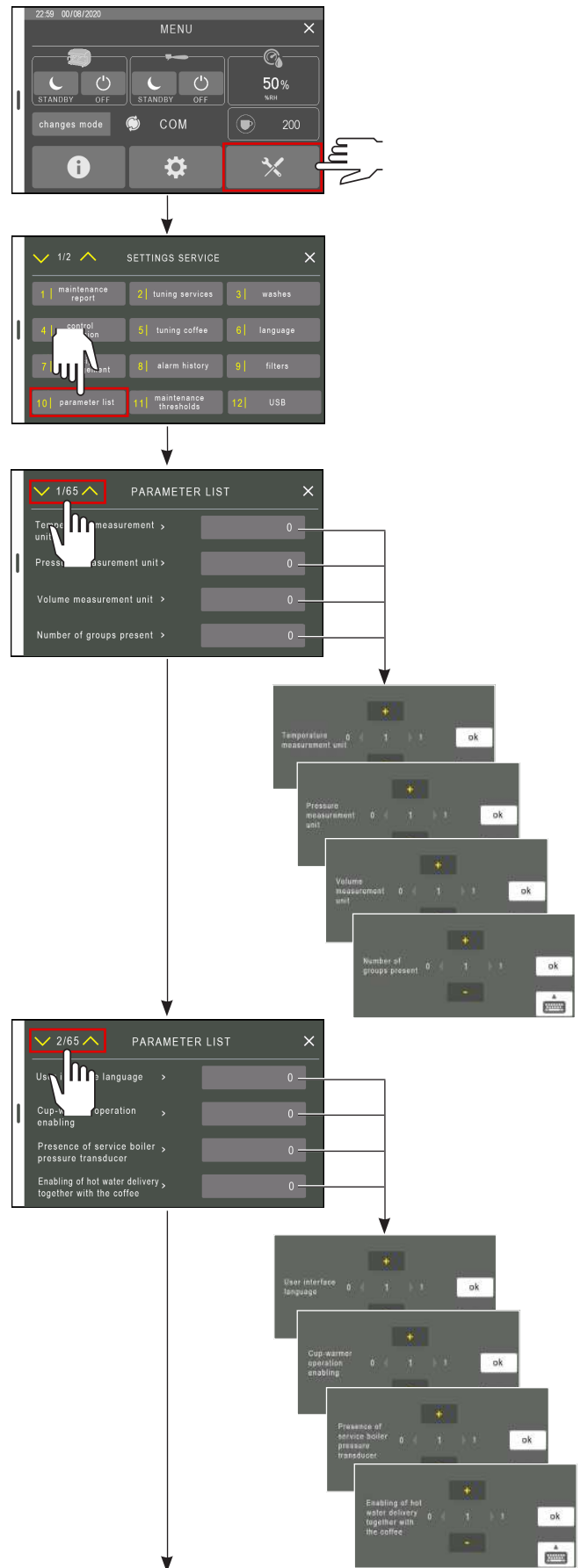
All the machine's parameters can be programmed in this section.

Use the **+** and **-** buttons or the display keyboard  to edit the information.

To go from one page to another, select the **1/2** button.



The complete list of all parameters is provided in **chap. 18**.



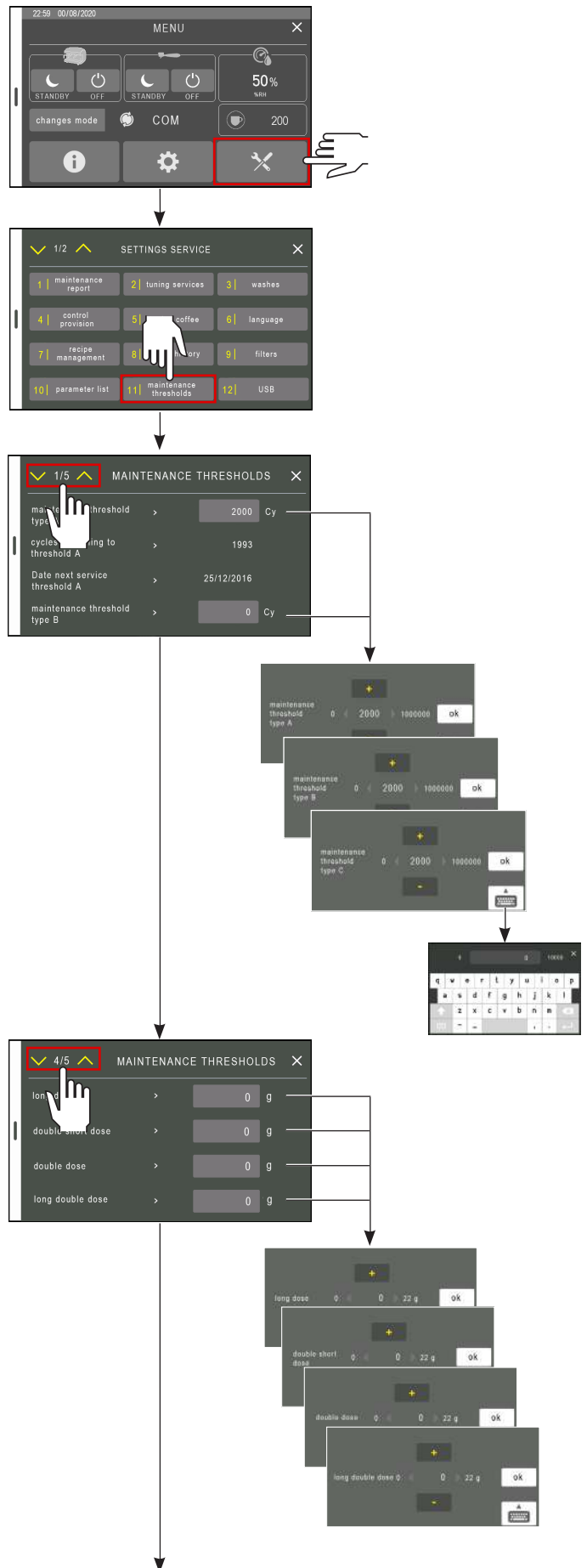
8.5.10 Maintenance thresholds

This section is dedicated to managing the machine's maintenance:

- Type A-B-C maintenance threshold;
- Viewing the remaining cycles until the A-B-C threshold;
- Viewing the next date for the A-B-C maintenance threshold;
- Days remaining until maintenance;
- Setting the short-normal-long single doses (in grams);
- Setting the short-normal-long double doses (in grams);
- Burr threshold (kg).

The **+** and **-** buttons, or the display keyboard can be used to edit the information.

To go from one page to another, select the **1/2** button.



8.5.11 USB

Use the USB memory stick to update the machine’s software and upload useful information, such as:

- Updating the keypad/display software;
- Update the control unit software;
- Upload slides;
- Import parameters;
- Save parameters;
- Set the language;
- Upload Splash images;
- To carry out the operation, select the start button.

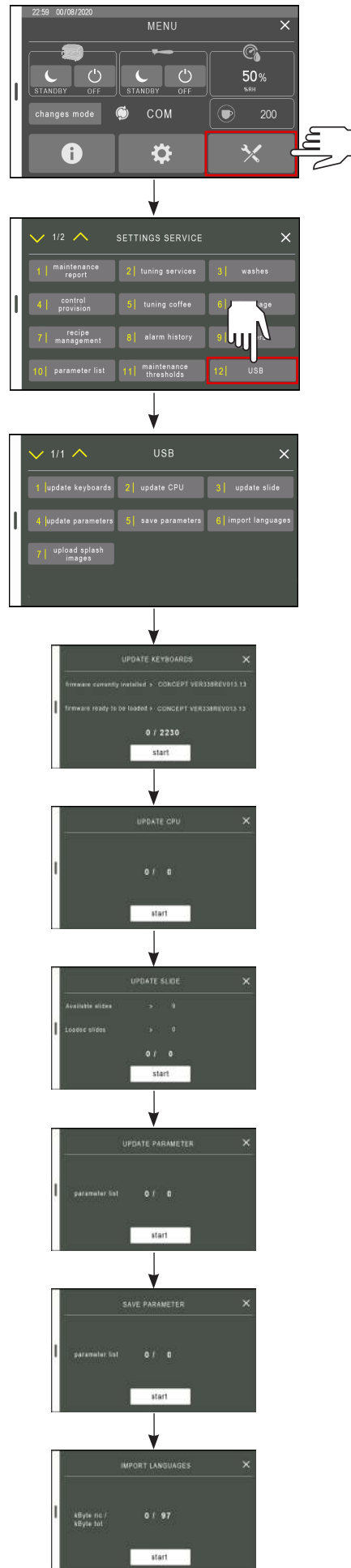


The Keypad Software and Basic Software can be seen on the display, as indicated in chap. 7.

Splash images

The display can be customised by updating the system-fixed screens with customer-selected images. The images must be numbered from "slide11" to "slide15", and they will be displayed as wallpapers on the display’s various screens during normal operating conditions. Refer to the table below for the format and name of the images. The images will be placed in the main folder of the USB memory stick (not in a subfolder).

Name	Format	Resolution	Colour depth
from "slide11.jpg" to "slide15.jpg"	jpeg	800x480 pixels 72 dpi	24 bit

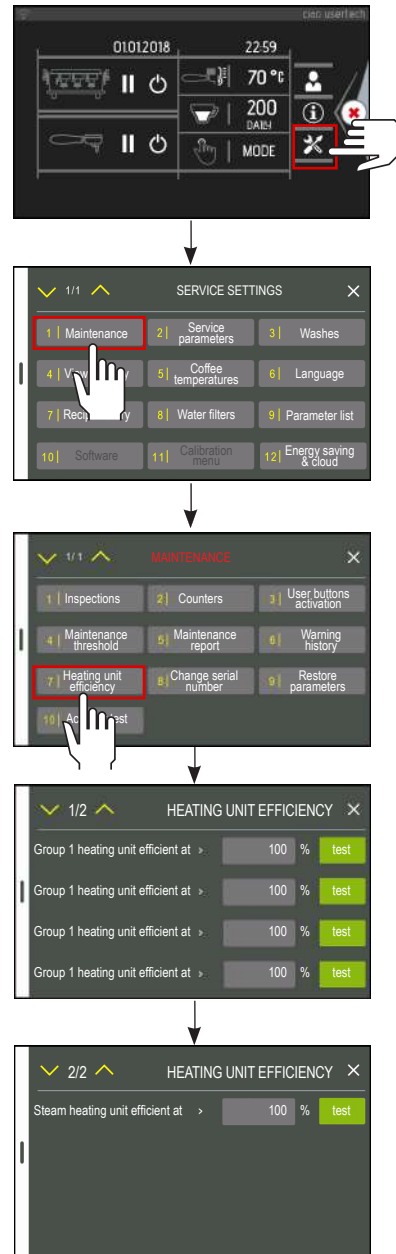


8.5.12 Heating unit efficiency

The efficiency of the heating units can be checked in this section. Comparing the various parameters over time, allows you to evaluate the operating status of the heating units:

For each heating unit, press the “test” button to test the efficiency of the heating unit whilst heating up.

To go from one page to another, select the  button.

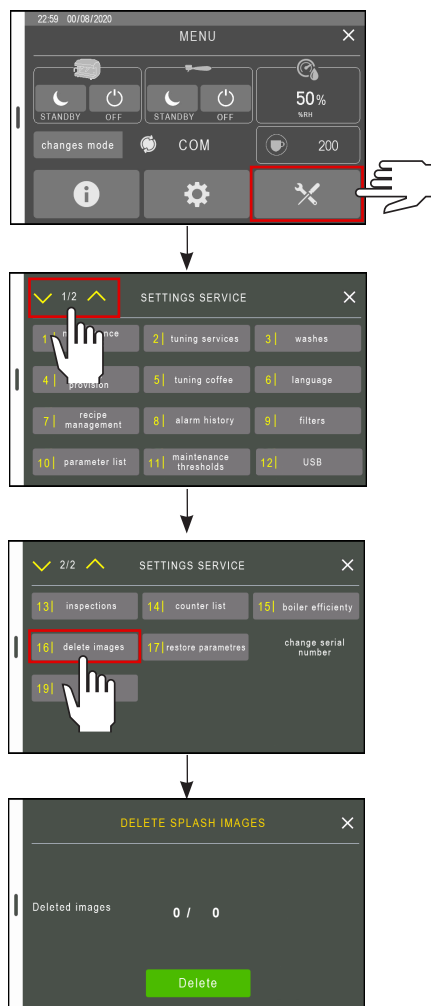


8.5.13 Delete Splash images

This item allows you to delete customer-personalised screens by restoring the default ones.

To cancel, select the **Delete** button.

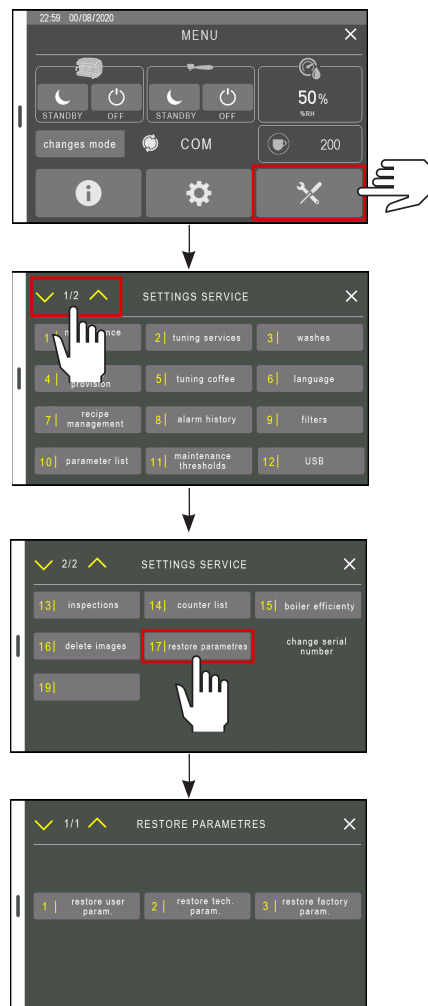
To load new custom images, see para. 8.5.11.



8.5.14 Restoring the parameters

In this section, you can restore the initial programming data, such as:

- Restoring the user parameters;
- Restoring the technician parameters;
- Restoring the manufacturer parameters;
- To activate the restore procedure, select the desired button.



8.5.15 Simplified parameters

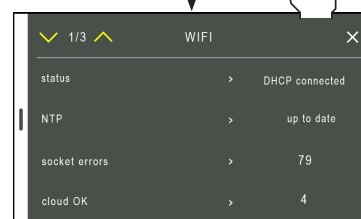
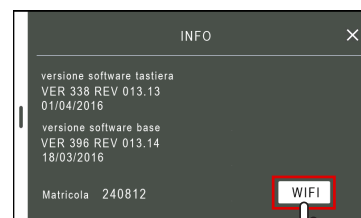
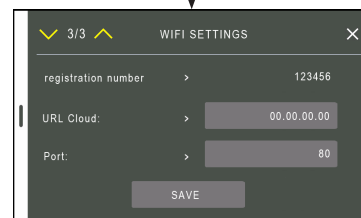
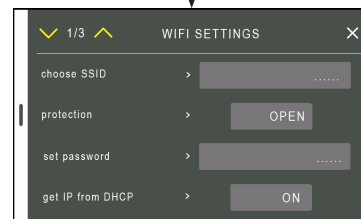
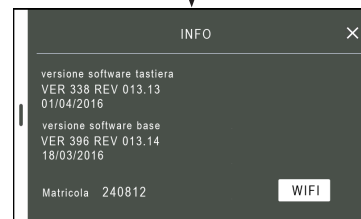
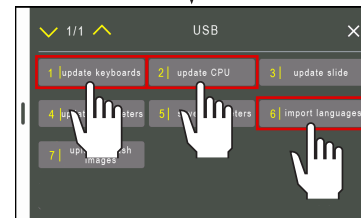
Provides a reduced list of configurable parameters (see para. 8.5.9). The list is shown below:

Par.	Description
P1	Temperature unit of measurement (0 = °C, 1 = °F)
P4	Number of units present
P6	Enables the cup warmer operation
P10	Enables the prebrewing
P11	Enables the automatic steam wand
P15	Enables the continuous coffee dispensing
P96	Maximum continuous dispensing duration (Start/Stop button)
P101	Automatic Steam Wand Temperature Set T1
P102	Automatic Steam Wand Temperature Set T2
P134	Hourly dispensing threshold for entering into automatic stand-by mode
P135	Energy saving type
P352	LCD display sensitivity
P358	Automatic display brightness reduction timeout
P370	Enables the DEMO mode

9. WI-FI CONNECTION

If the Wi-Fi service is set up on the machine, it can be connected as follows:

- Check if the **WIFI** writing which appears on the lower-right of the display, is inside a white rectangle;
- Otherwise, you will need to update the software via the USB stick and following the sequence of commands on the display: 1-2-6 and 2 again;
- Now check if the word **WIFI** is in a white rectangle on the display;
- Choose the Wi-Fi network to connect to via the “SSID Choice” menu;
- Choose the type of Wi-Fi network protection via the “protection type” menu. The Wi-Fi network can provide password protection with different standards. The MyConcept-supported ones are “open” (no protection), “WPA1” and “WPA2”;
- If the type of Wi-Fi network protection is not “OPEN”, enter the Wi-Fi network password in the “set password” field;
- A DHCP server can be installed on the selected Wi-Fi network to provide the machine with an IP address. If it is installed, you must select “ON” in the “obtain IP from DHCP” field, otherwise set it to “OFF”. In the latter case, the IP network configuration must be manually configured via the following fields:
 - “Set IP address” to set the IP address;
 - “Set subnet mask” to set the netmask;
 - “Set gateway” to set the network gateway IP address;
- Enter the IP address of a DNS server in the “set DNS” menu (e.g. 8.8.8.8);
- Specify the cloudWegaConnects server to connect the machine to, by specifying its IP address in the “URL Cloud” menu (e.g. 52.17.80.13) and the port in the “Port” menu (e.g. 80);
- Press the “SAVE” button;
- Check if the machine is connected. Make a note of the serial number (e.g. 123456);
- Access the machine’s INFO menu and select the **WIFI** button to find out the connection status. If the settings are correct, “Connected” will be displayed in the status field.



10. MAINTENANCE AND CLEANING

10.1 Safety precautions



Carefully read the instructions provided in chapter "I. SAFETY PRECAUTIONS" on page 3.

10.2 PPE features

When installing the machine, the following PPE is required:



The use of protective gloves is mandatory.

10.3 Maintenance

10.3.1 Scheduled maintenance

Perform the following maintenance according to the specified frequency.

If the machine is used intensively, the checks need to be performed more frequently.

Component	Type of operation	Quarterly	Yearly
PRESSURE TRANSDUCER	Check the heating unit pressure, which must be between 0.8 and 1.4 bar. Check the water pressure when coffee is being dispensed: check the pressure indicated on the gauge, which must be between 8 and 9 bar.	X	
FILTERS AND FILTER HOLDERS	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 the filters and/or filter holders, as required.	X	
DISPENSING GROUP	Replace the shower screen and group gasket as indicated in para. 10.3.4.	X	
WATER FILTER	Replace the water filter cartridge at the frequency indicated by the manufacturer. If limescale has formed in the hydraulic circuit, the filter will need to be replaced.	X	
WATER SOFTENER	Carry out the regeneration as instructed by the manufacturer. Take care in areas where the water is very hard. It will be necessary to regenerate the water at more frequent intervals, especially if the machine is used intensively.	X	
GRINDER-DISPENSER	Check the ground coffee dose (around 7 grams each time) and check the degree of grinding. The burrs must always have sharp cutting edges. Too much powder in the grounds is an indication that the coffee is deteriorating. We recommend contacting a Maintenance Technician to replace the flat burrs after every 400/500 kg of coffee, or after every 800/900 kg for conical burrs. If the automatic burr wear warning is enabled, follow the instructions in para. 8.5.4.	X	
HEATING UNIT	Replace the water in the heating unit as indicated in para. 6.7.	X	

Component	Type of operation	Quarterly	Yearly
HEATING UNIT	<p>Replace the electric heating element if it becomes faulty or malfunctions. Do not replace the heating element with a more powerful one. Before making any changes, please contact the Manufacturer.</p> <p>If the thermostat of the heating element is triggered, reset it by pressing the central button of the thermostat. However, before starting the machine up again, check what caused the problem.</p> <p>If the heating unit insulation needs to be removed, restore the insulation after the maintenance work has been completed.</p> <p>Remove and clean the heating unit level probes.</p> <p>Check whether there is any limescale build-up on the heating element. If there is a lot of limestone build-up, this indicates that the water filter has not been replaced, or that the softener has not been regenerated.</p> <p>When replacing any components, always replace the relative gasket as well.</p>		X
SAFETY VALVE SCNR VALVE	<p>Check that the safety valves and non-return drain valves are operating properly, as indicated in paragraphs 10.3.5 and 10.3.6.</p> <p>If these need to be replaced due to malfunction, repeat the check with the newly-installed valve.</p>		X
HYDRAULIC CIRCUIT	<p>Check whether there is any lime-scale build-up in the hydraulic circuit. When replacing any components, always replace the relative gasket as well.</p> <p>If there is a lot of limestone build-up in the machine's hydraulic circuit, this indicates that the water filter has not been replaced, or that the softener has not been regenerated.</p> <p>Take care in areas where the water is very hard. The water filter will need to be replaced more frequently and the water softener will need to be regenerated more often, especially if the machine is used intensively.</p>		X
DRAIN	<p>Check for any leaks on the water mains and sewer connections.</p> <p>Check the condition of the drain tray and the drain connection tube.</p>		X
DISPENSING GROUP	Check the efficiency of the dispensing group's solenoid valve.		X
WATER and STEAM NOZZLES	Check the condition of the nozzles and clean the sprayer.		X
DOSING DEVICE	Check and clean the volumetric dosing device by removing any oxidation from the tips.		X
ELECTRIC SYSTEM	Check and clean the volumetric dosing device by removing any oxidation from the tips.		X
TOUCH SCREEN	<p>Check that the touch screen is working correctly and adjust the parameters if necessary.</p> <p>View the machine counts and check the performed work cycles.</p>		X
MOTOR PUMP	Check that the motor pump is working correctly and adjust if necessary.		X



If any work is carried out on the machine electronics when the machine is still live, any guarantee will automatically be invalidated.



All original spare parts are available from the Manufacturer's website. The Manufacturer may provide the list of spare parts recommended for the maintaining the various versions of the machine.

10.3.2 Maintenance after a short period of machine inactivity

“Short period of machine inactivity” refers to a period of time exceeding one working week.

If the machine is switched back on after this period, all the water inside the hydraulic circuits must be replaced as indicated in para. 6.7.

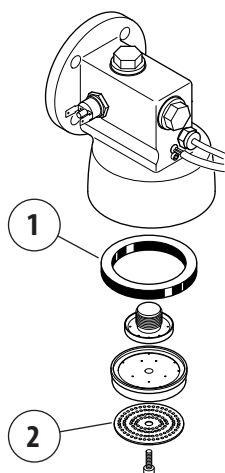
Furthermore, all periodic maintenance operations must be carried out, see the previous paragraph.

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 para. 6.7 and the machine must be fully checked.

10.3.4 Dispensing group maintenance

Replace the dispensing group's shower screen (2) and group gasket (1) on a quarterly basis (it is recommended to use original spare parts only).



10.3.5 SAFETY VALVE check

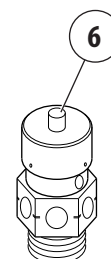
The pressure relief valve is one of the main components for machine safety. Therefore, it is important to carry out the following checks:

First check:

- Remove the machine's upper grille.
- Use pliers to pull the valve pin (6) upwards.
- If the pin will not budge, it probably means that the valve is encrusted with limestone and must be replaced.

Second check:

- Turn the machine off.
- Close off the pressure switch contacts.
- Turn the machine back on and wait for the pressure in the heating unit to rise.
- Check that the valve is working correctly at the maximum pressure of 0.19 bar (1.9 bar).

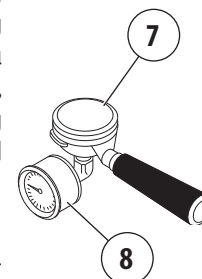
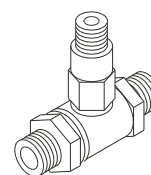


If any malfunctions are detected, the valve must be replaced. Only use the Manufacturer's original Safety Valves.

10.3.6 NON-RETURN DRAIN VALVE check

The non-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 (7) with a pressure gauge (available on request) to the dispensing group.
- Activate the dispensing group, and use the pressure gauge (8) to monitor the pressure as it increases up to 0.8-0.9 MPa (8-9 bar).
- Check that the pressure is increasing due to the heated pressure water expanding until it reaches approximately 1.2 MPa (12 bar): when this value is reached, it confirms that the valve is working correctly and the seals and solenoid valves are tight.
- Stop dispensing.
- Repeat the check on the other dispensing groups.



If any malfunctions are detected, the valve must be replaced.

10.4 Water filter maintenance

10.4.1 Determining the water hardness

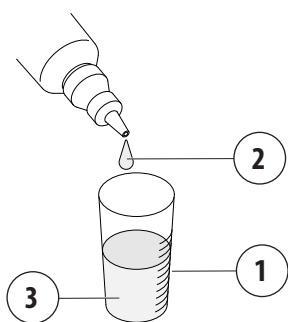
As part of the filter maintenance, it is advisable to test the water beforehand.

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

- Put 10 ml of water to be tested (1) in the test tube.
- Add a drop of reagent (2) and mix.
- Proceed in the same way by counting the number of drops until the solution (3) turns from blue to red.

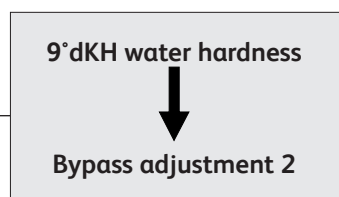
1 DROP = 1°dKH

Example: 9 Drops ----> 9°dKH carbonate hardness



10.4.2 Bypass configuration

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



Water hardness (°dKH)	Bypass Adjust.	Filter capacity (litres)			
		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



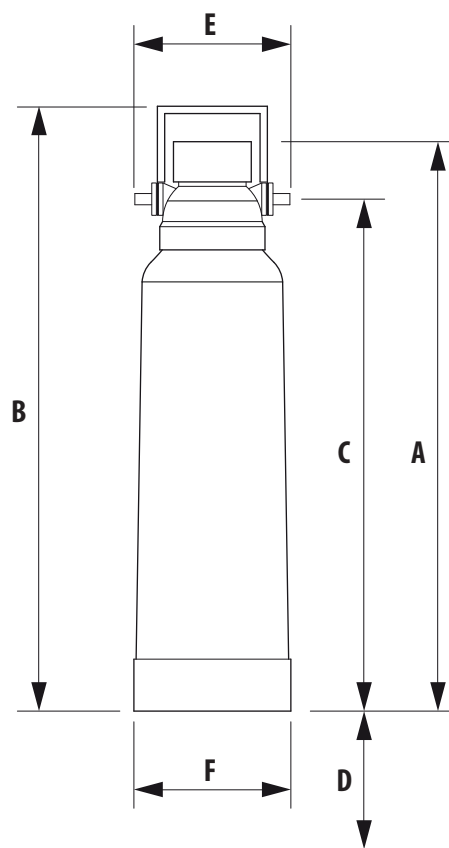
The values indicated in the table may vary, depending on the type of filter cartridge used.

To adjust the bypass, push the (4) button and turn.



10.4.3 Technical data

Model	V	M	L	XL
Connection coupling type	3/8"	3/8"	3/8"	3/8"
Min.-max. water supply pressure (bar)	2-8	2-8	2-8	2-8
Water temperature min. - max. (°C)	4-30	4-30	4-30	4-30
Room 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 bracket (mm)	445	500	530	530
Connection (C) height (mm)	370	425	450	450
Distance from the floor (D) (mm)	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.



To use and maintain the water filter, follow the indications by the manufacturer.

10.5 Water softener regeneration

It is very important to regenerate the softener within the established times. The regeneration is to be carried out regularly: every 15 days. However, in locations where the water is very hard, it will be need to be regenerated more frequently. The same rule can be applied to locations where there is a large consumption of hot water (for tea, etc.). Proceed as follows:

- Move the lever (B) and (E) from left to right;
- Remove the lid by unscrewing the knob (A);
- Release enough water through the pipe (C) to make room for the amount of salt required depending on the model (see table);
- Clean any salt or resin residues from the gasket located on the lid;
- Put the cover back on by securely screwing the knob (A) 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.

i **The build-up of limescale in the hydraulic circuit and heating unit inhibits thermal exchange, which prevents the machine from working properly. Heavy incrustations in the heating unit may cause long machine shutdowns and in any case invalidate any guarantee, because this symptom indicates that the regeneration procedure has not been carried out.**

In order to keep the water softener, and hence the machine, in perfect operating condition, it is necessary to regularly regenerate it, depending on 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 measurement:

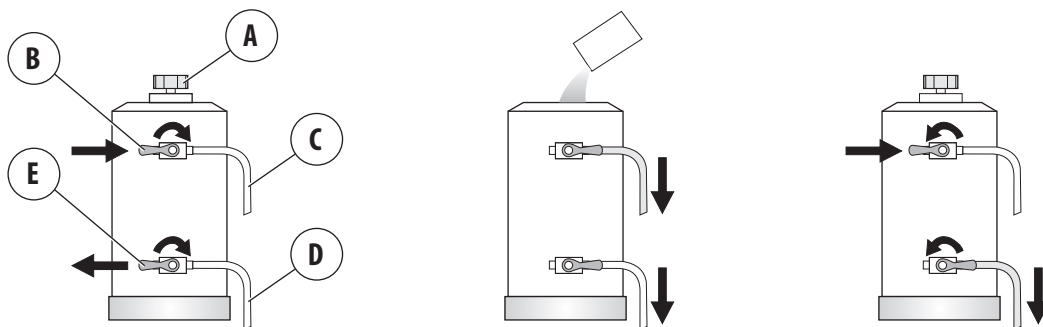
- °f: French degree
- °d: German degree = 1.8°f
- mg CaCO₃

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 ₃	30	40	60	80	
8 litres	1000 L	900 L	700 L	500 L	1.0 kg
12 litres	1500 L	1350 L	1050 L	750 L	1.5 kg
16 litres	2100 L	1800 L	1400 L	1000 L	2.0 kg

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

i **To use and regenerate the water softener, follow the instructions provided by the manufacturer.**



10.6 Malfunctions and solutions

Problem	Cause	Action
NO MACHINE POWER	The main switch is in the "OFF" position. The machine switch is faulty. The mains switch is in the OFF position. The wiring is defective.	Turn the main switch to the ON position. Replace the main switch. Turn the mains switch to the ON position. Check for any faulty connections.
NO WATER IN THE HEATING UNIT	The water mains valve is shut off. The cut-off valve of the automatic level device is closed. The pump filter is clogged. The motor pump is disconnected or jammed. The water filling solenoid valve is faulty. The water inlet solenoid valve filter is clogged.	Open the water mains valve. Open the automatic level device valve. Replace the pump filter. Check the motor pump. Replace the water filling solenoid valve. Clean or replace the solenoid valve filter.
TOO MUCH WATER IN THE HEATING UNIT	The solenoid valve of the automatic level device is faulty. The level probe is out of order (clogged by lime-scale).	Replace the solenoid valve of the automatic level device. Replace the level probe.
WATER IS LEAKING FROM THE MACHINE	The tray is not draining. The drain pipe is broken, has detached, or the water flow is obstructed. Water is leaking from the hydraulic circuit.	Check the sewer drain. Check and restore the drain pipe connection to the tray. Restore the hydraulic seal by replacing the pipe, the gasket or the fitting as necessary.
WATER IS LEAKING FROM THE DISPENSING GROUP	The group gasket is worn.	Replace the group gasket.
THE DISPLAY INDICATES NON-CONFORMING PRESSURE	The display is faulty. The motor pump has been calibrated incorrectly.	Replace the display. Adjust the motor pump calibration.
THE SAFETY VALVE IS IN OPERATION	The electronic control unit is faulty.	Check that the electronic system is working properly.
NO STEAM RELEASED FROM NOZZLE	The machine is switched off. The electrical heating element is faulty. The temperature probe is faulty. The nozzle sprayer is clogged. The safety thermostat is deactivated or faulty.	Turn on the machine. Replace the electrical heating element. Replace the temperature probe. Clean the steam nozzle sprayer. Reactivate or replace the thermostat.
WATER OR STEAM MIXED WITH WATER COMES OUT OF STEAM NOZZLES	The level of the heating unit is too high due to the level probe being incorrectly positioned inside the heating unit or the presence of limestone. The heating unit filling solenoid valve is leaking.	Check the condition of the level probe: check if it is positioned correctly and check for any surface lime-scale. Clean and replace the filling solenoid valve.
NO COFFEE IS DISPENSING	There is no water in the mains. The group solenoid valve is faulty. The pump is jammed. The group solenoid valve is clogged or dirty. The group filter is clogged. The volumetric dosing device is jammed. The inlet and outlet taps of the dosing device are closed. The outlet nozzle of the volumetric dosing device is dirty.	Check that there is water in the mains. Replace the group solenoid valve. Replace the pump. Clean or replace the solenoid valve. Clean or replace the filter. Check/replace the dosing device. Open the taps. Clean or replace the nozzle.
THE COFFEE GROUNDS ARE WET	The group solenoid valve drain is clogged. The dispensing group is too cold. The coffee has been ground too finely. There's not enough ground coffee.	Clean the group drain. Wait until the group has fully heated up. Adjust the coffee grinder. Increase the amount of ground coffee.
GROUND FOUND IN CUPS	The filter holder is dirty. The filter holes are worn. The coffee has not been ground evenly. The group gasket is worn. The pump pressure is too high.	Clean the filter holder. Replace the filter. Replace the burrs. Replace the seal. Adjust the pump pressure.

Problem	Cause	Action
THE CUP IS DIRTY WITH SPLASHES OF COFFEE	There are steam pockets in the dispensing system. There are air pockets in the hydraulic circuit. The coffee has been ground too coarsely.	Reduce the water temperature. Check the cause and resolve the problem. Adjust the grinder as appropriate.
THE COFFEE IS TOO COLD	The heating element of the coffee heating unit is faulty. The wiring is faulty. There is limescale on the heating element. The heating element protection thermostat has cut-in. Limescale has reduced the water circulation. The dispensing group is cold.	Replace the electrical heating element. Check for any faulty connections. Clean the machine. Reset the heating element protection. Clean the exchanger connections, and clean or replace the two circulation pipes. Eliminate air pockets in the hydraulic circuit in the following manner: Disconnect the pump from the power supply. Close the softener's water valve. Perform a dry dispensing run for a few minutes. Reconnect the pump to the power supply. Open the softener's water outlet valve. Dispense until water comes out; Wait a few minutes for it to heat up.
THE COFFEE IS TOO HOT	The heating unit temperature is too high.	Reduce the pressure in the heating unit.
COFFEE DISPENSING TOO FAST	The coffee has been ground too coarsely. The diameter of the injector is too big. The ground coffee dose is too small.	Adjust the coffee grinder. Replace the injector with one that has a smaller diameter. Check the amount (grams) of ground coffee being used.
COFFEE DISPENSING TOO SLOWLY	The coffee has been ground too finely. The injector is clogged. The dispensing group is clogged. The filter holder is dirty.	Adjust the coffee grinder. Replace the injector. Check and clean the dispensing group. Clean and replace the filters, if necessary.
SHUTDOWN OF THE ELECTRONIC SYSTEM	The control unit main fuse has burned out. One of the volumetric dosing device's contacts is grounded.	Replace the main fuse. Check the volumetric dosing device connection.
COFFEE DISPENSING IN INCONSISTENT MANNER THE COFFEE DOSE IS NOT CONSISTENT WITH SET VALUES	The volumetric dosing device connection is faulty. The electronic control unit connection is faulty. The volumetric dosing device connector is wet. The volumetric dosing device is faulty: the LED does not flash during the dispensing process. The coffee has been ground too finely: there isn't enough water flow in the dosing device. The non-return valve is losing pressure (the dose is too small). The expansion valves are losing pressure (the dose is too small). Water is leaking from the group solenoid valve when coffee is being dispensed or when in standby. The volumetric dosing device is partially obstructed.	Check that the volumetric dosing device connector has been connected properly. Check that the connector has been connected correctly to the electronic control unit. Remove the volumetric dosing device connector and thoroughly dry the contacts. Replace the heads of the volumetric dosing device or replace the whole dosing device. Suitably adjust the grind and check the burrs, if necessary. Check and replace the non-return valve, if necessary. Check and replace the expansion valves, if necessary. Clean and replace the solenoid valve, if necessary. Clean or replace the volumetric dosing device.
UNEVEN AMOUNTS OF MILK ARE DISPENSING FROM THE CAPPUCCINO MAKER	The milk has run out. The milk injector is clogged. The cappuccino maker is clogged. The suction hose is clogged. The silicone tube is detached.	Refill the milk. Clean the milk injector. Clean the cappuccino maker. Clean the milk suction hose. Connect the hose correctly.
THERE ARE AIR POCKETS IN THE MILK FROTH FROM THE CAPPUCCINO MAKER	The air regulator is open too much. The air suction hose is disconnected from the cappuccino maker.	Properly calibrate the air regulator. Restore the connection via the hose.

10.7 Cleaning operations

10.7.1 General instructions

A few simple cleaning tasks are required to have a perfectly sanitised and efficient appliance. The instructions provided here apply when the machine is being used on a regular basis. If the machine is used consistently, cleaning should be performed more frequently.



Do not use alkaline cleaners, solvents, alcohol or aggressive substance-based products (e.g. phosphoric, citric or sulfamic acids). The products/cleaners used must be suitable for this purpose and not corrode the water circuit elements.

Do not use abrasive cleaners which may scratch the body-work's surface.

Always use clean and sanitised cloths when cleaning.

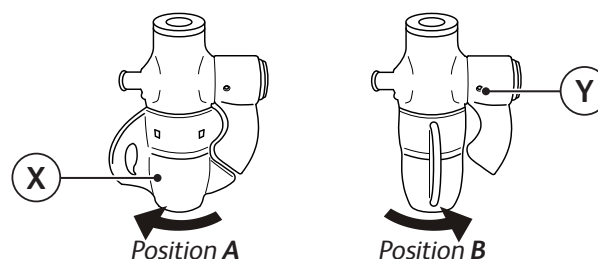
When washing the filters, filter holders and all machine components, use Manufacturer-supplied cleaners or products specific for cleaning professional coffee machines.

Cleaning	Daily	Weekly
	Cappuccino maker: Clean at least once a day or more often if the cappuccino maker is used constantly, by following the instructions in para. 10.7.2.	X
Body and Grilles: 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	
Pushbutton panels: Clean the pushbutton panels with a cloth dampened in lukewarm water. Turn off the machine before starting the cleaning operation.	X	
Filters and Filter Holders: Wash the filters and filter holders on a daily and weekly basis, as indicated in para. 10.7.3. Perform the cleaning operations on a daily basis as indicated in para. 10.7.6.	X	X
Steam nozzle: Keep the nozzle clean at all times using a cloth dampened in lukewarm water. Check and clean the nozzle tips, by clearing the steam outlet holes with a small needle. Perform the wash on a weekly basis, as indicated in para. 10.7.7.	X	X
Dispensing group: Wash the dispensing group as described in para. 10.7.5. Perform the cleaning operations on a daily basis as indicated in para. 10.7.6. Internally clean the group on a weekly basis, as indicated in para. 10.7.6.	X	X
Grinder-dispenser and Hopper: 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 Washing the cappuccino maker

Take special care when cleaning the cappuccino maker and follow the steps provided below:

- Perform an initial wash by immersing the suction hose into the water and dispensing for a few seconds.
- Turn the rotating body (X) 90° to position B (the milk outlet duct closes).
- Whilst holding the milk suction hose in the air, dispense steam (cappuccino maker dry run).
- Wait around 20 seconds so that the cappuccino maker can be internally cleaned and sterilised.
- Shut off the steam and put the rotating body back into position A.
- If the air intake hole (Y) is blocked, clear it gently using a pin.



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

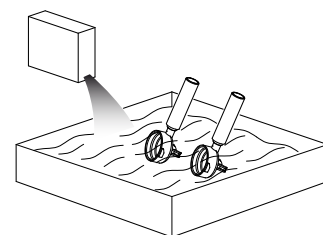
10.7.3 Cleaning the filters and filter holders



Caution: only immerse the filter holder cup in water and try not to get the handle wet. The cleaner must be diluted in cold water in the doses indicated on the package (see the manufacturer).

Daily:

- Soak the filter and filter holder in hot water overnight so that the fatty coffee deposits can dissolve.
- Rinse everything in cold water.



Weekly:

- Use a screwdriver to detach the filter from the filter holder.
- Soak the filter and filter holder in warm water with a suitable cleaner for 10 minutes.
- Rinse everything in cold water.









10.7.4 Scheduled dispensing group wash

If provided, the machine automatically requests that the dispensing groups be washed on a daily basis.

To begin the washing cycle, proceed as shown on the display. You can always cancel the washing request and resume normal operation.

10.7.5 Dispensing group manual wash

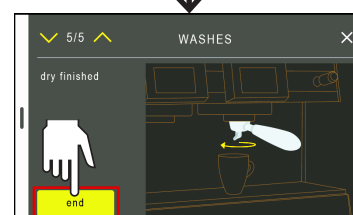
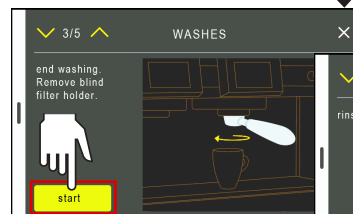
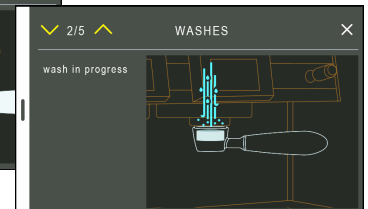
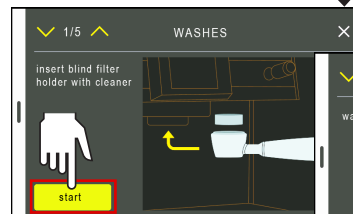
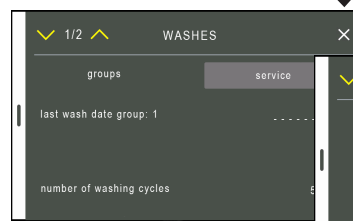
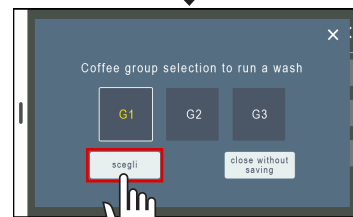
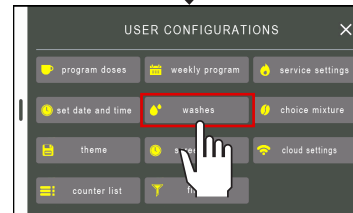
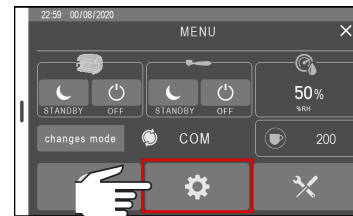
If desired, it is possible to wash the groups at any time, proceeding as follows:

- Access the menu (see para. 8.1).
- Select the configuration button  .
- Press the  button.
- Select the dispensing unit that you would like to wash;
- The display will indicate the date of the last washing cycle and the number of washing cycles.
- Move to the next page using the  1/2  buttons.
- To start the wash, press the  button.
- Insert a suitable detergent in the blind filter holder, secure it to the dispensing group and press the  button.
- Wait for wash cycle to finish, then remove the filter holder from the dispensing group and press the  button.
- When the rinse cycle has finished, remove the filter holder from the dispensing group and press the  button.



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

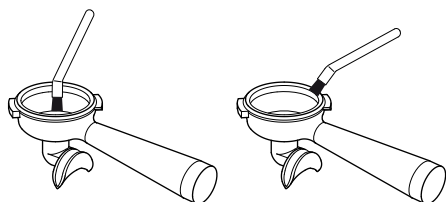
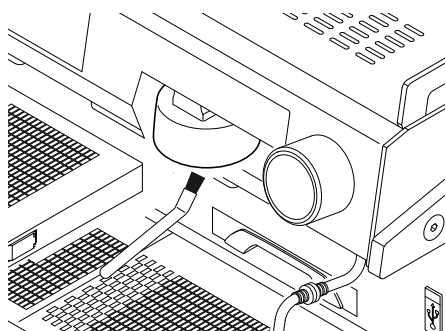
Washes are interrupted if the machine is switched off; to resume the washes automatically, turn the machine on again.



10.7.6 Cleaning the group shower screen, shower screen containment ring and filter holder

Daily

Clean the dispensing group and filter holder shower screens with the supplied brush on a daily basis. Thoroughly clean the inside of the coupling ring and filter holder, as well as the edge and the wings of the filter holder, so as to eliminate any accumulated coffee residues.

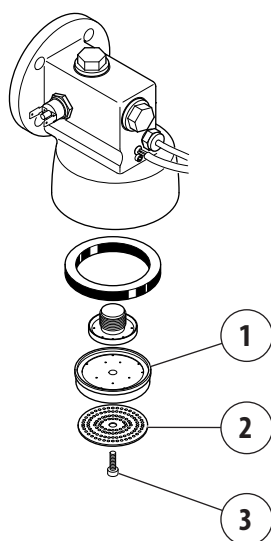


Use the special brush supplied (see the Spare Parts Catalogue).

Weekly

Clean the shower screen as follows:

- Loosen the screw using a screwdriver (3);
- Remove the shower screen (2) and the shower screen containment ring (1);
- Carefully wash the two components with hot water;
- Reposition the shower screen and shower screen containment ring in their original position and lock everything in place with the screw.

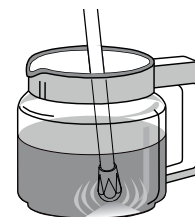


10.7.7 Cleaning the steam nozzle/automatic steam wand

Weekly

Clean the steam nozzle as follows:

- Insert the nozzle into a jug with water and a specific cleaner, in accordance with the manufacturer's instructions.
- Heat the solution with the steam nozzle.
- Let the nozzle cool down whilst keeping it immersed in the solution for at least 5 minutes, so that cleaner can rise inside the nozzle due to the cooling effect.
- Repeat the operation 2 or 3 times until no more milk residue is dispensed.



11. SPARE PARTS

To replace machine components and/or parts, refer to the official documentation provided by the Manufacturer.



All original spare parts are available from the Manufacturer's website. The Manufacturer can provide a list of spare parts recommended for maintaining the various versions of the machine on request.



If non-original parts are used, the safety of the machine cannot be guaranteed. The Manufacturer reserves the right to void the machine guarantee.

12. DECOMMISSIONING

12.1 Short period of machine inactivity

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

If the machine is reactivated after this period, the Technician must replace all the water contained in the hydraulic circuits as indicated in para. 6.7.

All the scheduled maintenance operations must also be performed - see para. 10.3.1.

12.2 Long period of machine inactivity

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

In this case, the machine must be disconnected from the electric, hydraulic and gas mains if fitted, and all the internal circuits must be drained of water.

To connect the machine after this period, follow the initial installation procedure.

13. DISASSEMBLY

To disassemble the machine, follow the installation procedure in reverse order - see chap. 5.

All dismantled components must be divided by material to make identification easier and then disposed of at the authorised collection centres, as instructed in chap. 14.

14. DISPOSAL

14.1 Disposal information

For the European Union and the European Economic Area only.

This symbol indicates that the product cannot be disposed of with household waste, pursuant 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 product with similar features, or an authorised collection site that recycles electrical and electronic equipment waste (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 the potentially hazardous substances which are usually found in this kind of waste.

Your cooperation in correctly disposing of this product will contribute to the effective use of natural resources and you will avoid incurring fines provided by law. For more information about recycling this product, contact either your local authority, the entity responsible for waste collection, an authorised dealer or your household waste disposal service.



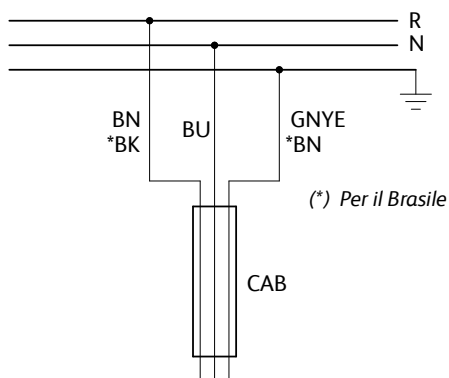
Before disposing of the machine, we recommend seeking advice from the Technician and/or the seller.

14.2 Environmental information

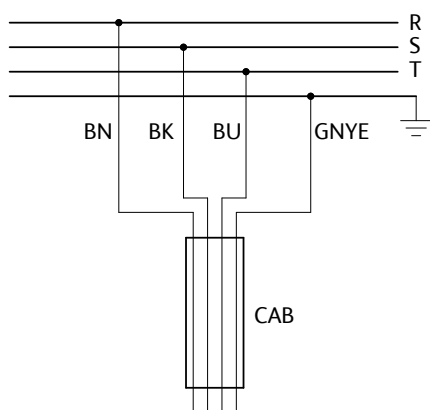
The machine features an internal lithium button battery, which is located in the circuit board and ensures data storage. Dispose of the battery in accordance with current national regulations.

15. WIRING DIAGRAMS

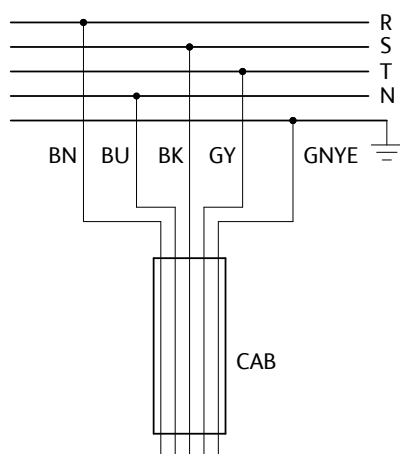
15.1 ELECTRIC MAINS connection



CAVO A 3 CONDUTTORI (Fase+Neutro+Terra)



CAVO A 4 CONDUTTORI (3 Fasi+Terra)



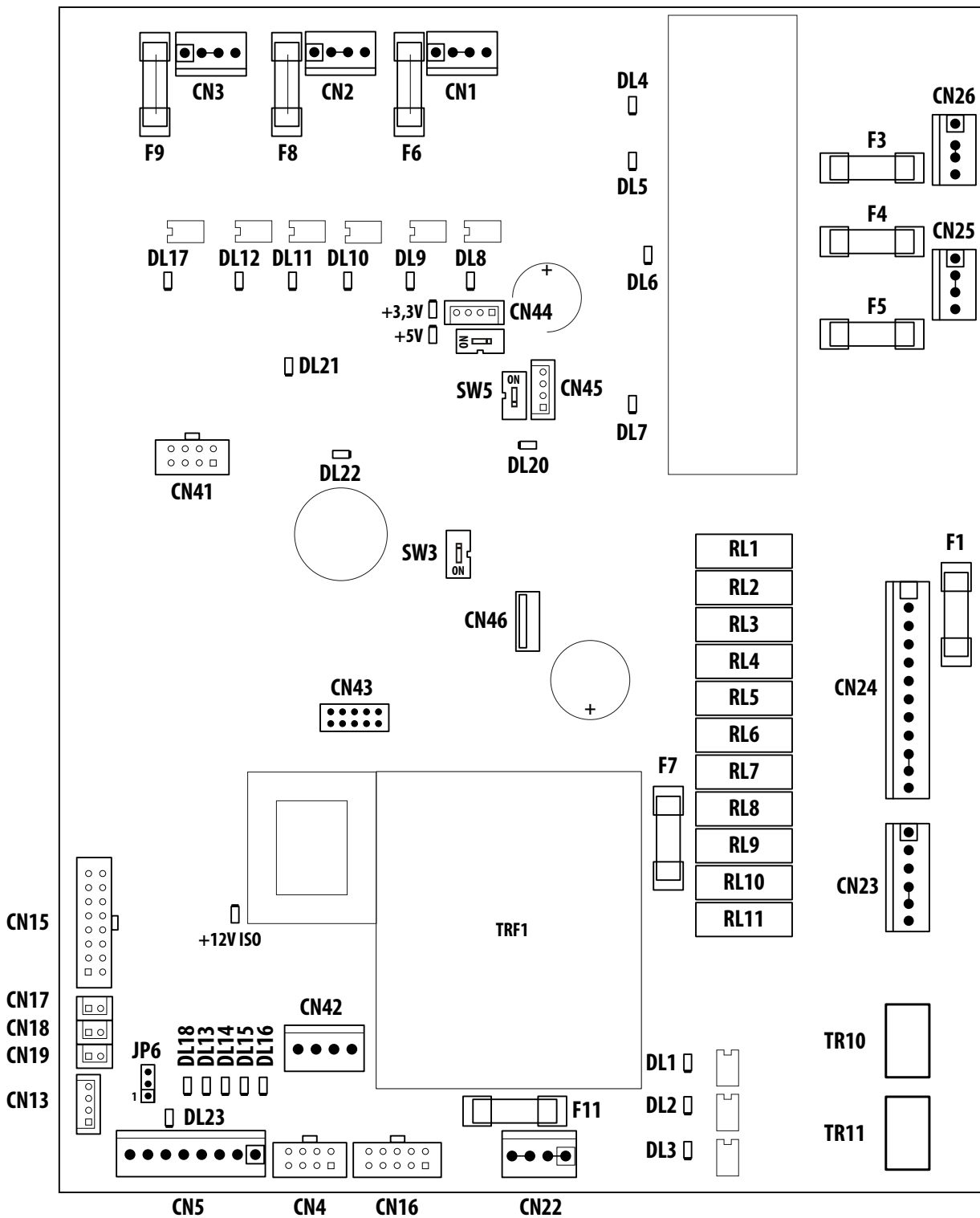
CAVO A 5 CONDUTTORI (3 Fasi+Neutro+Terra)

R	Phase
S	Phase
T	Phase
N	Neutral
	Earth
BU	Blue
CAB	Power cable
GY	Grey
GNYE	Yellow-green
BN	Brown
BK	Black



To correctly connect the machine to the electric mains, please refer to the information provided on the nameplate (see the example in paragraph 2.8).

15.2 Electronic control unit diagram



Fuse		Description
F1	5x20 time-delay fuse, 6.3 A	Protects: from RL1 to RL13
F3	5x20 T 10 A fuse	Protects: the group 2 coffee heating unit heating element
F4	5x20 T 10 A fuse	Protects: the group 3 coffee heating unit heating element
F5	5x20 T 10 A fuse	Protects: the group 1 coffee heating unit heating element
F6	5x20 T 10 A fuse	Protects: the coffee heating unit heating elements of groups 1 and 3
F7	5x20 time-delay fuse, 2 A	Protects: the transformer's double winding
F8	5x20 T 10 A fuse	Protects: the group 2 and 4 coffee heating unit heating elements
F9	5x20 time-delay fuse	Protects: the steam heating unit's heating element
F11	5x20 time-delay fuse, 200 mA	Protects: +24V power supply

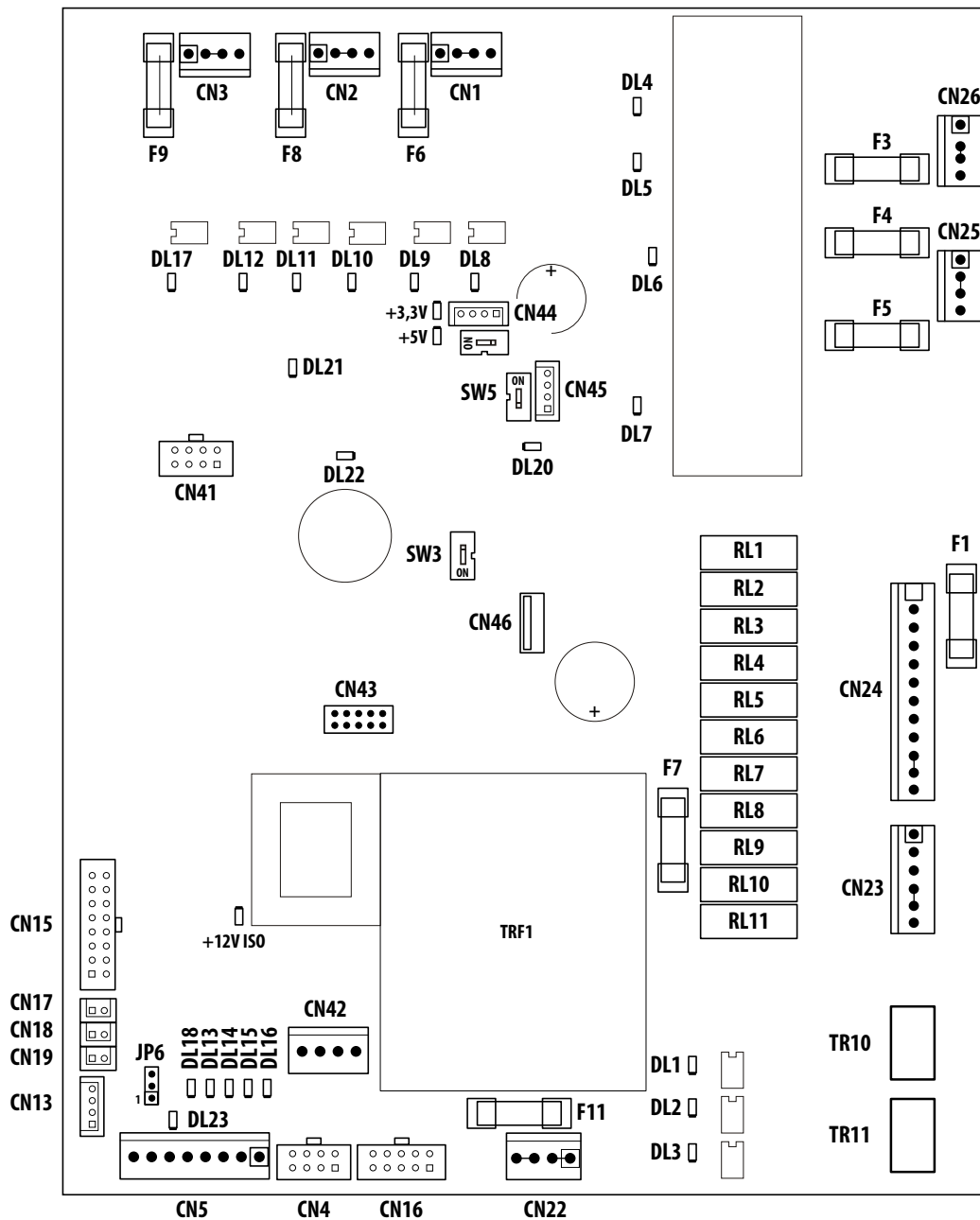
LEDs	Description
DL1	Front LEDs
DL2	Side panel LEDs
DL3	Cup warmer
DL4	Group 4 coffee heating unit heating element
DL5	Group 2 coffee heating unit heating element
DL6	Group 3 coffee heating unit heating element
DL7	Group 1 coffee heating unit heating element
DL8	Group 1 heating element
DL9	Group 3 heating element
DL10	Group 2 heating element
DL11	Group 4 heating element
DL12	Steam heating unit 1 heating element
DL13	Group 4 volumetric counter
DL14	Group 3 volumetric counter
DL15	Group 2 volumetric counter
DL16	Group 1 volumetric counter
DL17	Steam heating unit 2 heating element
DL18	-
DL19	-
DL20	-
DL21	-
DL22	-
DL23	RS232 (RX)
+3.3 V	+3.3 V power supply
+5 V	+5 V power supply
+12 V	+12 V power supply
+12 V ISO	+12 V level control power supply
+18 V RECT	+18 V power supply

Relay	Description
RL1	Pump
RL2	Group 1 solenoid valve
RL3	Group 3 solenoid valve
RL4	Group 2 solenoid valve
RL5	Group 4 solenoid valve
RL6	Heating unit filling solenoid valve
RL7	Mixed hot water solenoid valve
RL8	Tea solenoid valve 1
RL9	Steam wand steam solenoid valve
RL10	Air solenoid valve
RL11	Tea solenoid valve 2
RL12	Reserve 2
RL13	Reserve 1
TR10	Side panel LED control
TR11	Front panel LED command

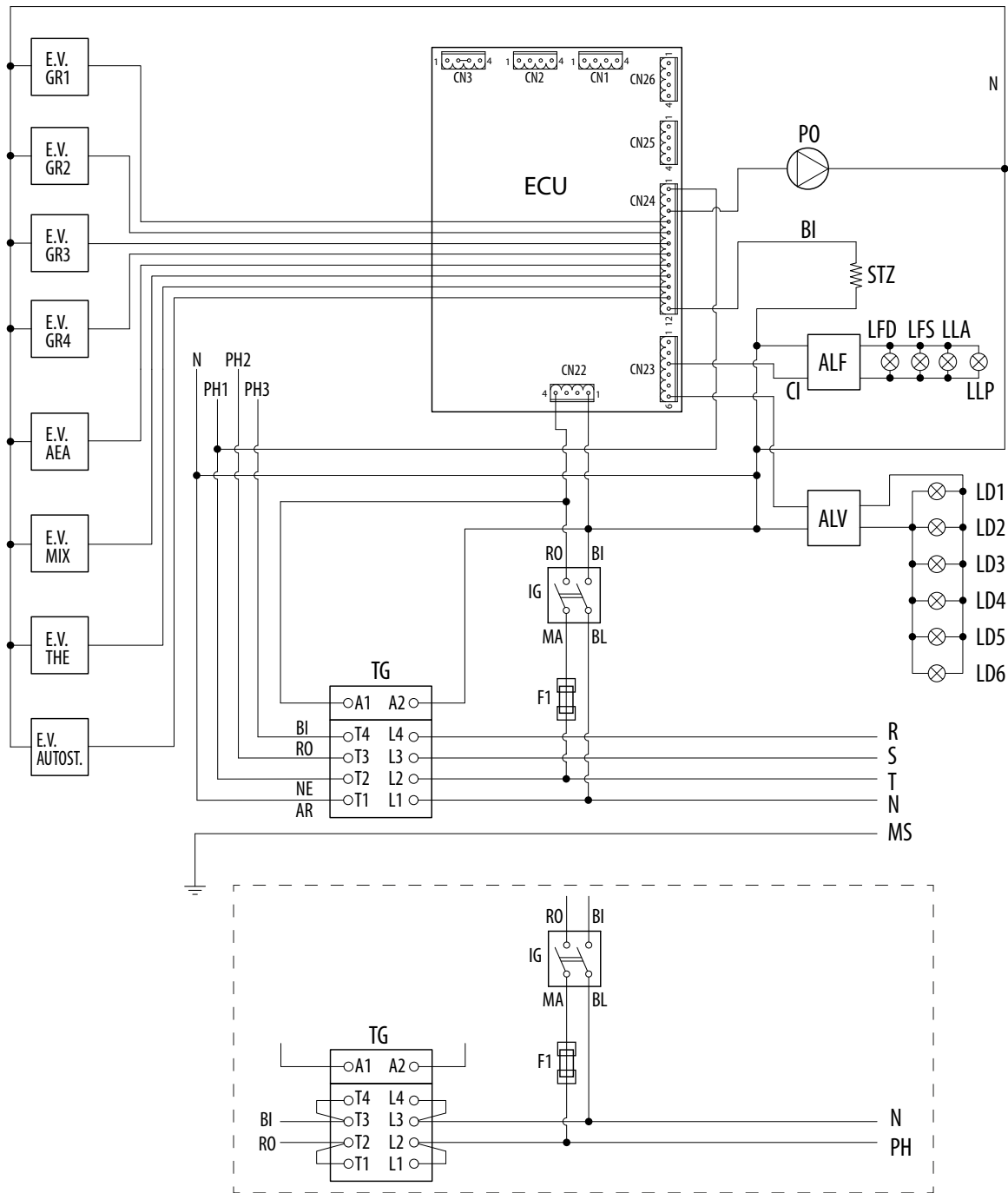
15.3 Connector wiring diagram

CN1	Heating element connection for groups 1 and 3
CN2	Heating element connection for groups 2 and 4
CN3	Heating element connection for the steam heating unit
CN4	Connection of the coffee heating unit pressure switches
CN5	Connection of the volumetric dosing devices and steam heating unit levels
CN13	RS232 serial socket connection
CN14	Not used
CN15	Connection of the NTC temperature sensors
CN16	Mains pressure transducer power supply, humidity sensor and heating unit press.
CN17	NTC steam heating unit connection
CN18	NTC steam wand connection

CN19	NTC cup warmer connection
CN22	Wiring of the circuit board
CN23	Connection of 230 VAC outputs
CN23A	Connection of 230 VAC outputs
CN24	Connection of 230 VAC outputs
CN25	Connection of heating elements for hot water containers 1 and 3
CN26	Connection of heating elements for hot water containers 2 and 4
CN41	Display/ CPU connection
CN44	485 grinder-dispenser connection
CN45	485 AUX connection



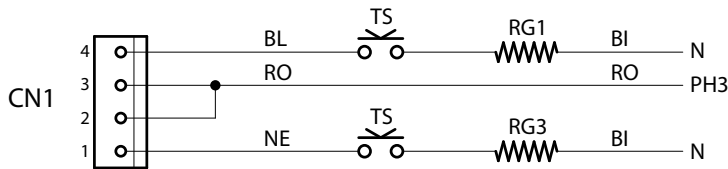
15.4 Control unit connection diagram



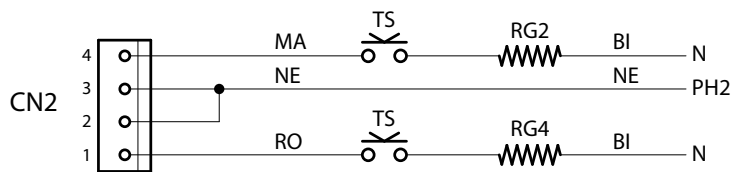
AR	Orange
ALV	Work surface LED power supply
ALF	Side panel + logo LED power supply
BI	White
CE	Electronic control unit
CI	Cyan
CN22	Power supply connector
F1	10 A T Fuse
IG	Main switch
LD1-2-..	Work surface LED
LFD	Right side panel LEDs

LFS	Left side panel LEDs
LP	Power indicator
MA	Brown
MS	Frame mass
N	Neutral
NE	Black
PH	Phase
PO	Pump
RO	Red
STZ	Heating element
TG	Remote switch

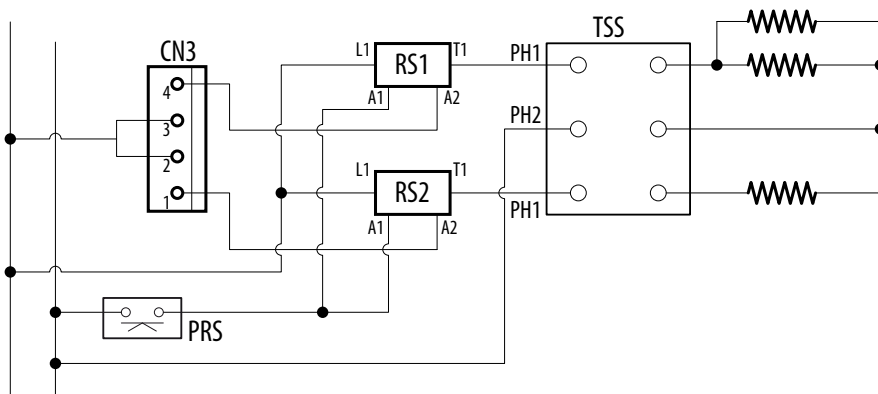
CN1 - Group 1 and 3 coffee heating unit heating element connection



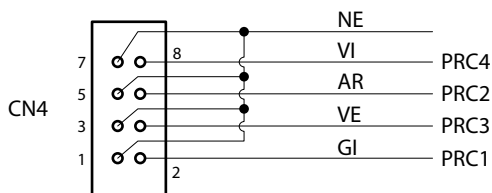
CN2 - Group 2 and 4 coffee heating unit heating element connection



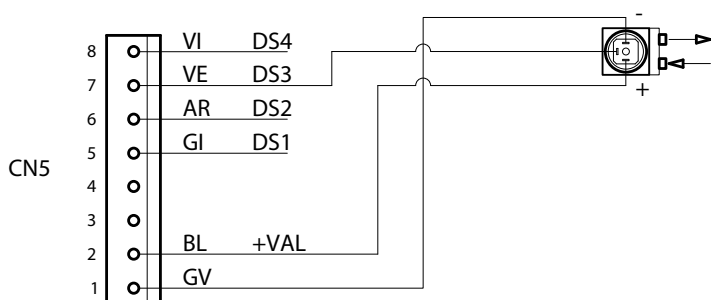
CN3 - Steam heating unit heating element connection



CN4 - Connection of the coffee heating unit pressure switches

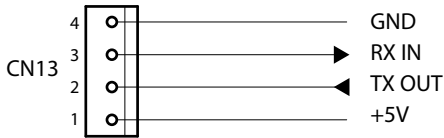


CN5 - Connection of the volumetric dosing devices and steam heating unit levels

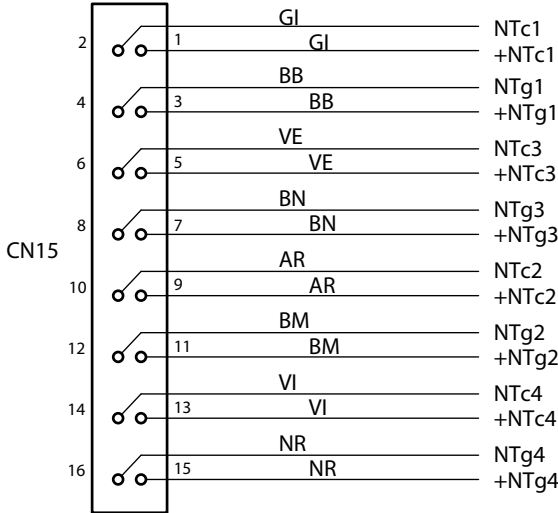


AR	Orange
BB	White/Blue
BI	White
BL	Blue
BM	White/Brown
BN	White/Black
DS	Volumetric dosing device
EVa	Automatic steam wand SV
EVgr	Group SV
EVC	Heating unit-filling SV
EVt1	Hot water SV
EVt2	Hot water SV 2
EVS	Frothing SV
EVm	Mixed water SV
GI	Yellow
GR	Grey
GV	Yellow/Grey
LC	Heating unit level
LF	Side Panel LEDs
LPL	Work Surface LED
LS	Safety level
MA	Brown
N	Neutral
NE	Black
NTa	Automatic steam wand NTC probe
NTb	Service NTC probe
NTc	Coffee heating unit NTC probe
NTg	Group NTC probe
NTs	Cup warmer NTC probe
PH	Phase
PO	Pump
PRC	Coffee heating unit pressure switch
PRS	Safety pressure switch
RG	Group heating element
RH	Coffee heating unit heating element
RO	Red
RR	Heating element
RS	Static relay
TP	Coffee heating unit pressure transducer
TPR	Pressure transducer
TS	Safety thermostat
STZ	Cup warmer
SUR	Humidity sensor
VE	Green
VI	Violet

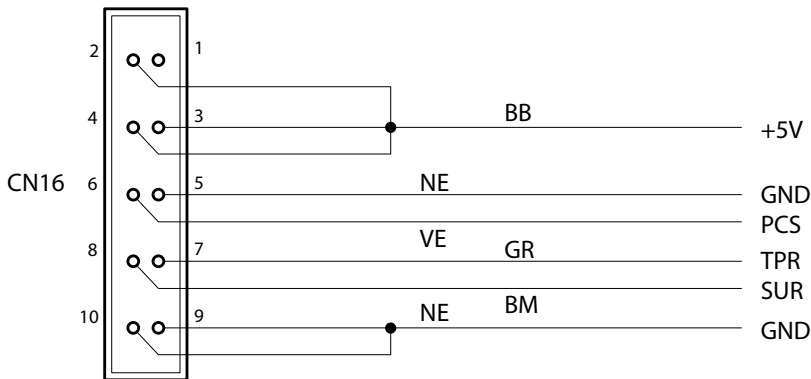
CN13 - RS232 serial socket connection



CN15 - NTC temperature sensor connection



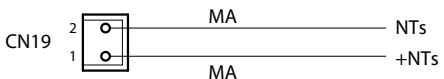
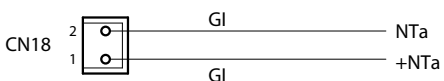
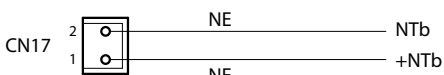
CN16 - Coffee heating unit pressure switch power supply



CN17 - Steam heating unit NTC connection

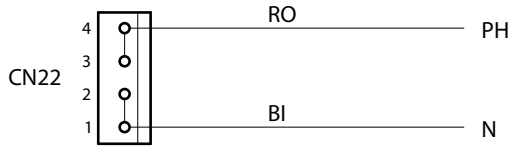
CN18 - Automatic steam wand NTC connection

CN19 - Cup warmer NTC connection

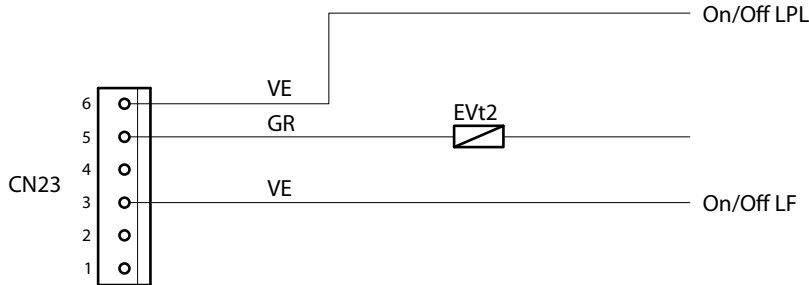


AR	Orange
BB	White/Blue
BI	White
BL	Blue
BM	White/Brown
BN	White/Black
DS	Volumetric dosing device
EVa	Automatic steam wand SV
EVgr	Group SV
EVc	Heating unit-filling SV
EVt1	Hot water SV
EVt2	Hot water SV 2
EVS	Frothing SV
EVm	Mixed water SV
GI	Yellow
GR	Grey
GV	Yellow/Grey
LC	Heating unit level
LF	Side Panel LEDs
LPL	Work Surface LED
LS	Safety level
MA	Brown
N	Neutral
NE	Black
NTa	Automatic steam wand NTC probe
NTb	Service NTC probe
NTc	Coffee heating unit NTC probe
NTg	Group NTC probe
NTs	Cup warmer NTC probe
PH	Phase
PO	Pump
PRC	Coffee heating unit pressure switch
PRS	Safety pressure switch
RG	Group heating element
RH	Coffee heating unit heating element
RO	Red
RR	Heating element
RS	Static relay
TP	Coffee heating unit pressure transducer
TPR	Pressure transducer
TS	Safety thermostat
STZ	Cup warmer
SUR	Humidity sensor
VE	Green
VI	Violet

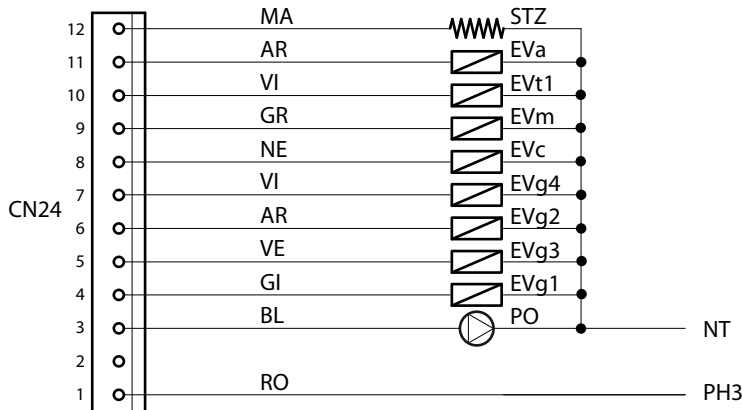
CN22 - Circuit board wiring



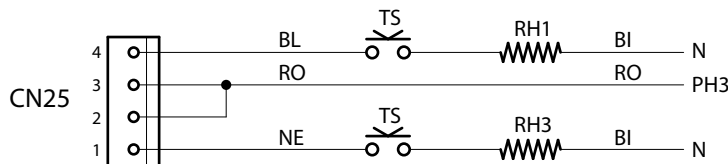
CN23 - Connection of 230 VAC outputs



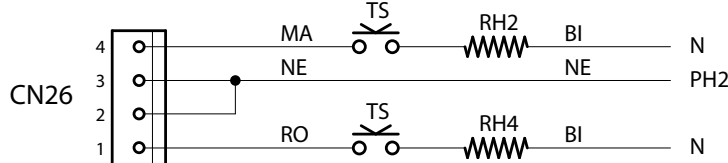
CN24 - Connection of 230 VAC outputs



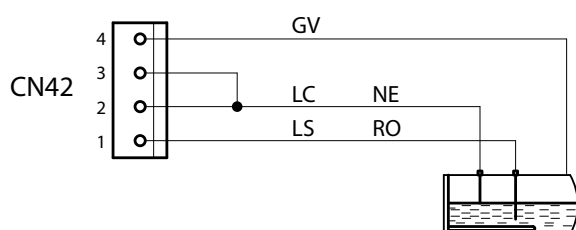
CN25 - Coffee heating unit 1 and 3 heating element connection



CN26 - Coffee heating unit 2 heating element connection

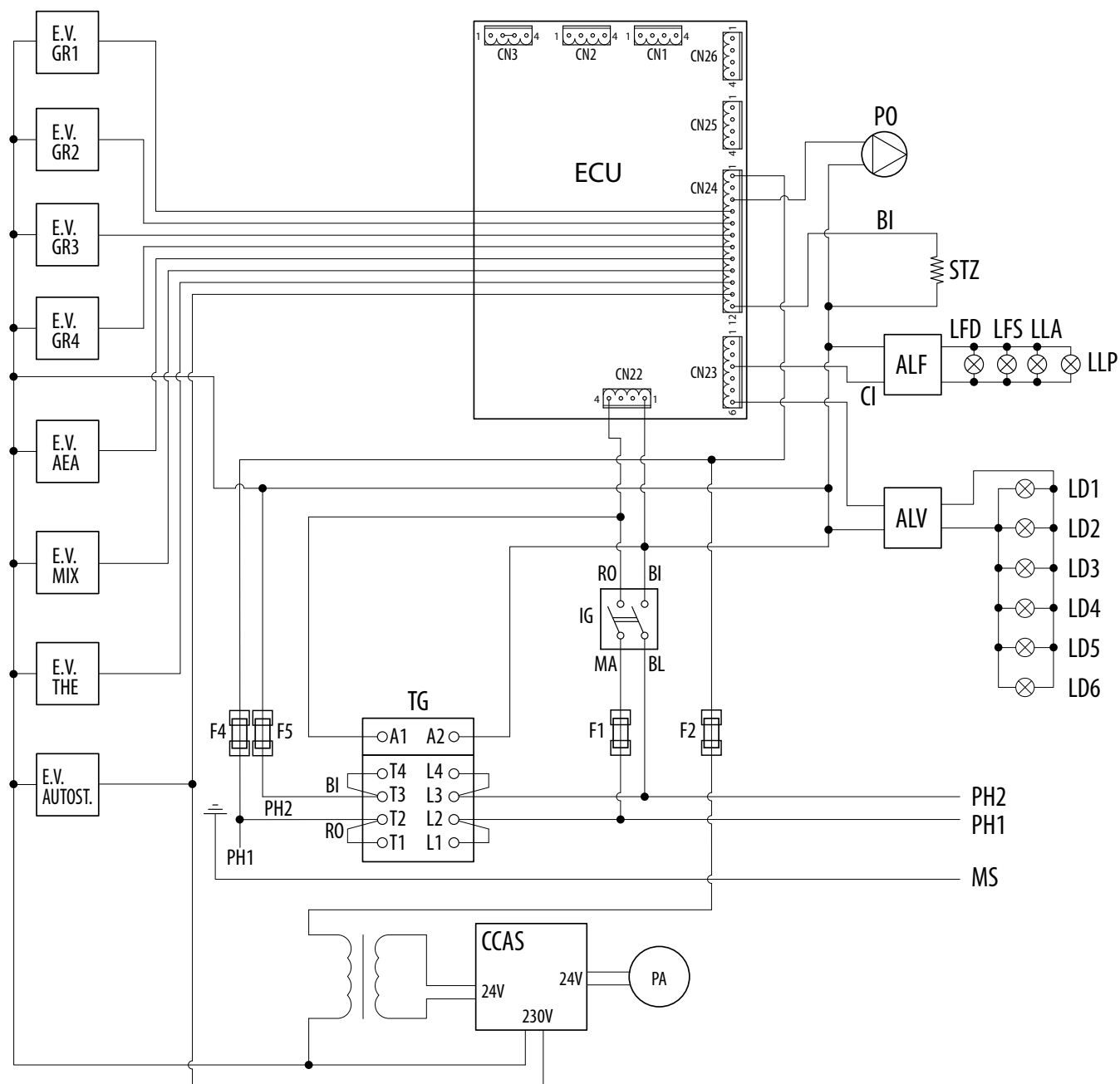


CN42 - Steam heating unit probe connection



AR	Orange
BB	White/Blue
BI	White
BL	Blue
BM	White/Brown
BN	White/Black
DS	Volumetric dosing device
EVa	Automatic steam wand SV
EVgr	Group SV
EVc	Heating unit-filling SV
EVt1	Hot water SV
EVt2	Hot water SV 2
EVS	Frothing SV
EVm	Mixed water SV
GI	Yellow
GR	Grey
GV	Yellow/Grey
LC	Heating unit level
LF	Side Panel LEDs
LPL	Work Surface LED
LS	Safety level
MA	Brown
N	Neutral
NE	Black
NTa	Automatic steam wand NTC probe
NTb	Service NTC probe
NTc	Coffee heating unit NTC probe
NTg	Group NTC probe
NTs	Cup warmer NTC probe
PH	Phase
PO	Pump
PRC	Coffee heating unit pressure switch
PRS	Safety pressure switch
RG	Group heating element
RH	Coffee heating unit heating element
RO	Red
RR	Heating element
RS	Static relay
TP	Coffee heating unit pressure transducer
TPR	Pressure transducer
TS	Safety thermostat
STZ	Cup warmer
SUR	Humidity sensor
VE	Green
VI	Violet

15.5 Control unit connection diagram -UL-

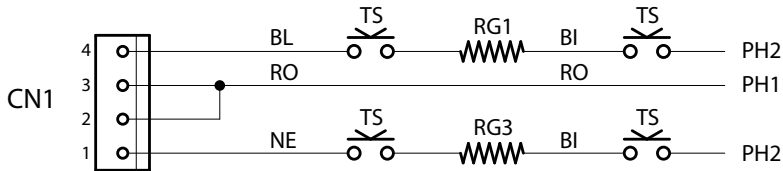


AR	Orange
ALARM	Light-up logo LED power supply
ALV	Work surface LED power supply
ALF	Side panel LED power supply
BI	White
CCAS	Automatic Steam Wand Command Control Unit
CE	Electronic control unit
CI	Cyan
CN22	Power supply connector
F1	10 A T Fuse

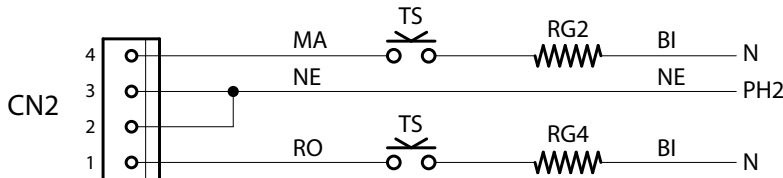
F2	1 A Fuse
F3	1 A Fuse
F4	15 A Class C Fuse
F5	15 A Class C Fuse
IG	Main switch
IS	Cup warmer switch
LDS	Cup warmer LED on
LD1-2-..	Work area LED
LFD	Right side panel LEDs
LFS	Left side panel LEDs
LLA	Front logo LED

LLP	Rear logo LED
MA	Brown
MS	Frame mass
NE	Black
PA	Air pump
PH1	Phase
PH2	Phase
PO	Pump
RO	Red
STZ	Cup warmer heating element
TG	Remote switch

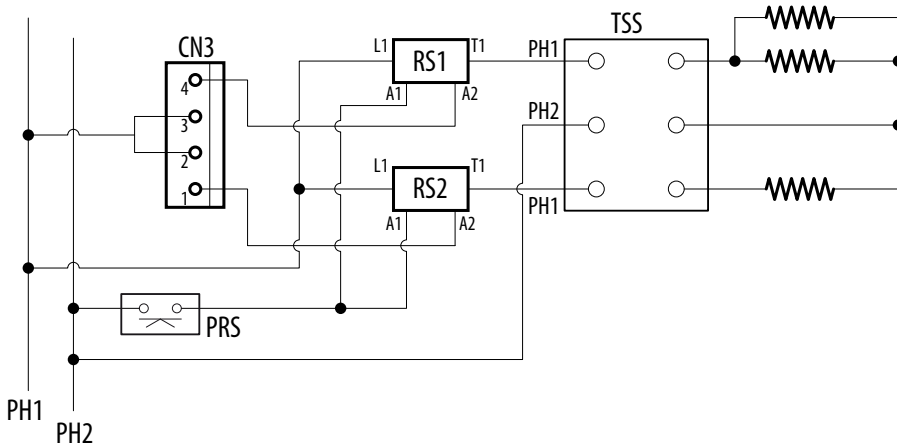
CN1 - Group 1 and 3 coffee heating unit heating element connection -UL-



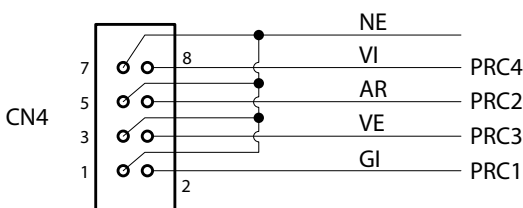
CN2 - Group 2 and 4 coffee heating unit heating element connection -UL-



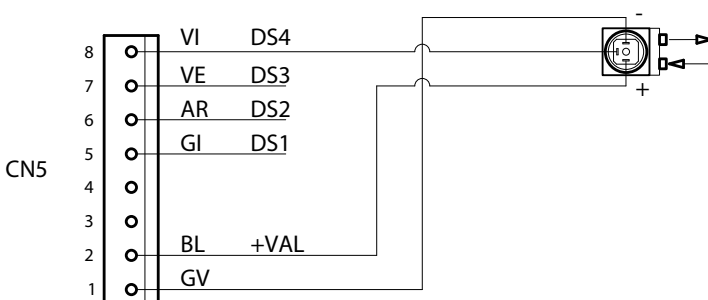
CN3 - Steam heating unit heating element connection -UL-



CN4 - Connection of the coffee heating unit pressure switches -UL-

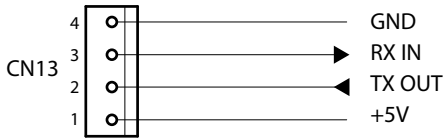


CN5 - Volumetric dosing device connection -UL-

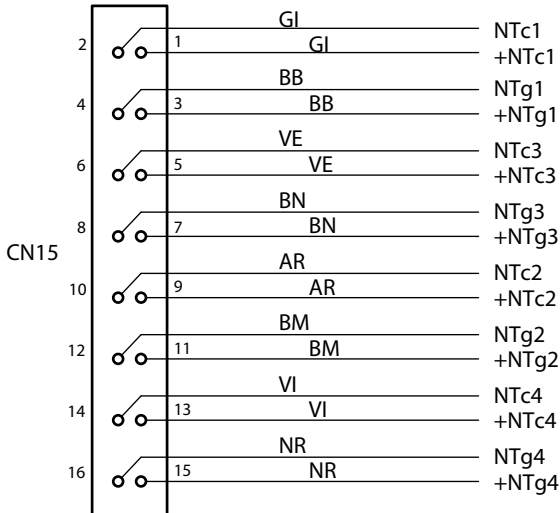


AR	Orange
BB	White/Blue
BI	White
BL	Blue
BM	White/Brown
BN	White/Black
DS	Volumetric dosing device
EVa	Automatic steam wand SV
EVgr	Group SV
EVc	Heating unit-filling SV
EVt1	Hot water SV
EVt2	Hot water SV 2
EVm	Mixed water SV
GI	Yellow
GR	Grey
GV	Yellow-Green
LC	Heating unit level
LF	Side Panel LEDs
LPL	Work Surface LED
LS	Safety level
MA	Brown
N	Neutral
NE	Black
NTa	Automatic steam wand NTC probe
NTb	Service NTC probe
NTc	Coffee heating unit NTC probe
NTg	Group NTC probe
NTs	Cup warmer NTC probe
PH	Phase
PO	Pump
PRC	Coffee heating unit pressure switch
PRS	Safety pressure switch
RG	Group heating element
RH	Coffee heating unit heating element
RO	Red
RR	Heating electric heating element
RS	Static relay
TP	Coffee heating unit pressure transducer
TPR	Pressure transducer
TS	Safety thermostat
STZ	Cup warmer
SUR	Humidity sensor
VE	Green
VI	Violet

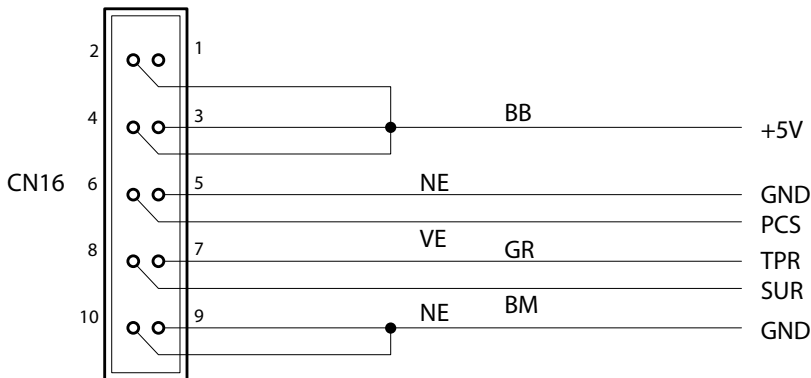
CN13 - RS232 serial socket connection -UL-



CN15 - NTC temperature sensor connection -UL-



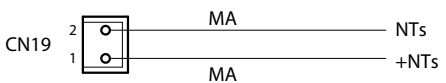
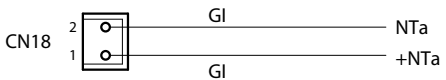
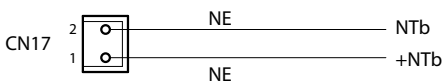
CN16 - Coffee heating unit pressure switch power supply -UL-



CN17 - Steam heating unit NTC connect.

CN18 - Automatic steam wand NTC connect.

CN19 - Cup warmer NTC connect. -UL-

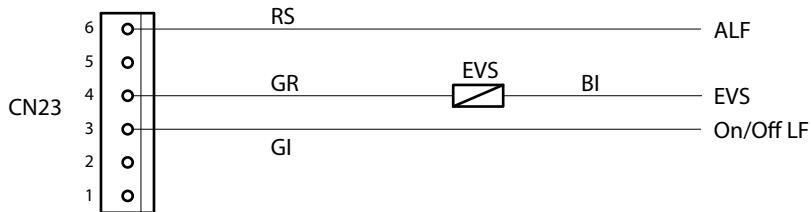


AR	Orange
BB	White/Blue
BI	White
BL	Blue
BM	White/Brown
BN	White/Black
DS	Volumetric dosing device
EVa	Automatic steam wand SV
EVgr	Group SV
EVc	Heating unit-filling SV
EVt1	Hot water SV
EVt2	Hot water SV 2
EVm	Mixed water SV
GI	Yellow
GR	Grey
GV	Yellow-Green
LC	Heating unit level
LF	Side Panel LEDs
LPL	Work Surface LED
LS	Safety level
MA	Brown
N	Neutral
NE	Black
NTa	Automatic steam wand NTC probe
NTb	Service NTC probe
NTc	Coffee heating unit NTC probe
NTg	Group NTC probe
NTs	Cup warmer NTC probe
PH	Phase
PO	Pump
PRC	Coffee heating unit pressure switch
PRS	Safety pressure switch
RG	Group heating element
RH	Coffee heating unit heating element
RO	Red
RR	Heating electric heating element
RS	Static relay
TP	Coffee heating unit pressure transducer
TPR	Pressure transducer
TS	Safety thermostat
STZ	Cup warmer
SUR	Humidity sensor
VE	Green
VI	Violet

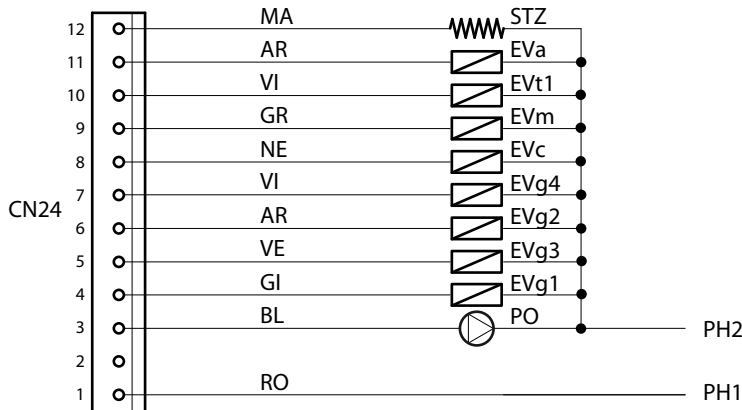
CN22 - Circuit board wiring -UL-



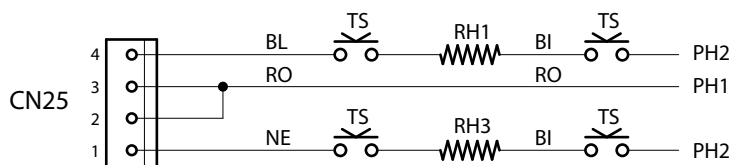
CN23 - Connection of 230 VAC outputs -UL-



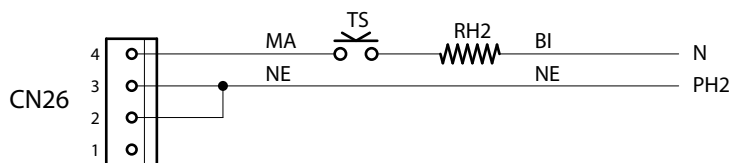
CN24 - Connection of 230 VAC outputs -UL-



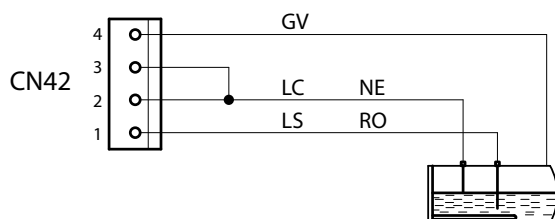
CN25 - Hot water container 1 and 3 heating element connection -UL-



CN26 - Hot water container 2 and 4 heating element connection -UL-

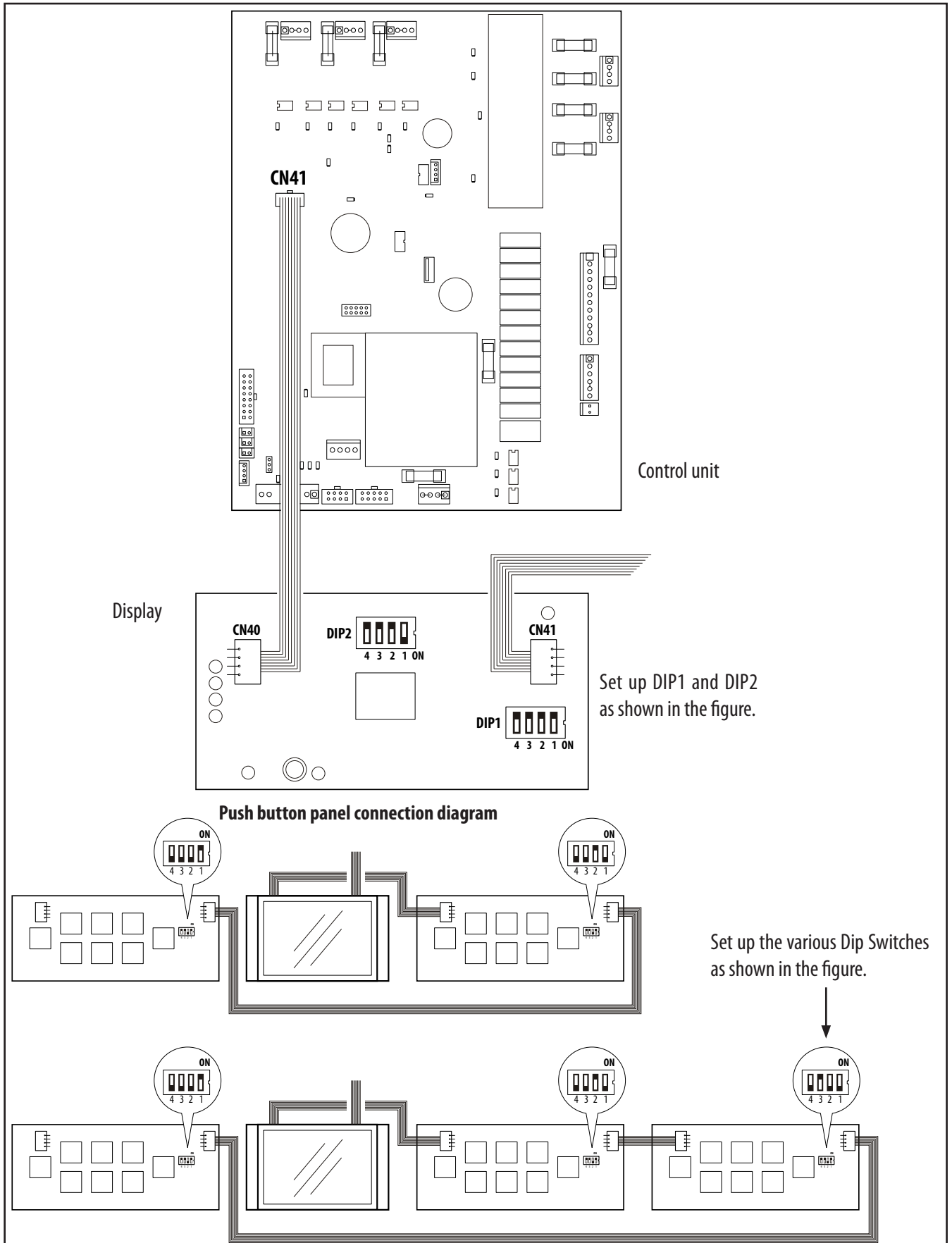


CN42 - Steam heating unit level connection -UL-

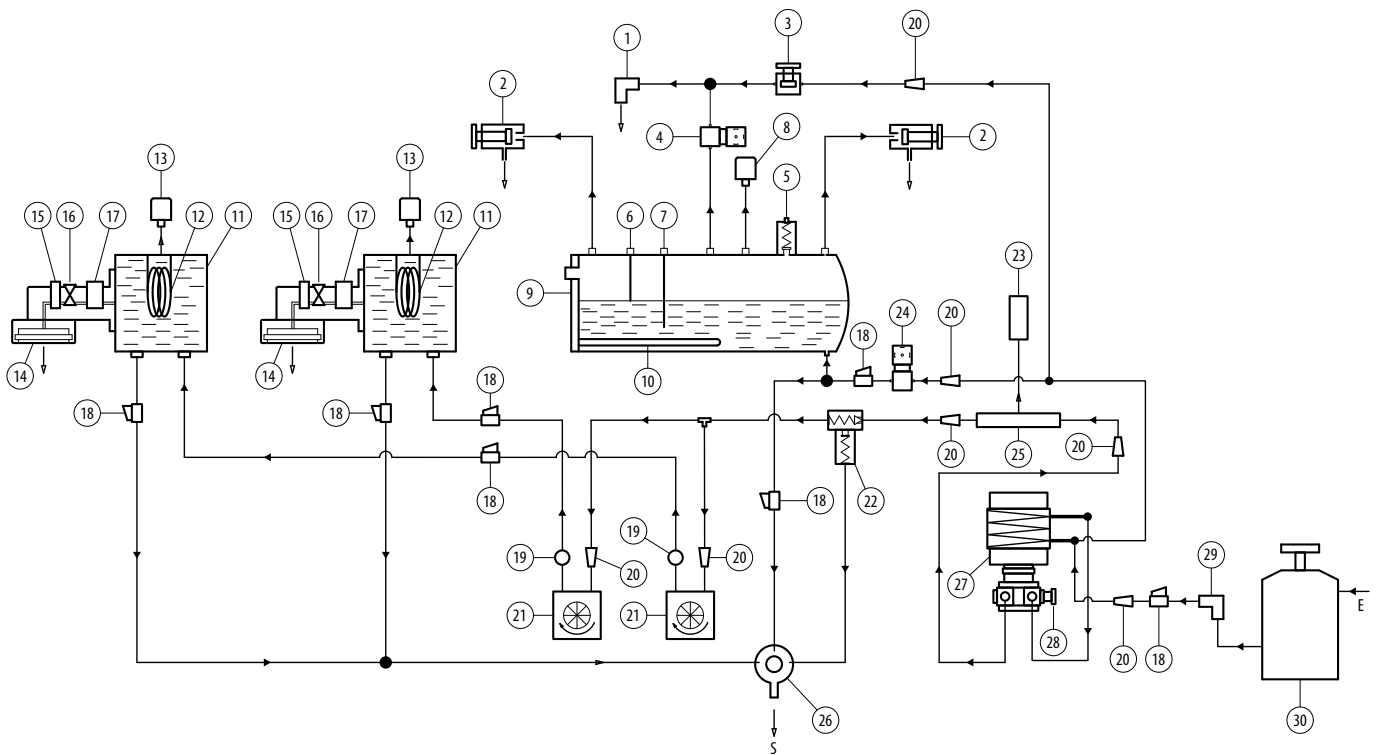


AR	Orange
BB	White/Blue
BI	White
BL	Blue
BM	White/Brown
BN	White/Black
DS	Volumetric dosing device
EVa	Automatic steam wand SV
EVgr	Group SV
EVc	Heating unit-filling SV
EVt1	Hot water SV
EVt2	Hot water SV 2
EVm	Mixed water SV
GI	Yellow
GR	Grey
GV	Yellow-Green
LC	Heating unit level
LF	Side Panel LEDs
LPL	Work Surface LED
LS	Safety level
MA	Brown
N	Neutral
NE	Black
NTa	Automatic steam wand NTC probe
NTb	Service NTC probe
NTc	Coffee heating unit NTC probe
NTg	Group NTC probe
NTs	Cup warmer NTC probe
PH	Phase
PO	Pump
PRC	Coffee heating unit pressure switch
PRS	Safety pressure switch
RG	Group heating element
RH	Coffee heating unit heating element
RO	Red
RR	Heating electric heating element
RS	Static relay
TP	Coffee heating unit pressure transducer
TPR	Pressure transducer
TS	Safety thermostat
STZ	Cup warmer
SUR	Humidity sensor
VE	Green
VI	Violet

15.6 DISPLAY control unit diagram



16. HYDRAULIC DIAGRAM



1	TEA outlet
2	STEAM outlet
3	MIXED TEA adjustment solenoid valve
4	HOT WATER solenoid valve
5	STEAM heating unit safety pressure switch
6	HEATING UNIT LEVEL probe
7	SAFETY LEVEL probe
8	SAFETY valve
9	STEAM heating unit
10	STEAM heating unit heating element
11	COFFEE heating unit
12	COFFEE water heating element
13	COFFEE water pressure switch
14	DISPENSING group
15	GROUP filter
16	GROUP nozzle
17	GROUP solenoid valve

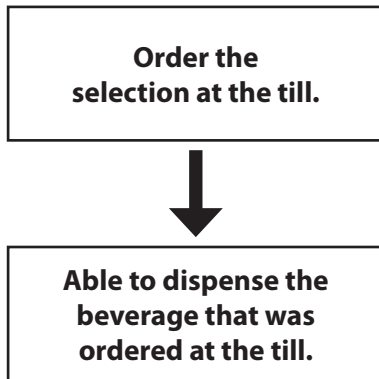
18	MANUAL tap
19	COLD nozzle
20	MAINS filter
21	VOLUMETRIC dosing device
22	SCNR valve
23	PUMP pressure transducer
24	HEATING UNIT FILLING solenoid valve
25	MAINS distributor
26	DRAIN tray
27	BUILT-IN motor pump
28	MOTOR PUMP pressure adjustment
29	WATER INLET connection
30	Water softener
E	Water inlet
S	Water drain

17. CREDIT - DEBIT/DEBIT - CREDIT SYSTEM

17.1 CREDIT - DEBIT system with direct connection to the till

The CREDIT-DEBIT system allows coffees to be dispensed from the machine only after the beverages have been paid for at the till.

The system is structured as follows:



The machine and tills are physically connected via the RS232 serial communication.

To activate the system, proceed as follows:

- Set the P14 activation parameter to 1.
- Set the P312 activation parameter to 3.



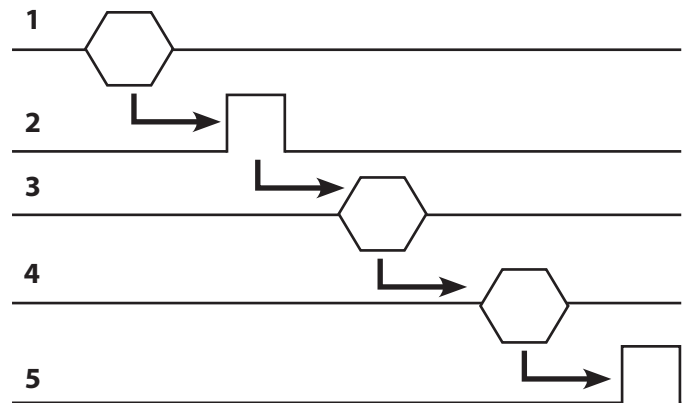
The till management software and the standard CS serial cable are not the responsibility of the manufacturer.

Communication protocol

Description of the operating principle with reference to the diagram shown below:

- Order the beverage at the till.
- Select the ordered dose on the coffee machine.
- The code that corresponds to the selection is sent to the till (see the code table).
- The till replies with ACK=06H, thus enabling the beverage to be dispensed.
- The coffee machine dispenses the beverage.

If the cash register does not identify the code, there is no enabling and the delivery is not made, the cash register sends the NACK=15H code.



- | | |
|-------------------|-------------------|
| • Baud rate: 1200 | • 1 bit Stop |
| • 8 bit | • Parity N (none) |

17.2 DEBIT - CREDIT system with direct connection to the till

The DEBIT-CREDIT system allows beverages to be paid for after they have been dispensed, as the doses are registered by the coffee machine's till.

The system is structured as follows:



The machine and tills are physically connected via the RS232 serial communication.

To activate the system, proceed as follows:

- Set the P14 activation parameter to 2.
- Set the P312 activation parameter to 2.



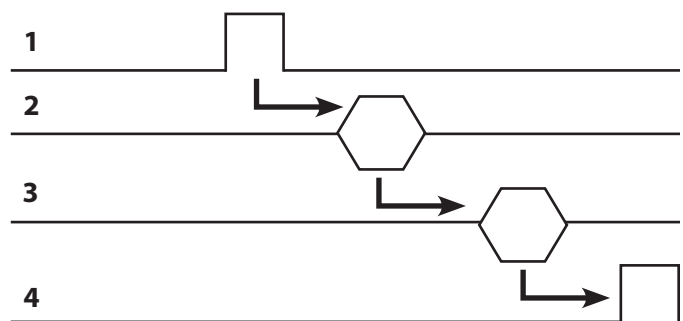
The till management software and the standard CS serial cable are not the responsibility of the manufacturer.

Communication protocol

Description of the operating principle with reference to the diagram shown below:

- Select the desired dose on the coffee machine.
- The code that corresponds to the selection is sent to the till (see the code table).
- The till replies with ACK=1H, thus enabling the beverage to be dispensed.
- The coffee machine dispenses the beverage.
- The till system registers the dispensed beverage.

If the till does not identify the code, the machine is not enabled, the selection is not dispensed and the till sends the NACK=0H code.



- | | |
|--------------------------|--------------------------|
| • Baud rate: 1200 | • 1 bit Stop |
| • 8 bit | • Parity E (even) |

17.3 Beverage selection code table

Description	Signal
1 GR1 Espresso	011 h
1 GR1 Long	013 h
2 GR1 Espressos	014 h
2 GR1 Long	016 h
1 GR2 Espresso	021 h
1 GR2 Long	023 h
2 GR2 Espressos	024 h
2 GR2 Long	026 h
1 GR3 Espresso	031 h
1 GR3 Long	033 h
2 GR3 Espressos	034 h
2 GR3 Long	036 h
1 GR4 Espresso	041 h
1 GR4 Long	043 h
2 GR4 Espressos	044 h
2 GR4 Long	046 h
Tea 1	051 h
Tea 2	052 h

18. PARAMETER TABLE

Par.	Description	min.	Def.	MAX.	UM
P1	Temperature unit of measurement (0 = °C, 1 = °F)	°C	°C	°F	-
P2	Pressure unit of measurement 0 = bar, 1 = Atm, 2 = kPa	0	0	2	
P3	Volume unit of measurement 0 = litres, 1 = gallons	0	0	1	
P4	Number of units present	1	3	4	-
P5	User interface language	0	0	50	N/A
P6	Cup warmer ON	0	1	1	
	0 = Disabled.				
	1 = Enabled.				
P7	Presence of the steam heating unit pressure transducer	0	1	1	N/A
	0 = Absent.				
	1 = Present.				
P8	Enabling hot water to be dispensed simultaneously with coffee.	0	1	1	N/A
	0 = Disabled.				
	1 = Enabled.				
P9	Enabling long coffee selections.	0	1	1	N/A
	0 = Disabled.				
	1 = Enabled.				
P10	Enabling prebrewing.	0	0	1	N/A
	0 = Disabled.				
	1 = Enabled.				
P11	Enabling the automatic steam wand.	0	0	1	N/A
	0 = Disabled.				
	1 = Enabled.				
	2 = enabled with automatic cleaning				
P12	Enabling the 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 the connection with the till	0	0	2	N/A
	0 = Not connected to the till				
	1 = Pay first mode (CREDIT - DEBIT)				
	2 = Dispense first mode (DEBIT - CREDIT)				
P15	Enabling continuous coffee dispensing	0	1	2	N/A
	0 = Start Stop button disabled				
	1 = Start Stop button enabled				
	2 = Start Stop button ON for 3 secs. (Purge)				
P16	Automatic daylight saving time management	0	1	2	N/A
	0 = Manual management				
	1 = Changing to standard time with European rules				
	2 = Changing to standard time with US rules				
P17	User interface theme	0	1	3	N/A

Par.	Description	min.	Def.	MAX.	UM
P18	Buzzer sound disabled when LCD keypad buttons are pressed	0	0	1	N/A
	0 = Buzzer works normally				
	1 = Buzzer OFF				
P19	Relevant time zone	0	2	37	N/A
P20	Minimum group 1 dispensing temperature	60	80	105	°C
P21	Minimum coffee heating unit temperature for dispensing from group 1	60	80	110	°C
P22	Group 1 setpoint temperature	P62	93	P63	°C
P23	Group 1 coffee heating unit setpoint temperature	P60	93	P61	°C
P24	Minimum stand-by temperature set - unit 1	0	60	75	°C
P25	Group 1 coffee heating unit minimum setpoint temperature in standby	0	60	75	°C
P26	Group 1 setpoint Delta temperature in standby	0	0	50	°C
P27	Group 1 coffee heating unit setpoint Delta temperature in standby	0	20	50	°C
P30	Group 2 minimum dispensing temperature	60	80	105	°C
P31	Group 2 minimum coffee heating unit dispensing temperature	60	80	110	°C
P32	Group 2 setpoint temperature	P62	93	P63	°C
P33	Group 2 coffee heating unit setpoint temperature	P60	93	P61	°C
P34	Minimum stand-by temperature set - unit 2	0	60	75	°C
P35	Group 2 coffee heating unit minimum setpoint temperature in standby	0	60	75	°C
P36	Group 2 setpoint Delta temperature in standby	0	0	50	°C
P37	Group 2 coffee heating unit setpoint Delta temperature in standby	0	20	50	°C
P40	Minimum dispensing temperature - unit 3	60	80	105	°C
P41	Group 3 minimum coffee heating unit dispensing temperature	60	80	110	°C
P42	Temperature Set - unit 3	P62	93	P63	°C
P43	Group 3 coffee heating unit setpoint temperature	P60	93	P61	°C
P44	Minimum stand-by temperature set - unit 3	0	60	75	°C
P45	Group 3 coffee heating unit minimum setpoint temperature in standby	0	60	75	°C
P46	Group 3 setpoint Delta temperature in standby	0	0	50	°C
P47	Group 3 coffee heating unit setpoint Delta temperature in standby	0	20	50	°C
P50	Minimum dispensing temperature - unit 4	60	80	105	°C
P51	Group 4 minimum coffee heating unit dispensing temperature	60	80	110	°C
P52	Group 4 setpoint temperature	P62	93	P63	°C
P53	Group 4 coffee heating unit setpoint temperature	P60	93	P61	°C
P54	Minimum stand-by temperature set - unit 4	0	60	75	°C
P55	Group 4 coffee heating unit minimum setpoint temperature in standby	0	60	75	°C
P56	Group 4 setpoint Delta temperature in standby	0	0	50	°C

Par.	Description	min.	Def.	MAX.	UM
P57	Group 4 coffee heating unit setpoint Delta temperature in standby	0	20	50	°C
P60	Minimum coffee heating unit temperature.	0	60	P61	°C
P61	Maximum coffee heating unit temperature.	P60	110	120	°C
P62	Minimum group temperature.	0	60	P63	°C
P63	Maximum group temperature.	P62	105	120	°C
P65	Group solenoid valve ON time during prebrewing.	0	0.5	10	S
P66	Group solenoid valve OFF time during prebrewing.	0	1.5	10	S
P67	Coffee heating unit full pressure recognition (machines with an analogue pressure transducer in the coffee heating units).	0.1	2	6	bar
P68	Group SV opening time for air evacuation during the coffee heating unit heating phase.	0	10	20	s
P69	Delay for closing all the group solenoid valves during the initial filling phase.	0	2	20	s
P70	Group heating timeout (P band entry)	0	45	255	Min
P71	Coffee heating unit heating timeout (P band entry)	0	45	255	Min
P72	First coffee heating unit filling timeout	0	240	255	s
P73	Coffee heating unit topping up timeout.	0	60	255	s
P74	Second coffee heating unit topping-up phase timeout	0	120	255	s
P75	Coffee dispensing control mode:	0	0	3	
	0 = Null				
	1 = Timer				
	2 = Flow				
	3 = Temperature				
P76	Maximum flow variation percentage	5	15	40	
P77	Dispensing timeout for the "coffee water pressure" warning	10	90	250	s
P78	End of forced dispense timeout (Single dispense)	10	120	250	s
P79	Minimum pulse count to accept the dose programming	10	10	250	Pls
P80	Steam heating unit minimum pressure.	0	0	P81	bar
P81	Steam heating unit maximum pressure.	P80	1.4	2.5	bar
P82	Steam heating unit setpoint pressure.	P80	1.2	P81	bar
P83	Minimum pressure in the steam heating unit to dispense hot water. 0 = Heating unit disabled.	0	0.5	P82	bar
P84	Steam SV opening temperature in Energy Saving mode.	0	104	255	°C
P85	Setpoint pressure for closing the steam SV and cancelling the warning for the user regarding steam escaping, when the steam heating unit is being filled (eq. P88 for machines with a pressure transducer).	0	0.01	0.5	bar
P86	Time hysteresis for identifying the steam heating unit levels.	0	3	10	s
P87	Setpoint temperature for viewing the warning for the user regarding steam escaping, when the steam heating unit is being filled.	50	93	150	°C

Par.	Description	min.	Def.	MAX.	UM
P88	Setpoint temperature for closing the steam solenoid valve and cancelling the warning for the user regarding steam escaping, when the steam heating unit is being filled.	50	97	150	°C
P89	Steam SV opening pressure with the machine in Energy Saving mode (eq. P84 for machines with a pressure transducer).	0	0.2	2	Bar
P90	Steam heating unit temperature threshold, below which the analogue pressure transducer must be ignored and only the temperature considered.	50	97	150	°C
P91	Steam heating unit heating timeout (P band entry).	0	60	255	Min
P92	Steam heating unit topping up timeout.	0	45	255	s
P93	First steam heating unit filling timeout	0	255	600	s
P94	Steam heating unit setpoint in Energy Saving mode	50	80	P90	°C
P95	Delta temperature for the standard group heating timeout warning	0	10	20	°C
P96	Continuous coffee dispensing maximum duration (Start/Stop button)	10	120	600	s
P97	Heating unit setpoint pressure in boost mode	P80	1.3	P81	bar
P98	Boost duration	0	30	600	min.
P99	Parameter that enables the water in the heating units to be renewed	0	0	1	
P101	Automatic Steam Wand Temperature Set T1	50	55	80	°C
P102	Automatic Steam Wand Temperature Set T2	50	65	80	°C
P103	Automatic Steam Wand Temperature Set T3	50	65	80	°C
P104	Automatic steam wand dispensing timeout.	0	240	600	s
P105	Window of time after the steam wand has finished dispensing to manually continue dispensing.	0	3	30	s
P106	Cup warmer temperature setting	P108	80	P109	°C
P107	Cup warmer adjustment differential	0	0.1	10	°C
P108	Cup warmer minimum temperature.	0	70	P109	°C
P109	Cup warmer maximum temperature.	P108	100	120	°C
P110	Burr wear warning threshold. 0 = Disabled.	0	0	2000	kg
P111	Short coffee weight (for burr wear).	0	0	22	g
P112	Medium coffee weight (for burr wear).	0	0	22	g
P113	Long coffee weight (for burr wear).	0	0	22	g
P114	Double short coffee weight (for burr wear).	0	0	22	g
P115	Double medium coffee weight (for burr wear).	0	0	22	g
P116	Double long coffee weight (for burr wear).	0	0	22	g
P117	Continuous coffee weight (for burr wear).	0	0	22	g
P120	Assistance A request threshold	0	0	1000000	cycles
P121	Assistance B request threshold	0	0	1000000	cycles
P122	Assistance C request threshold.	0	0	1000000	cycles
P123	Delta cycles for the assistance required warning	0	1000	10000	cycles
P125	Board setpoint temperature pre-warming	0	65	90	°C

Par.	Description	min.	Def.	MAX.	UM
P126	Board setpoint temperature	0	70	90	°C
P127	Temperature differential for resumption from alarm	10	15	30	°C
P130	Regeneration threshold.	0	0	10000	L
P131	The amount of water per second to be added to the count of water litres used by the machine when the filling SV is open.	0	21	255	ml/s
P132	The amount of water per second to be added to the count of water litres used by the machine when the mixed SV is open.	0	8	255	ml/s
P133	Delay from when the last beverage was made before entering into standby mode.	0	10	255	min.
P134	Hourly dispensing threshold for automatic entry into standby mode	1	5	250	
P135	Energy saving type	0	0	2	
	0 = Only manual group is OFF				
	1 = Timer management				
	2 = Automatic self-learning mode				
P136	The mean weight for self-learning mode (uses the old value)	1	5	10	
P137	Pre-set of the number of coffees dispensed within 10 minutes for historical dispenses in self-learning mode (initial reference value)	0	10	255	
P138	First unit to be switched on in AUTO mode	0	0	4	
P139	Second unit to be switched on in AUTO mode	0	0	4	
P140	Third unit to be switched on in AUTO mode	0	0	4	
P141	Unit 1 display type	0	0	2	
P142	Unit 2 display type	0	0	2	
P143	Unit 3 display type	0	0	2	
P144	Unit 4 display type	0	0	2	
P145	Group wash-Number of wash cycles	1	5	10	
P146	Group washes - Rinse time	10	30	100	s
P147	Hours to wait before re-proposing washing upon power on	0	24	48	hours
P148	Automatic wash time	0	0	1	
P150	PID cycle time of coffee heating units, groups and the steam heating unit.	0.5	10	10	s
P152	Coffee group PID proportional band	0.1	5	100.0	°C
P153	Coffee units PID supplementary coefficient	0	60	10000	s
P154	Coffee units PID derivative coefficient	0	2.0	10.0	s
P156	Coffee heating unit PID proportional band	0.1	5.0	100.0	°C
P157	Coffee heating unit PID supplementary coefficient	0	60	10000	S
P158	Coffee heating unit PID derivative coefficient	0	2.0	10.0	s
P160	Steam heating unit PID proportional band	0.01	0.01	10.00	Bar
P161	Steam heating unit PID supplementary coefficient	0	0	10000	s
P162	Steam heating unit PID derivative coefficient	0	0	10.0	s
P163	Steam heating unit temperature band	0	2	10.0	°C
P165	Group deep standby setpoint temperature	P62	65	P63	°C

Par.	Description	min.	Def.	MAX.	UM
P166	Coffee heating unit deep standby setpoint temperature	P62	65	P63	°C
P167	Steam heating unit deep standby setpoint temperature	P62	65	P63	°C
P168	Stand-by time to switch to deep_ standby	0	10	255	min.
P200	Heating unit pressure offset calculation/ measurement	-1.00	0.00	-1.00	bar
P201	NTC probe offset - unit 1	-20	-1	20	°C
P202	Group 1 coffee heating unit NTC probe offset	-20	0	20	°C
P203	NTC probe offset - unit 2	-20	-1	20	°C
P204	Group 2 coffee heating unit NTC probe offset	-20	0	20	°C
P205	Group 3 NTC probe offset	-20	-1	20	°C
P206	Group 3 coffee heating unit NTC probe offset	-20	0	20	°C
P207	NTC probe offset - unit 4	-20	-1	20	°C
P208	Group 4 coffee heating unit NTC probe offset	-20	0	20	°C
P209	Steam heating unit NTC probe offset	-20	0	20	°C
P210	Steam wand NTC probe offset	-20	0	20	°C
P211	Cup warmer NTC probe offset	-20	0	20	°C
P212	Base board NTC probe offset	-20	0	20	°C
P213	Pump pressure offset measurement	-1.00	0.00	-1.00	bar
P214	Out of calibration for automatic steam wand T1	0.0	13.0	20.0	°C
P215	Out of calibration for automatic steam wand T2	0.0	13.0	20.0	°C
P216	T3 steam wand calibration	0.0	8.0	20.0	°C
P220	Ratiometric ambient humidity value related to 0%	0	0	100	%
P221	Ratiometric ambient humidity value related to 100%	0	100	100	%
P222	Ratiometric pump pressure value related to 0%	0.0	0.0	10.0	Bar
P223	Ratiometric pump pressure value associated with 100%	0.0	16.0	25.0	Bar
P224	Ratiometric steam heating unit pressure value associated with 0%	0.0	0.0	10.0	Bar
P225	Ratiometric steam heating unit pressure value associated with 100%	0.0	4.0	10.0	Bar
P226	Ratiometric steam heating unit voltage pressure associated with 0%	0.0	0.5	5.0	Volt
P227	Ratiometric steam heating unit voltage pressure associated with 100%	0.0	4.5	5.0	Volt
P230	Flow meter inlet litre impulses	0	2000	10000	
P231	Coffee flow meter litre impulses - unit 1	0	2000	10000	
P232	Coffee flow meter litre impulses - unit 2	0	2000	10000	
P233	Coffee flow meter litre impulses - unit 3	0	2000	10000	
P234	Coffee flow meter litre impulses - unit 4	0	2000	10000	
P235	Flow meter inlet presence 0 = Absent 1 = Present	0	0	1	
P300	Modbus address for the RS485 CN32 serial	0	1	127	
P301	Baud rate for the RS485 CN32 serial 0 = 4800 Baud 1 = 9600 Baud 2 = 19200 Baud	0	1	2	

Par.	Description	min.	Def.	MAX.	UM
P302	Parity for the RS485 CN32 serial 0 = None (with 2 stop bits) 1 = ODD (1 stop bit) 2 = EVEN (1 stop bit) 3 = NONE (1 stop bit)	0	2	3	
P303	Communication timeout for RS485 CN32	1	60	600	s
P305	Modbus address for the RS485 CN31 (RFID) serial	0	1	127	
P306	Baud rate for the RS485 CN31 (RFID) serial 0 = 4800 Baud 1 = 9600 Baud 2 = 19200 Baud	0	1	2	
P307	Parity for the RS485 CN31 (RFID) serial 0 = None (with 2 stop bits) 1 = ODD (1 stop bit) 2 = EVEN (1 stop bit) 3 = NONE (1 stop bit)	0	3	3	
P308	Communication timeout for RS485 CN31 (RFID)	1	60	600	s
P311	Baud rate for the RS232 CN12 serial (till) 0 = 1200 Baud 1 = 2400 Baud 2 = 4800 Baud 3 = 9600 Baud 4 = 19200 Baud 5 = 38400 Baud	0	0	5	
P312	Parity for the RS232 CN12 serial (till) 0 = None (with 2 stop bits) 1 = ODD (1 stop bit) 2 = EVEN (1 stop bit) 3 = NONE (1 stop bit)	0	2	3	
P313	Communication timeout for RS232 CN12 (till)	0.1	1.0	60.0	s
P320	Baudrate CAN 1 0 = 125 Kbit 1 = 250 Kbit 2 = 500 Kbit 3 = 1 Mbit	0	2	3	
P321	CAN 2 baud rate 0 = 125 Kbit 1 = 250 Kbit 2 = 500 Kbit 3 = 1 Mbit	0	2	3	
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 heating unit heating element power	0	1000	2000	W
P362	Steam heating unit primary heating element power	0	2000	5000	W
P363	Steam heating unit secondary heating element power	0	1000	3000	W

Par.	Description	min.	Def.	MAX.	UM
P364	Cup warmer heating element power	0	200	500	W
P365	Pump motor power	0	330	500	W
P400	Period for sending data to the Cloud	1	5	9999	s
p401	Period for downloading data from the Cloud	1	5	250	s
P500	Short coffee dose - Group 1	0	100	1000	Pls
P501	Medium coffee dose - Group 1	0	120	1000	Pls
P502	Long coffee dose - Group 1	0	140	1000	Pls
P503	Short coffee dose 2 - Group 1	0	210	1000	Pls
P504	Medium coffee dose 2 - Group 1	0	230	1000	Pls
P505	Long coffee dose 2 - Group 1	0	270	1000	Pls
P510	Short coffee dose - Group 2	0	100	1000	Pls
P511	Medium coffee dose - Group 2	0	120	1000	Pls
P512	Long coffee dose - Group 2	0	140	1000	Pls
P513	Short coffee dose 2 - Group 2	0	210	1000	Pls
P514	Medium coffee dose 2 - Group 2	0	230	1000	Pls
P515	Long coffee dose 2 - Group 2	0	270	1000	Pls
P520	Short coffee dose - Group 3	0	100	1000	Pls
P521	Medium coffee dose - Group 3	0	120	1000	Pls
P522	Long coffee dose - Group 3	0	140	1000	Pls
P523	Short coffee dose 2 - Group 3	0	210	1000	Pls
P524	Medium coffee dose 2 - Group 3	0	230	1000	Pls
P525	Long coffee dose 2 - Group 3	0	270	1000	Pls
P530	Short coffee dose - Group 4	0	100	1000	Pls
P531	Medium coffee dose - Group 4	0	120	1000	Pls
P532	Long coffee dose - Group 4	0	140	1000	Pls
P533	Short coffee dose 2 - Group 4	0	210	1000	Pls
P534	Medium coffee dose 2 - Group 4	0	230	1000	Pls
P535	Long coffee dose 2 - Group 4	0	270	1000	Pls
P540	Tea dose 1 - 1 group	0	10.0	60.0	S
P541	Tea dose 1 - 2 groups	0	10.0	60.0	S
P542	Tea dose 1 - 3 groups	0	10.0	60.0	s
P543	Tea dose 1 - 4 groups	0	10.0	60.0	s
P545	Tea dose 2 - 1 group	0	15.0	60.0	s
P546	Tea dose 2 - 2 groups	0	15.0	60.0	s
P547	Tea dose 2 - 3 groups	0	15.0	60.0	s
P548	Tea dose 2 - 4 groups	0	15.0	60.0	s
P600	Short coffee dose time - Group 1	0	0.0	60.0	s
P601	Medium coffee dose time - Group 1	0	0.0	60.0	s
P602	Long coffee dose time - Group 1	0	0.0	60.0	s
P603	Double short coffee dose time - Group 1	0	0.0	60.0	s
P604	Double medium coffee dose time - Group 1	0	0.0	60.0	s
P605	Long coffee dose time - Group 4	0	0.0	60.0	s
P610	Short coffee dose time - Group 2	0	0.0	60.0	s
P611	Medium coffee dose time - Group 2	0	0.0	60.0	s
P612	Long coffee dose time - Group 2	0	0.0	60.0	s
P613	Double short coffee dose time - Group 2	0	0.0	60.0	s
P614	Double medium coffee dose time - Group 2	0	0.0	60.0	s
P615	Double long coffee dose time - Group 2	0	0.0	60.0	s
P620	Short coffee dose time - Group 3	0	0.0	60.0	s
P621	Medium coffee dose time - Group 3	0	0.0	60.0	s

Par.	Description	min.	Def.	MAX.	UM
P622	Long coffee dose time - Group 3	0	0.0	60.0	s
P623	Double short coffee dose time - Group 3	0	0.0	60.0	s
P624	Double medium coffee dose time - Group 3	0	0.0	60.0	s
P625	Double long coffee dose time - Group 3	0	0.0	60.0	s
P630	Short coffee dose time - Group 4	0	0.0	60.0	s
P631	Double medium coffee dose time - Group 1	0	0.0	60.0	s
P632	Long coffee dose time - Group 4	0	0.0	60.0	s
P633	Double short coffee dose time - Group 4	0	0.0	60.0	s
P634	Double medium coffee dose time - Group 4	0	0.0	60.0	s
P635	Double long coffee dose time - Group 4	0	0.0	60.0	s



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