



**LB 4712**

**MAINTENANCE MANUAL  
FOR TECHNICAL ASSISTANCE**

**LAVAZZA**

**BLUE**

**BEST LAVAZZA ULTIMATE ESPRESSO**



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## 1. GENERAL INFORMATION

### 1.1. Structure of the manual

Before any operation is carried out on the machine, the maintenance technician must carefully read the instructions contained in this publication. The undertaking of any operation on the machine, without having read and understood the contents of this manual is prohibited. If there is any doubt about the correct interpretation of the instructions, contact Lavazza in order to obtain the necessary clarification.

#### 1.1.1. Scope and content

This manual contains all the information necessary for the maintenance of the machine, safety instructions, troubleshooting and diagrams.

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Lavazza reserves the right to modify features of equipments presented in this publication without prior notice; it also declines any responsibilities for possible inaccuracies due to misprint.

It is recommended that the Internet site of the Lavazza Technical Service be checked (at the following address <http://ts.inlavazza.it>) to ensure that your manual is the most recent version available and otherwise to download an updated copy.

#### 1.1.2. Messages used



**ATTENTION** messages indicate a danger, possibly lethal, for the technician. The operations described after this message must be carried out carefully and safely using the personal protective equipment.



**WARNING** messages are displayed before procedures that, if not observed, could cause damage to the machine.



**ENVIRONMENT** messages are displayed before procedures that, if not observed, could cause damage to the environment.



**NOTE**  
Messages show further information useful for the maintenance technician.

#### 1.1.3. Users

This manual is designed for technicians qualified to maintain the machine. Lavazza is not responsible for damage derived from the failure to follow these rules.

#### 1.1.4. Preservation

In order to be able to guarantee the integrity and utility of this manual the following guidelines should be observed:

- employ this manual in such a way that it remains undamaged and whole;
- do not for any reason, remove, tear, or write over any part of the manual;
- keep the manual in an area protected from humidity and heat, in such a way that the quality and legibility of the publication are not compromised;
- keep the manual close at hand for maintenance staff.



**Warning**  
If this manual is damaged or lost, it is possible to download another copy from the Lavazza Technical Service site at the following address: <http://ts.inlavazza.it>.

## 1.2. Designated personnel

The machine may be operated only by a qualified technician who has read this manual and moreover who:

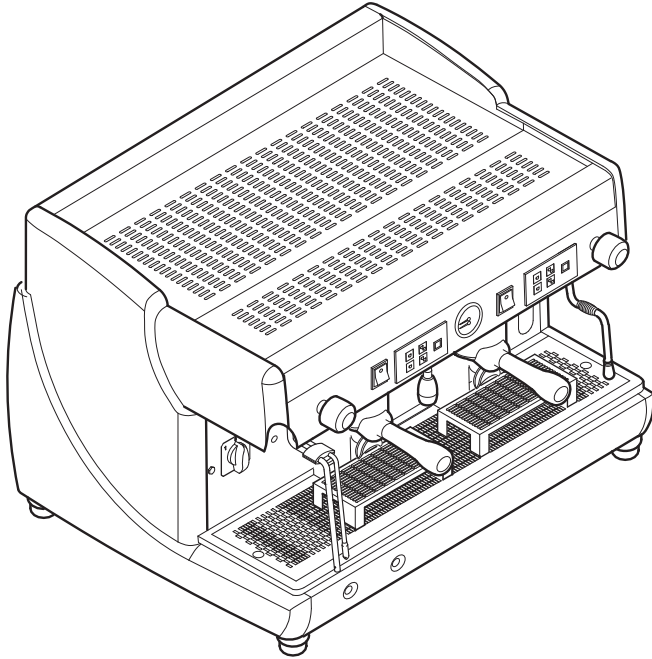
- has specific experience in the maintenance of professional coffee machines;
- is able to carry out repairs in case of serious malfunction of the machine / machines shown in this manual;
- is able to understand the technical contents of the manual and to correctly interpret drawings and diagrams and has knowledge of the safety information described below;
- has knowledge of the appropriate hygiene, workplace safety, technology and security measures;
- knows how to act in an emergency, where to find the personal protective equipment and knows how to use it.

### 1.3. Machine composition

If not expressly indicated in the text, the position numbers of the machine components refer to figures in the chapters 1.3.5. External components and 1.3.6 Internal components.

#### 1.3.1. Models

LB 4712



#### 1.3.2. Identification data

In the plate the following data of the machine are indicated:

- manufacturer;
- machine model;
- serial number;
- Lavazza's product code;
- date of manufacture;
- power supply voltage (V) and frequency (Hz);
- power consumption (W);
- water mains pressure (MPa).

#### 1.3.3. Overall dimensions and weight

Depth: 560 mm  
 Width: 720 mm  
 Height: 530 mm  
 Weight: 76 kg

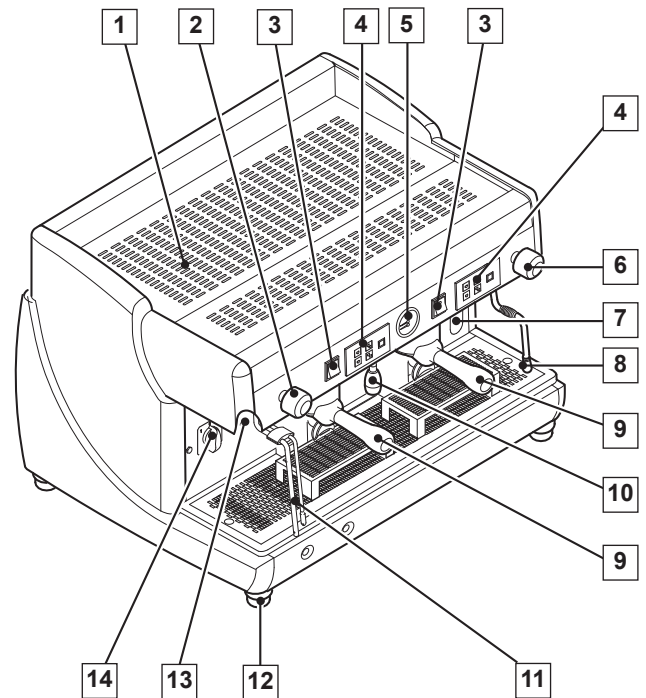
#### 1.3.4 Technical specifications

Power supply voltage: 230/240 V  
 Power supply frequency: 50/60 Hz  
 Power consumption: 3700 W  
 Boiler capacity: 10,5 litres  
 Boiler pressure: 0,8 - 1,2 bar Max  
 Safety valve calibration: 1,9 bar

Supply water pressure: 1,5 - 5 bar Max  
 Coffee brewing pressure: 8-9 bar  
 Net weight: 76 Kg

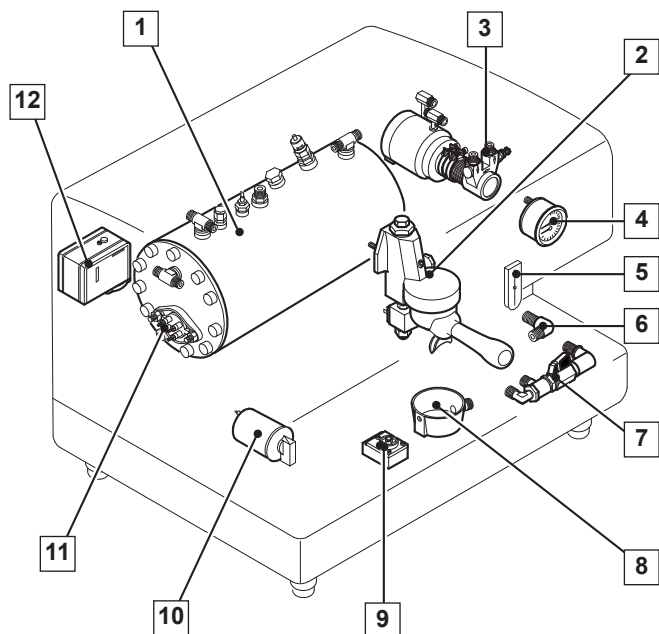
#### 1.3.5. External components

- 1) Cup support grid
- 2) Water knob
- 3) Manual dispensing switch
- 4) Keyboard
- 5) Pressure gauge
- 6) Steam knob
- 7) Boiler level-check window
- 8) Steam pipe
- 9) Filter-holder
- 10) Hot water pipe
- 11) Autosteamer pipe
- 12) Adjustable foot
- 13) Machine-On pilot light
- 14) Selector switch



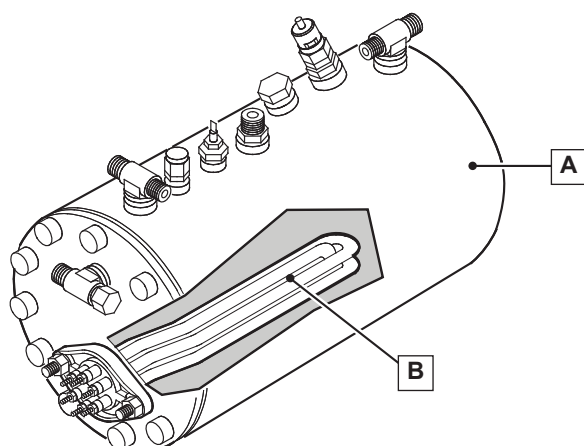
#### 1.3.6. Internal components

- 1) Boiler
- 2) Brewing unit
- 3) Internal motor pump
- 4) Boiler/motor pump pressure gauge
- 5) Boiler level-check window
- 6) Water fitting for internal pump
- 7) Manual water inlet
- 8) Drain tray
- 9) Flowmeter
- 10) On/off switch
- 11) Electrical heating element
- 12) Pressure switch



### 1.3.6.1. Boiler

The boiler is constructed of copper sheet (A). Heat exchangers, connected to the brewing unit, are attached to the boiler. Water for coffee brewing is taken directly from the boiler. During brewing, cold water is sent inside of the exchanger by the power pump. Inside the heat exchanger, cold water and the pre-existing hot water are mixed, thus obtaining optimal water temperature for coffee infusion. The water is heated into the boiler by an electrical heating element immersed in the water (B).



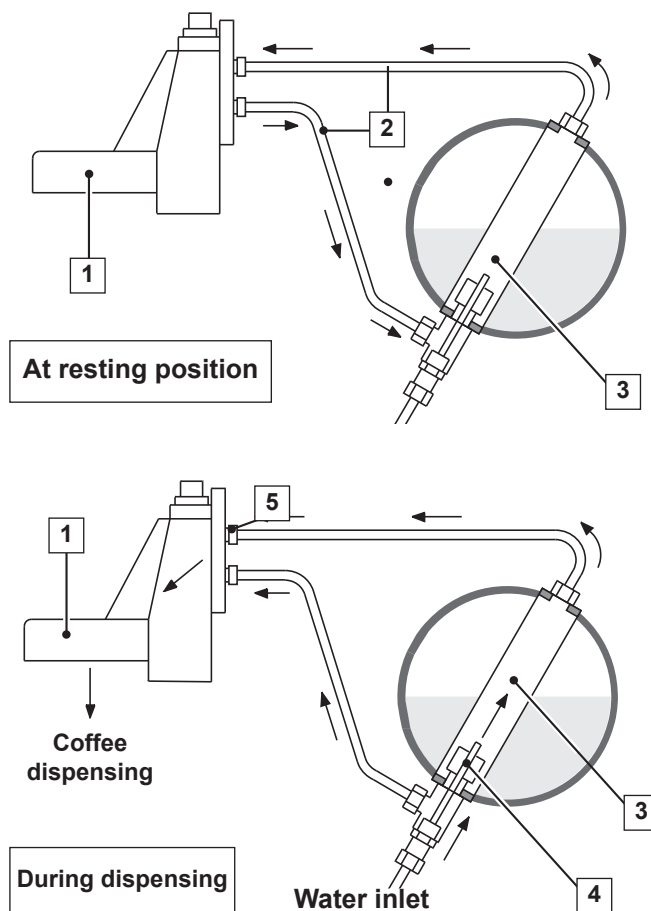
### 1.3.6.2. Brewing unit

The brewing unit and the heat exchanger are fundamental components to obtain espresso coffee. Specifically the function of the unit is coffee dispensing.

In this system the brewing unit (1) is heated by a thermosiphon circuit (2) connected to the heat exchanger (3). The same water is used for coffee brewing, this ensures the same temperature for all coffees:

- activation of the solenoid valve and the pump allows cold water to enter the exchanger (3) via the injector (4);
- heated water is carried to the unit (1) for brewing from the exchanger (3);
- the pump allows water pressure to be increased up to 8-9 bars for brewing.

To increase the coffee extraction temperature, remove the flow reducer (5) or replace it with one of a larger diameter. To decrease the temperature, replace it with one of a smaller diameter.

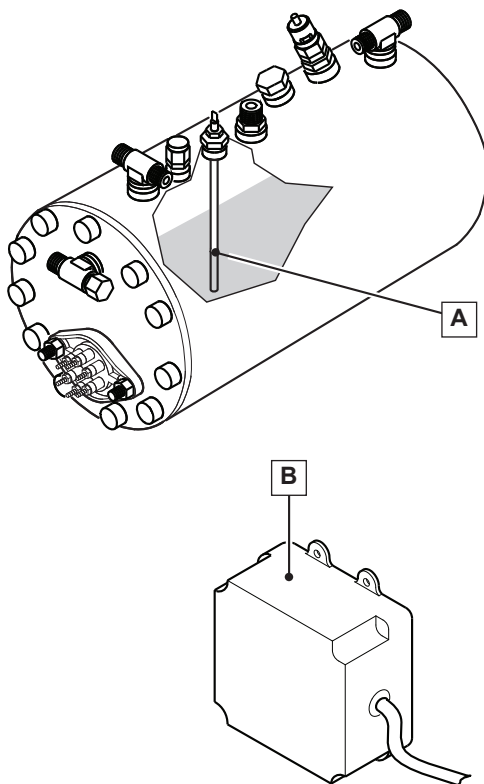


### 1.3.6.3. Automatic water entry system (A.E.A)

The automatic water entry system checks the water level in the boiler.

The system is composed of:

- a probe inserted in the boiler (A) which is composed of a stainless steel rod;
- an electronic control unit (B);
- the pump allows water pressure to be increased until 8-9 bars for brewing.



The electronic control unit controls the level of the water in the boiler.

When this level drops the contact with the probe is interrupted; the control unit sends an impulse to the inlet solenoid valve and the power pump, which restore the normal level of water in the boiler.

To avoid possible flooding due to machine malfunctions or leaks in the water circuit, the electronic control unit is equipped with a timing device that cuts off the automatic filling after a maximum period of 120 seconds.

#### Attention

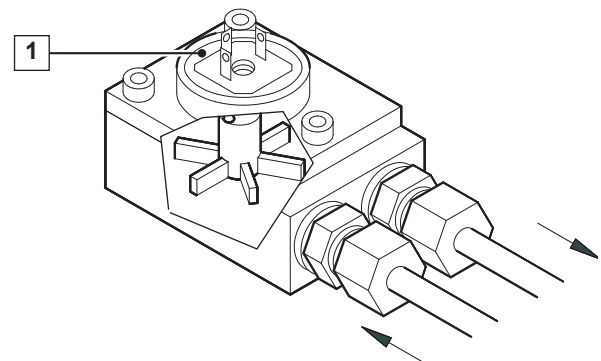
Always check the level of the water in the boiler by means of the level-check window located on the front of the machine.

### 1.3.6.4. Flowmeter

The flowmeter measures the quantity of water sent to the brewing unit for espresso brewing.

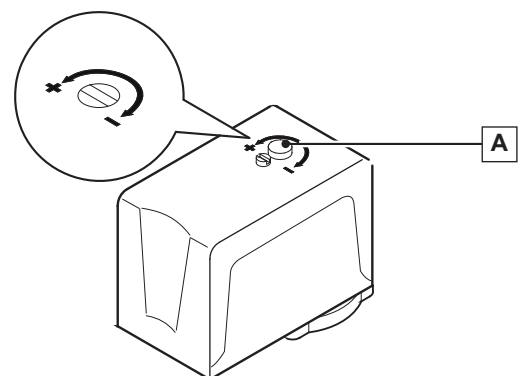
The flowmeter generates some electric impulses which are sent to the electronic control unit. These impulses are read by the control unit and memorized during the programming of the dose.

The flashing of the LED (1) indicates that the electrical impulses have been sent from the flowmeter to the control unit.



### 1.3.6.5. Pressure switch

The pressure switch allows controlling the boiler pressure by activating or bypassing the heating element in the boiler. Any calibration of the pressure switch which may be required can be carried out with the machine in operation by means of the screw (A) located on the component case.



#### Attention

The internal contacts of the pressure switch may be subjected to oxidation. It is recommended to clean the contacts with anti-oxidant spray periodically.

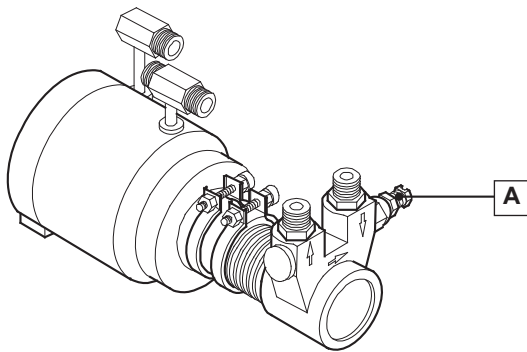


### 1.3.6.6. Pumping system

It is the component that feeds the machine, raising the water pressure to 8-9 bars for coffee brewing and automatic filling of the boiler.

To set the pressure rating, proceed as follows:

- select a coffee dispensing key;
- check the water pressure on the machine pressure gauge;
- set the pressure by using the pressure adjusting screw located in the pump (A) in such a way as to reach a value between 8 and 9 bars: turning clockwise the pressure increases, turning anticlockwise the pressure decreases;
- check the pressure on the pressure gauge.



### 1.3.6.7. Softener

Tap water contains insoluble salts, which causes build-up of lime scale in the boiler and in other parts of the machine. The softener eliminates or greatly reduces the presence of these mineral salts.

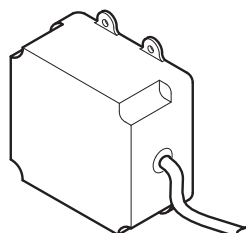
#### Attention

The lime scale build-up in the water circuit and boiler prevents the heat exchange and affects the efficient working of the machine. If the boiler is encrusted with lime scale this may stop the machine for long periods and therefore void any guarantee.

### 1.3.6.8. Electronic control unit

This unit electronically controls the coffee dose via the water flow in the flowmeter and the boiler water filling.

It also manages the operation of the autosteamer pipe.

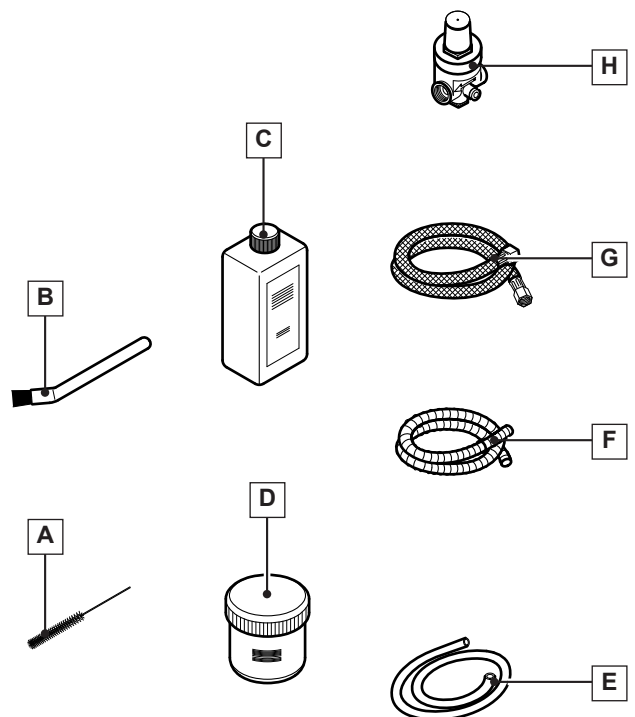


### 1.3.7. List of accessories

Booklet: instructions for using the machine.

Accessories:

- A Rifle-type brush
- B) Brush with bristles
- C Detergent for cappuccinatore
- D) Puly caf
- E) Silicone pipe
- F) Cavoflex pipe
- G) Flexible pipe
- H) Reducer



## 2. GENERAL SAFETY STANDARD

#### Attention

Failure to comply with basic safety rules and precautions could cause accidents during machine operation and maintenance. During the repair of the machine all the measures necessary to prevent accident must be used.

The main safety precautions that should be used when operating the machine are described below. Lavazza does not foresee every possible situation that could be potentially dangerous. Warnings in this manual are not exhaustive. If tools, procedures, working methods or techniques not expressly recommended are used, make sure that there is no risk of personal injury or injury for other people.

Adjustments, specifications and illustrations in this manual are based on information available at the moment of the editing and therefore can change anytime. These modifications affect maintenance operations to be carried out. Ensure that the updated version of the present manual is being used.

Power connection must be made in compliance with the CEI EN 60335-1 and local safety standards in force.

The electric socket connecting the machine must:

- conform with the type of plug installed on the machine, if it is present;
- be sized in order to comply with the data provided on the plate on the bottom of the appliance;
- be connected to ground system, efficient and in accordance with the law.

Before carrying out any operation on the machine ensure that the plug is disconnected from the current and that the machine is cool.

In order to avoid any electric shocks, electrical parts and surrounding components must not :

- enter into contact with any type of liquid;
- be manipulated by humid or wet hands;
- be tampered with.

It is forbidden:

- to use the machine near flammable substances and/or explosives and/or in an atmosphere with any risk of fire;
- to use unoriginal spare parts (not advised by the manufacturer);
- to carry out any type of technical modification not covered in the normal procedures of diagnosis and repair.

In case of fire, use carbon dioxide (CO<sub>2</sub>) extinguishers. Do not use water or powder extinguishers.

If an operation or intervention not foreseen should be carried out, following a different procedure than that indicated in the manual, please contact Lavazza technical service before starting.

Structural damage, modifications, tampering, alterations or improper repairs could compromise the safety of the machine.

## 2.1. Stop functions

To stop the machine, turn the main switch to "0" (OFF).

## 2.2. Safety devices

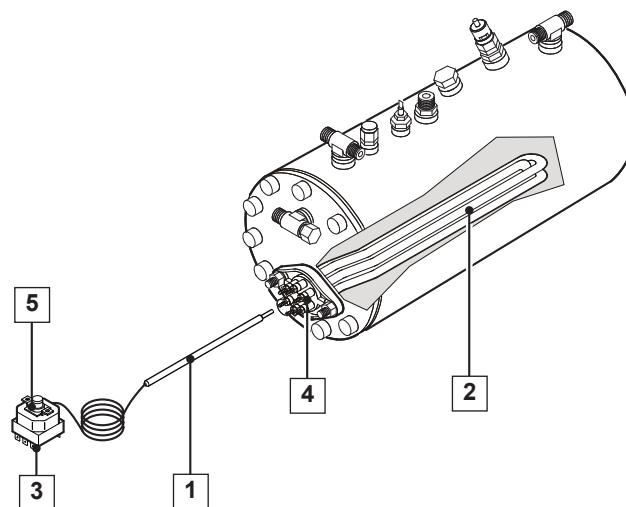
The machine/s described in this publication, are designed in compliance with the specific standards in force (CEI EN 60335-1) and therefore have measures of protection in all the potentially hazardous parts.

**A thermal protector** avoids any overheating of the boiler.

**The pipe for steam dispensing** is provided with rubber protectors so that it can be grasped and oriented even when hot.

### Thermostat

The thermostat allows electric heating damage to be prevented when there is no water in the boiler. The thermostat bulb (1) is located inside a sheath (2) which is situated in the middle of the heating elements. The thermostat contacts (3) are connected to the electric heating element (4). If the heating element is not immersed in water due to a fault in the boiler water filling system, its temperature increases considerably. At this point the thermostat cuts off power to the heating element in such a way as to prevent any damage.

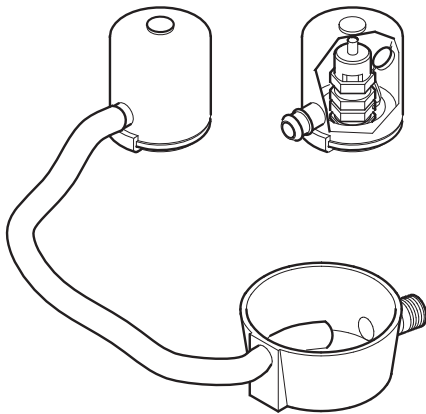


### Attention

**Press the central key (5), to reset the thermostat. Before restarting the machine, verify the causes of the failure of the boiler water filling system.**

### Anti-flooding device

The cover installed on the pressure relief valve allows collection of water which may leak from the boiler due to a machine malfunction and carries it, by means of the special pipe, to the drain cup.

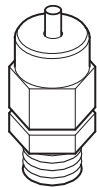


**Valve group**

The valves serve to ensure safety and proper machine operation.

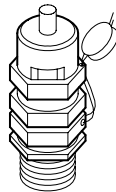
**Safety valve**

The safety valve serves to eliminate the air in the boiler during the heating of the machine.



**Pressure relief valve**

The pressure relief valve ensures that the pressure in the boiler doesn't exceed 1.9 bars. In case of a malfunction, the capacity of the valve is likely to eliminate all the excess pressure in the boiler.

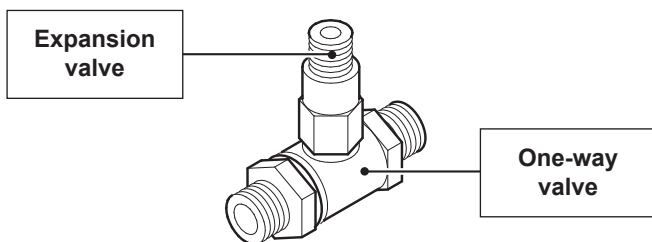


**Expansion – one-way valve**

This device consists of an expansion valve and a one-way valve.

Expansion valve: the cold water sent from the pump to the heat exchangers is heated. This heating causes an increase in the volume of the water. To limit pressure increases in the hydraulic circuit, the valve limits the maximum internal pressure in the circuit to 12 bars.

One-way valve: its function is to prevent the backflow of



the water from the exchangers to the hydraulic circuit.

**! Attention**

Check the valves regularly as indicated in chapter "Inspections and maintenance".

**! Attention**

Do not change, eliminate or by-pass the safety devices in order to not cause serious risks to health and safety.

**2.3. Residual risks**

The careful hazardous analysis performed, has allowed most of the risks connected with operating and maintenance machine conditions to be eliminated. Lavazza reminds the user that the instructions, procedures and recommendations contained in this manual should be strictly followed, and comply with the safety rules in force, including the use of provided protection devices, both integrated in the machine and individual.

This chapter illustrates the risks that the user may incur if he does not comply with the specific safety rules as described in this booklet.

- The machine must be connected to an earthed installation. If it is not done, the appliance can become a source of dangerous electrical discharges as it is no longer able to discharge electricity to earth.
- Be careful with the steam, autosteamer and hot water pipes. During use the steam, autosteamer and hot water pipes may overheat, thus becoming a source of danger. Handle these parts carefully.
- Never direct steam or hot water jets directly on parts of the body.
- Do not work on the machine when it is powered. Before carry out any operations on the machine, disconnect it from the electrical network.
- Do not use water jets for washing any part of the appliance because running water can seriously damage electrical and electronic components.
- Never work on the hydraulic system before having emptied it. All operations regarding the hydraulic system and its boiler have to be avoided when there is still water and pressure in the system. You must therefore empty it beforehand, closing the mains tap and dry-running the brewing unit, hot water pipe, cappuccinatore or steam pipe for a short time. Switch the machine off.

When the pressure is at zero, completely empty the boiler, by opening the specific valve located on the lower part of it. If the above procedure is not correctly carried out, the opening of any part of the hydraulic circuit can cause a sudden outlet of overheat water under pressure.

- Be careful with the tips of the capsule perforator located inside the clamping ring of the brewing unit.
- This machine is an appliance for espresso coffee dispensing. Any other type of use is considered incorrect and therefore dangerous.



**Non-observance of the above rules can cause serious harm to people, property or animals.**

### 3. HANDLING AND STORAGE

#### 3.1. Handling

During handling the machine must be treated according to the rules in force concerning health and safety on working places.

During handling and transport, the machine must remain in a vertical position according to the directions and symbols on the packaging. Carry out lifting and positioning with care. Do not shake the machine. For occasional transport use the original packaging, which will contain and protect the machine.

#### 3.2. Storage

The machine should be stored according to the following conditions:

- minimum temperature: above 5°C;
- maximum temperature: below 40°C;
- maximum humidity: below 95%.

The machine is packaged in cardboard and polystyrene. Check the maximum number of containers that can be stacked on the packaging.

### 4. DISMANTLING AND DISPOSAL

#### 4.1. Instruction for end of life treatment

This product conforms to art. 13 of the Decree Law No. 151 of July 25th, 2005, "Implementation of Directives 2002/95/EC, 2002/96/CE and 2003/108/CE, regarding the restriction of the use of certain hazardous substances in electrical and electronic equipment and disposal of waste electrical and electronic equipment".



The crossed-out wheeled bin symbol displayed on the appliance and/or the packaging indicates that at the end of its life, the product should not be treated as a generic household waste but should be delivered to an authorised local recycling centre of WEEE. Collecting the components of the machine in properly separated fractions will enable recycling, treatment and environmentally friendly disposal and contribute to avoiding possible adverse effects on the environment and on health and favours the re-use and/or re-cycling of materials which make up the machine.



#### Environment

**INFORMATION FOR USERS OF PROFESSIONAL APPLIANCES.** The separate collection of this appliance, at the end of its life, is organised and managed by the producer. The user who wants to dispose of this appliance must contact the producer and follow the system to collect the appliance separately at the end of its useful life.



#### Environment

**INFORMATION FOR USERS OF HOUSEHOLD APPLIANCES.** At the end of the useful life of the appliance, the user must send it to a WEEE waste collection centre or to the retailer when purchasing a new similar appliance, on a one-to one basis. In both cases make the machine unusable cutting the power cord.

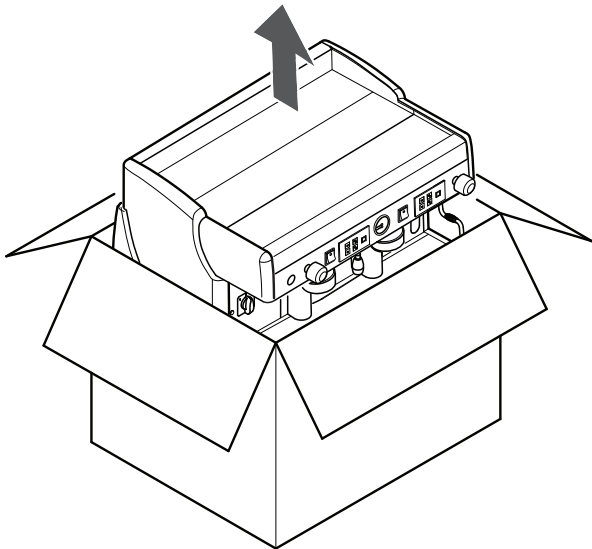
An appropriate separate collection of the appliance for re-cycling and disposal compatible with the environment contributes to preventing any possible negative effects on the environment and health and favours the re-use and/or recycling of materials which make up the machine.

Unlawful disposal of this product involves the application of administrative sanctions in compliance with Legislative Decree no. 152/2006 and subsequent modifications.

## 5. INSTALLATION AND START UP

### 5.1. Unpacking

Open the packaging, taking care not to damage it. Remove the machine protections and the equipment contained in the package. Take the machine out..



### Environment

Components of the packing must be separated according to the materials with which they are composed and disposed of according to the waste collection and disposal regulation in force.

### 5.2. Positioning

For a correct ergonomic use of the machine, place it on a stable and perfectly horizontal surface, away from water source, flames and heat. The area should be sufficiently illuminated, ventilated, hygienic, not corrosive and/or explosive and equipped with a power outlet readily reached with the supplied power cord. Also make sure that the place where the machine is installed has dimensions and sturdiness suitable to safely support it.

For the correct operation of the machine the following advice is given:

- room temperature: 5°C ÷ 40°C;
- maximum humidity: 95%;

### Warning

The machine is not suitable for outdoor installation, and should not be exposed to weather.

### Warning

The presence of magnetic fields or proximity of electric machines which generate disturbances, may cause malfunctions in the electronic control of the machine.

### Warning

With temperatures approaching 0°C there is the risk of freezing internal parts of the machine which contain water. Do not use the machine under these conditions.

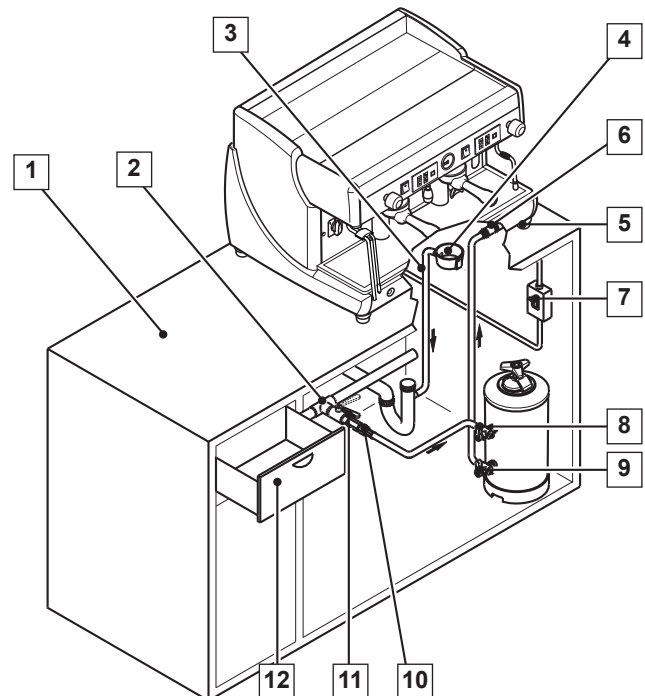
### Attention

Sufficient space must be allowed to access the machine and the plug, to allow the user to move freely and to be able to immediately leave the area in an emergency.

Prepare a support base that is suitable to support its weight (1); It is important that all the terminal connections to the water (2) and electrical mains (7) are easily reachable and, in any case, close to the machine.

Make sure that there is enough space to install and correctly use the machine.

It is recommended to equip the working base of the machine with a drawer (12) to collect the used coffee capsules.



### Attention

For correct operation, the machine must rest on a perfectly horizontal surface. Any alignment adjustments of the machine must be done by adjusting feet (5).

### 5.3. Water connection

Remove any rubber plugs which may be inserted in the valve fixtures of the softener.

Connect the water mains (2) to the softener inlet (8) using the flexible pipe provided.

Rinse the resins of the softener and check that the water, which initially comes out yellowish, comes out clean.

Connect the softener outlet (9) to the machine inlet (6).

Connect the drain cup of the machine (4) to the sewer drain (3) by using the special pipe provided. Take care to avoid tight bends or kinks and keep a sufficient inclination for drain water evacuation.



#### Note

All filling connections are 3/8 male gas type. The drain tray is connected with a pipe of 16 mm. internal diameter.



#### Warning

The water mains must provide cold water for human consumption (drinking water) at a pressure between 1.5 and 5 bar. If the pressure is greater than 5 bars, connect a pressure reducer upstream from the pump.

Place a tap (11) and a one-way valve (10) on the water mains so that it will be possible to cut off the water to the machine.

In order to prevent it from being damaged, it is advisable to install the softener where it is protected from accidental blows.

To prevent the water from freezing, install a softener (11) only where the room temperature is more than 5°C.

Connect the outlet softener (9) or the water mains (2) to the machine inlet (6) directly.

When connecting the machine cup to the sewer drain tray to the sewer drain, avoid tight curves or kinks and make sure that there is a sufficient inclination for water to flow out of the drain.

The drain must be connected to a siphon that can be periodically inspect and cleaned in order to avoid the backflow of unpleasant odours.

To avoid oxidation and damage to the machine over time, do not use iron fittings for the hydraulic connection, even if they are zinc plated.



#### Attention

The hydraulic connection must be made in compliance with local national rules.

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

For the European Community: for both hydraulic connection to the water mains as well as the connection to the external tank, a one-way valve (9) must be placed upstream of the machine as indicated by the standards EN 1717.

Water and drain connection must be carried out according to the International Plumbing Code 2003 of the International Code Council (ICC), or to the Uniform Plumbing Code 2003 of the IAPMO. For machine installation, place a one-way valve, according to national rules.



#### Note

All the machines are equipped with an automatic water filling with a time control device which allows the boiler to be filled with water within a maximum period of time. This function keeps water from coming out of the boiler valve (flooding) and prevents the overheating of the power pump. If the period of time does not last enough to fill up the boiler completely, switch the machine off and on again and repeat the above mentioned operations.

When the machine is started for the first time, it is advised to fill the boiler manually using the manual water entry valve.

### 5.4. Electric connection

Connect the machine power cord according to the instructions shown in “Electric diagrams” section.

**! Attention**

It is recommended to install a protection switch on the electric network.



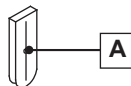
**! Attention**

Carry out all electric connections with the power supply disconnected.

### 5.5. Machine start up

**! Attention**

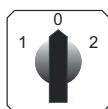
Before starting the machine, make sure that the level of water in the boiler is higher than the minimum level on the level-check window (A).



If there is no water (first installation or after boiler maintenance), it is necessary to fill the boiler in advance in such a way to prevent the overheating of the heating element.

Proceed as follows :

- open the water tap of the water mains and of the softener;
- turn the switch to position one “1” (electric power supply to the pump for automatic boiler filling and machine services) and wait for the boiler to be automatically filled with water;
- turn the switch to the position “2” (full electrical power supplied, including the heating element in the boiler) and wait for the machine to warm up completely.



**! Attention**

During the machine’s warm-up phase (about 20 minutes), the safety valve will release steam for a few seconds until the valve itself closes.

Before using the machine, carry out some dry cycles with the capsule holders attached for a few seconds, to release any air which may be in the circuit, so that the brewing units are completely heated.

Before using the machine dispense few coffees to check the operating pressure of the machine.

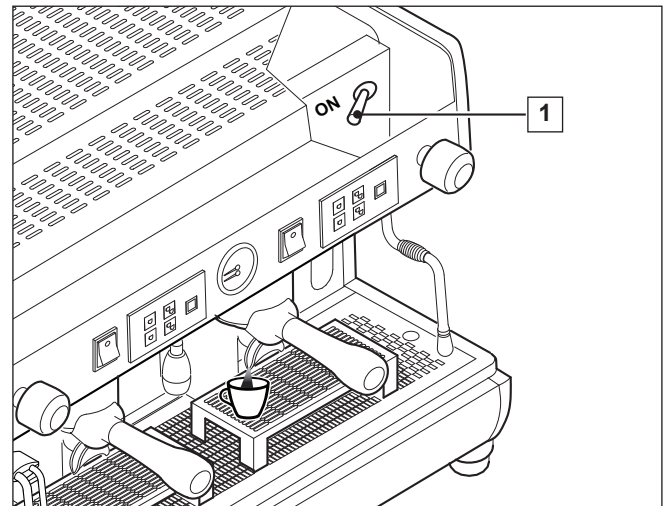
## 6. CONFIGURATION

### 6.1. Programming

**! Attention**

Machine programming must be carried out by technical staff. Be careful when accessing the inside of the machine the temperature of some components is very high and there are powered parts.

#### 6.1.1. Programming of coffee doses



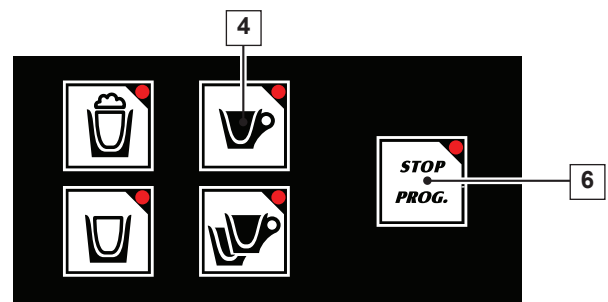
Put the programming lever (1), situated under the machine boiler cover, to the ON position.

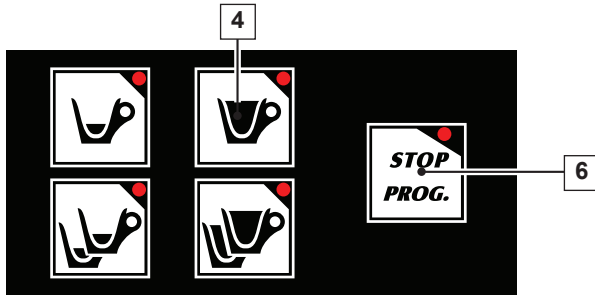
Place the cup under the dispensing spout.

Press the PROG/STOP key (6) for at least 5 seconds: all the LEDs of the dose keys light up.

Press the desired dose key: for instance the (4) key.

When the desired dose is reached, confirm it by pressing the PROG/STOP (6) key.





Repeat this operation for the other dose keys.

To exit the programming mode, press the STOP/PROG key (6) or wait 30 seconds.

When the programming is completed, place the programming lever (1) to the OFF position.

**Warning**

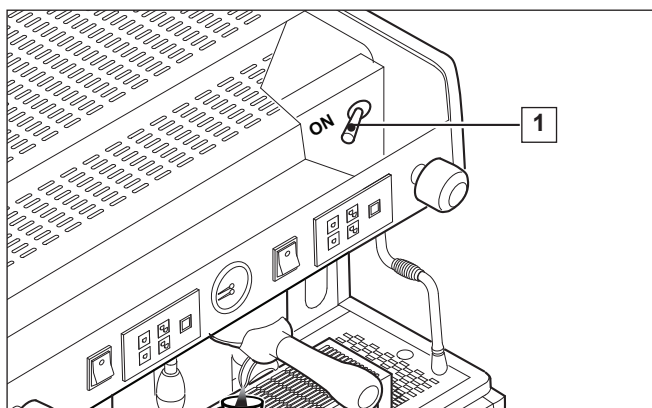
Each dose should be programmed using a new capsule and not one previously used. The maximum programmed time period is 120 seconds.

**Note**

Programming the doses of the left-hand keyboard first, the machine automatically programs the doses of the right-hand keyboard. It is however possible and advisable to program the keyboards separately, taking care to always start from the left-hand keyboard.

**6.1.2. Programming autosteamer hot milk temperature**

Put the programming lever (1), situated under the machine boiler cover, to the ON position.



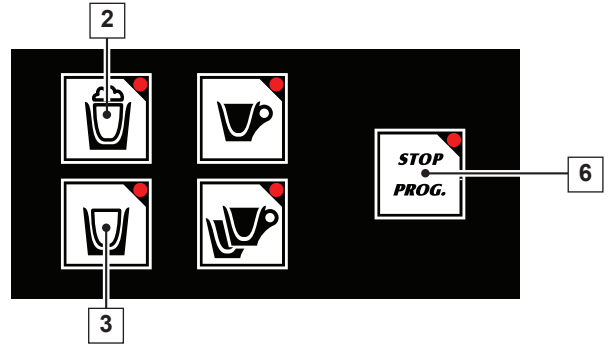
Turn the machine on, keeping the key (3) pressed for at least 3 seconds.

The LEDs of the keys (2) and (3) light up to confirm the set temperature.

The key (2) indicates the tens and the key (3) indicates the units.

To increase or decrease the temperature of 1°C use the keys (2) and (3) respectively.

To confirm the new set value, press the STOP/PROG (6) key for at least 3 seconds.



**6.1.3. Programming autosteamer hot frothed milk temperature**

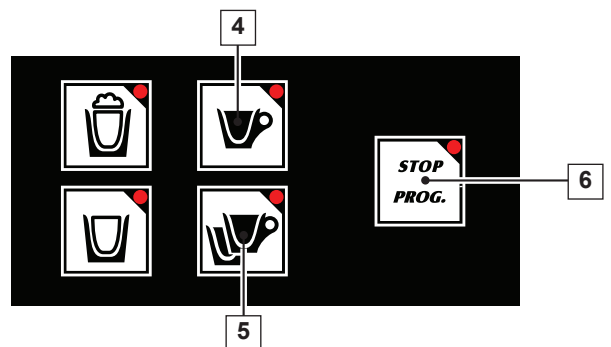
Switch the machine on keeping the key (2) pressed for at least 3 seconds.

Proceed as indicated in section 6.1.2.

**6.1.4. Loading of default data**

Put the programming lever (1), situated under the machine boiler cover, to the ON position.

Turn the machine on, keeping keys (4), (5) and (6) pressed for at least 5 seconds.



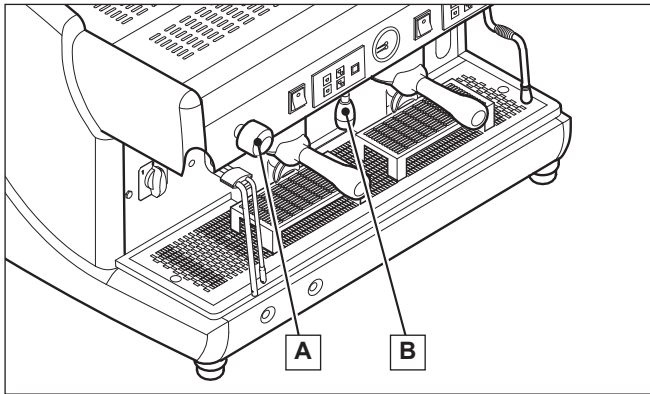
When the programming is completed, place the programming lever (1) to the OFF position.

**6.2. Preparing hot drinks**

**6.2.1. Dispensing hot water**

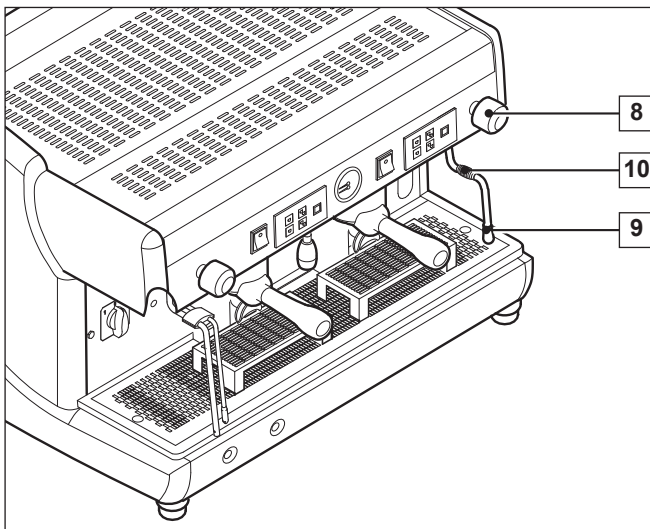
To dispense hot water, turn the tap knob (A) anticlockwise: the hot water coming out from the pipe (B) will be proportional to the opening of the tap.





### 6.2.2. Dispensing steam

To dispense steam, turn the tap knob (8) anticlockwise: the steam coming out from the steam pipe (9) will be proportional to the opening of the tap.



**! Attention**

Before using the steam to warm drinks or froth the milk, it is necessary to dispense steam to completely discharge the condensation.

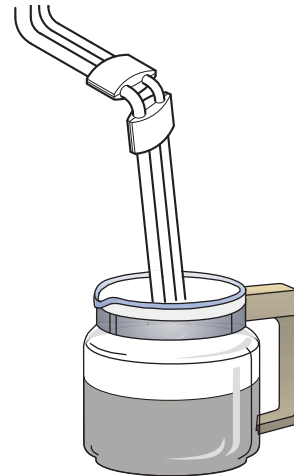
**! Attention**

Handle the steam pipe carefully using the rubber piece (10) and do not touch the hot water pipe because they are components which can reach high temperatures.

### 6.3. Autosteamer

#### 6.3.1. Heating milk

Immerse the autosteamer ends in the milk to be heated.

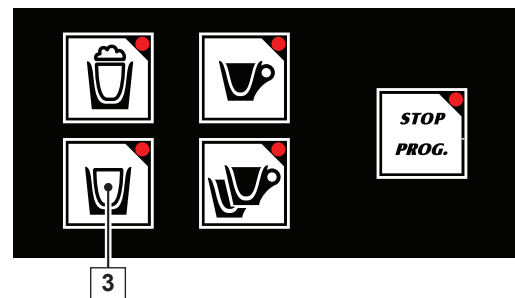


Press the hot milk key (3).

Wait for steam dispensing to be completed.

Press the hot milk key (3) again to stop milk heating in advance.

When the set temperature is reached, it is possible to enable steam dispensing again by keeping the hot milk key (3) pressed.



**! Attention**

The autosteamer ensures accuracy of  $\pm 3^{\circ}\text{C}$  on milk temperature between set and actual temperature only if the temperature of milk used is  $4^{\circ}\text{C}$ .

#### 6.3.2. Heating and frothing milk

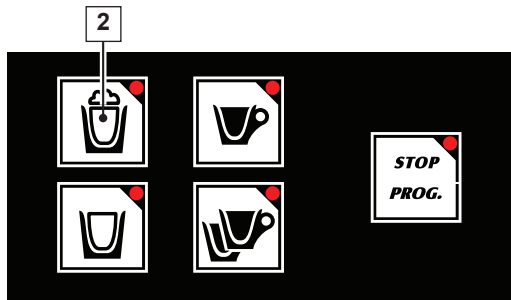
Since steam dispensing stops automatically when the set milk temperature is reached, to prevent froth from flowing out, milk volume must not exceed 1/3 of jug capacity. Immerse the autosteamer ends in the milk to be heated.

Press the frothed hot milk key (2).

Wait for steam dispensing to be completed.

Press the key (2) again to stop milk heating and frothing in advance.

When the set temperature is reached, it is possible to enable steam dispensing again by keeping the frothed hot milk key (2) pressed.



### Attention

Before using the steam to warm the beverages or froth the milk, select the steam dispensing to completely discharge the condensation. After each use, dispense steam shortly, to preserve perfect efficiency of the steam nozzles.

If the nozzles are not constantly cleaned the autosteamer operation may be affected.

To obtain excellent milk froth the following is suggested: use cold milk at about 4°C; use a 0,75 or 1 litre jug and fill with milk up to its half capacity; set a maximum heating temperature at 60°C.

### Attention

Keep the autosteamer ends constantly clean using a cloth dampened in lukewarm water.

Be careful using the autosteamer because of the danger due to steam and high temperature.

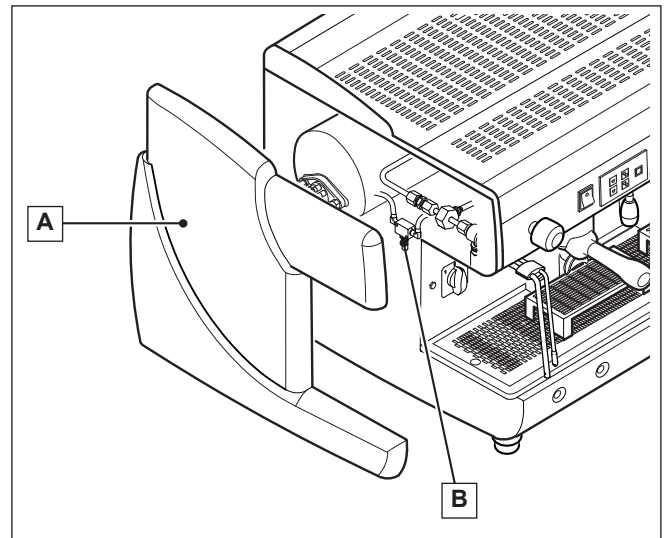
Do not keep the nozzle immersed in the milk for a long time, but only during milk frothing.

The system has a maximum time-out of the autosteamer operation of 4 minutes.

### 6.3.3. Setting of milk frothing

To modify milk frothing through the autosteamer proceed as follows:

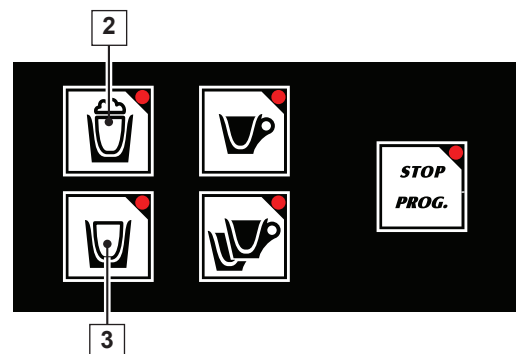
- remove the left side panel of the machine (A);
- by means of the screw of the valve (B):
  - turn clockwise to decrease the froth;
  - turn anticlockwise to increase the froth;
- replace the machine side panel (A).



### 6.3.4. Operation of the autosteamer system

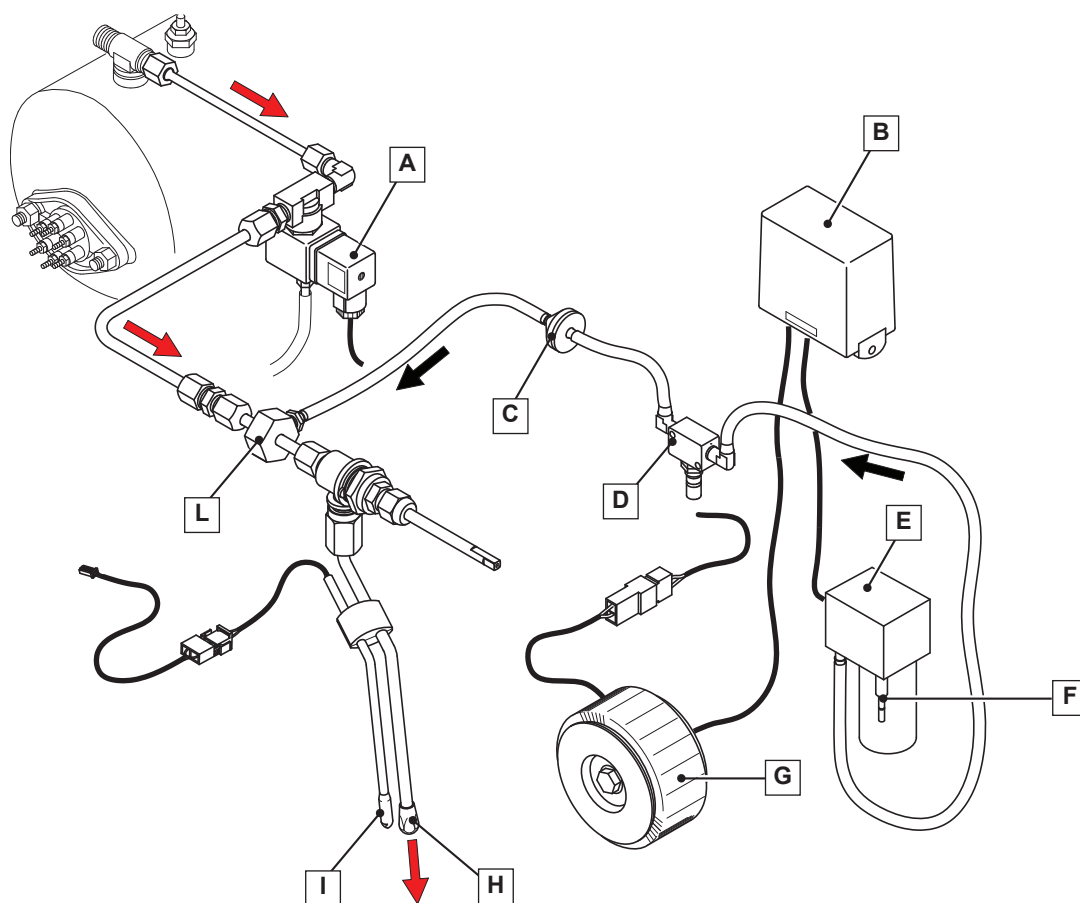
Below the operation of the autosteamer is described:

- press the key (2) or the key (3);



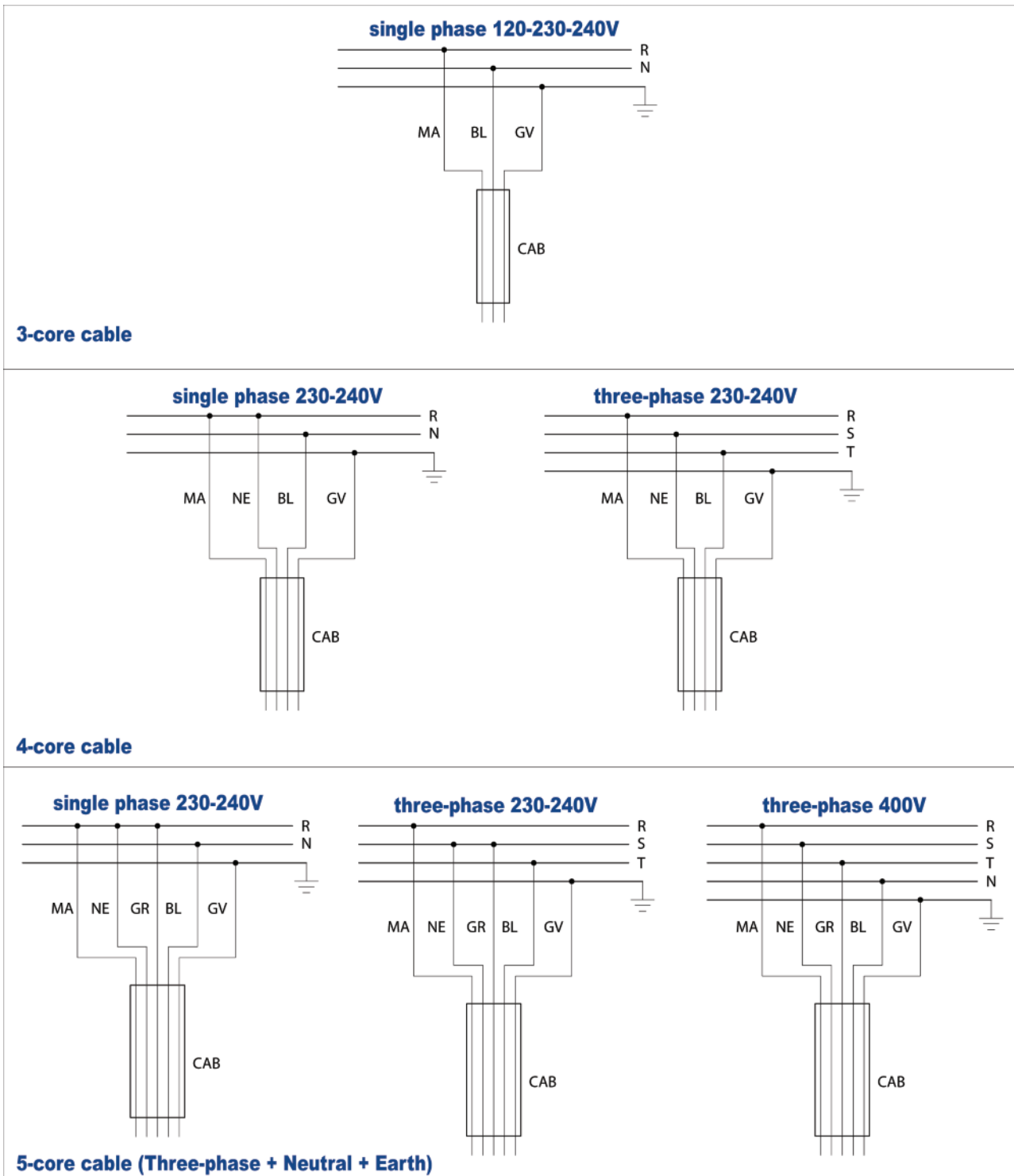
- the solenoid valve (A) opens and the steam flows from the boiler to the autosteamer;
- at the same time the system activates the air suction pump (E) which is controlled by the control unit (B) and powered by the transformer (G). To change the milk frothing setting, modify the amount of air taken the suction spout (F) by means of the valve (D) as indicated in section 6.3.3;

- the air, passing through the one-way valve (C), is mixed with the steam in the “autosteamer interface” (L);
- the steam comes out from the nozzle (H);
- the probe ( I ) connected to the electronic control unit detects the milk temperature during heating;
- when the set temperature of milk is reached, the electronic system stops air and steam dispensing.



## 7. DIAGRAMS

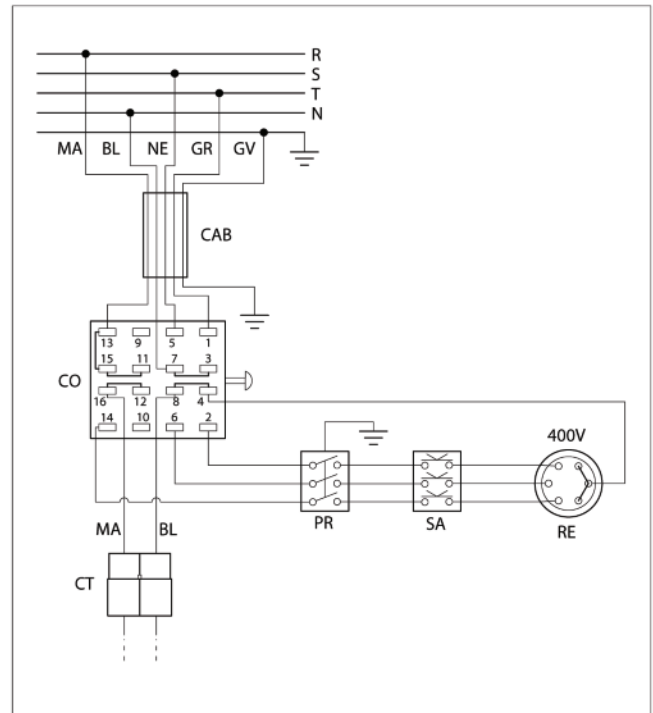
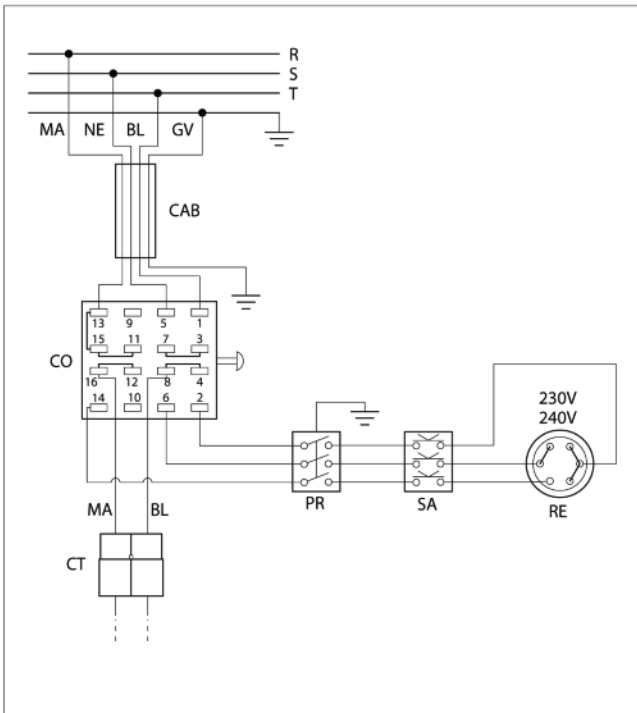
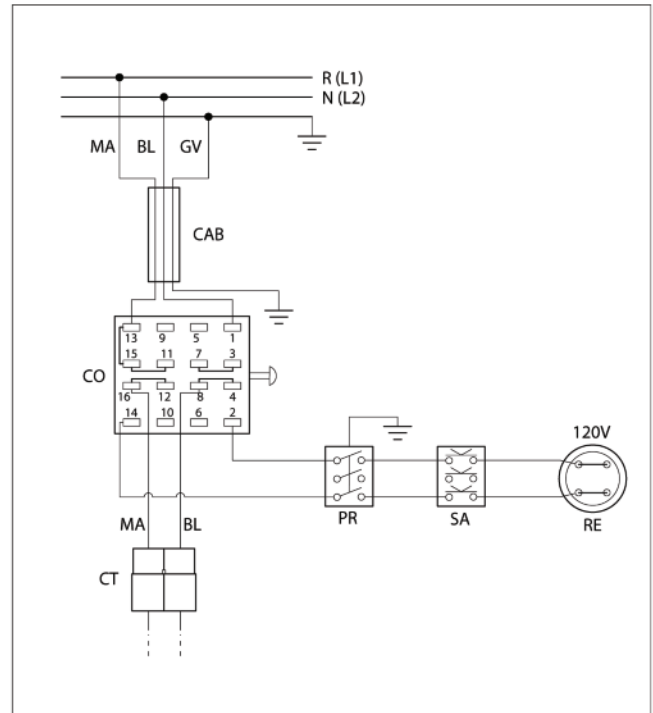
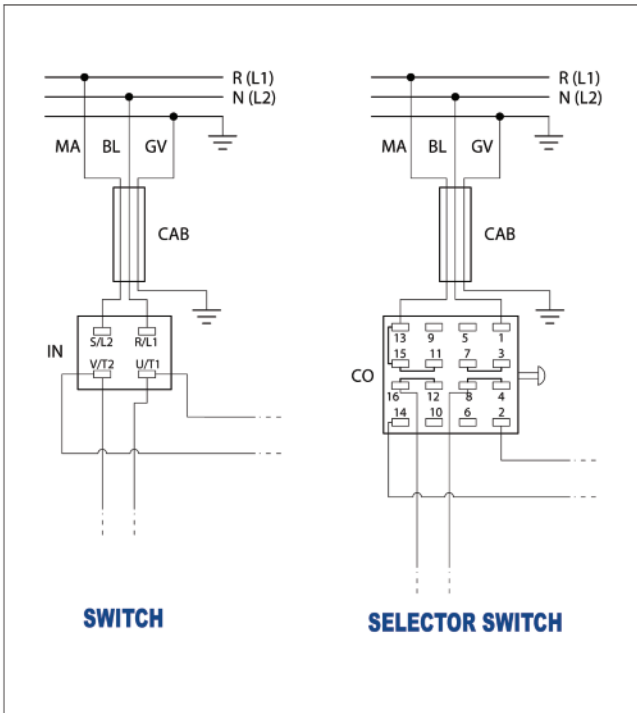
### 7.1. Electrical mains connection wiring diagram



|          |         |
|----------|---------|
| <b>R</b> | Phase   |
| <b>S</b> | Phase   |
| <b>T</b> | Phase   |
| <b>N</b> | Neutral |
|          | Earth   |

|            |              |
|------------|--------------|
| <b>BL</b>  | Blue         |
| <b>CAB</b> | Power cord   |
| <b>GV</b>  | Yellow-green |
| <b>GR</b>  | Grey         |
| <b>MA</b>  | Brown        |
| <b>NE</b>  | Black        |

## 7.2. Machine power supply wiring diagram

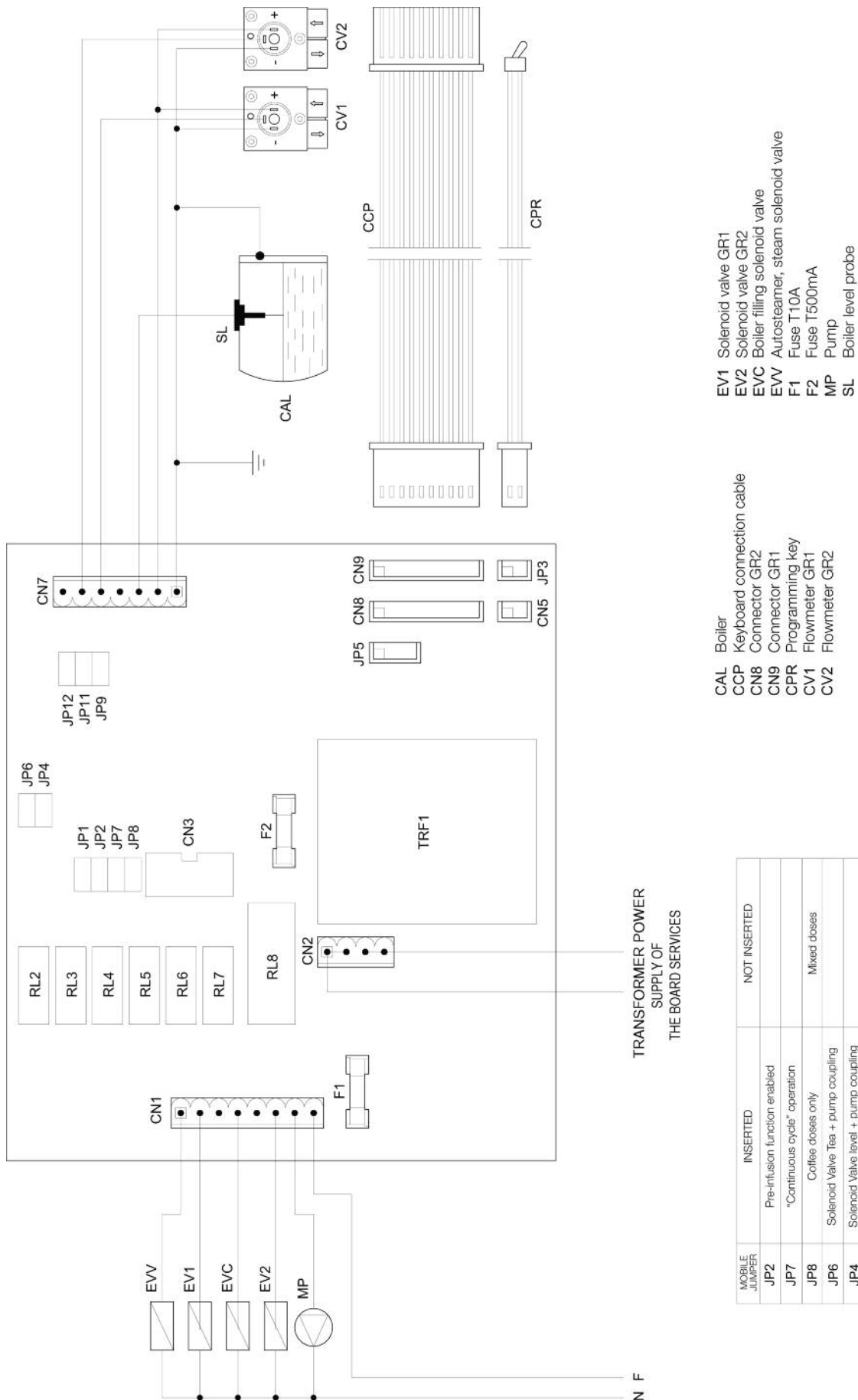


|          |         |
|----------|---------|
| <b>R</b> | Phase   |
| <b>S</b> | Phase   |
| <b>T</b> | Phase   |
| <b>N</b> | Neutral |
|          | Earth   |

|            |                            |
|------------|----------------------------|
| <b>CAB</b> | Power cord                 |
| <b>CT</b>  | Connector                  |
| <b>CO</b>  | Selector switch            |
| <b>IN</b>  | Switch                     |
| <b>PR</b>  | Pressure switch            |
| <b>RE</b>  | Heating element            |
| <b>SA</b>  | Heating element protection |

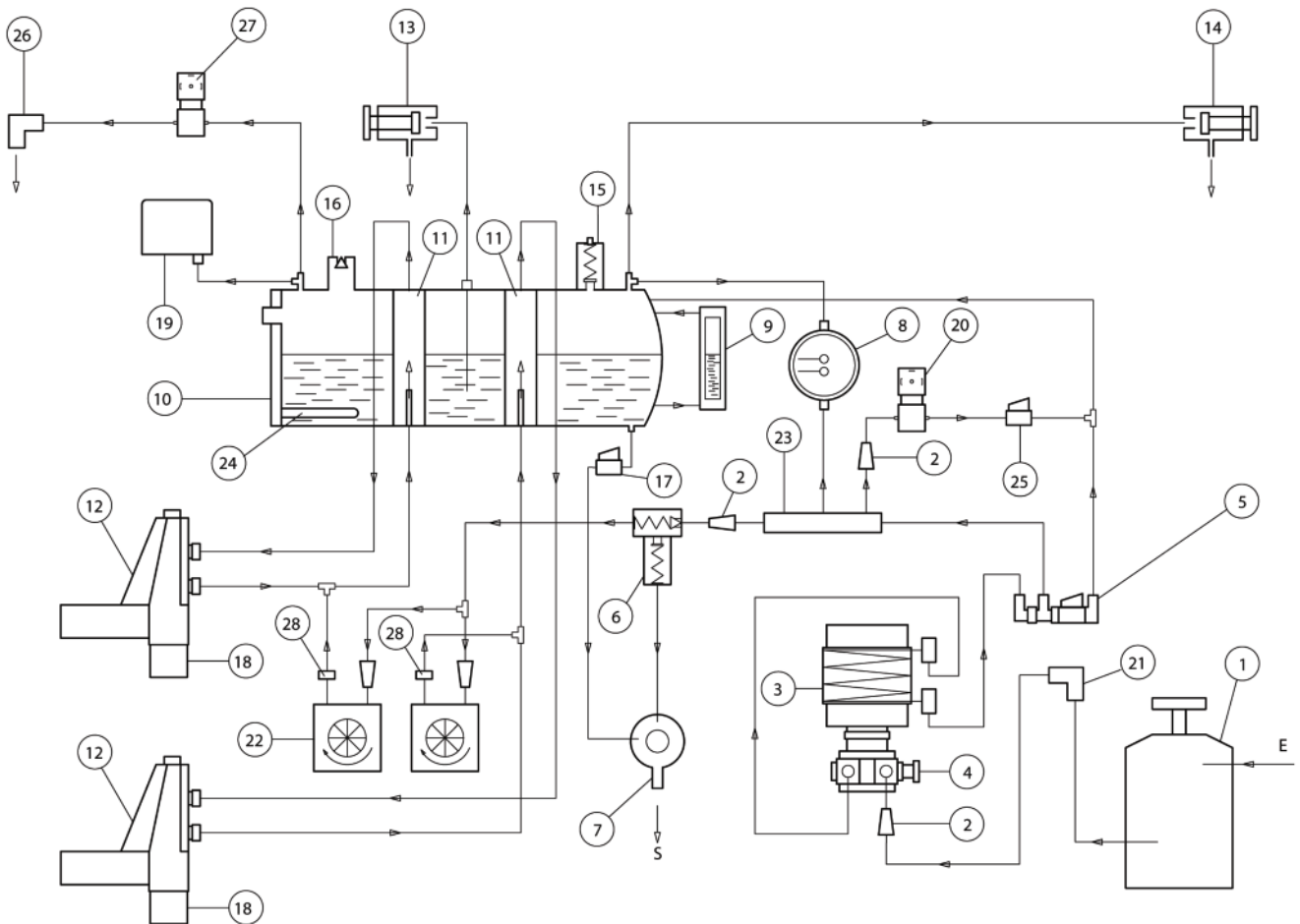
|           |              |
|-----------|--------------|
| <b>BL</b> | Blue         |
| <b>GR</b> | Grey         |
| <b>GV</b> | Yellow-green |
| <b>MA</b> | Brown        |
| <b>NE</b> | Black        |

### 7.3. Wiring diagram of the electronic central unit



| MOBILE JUMPER | INSERTED                             | NOT INSERTED |
|---------------|--------------------------------------|--------------|
| JP2           | Pre-inflation function enabled       |              |
| JP7           | "Continuous cycle" operation         |              |
| JP8           | Coffee doses only                    | Mixed doses  |
| JP6           | Solenoid Valve Tea + pump coupling   |              |
| JP4           | Solenoid Valve level + pump coupling |              |

### 7.4. Hydraulic diagram



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li><b>1</b> Water softener</li> <li><b>2</b> Water entry filter</li> <li><b>3</b> Built-in power pump</li> <li><b>4</b> Pump pressure adjustment</li> <li><b>5</b> Manual water inlet tap</li> <li><b>6</b> Discharge + one-way valve</li> <li><b>7</b> Drain tray</li> <li><b>8</b> Pressure gauge</li> <li><b>9</b> Level-check window</li> <li><b>10</b> Boiler</li> <li><b>11</b> Heat exchanger</li> <li><b>12</b> Brewing unit</li> <li><b>13</b> Hot water tap</li> <li><b>14</b> Steam tap</li> </ul> | <ul style="list-style-type: none"> <li><b>15</b> Safety valve</li> <li><b>16</b> Anti-vacuum valve</li> <li><b>17</b> Boiler drain tap</li> <li><b>18</b> Brewing unit solenoid valve</li> <li><b>19</b> Pressure switch</li> <li><b>20</b> Solenoid valve of Automatic Water Entry system</li> <li><b>21</b> Water inlet connection</li> <li><b>22</b> Flowmeter</li> <li><b>23</b> Water distributor</li> <li><b>24</b> Boiler heating element</li> <li><b>25</b> Valve</li> <li><b>26</b> Autosteamer</li> <li><b>27</b> Autosteamer solenoid valve</li> </ul> |
|---|---|

**E** Water entry  
**S** Discharge

## 8. INSPECTIONS AND MAINTENANCE

### 8.1. Periodical inspections

Every week check the boiler pressure using the machine pressure gauge.



#### Note

The boiler pressure must be 0.8-1.2 bar.

Every week check the softener condition.

Every four months check the gaskets of the brewing unit (for brewing unit disassembling see the section 8.2.1.).

Every four months replace the perforator (for replacing procedure see the section 8.2.2.).

Every year check the correct operation of the safety, pressure-relief and discharge-on-way valves (for checking procedure see the section 8.2.3.).

Every year check the correct operation of the pressure gauge.

Every year check for possible lime scale build up on the heating element and boiler.

Every year check the efficiency of the solenoid valve of the brewing unit.

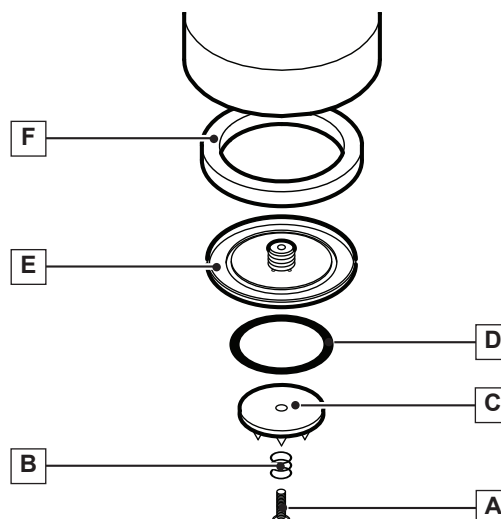
Every year check for possible water leaks on the bench and the condition of the discharge devices.

### 8.2. Routine and supplementary maintenance

#### 8.2.1. Brewing unit

To replace the brewing unit components proceed as follows:

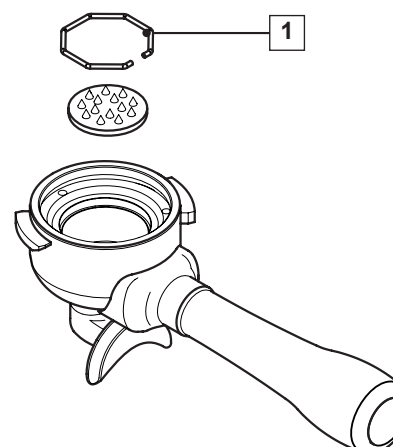
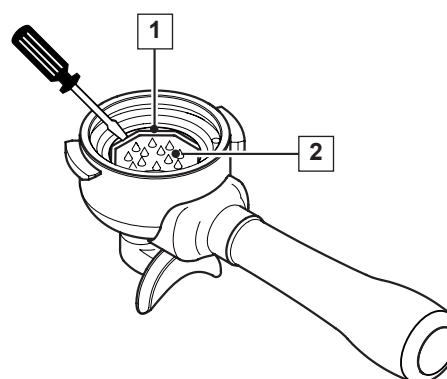
- loosen the screw (A);
- remove the spring (B);
- replace the perforator (C), if damaged, (not compliant dispensing);
- loosen the ring (D);
- replace the gasket (E);
- replace the gasket (F).



#### 8.2.2. Replacing the perforator

To replace the perforator proceed as follows:

- with a small screwdriver, remove the spring (1) that blocks the perforator (2) in the capsule-holder seat;
- remove the perforator (2) and replace it with a new one;
- place the spring (1) back into position.





### 8.2.3. Valves

Once a year, at least, check the correct operation of the safety valve, pressure relief valve and discharge one-way valve.

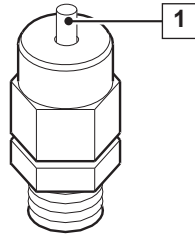
When their replacement is needed, due to a malfunction, retest the new valve installed.

Carry out the tests in the following way.

#### Safety valve

First test:

- remove the upper grid of the machine;
- push the pin (1) downward with a gripper;
- if the pin doesn't move, it probably means that the valve is encrusted with lime scale and should be replaced.



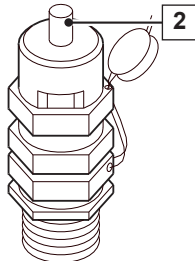
Second test:

- switch the machine off;
- open the steam valve and discharge the pressure in the boiler;
- switch the machine on again and check the regular closure of the valve.

#### Pressure relief valve

First test:

- remove the upper grid of the machine;
- push the pin (2) downward with a gripper;
- if the pin doesn't move, it probably means that the valve is encrusted with lime scale and should be replaced.

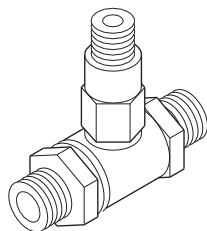


Second test:

- switch the machine off;
- tighten the set screw located on the pressure switch, clockwise, completely;
- switch the machine on again and wait for the boiler pressure to increase;
- check the correct operation of the valve at the maximum pressure of 1.9 bar.

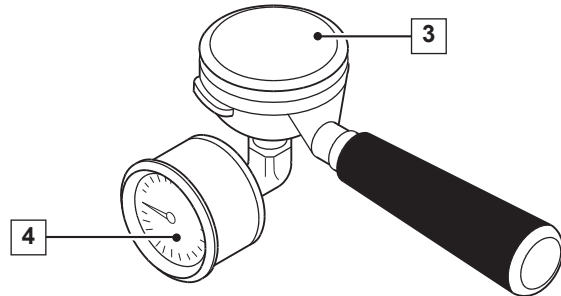
#### Expansion one-way valve

- activate the brewing units for at least 30 seconds;
- attach a filter-holder (3) with pressure gauge to the brewing unit;
- activate the brewing unit and check the pressure increase via the pressure gauge (4);
- check the pressure increase due to the expansion effect of the heated water until approximately 12 bar:



when this value is reached there is the confirmation of the correct operation of the valve and the sealing of the gaskets and solenoid valves

- disable the dispensing;
- repeat the same test on the other brewing unit.



### 8.3. Cleaning

For perfect cleaning and efficiency of the appliance, several simple daily cleaning operations are necessary on the functional parts and accessories as well as the body panels. These operations must be carried out by the user.

The indications given here are applicable for normal use of the coffee machine. If the machine is heavily used then cleaning should be performed more frequently.

It is recommended to always carry out cleaning with completely clean and hygienic cloths.

#### Warning

Cleaning must be always carried out with completely clean and hygienic cloths.

#### Attention

Attempts at intervention inside the machine are strictly forbidden.

Never use alkaline detergents, solvents alcohol or aggressive substances.

During cleaning, be careful with the tips of the capsule perforator located inside the clamping ring of the unit.

#### 8.3.1. Capsule-holder

Clean the capsule-holders in hot water daily. Leave them immersed in hot water overnight so that the fatty coffee deposits can dissolve.

Then rinse them.

 **Warning**

**If the capsule holders are not daily cleaned the quality of the dispensed coffee and the correct operation of the capsule holder may decline.**

Every week, immerse the capsule holders in hot water for at least 10 minutes with proper detergent (see spare parts).

Then rinse with water.

### **8.3.2. Body**

Clean the panels of the body with a cloth dampened in lukewarm water daily.

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

### **8.3.3. Steam and autosteamer pipe**

After each use, dispense steam shortly and clean the steam and autosteamer pipes using a cloth dampened in lukewarm water.

Check and clean the ends of the pipe, clearing out the exit holes with a small needle weekly.

### **8.3.4. Brewing unit**

Wash the brewing units weekly as described below:

- use the blind filter holder;
- pour the detergent (see spare parts) on the blind filter and attach the capsule-holder;
- carry out dispensing cycles until the water comes out clean;
- remove the capsule-holders from the brewing unit and carry out at least one dispensing so as to eliminate the detergent residue.

## 9. TROUBLESHOOTING

### 9.1. Signalling and solutions to the most common problems

| PROBLEM                             | CAUSE   | SOLUTION  |
|-------------------------------------|---|---|
| No electrical power on the machine. | The selector switch is placed to "0" or "1" position.               | Turn the selector switch to "2" position.   |
|                                     | The on/off switch is damaged.                                       | Replace the on/off switch.  |
|                                     | The network switch is placed to OFF position.                       | Place the network switch to ON position.  |
|                                     | The connection to the electrical network is defective.              | Check for possible connection defects.  |
| No water in the boiler.             | The valve of the water mains is closed.                             | Open the water mains valve.   |
|                                     | The valve to bypass the automatic level is closed.                  | Open the automatic level valve.   |
|                                     | The pump filter is clogged.   | Replace the pump filter.  |
|                                     | The power pump is disconnected or blocked.                          | Check the power pump.   |
|                                     | The water inlet solenoid valve is damaged.                          | Replace the water inlet solenoid valve.   |
|                                     | The filter of the water inlet solenoid valve is clogged.            | Clean or replace the solenoid valve filter.   |
| Too much water in the boiler.       | The solenoid valve of the automatic level device is damaged.        | Replace the solenoid valve of the automatic level device.                                       |
|                                     | The heat exchanger is perforated.                                   | Replace the heat exchanger.   |
|                                     | The solenoid valve of the automatic level device remains connected. | Check the level probe, the earth of the frame and the operation of the electronic control unit. |
| No steam from pipes.                | The electrical heating element is defective.                        | Replace the electrical heating element.   |
|                                     | The pressure switch contacts are oxidized.                          | Clean the contacts or replace the pressure switch.  |
|                                     | The heating element protection thermostat has tripped.              | Reset the heating element protection.   |
|                                     | The nozzle of the pipe is clogged.                                  | Clean the steam nozzle.   |
|                                     | On/off switch is placed to "1" position.                            | Turn the machine switch to "2" position.  |

| PROBLEM                                     | CAUSE  | SOLUTION   |
|---|--|--|
| Steam mixed with water comes out from pipes | The boiler level is too high.                            | Check the level probe for correct position and presence of any surface lime scale. |
| The machine does not dispense.              | No water mains.  | Check that there is water in the mains.  |
|   | The solenoid valve of the brewing unit is defective.     | Replace the solenoid valve of the brewing unit.                                    |
|   | The pump is jammed.                                      | Replace the pump.  |
|   | The fuse of the control unit is burnt out.               | Replace the solenoid valve protection fuse (1A).                                   |
|   | The injector is clogged.                                 | Clean or replace the injector.   |
|   | The brewing unit solenoid valve is clogged or dirty.     | Clean or replace the solenoid valve.   |
|   | The flowmeter is jammed.                                 | Check/replace the flowmeter.   |
| Water leaks from the machine.               | The drain tray does not discharge.                       | Check the sewer drain.   |
|   | The drain pipe is broken or detached or clogged.         | Check and restore the connection of the drain pipe to the drain tray.              |
|   | Water leaks in the hydraulic circuit.                    | Check and eliminate any hydraulic leaks.   |
| Coffee is cold.                             | The heating element is damaged.                          | Replace the electrical heating element.  |
|   | The electrical connection is defective.                  | Check for possible defects on the connection.                                      |
|   | Lime scale on the exchangers and/or the heating element. | Clean the machine.   |
|   | The pressure switch contacts are oxidized.               | Clean or replace the pressure switch contacts.                                     |

| PROBLEM  | CAUSE   | SOLUTION   |
|--|---|--|
| The pressure gauge indicates an unacceptable pressure  | The pressure gauge is defective.  | Replace the pressure gauge.  |
|  | The boiler calibration is incorrect.  | Adjust the calibration of the boiler.  |
|  | The power-pump calibration is incorrect.  | Adjust the calibration of the power-pump.  |
| Grounds in cup   | The capsule-holder is dirty.  | Clean the capsule-holder.  |
|  | The lower perforator holes are worn.  | Replace the lower perforator.  |
|  | The internal gasket is worn.  | Replace the gasket.  |
|  | The temperature of the dispensed water is high.   | Check the cause and remedy any problems.   |
| Coffee is dispensed with the manual key only.  | The fuse of the control unit is damaged.  | Replace the fuse of the control unit (1A).   |
|  | Defective keyboard.   | Replace the keyboard.  |
| Unacceptable coffee dispensing.<br>The coffee dose is not met.<br>The LED of the dose key flashes. | The connection of the flowmeter is defective.   | Check for proper connection of the flowmeter.                                      |
|  | The connection of the electronic control unit is defective.                                   | Check for proper connection of the 8-pin connector of the electronic control unit. |
|  | The connector of the flowmeter has humidity on it.  | Remove the connector of the flowmeter and dry the contacts.                        |
|  | The flowmeter is defective: during brewing the flowmeter LED does not flash.                  | Replace the heads of the flowmeter or the whole flowmeter.                         |
|  | The one-way valve loses pressure (the dose is too small).                                     | Check and replace the one-way valve, if necessary.                                 |
|  | The discharge valves lose pressure (the dose is too small).                                   | Check and replace the discharge valves.  |
|  | Water leakage from the unit solenoid valve during coffee brewing or when at resting position. | Clean and replace the solenoid valve, if necessary.                                |
| The flowmeter is partially clogged.  | Clean or replace the flowmeter.   |  |

| PROBLEM  | CAUSE  | SOLUTION   |
|--|--|--|
| The LEDs of all the keyboard flash.  | After a few minutes the automatic filling of water stops.<br>Time-out device is activated. | Turn the machine off and then back on.   |
|  | No water in mains.   | Open the water mains tap.  |
|  | The automatic level valve is closed.   | Open the automatic level valve.  |
|  | Some of the pipes in the circuit are clogged.  | Check and replace the defective pipes.   |
|  | The probe and/or the earth are disconnected.   | Check and restore the connections.   |
| The pump works only with the manual dispensing key.                                | The pump fuse of the electronic control unit is damaged.                                   | Replace the pump fuse of the electronic control unit (10 A).                             |
| Shut down of the electronic system.  | The control unit fuse is burnt out.  | Replace the main fuse (125 mA).  |
|  | The flowmeter has a contact between the positive pole and the earth.                       | Check the connection of the flowmeter.   |
| The pump leaks water.  | Poor mechanical seal of the shaft or the O-Ring.   | Check the pump and take any corrective actions.  |
|  | The inlet and outlet connections are loose.  | Tighten the connectors.  |
|  | The hexagonal nut of the pressure relief valve or the filter are loose.                    | Tighten the hex connection of the pressure relief valve or the filter.                   |
|  | The gasket or the O-Ring of the pressure relief valve of the filter are defective.         | Replace the gasket and the O-Ring, take care not to change the calibration of the valve. |
| The motor stops suddenly or the thermal protector is activated due to an overload. | Lime scale and mineral build-ups in the pump have caused it to jam.                        | Check the pump and replace it, if necessary.   |
|  | The pump and the motor are not aligned.  | Install the pump-motor joint.  |
|  | The motor is defective.  | Replace the motor.   |
|  | The motor is connected with an incorrect voltage.  | Ensure that the power supply voltage of the motor is correct.                            |

| PROBLEM                                   | CAUSE  | SOLUTION   |
|---|--|--|
| The pump works below the nominal capacity | The inlet is clogged even partially.   | Clean the pump filter.   |
|   | The pump rotates in the wrong direction.   | Check the motor.   |
|   | The pump is not properly calibrated.   | Calibrate the pressure adjusting screw.  |
|   | The motor runs at a low RPM.   | Check the voltage or replace the motor.  |
|   | The motor runs at a low RPM.<br>The inside of the pump is damaged due to the infiltration of foreign matter. | Replace the pump.  |
| The pump is noisy.                        | The pump and the motor are not aligned.  | Install the pump-motor joint.  |
|   | The gasket or the O-Ring of the pressure adjusting screw or the filter is defective.                         | Replace the gasket and the O-Ring, take care not to change the calibration of the valve. |
|   | The joint, the coupling screw or the V-shaped clamp, are loose.  | Align and tighten the components which are loose.  |
|   | The inlet is clogged even partially.   | Clean the filter-holder.   |
|   | The hex nut of the pressure adjusting screw or the filter are loose.   | Tighten the hex connection of the pressure adjusting screw and the filter.               |
| The cup is dirty with splashed coffee.    | Steam pockets during brewing.  | Reduce the water temperature.  |
|   | Air pockets in the hydraulic circuit.  | Tighten fittings or connectors which are loose.  |
|   | The flow reducer of the brewing unit is unsuitable.  | Replace the flow reducer.  |