ESTD 1956

Conti

MONACO

MC ULTIMA

TECHNICAL DOCUMENTATION

Edition 05/2021

Index

page

1 TECHNICAL DOCUMENTS

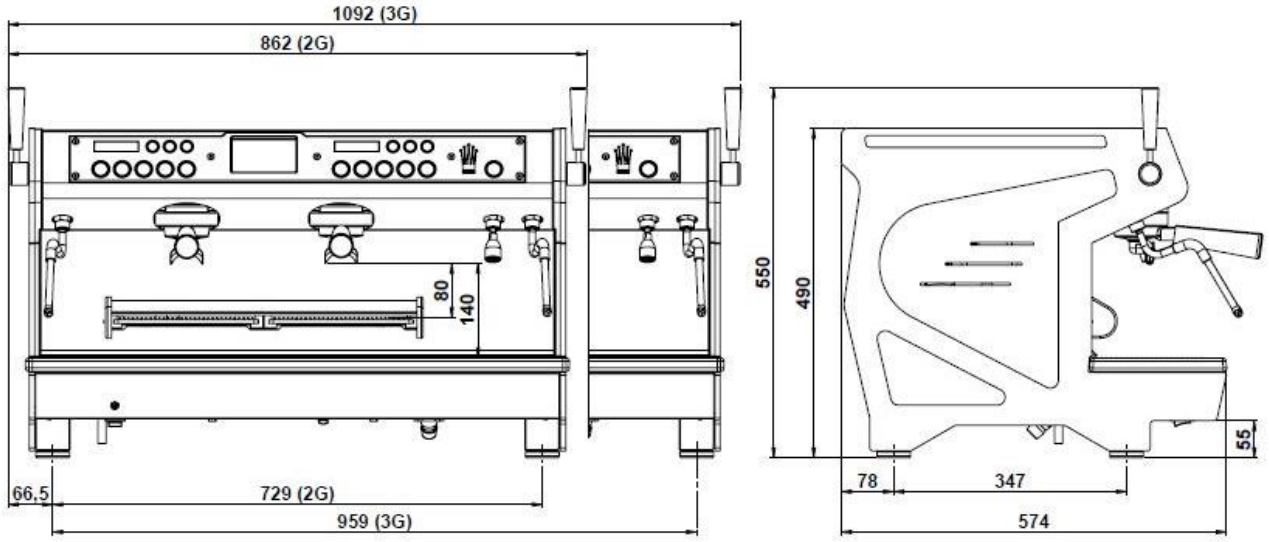
	Steam boiler		Coffee boiler			Group		Outlet	Total power
	Capacity (liter)	Power (W)	Capacity (liter)	Number	Power (W)	Number	Power (W)	Power (W)	(W)
2G	10	4200	0,9	2	1000	2	100	300	6700
3G	14	6000	0,9	3	1000	3	100	300	9600

BOILER CAPACITY (IN LITERS)		
	2 Groups	3 Groups
TOTAL	10	14
Hot water volume	6,5	10
Steam volume	3,5	4
Coffee boiler volume	2 x 0.9	3 x 0.9

	WEIGHT EMPTY (Kg)	Weight in operation (Kg)
2G	89	99
3G	103	117

2 DIMENSIONS

Cup warmer capacity: (88 espressos cups) or (56 espressos cups + 18 cappuccino cups)



3 CAUTION DURING THE USE

3.1 Ambient conditions

- The ambient temperature around the machine had to be between 5°C and 32°C.
- The ambient humidity must not exceed 70 %
- The machine must be placed such as the cup warmer is located more than 1.5 meters from the ground.

3.2 During installation

- The installation (electrical connections, water supply and drainage) must be carried out by a qualified technician approved by CONTI.
- The machine must be connected to a device conforming to the standards of the country where the machine is installed. Potential costs of equipment compliance are the only responsibility of the customer.

- For any technical intervention, the machines must always have the power disconnected from the mains.
- An effective earth connected to the terminal provided for this purpose on the device is mandatory
- A screw located under the bottom base machine, allow if necessary, to connect several machines on an equipotential way.
- Devices for disconnection from the main supply, having a contact separation of at least 3mm in all poles, must be provided in the fixed wiring in accordance with the installation rules.

3.3 During the use

- When the machine is not operating, the water cut-off valve must be closed and the electrical power supply cut.
- When the machine is not supervised it must be disconnected from the power and water supply.
- Never disconnect the earthing when the machine is connected to the power supply.
- Machines must always be disconnected from the main power, in case of technical interventions.

b) We guarantee our machines subject to a correctly sized water treatment is installed backward and adjusted according to the carbonate hardness of the water network.

3.4 Rules relating to the environment

- This device has been designed according to the European Directive No. 2002/95/EC. This refers to the restriction of certain hazardous substances in electrical and electronic equipment (ROHS)

- This device has been designed in compliance with the European Directive No. 2002/96/EC concerning waste electrical equipment (WEEE).
- This picture informs you that this device should not be discarded with household waste.
- At end of life, this product must be returned to a collection point or returned to an authorized dealer. By doing so, you will help to protect the environment and human health.

4 INSTALLATION

4.1 Standby (standby = 2 months):

- The first thing to do is to test your machine in a lab.
- If the machine stops running for a long time, you could have sediment in some places.
- More precisely in small area like the spray nozzle.

4.2 Protections

- It is necessary to place before the machine:
  - A water shut off valve.
  - An electrical protection standard, suitable for voltage and power consumption.

4.3 Water supply

- Recommended operating pressure from 0,15 MPa to 0,6 MPa
- Water connection pin 3/8"
- The water supply pipes must resist to 145 Psi / 1 MPa

4.4 Drain

- Without pressure.
- A tip on the outlet of the machine and a pipe is supplied with the machine
- Ensure a connection that causes no risk of fluid return, and ensure good drainage:
  - The drainpipe must be located lower than the machine.
  - Do not create a bend in the exhaust tube.

4.5 Supplying voltage

- To be specify when ordering: 230V – 50/60Hz Monofase
- Or: 400V – 50/60Hz Trifase

4.6 Water softeners

- When the mains water has a high hardness (>10°TH ou >4 °KH), it is recommended:
  - To use a water treatment
  - To regenerate regularly the filters.

- What is the total Hardness of the water?
  - This is the amount of calcium and magnesium ions in the water.
  - These ions are partly responsible for limestone formation.
  - It is measured with the test strip provided with the machine.
  - The unit of measurement is the ° French (° TH) or the ° German (° dH).

- What is the Karbonat Hardness of the water?
  - This is the amount of Carbonate Calcium ions and Carbonate Magnesium ions in the water.
  - These ions are completely responsible for limestone formation.
  - It is measured with chemical dropper testers.
  - The unit of measurement is ° Carbonate (°KH)

There are 2 types of water treatments:

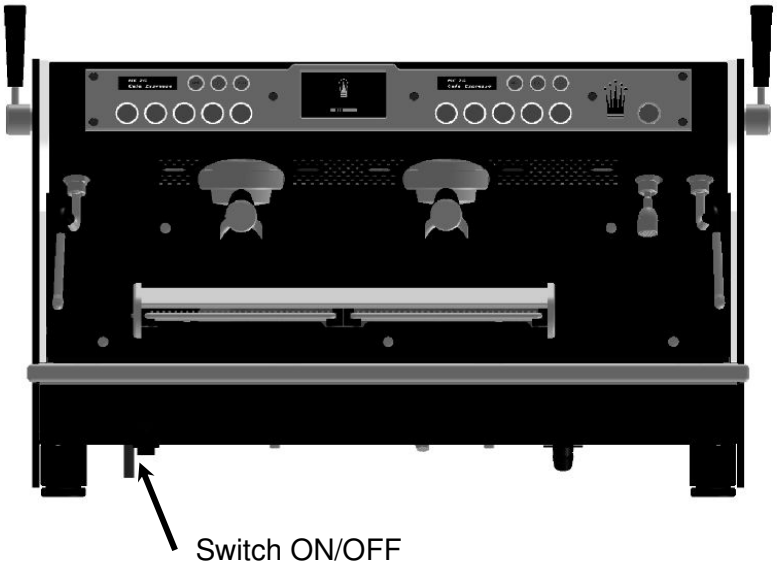
- Saltwater softeners
  - They treat the total water hardness (°TH)
  - By an exchange of sodium ions with calcium and magnesium ions.
  - They require periodic regeneration of the resins by the user.
  - To use when the water hardness is > à 10°TH or > 5 °GH
- Resins filters:
  - They treat the Carbonat hardness water (°KH)
  - By fixing carbonate ions on the resins.
  - Often fitted with microfiltration and carbon filtration.
  - To use when the Carbonat Hardness is > à 6°KH
  - Highly recommended by the manufacturer:
    - The machines are equipped with suitable protection in accordance with flowrate and the water encountered.
    - The changing cartridges is carried out by the technical service, at intervals to be determined

5 FIRST INSTALLATION

A. Open the water supply tap

B.

C. Switch on the machine using the ON/OFF switch under the drip tray.



D. After few second, the main display shows:

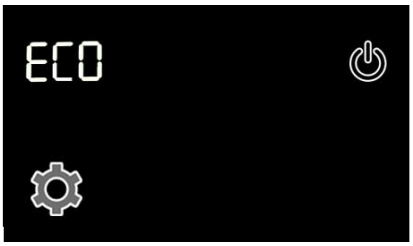
Then

E. According to the situation, the machine may have stayed in the “activated” mode just before switching off, in this case the display shows:

The groups are switched on and the machine begins to fill up.

Press anywhere on the display for 2 sec to interrupt the process:

A. The machine turns back to the “stand by” mode

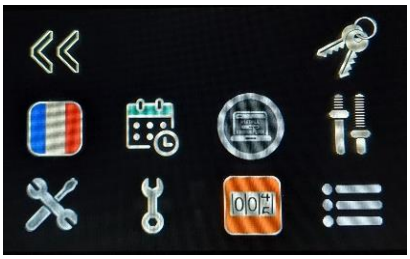


The coffee groups are switched OFF

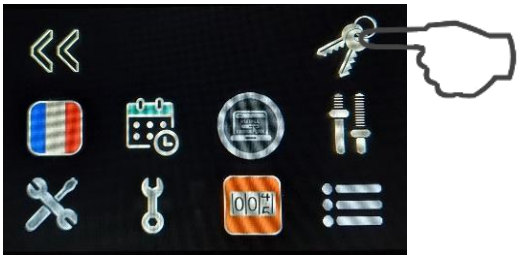
B. Enter in programming menu to access to the 1st installation:

- Press the button  for 3 seconds:

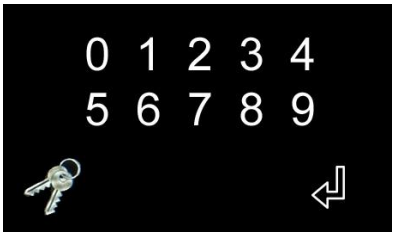
- The display shows:



- Press the button  to enter the password:

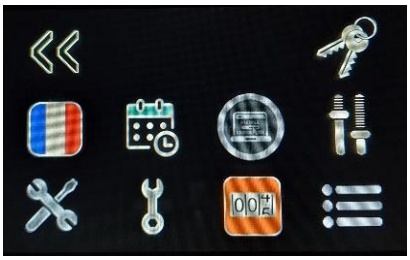


- The display shows :



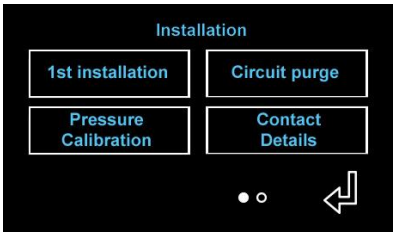
You have 8 seconds to enter the password **1956**

C. The logo  is activated “green” and you have access to the full menu :

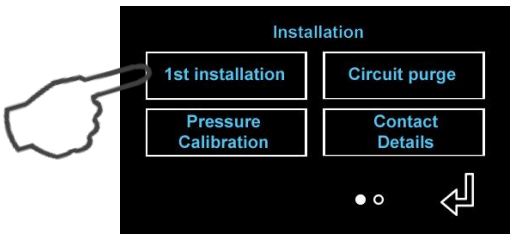


- Press on  to follow the machine installation steps :

- The display shows :

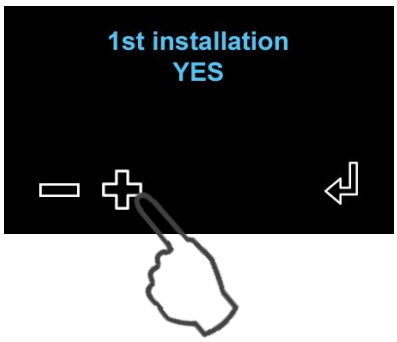


- Launch the process pressing on 1ère installation button :

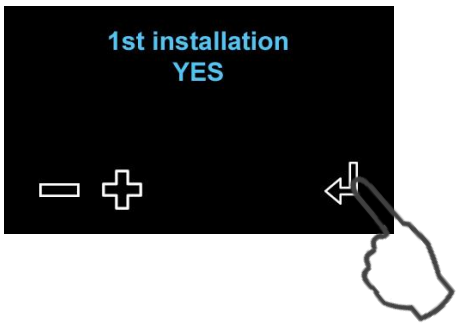


- The display shows:

- Press on ✚ to confirm :



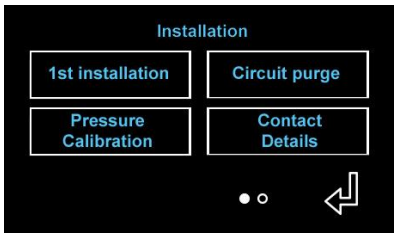
- Then on ↵ to validate and start the 1st installation process:



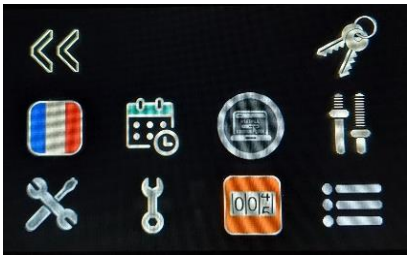
- The display shows :

Let the machine doing the 1° installation.
During this time, the air inside coffee groups is automatically vacuum by an opening cycle of purge valves, pump and groups valves.

D. The process is completed when the display shows again:



➢ Press the button ↵ to come back to the main menu



➢ Press the button « to come back to the « stand-by » mode of the machine

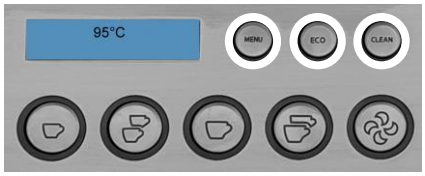
➢ The display shows :

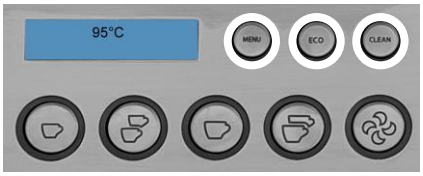
6 STARTING & WARM UP

A. Switch ON the machine by pressing the button ⏻ on the main display.

B. The machine starts up :

- Steam boiler filling id activated (with or without the pump according to the configuration)
- The keypads turn on

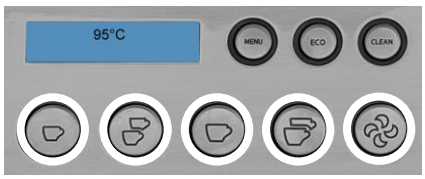




- The group displays show the temperature of the coffee boilers.

C. When the steam boiler filing is completed:

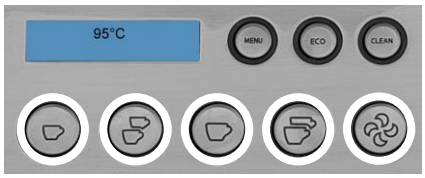
- The coffee boilers start to heat up.



- The coffee buttons are blinking
- The steam boiler heating is started at the same time (according to the power level configuration).

D. When the coffee boilers reach the programmed temperature (generally 90°C in 3 minutes) :

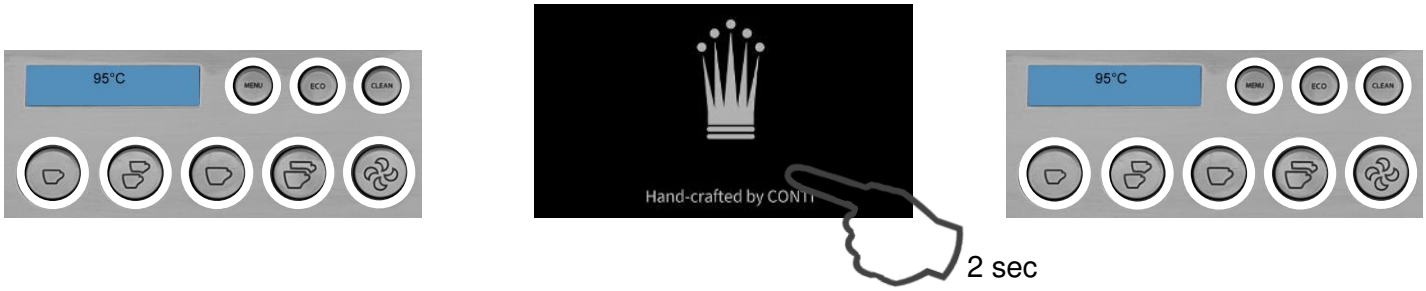
- The coffee boiler purge is launched automatically



- The coffee buttons remain lighting

Note: A "customer" logo may appear on the main display during the process

Just press the screen for 2 seconds to return to normal mode:



Then the display shows again:

E. When the steam boiler temperature reaches the programmed value (ex :123°C)

- The hot water button lights on.

- The machine is ready.

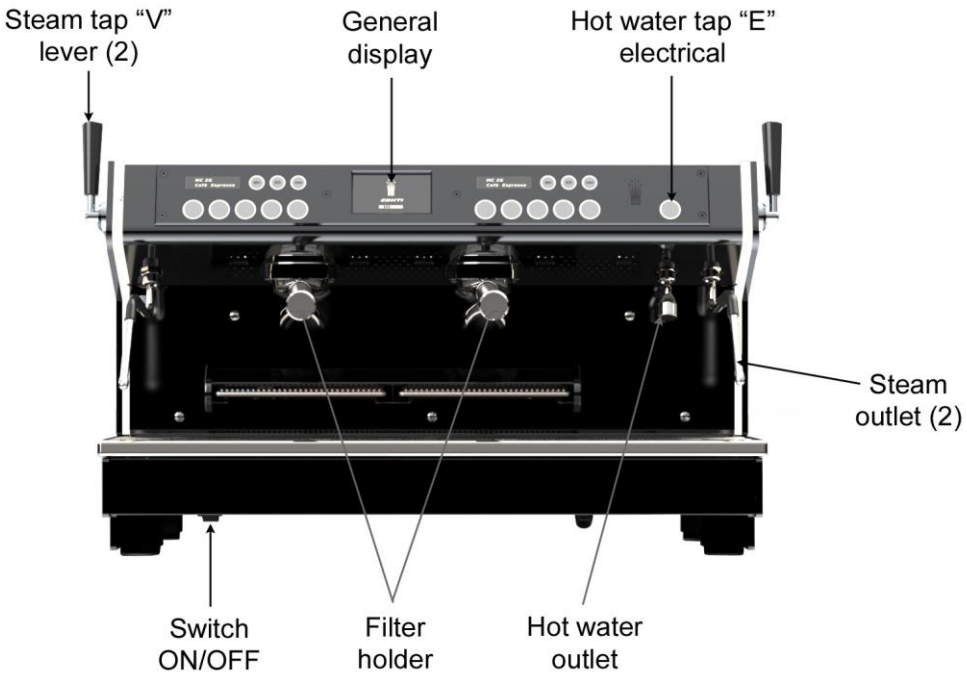
F. Main display

- The main display shows the following information's :

- Press anywhere on the display for 3 seconds to put the machine in "standby" mode

- The display shows :

7 HOW TO USE THE MACHINE



7.1 Operating elements

➢ STEAM FUNCTION

Two steams tap levers « V » are provided to allow:

- The heating of liquids by spraying steam.
- The milk foam production to create Cappuccino or Macchiato.

The liquid to be heated should preferably be placed in a deep container.
The tip of the steam wand outlet must be immersed in the liquid, without touching the bottom of the container.
The steam may also be used to sterilize and warm glasses.

After each use and absolutely **after heating milk**, always clean the stainless steel steam nozzle and the outlet nozzles with a damp cloth, removing all traces present.
A rinsing of the steam lance inner holes is to be done by a short pulse on the lever downwards to release a jet of steam.

➢ HOT WATER FUNCTION

One electric tap "E" are provided for preparing tea, grog, etc.
Be careful, not to be burnt by the pressure water spray.
For that, the valve is coupled to cold water mixing for adjusting the water T° for tea and avoids spitting hot water.

➢ FILTERS

The machine is equipped with two types of filters: 1 cup (10 G) and 2 cups (18 G)
Each filter is operating with its own holder-filter to produce respectively 1 cup or 2 cups of coffee.
Filters need to be unclogged and clean, so they need to be cleaned almost once a day with hot water, by being removed from the holder filters.
Take care to remove all residual traces of coffee and ensure proper cleanliness of perforations in the bottom of the filter.

- **FILTER-HOLDER**

Never remove the filter-holder during operation of the group. The shutdown is controllable with coffee spouts: they no longer eject liquid.
Be careful to always keep the filter-holder engaged in the group, emptied of coffee cake, to keep them warm.
In case of an extended stopping period, remove the filter-holder from the group, taking care to eject the used grounds remain in the filter-holder.
Tighten the filter-holder until to be in contact with the seal, exceeding a little bit. The sealing is guaranteed. Do not unnecessarily try to crush the seal by tightening the filter at the maximum of your possibilities. It may damage the seal prematurely.
To empty the coffee filters used, turn the filter holder upside-down and lightly tap it on the edge of a wooden box. Never strike it against metal or other hard objects.

- **DIGITAL MANOMETER M1 : BOILER PRESSURE**

The boiler pressure is adjusted in factory between 0,08 MPa (12 PSI) and 0,1 MPa (15 PSI). This value varies slightly around its nominal temperature, due to the PID system which controls the heating and limits the current consumption to its minimum.

Factory settings: 1, 2 MPa with setting range from 0,08 MPa to 0,14 MPa.

NOTE: An over-heating thermostat cut the power on the general relay, in case of an abnormal high temperature. The machine is not anymore supplied.

- **DIGITAL MANOMETER M2: PUMP PRESSURE**

The pump pressure is adjusted at 0,9 MPa in the factory. Value which allows the best extraction of coffee flavors. A bypass system evacuates over-pressure.

NOTE: Simultaneous operation of all the groups can impact a little bit the pressure level.

Visualization of the presence of water network is done by consulting the gauge

7.2 How to use the programmed doses

- Simply select one of the buttons available on each keypad to obtain the doses or the programmed drinks.

- The selected dose is shown by a blinking led on the keypad.

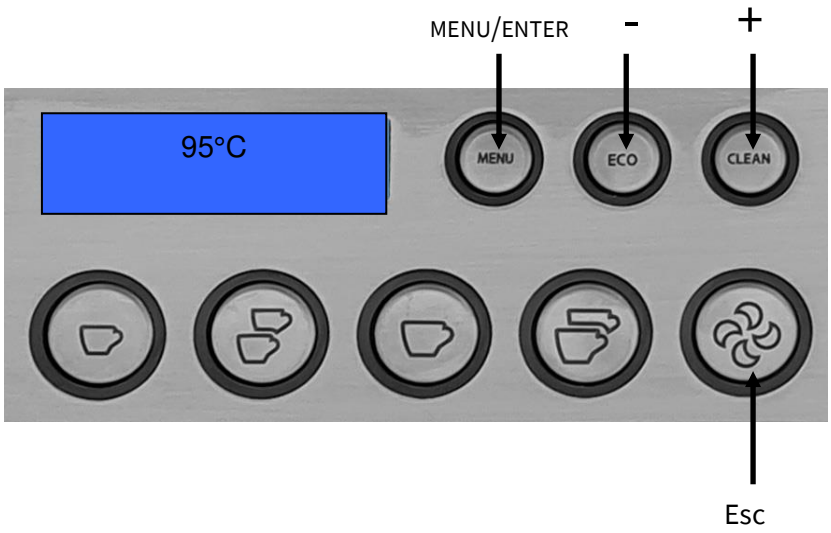
- The flow can be stopped by repressing:
  - The same button or
  - The STOP button (which is also the programming and continuous flow button).

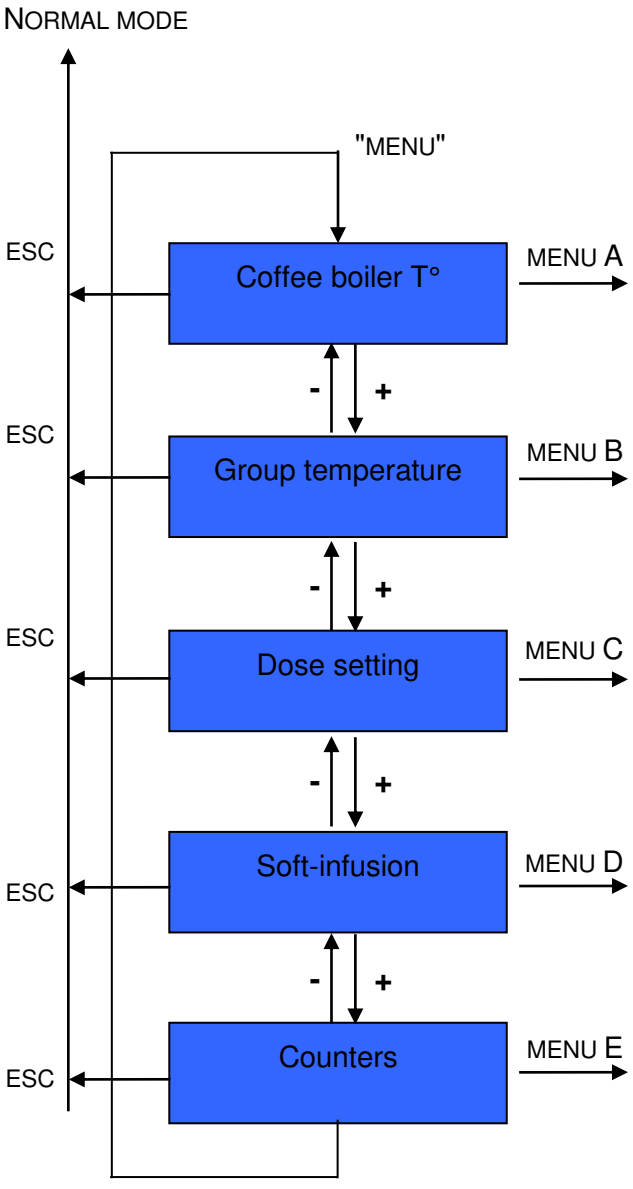
8 COFFEE GROUPS

8.1 Mode menu

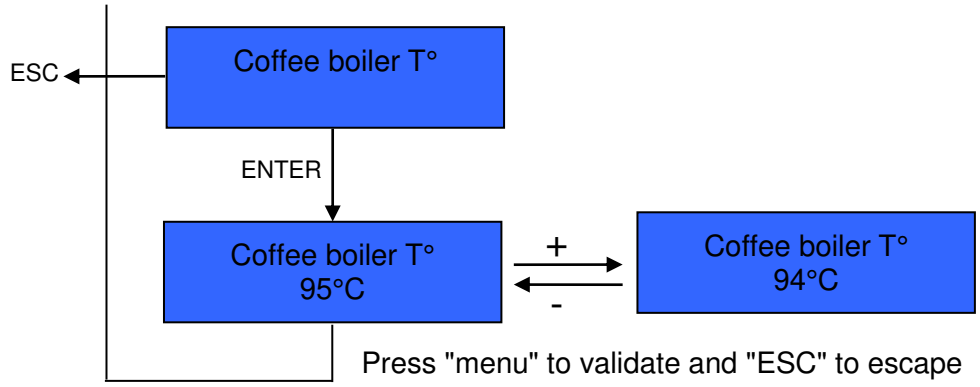
Press the "Menu/Enter" button to enter in the programming mode.

The "Esc" button is used to escape from the programming mode.

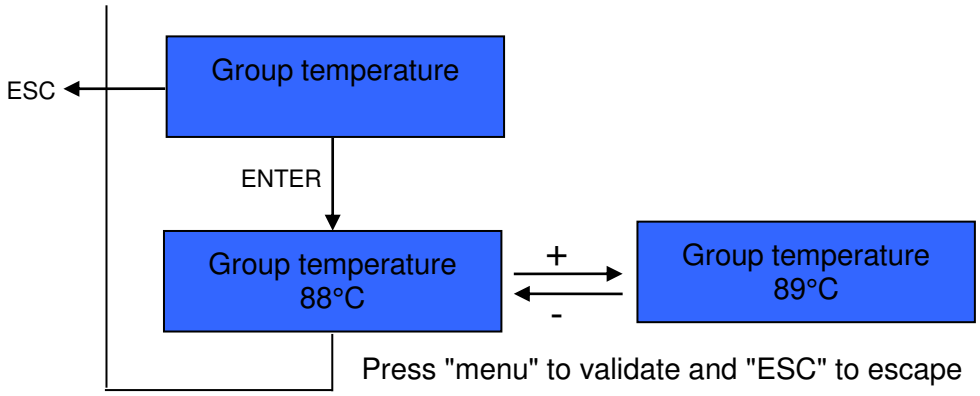




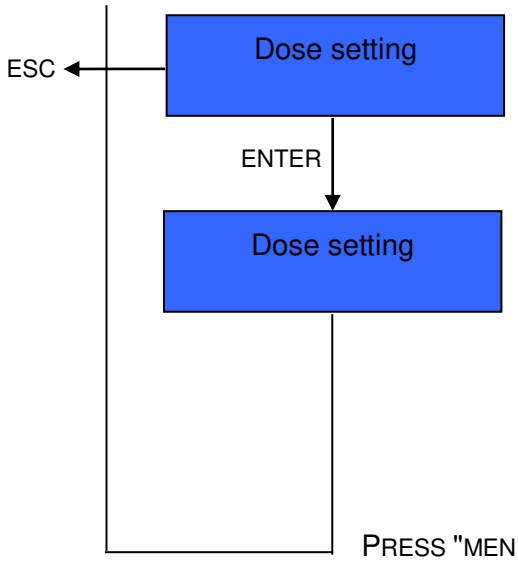
A) COFFEE BOILER TEMPERATURE



B) GROUP TEMPERATURE



C) DOSE SETTING



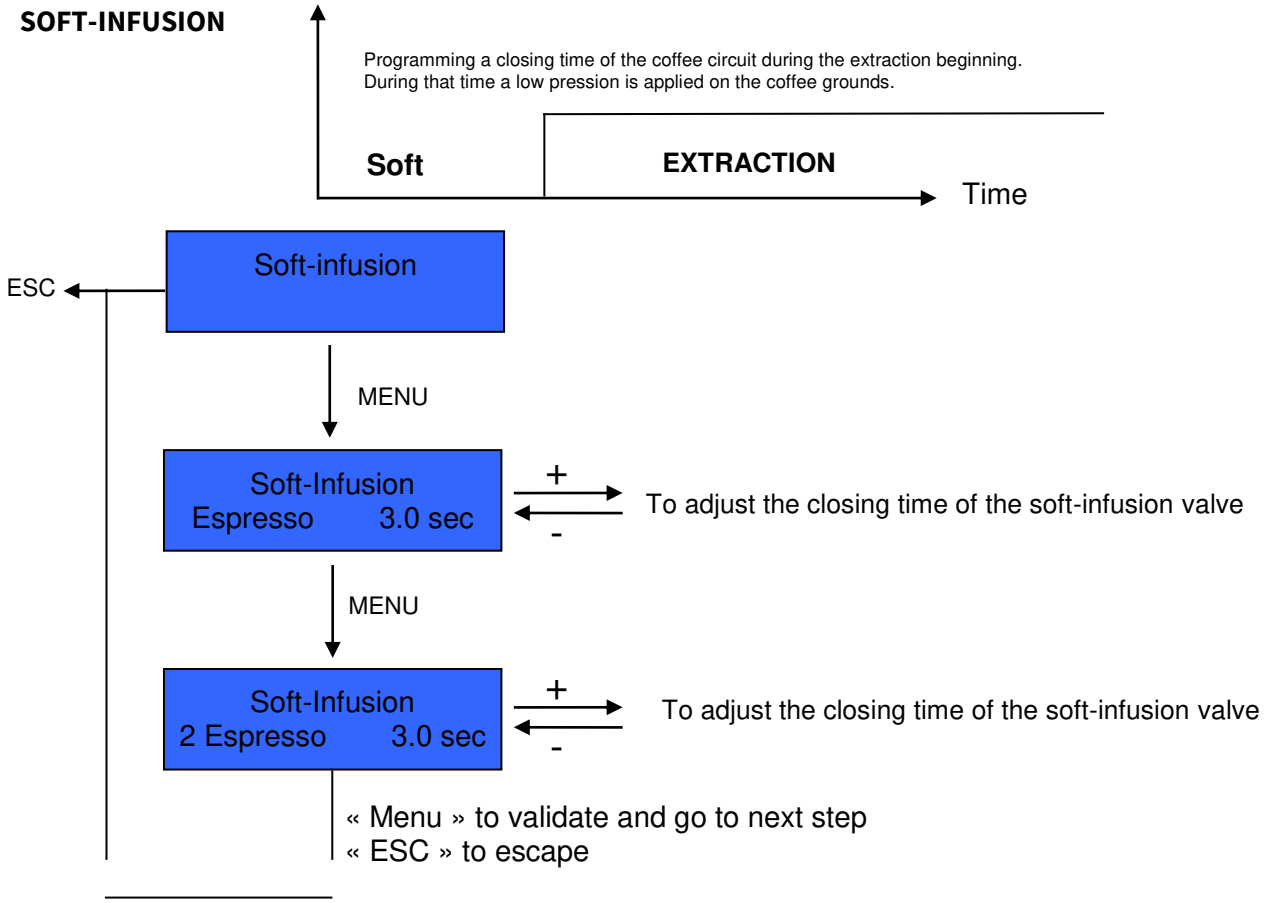
All the leds are OFF

It is enough to program the left group so that both groups are configured in the same way.

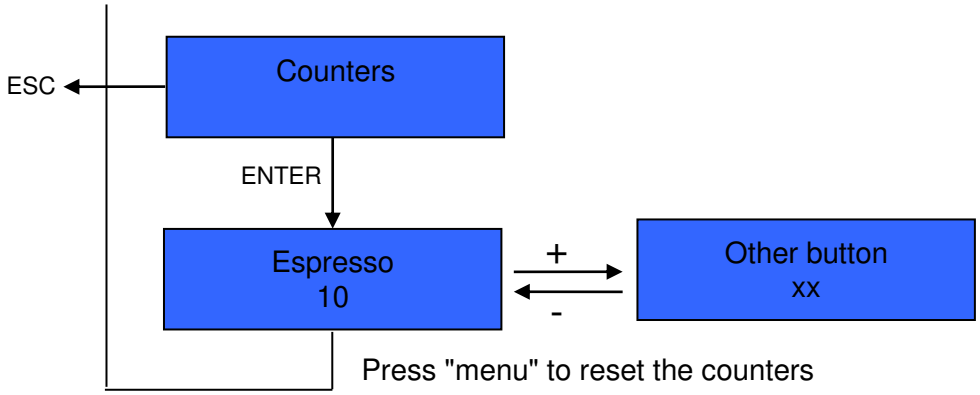
- Do the dose and stop at the desired volume.
- When the dose is programmed the led button remain lighting
- Do the same for the other buttons
- The continuous is not programmable.
- The hot water button (close to the keyboard) is programmable like the coffee dose.

PRESS "MENU" to validate and "ESC" to escape

D) SOFT-INFUSION



E) COUNTERS



8.2 Group eco mode

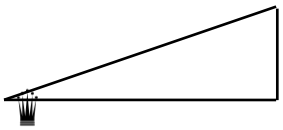
If you press on the "ECO" button of one group, you enter in the "ECO" mode: the coffee boiler switches off. The group is disabled but the group head is maintained at temperature. The other groups remain functioning. Press again on the "ECO" button to enable the group.

8.3 Clean button

If you press on the "CLEAN" button of one group, a cleaning cycle starts.

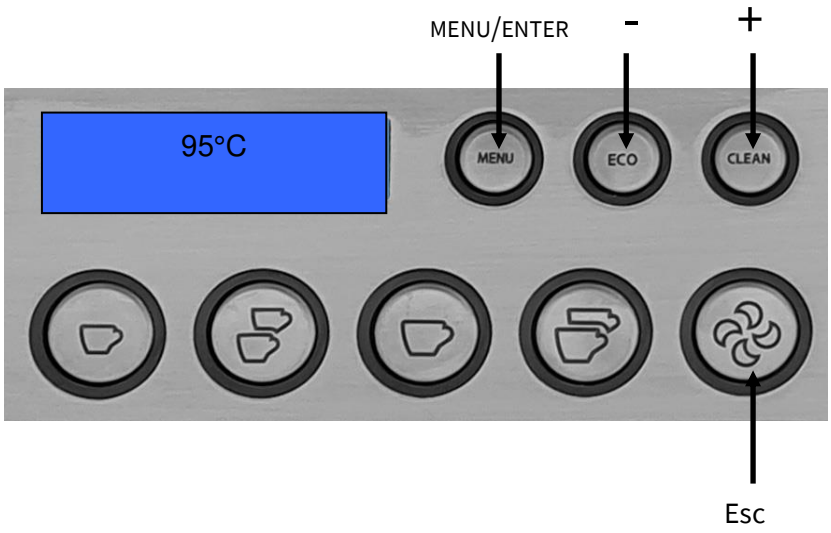
- Prepare the blind filter holder and cleaning tablet
- Put it on the group head
- Press the "CLEAN" button
- The machine starts the cleaning cycle without any special indication.

A bar graph indicates the cleaning progress.



9 PROGRAMMING DOSES METHODOLOGY

9.1 Coffee doses programming:



2 ways of programming are possible to set the coffee dose.

- Choose 1st group (on the left when the user is in front of the machine)
  - To program all groups at the same time with the same value.
  - The programmed key will have its equivalent key programmed identically on the other groups
- Choose each group separately, if they the groups need to have different value.

Methodology:

☞ Put the ground coffee (1 dose or 2 doses according to the programmed key), in the suitable filter holder.

☞ Press the "MENU" key: the display show "Coffee boiler T"

☞ Press 2 times the "+" key: the display shows "Doses setting"

☞ Press the "MENU" key: the display shows:

Doses setting	
XX s	YY ml

☞ The button to be programmed are not lighting.

☞ Press the key to be programmed to start the flow and press again when water quantity is correct.

☞ The value is directly registered

☞ The programmed key remains "On"

☞ Then, keep programming the next key, and so on for the other keys.

Note: On the factory, each machine undergoes a test protocol on which a program has already been completed, according to the following settings:
1 espresso = 2.5 cl / 2 espressos = 5 cl / 1 coffee = 4,5 cl / 2 coffee = 9 cl

9.2 Hot water dose programming:

Methodology:

The programming is made from the rightmost keypad of the machine

- Press the “MENU” button on the coffee group.
- The display show “Coffee boiler T°”
- Press 2 times the “+” button: the display shows “Doses setting”
- Press the “MENU” button: the display shows:

Doses setting
XX s YY ml

- Push **hot water key** to start the flow and push again when the water volume is correct.
- The timing key is registered.

10 GENERAL DISPLAY

10.1 eco mode (general)

- Press the ECO button to put the machine in general ECO mode.

- The machine switches to ECO mode
- The steam boiler is kept at 60°C.
- Products can no longer be delivered.
- The display shows:

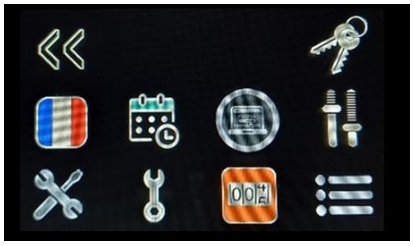
- Only the ECO keys on the keyboards are lit..
- To return to "stand-by" mode, press anywhere on the main screen principal

- The display shows :

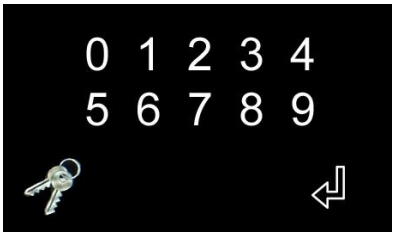
10.2 Programming on general display

- Press on the button  for 2 seconds.

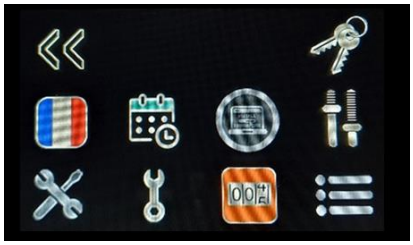
- The display shows the 8 main programming menus :



- Some menus are grayed out = inaccessible without entering the navigation password
- To access the full menu: Enter the password:
  - Press on : 
  - The display shows :

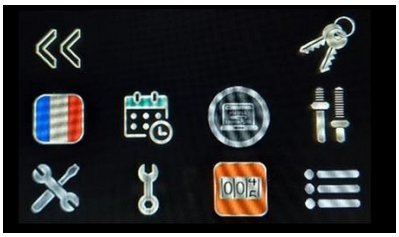


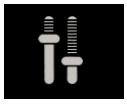
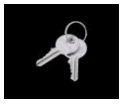
  - You have 8 seconds to enter the password 1956
  - The logo  is activated and you have access to the full menu :



If a password is not entered, the steps available are only those marked with: (*)

10.3 General menu on the 1st level:

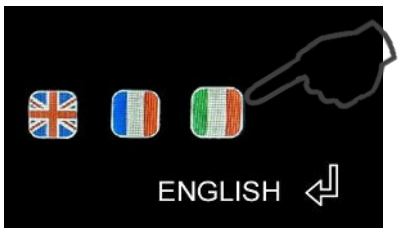


	Language	Allow to define the language of the machine
	Clock	Allow to adjust the clock and the automatic “switch on and switch off”
	Installation	Gathers the technical steps to be carried out during the installation
	Settings	Allows to adjust all the parameters related to the extraction quality
	Maintenance	Gathers the maintenance actions
	Machine Parameters	These are the internal parameters of the machine
	Counters	Counters for product on each groups and general (Resettable and not resettable)
	Accessibility	To define the access levels to the programming
	Password	Entering the password for access to the programming machine

- Access to each menus by pressing the desired logo.

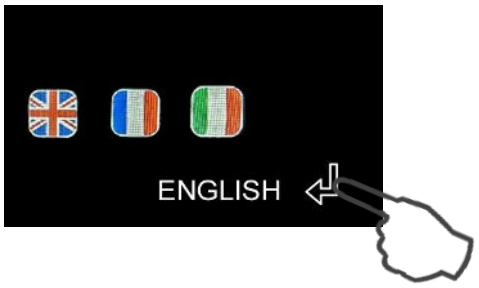
10.4 Language (*) 

- Press on the desired flag to change the language :

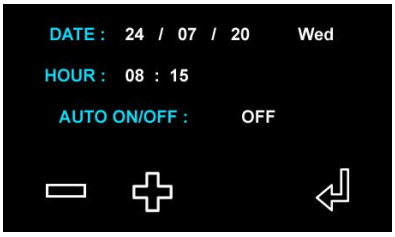


- The name of the active language is displayed at the bottom right

- Press on ↵ to validate:

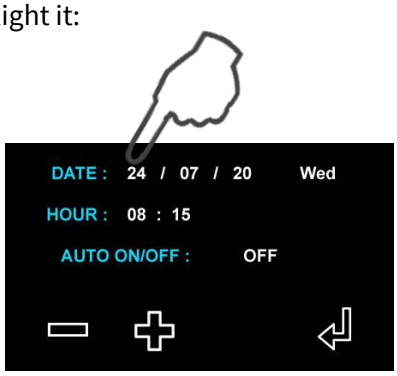


10.5 Clock (*)

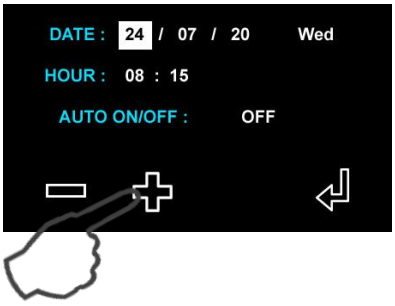


10.5.1 Date and Hour adjustment

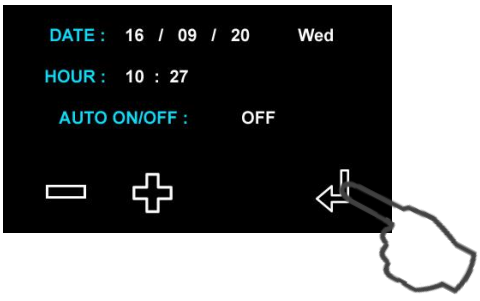
- Press the desired digit to highlight it:



- Press on **+** or **−** to change the value:

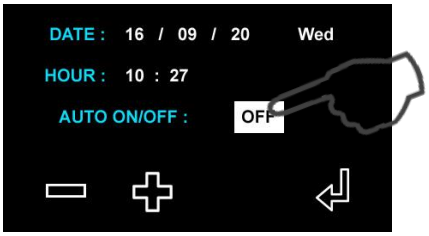


- Press on ↵ to validate the new value:



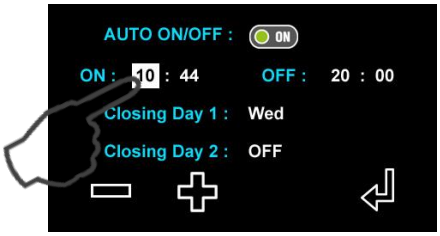
10.5.2 Automatic switching On/OFF adjustment

- Press the “OFF” digit to enter in the Auto On/Off submenu:

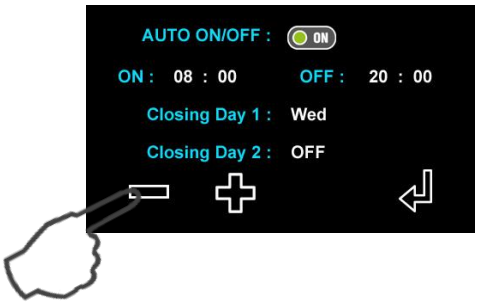


- Confirm by pressing OFF again:

- Auto On/Off function comes “On”. Press the desired digit to highlight it:



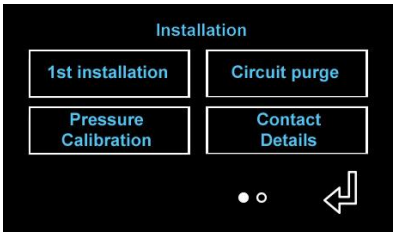
- Press on **+** or **−** to change the value:



- Proceed in the same way to change each value that may appear highlighted.
- The closing day corresponds to the day when the machine remains switched off.
- You can choose up to 2 days of closing

- A Press on ↵ to validate the new value, and escape from the menu:

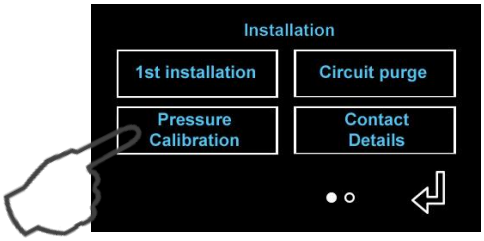
10.6 Installation



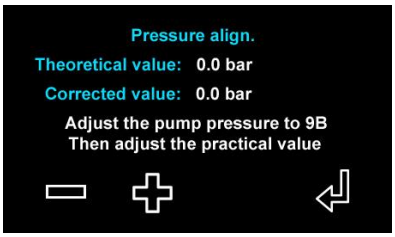
10.6.1 1st installation: see detailed procedure in chapter 5

10.6.2 Pressure alignment

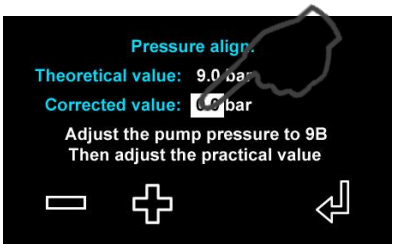
- This menu allows to adjust the value shown by digital manometer according to the value shown by the mechanical manometer.
- Press on the button “Pressure Alignment”.



- The pump starts up.
- The display shows :



- Press the digit of the corrected value to highlight it:



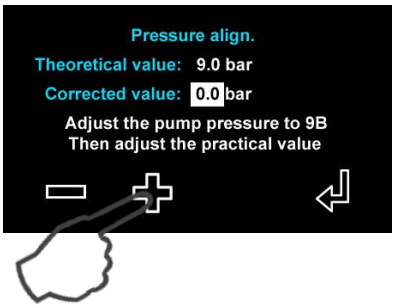
- Press on **+** or **−** to change the value.

- Adjusting method:
  - The user read the value shown by the mechanical manometer (example: 9 bars)
  - The display shows:

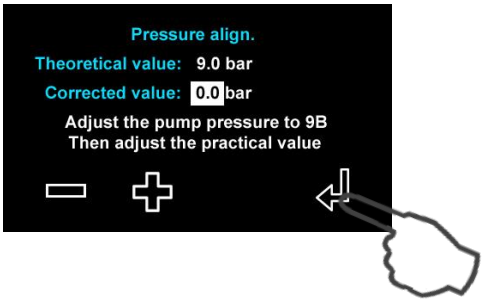
    - V.TH = Theorical value (That should have been be displayed)
    - V.Cor = Corrected value (The one will be shown on the display)

  - The user adjust “V.Cor” with **+** and **–** to display the same value as the mechanical one

  - The displayed value will be V.Cor always the same as the mechanical manometer one.

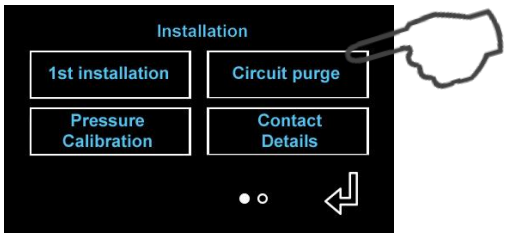


- A Press ↵ to validate the new value:

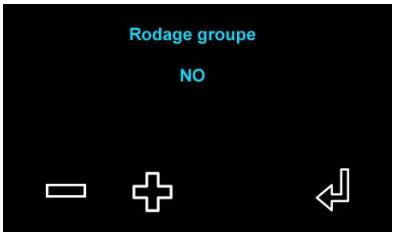


10.6.3 “Running in” of coffee groups

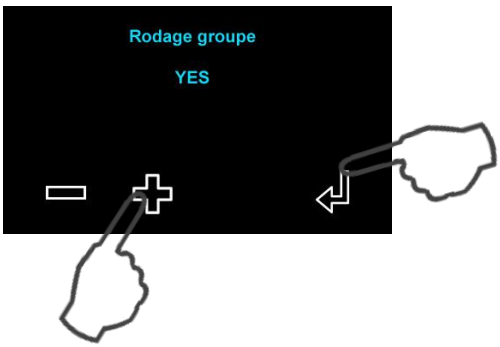
- A “running-in” process must be done with the machine warm and stabilized
- This step consists of expelling the air from the coffee circuit in order to guarantee an optimum soft infusion process.
- Press the button « Running In »:



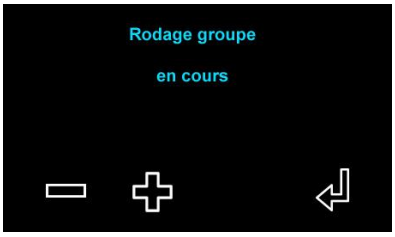
- The display shows :



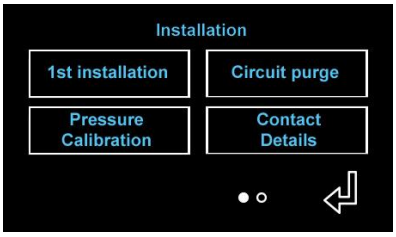
- Press **+** to confirm, then press ↵ to validate:



- The machine performs automatically the lapping process:
- The display shows :

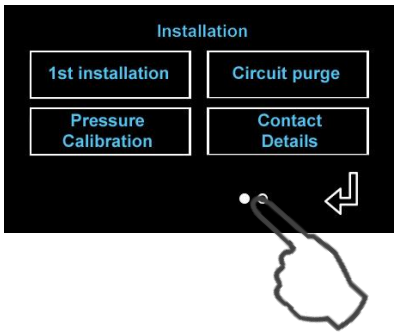


- This process takes about 5 to 8 minutes.
- When it is finished, the display shows again :

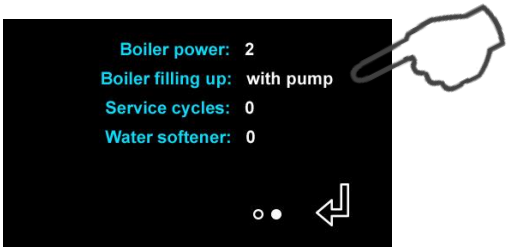


10.6.4 Further installation parameters adjustment

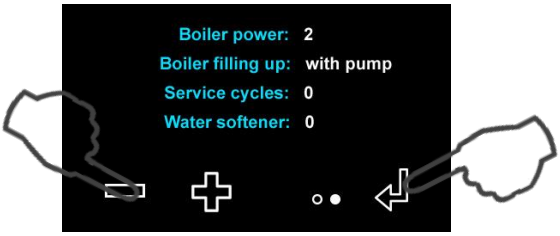
- Press on the bookmark dots ●○ at the bottom of the screen to change page:



- The display shows :



- Press on the desired digit to highlight it and change the value.
- The display shows the logos **+** et **−** .
- Press on **+** et **−** to adjust the value and ↵ to validate



10.6.4.1 Boiler power:

- This step is to define the maximum power supply available for the machine.
- Example: 2 → Max 22 Amp. (see chapter power management)
- Programmable value: from 1 to 6

10.6.4.2 Boiler filling mode:

- This step allows the machine to fill the tanker with or without the pump.
- In case of “kit solo” system the machine needs to be adjusted with a filling up with pump.
- Programmable value : with or without pump

10.6.4.3 Maintenance cycle:

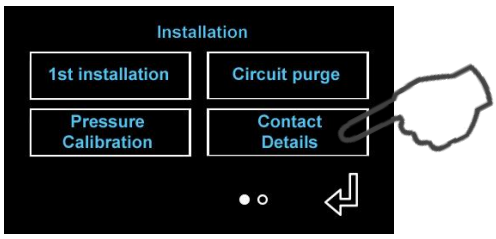
- This menu allows the machine to display a message for a service after a programmed number of cycle (example 20000 cycles)
- Keep the button pressed to accelerate the scrolling during the adjustment
- Programmable value : 0 to 990000 cycles
- If the value = 0: function disabled.

10.6.4.4 Water filter:

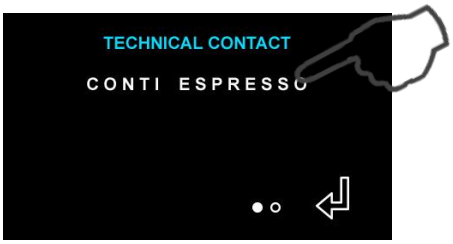
- This parameter defines a number of liters of water consumed from which the machine displays an invitation to change the filter cartridge (depending on the hardness of the water and the capacity of the water treatment)
- Keep the button pressed to accelerate the scrolling during the adjustment
- Programmable value : 0 à 99999 liters
- If the value = 0: function disabled.

10.6.5 Technical service contact details

- This menu allows you to enter the contact details of the maintenance technician.
  These details will be displayed on the screen in the event of a breakdown or a need for maintenance

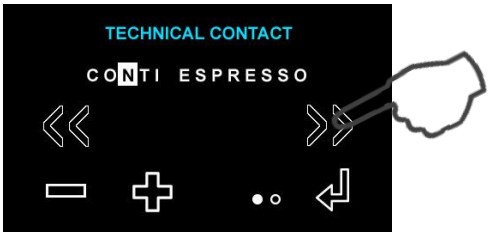


- Press on the desired digit to change the value:

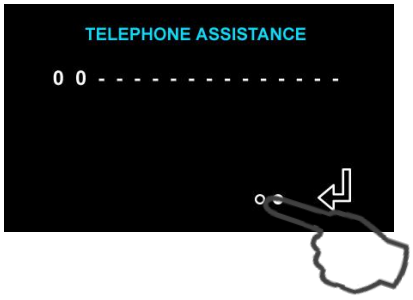


- Press on **+** and **−** to change the characters:

- Press on « or » to change the digit:



- Press on the bookmark dots ●○ at the bottom of the screen to access to the entry of the telephone number:



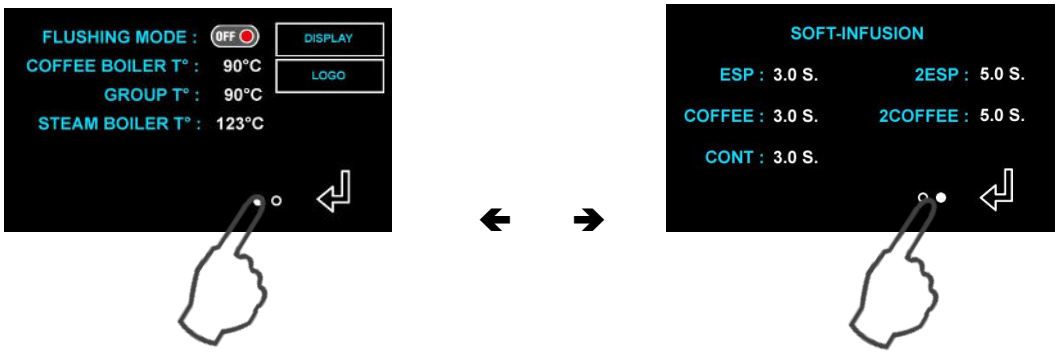
- Press + or − to change the characters:

- Press on « or » to change the digit

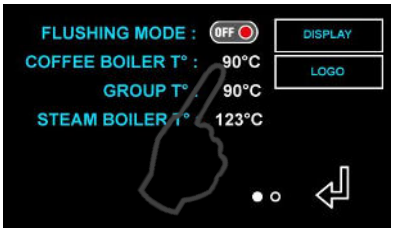
- Press ↵ to validate and escape from the menu:

10.7 Settings 

- The menu is spread over 2 pages.
- Press on the bookmark dots  at the bottom of the screen to navigate from one to another:

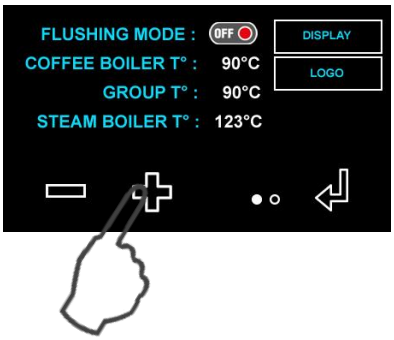


- Press on the desired digit to highlight it to change the value:



10.7.1 Coffee boiler temperature:

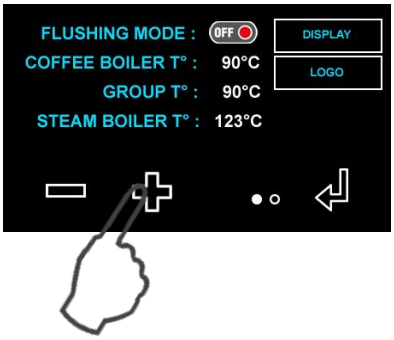
- This menu is used to adjust the temperature of the coffee boilers.
- The temperature indicated by default corresponds to the setting programmed on the left-hand coffee boiler.
- Press on **+** and **-** to change the value:



- The new temperature setting will be changed on all coffee boilers.
  All coffee boilers will have the same set point temperature.
- Programmable value: between 80 and 95 ° C
- Press on ↵ to validate and escape from the menu.
- For differentiated settings, go to the programming dedicated to each group via the keyboards.

10.7.2 Coffee group head temperature:

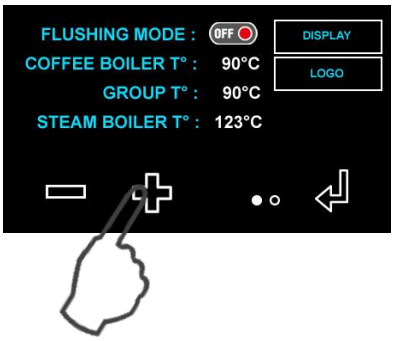
- This menu is used to adjust the temperature of the heating cartridges of the group heads.
- The temperature indicated by default corresponds to one programmed on the left group
- Press on **+** and **-** to change the value:



- The new temperature setting will be changed on all groups
  All groups will have the same set temperature value
- Programmable value: between 80 and 95 ° C
- Recommended value = 2 ° C less than the coffee boiler temperature
- Press ↵ to validate and escape from the menu
- For differentiated settings, go to the programming dedicated to each group via the keyboards.

10.7.3 Steam boiler temperature:

- This menu is used to adjust the temperature of the steam boiler.
- The temperature indicated by default corresponds to the setting programmed on the steam boiler.
- Press on **+** and **-** to change the value:



- Programmable value: between 80 and 125 ° C
- Recommended value = 123°C

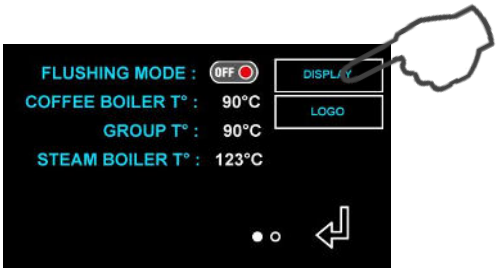
10.7.4 Flushing mode :

ON **Flushing mode is active**: the 1st espresso key of each group becomes a “Flush Key”
= it opens for 3 seconds when pressed

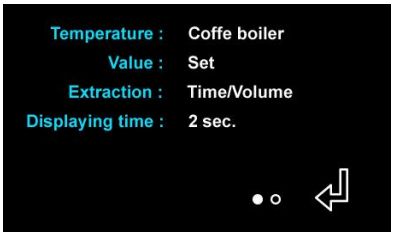
OFF **Flushing mode is disabled**

10.7.5 Display menu :

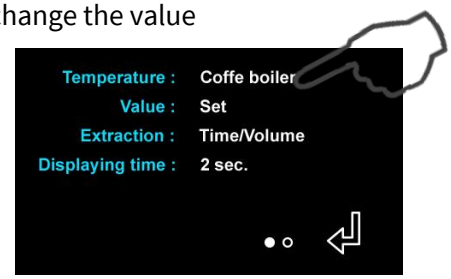
- This menu allows to define:
  - The choice between coffee temperature or group temperature to be displayed
  - The information to be displayed during extraction
- Press on the button “Display”



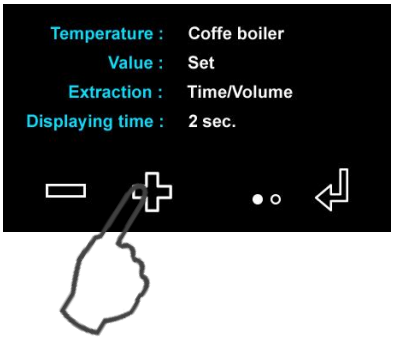
- The display shows :



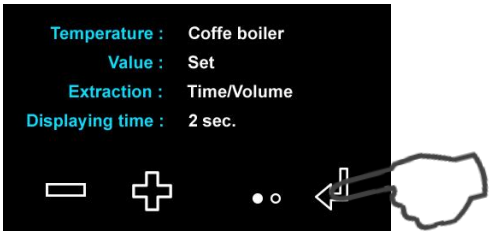
- Press on the desired digit to change the value



- Press on **+** and **-** to change the value:



- Press on ↵ to validate and escape from the menu:



10.7.5.1 Temperature

- Choice of the temperature zone to be shown on the coffee group display
- 2 possible values:
    - **Coffee boiler** = display of **coffee boiler temperature** during use of machine
    - **Group** = display of the **group head temperature** during use of the machine

10.7.5.2 Value

- Choice of the temperature type to be shown on the coffee group display:
    - If the value is « setting »
        - The temperature shown on each coffee group displays will be the Setting T° value
    - If the value is « Actual»
        - The temperature shown on each coffee group displays will be the Real T° value.
    - If the value is « Average»
        - The temperature shown on each coffee group displays will be an average of the real T° value.

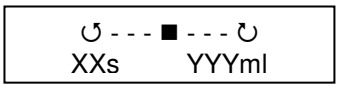
10.7.5.3 Extraction

- Choice of the type of extraction data to be shown during extraction:
    - If the user chooses "**Time / Volume**" (**default value**):
        - The viewing during the extraction is this one (@ represents cups logos)

    - If the user chooses "**Time / Volume / Flow**"
        - The viewing during the extraction is this one:

        - ZZ ml/s is the flow in ml/s. **It's YYY on XX (on 2 digits)**

    - If the user chooses "Quality criteria"
        - The viewing during the extraction is this one:



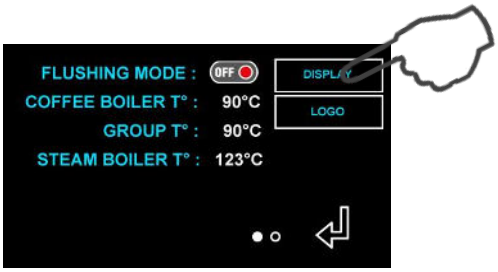
(See more explanations in chapter: coffee quality criteria displayed)

10.7.5.4 Afterglow

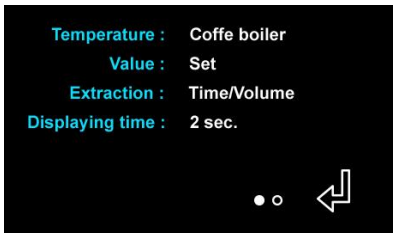
- This menu defines the time during which the parameters of the last extraction remain displayed on the group displays.
- Programmable value: between 0 and 60 seconds
- Recommended value = 20 sec.
- Note: On the main display, the data related to the volumes and times of the last extraction remain permanently displayed, and are updated at each new extraction.

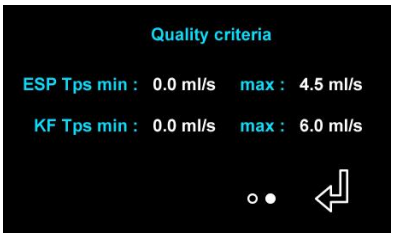
10.7.6 Quality Criteria:

- This menu allows you to adjust the scale of the bar graph when the machine needs to display the extraction speed in graphical form.
- Press on the button “Display”

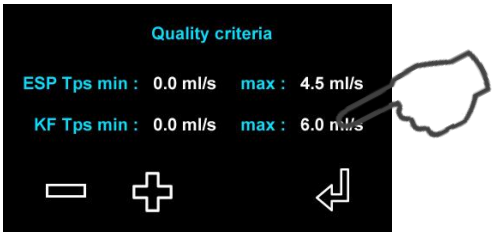


- The display shows :

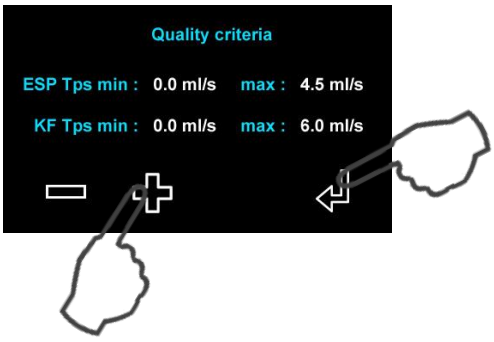




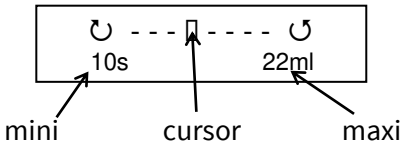
- Press on the desired digit to highlight it to change the value :



- Press on **+** and **-** to change the value, and press ↵ to validate and escape from the menu:



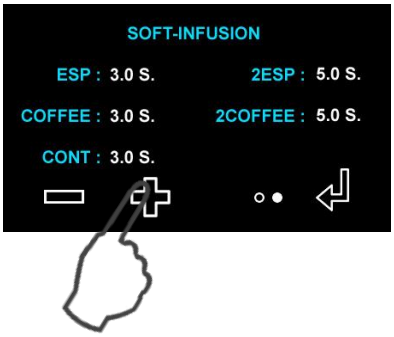
- These values correspond to the minimum and maximum acceptable flow rate (ml/s) to consider an espresso product (respectively coffee) as a quality one.
- See chapter “Quality Criteria »
- The group display will position a cursor on a bar graph according to the flow rate and according to the min / max scale chosen in this menu.



10.7.7 Soft-infusion

- This menu allows to adjust the soft-infusion values of all groups at the same time.
- Press on the desired digit to highlight it to change the value:

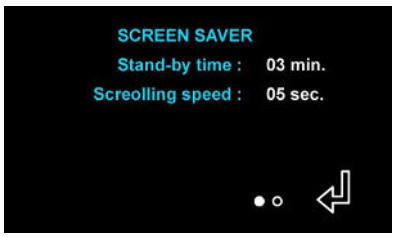
- Press on **+** and **-** to change the value:

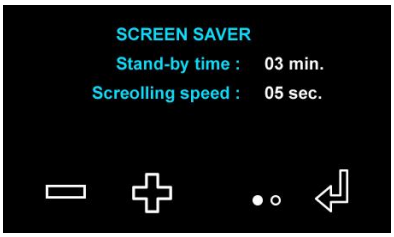


- Press ↵ to validate and escape from the menu:

- Soft infusion can be programmed for the 5 types of buttons
- BUT all groups will be programmed the same.
- For differentiated settings, go to the programming dedicated to the group using the group keypad.

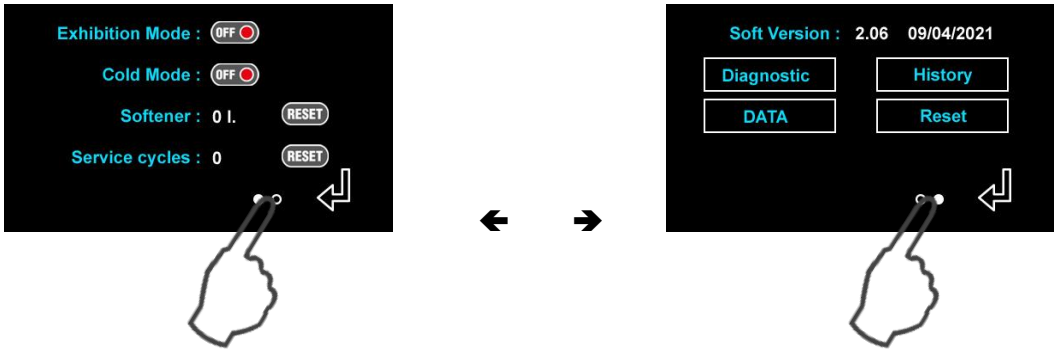
10.7.8 LOGO



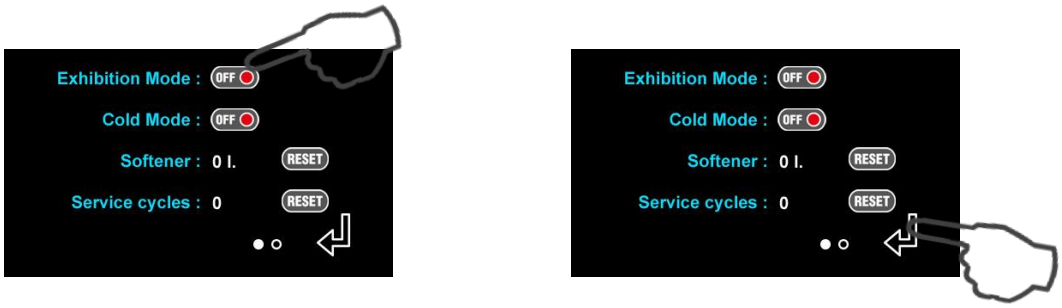


10.8 Maintenance

- The maintenance menu is spread over 2 pages
- Press on the bookmark dots at the bottom of the screen to navigate from one to another:

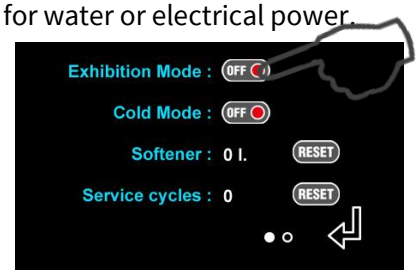


- Press on desired icons to change the state, then on ↵ to validate and escape from menu:



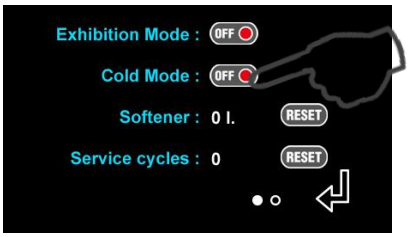
10.8.1 Exposition mode

- This function allows you to expose a machine without the need for water or electrical power.
  - OFF : Disabled function.
  - ON : Active function:
    - No filling up tanker
    - No heating up boiler
    - No doses available



10.8.2 Mode cold

- This function allows to operate the machine on cold to facilitate technical access without burning yourself.
  - OFF : Disabled function.
  - ON : Active function:
    - The machine operates normally
    - But all the heaters are off



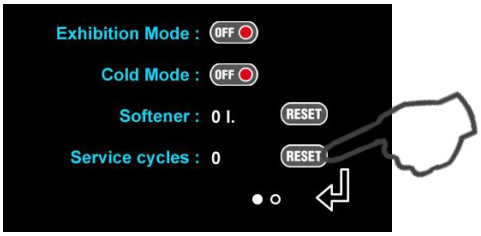
10.8.3 Water filter: Reset filter counter

- The display shows the amount of water consumed since the last reset.
- Press RESET **for 2 seconds** to reset the counter:

- This operation is to be carried out after each change of the filter cartridge.

10.8.4 Maintenance cycle : Reset maintenance cycle counter

- The display shows the number of cycles performed by the machine since the last reset.
- Press RESET **for 2 seconds** to reset the counter:



- This operation is to be carried out after the visual maintenance operation (Generally gaskets and showers).

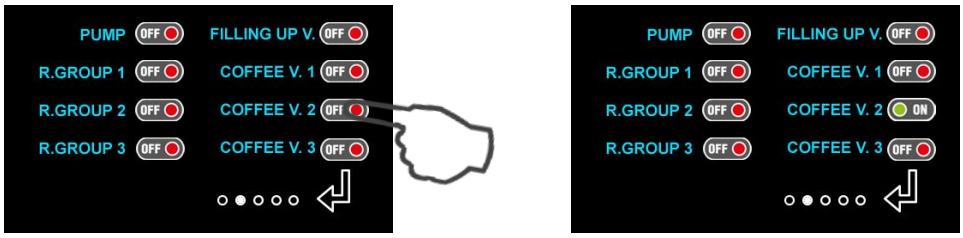
10.8.5 Diagnostic

- The menu allows supplying and testing separately all the outlets:
- Press the “Diagnostic” button

- The diagnostic menu is spread over 4 pages.
- Press on the bookmark dots ●○ at the bottom of the screen to navigate from one to another:

- Each output is indicated in the “OFF” status OFF
- To activate an output, just press ON

Example :



- The solenoid valve remains “ON” for 10 seconds during the diagnosis then it returns to OFF

- Output list :

Steam 1: XXX °C	(Real temperature read in the steam boiler)
Steam 2: XXX °C	(Real temperature read in the steam boiler)
Steam 3: XXX °C	(Real temperature read in the steam boiler)
Coffee 1: YY °C	(Real temperature read in the 1° coffee boiler)
Coffee 2: YY °C	(Real temperature read in the 2° coffee boiler)
Coffee 3: YY °C	(Real temperature read in the 3° coffee boiler)
R grp 1: ZZ °C	(Real temperature read in the 1° head group)
R grp 2: ZZ °C	(Real temperature read in the 2° head group)
R grp 3: ZZ °C	(Real temperature read in the 3° head group)
Pump:	Pump motor
Filling up valve:	Filling up valve for steam boiler
Coffee 1 valve:	Coffee valve for group n° 1
Coffee 2 valve:	Coffee valve for group n° 2
Coffee 3 valve:	Coffee valve for group n° 3
Pre-Inf valve Grp 1:	Pre-Brewing valve for group n° 1
Pre-Inf valve Grp 2:	Pre-Brewing valve for group n° 2
Pre-Inf valve Grp 3:	Pre-Brewing valve for group n° 3
Hot water 1 valve:	Left hot water valve + Left cold water valve
Hot water 2 valve:	Right hot water valve + Right cold water valve
Steam C. Valve:	Steam valve for steam control
Vacuum valve grp 1:	Purge valve for coffee boiler n° 1
Vacuum valve grp 2:	Purge valve for coffee boiler n° 2
Vacuum valve grp 3:	Purge valve for coffee boiler n° 3
Air valve:	Air valve for steam control
On / Off:	Relay dedicated to supply the light transformer

- Press on ↵ to validate and escape from the menu

10.8.6 Alarm History

- See “alarm” chapter

10.8.7 Software upgrade

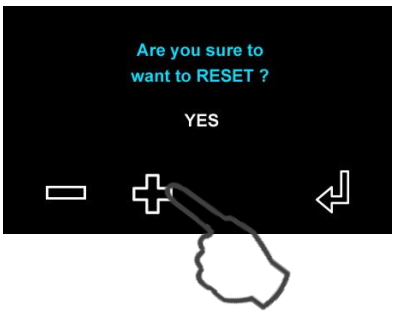
- In progress

10.8.8 Reset

- The menu allows to set the factory setting inside the machine
    - Machine version = 2G and coffee model
    - Power: 2
    - Language: English
- Press on RESET button:

- The display shows :

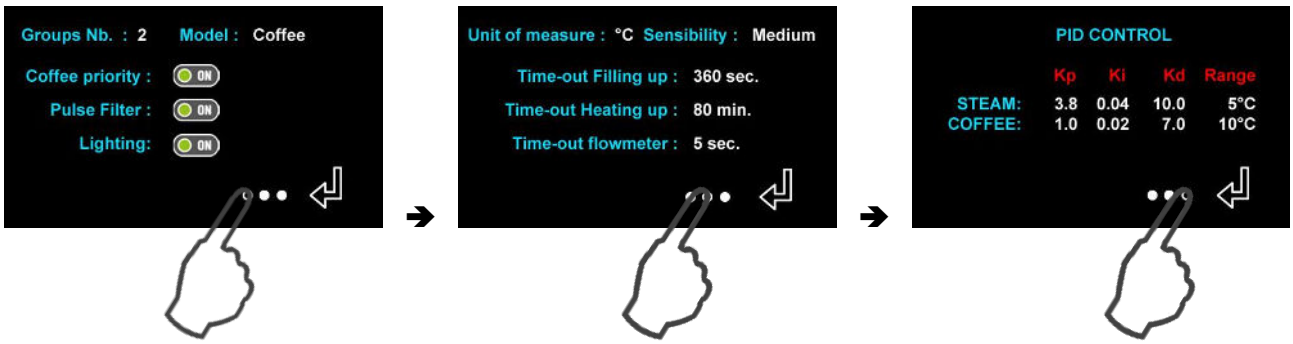
- Press + to confirm and ↵ to validate:



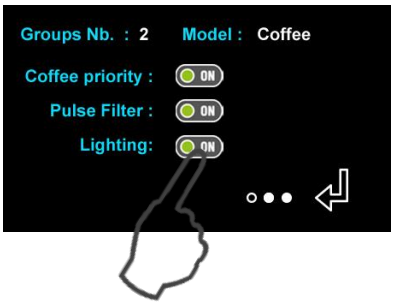
- The display shows :

10.9 Technical parameters (*)

- Technical parameters menu spread over 2 pages
- Tap the bookmark dots ○●● to navigate from one to another:



- Press on the desired icons to change the state from "**ON**" to "**OFF**"
- Press on the desired digit to highlight it and change the values with **+** or **–**:



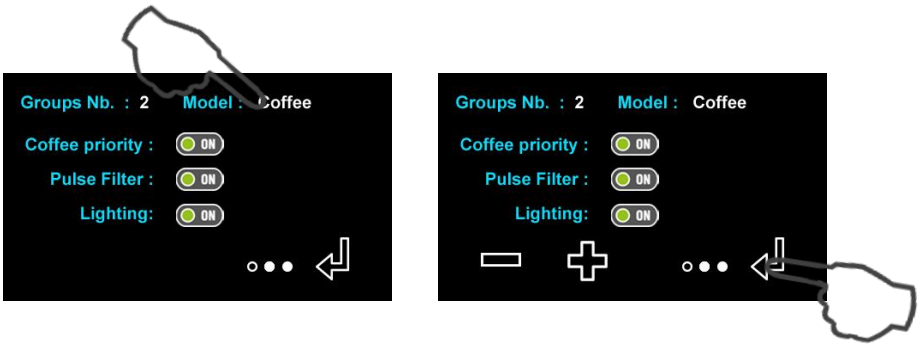
- Press on ↵ to validate and escape from the menu:

10.9.1 Number of groups

- Allows to declare the number of groups on board of the machine.
- Value = 2 or 3 groups

10.9.2 Model

- Allows to declare the machine model that the electronics must manage.
- Value = Coffee or Steam Control
- (Steam control to manage the temperature sensor input linked to the steam control)



10.9.3 Coffee priority

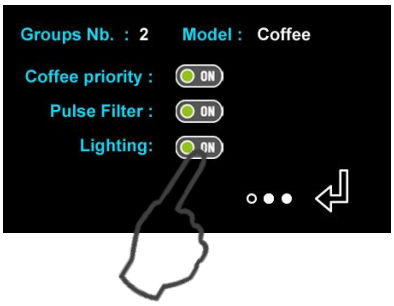
- The « coffee priority » won't allow the steam boiler filling up during a coffee extraction

10.9.4 Pulse filter

- In progress Pulse filter activated: the machine uses the specific Monte Carlo dose counting
- Pulse filter disactivated: the machine counts the water goes through the flowmeter for the dose

10.9.5 Lighting

- This step allows to choose if during the functioning of the machine the "side white leds" are "switch off" or "switch on".



- Value :
    - ON = side lights are ON while the machine is running
    - OFF = the side lights are OFF during machine operation
- Sometimes useful in "night atmosphere" mode
- Note: in ECO mode the side lights are always off.

10.9.6 Unit of Temperature

- •Allows to choose the temperature unit ° C / ° F of the machine.
    - °C = Celsius (programming and visualization)
    - °F = Fahrenheit (programming and visualization)

10.9.7 Sensitivity

- 3 values : low, medium, high
- Recommended value = medium

10.9.8 Time-out Filling Up

- It Corresponds to the time allocated to the machine to fill up the steam boiler
- If this time is exceeded, the machine displays an alarm.
- Recommended value = 360s

10.9.9 Time-out Heating up of steam and coffee boilers

- Recommended value = 80 minutes

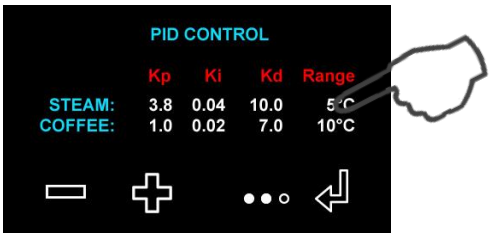
10.9.10Time-out flowmeter

- Recommended value = 5 minutes

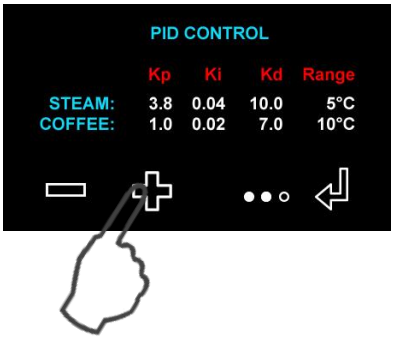
10.9.11PID menu:

- This menu is used to change the values of the PID system of the heating management.
- Press the PID buttons :

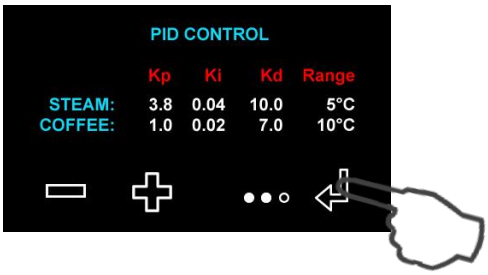
- Press on the desired digit to highlight it to change the value:



- Press on **+** and **-** to change the value:



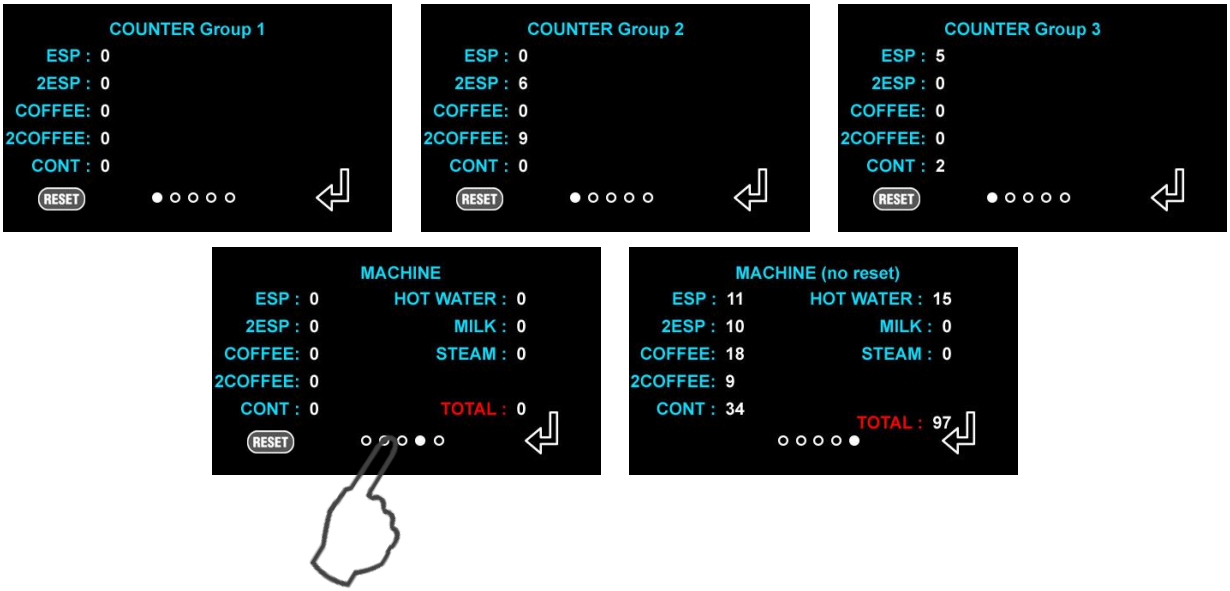
- Press ↵ to validate and escape from the menu:



- The values of the PID system have been optimized in the factory according to the boilers volumes and powers.
- **WE ADVISE YOU NOT TO TOUCH THESE PARAMETERS**

10.10 Counter (*)

- The counters menu is spread over 5 pages
- Tap the bookmark dots ●○ to navigate from one to another:



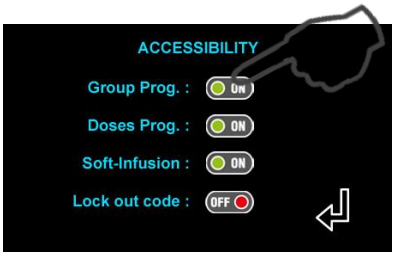
- There are 4 « resettable" counter pages
  - Group 1 coffee counter
  - Group 2 coffee counter
  - Group 3 coffee counter
  - Total machine coffee counter
- Example : Press RESET for 2 seconds to reset the counters of the active page to 0.

- The 5th page concerns the machine total

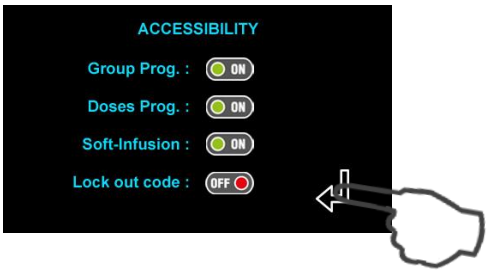
  It is NOT RESETTABLE

10.11 Accessibility

- Allows to define the different levels of accessibility to the menus
- Press on the desired icons to change its state from “On » to “OFF”



- Press on ↵ to validate and escape from the menu



10.11.1 Group programming

- ON: Allows access to group programming from the keypad of each group
- OFF: Disables access to group programming from group keyboards

10.11.2 Doses programming

- ON: Authorizes individual programming of doses from the keypads of each group.
- OFF: Disables individual dose programming from group keypads.
- If disabled: no possibility for the user to adjust the doses

10.11.3 Soft-Infusion

- ON: Authorizes the programming of soft infusions from the keypads of each group
- OFF: Disables the programming of soft infusions from the group keypads.
- If disabled: no possibility for the user to adjust the soft-infusion

10.11.4 Locking code

- In progress

11 COFFEE TEMPERATURE ADJUSTMENTS

- Factory adjustment:
  - Steam boiler temperature: 123°C
  - Coffee boiler temperature: 90°C
  - Group temperature: 90°C

  } Coffee temperature: 89°C

- On the one hand:

  You choose the steam boiler temperature between 117°C (0.8 bars) and 125°C (1.4 bars).

- On the other hand:

  You choose coffee boiler temperature and group temperature to have the desire temperature.

Steam boiler Temperature (°C)	Coffee boiler and Group Temperature (°C)	Coffee Temperature (°C)
117	87	78
	90	81
	93	85
120	87	78
	90	81
	93	85
123	87	79
	90	82
	93	85
125	87	79
	90	82
	93	85

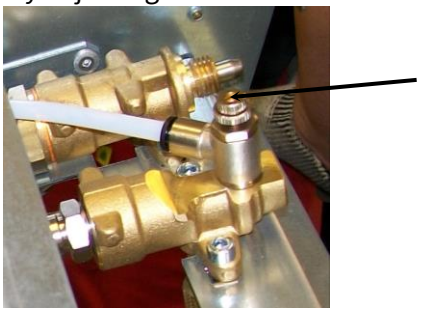
- To adjust the coffee temperature, you can change the coffee boiler and group temperature.

  1°C on coffee boiler and group temperature -> 1°C on coffee temperature

- Concerning the abacus above:
  - These values are given in an indicative way, following the regulation and the especial protocol of the CONTI Company.
  - These can change according to the type of coffee used, as well as the environment of the machine.

11.1.1 Hot water temperature adjustment

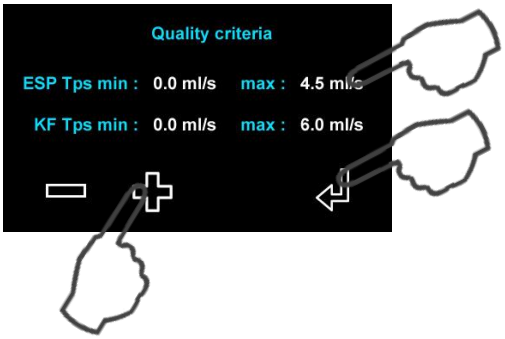
- The factory setting is a hot water temperature at 92°C.
- You can change this temperature by adjusting the screw above the tap.



12 QUALITY CRITERIA

⇒ 1st step: Adjustment of the scale of the flowrate bar graph:

- Minimum and maximum flow rates are to be adjusted according of criteria acceptance on product.
- Press on the desired digit to highlight it, and change the value with **+** and **–**
  - Recommended value for **Espresso**: mini = 0 ml/sec and Maxi = 4,5 ml/sec
  - Recommended value for **Coffee**: mini = 0 ml/sec and Maxi = 4,5 ml/sec
- Then press ↵ to validate and escape from the menu:



⇒ 2nd step: Choose to display « Quality criteria » on the extraction data:

⇒ 3rd step : How does it function:

- During an extraction the group display shows:

- The cursor ■ moves on 7 positions on the display:
  - Between the minimum and maximum values of the Espresso or Coffee
  - Depending of the measured flow rate of the coffee (ml/s).

- The 7 positions corresponds to 7 range of coffee flowrate values between the mini and max.

- For example: programmed value: Min = **0.80 ml/s** / Max = **1,20 ml/s**
  - Position 1 = flow between 0.80 ml/s and 0.86 ml/s
  - Position 2 = flow between 0.86 ml/s and 0.91 ml/s
  - Position 3 = flow between 0.91 ml/s and 0.97 ml/s
  - Position 4 = flow between 0,97 ml/s and 1,02 ml/s **(median position)**
  - Position 5 = flow between 1,02 ml/s and 1,08 ml/s
  - Position 6 = flow between 1,08 ml/s and 1,14 ml/s
  - Position 7 = flow between 1,14 ml/s and 1,20 ml/s

13 MAINTENANCE OF MACHINES

➢ DAILY MAINTENANCE

☞ Clean the hot water outlet and the steam outlets with a scouring pad:
- Use a needle to keep the diffuser outlets unclogged.
- Then purge by opening the tap a few seconds.

☞ Clean the drip tray and the basin, removing them from the machine.

☞ Remove the filter-holder and clean the seal injection filter-holder with the brush.

☞ Use the automatic process cleaning:
- Push on the « clean » button
- The automatic cleaning process of the group is started in 3 steps:
- The process is shown on the display.
- The machine asks for blind hold filter and the CONTI cleaning pill code n°466662
- Follow the instructions on the display.
- Repeat this procedure on each group.

☞ Brush the filters in water containing detergent:
- In order to unclog the holes
- Never use a needle or a flame.

☞ For sanitary reasons, be sure to consume at least 2 liters of hot water per day.

➢ HALF YEAR MAINTENANCE:

☞ A kit n° 450200, for the following operation is available for sale.

☞ For each group:
- Remove the sprinkler, diffuser, and seal gasket.
- Scrub the gasket groove and the supplying hole on the group head.
- Clean the two parts of the diffuser. Clear all the holes with a needle.
- Reassemble the 2 parts of the diffuser on the group head
- Place NEW Filter gasket (No. 002711), and NEW sprinkler (No. 415684)

☞ Remove and clean the level sensor and the safety sensor (limestone deposit).

- **ANNUAL MAINTENANCE:**

☞ A kit n° 450201, for the following operation is available for sale.

☞ Change the pump inlet filter (No. 411861)

☞ On the steam boiler:
- Change vaccum valve (No. 408898)
- Change the safety valve (No. 411827)

☞ On the coffee boiler:
- Remove and clean the gasket limiter 12 Bars (1,2 MPa)
- Clean the draining valve core

☞ On the inlet bloc valves:
- Change the filter (No. 470199)
- Replace the gasket (No. 219000) of 2 non-return valves
- Remove and clean the gasket limiter 12 Bars (1,2 MPa)
- Clean the nucleus of the solenoid inlet water boiler

☞ On the cold water valve block:
- Clean the both cold water valves cores

☞ On the pre-brewing valve:
- Clean the pre-brewing valve core

☞ On the coffee groups
- Change the O-ring nozzle (No. 403457) and the filter nozzle (No. 403458)
- Clean the 3rd way and the nucleus of the solenoid coffee valve

☞ On the 2 electrical taps
- Clean the nucleus of the solenoid "hot water" valve

☞ On the 2 steam taps:
- Change the 2 O-rings (No. 403457)
- Change the 1 gasket (No. 407502)

☞ On the 2 "steam" output and on the 2 "hot water" output
- Change the O-ring (No. 061200)
- Change the O-ring (No. 055300)

☞ For water quality issues, it is recommended to fully drain the boiler.

- **BIENNAL MAINTENANCE:**

☞ A kit n° 450201, for the following operation is available for sale.

☞ Change the pump inlet filter (No. 411861)

☞ On the steam boiler:
- Change vacuum valve (No. 408898)
- Change the safety valve (No. 411827)
- Dismantle and clean the injectors

☞ On the coffee boiler:
- Change the limiter 12 Bars (1,2 MPa) (No. 409774)
- Change the draining valve (No. 430046)

☞ On the inlet bloc valves:
- Change the filter (No. 470199)
- Replace the gasket (No. 219000) of 2 non-return valves
- Change the limiter 12 Bars (1,2 MPa) (No. 409774)
- Change the inlet boiler valve (No. 470161) + 2 PTFE gasket (No. 407500)

☞ On the cold water valve block:
- Change cold water valve (No. 466273)

☞ On the pre-brewing valve:
- Change the pre-brewing valve (No. 450033)

☞ On the coffee groups
- **Remove all the parts and uncork all the holes in the group head.**
- Change the O-ring nozzle (No. 403457)
- Change the filter nozzle (No. 403458)
- Change the solenoid coffee (No. 4072391) + 2 PTFE gasket (No. 407500)

☞ On the 2 electrical taps
- Change the solenoid "hot water" (No. 470161)
- Change the 2 PTFE gasket (No. 407500)
- Change the O-ring of the adjusting screw (No. 400 039)

☞ On the 2 steam taps:
- Change the 2 O-rings (No. 403457)
- Change the 1 gasket (No. 407502)
- Change the O-ring (No. 356500)

☞ On the 2 "steam" output and on the 2 "hot water" output
- Change the O-ring (No. 061200)
- Change the O-ring (No. 055300)
- Change the washer (No. 401320)
- Change the O-ring of steam nozzles (No. 055400)

☞ On the flowmeter:
- Change the non-return valve (No. 415167)

☞ Change the silicone tubes evacuation 3-way valves cafes (No. 405621)

☞ For water quality issues, it is recommended to fully drain the boiler.

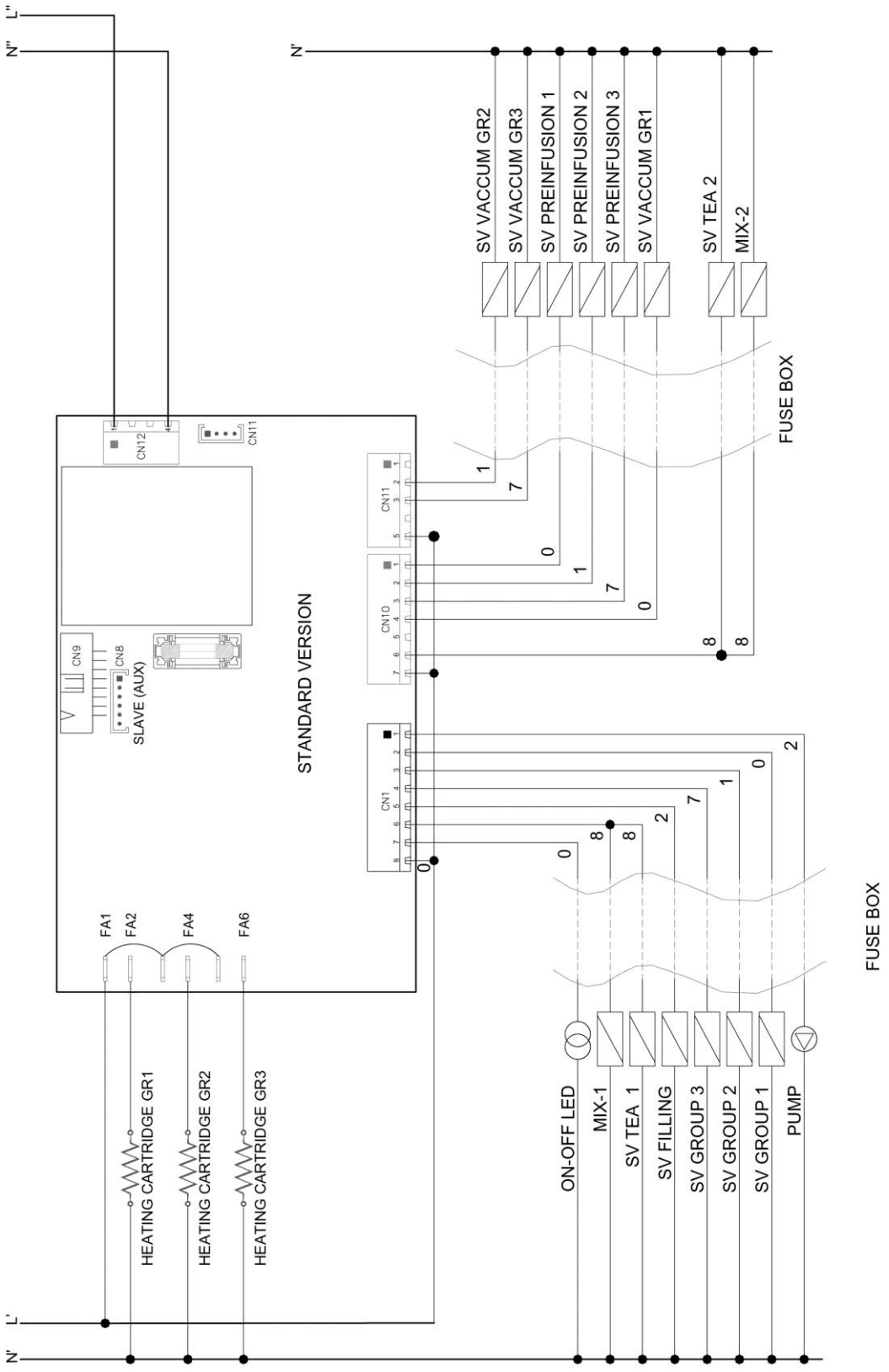
14 ELECTRIC DRAWING

14.1 CPU board standard

CODE COULEURS FILS
CABLE COLOUR CODE

1	marron	brown
2	rouge	red
3	orange	orange
4	jaune	yellow
5	vert	green

6	bleu	blue
7	violet	violet
8	gris	grey
9	blanc	white
0	noir	black

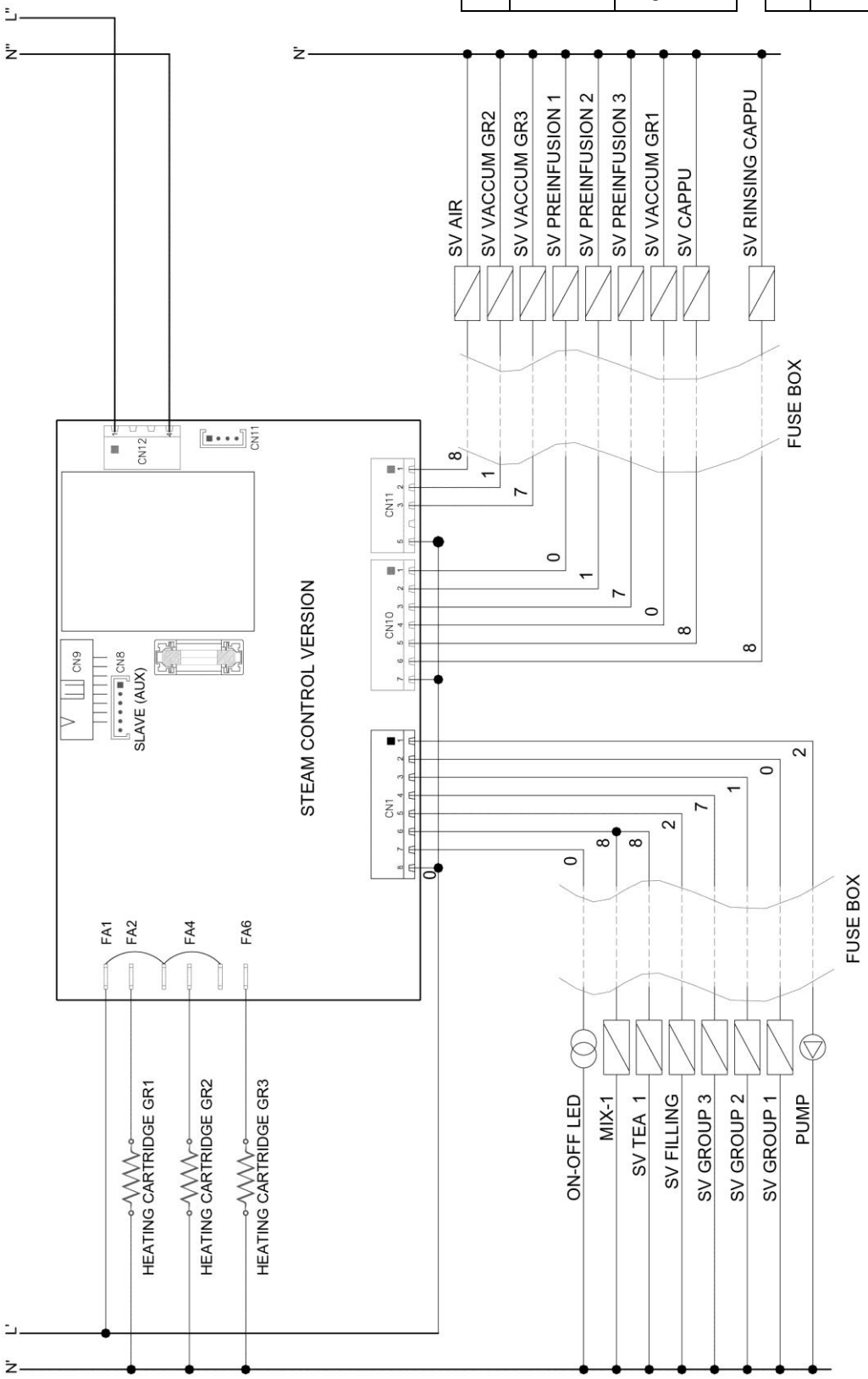


14.2 CPU board Steam Control

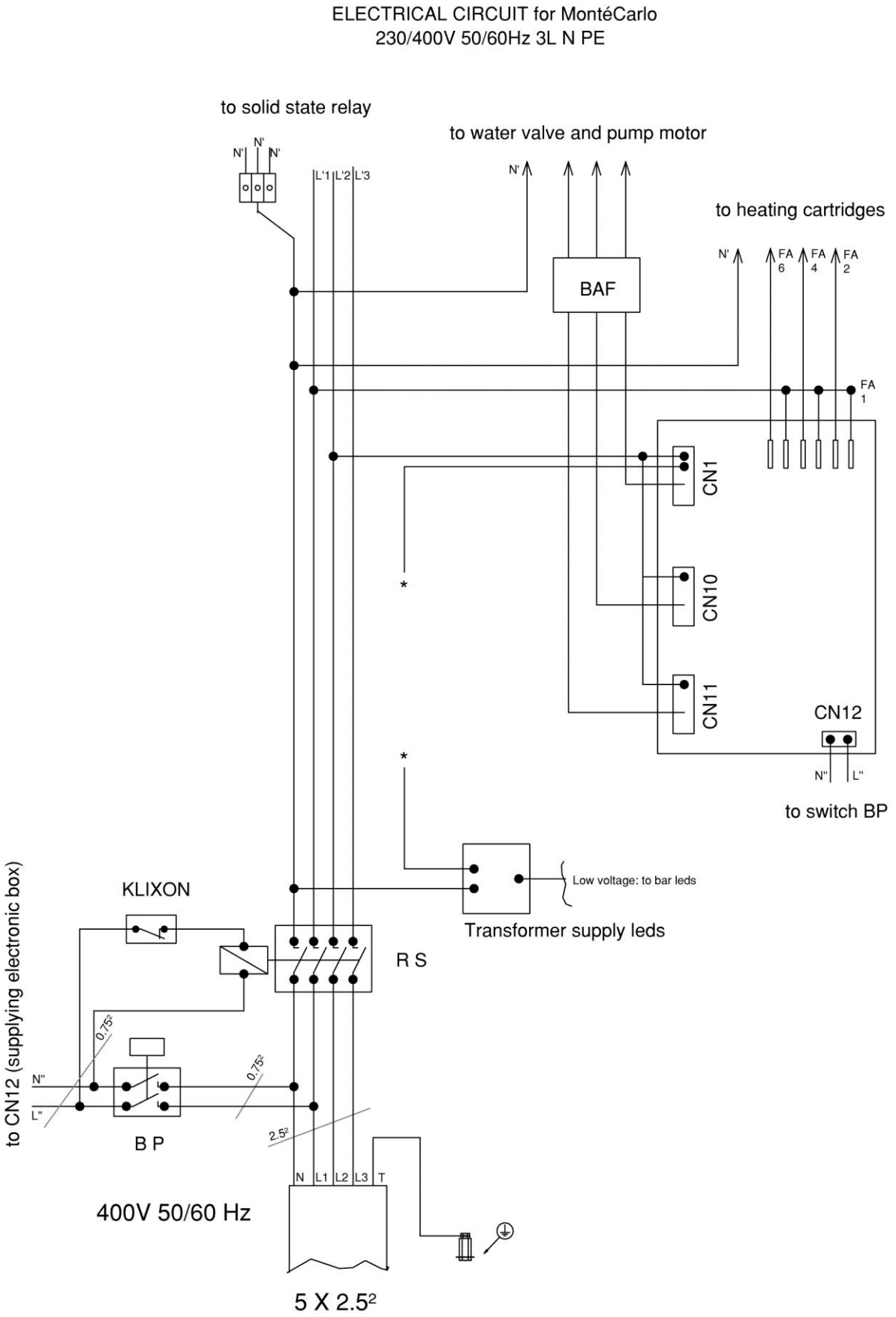
CODE COULEURS FILS
CABLE COLOUR CODE

1	marron	brown
2	rouge	red
3	orange	orange
4	jaune	yellow
5	vert	green

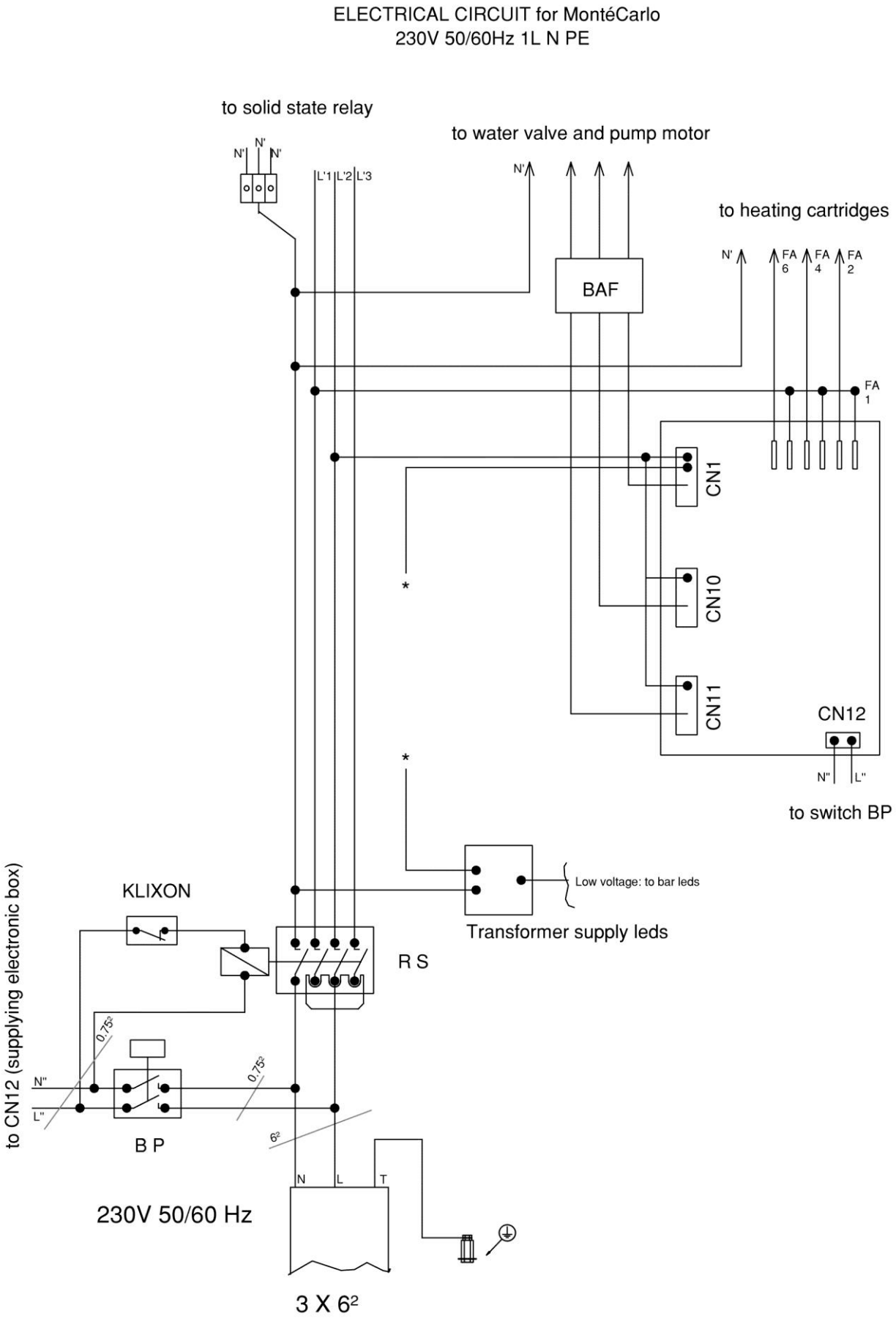
6	bleu	blue
7	violet	violet
8	gris	grey
9	blanc	white
0	noir	black



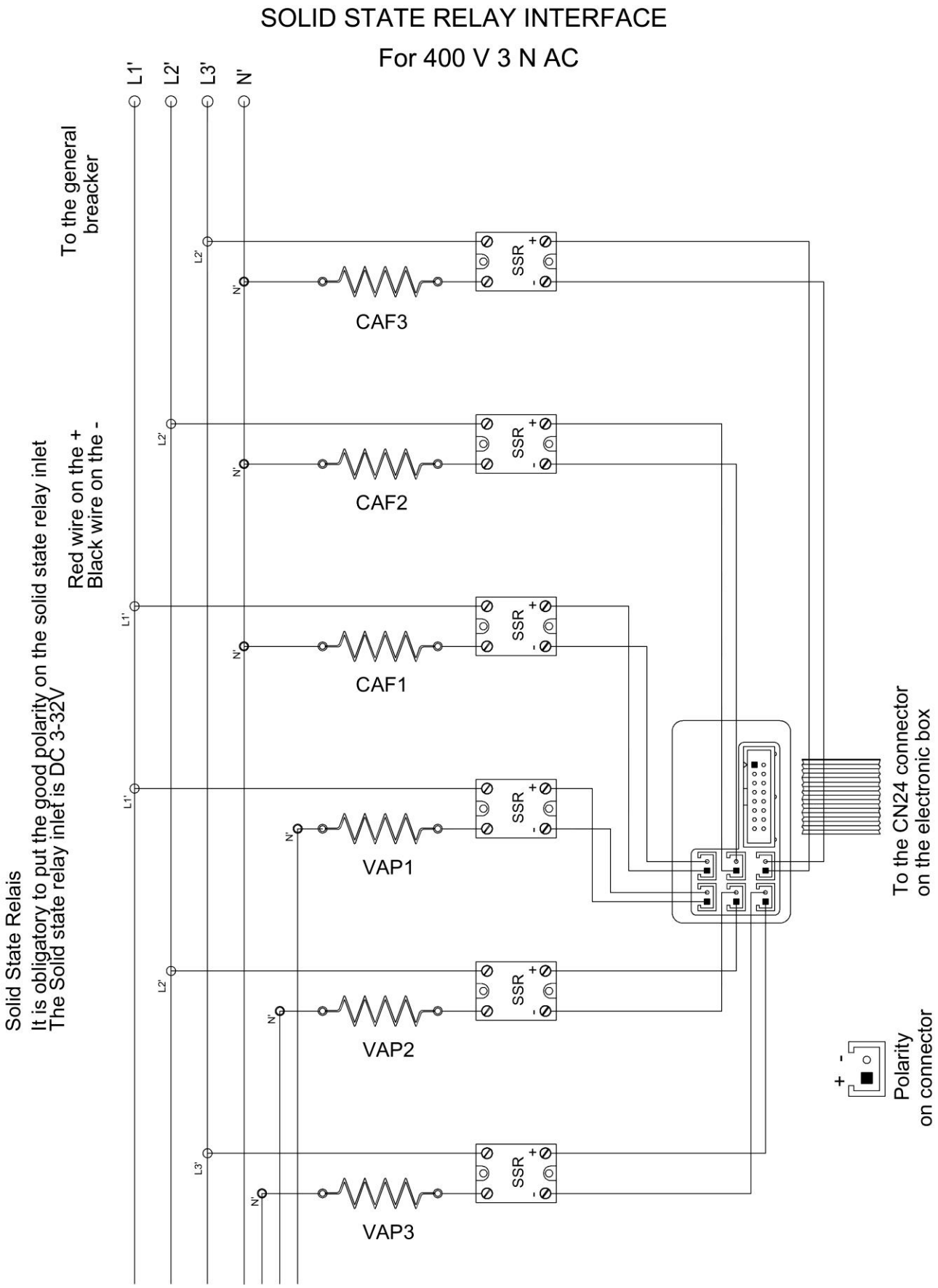
14.3 Electrical power diagram for “400V 3L N PE”



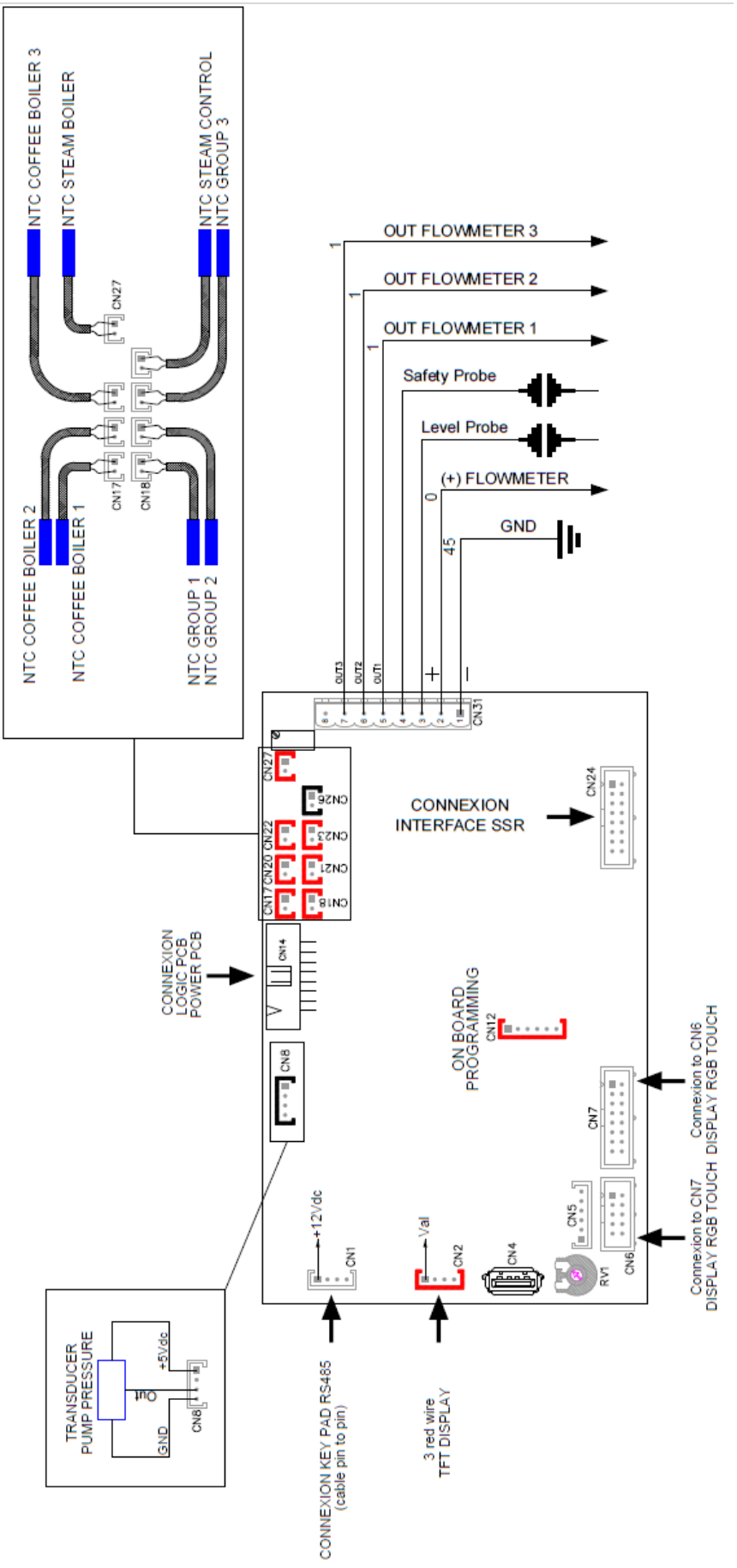
14.4 Electrical power diagram for “230 V 1L N PE”



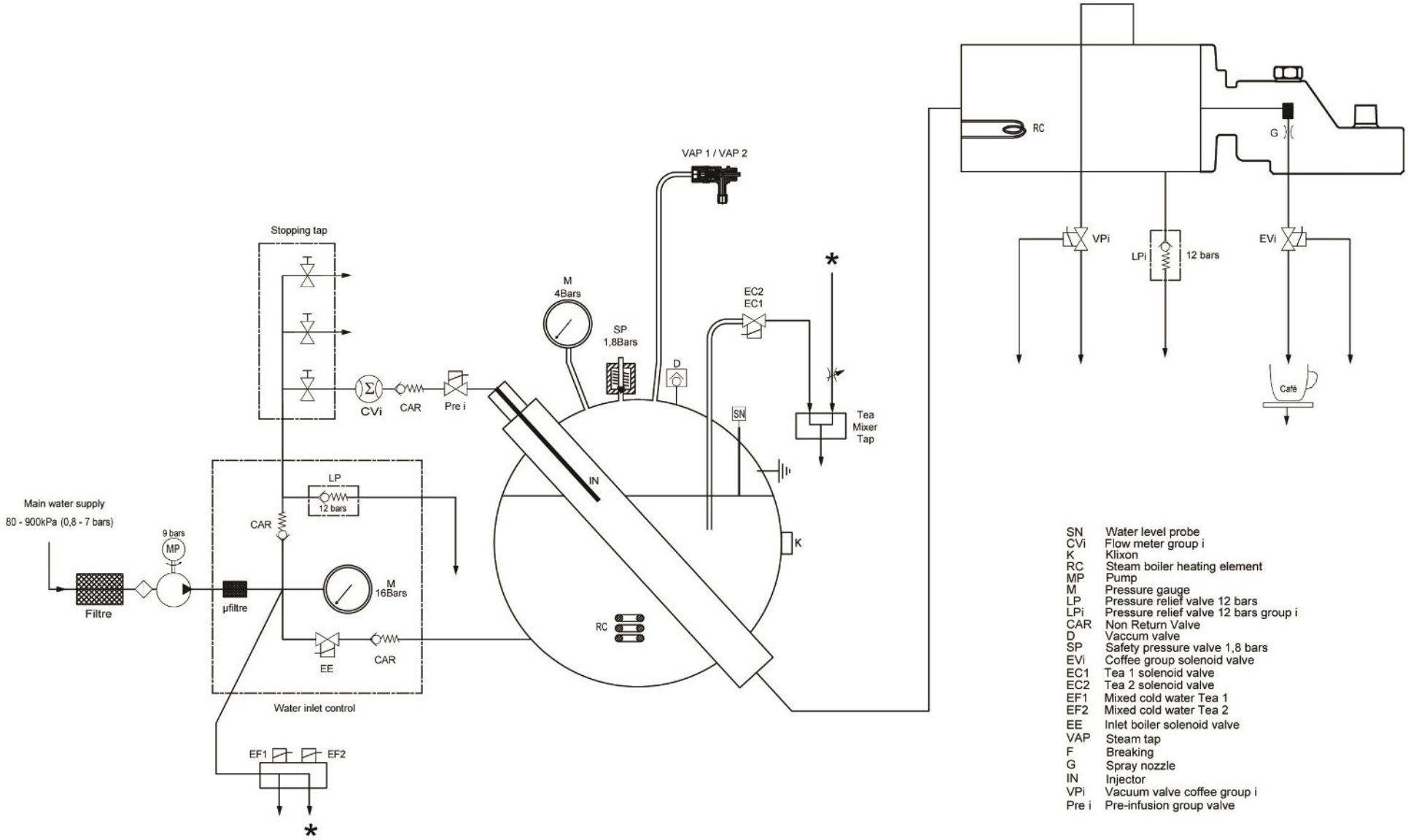
14.6 Solid state relay interface for “400 V 3NAC”



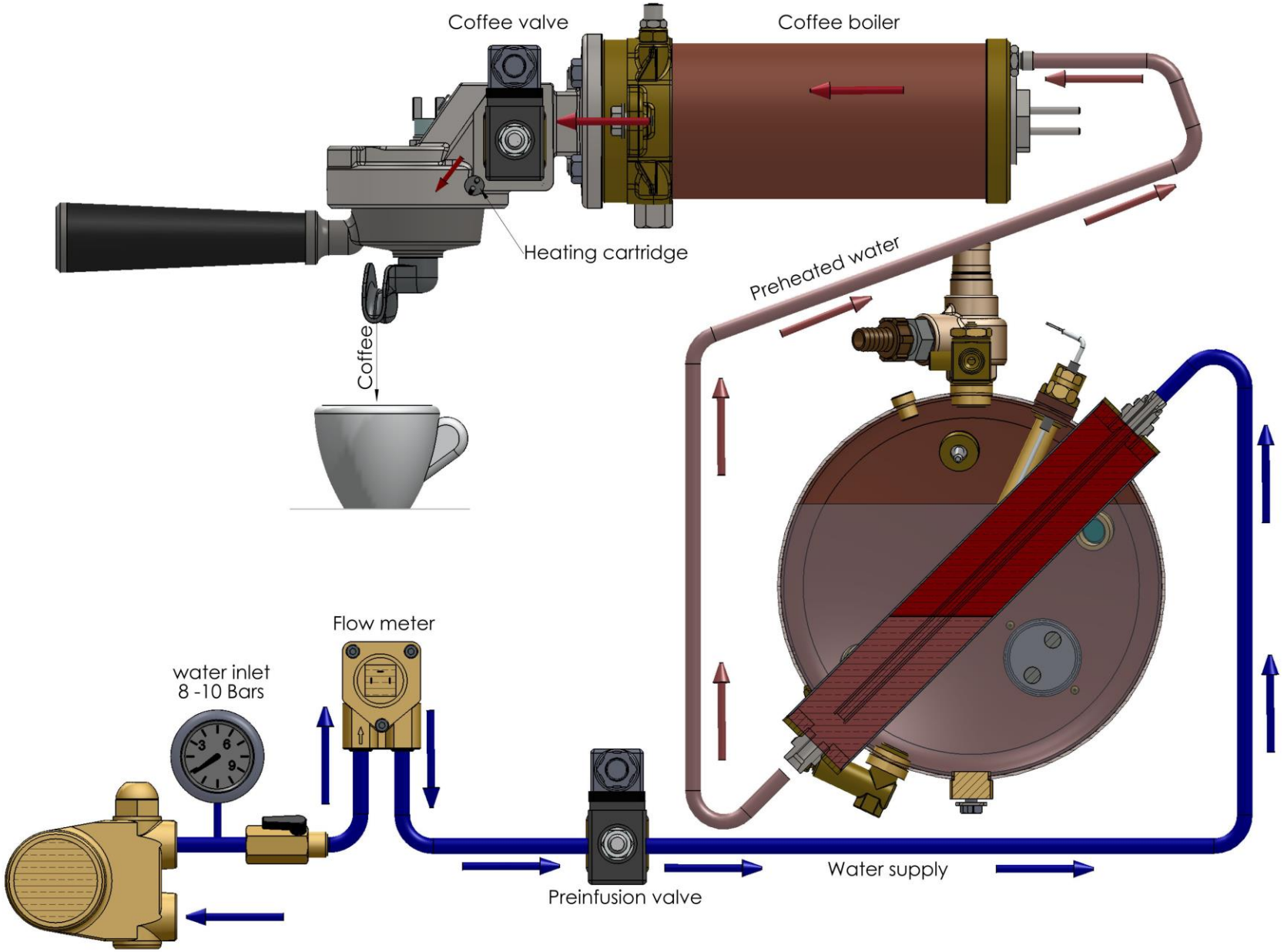
14.7 Low voltage wiring



15 HYDRAULIC SCHEME



SN	Water level probe
CVi	Flow meter group i
K	Klixon
RC	Steam boiler heating element
MP	Pump
M	Pressure gauge
LP	Pressure relief valve 12 bars
LPi	Pressure relief valve 12 bars group i
CAR	Non Return Valve
D	Vaccum valve
SP	Safety pressure valve 1,8 bars
EVi	Coffee group solenoid valve
EC1	Tea 1 solenoid valve
EC2	Tea 2 solenoid valve
EF1	Mixed cold water Tea 1
EF2	Mixed cold water Tea 2
EE	Inlet boiler solenoid valve
VAP	Steam tap
F	Breaking
G	Spray nozzle
IN	Injector
VPi	Vacuum valve coffee group i
Pre i	Pre-infusion group valve



16 ALARM

Description	Faults	Recommendations
Coffee boiler 1 probe alarm	- Coffee boiler 1 t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Coffee boiler 2 probe alarm	- Coffee boiler 2 t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Coffee boiler 3 probe alarm	- Coffee boiler 3 t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Group 1 probe alarm	- Group 1 t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Group 2 probe alarm	- Group 2 t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Group 3 probe alarm	- Group 3 t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Steam boiler probe alarm	- Boiler t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Probe steam wand alarm	- Steam control t° probe in short-circuit or disconnected.	- Check the probe - Check the probe connection - Check the electronic board
Alarm safety probe	- Low level safety probe didn't detect water for more than 2 seconds => boiler heating stopped	- Check the probe (limestone) - Check the probe connection - Check the electronic board - Check that the boiler fills - Check the water inlet
Steam boiler heating timeout	- Time allocated to the boiler heating exceeded.	- Check the boiler t° probe - Check the probe connection - Check the electronic board - Check the heaters and the relays - Check the programmed heating time - Check the relay control box
Coffee boiler 1 time out alarm	- Time allocated to the coffee boiler 1 heating exceeded.	- Check the t° probe - Check the probe connection - Check the electronic board - Check the heater and the relay - Check the programmed heating time - Check the relay control box

Coffee boiler 2 time out alarm	- Time allocated to the coffee boiler 2 heating exceeded.	- Check the t° probe - Check the probe connection - Check the electronic board - Check the heater and the relay - Check the programmed heating time - Check the relay control box
Coffee boiler 3 time out alarm	- Time allocated to the coffee boiler 3 heating exceeded.	- Check the t° probe - Check the probe connection - Check the electronic board - Check the heater and the relay - Check the programmed heating time - Check the relay control box
Flowmeter Grp 1 time out	- No flowmeter 1 pulse after 5 seconds	- Check the flowmeter (flashings) - Check the flowmeter connection - Check the electronic board - Check for clogged coffee group
Flowmeter Grp 2 time out	- No flowmeter 2 pulse after 5 seconds	- Check the flowmeter (flashings) - Check the flowmeter connection - Check the electronic board - Check for clogged coffee group
Flowmeter Grp 3 time out	- No flowmeter 3 pulse after 5 seconds	- Check the flowmeter (flashings) - Check the flowmeter connection - Check the electronic board - Check for clogged coffee group

17 POWER MANAGEMENT

The Monte Carlo machines are three phase machines

When the machine is connected to a three-phase network, the absorbed power consumption does not need to be flanged.
In this case the Power Management is at its maximum position: 6.

The machine can be connected to a single phase 230V.
In this case:

1: Change the power cable with a cable 3x6 ^{2} (Conti reference: 103600)
2: Depending on the available amperage on the grid (16A / 20A / 32A):
It is necessary to adjust the power consumption of the machine.
Through the Power management (see table below)
3: Here's how to connect the 3x6 ^{2} cable on the general relay machine

Nota Bene:
It is possible to retain the original cable (5x2,5 ^{2}), but in this case:
It is imperative to curb the power management 1 (or 2 maximum if the machine is not used too much)

Power parameters and Current comsumption (for 230 volts monophase)

	Power 1		**Power 2**		**Power 3**		**Power 4**		**Power 5**		**Power 6**	
	Max power (W)	Max current (A)	Max power (W)	Max current (A)	Max power (W)	Max current (A)	Max power (W)	Max current (A)	Max power (W)	Max current (A)	Max power (W)	Max current (A)
MC 2G	1900	**8**	3300	**14**	4700	**20**	5700	**25**	6700	**29**	6700	**29**
MC 3G	2600	**11**	4600	**20**	6600	**29**	7600	**33**	8600	~~**37**~~	9600	~~**42**~~
MC 2G K	3000	**13**	5500	**24**	7500	**33**	9500	~~**41**~~	11500	~~**50**~~	11500	~~**50**~~
MC 3G K	3100	**13**	5600	**24**	8100	~~**35**~~	10100	~~**44**~~	12100	~~**53**~~	14100	~~**61**~~

Power 1/2/3/4/5/6:
That's the number of heating element can be supplyied at the same time in the machine
The priority is always given to the coffee Boiler

ESTD 1956

Conti

MONACO

web

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