M100

GT - HD - Dosatron- Turbo Milk

MANUALE DEL TECNICO

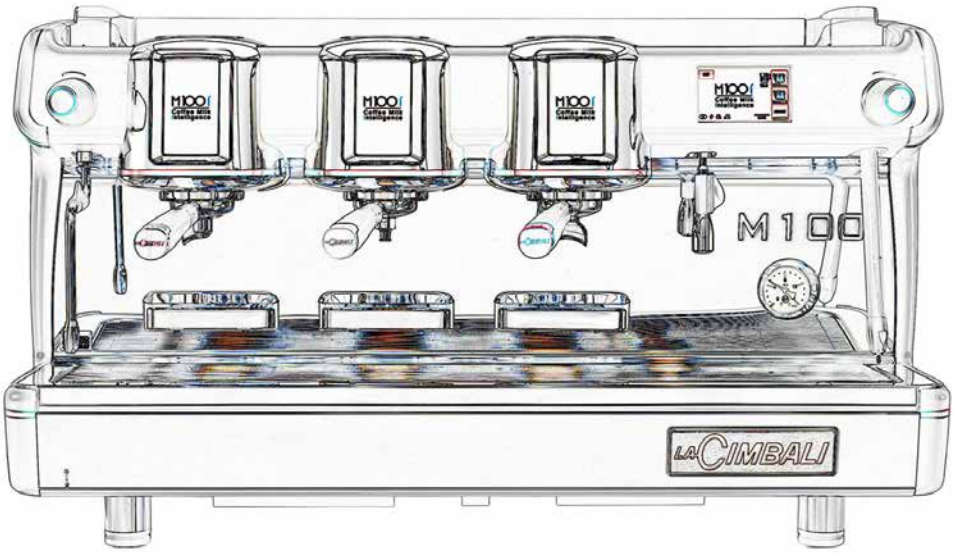
ENGINEER'S MANUAL

MANUEL DU TECHNICIEN

TECHNIKERHANDBUCH

MANUAL DEL TÉCNICO

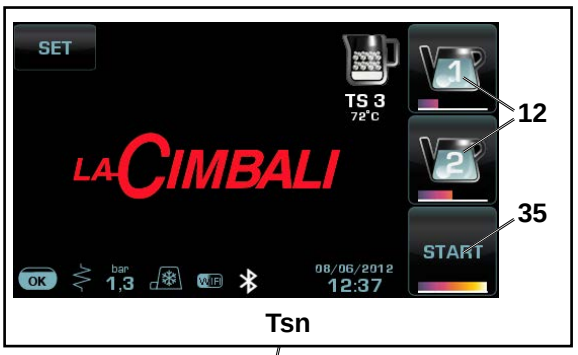
MANUAL DO TÉCNICO



(rev. MT-M100TurboMilk P0-1907)

M100

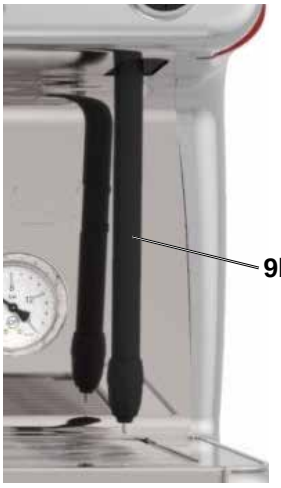
Tsb



Tsn

Cold Touch (SX)

Cold Touch (DX)



Turbomilk

IT LEGENDA

1 Interruttore generale
6 Manometro pompa
8 Erogatore acqua calda
9 Tubo (lancia) vapore
9a Tubo (lancia) Turbosteam
9b Tubo (lancia) Turbosteam Cold Touch (*)
9c Tubo (lancia) Turbo Milk (*)
11 Portafiltro
12 Pulsante acqua calda
13 Selettore Turbosteam / Turbomilk
15 Bacinella appoggiatazze
19 Boiler caffè (*)
20 Manopola erogazione vapore
23 Piano appoggiatazze
35 Tasto "**STOP-CONTINUO**" acqua calda
SET Tasto per entrare in programmazione / menù
TSb Touch screen di selezione
TSn Touch screen

I componenti - * - sono applicati solo in alcune configurazioni di prodotti.

EN LEGEND

1 Main switch
6 Pump pressure gauge
8 Hot-water outlet
9 Steam pipe
9a Turbosteam pipe
9b Turbosteam Cold Touch pipe (*)
9c Turbo Milk pipe (*)
11 Filter holder
12 Hot-water button
13 Turbosteam / Turbomilk selector
15 Tray
19 Coffee boiler (*)
20 Steam supply knob
23 Cup warmer
35 Hot-water "**STOP-CONTINUOUS**" key
SET Key to access programming mode / menu
TSb Selection touch screen
TSn Touch screen

The components - * - are applied only in some product configurations

FR LÉGENDE

1 Interrupteur général
6 Manomètre pompe
8 Sortie eau chaude
9 Buse vapeur
9a Buse Turbosteam
9b Buse Turbosteam Cold Touch (*)
9c Buse Turbo Milk (*)
11 Porte-filtre
12 Bouton eau chaude
13 Sélecteur Turbosteam / Turbomilk
15 Bac d'égouttement
19 Chauffe-eau, café (*)
20 Robinet de débit du vapeur
23 Chauffe-tasses
35 Touche « **STOP-CONTINU** » eau chaude
SET Touche programmation/menus
TSb Écran tactile de sélection
TSn Écran tactile

Les composants accompagnés d'un * ne sont montés que dans certaines configurations de produit.

DE LEGENDE

1 Hauptschalter
6 Manometer Pumpe
8 Heißwasserausgabe
9 Dampfausgaberohr
9a Dampfausgaberohr Turbosteam
9b Dampfausgaberohr Turbosteam Cold Touch (*)
9c Milchausgaberohr Turbo Milk (*)
11 Filterhalter
12 Heißwasser-Drucktaste
13 Wahlschalter Turbosteam / Turbomilk
15 Auffangschale
19 Boiler Kaffee (*)
20 Drehknopf Dampfabgabe
23 Tassenerwärmer
35 Taste "**STOP-KONTINUIERLICHE**" Heißwasserabgabe
SET Taste zur Programmierung / Menü
TSb Wahl-Touchscreen
TSn Touchscreen

Bauteile - * - sind nur bei einigen Produkt-Konfigurationen angebracht.

ES LEYENDA

1 Interruptor general
6 Manómetro bomba
8 Erogador agua caliente
9 Tubo (boquilla) vapor
9a Tubo (boquilla) Turbosteam
9b Tubo (boquilla) Turbosteam Cold Touch (*)
9c Tubo (boquilla) Turbo Milk (*)
11 Portafiltro
12 Botón suministro agua caliente
13 Selector Turbosteam / Turbomilk
15 Bandeja
19 Calentador café (*)
20 Botón giratorio erogación vapor
23 Calientatazas
35 Tecla "**STOP-CONTINUO**" agua caliente
SET Tecla para entrar en programación / menú
TSb Pantalla táctil de selección
TSn Pantalla táctil

Los componentes - * - se aplican sólo en algunas configuraciones de productos.

PT LEGENDA

1 Interruptor geral
6 Manómetro da bomba
8 Distribuidor de água quente
9 Tubo do vapor
9a Tubo do vapor Turbosteam
9b Tubo do vapor Turbosteam Cold Touch (*)
9c Tubo Turbo Milk (*)
11 Porta-filtro
12 Botão de distribuição de água quente
13 Selector Turbosteam / Turbomilk
15 Tabuleiro
19 Boiler café (*)
20 Manípulo de distribuição do vapor
23 Grelha para aquecer chávenas
35 Tecla "**STOP-CONTÍNUO**" água quente
SET Tecla para entrar na programação / menu
TSb Touch screen de selecção
TSn Touch screen

Os componentes - * - são aplicados só em algumas configurações de produtos.

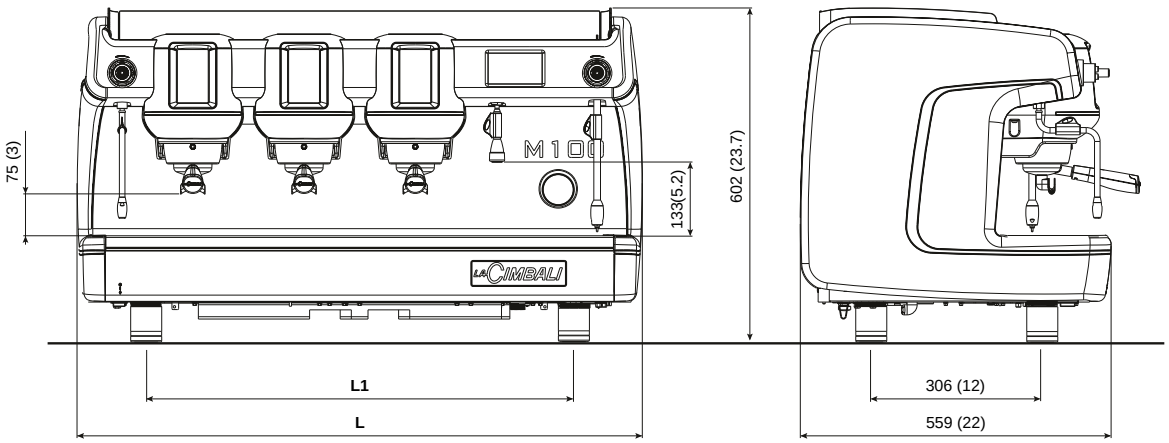
M100 GT - M100 HD

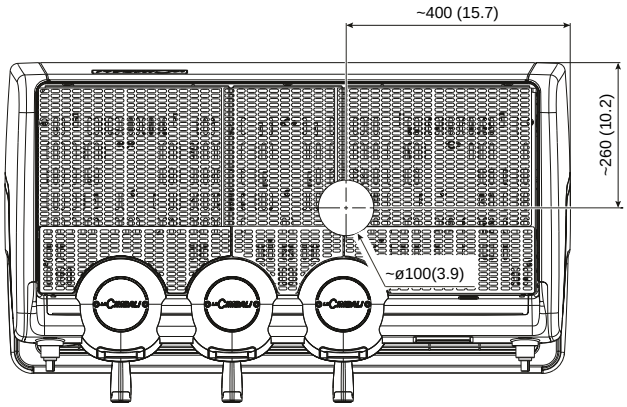
PED / DESP	P_{max} [bar]	T_{max} [°C]	**tipo di macchina** **Type of machine** **type de machine** **Maschinentypen** **modelo de la máquina** **tipo de la màquina**	2 gruppi 2 groups 2 groupes 2 Einheiten 2 grupos 2 grupos	3 gruppi 3 groups 3 groupes 3 Einheiten 3 grupos 3 grupos	4 gruppi 4 groups 4 groupes 4 Einheiten 4 grupos 4 grupos
			Fluido - Fluid - Fluide **Flüssig - Fluido - Fluido**	**Capacità - Capacity - Capacité** [L] **Fassungsvermögen - Capacidad - Capacidade**		
Caldaia Service boiler Chaudière Heizkessel Caldera Caldeira	2	133	acqua/vapore water/steam eau/vapeur wasser/Dampf agua/vapor água/vapor	10	10	10
Scambiatore Heat exchanger Échangeur de chaleur Wärmeaustauscher Intercambiador de calor Permutador de calor	12 (GT) 15 (HD)	133	acqua water eau Wasser agua água	0.22 x 2	0.22 x 2	0.22 x 2
Boiler caffè Coffee boiler Chauffe-eau, café Boiler Kaffee Calentador café Boiler do cafè	12 (GT) 15 (HD)	160	acqua water eau Wasser agua água	0.40 x 2	0.40 x 3	0.40 x 4

M100 Dosatron

PED / DESP	P_{max} [bar]	T_{max} [°C]	**tipo di macchina** **Type of machine** **type de machine** **Maschinentypen** **modelo de la máquina** **tipo de la màquina**	2 gruppi 2 groups 2 groupes 2 Einheiten 2 grupos 2 grupos	3 gruppi 3 groups 3 groupes 3 Einheiten 3 grupos 3 grupos	4 gruppi 4 groups 4 groupes 4 Einheiten 4 grupos 4 grupos
			Fluido - Fluid - Fluide **Flüssig - Fluido - Fluido**	**Capacità - Capacity - Capacité** [L] **Fassungsvermögen - Capacidad - Capacidade**		
Caldaia Service boiler Chaudière Heizkessel Caldera Caldeira	2	133	acqua/vapore water/steam eau/vapeur wasser/dampf agua/vapor água/vapor	10	15	20
Scambiatore Heat exchanger Échangeur de chaleur Wärmeaustauscher Intercambiador de calor Permutador de calor	12	133	acqua water eau Wasser agua água	0.18 - 0.25 x 2	0.18 - 0.25 x 3	0.18 - 0.25 x 4

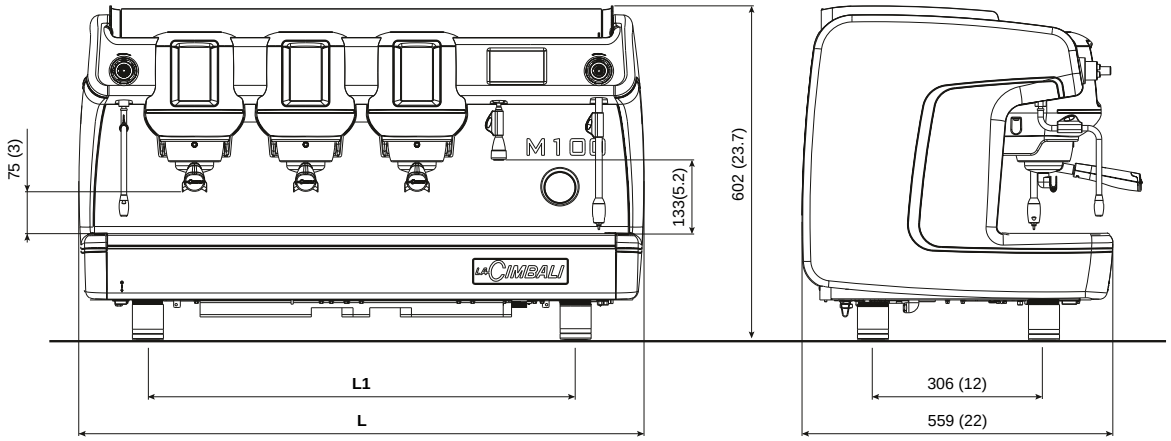
M100 GT
M100 HD

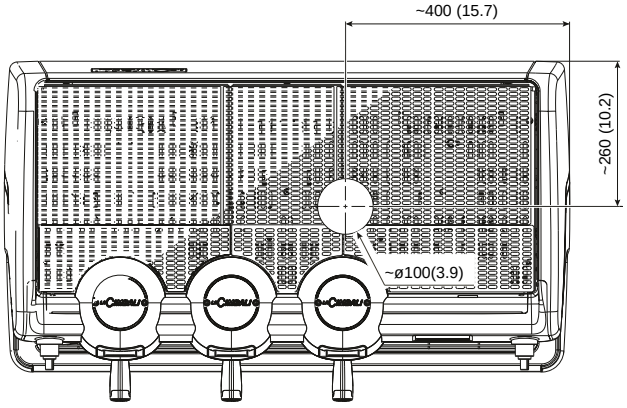




DIMENSIONS				
		2 gr.	3 gr.	4 gr.
L	mm	817	1017	1217
	inches	32.2	40	47.9
L1	mm	568	768	968
	inches	22.4	30.2	38.1
Weight	Kg	89	105	120
	pounds	196	232	265

M100 DT





DIMENSIONS				
		2 gr.	3 gr.	4 gr.
L	mm	817	1017	1217
	inches	32.2	40	47.9
L1	mm	568	768	968
	inches	22.4	30.2	38.1
Weight	Kg	87	100	123
	pounds	187	221	271

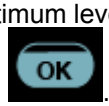
English

Index

WARNING: Installation and disassembly must only be performed by qualified and authorized technicians. Switch off the power to the machine before performing these steps.

Description display symbols

WATER LEVEL


This symbol indicates the boiler water level.
During the loading phase, the bottom part of the icon blinks.
When the optimum level is reached, the symbol looks like this: 

.

RESISTANCE

This symbol indicates that the resistance is activated and functioning; a thicker luminous flow passing through the resistance shows the electric heating is on.

When the boiler pressure reaches the set value, the icon looks like this: 
.

This indicates that the heating resistance has been disabled.

Note: the customer cannot switch on or switch off the electric heating.

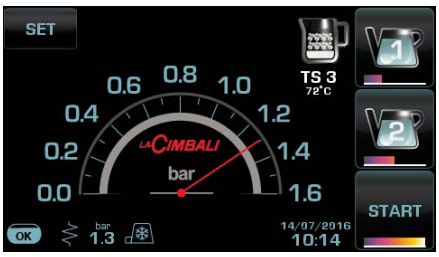
When the on/off function is programmed, the electric heating takes place automatically.

SEVICE BOILER PRESSURE

This symbol indicates the boiler pressure value.

If the icon 

is pressed, the pressure gauge will be displayed analogically. This will be shown on the display:



Press again the icon 

to return to the regular display mode.

COLD MACHINE

This symbol indicates that the machine is in its initial warming stage or that the boiler pressure has decreased to below 0.5 bar.
It shows the boiler's warming status and appears if one or more boilers are still in their initial warming stage or if their temperature decreases to below 55°C.

Pressing the "STOP/continue coffee" 

icon will cause dispensing to occur at the current temperature.
All the other icons are disabled until required operating pressure is reached.

While waiting for the machine to be ready for use, attach the filter holders to the groups.
The machine has reached programmed operating temperature when the icon 
no longer appears on the display.

CUP-WARMER

These symbols indicate the power currently selected by the cup warmer.

WI-FI

This symbol appears on the display when the Wi-Fi module is in the machine.

BLUETOOTH

These symbols refer to Bluetooth communication:

- the icon indicates the presence of the Bluetooth module on the machine;

- the blue icon indicates that the machine is communicating with a Bluetooth grinder-dispenser.

USB

This symbol appears on the display when a USB pen drive is connected.

USB

This symbol appears on the display when a USB pen drive is connected.

BDS

BDS activation (Barista Driving System).

Description display symbols

PAYMENT SYSTEMS

This icon indicates that the machine is connected to a payment systems interface and is configured to work with it. Dispensing is therefore possible subject to approval by the payment system.

- the red icon indicates that the cash system has denied the transaction;

- the blue icon indicates that the cash system has approved the transaction.

CONTROL OF THE FLOW (ONLY IF IN USE)

When this icon lights up it means that it is necessary to adjust the grinder-dispenser to tighten or loosen the grinding, in order to return the coffee dose to the correct parameters.
The icons that are shown are:

means that the grinding needs to be loosened. (flow of coffee is lower than the reference).

means that the grinding needs to be tightened. (flow of coffee is greater than the reference).

Note. The number next to the icon (1 or 2) indicates the grinder-dispenser that must be used.
The icon appears on the display instead of the level symbol.

Switching off the boiler (only on “HD / GT” machines)

1

Press the temperature on the boiler display.

2

On the boiler display, press the indication STANDBY.
Note: If not pressed within 5 seconds, the boiler returns to normal functioning.

3

The group boiler is disabled. Press the display at any point to return to normal functioning.

Data flow chart - Technician programming

TECHNICIAN PROGRAMMING

1. Programming access

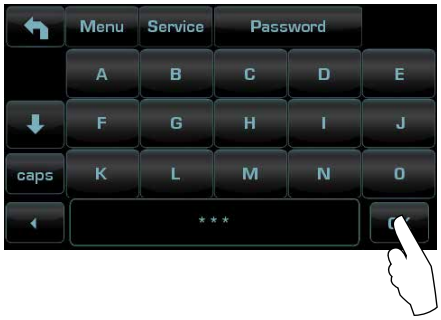
Access the programming menu by pressing:

1) the key SET:

(versions with *Turbosteam L and Turbosteam R*)

2) the key :

3) typing the password and pressing OK:



Return to the previous menu or exit the programming menu by pressing the key .

2. Service time menu

1

Press the icon  .

AUTOMATIC SWITCH OFF / SWITCH ON

The machine can be set to switch off and switch on at programmed times.
During the machine off phase, the display light is dimmed.

Note. When the machine is working in the automatic on/off function do not use the general switch (1) to switch off the machine. If this happens, the machine will not be able to switch on again automatically.

FORCED SWITCH ON

Push any dispensing button to turn it on.

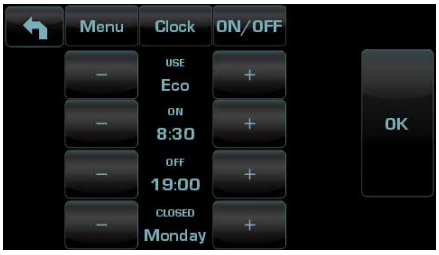
Note. Forcing the machine on does not change the programmed on/off times.

Note. At this point the machine will remain on until the next switch off time is reached.

To immediately return the machine to "off" as originally programmed, switch it off and on again using the general on-off switch (**1**).

2a

Access the service hours menu by pressing the icon  .



These parameters can be configured:
USE - timed switch-on/switch-off: YES, NO, Eco (during the switch-off phase, the machine resistance is not completely disabled and allows the boiler pressure to remain at 0.2 bar).
ON - (switch-on time);
OFF - (switch-off time);
CLOSED - (day of closure).

2b

Press the icon  to set the time.

These parameters can be configured:
HOUR, MINUTES, STYLE - (24:00 or AM/PM).

2c

Press the icon  to set the date.

These parameters can be configured:
DAY, MONTH, YEAR.

3. Language selection

Press the icon .

Press the icon to choose the desired language.

4. INFO menu

1

Press the icon .

2

In the INFO menu, you can view:

Counters ***Counters Sel.***
Water C. ***Coffee***
Malflunc. ***Setup***
Version ***Serial N.***

Counters

3a

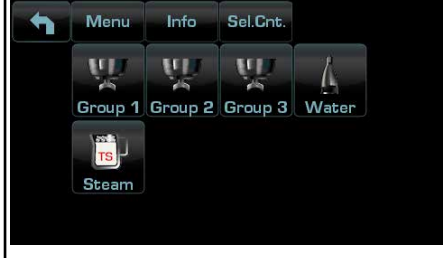
In the ***Counters*** menu the listed parameters are:

Coffee Group... - (number of coffee-based beverages);
Water - (number of times that water was dispensed);
Steam - (number of times that steam was dispensed using the Turbosteam selector on position TS 1);
Steam + Air - (number of times that steam and air were dispensed using the Turbosteam selector, positions TS 2÷4);
Hot milk - (number of times hot milk was dispensed);
Cold milk - (number of times cold milk was dispensed);
Total Coffee - (total number of coffee-based beverages);
- (time since last start up).

Scroll through the entries using the and arrows..

3b

In the ***Selection Counters*** menu, the parameters relative to the individual keys are the ones that are counted.



Example of counter selection of a coffee group :

Example of counter selection of water doses :

Counters (versions with *Turbosteam L and Turbosteam R*)

3c

In the ***Selection Counters*** menu, the parameters relative to the individual keys are the ones that are counted.

Example of a Turbosteam key selection counter :

Turbosteam 2 (SX)

Turbosteam 1 (DX)

English

Water Change

1

Press the icon to display the "Water Change" submenus.

2

1) The items are scrolled by pressing the icons .

2) Press the key RESET to clear/reset.

Coffee

1

Press the icon to display the "Coffee" submenus.

2

1) The items are scrolled by pressing the icons .

2) Press the key RESET to clear/reset.

Milk (versions with Turbo Milk)

1

Press the icon to display the "Milk" submenus.

2

1) The items are scrolled by pressing the icons .

2) Press the key RESET to clear/reset.

Fault history

1

Press the icon  to display the "Malfunctions" submenus.

2

1) The items are scrolled by pressing the icons   .

2) Press the key RESET to clear/reset.

Setup

1

Press the icon  to display the "Setup" submenus.

2

-  : NUMBER OF GROUPS: 2, 3, 4;
-  : Version DT - HD - GT;
-  :Turbosteam: TS - TS/2 - NO;
  TurboMilk: YES / NO
-  : 1 key; 5 keys; 7 keys.

NOTE: machines configured with 1 dispensing key do not allow "BDS" and connection to the payment system.

Version

1

Press the icon  to display the "Version" submenus.

2

Scroll through the entries using the  and  arrows.

The submenus under "Version" show the memory versions:
- Master 047.00.P0;
- Slave 050.00.P0;
- Display 061.00.M0;
- Firmware V00.49.18.19;
- Bluetooth;
- WIFI;
- VEBOX;
- TurboMilk / Turbosteam.

Serial number

1

Press the icon  to display the "Serial Number" submenus.

2

5. Programming measures function

1

Press the icon  .

2

Press one of the coffee keys (ex. Group 3).

3

The icons of the programmable keys are shown on the services display; the numbers relative to each key appear on the group display.

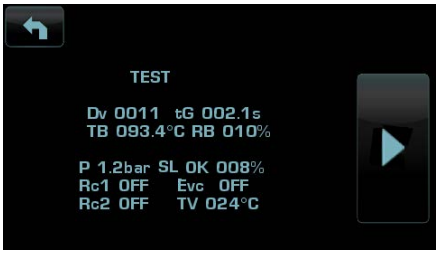
The  key makes it possible to program water doses with the SELF-LEARNING function (see specific paragraph).

4

By pressing one of the coffee keys (e.g. key 1), the relative water dose is shown on the services display and the icon of the key in question remains highlighted on the group display.

5

By pressing the  key, the dispensing starts and the following screen appears on the services display:



The parameters displayed are:
Dv: *Volumetric meter incremental counter*
tG: *dispensing time*
TB: *instant coffee boiler temperature*
RB: *% activation coffee boiler* resistance
P: *service boiler pressure*
Liv: service *boiler water level; % level signal*
Rc: service *boiler resistance*
Evc: service *boiler load solenoid valve*
TV: *Turbosteam wand steam temperature*

Water dose programming

1

Press the icon  .

2

Press the  icon. These parameters can be configured:
SET... - to set the dispensing time;
% - to set the water temperature.

NOTE. -  the red border around the icon indicates the key being changed.
- the TESTING phase for the water keys is similar to that of the coffee keys.

Press the  icon to confirm the information entered.

Water dose programming using the "self-learning" function

1

Place a container suitable for the amount you wish to fill beneath the hot-water outlet and press the icon.

2

The buzzer sound and the red border around the icon indicate the SELF-LEARNING STAGE.

3

Press key to be programmed. When the desired level is reached in the container press the key again.

Continue with any additional programming of the keys.

4

Press the icon to exit the SELF-LEARNING phase.

5

The buzzer sound will stop and the red border at the top left of the icon will disappear.

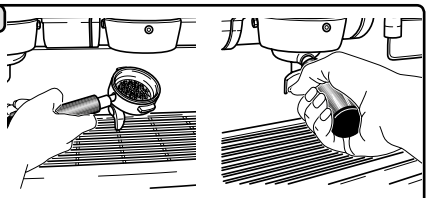
6

The dispensing time and temperature of the water added will be displayed which can be corrected manually using the buttons .

Afterwards, confirm the values by pressing the OK icon.

Programming measures using the "SELF-LEARNING" function

1



Hook the filter holder with the dose of ground coffee to the group.

2

Press one of the coffee keys (e.g. Group 3).

3

Press the key  ; a red outline and the buzzer indicate the SELF-LEARNING phase.

4

Place the cup or cups underneath the filter holder nozzles.

The numbers relative to each key appear on the group display.

5

Push the button to be programmed (e.g. key 1): the icon of the key in question remains selected on the display.

When the desired level is reached in the cup or cups, press the key again.

Continue to program all the coffee keys.

6

By pushing the coffee buttons on the services display, the doses entered can be viewed, with the values of the impulses of the volumetric dosing devices.

The doses entered with the self-learning function can be corrected manually using the +/- keys.

Afterwards, confirm the values by pressing the OK key.

Clone function

This feature allows you to replicate the coffee unit settings for all other machine groups.

1

Press one of the coffee keys (e.g.  Group 3).

2

Press the icon  .

3

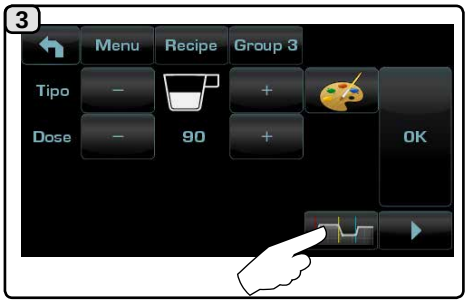
Press the icon OK to confirm.

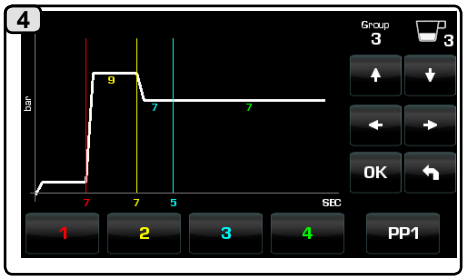
4

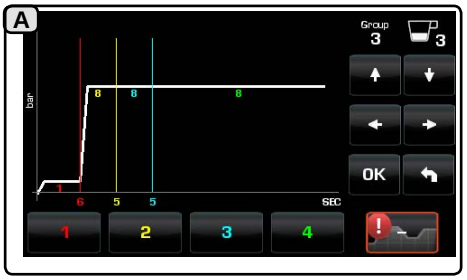
At the end of the process, all the groups will have the same parameters.

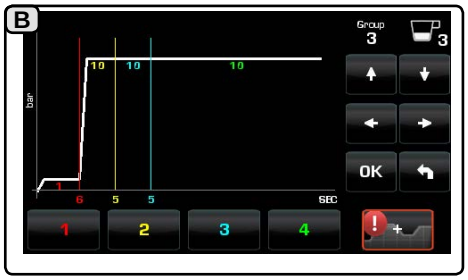
Pressure profile (only on “HD” machines)

This function lets you set the profile for the pressure at which the coffee is dispensed.

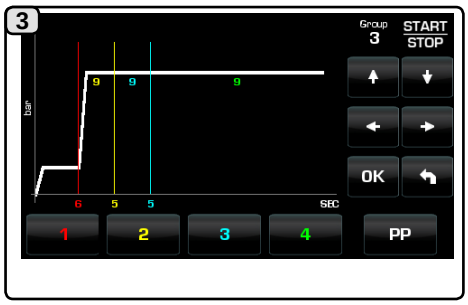








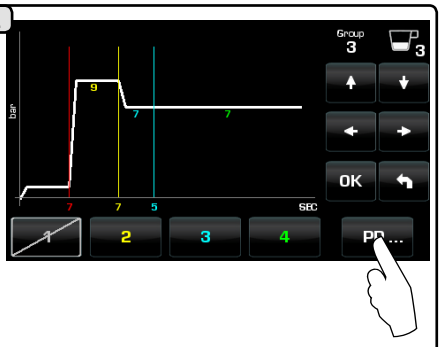
Pressure profile: Start/Stop key



English

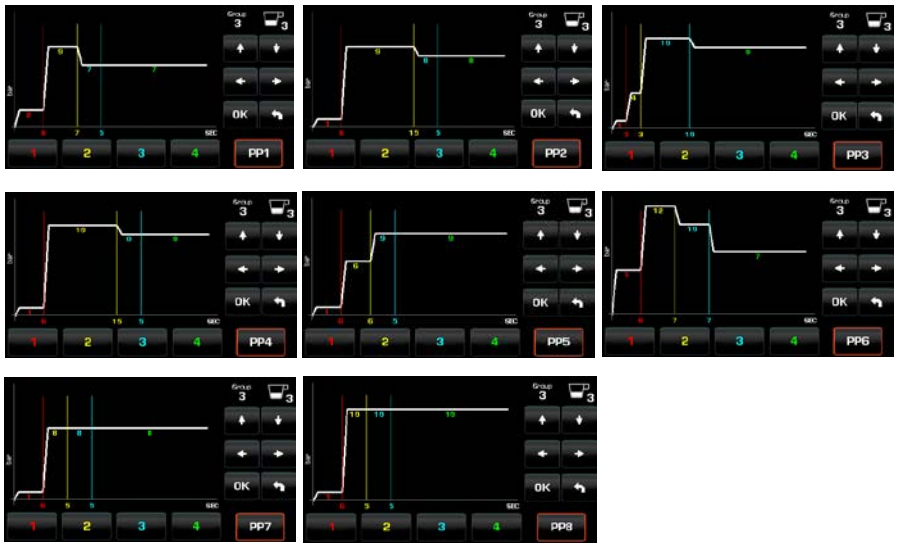
Available profiles

1



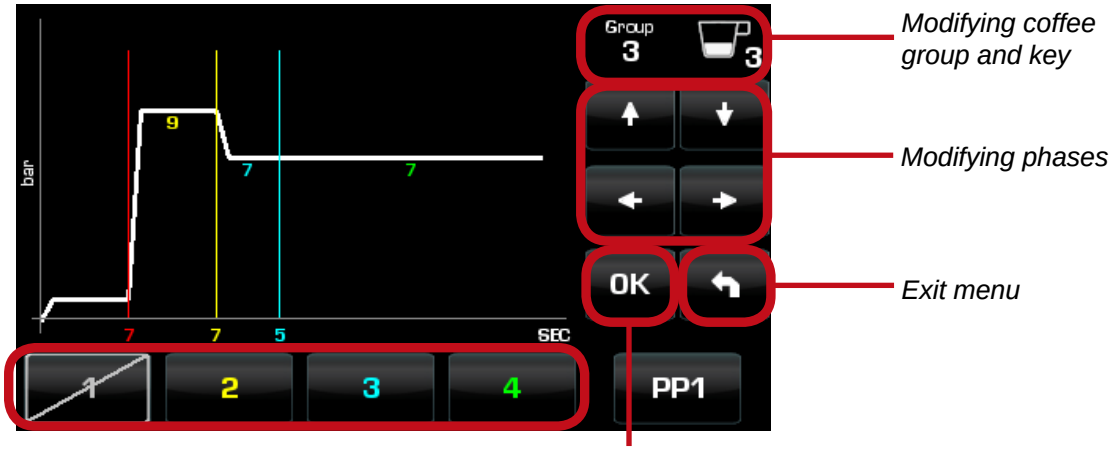
8 preset profiles are available and can be viewed when consecutively pressing the icon PP ... .

2



Edit Profiles

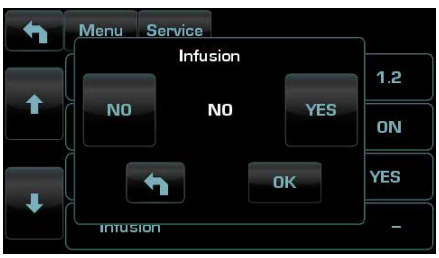
The profiles can be customized by modifying the duration and pressure of each separate dispensing phase.

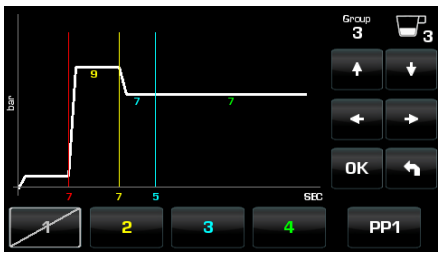


For example, **phase 2** (**in yellow**) will have a duration of 7 seconds at 9 bars; **phase 3** (**in blue**) will have a duration of 5 seconds at 7 bars.

Phase 1 Is tied to infusion: as shown in the image above, it cannot be modified ( ) and has settings (time and pressure) similar to those of a traditional machine.

To modify ( ) **phase 1**, you must access the *Programming menu* and set the *Infusion* parameter to NO:



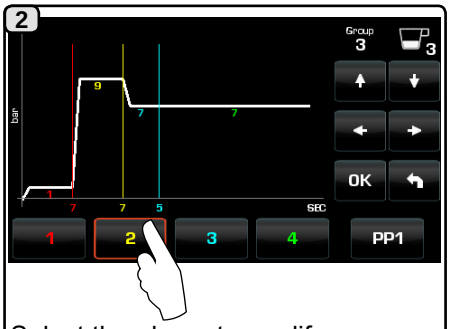


The following illustrates in detail the steps to follow: the separate phases of the key ***3 strong coffee of group 3***.

1

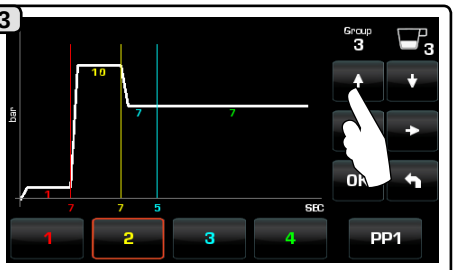
Press the icon  of the key.

2



Select the phase to modify.

3

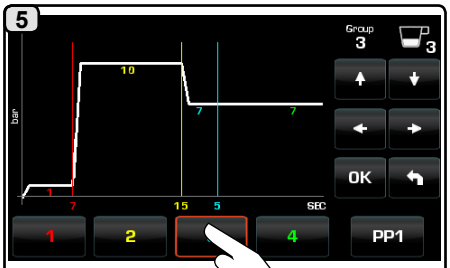


Change the pressure using the keys  .

4

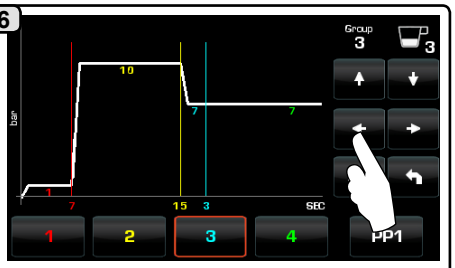
Change the seconds using the keys  .

5



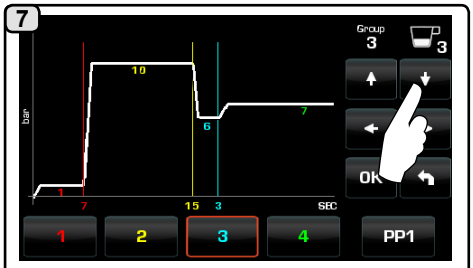
Select another phase to modify.

6



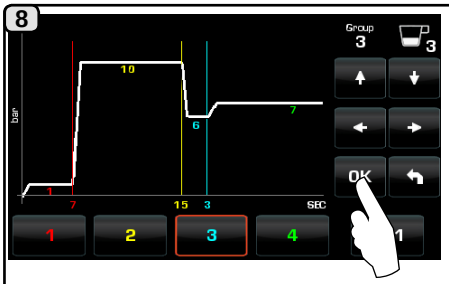
Change the seconds using the keys  .

7



Change the pressure using the keys  .

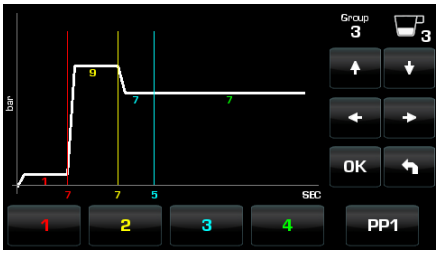
8



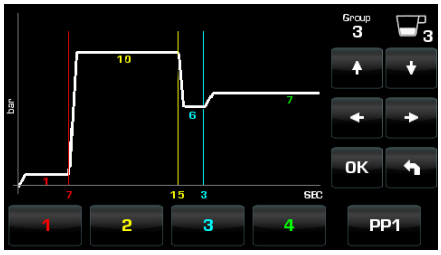
Confirm changes to the profile by pressing the key  .

Press the key  to exit, leaving the profile in the initial condition.

The change to the pressure profile tied to the key ***3 strong coffee of group 3*** is evident when comparing the initial profile with the modified one:



Initial profile



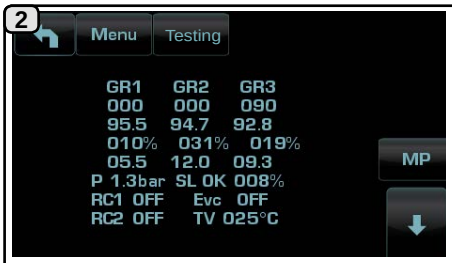
Modified profile

6. Testing

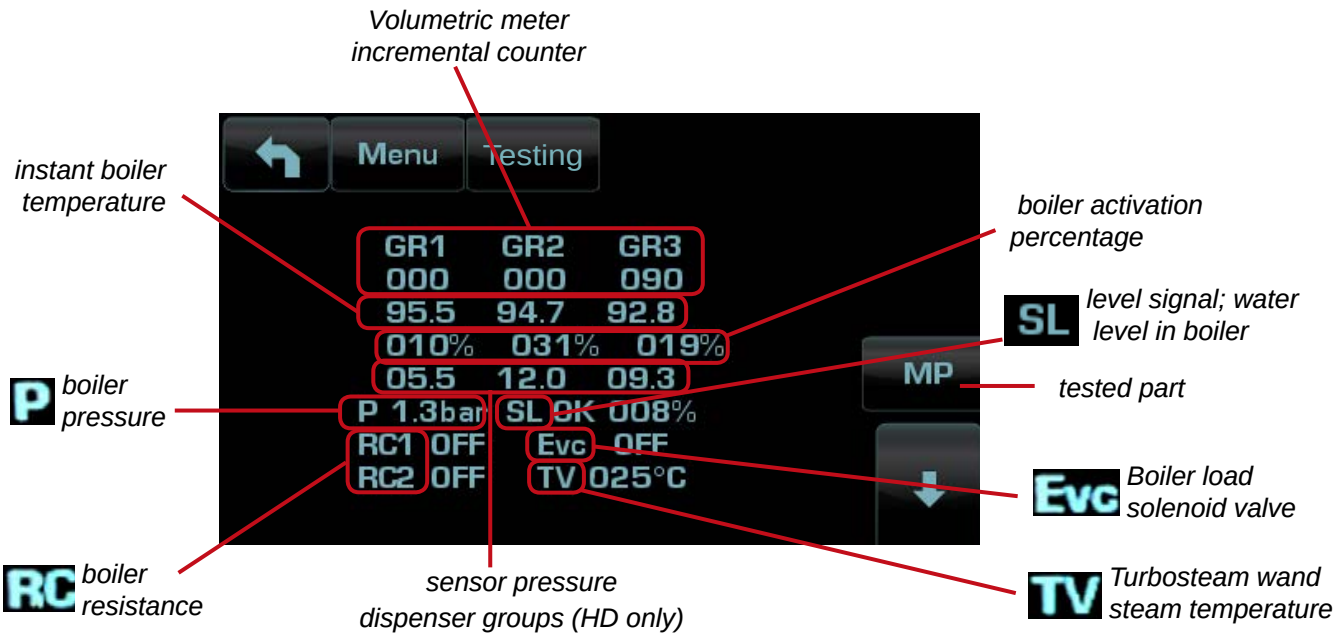
1

Press the icon  .

2



The test screen permits manual operation of the components in the machine.



Boiler activation percentage: Modulation percentage of the heating power of the boiler.

RC **Boiler resistance:** Activation of resistance elements on the basis of the power selected.
Total power divided into: RC1 = ⅔ - RC2 = ⅓

Full power cycle: RC1 ON / RC2 ON
RC1 OFF / RC2 OFF

Low power cycle: RC1 ON / RC2 OFF
RC1 OFF / RC2 OFF

Components to operate are selected by pressing icons  ; the operation takes place by pushing the button which indicates the name of the part.

Here is the table of symbols used to define the moving parts that can be accessed:

MP	Pump motor
G1÷G4	Coffee dispensing solenoid valves
Eac	Hot water solenoid valve
Eaf	Cold water solenoid valve
Eav	Steam water solenoid
Evc	Boiler load solenoid valve
Ets	Steam solenoid valve (Turbosteam)*
MC	Turbosteam compressor motor*
Eds	EDS solenoid valve*
Em-Erp	Milk solenoid valve/ Pressure-reset solenoid valve*
Gp1÷Gp4	Proportional solenoid valve*

The components - * - are only applied with certain product configurations.

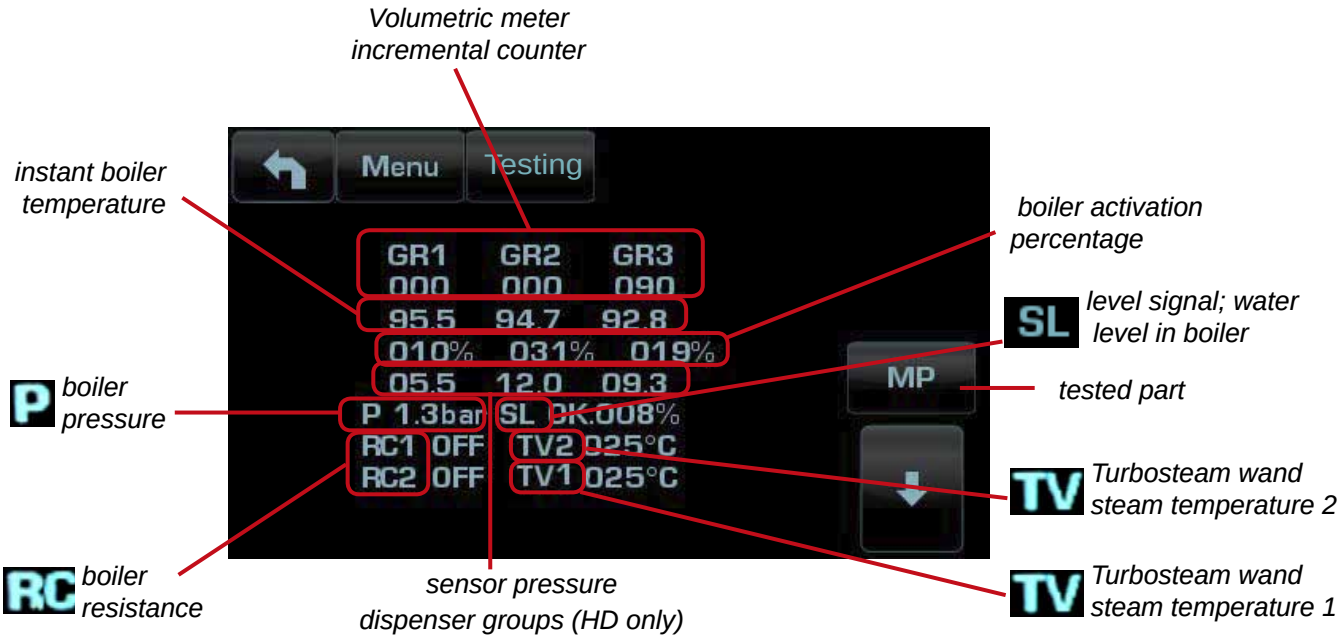
1

Press the icon  .

2

The test screen permits manual operation of the components in the machine.

English



Boiler activation percentage: Modulation percentage of the heating power of the boiler.

Boiler resistance: Activation of resistance elements on the basis of the power selected.
Total power divided into: RC1 = ⅔ - RC2 = ⅓

Full power cycle: RC1 ON / RC2 ON
RC1 OFF / RC2 OFF

Low power cycle: RC1 ON / RC2 OFF
RC1 OFF / RC2 OFF

Components to operate are selected by pressing icons ↓ ↑; the operation takes place by pushing the button which indicates the name of the part.

Here is the table of symbols used to define the moving parts that can be accessed:

MP	Pump motor
G1÷G4	Coffee dispensing solenoid valves
Eac	Hot water solenoid valve
Eaf	Cold water solenoid valve
Eav	Steam water solenoid
Evc	Boiler load solenoid valve
Ets	Steam solenoid valve (Turbosteam)
MC	Turbosteam compressor motor
Ets2	Steam solenoid valve (Turbosteam)
MC2	Turbosteam compressor motor
Eds	EDS solenoid valve
Em	Milk solenoid valve/ Pressure-reset solenoid valve
Gp1÷Gp4	Proportional solenoid valve*

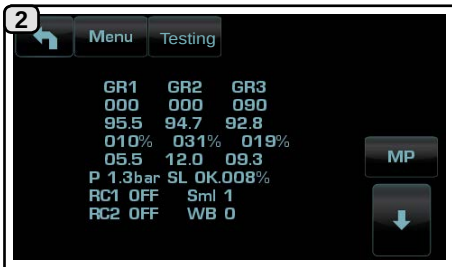
The components - * - are only applied with certain product configurations.

English

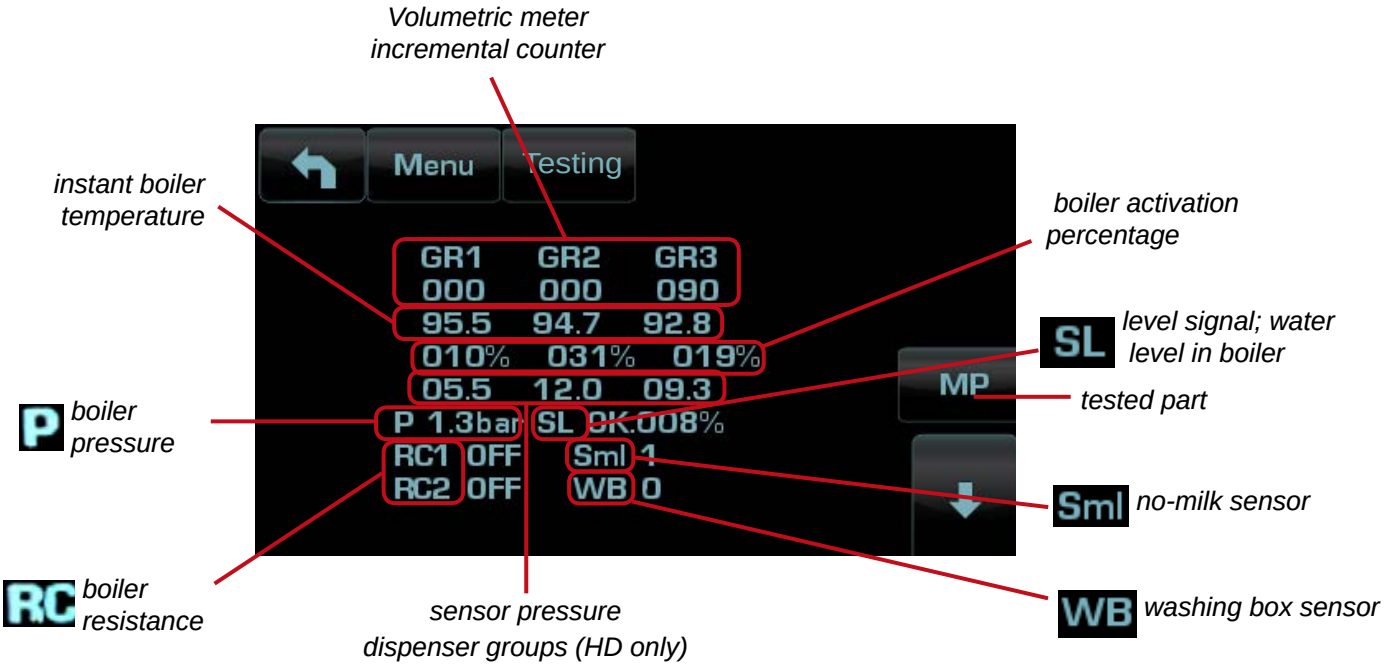
1

Press the icon  .

2



The test screen permits manual operation of the components in the machine.



Boiler activation percentage: Modulation percentage of the heating power of the boiler.

RC **Boiler resistance:** Activation of resistance elements on the basis of the power selected.
Total power divided into: RC1 = ⅔ - RC2 = ⅓
Full power cycle: RC1 ON / RC2 ON
RC1 OFF / RC2 OFF
Low power cycle: RC1 ON / RC2 OFF
RC1 OFF / RC2 OFF

Components to operate are selected by pressing icons  ; the operation takes place by pushing the button which indicates the name of the part.

Here is the table of symbols used to define the moving parts that can be accessed:

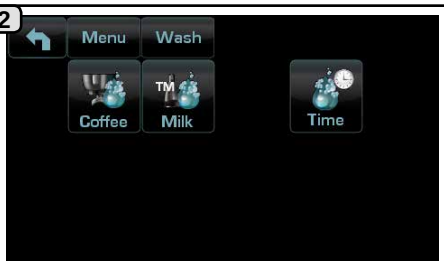
MP	pump motor
G1÷G3	Dispense-coffee solenoid valve
Eac	Hot water solenoid valve
Eaf	Cold-water solenoid valve
Ev	Steam solenoid valve
Evc	Charge-boiler solenoid valve
Em	Milk solenoid valve
Ed	Diverter solenoid valve
Elf1	Water solenoid valve for milk reconstitution
Edm	Milk diverter solenoid valve
Edar	Air diverter solenoid valve
Esm	Milk safety solenoid valve
Etm	Turbomilk solenoid valve
Elf	Washing solenoid valve
Mpl	Milk pump motor

7. Washes

1

Press the icon  .

2

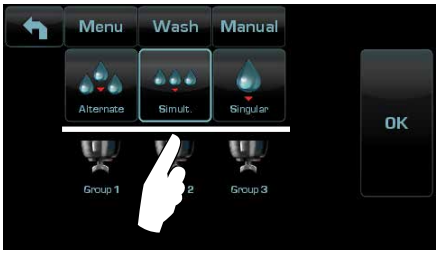


Select from the following wash settings:

- ***Coffee*** 
- ***Milk*** 
- ***Time*** 

3a

Coffee Wash: press the  key



- Choose the type of wash-cycle to perform  ;
- Confirm by pressing the key OK;
- Follow the instructions on the display.

3b

Milk Wash: press the  key

Press the OK key and follow the instructions on the display.

NOTE: More information on the wash cycle can be found in the "**Cleaning and Maintenance**" chapter.

4

Time: press the  key

This menu makes it possible to set the times requests appear for the water change in the boiler, the coffee circuit wash, and the milk circuit wash.

Select which of the following times to set:

- ***Change*** 
- ***Coffee*** 
- ***Milk*** 

English

4a

Change: press the  key

Change the time depending on your requirements.

Confirm by pressing the OK key.

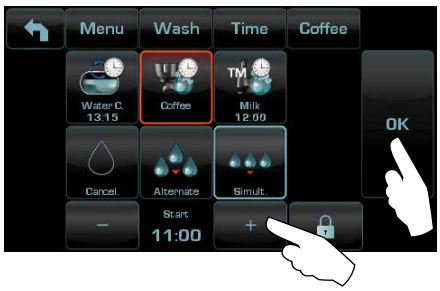
The new time appears under the  key.

NOTES. The "*WATER CHANGE*" function with time request is set by the technical personnel who can also enable or disable the "block" function.
With "block" enabled, if the water refill is not done within one hour, the machine prevents the dispensing of the beverages, water and steam.
With request scheduled the user can only change the time the request appears.

4b

Coffee: press the  key

Select which type of coffee wash you want to perform. For example  .



Change the time depending on your requirements and confirm with the OK key.

The time appears under the  key.

NOTES. It is possible to cancel the scheduled wash request by pressing the  key; in this case no time appears under the  key.

4c

Milk: press the  key

Change the time depending on your requirements and confirm with the OK key.

The new time appears under the  key.

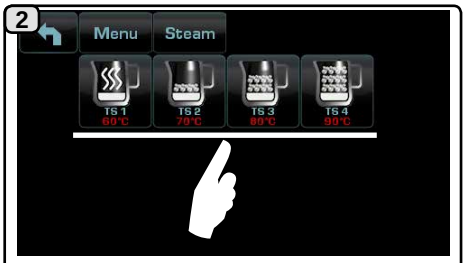
NOTE. It is NOT possible to cancel the scheduled wash request.

8. Turbosteam

1

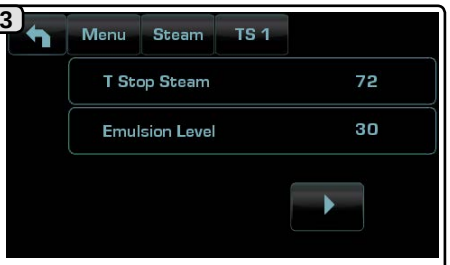
Press the icon  .

2



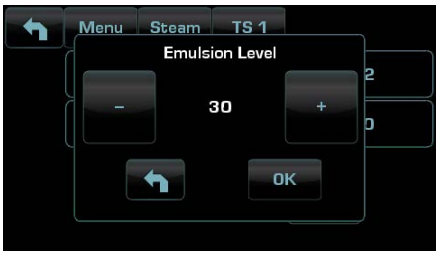
Press one of the Turbosteam keys.

3



Press the parameter to be modified

4



Set the values using the  keys. Confirm the data inserted using the key  or exit and leave the previous data using the key  .

5

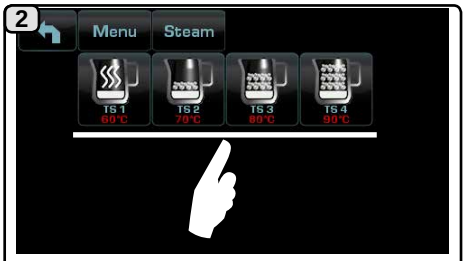
By pressing the  key the following screen appears on the services display.

(versions with *Turbosteam L and Turbosteam R*)

1

Press the icon  .

2

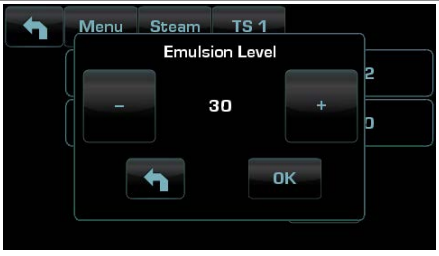


Press one of the Turbosteam keys.

3

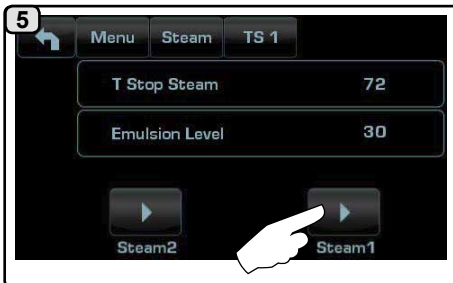
Press the parameter to be modified

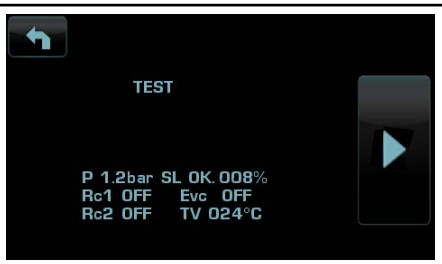
4



Set the values using the  keys. Confirm the data inserted using the key  or exit and leave the previous data using the key  .

5





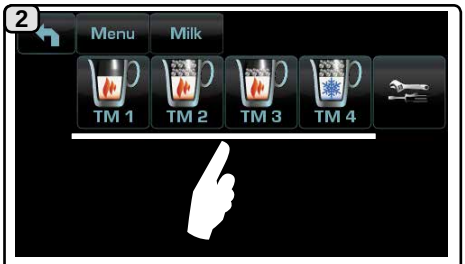
By pressing the  key the following screen appears on the services display.

Milk (versions with Turbo Milk)

1

Press the icon .

2



Press one of the Turbo Milk keys.

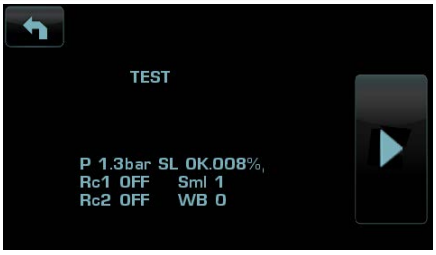
3

Press the parameter to be modified.

4

Set the values using the − + keys. Confirm the data inserted using the key OK or exit and leave the previous data using the key .

5



By pressing the key the following screen appears on the services display.

1

Press the icon .

2

Press the parameter to be modified.

3

Set the values using the − + keys.

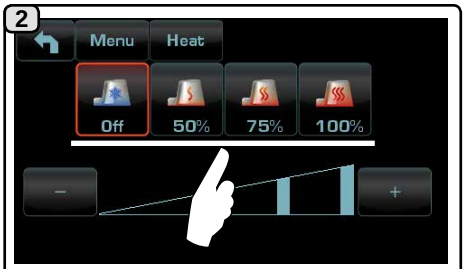
Confirm the data inserted using the key OK or exit and leave the previous data using the key .

9. Cup Warmer

1

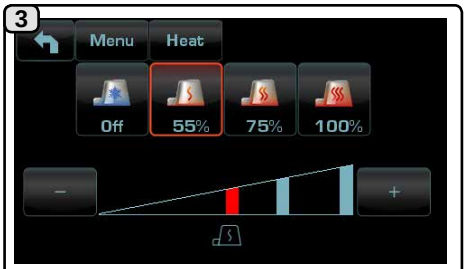
Press the icon  .

2



Select the heating level.

3



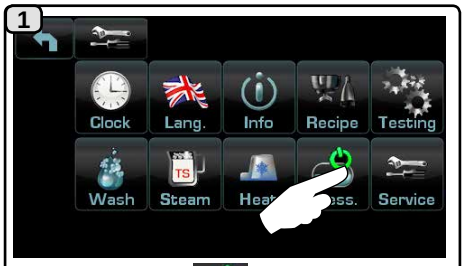
Additional changes are possible using the  keys.

English

10. Heating element

Service personnel can switch on or switch off the electric heating (service boiler and groups boilers) in this way:

1



Press the icon  .

2

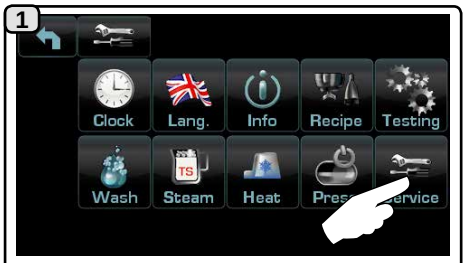
Returning to the main menu, the key  displays the barred icon of the resistance  : all resistances are disabled.

Icon  in programming = enabled resistances (icon  main menu);

Icon  in programming = disabled resistances (icon  main menu).

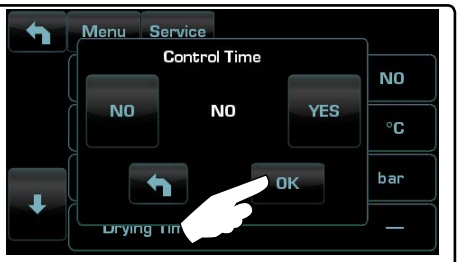
11. Programming

1

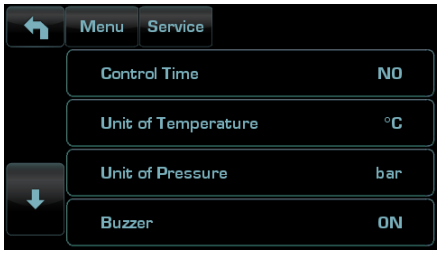


Press the icon  .

2



Press the icons  to scroll through the entries.
Configuration of the parameter occurs by pressing the square of the parameter: press the desired icon on the screen and confirm with OK.

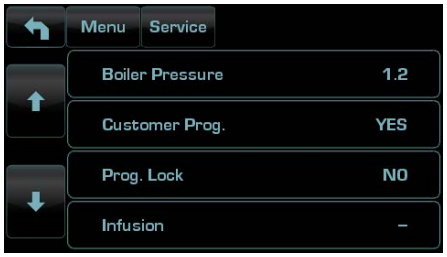


Control Time - display dispensing time: YES/NO (from 1" to 60').

Unit of Temperature - can be set to: °C, degrees centigrade/Celsius, or °F, degrees Fahrenheit.

Unit of Pressure - can be set to bar or psi.

Buzzer - enables/disables all acoustic signals when keys are pressed or messages are displayed: YES/NO.



Boiler Pressure - indicates the pressure of the boiler; 0.6 to 1.6 bar (9 to 23 psi)

Customer Prog. - customer programming: YES/NO.

Prog Lock. - block programming: YES/NO.

Infusion - parameter linked to the pressure profiles of the dispensing keys: YES/NO "Only on HD"
YES: values (time and pressure) similar to those of a traditional machine.
NO: editable in step 1 of the pressure profiles.

Weighting system - allows management of the Acaia scales for weighing the amount of coffee dispensed: YES/NO.

Payment Systems - allows a payment system to be configured, when connected.

Level Sensib. - indicates the degree of sensitivity of the level probe, which then operates the filling of the boiler with water. For safety reasons, automatic level control of the boiler is disabled when the boiler resistance is turned off.
- Note: set a value of 1 if the machine is installed with very conductive water.
-NOTE: set a value of 3 if the water used is not very conductive (very soft).

Data In/Out - contains the items:
IN: transfer from USB to machine;
OUT: from machine to USB.

Grinder Control-1
Grinder Control-2
(only if the machine is connected to a wireless grinder/dispenser).
The parameters that can be set are:
- *enabled* - MM1 - MM2
Set to "NO" during the machine configuration phase; "YES" once parameters have been entered.
- *Adjustment threshold* - see the section "Steps for Bluetooth Coffee Machine-Grinder/Dispenser Communication" in the following pages.

Bluetooth - see section "*Bluetooth Connection*" in the following pages.
Wi-Fi - see section "Wi-Fi Configuration" in the following pages.

11. Programming

Coffee Boiler - this parameter includes the items for setting the coffee boiler temperature; values that can be set are 60°C to 110°C (140°F to 230°F) with steps of 0.5°C.Group temperature programming with offset correction possible (see section in pages below).

Softener Reg. - includes the resin regeneration parameters: litres of resin (from 0.1 l to 25 l), hardness (from 0°F to 45°F). The decreasing resin efficiency level is also indicated.

Change water Filter - On reaching the litre level set on the display a message is displayed which prompts replacement of the filter.
For both functions, an efficiency percentage is displayed (Softener/ Filter), descending from 100% to 0%.

Maintenance - includes 4 submenus for setting maintenance parameters:

- Max cycles - the number of cycles set.

- Max days - the number of days set.

- No. cycles/days - this is the number of cycles and days until next maintenance.

- Maintenance - YES/NO.

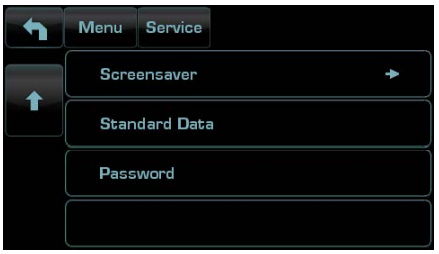
Enables (YES) or does not enable countdown of the cycles and days until the next maintenance activity.

Bds - see section “BDS Activation” in the following pages.

Flush - see section “Enabling Flush key” in the following pages.

Low Power - YES/NO

Drying Time - coffee disc drying time from 0 to 5 with steps of 0.1 seconds.



Screensaver - Possibility of programming the screensaver display time (from 30" to 20')

Standard data - Allows loading of standard data or reconfiguration of the machine. In both cases the machine is automatically restarted.

Password- allows change of the code for accessing technical programming.

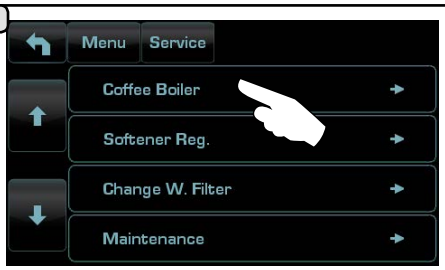
English

Coffee Boiler

1

Press the icon  .

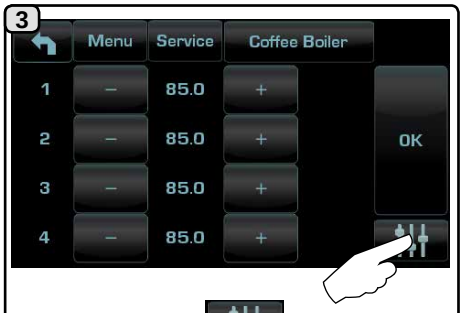
2



The items are scrolled by pressing the icons  .

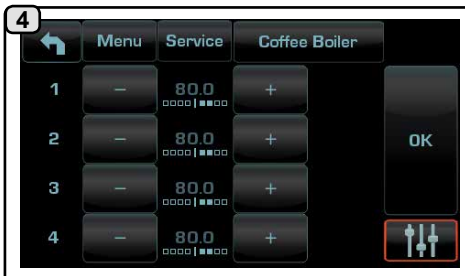
Press the icon Coffee Boiler.

3



Press the icon  offset .

4



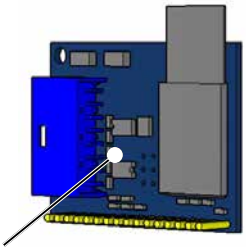
Set the desired values using the "**+**" and "**-**" icons.

NOTE: a temperature offset can be set for the boiler adjustable by ±2°C.

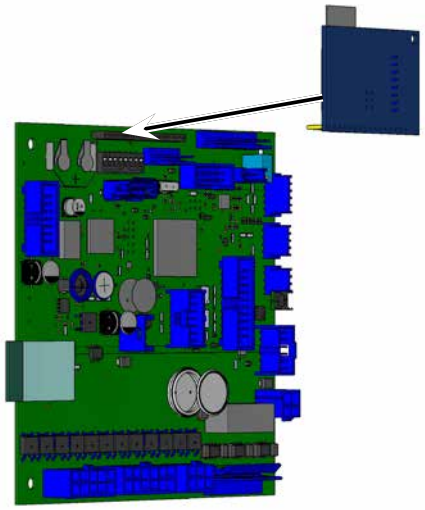
Each dot corresponds to approximately half a degree centigrade of offset.

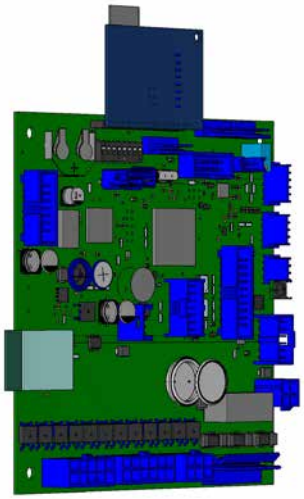
Confirm the data inserted using the icon OK or exit and leave the previous data using the icon  .

Bluetooth Connection



Bluetooth Card





<u>Bluetooth Menu</u> - The parameters that can be set are:
- MM1-MM2 - 1 to 2 grinders can be connected.
- Search - the machine will find all bluetooth devices within 10 m.
- Reset - cancels the connection with the associated device.

Note: during connection with bluetooth grinders/dispensers, the first one connected is set as MM1.

Procedure for Bluetooth connection with the machine-grinder unit

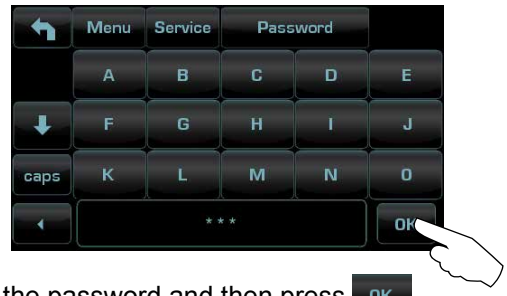
1 Turn the machine on; the initial menu appears on the display. The ✱ symbol indicates that the machine can be linked to a Bluetooth device.

To enter TECHNICAL programming, press the icon SET.

2

Press the icon  .

3

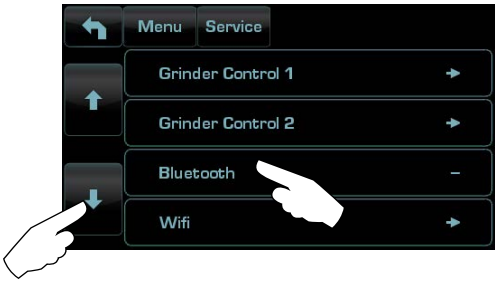


Type the password and then press OK

4

Press the icon  .

5



1) The items are scrolled by pressing the icons 
2) Press the icon Bluetooth.

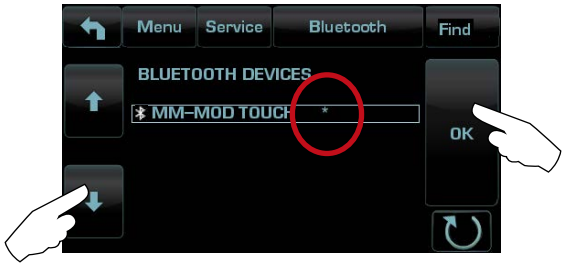
6

Press the icon Find.

7

The machine will find all Bluetooth devices within a range of 10 metres.

8



1) The items are scrolled by pressing the icons 
2) Press the icon OK to confirm the selected device, an asterisk will appear ✱ next to the line of the grinder/ dispenser to indicate the successful Bluetooth association with the machine:

9

Exit from programming by pressing the icon .

10

The blue icon indicates that the machine and grinder/ dispenser are communicating.

English

In the event of communication problems, the "COMMUNICATION FAILURE" message will appear on the display followed by the name of the disconnected grinder/dispenser. The message disappears automatically when the Bluetooth connection is restored. A common cause of this failure is the grinder/dispenser being turned off with the machine turned on.

BDS activation and sensor configuration

(Cannot be activated on “HD” machines)

1

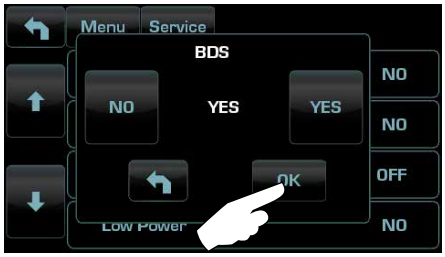
1) The items are scrolled by pressing the icons ↓ ↑.

2) Press the icon **BDS**.

2

Press the icon **YES**.

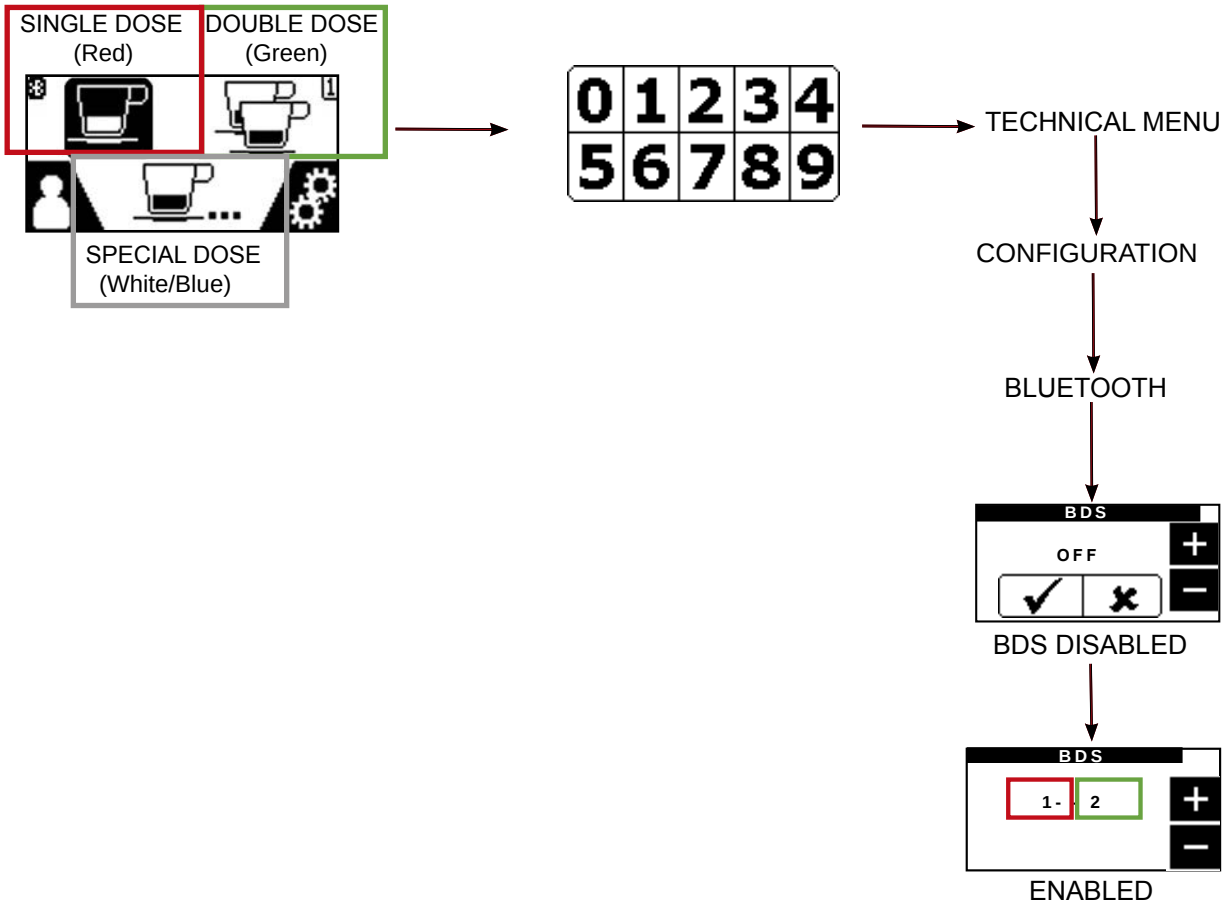
3



Press the icon **OK** to confirm.

Note: With BDS active the payment systems cannot be activated.

All the TECHNICAL MENU items of the "Magnum Bluetooth" grinder/dispenser can be viewed only after the default technical code has been entered.



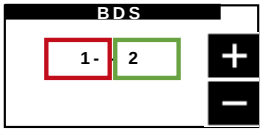
English

CONFIGURATION MAGNUM BLUETOOTH GRINDER/DISPENSER SENSORS

0: sensor disabled

1: single dose (Red)

2: double dose (Green)

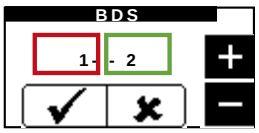


SINGLE DOSE
(Red)

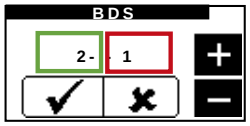
DOUBLE DOSE
(Green)

SPECIAL DOSE
(White)

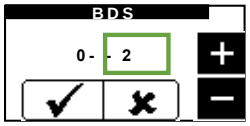
SPECIAL DOSE
(Blue)



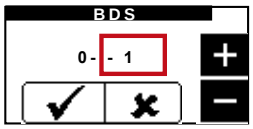
Single dose – Left sensor (Red)
Double dose – Right sensor (Green)



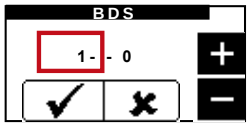
Double dose – Left sensor (Green)
Single dose – Right sensor (Red)



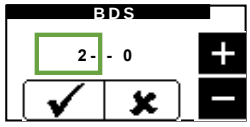
Left sensor disabled
Double dose – Right sensor (Green)



Single Dose – Right sensor (Red)
Left sensor disabled



Single dose – Left sensor (Red)
Right sensor disabled



Double dose – Left sensor (Green)
Right sensor disabled

Setting recipes and connections with grinder/dispenser

-NOTE: POSSIBILITY TO CONNECT ALSO WITH GRINDER/DISPENSER 2

GRINDER/DISPENSER 1

The filter holder-key and machine association logic is the following:
1-A or 2-A = activation of the first actuator
(filter-holder with single delivery spout)
1-B o 2-B = activation of the second actuator (filter-holder with double delivery spout)
1-C or 2-C = activation of the third actuator with filter-holder with dedicated filter

With the number **1** the first grinder/dispenser **MM1** is identified
With the number **2** the second grinder/dispenser **MM2** is identified

With the letters **A-B and C** the filter-holders are identified

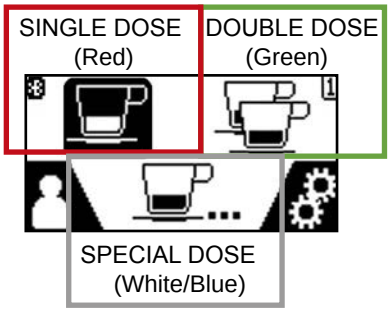
MEDIUM

SHORT

LONG

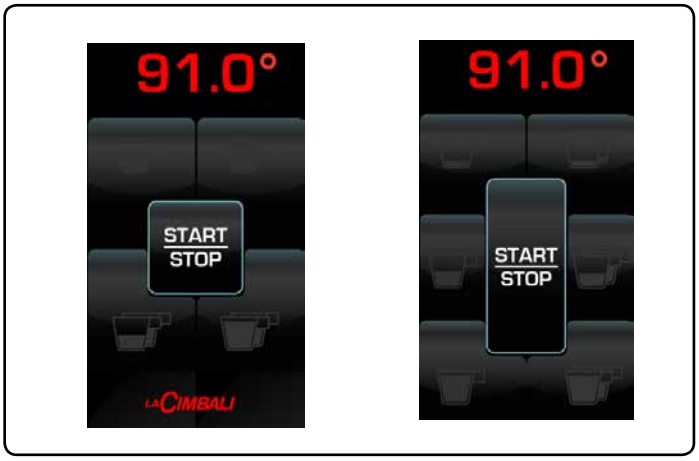
Every button on the machine can be configured based on the type and the relative grinder/dispenser. Not all types can be used with the BDS system. The possible choices are:

- Single type
- Short
- Medium -> SINGLE DOSE (Red)
- Long -> SPECIAL DOSE (White/Blue)
- Double type
- Short
- Medium -> DOUBLE DOSE (Green)
- Long

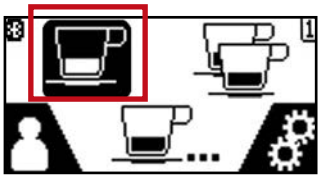


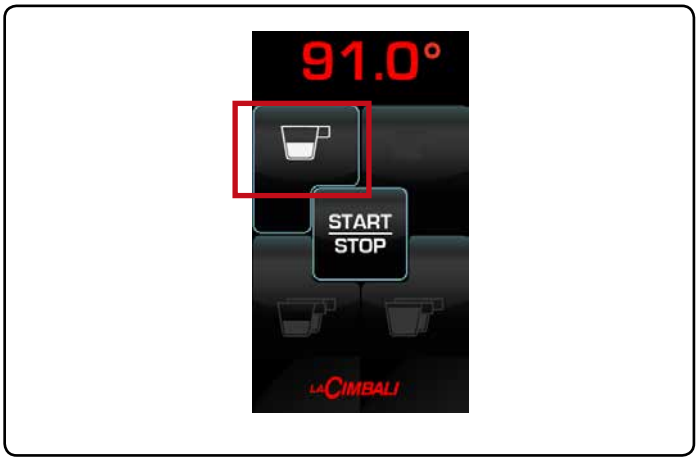
English

BDS system enabled.
Dispensing disabled (keys off) NOTE: Start/Stop key is always active.



Dose grinding and dispensing activated (key on)





Dispensing will remain active for 2 minutes. During this time, the grinder/dispenser used will be blocked and therefore unable to grind a second dose of coffee.

The grinder/dispenser will automatically release when the enabled key is pressed or when the two minutes of waiting time have elapsed.

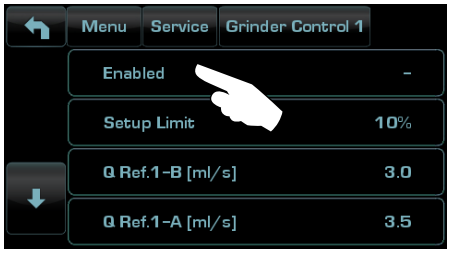
Grinder control parameters configuration

1

1) The items are scrolled by pressing the icons ↓ ↑

2) Press the icon **Grinder Control 1** .

2



Press the icon **Enabled**

Grinder Control-1
Grinder Control-2
(only if the machine is connected to a wireless grinder/ dispenser).

The parameters that can be set are:

-: not in use

✓: manual grinder control (for grinder/dispensers with no bluetooth connection option.

: automatic grinder control (bluetooth connection with grinder/dispenser).

Note: For proper operation of the grinder control system, keys of the same type (for example singular ones relative to grinder/dispenser 1) programmed with the same pressure and time parameters, in all the phases of the profile.

3

-: not in use

4

✓: manual grinder control (for grinder/dispensers with no bluetooth connection option).

5

: automatic grinder control (bluetooth connection with grinder/dispenser).

The parameters can be modified manually using the keys ← →.
After completing operations confirm the values by pressing the key **OK** or exit and leave the previous data using the key ↩.

Grinder control parameters configuration

✓: manual grinder control (for grinder/dispensers with no bluetooth connection option.

1. disable grinder control, if in use.
2. set and calibrate the machine and grinder/dispenser as desired.
3. dispense into the test square all the types of beverages to be used (double coffee, single coffee and any special blend - third key).
4. write down the satisfactory flow values of the coffees for each of the possible three types of beverage.
5. go to the grinder control panel and perform reset.
6. set the flow values for each of the beverages.
7. enable grinder control.

Note: Set the Q.ref of double coffees first for proper functioning of grinder control.

control of the flow (only if in use)

The appearance of this animated icon means that adjustments need to be made to the grinder/dispenser to tighten or
loosen the grinding, to return coffee dispensing to the default parameters.
The icons that are shown are:

 means that the grinding needs to be loosened. (flow of coffee is lower than the reference).

 means that the grinding needs to be tightened. (flow of coffee is greater than the reference).

Note. The number next to the icon (1 or 2) indicates which grinder/dispenser needs adjusting.
The icon appears on the display instead of the level symbol.

Grinder control parameters configuration

: Method 1: manual setting of Qref.

1. disable grinder control, if in use.
2. connect the machine to the grinder/dispenser via bluetooth and enable dialogue in the manner already in use.
3. set and calibrate the machine and grinder/dispenser as desired.
4. dispense into the test square all the types of beverages to be used (double coffee, single coffee and any special blend - third magnum key on demand).
5. write down the satisfactory flow values of the coffees for each of the possible three types of beverage.
6. go to the grinder control panel and perform reset.
7. set the flow values for each of the beverages.
8. enable grinder control.

: Method 2: setting of Qref in fully self-learning mode.

1. Disable grinder control, if in use.
2. Connect the machine to the grinder/dispenser via bluetooth and enable dialogue in the manner already in use.
3. Programme and calibrate the machine and grinder/dispenser as desired, dispensing the beverages until a satisfactory cup result is achieved.
4. Go to the grinder control panel and perform reset.
5. Enable grinder control.
6. Exit programming.
7. Dispense double coffees (5 or more) until the message Qref OK appears on the services display (with audible sound).
8. Dispense single coffees (5 or more) until the message Qref OK appears on the services display (with audible signal).
9. Dispense any special blend coffees (5 or more) until the message Qref OK appears on the services display (with audible sound).
10. Enter programming and check that the Qref values set are present.

Repeat the entire procedure for the second grinder/dispenser if present.
The machine is ready to work with the grinder control on. In the event of problems, dispensing can be performed in the test square with the grinder control in use to see if the symbol * is present beside the flow. Remember that dispensing is deemed valid only if it lasts more than 10 seconds.

Other symbols are used in the test square:

> if the flow is too high compared to the reference, above the upper limit

< if the flow is too low compared to the reference, below the lower limit

* flow within the acceptable range

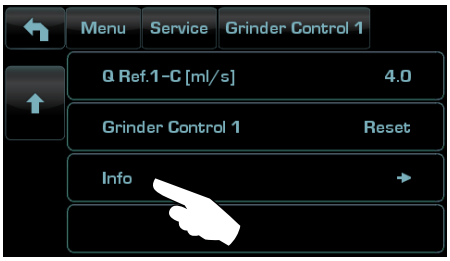
- dispensing too brief (at least 8 s but less than 10 s)
(3) number of remaining coffees to be dispensed and deducted from the count

English

Grinder control parameters configuration

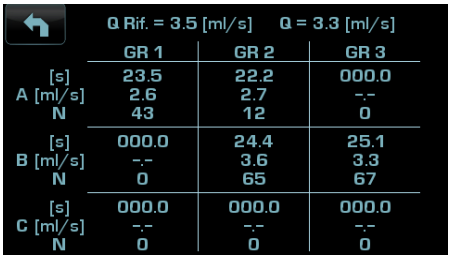
Info grinder control.

1



Press the icon **Info**.

2



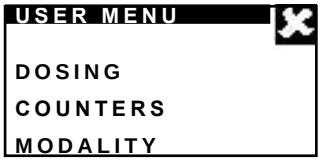
Example of information on the flows of each single dispensing sent to the Plat-One platform via WIFI.
(A) GR1 single coffee,
(B) GR 3 double coffee,
(A/B) GR 2 central with one single coffee and one double,
(C) the filter holder is not used for special coffees.

Dose time variation relative to the Magnum Bluetooth grinder/dispenser

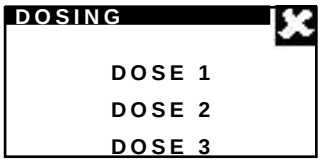
To increase or decrease the measure-time operate as follows:

1) press the icon from the main screen:

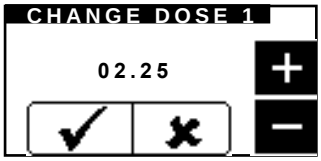
2) The following is displayed:



3) press the *DOSING* item; the following is displayed:



4) select the measure to be modified; the following is displayed:



Change the value by the "**+**" and "**-**" icons; confirm the entered value by the ✓ icon or press the ✗ icon to leave it unchanged.

The measure-number correspondence is the following:
DOSE 1 for the single measure ;
DOSE 2 for the double measure ;
* *DOSE 3* for the continuous measure ...

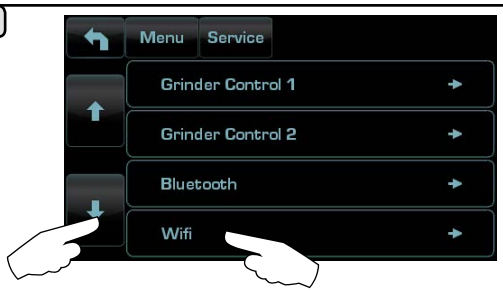
Note: single-measure's and continuous measure ...grinding time variation in user mode is ± 25 hundredths of second (0 ÷ 1/4 second).

Double-measure's grinding time variation in user mode is ± 50 hundredths of second (0 ÷ 1/2 second).

*** Grinding in continuous mode, if equal to zero (DOSE 3 = 0), can only be modified by the technician.**

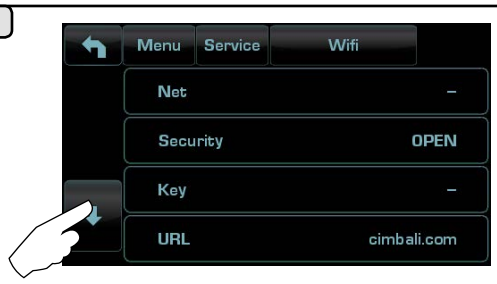
WiFi configuration

1



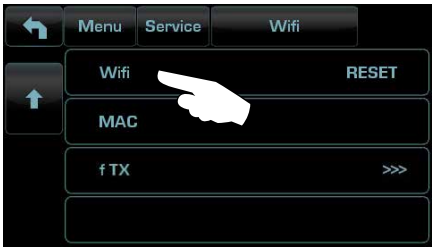
1) The items are scrolled by pressing the icons
2) Press the icon Wifi.

2



Scroll through the items using the icons

3



Press the icon WIFI RESET:

4

Reset the parameters with the icon OK - initialization of the standard data:

<u>Wi-Fi Menu</u> - Configure the following Wi-Fi parameters as shown below:

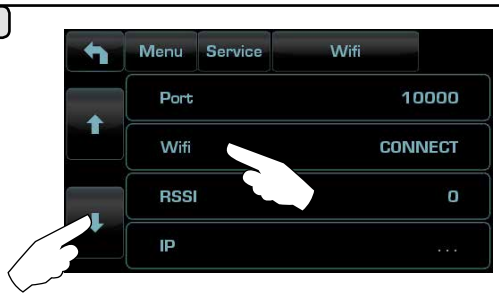
- NETWORK - enter the name of the access point.
- SECURITY - indicate the type of wireless network security:
- KEY - enter the password to access a protected Wi-Fi network (WPA or WEP)
- URL - enter <u>listener.gruppocimbali.com</u>.
- Port - enter <u>10000</u>.
- CONNECT - to connect to the access point selected.
- RSSI - signal intensity:
- IP - Displays the IP address assigned to the machine by the wireless access point.
- RESET - To restore the parameters to the standard parameters.
- MAC - Represents the Mac address of the WiFi module present in the machine. It is a parameter that is only displayed, cannot be changed.
- fTX - reduces data transmission to the remote server:
> **-** transmits all data daily at machine startup, faults/ washings per event;
>> **-** level 1 plus hourly counts;
>>> **-** level 2 plus pings every 10 min. (default).

Place the cursor on the item CONNECT to manually connect to the access point selected; if the configuration of the Wi-Fi module is correct, the following icon appears on the display WIFI:

5

1) The items are scrolled by pressing the icons
2) Press the icons required to configure the parameters.

6



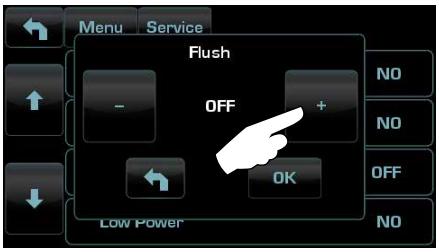
Enabling Flush key

By entering the programming menu you can activate the FLUSH key.

1

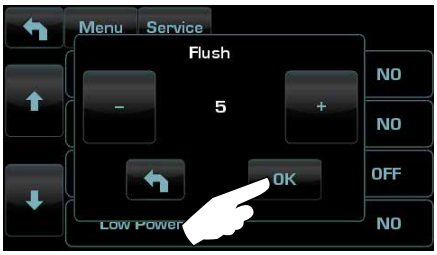
1) The items are scrolled by pressing the icons ↓ ↑.
2) Press the icon Flush.

2



Press the icon + and Set a time from 0 to 5 seconds.

3



Press the icon OK to confirm.

The machine can be set with 3 configurations:

1 key;

5 keys;

7 keys.

NOTE: when the machine is configured with 7 dispensing keys, the FLUSH key cannot also be present.

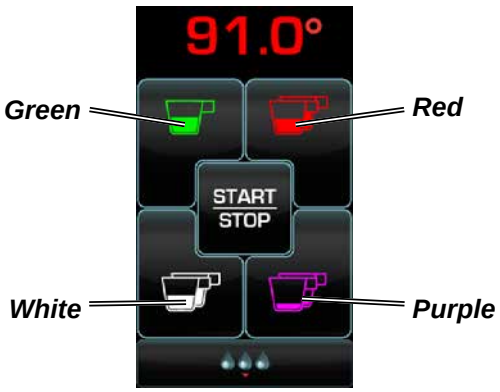
1 key

5 keys

7 keys

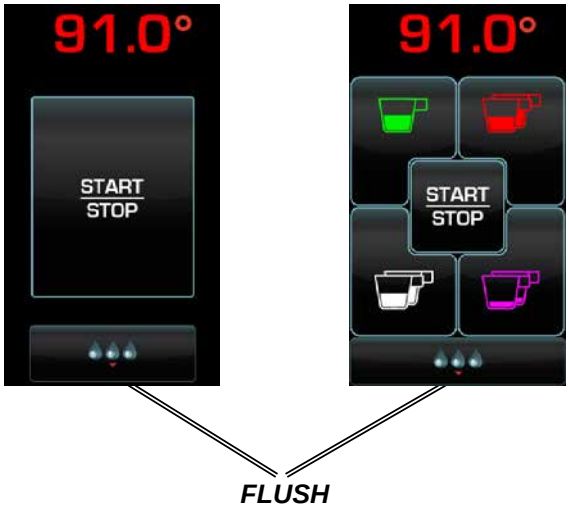
ENABLING FLUSH KEY

In addition, the keys of each dispenser group can be represented with different colours:



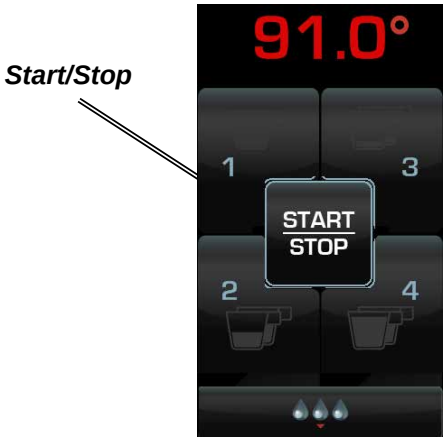
An additional function which is represented by the FLUSH key in the lower part of the display of each coffee dispenser group.

The FLUSH key makes it possible to briefly operate the "group rinse" (between 1 and 5 seconds) before inserting the filter holder.



If you want to interrupt this cycle, it is possible to stop the dispensing at any time by pressing any key on the unit.

The FLUSH key is not tracked in the cycle counters and remains free and active with payment systems in operation



Logo

On all the machine displays, after a period of inactivity set on the "Screensaver" menu, the standard Cimbali logos appear

English

1 Using any graphics program (e.g. Paint), create a file that meets certain characteristics; the prerequisites for a *bitmap* image to be used as a custom logo are:

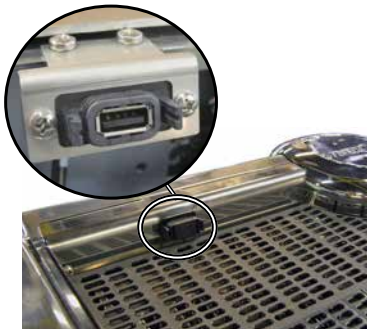
custlogo.bmp ***logosrv.bmp***	***logogrp.bmp***
• width less than or equal to **270 pixels**; • length less than or equal to **170 pixels**. • **24-bit bmp** colour.	• width less than or equal to **272 pixels**; • length less than or equal to **480 pixels**. • **24-bit bmp** colour.

Copy onto a USB pen drive the "***logogrp.bmp***" and/or "***logoserv.bmp***" files if you want to display a logo for the group display and one for the services display.

Copy the file "***custlogo.bmp***" if the user wants to display the same logo on all displays.

NOTE: If in the USB pen drive there are all files logo, will be displayed the image of the file "***custlogo.bmp***".

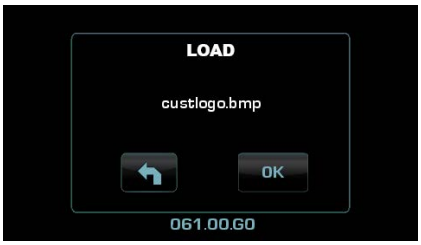
2 Insert the USB pen drive in the dedicated slot on the machine:



the  icon will appear on the services display:

3 Turn the machine off and back on again; when it comes back on the following will appear on the services display:

If in the USB pen drive there is the file ***logogrp.bmp*** and / or ***logosrv.bmp***



If in the USB pen drive there is the file ***custlogo.bmp***

4 Press OK and wait for the file to load:

5 Once loading is complete, remove the USB pen drive from the machine.

Note: If the screensaver is active, it is possible immediately see the logos, without waiting for idle time, every time the user turns off the analogically gauge.

Services logo

1

Return to the programming menu and press the icon **Screensaver**.

2

Press the icon **Logo**.

3

Press the icon **→**.

4

Press the icon **OK** to confirm.

5

Services display logo.

English

Coffee group display logo

6 Select the item GROUP to display the logo, both on the services display and on all displays of the coffee groups (the logo appears after 1 minute of inactivity)

Press the icon OK to confirm.

7

Coffee group display logo.

8 If you do not want to load custom images, M100 also offers a "default logo" that is always present in the machine. It is the "La Cimbali" logo

9 In the programming menu, just activate the logo item (without inserting any USB drive)

The "La Cimbali" logo will be displayed on the services display and, if the item group is activated, it will also be displayed on the coffee group display

Time

Possibility of programming the screensaver display time (from 30" to 20') with steps of 30 seconds.

1

Return to the programming menu and press the icon Time

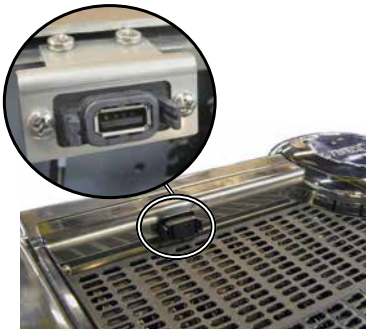
2

Press the icon +.

3

Press the icon OK to confirm.

Updating the TurboMilk SW board using USB Pen Drive.



- 1 Take an empty USB pen drive.
- 2 Copy the update file "Tmilk.hex" into the main directory of the pen drive from ftp://cffirmware:firmware@213.182.66.30/NEWTON/FIRMWARE/065_00_A0_09062015.zip
- 3 Insert the USB pen drive in the dedicated port on the machine
- 4 Turn on the machine

1

The following message will appear on the display:

2

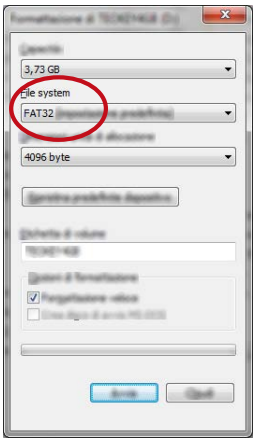
3

Once loading is complete, remove the USB pen drive from the machine.

1

PRELIMINARY OPERATIONS

Format a USB Pen Drive using the **FAT32** format. If using Windows, use the predefined formatting settings as shown in the image.



Copy the update files (CPU image.hex ; image.s19 ; *only for M100:* DISPLAY M100.ppf tft_fw.ppf) to the main file path of a USB Pen Drive.

NOTE: do not turn off the machine or remove the USB Pen Drive until the update has been completed. If using a USB Pen Drive operating LED, this is shown by the LED flashing.

2

PRELIMINARY OPERATION: Recognizing of USB support

With the machine running, insert the USB Pen Drive containing the update files into the USB port. The icon will appear on the display to indicate that the storage device has been recognised.

3

STARTING THE SOFTWARE UPDATE

Turn the machine off leaving the USB Pen Drive inserted. With the subsequent restart, the upgrade of the two microprocessors (master and slave) begins with the file image.hex image.s19.

The correct recognition of each file by the machine is signalled by a buzzer (200ms ON).

Pen Drive operating LED status: flashing (running).

4

At the end of the slave CPU update, programming of the master CPU begins. For the entire duration of this phase, the buzzer sounds intermittently (200ms ON).

Pen Drive operating LED status during the update: flashing (running).

The update of the CPU board lasts few minutes and ends when the buzzer emits prolonged intermittent signals (2sec ON / 10sec OFF).

Pen Drive operating LED status when update is completed: on (not running).

5

The 3.6 boot the key can be left inserted and it continues to automatically update the displays as well.

6

Insert the USB Pen Drive; the copying of the 2 DISPLAY update files begins M100.ppf tft_fw.ppf

7

In the next step, the display update begins. The screen shown is displayed on all of the machine's touch screens.

8

When the status indicator reaches 100% the update is complete and the machine restarts automatically. The following message appears when restarting:

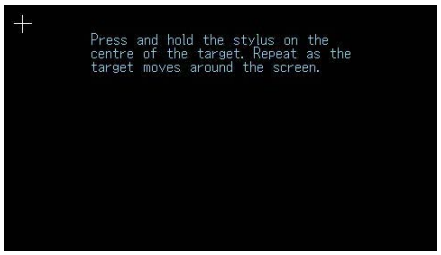
Remove the USB Pen Drive.

9

Enter the standard information, update the machine data and reactivate the resistance.

DISPLAY CALIBRATION

The calibration procedure can be performed at any time by starting the machine with Dip 3 ON.
The following message appears on all the displays when turned on:

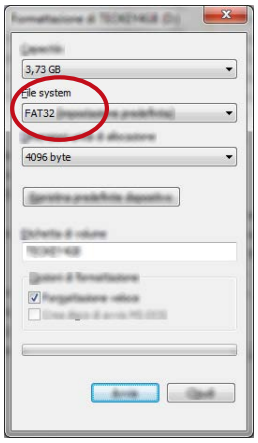


Using a pen hold down the centre of the cross; repeat the operation in all the points where the cross appears.
Perform the calibration on all the displays or only on those where it is required.
At the end of the operation, turn off the machine and return the Dip 3 to OFF.

1

PRELIMINARY OPERATIONS

Format a USB Pen Drive using the **FAT32** format. If using Windows, use the predefined formatting settings as shown in the image.
Copy the recovery files (M100_Recovery; *only for M100:* M100SOS.ppf) in the main path of the USB Pen Drive.



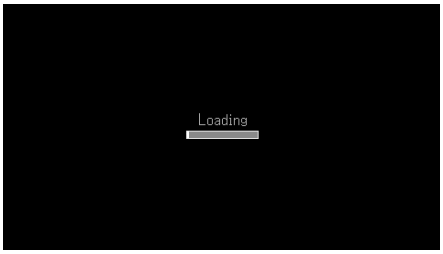
2

START-UP WITH RECOVERY FILES

Switch off the machine and insert the USB Pen Drive.

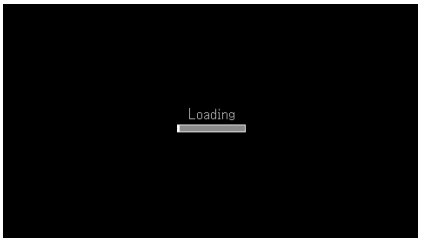
Turn the machine on again: when it restarts, recovery will begin.

The start of the procedure is indicated through an intermittent beep. During the update, the machine will beep at regular intervals.



3

The following message is displayed on the machine's touch screen.



4

When the update is complete, the services display automatically restarts and the following message appears:

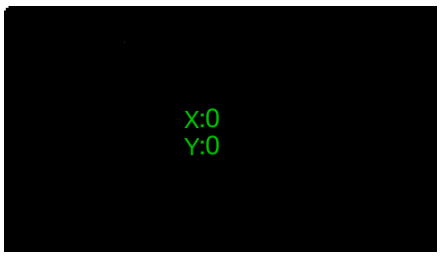
Remove the USB Pen Drive.

5

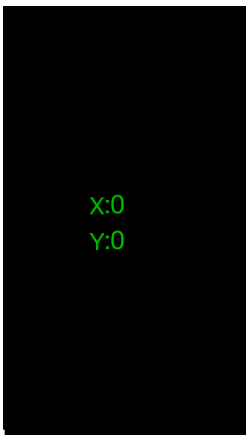
Enter the standard data, update the machine data and reactivate the heating element, if necessary.

The display test procedure can be performed at any time by starting the machine with Dip 5 ON.
Ensure that the information on the display is green, with no pressure on the screen.

Service display.

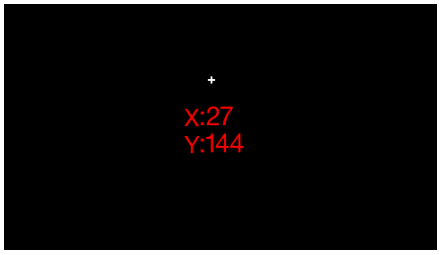


Coffee group display

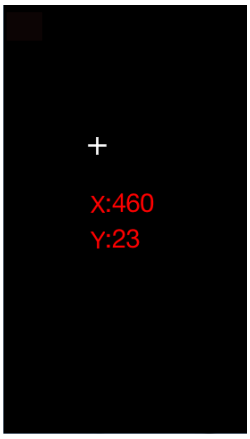


if the information is red, check for any undesired pressure on the edge of the screen.

Service display.



Coffee group display



At the end of the operation, turn off the machine and return the Dip 5 to OFF.

12. Diagnostic messages

MALFUN. CODE	DESCRIPTION	POSSIBLE CAUSES	VERIFICATIONS and SOLUTIONS
020	**USB power-supply malfunction.**	• USB-port current-consumption too high.	• Check the status of the USB port and its connections in order to identify possible causes of excessive consumption (e.g. short-circuit). • Once the cause of the malfunction is fixed the USB port should restore itself automatically and return to normal operation. • If the problem persists, replace the CPU board.
(x)21*	**Group boiler pressure sensor x out of range (x = 1, 2, 3, 4)** Note: Group 1 is to the far left.	• Sensor failure • Card failure.	•Check cabling •Replace the sensor •Replace the card.
023	**AC 24V power supply malfunction.**	•The glass fuse on the CPU board is likely broken.	• Replace the fuse.
024	**Clock malfunction.**	• Contacts oxidised. • Dead battery. • Clock blocked.	•Clean the contacts on the battery. • Measure the voltage of the battery (3 V DC) and, if necessary, replace it. If the battery is OK try, with the machine turned off, to remove it from the board and wait 2-3 minutes. Then reinsert the battery and check that the clock is working properly.
025*	**No power: group, EV, milk pump**	• Voltage drop in the power supply	• Check if CPU card has power. • Check power supply unit (protection) • Check cabling
029 *	**LCD display not connected (applies only to machines other than Emblem R and M100).**	• Break in cabling. • Display fault.	•Check cabling.
030	**Slave micro processor malfunction.**		•If the problem persists, replace the Newton board.
041*	**Milk pump motor overcurrent**	• Consequence of applied force • Rotor blocked • Pump motor faulty	•Check wiring. •Check whether the circuit or pump is clogged. •Replace the pump.
051	**Temperature sensor signal out of range.**	• Sensor failure • Card failure.	•Check cabling •Replace the sensor •Replace the card.
(x)51*	**Group boiler temperature sensor x out of range (x = 1, 2, 3, 4)** Note: Group 1 is to the far left.	• Thermocuple disconnected • Sensor failure.	•Check cabling •Replace the sensor.
052	**Boiler heating timeout - 45 minutes.**	• The safety thermocouple has been triggered • The resistance is interrupted (cabling defect) • The Triac card is malfunctioning.	•Check if the safety thermostat has been triggered, and reset it if necessary •Check if there are interruptions or detached fastons on the cabling •Check that the boiler resistance is not interrupted and replace it if necessary •Replace the Triac card.

English

MALFUN. CODE	DESCRIPTION	POSSIBLE CAUSES	VERIFICATIONS and SOLUTIONS
(x)52*	**Group x boiler heating timeout - 20 minutes (x = 1, 2, 3, 4)** Note: Group 1 is to the far left.	• The group x boiler safety thermostat has been triggered • The resistance is interrupted (cabling defect). • Triac board fault.	•Check if the safety thermostat of the group x boiler has been triggered, and reset it if necessary •Check if there are interruptions or detached fastons on the cabling •Check that the group x boiler resistance is not interrupted and replace it if necessary •Replace Triac board.
(x) 53*	**Steam thermocouple out of range.** **DX > 053; SX > 153**	• Thermocuple disconnected • Wrong configuration during standard data insertion.	•Enter in the programming mode and insert the correct standard data.. •Check connections. •Replace the steam temperature probe.
058	**Boiler overpressure alarm.**	•Resistanc alwayspowered. •Temperature sensor out of range.	•Check cabling •Replace the sensor.
059	**Boiler: Refill timeout - 15 minutes.**	• No water • Refill EV failure • Wiring interrupted • Card failure.	•Check water is supplied from the main line. •Replace the refill EV. •Check cabling. •Replace the card.
060	**Boiler-level signal errors.**	• Electrical fault. • Leakage to earth.	• Check wiring. • Check, by activating the components individually on the manual control panel, that the level signal does not show any anomalies (%).
062	**Coffees dispensed for MM1 with flow under the limit (3 consecutive coffees dispensed).**	• coffee filter blocked • coffee type changed • qref calibration wrong • grind too fine, excessive dose ground.	• wash the group • clean/replace the coffee filter • use a coarser grind • calibrate the machine correctly on the basis of the coffee/recipe.
063	**Coffees dispensed referred to MM1 with flow over the limit (3 consecutive coffees dispensed).**	• coffee type changed • qref calibration wrong • grinding too coarse • grinder/dispenser blocked, insufficient dose of ground coffee.	• check that there are no external elements in the grinders • check that the measure grinder is working (pick-up current and fuses) • use a finer grind • calibrate the machine correctly on the basis of the coffee/recipe.
064	**Coffees dispensed referred to MM2 with flow under the limit (3 consecutive coffees dispensed).**	• coffee filter blocked • coffee type changed • qref calibration wrong • grind too fine, excessive dose ground.	• wash the group • clean/replace the coffee filter • use a coarser grind • calibrate the machine correctly on the basis of the coffee/recipe.
065	**Coffees dispensed referred to MM2 with flow over the limit (3 consecutive coffees dispensed).**	• coffee type changed • qref calibration wrong • grinding too coarse • grinder/dispenser blocked, insufficient dose of ground coffee.	• check that there are no external elements in the grinders • check that the measure grinder is working (pick-up current and fuses) • use a finer grind • calibrate the machine correctly on the basis of the coffee/recipe.

MALFUN. CODE	DESCRIPTION	POSSIBLE CAUSES	VERIFICATIONS and SOLUTIONS
(x)66	**Error in the group that is dispensing. (x = 1, 2, 3, 4)** Note: Group 1 is to the far left.		•Check water is supplied from the main line. •Check there are no fitting obstructions or leakage. •Check flowmeter electrical connections. •Replace the broken flowmeter. •Replace the broken board.
(x)70	**Measure-grinder adjustment: Bluetooth set up by the technician. (x = 1, 2) MM1 > 170; MM2 > 270**		Event only archived and not displayed on the display during normal machine operation.
082	**Temporary communication problem with the keyboards/ TFT display.**		•Check the insulation. •Check the wiring and connections.
083	**Services key communication error.**	• Incorrect keyboard configuration (if applicable). • Wiring interrupted • Card failure.	• Check that the dip switches are correctly configured on the key board (if applicable). •Check cabling •Replace key board.
(x)83*	**Group x (x = 1, 2, 3, 4) keypad communication error** Note: Group 1 is to the far left. **Communication error with light-module board (RGB) x = 5 or light/turbo-steam board.**	• Incorrect keyboard configuration (if applicable). • Wiring interrupted • Card failure.	•Check that the dip switches are correctly configured on the key board (if applicable). •Check cabling •Replace key board.
(x)85*	**Bluetooth communication error (x = 1, 2) MM1 > 185; MM2 > 285**	• Incorrect association with measure grinder. • Measure grinder turned off.	• Turn on the grinder. •Repeat device association.
089	**NVM RAM data integrity error**	• Incorrect association with measure grinder. • Measure grinder turned off.	Turn the machine off and on again. If the error persists, replace the CPU board. Check the condition of the clock battery.
091*	**No tank during milk washing cycle**	Data integrity error in non-volatile RAM memory of the CPU board.	• Check the correct operation of the tank presence sensor on the manual control panel. • Check the wiring.
092	**Request water softener resin regeneration.**	• Removal of tank during the wash. • Tank presence sensor faulty.	• Softener maintenance.
093	**Request replacement water filter.**		• Replace the water-softner filter.
096	**Maintenance needed.**		• The machine has displayed the message to warn the user that maintenance must be performed. Carry out maintenance operations.

English

MALFUN. CODE	DESCRIPTION	POSSIBLE CAUSES	VERIFICATIONS and SOLUTIONS
097*	**Reset standard password.**	• Action desired by the user by entering the special code (applicable only for machines with TFT display).	
098	**Historical malfunctions and wash 1 reset.**	• Initialisation malfunction history (and washing history for machines without TFT display)	• Event only archived and not displayed on the display during normal machine operation.
099	**Default data input.**		
105	**SD card communication malfunction.**	• SD card corrupted or malfunction.	•Replace SD card.
282	**Keypad reset operation carried out by CPU board due to repeated communication problems.**		•Check the insulation. •Check the wiring and connections.
683	**Turbosteam module communication malfunction.**	• Break in wiring. • Board failure.	•Check wiring. •Replace Turbosteam board.

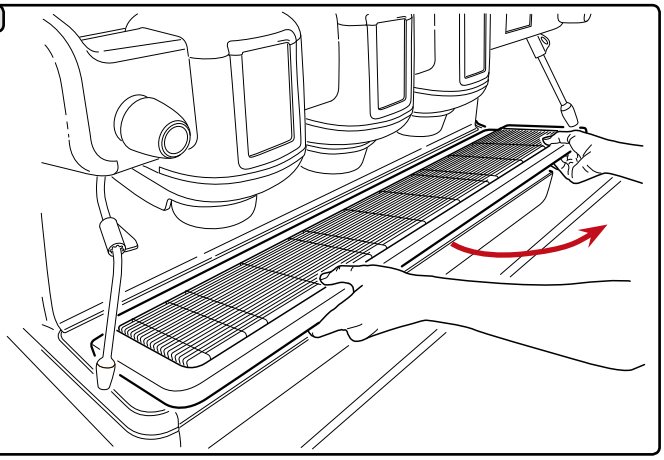
Faults - * - appear only in some produit configurations.

DISASSEMBLY AND SETTING

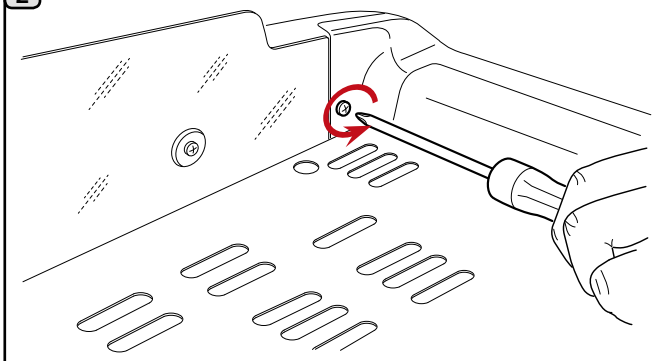
ALL OPERATIONS MUST BE PERFORMED WITH THE MACHINE OFF AND COLD.
TO ALWAYS USE THE NECESSARY SAFETY EQUIPMENT (SHOES/GLOVES).

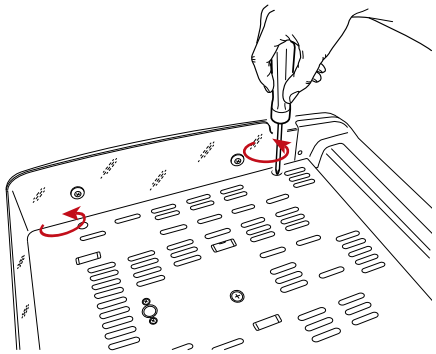
13. Removal of the side panels

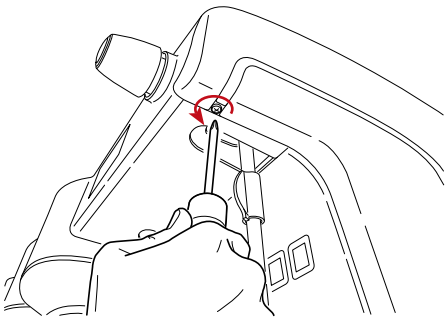
1

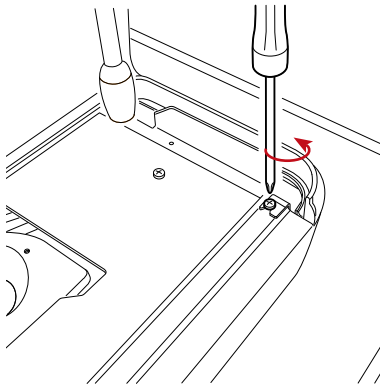


2

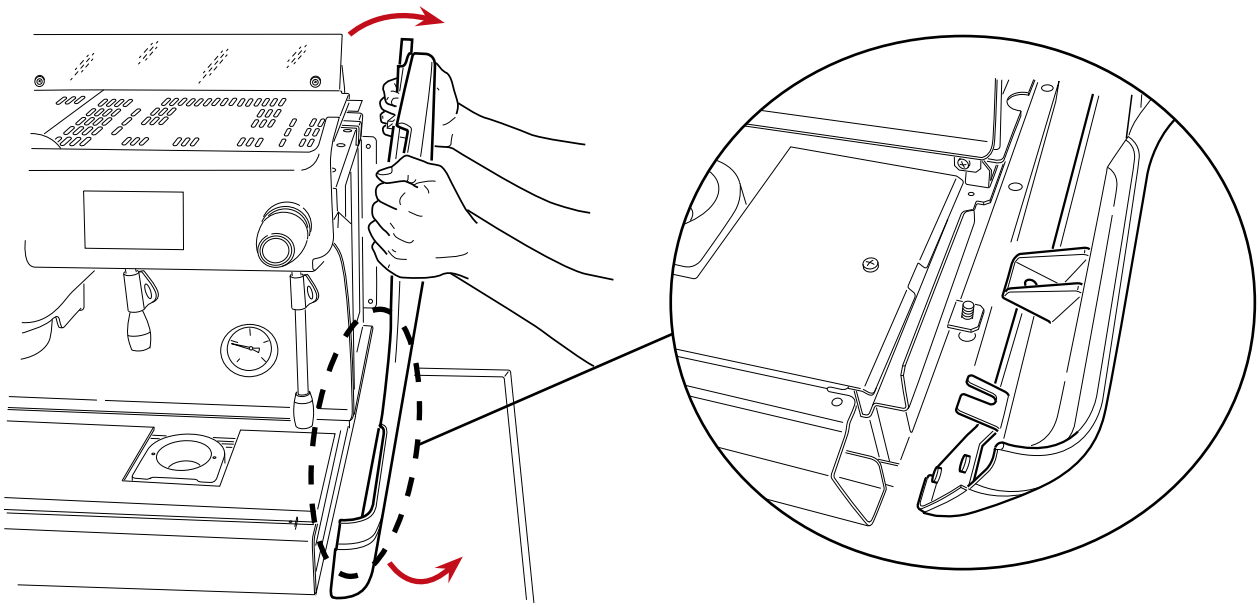






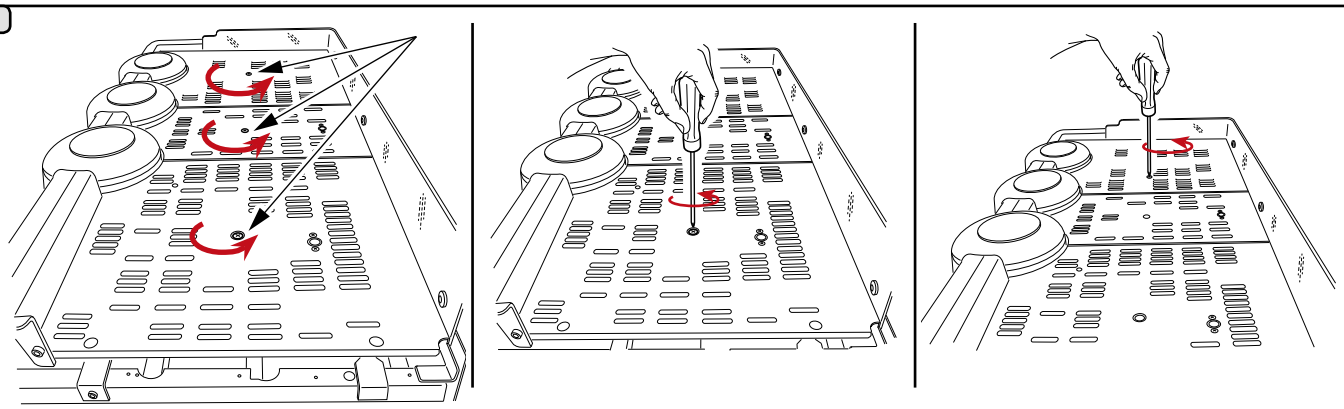


3

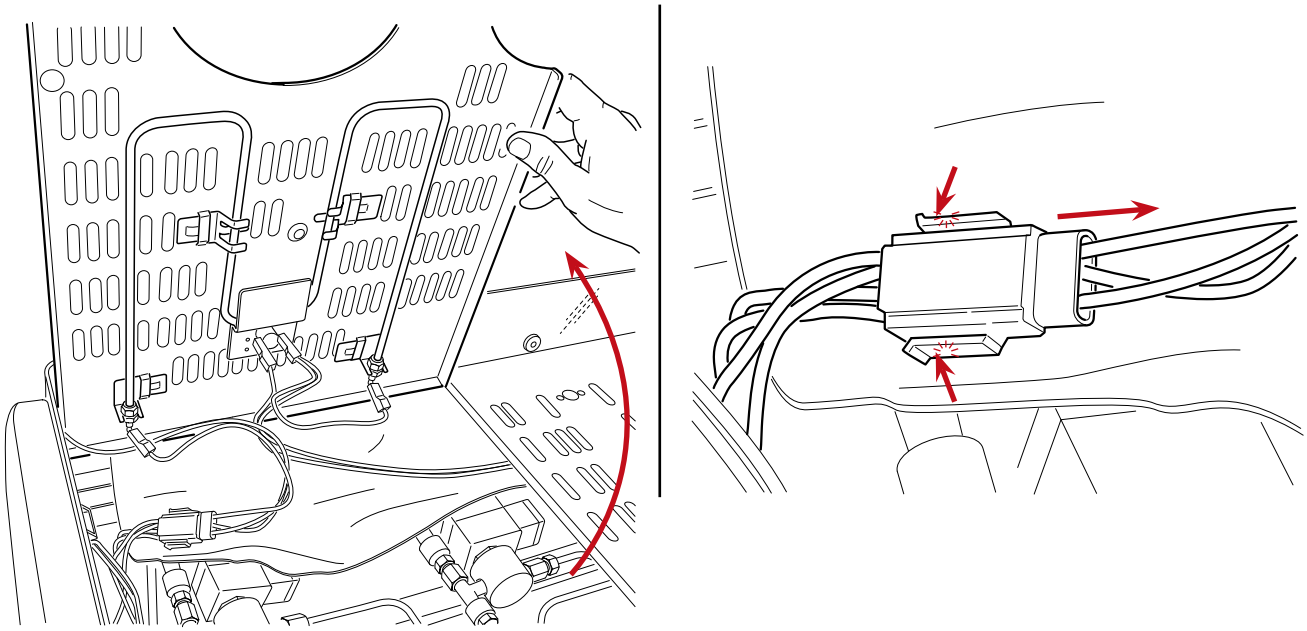


14. Cup Warmer

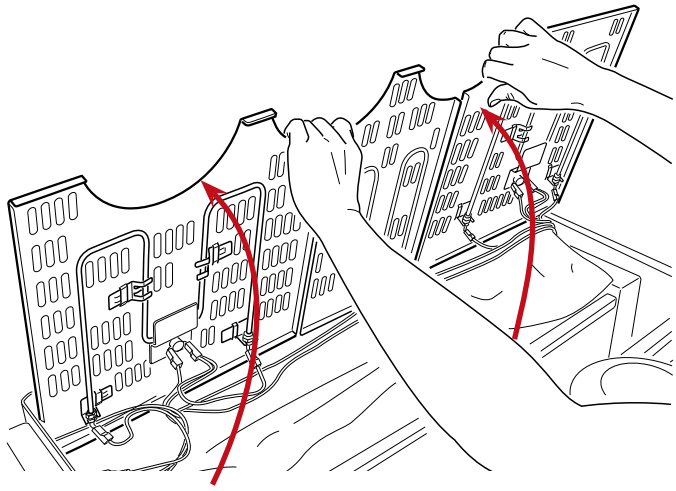
1



2

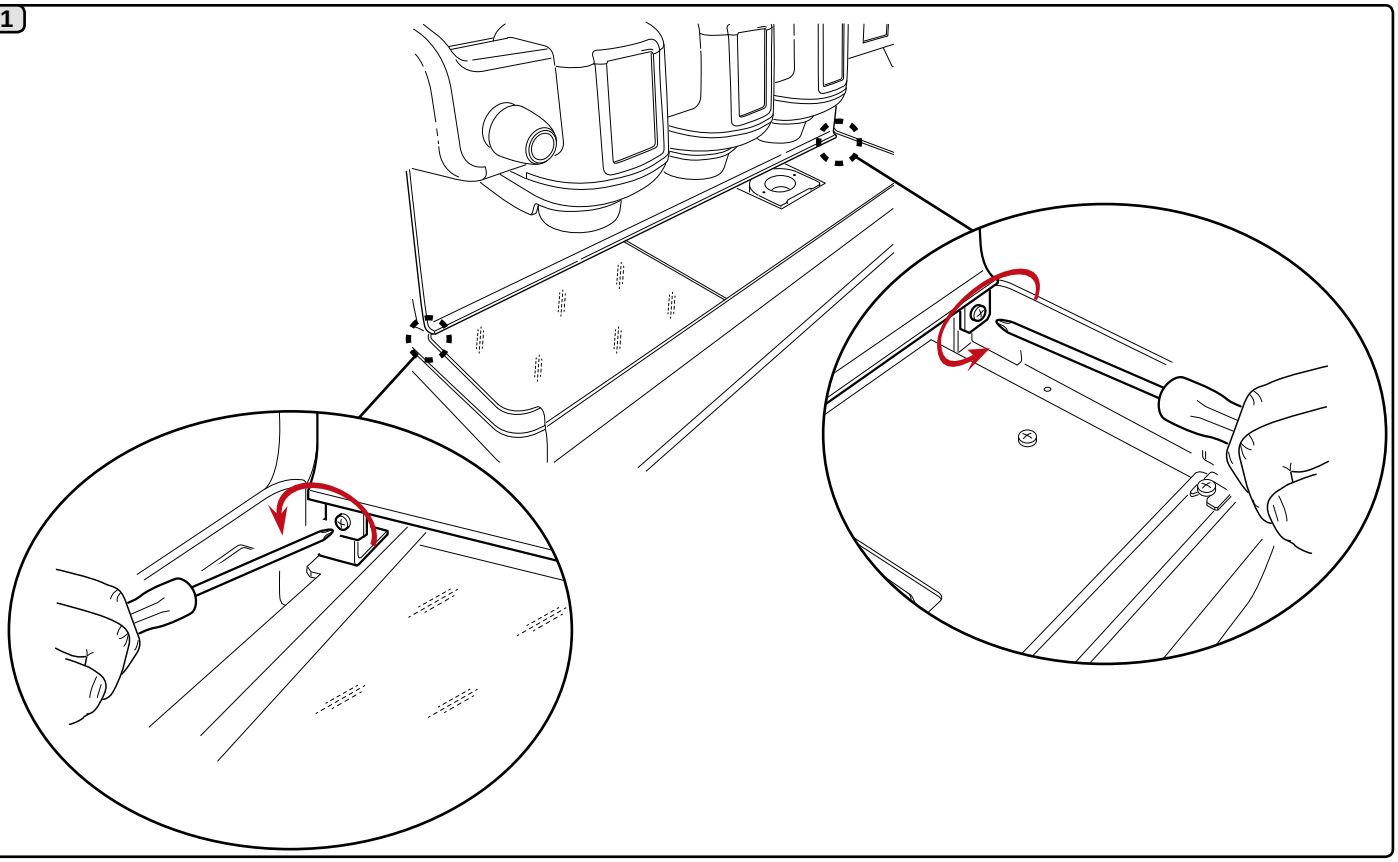


3

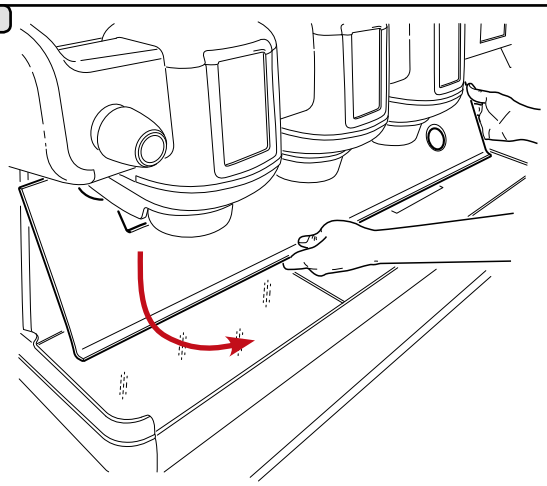


15. Stainless steel front panel

1



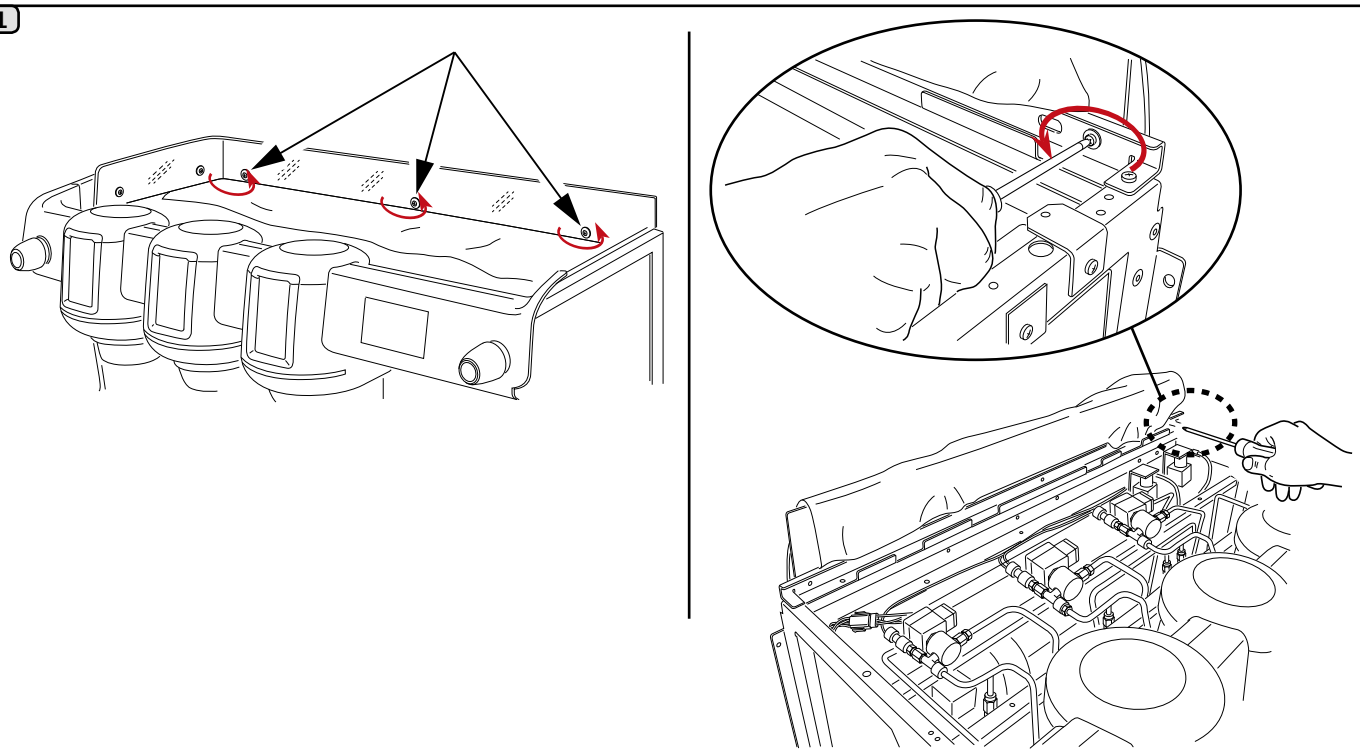
2



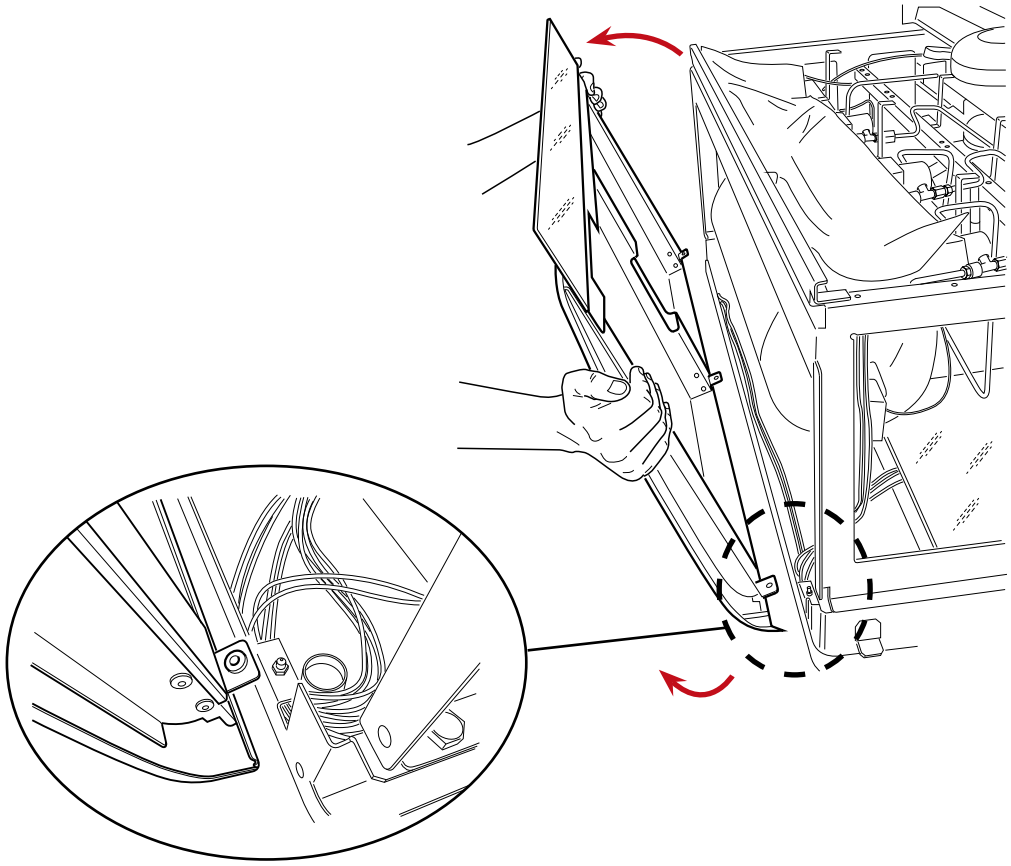
16. Rear panel

The back panel may be removed only after the cup warmer has been removed.

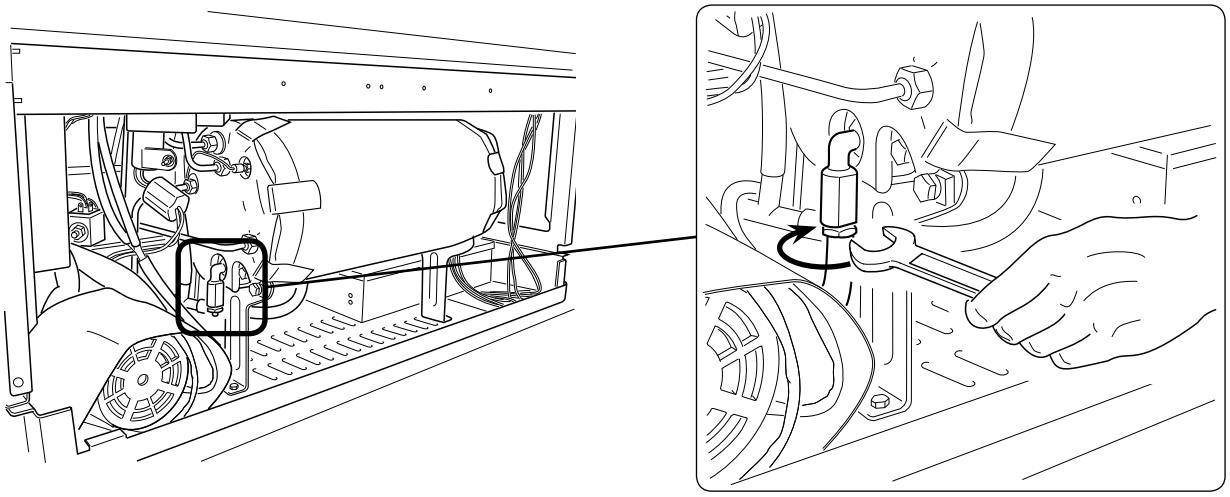
1



2



17. Draining the boiler water

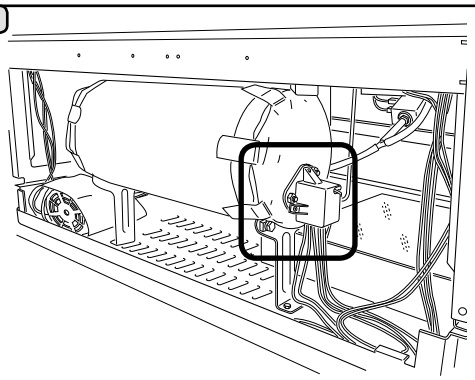


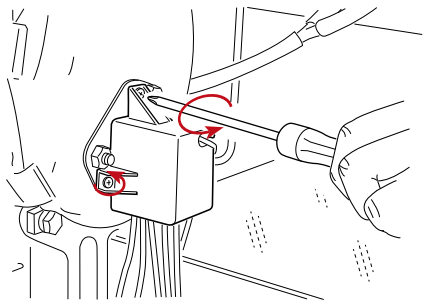
Slip a tube on the drain fitting and turn the nut in the direction indicated in the future.

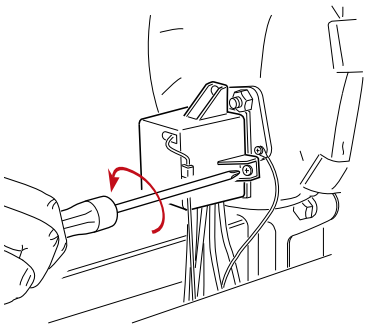
18. Removing the boiler heating element

Remove the resistance only after emptying the boiler.

1







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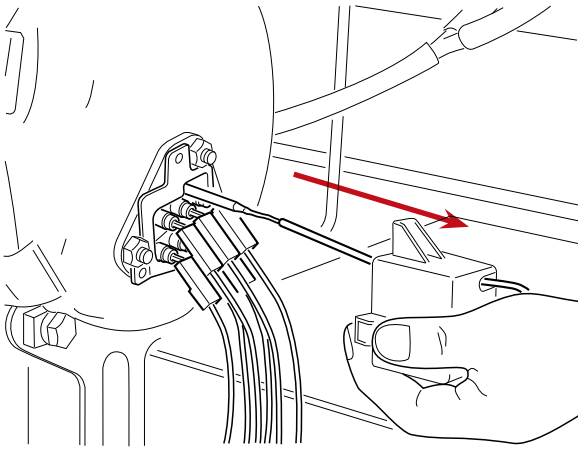

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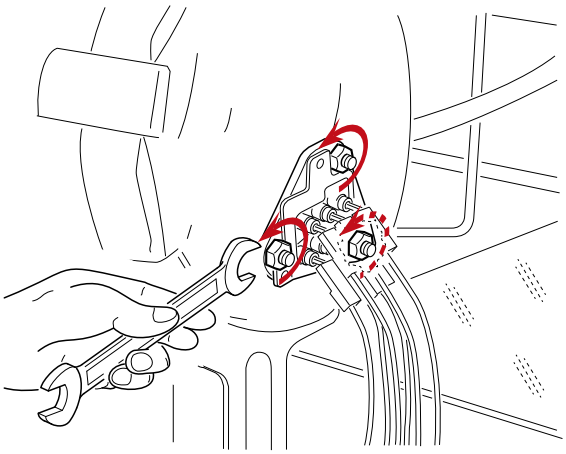
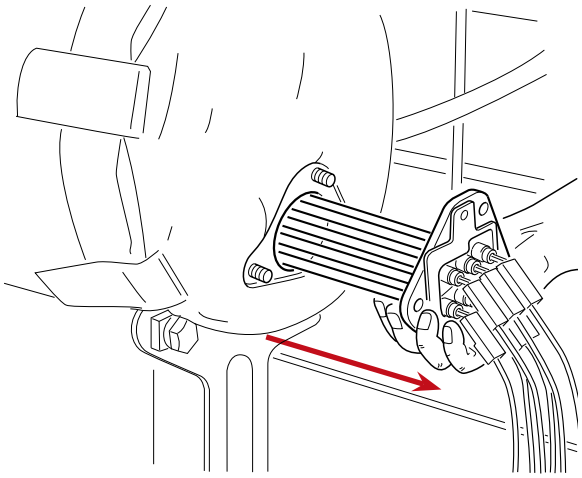
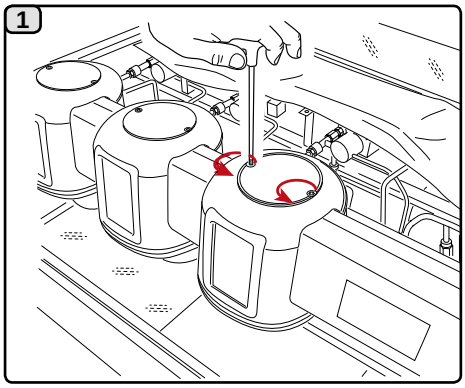
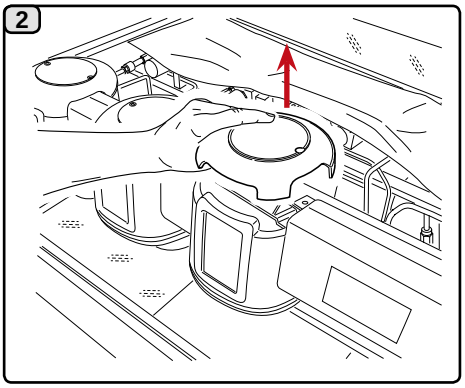


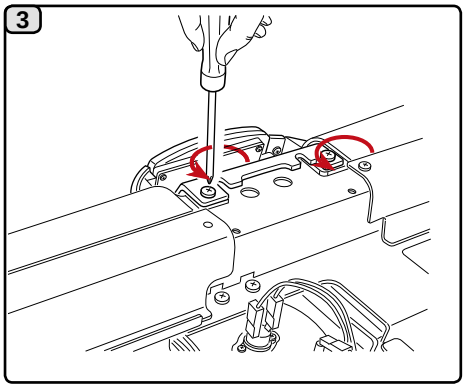
4

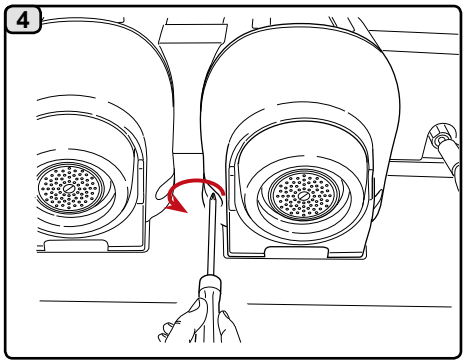


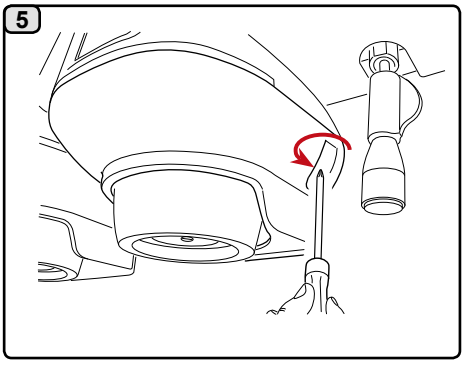
19. Coffee boiler

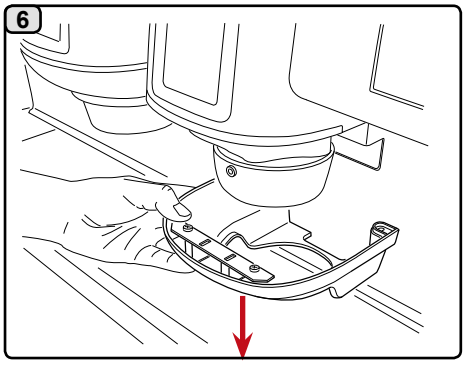


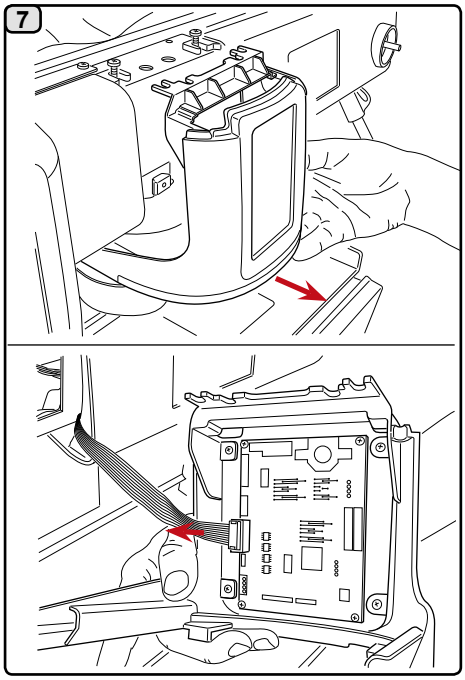


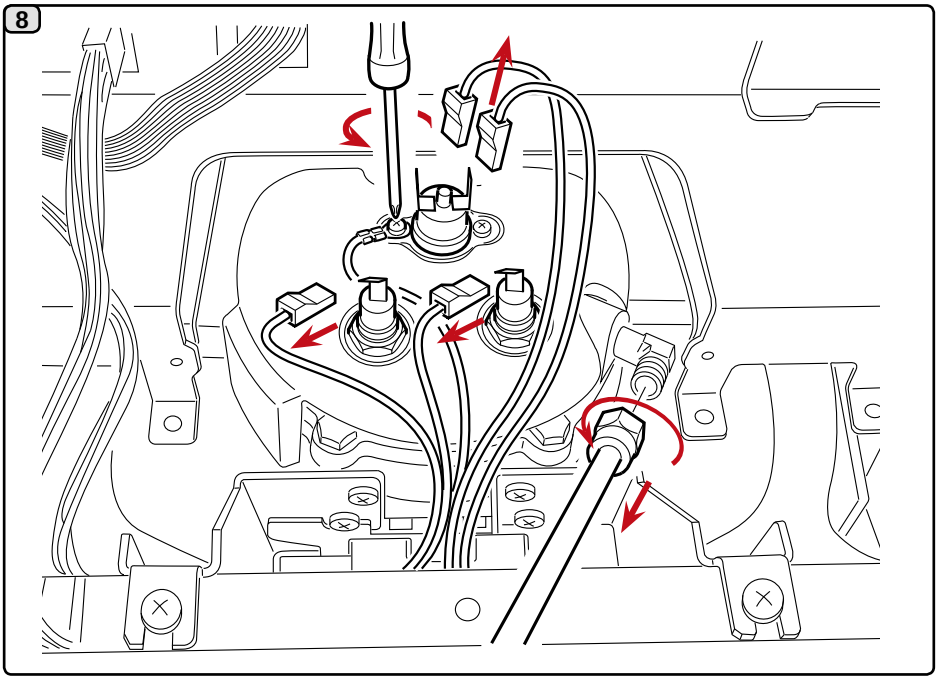


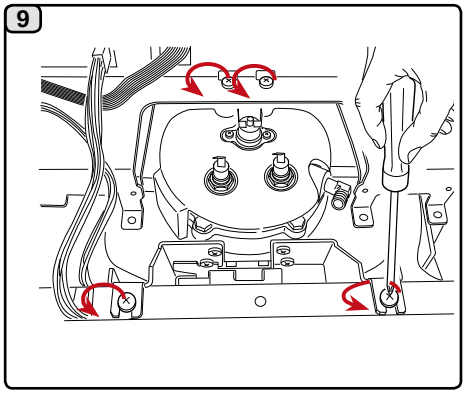


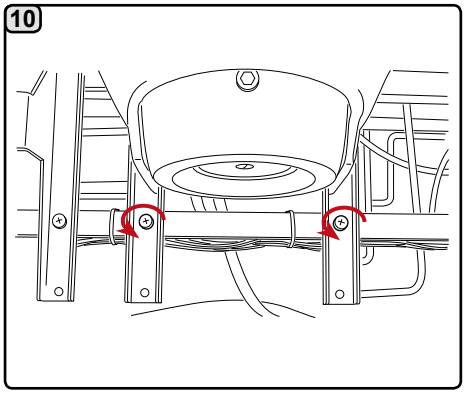


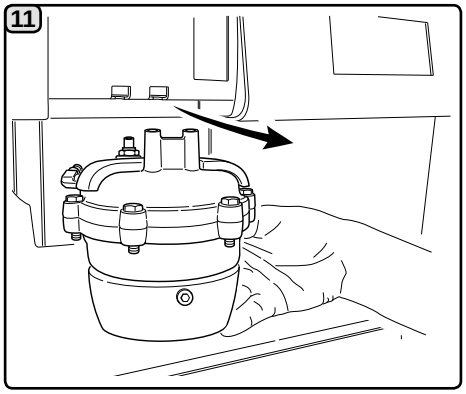


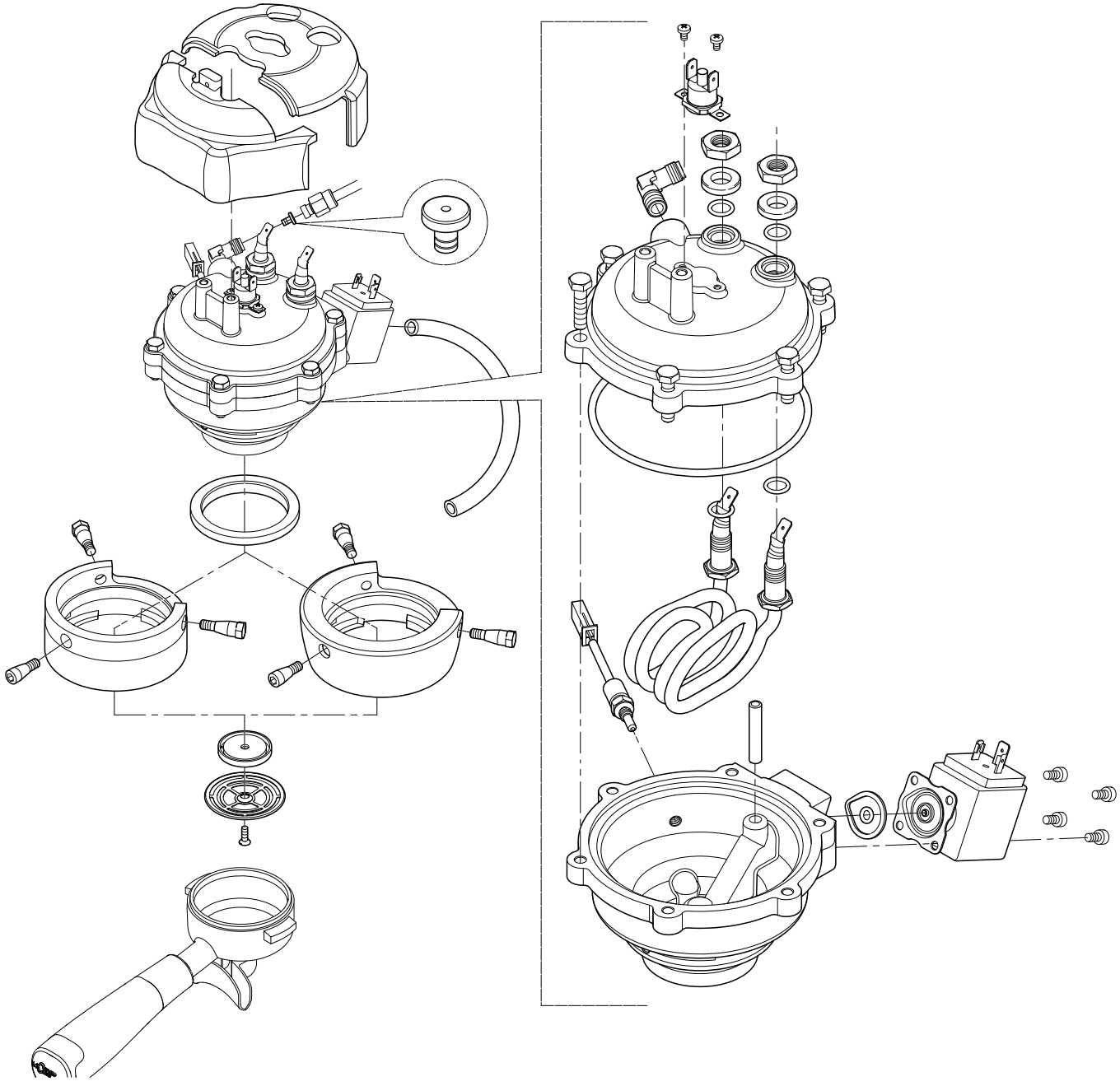




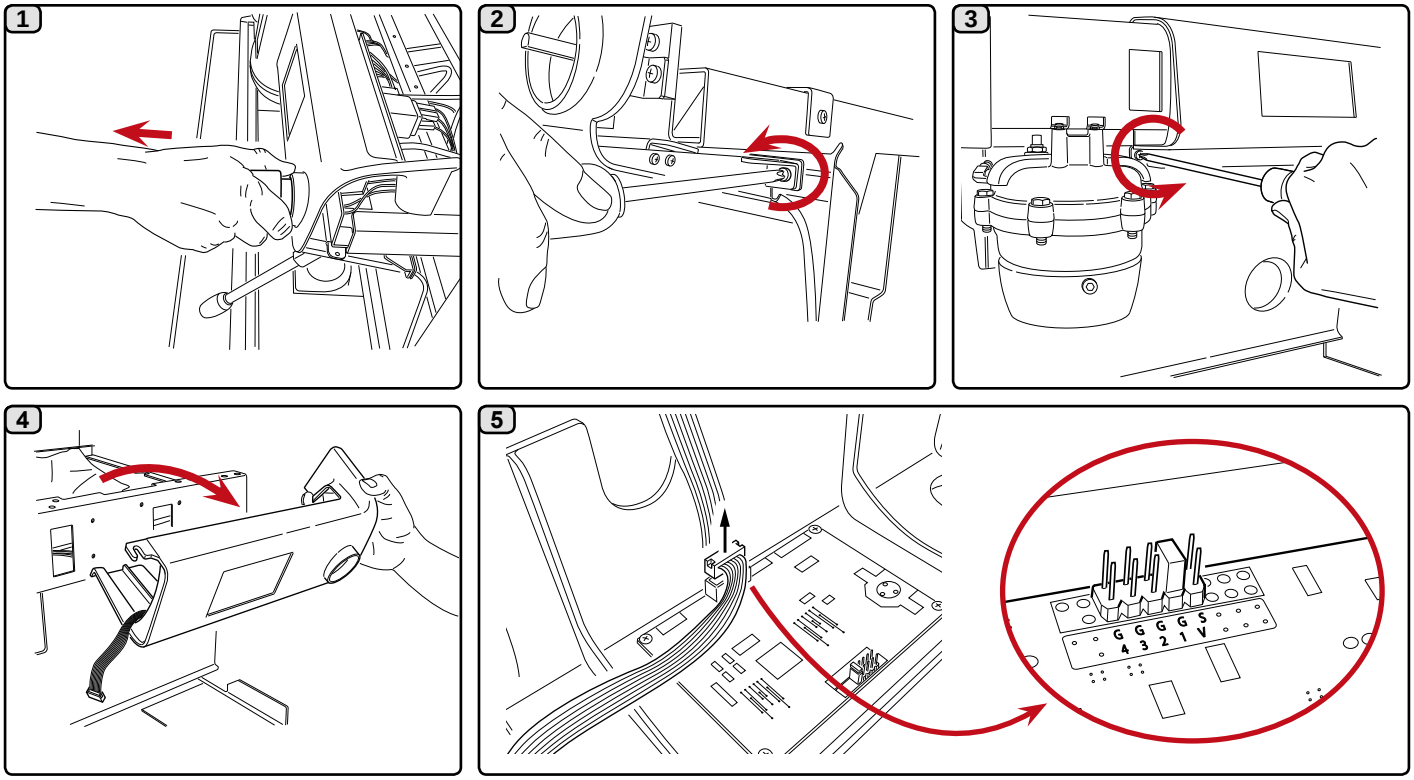


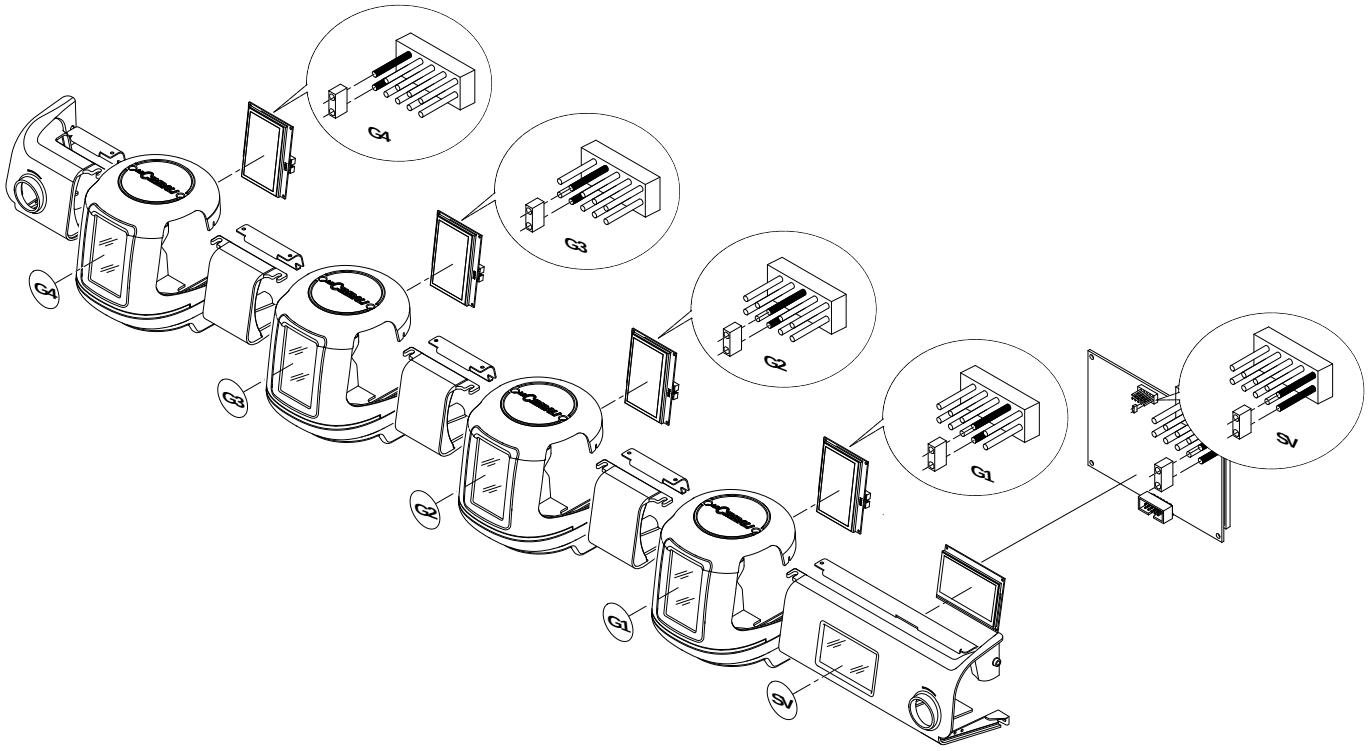




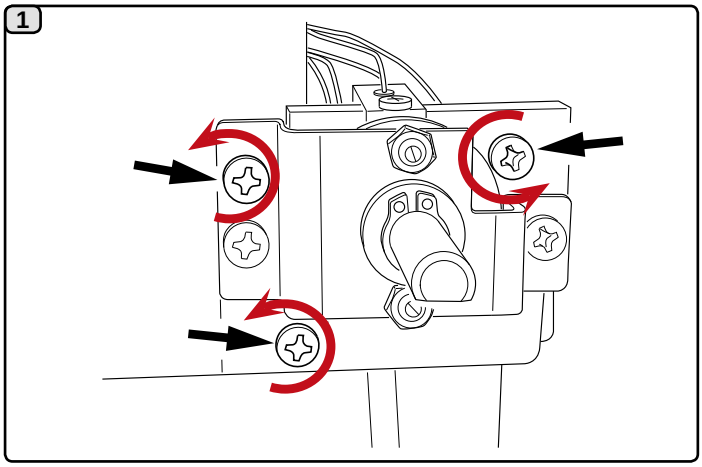


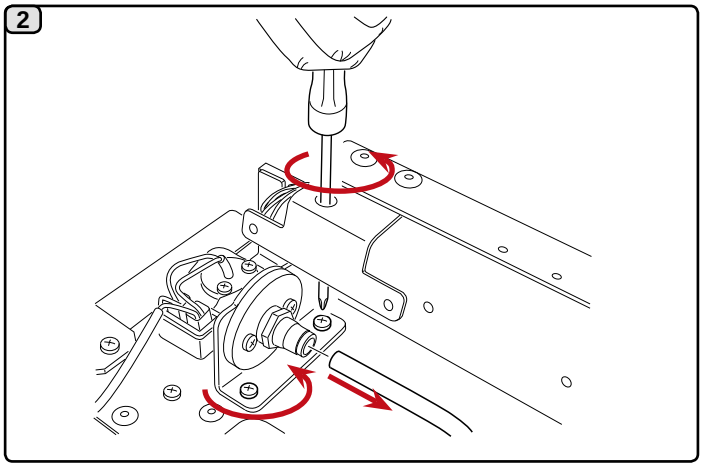
20. Services display panel



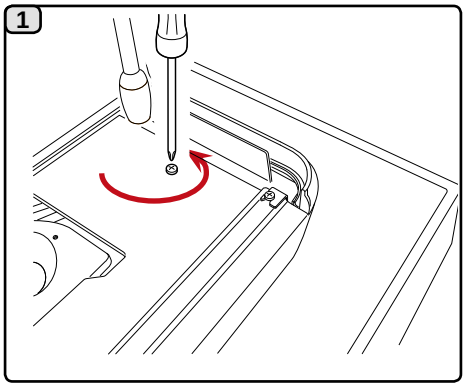


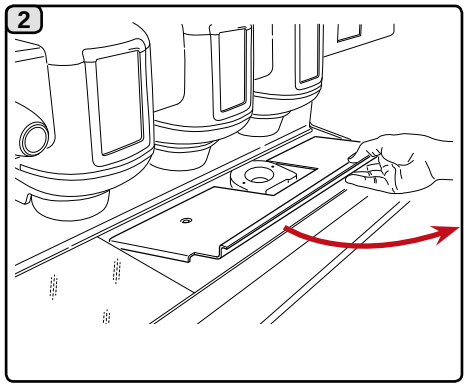
21. Turbosteam control and lance

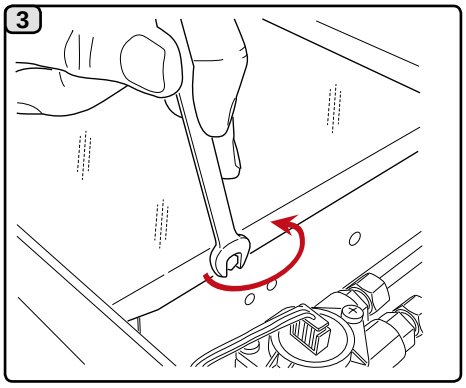


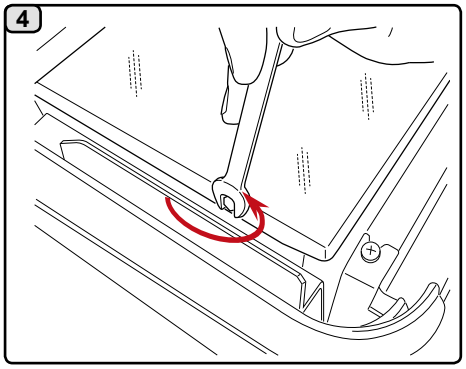


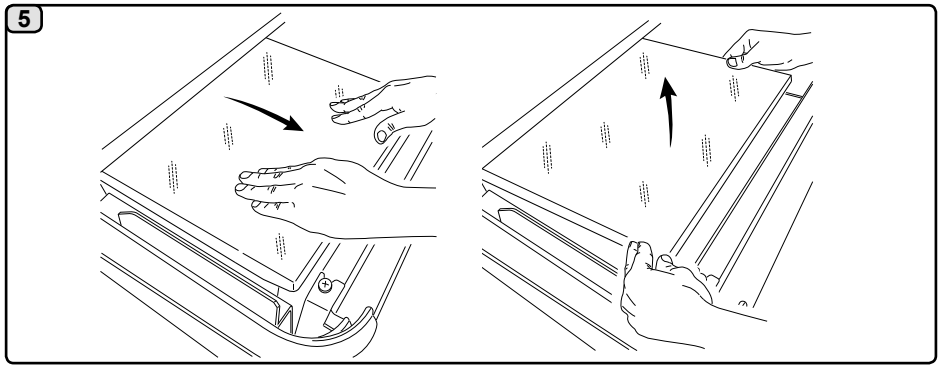
22. Junction Box



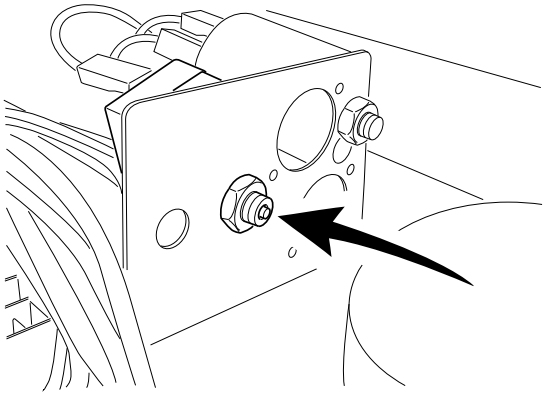




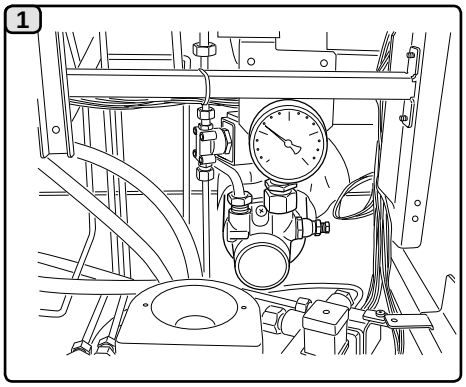


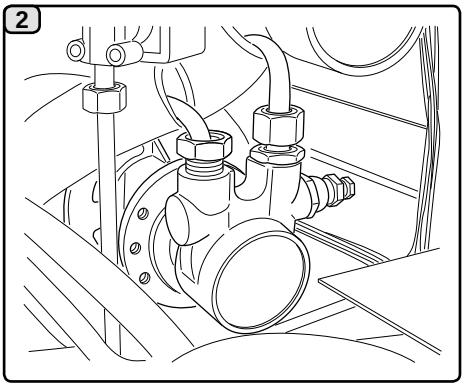


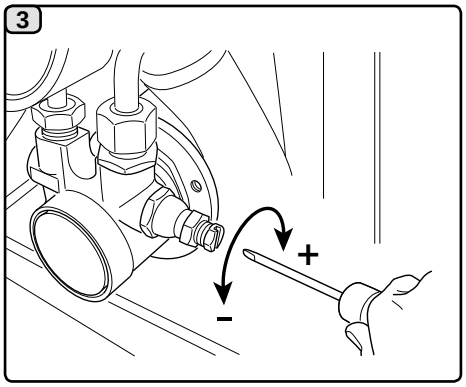
23. Safety thermostat



24. Peristaltic pump

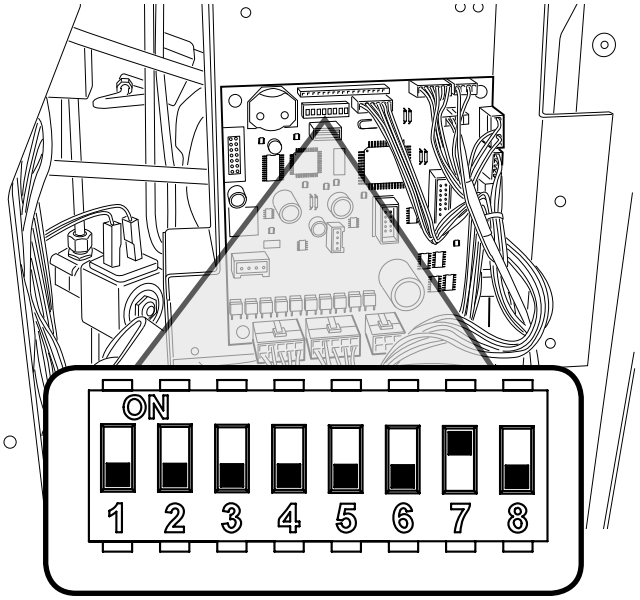




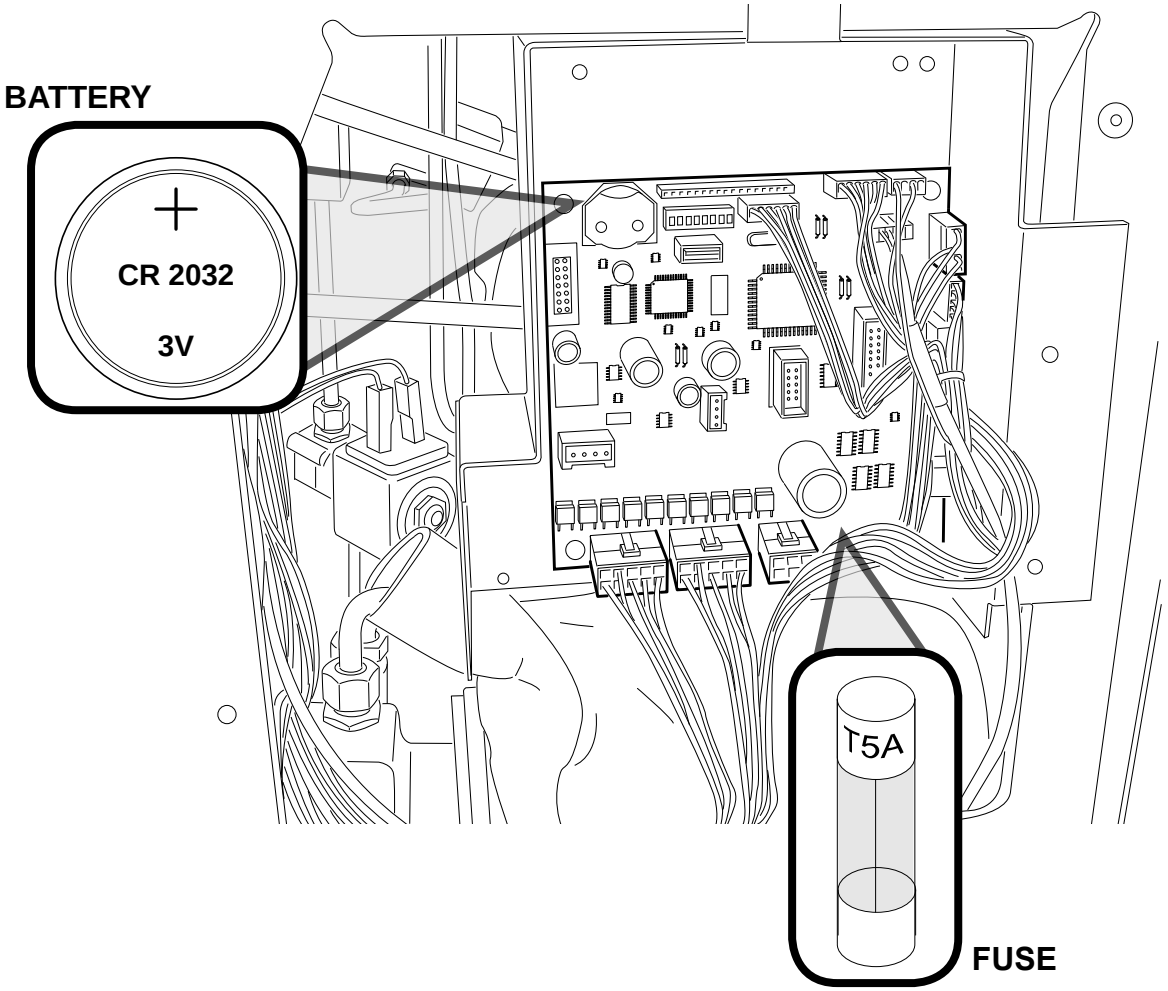


25. CPU dip-switch

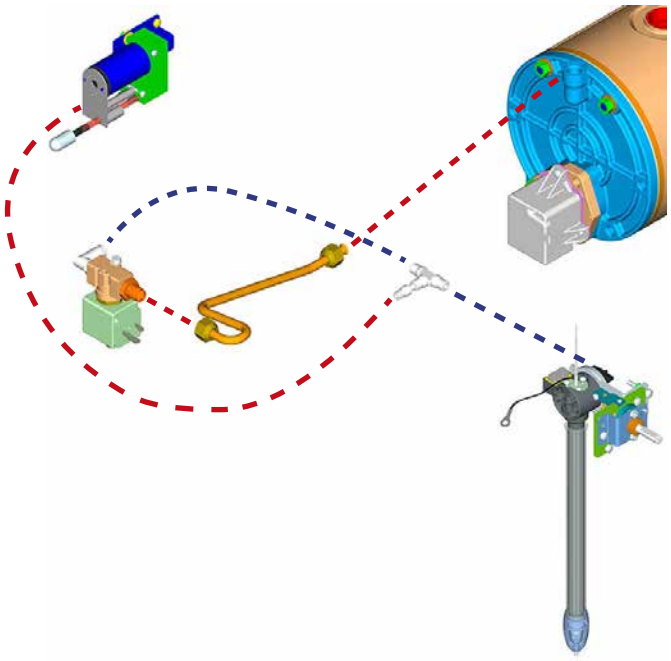
CPU DIP-SWITCH
CAUTION!
When changing the position of the Dip-Switch, the machine MUST BE SWITCHED OFF.
Under standard conditions, the dip-switches are positioned on OFF.
The dip-switches have the following functions:
- DIP 1 = OFF
- DIP 2 = OFF
- DIP 3 = OFF - ON calibration of the touch displays
- DIP 4 = OFF
- DIP 5 = OFF - ON touchscreen test
- DIP 6 = OFF
- DIP 7 = ON
- DIP 8 = OFF

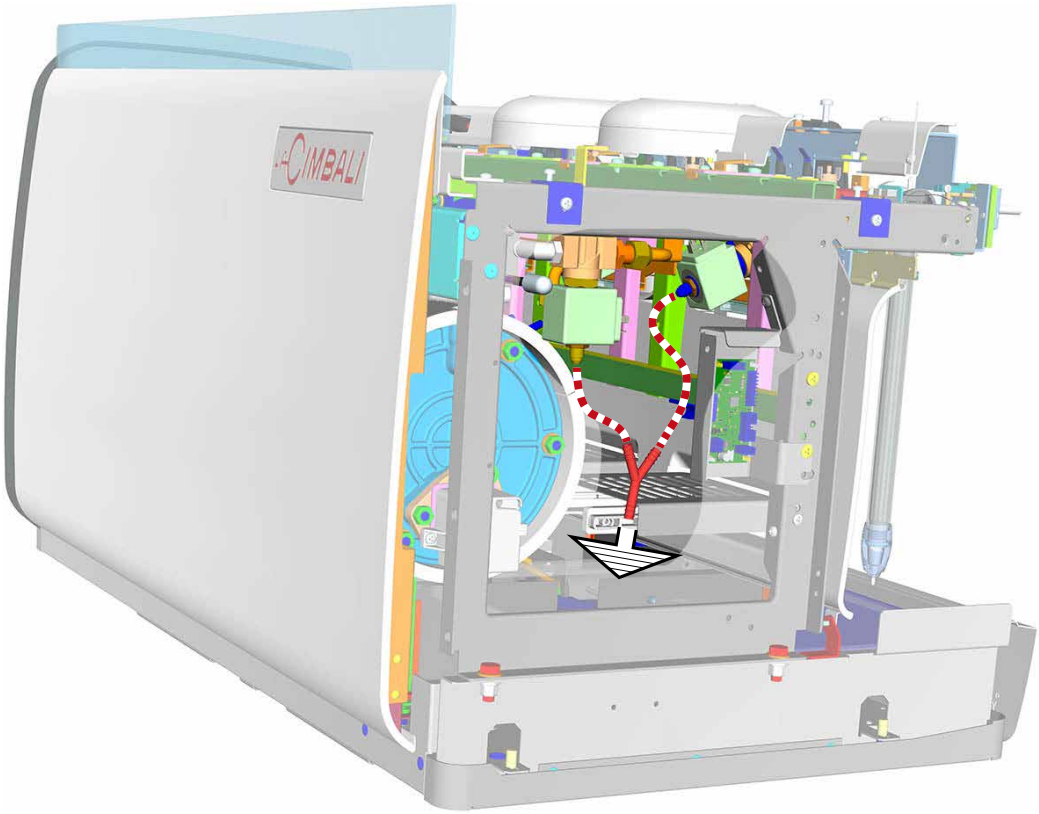


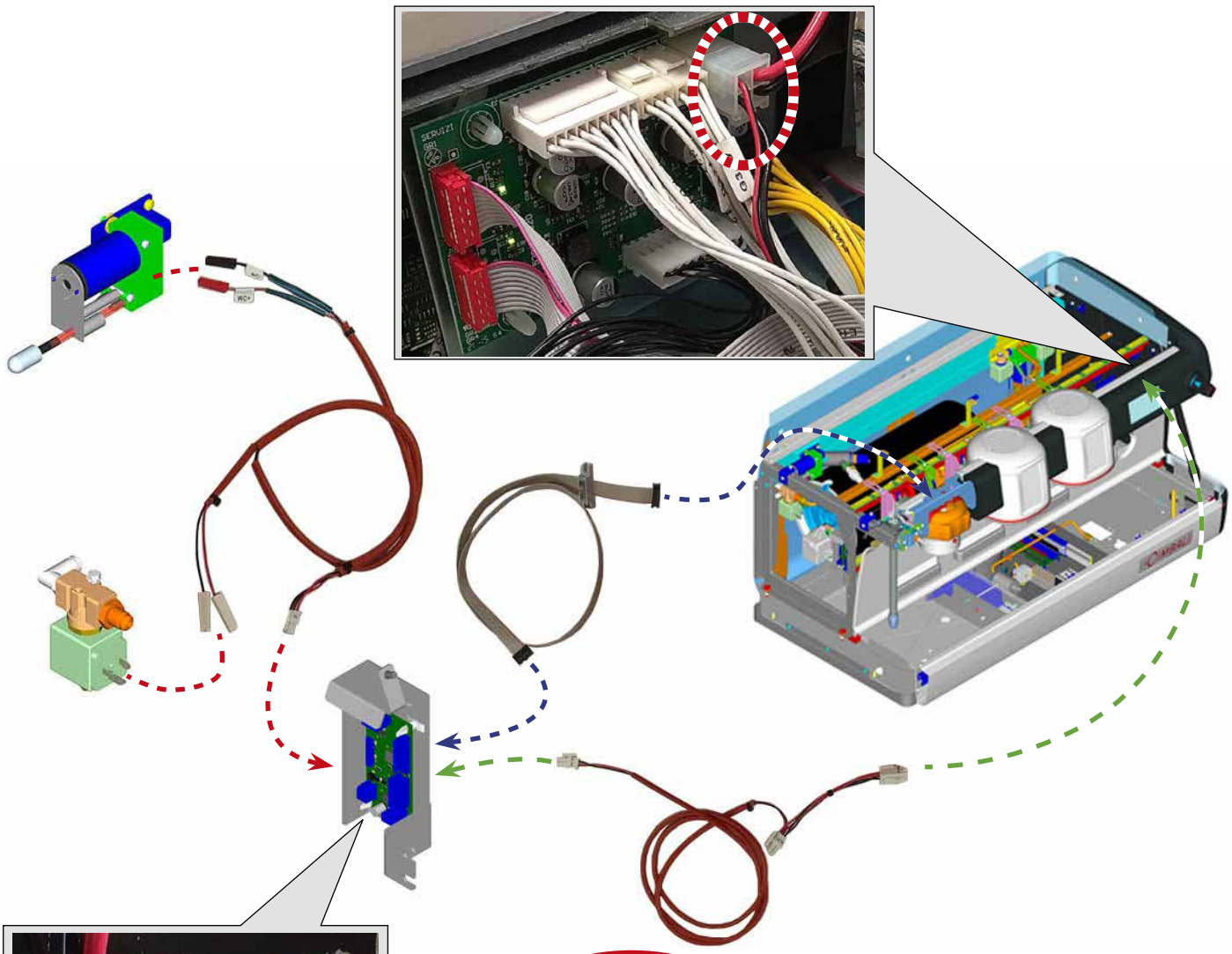
Battery - Fuse

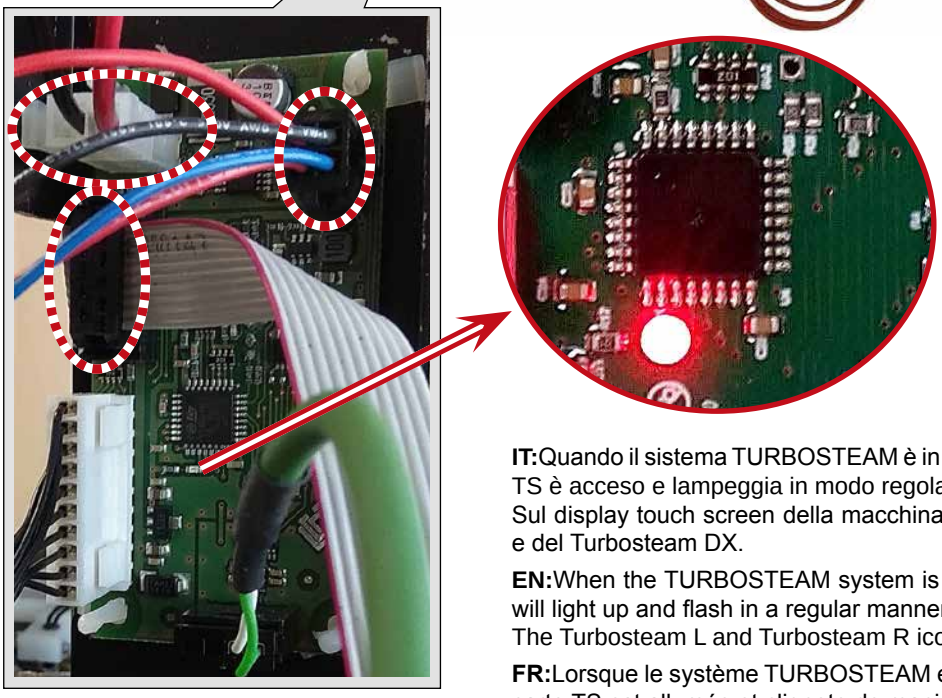


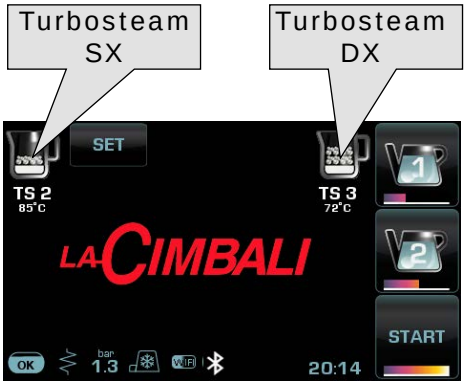
26. *TURBOSTEAM on the left side*











IT: Quando il sistema TURBOSTEAM è in funzione il LED rosso presente sulla scheda TS è acceso e lampeggia in modo regolare.
Sul display touch screen della macchina sono presenti le icone del Turbosteam SX e del Turbosteam DX.

EN: When the TURBOSTEAM system is operational, the red LED on the TS screen will light up and flash in a regular manner.
The Turbosteam L and Turbosteam R icons are on the machine's touch screen.

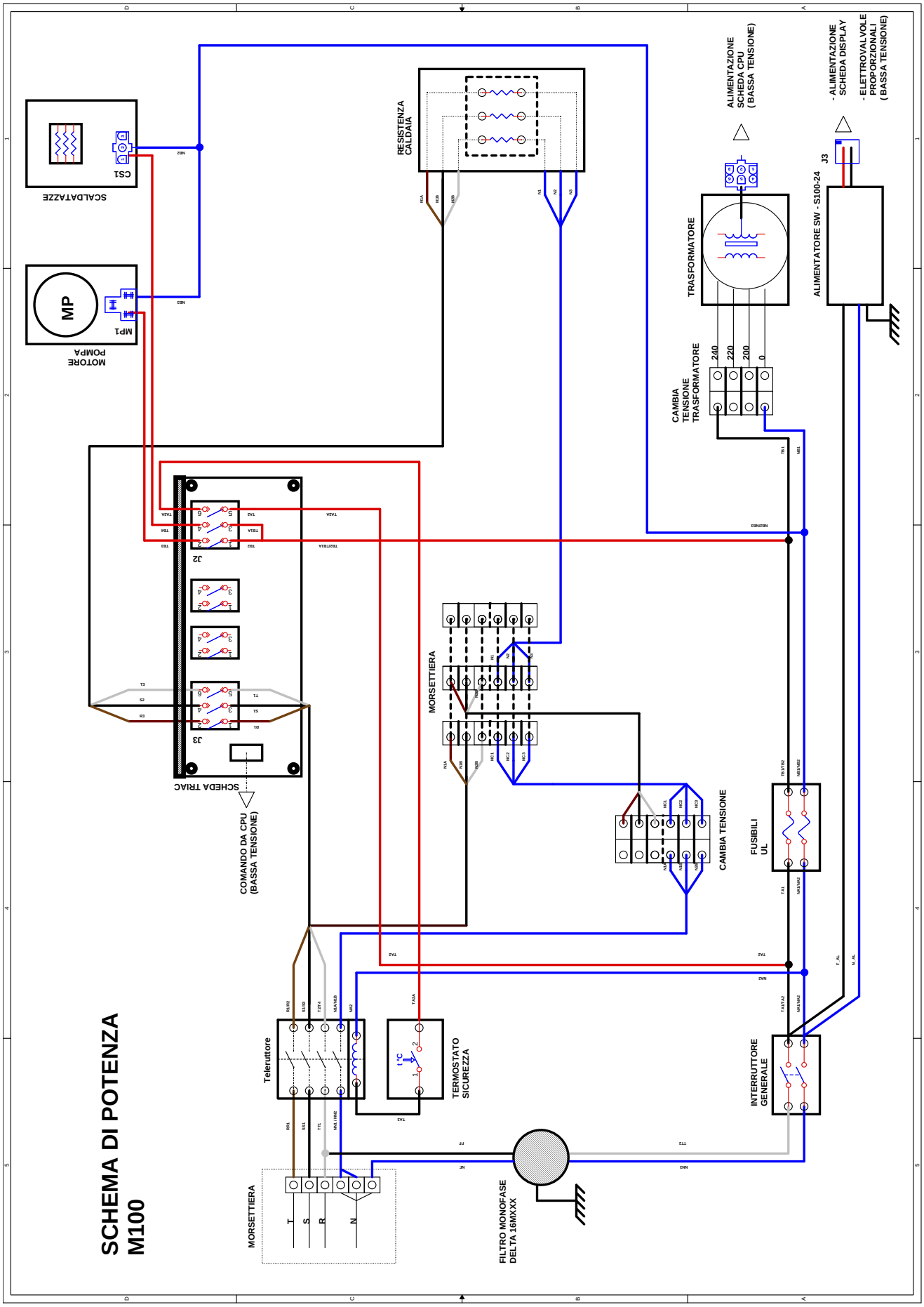
FR: Lorsque le système TURBOSTEAM est en marche, la LED rouge présente sur la carte TS est allumée et clignote de manière régulière.
L'écran tactile de la machine comporte les icônes du Turbosteam côté gauche et du Turbosteam côté droit.

DE: Ist der TURBOSTEAM in Betrieb, leuchtet die rote LED der TS-Platine und blinkt regulär.
Auf dem Touchscreen-Display der Maschine befinden sich die Symbole Turbosteam LINKS und Turbosteam RECHTS.

ES: Cuando el sistema TURBOSTEAM está en funcionamiento, el LED rojo presente en la tarjeta TS está encendido y parpadea de manera regular.
En el visualizador con pantalla táctil de la máquina se encuentran los iconos del Turbosteam IZDO y del Turbosteam DCHO.

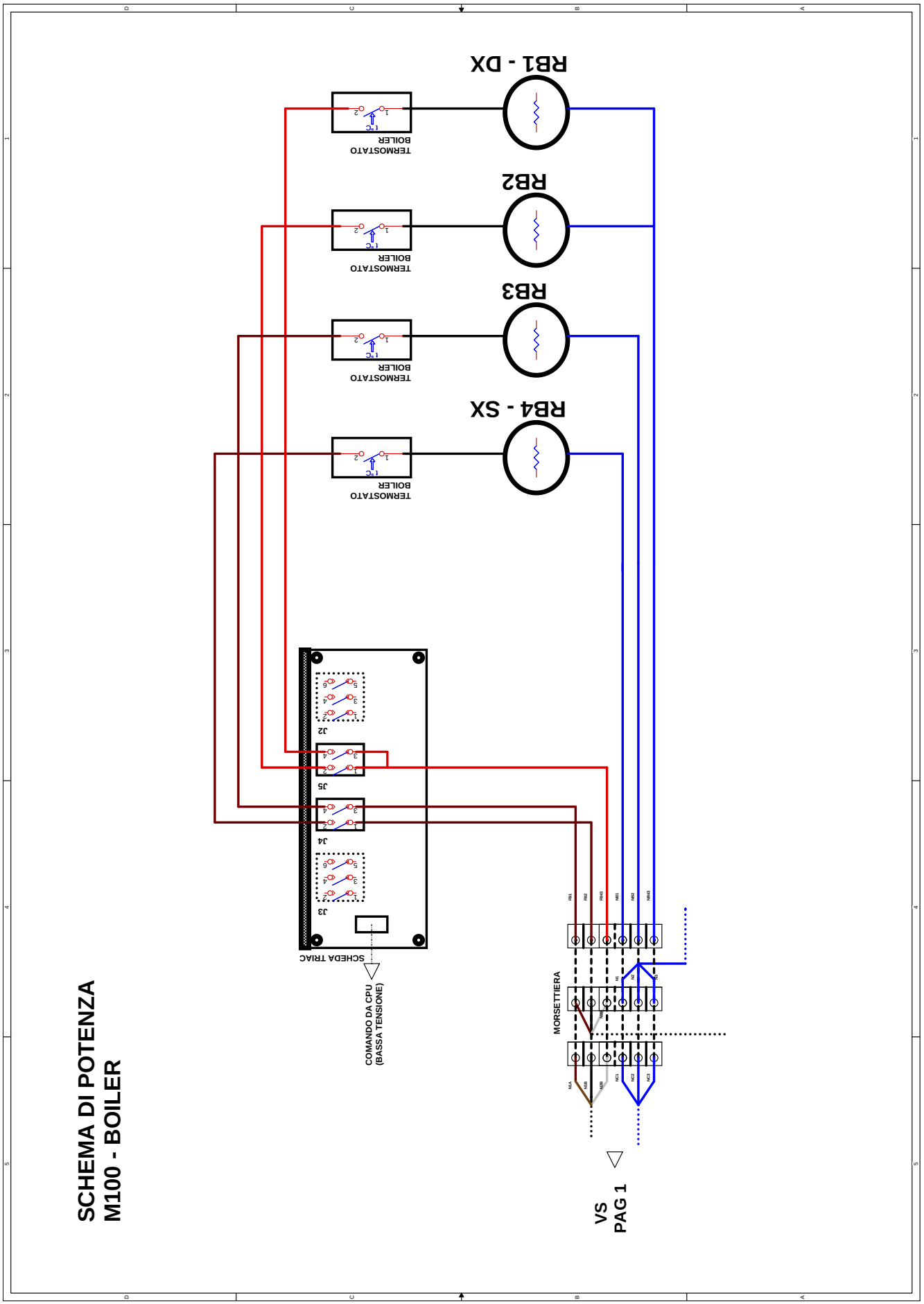
PT: Quando o sistema TURBOSTEAM está a funcionar o LED vermelho presente na placa TS está aceso e pisca de forma regular.
No visor tátil da máquina estão presentes os símbolos do Turbosteam ESQ. e do Turbosteam DIR.

WIRING DIAGRAM

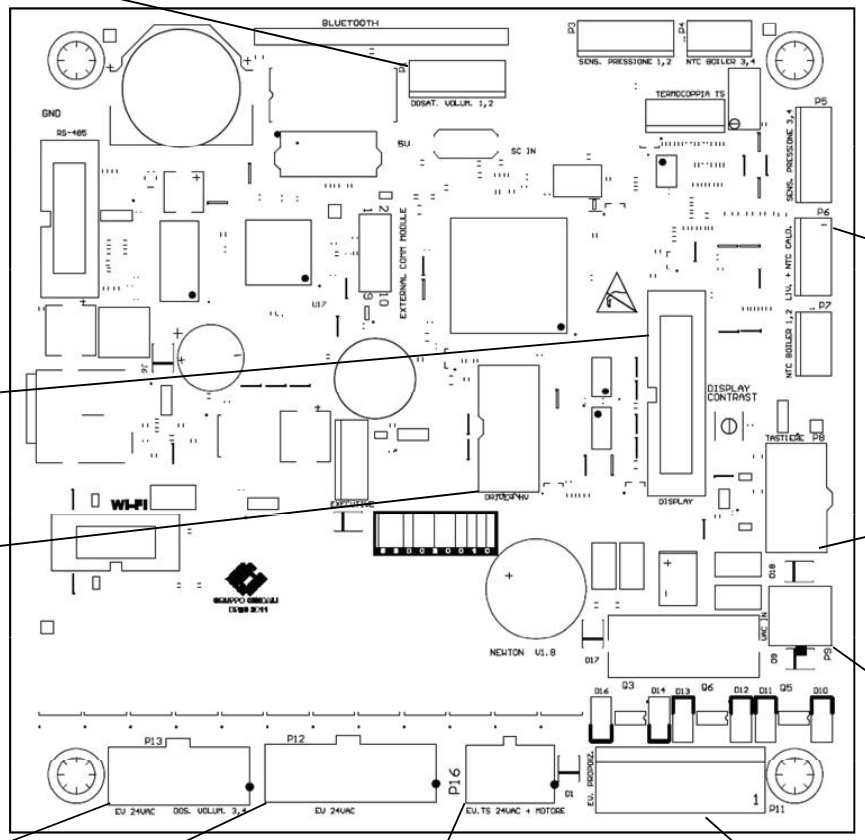


English

WIRING DIAGRAM



BASSA TENSIONE – CPU 1/2



DV1/DV2 – GRIGIO

PIN: (1)VCC_DV1 (2) VCC_DV2
(3) SIG_DV1 (4) SIG_DV2
(5)GND_DV1 (6) GND_DV2

LIVELLO / NTC CALDAIA – ROSSO

PIN: (1RIF_LIVEL (2)NTC-CALD
(3)--- (4)LIV
(5) NTC-CAL

DISPLAY M39 TE

J1 – NERO

COMANDI SCHEDA
POWER TRIAC

TASTIERE/SK-DISPLAY M100– GIALLO

PIN: (1)SDA (2)SCI
(3)INT (4)RST
(5)AUX1 (6)AUX2
(7)GND1 (8)GND2
(9)--- (10)---
(11)10Vac (12)10Vac

P16 – MARRONE

PIN: (1)10Vac –TRAFO
(2)10Vac –TRAFO
(3)24Vac – TRAFO
(4)24Vac - TRAFO

P13 – ROSA

PIN: (1)VCC_DV3 (2)SIG_DV3
(3)GND_DV3 (4)EV_EDS2
(5)EV_G3 (6) VCC_DV4
(7) SIG_DV4 (8)GND_DV4
(9)COM EV (10)EV_G4

P12 – BLU

PIN: (1)EV_G2 (2)COM_EDS
(3)COM_AC (4)COM_AF
(5)COM_EV (6)EV_EDS
(7)EV_EVC (8)EV_AF
(9)EV_G1 (10)EV_EM
(11)EV_EVAC (12)EV_MIX

P16 – NERO

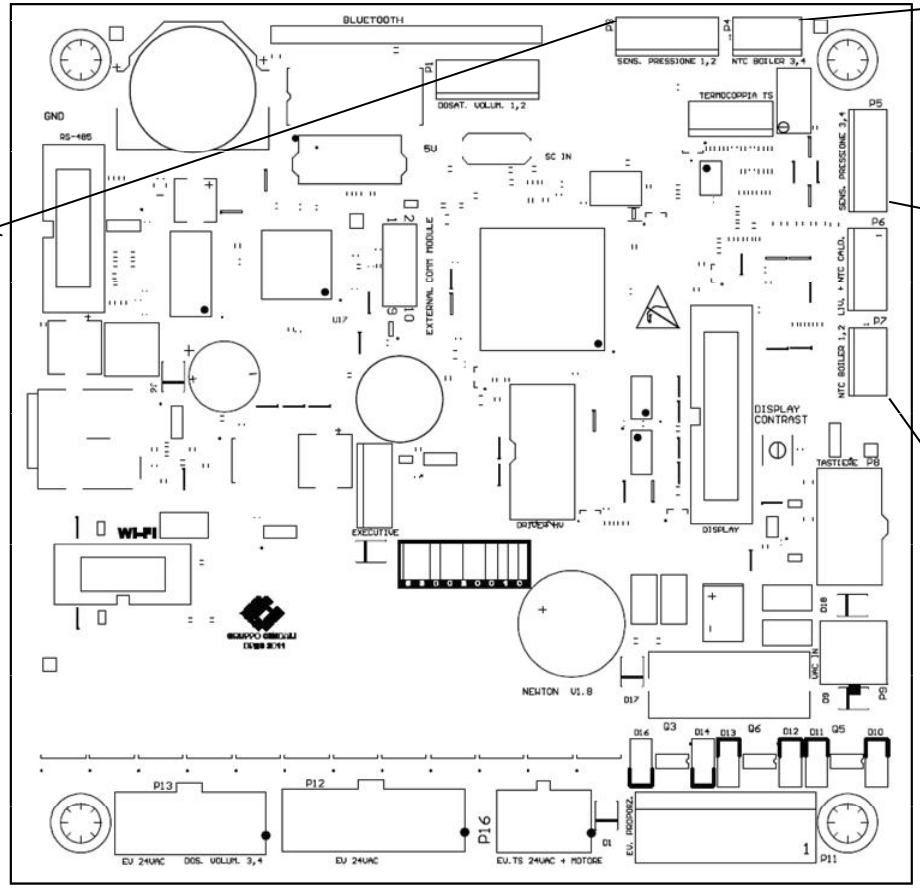
PIN: (1)COM_EVTS (2)----
(3)COM_MC (4)MC
(5)---- (6)EV_EVTS

P11 – VERDE

PIN: (1)-24 (ALIM) (2)EV_EVP1
(3) EV_EVP2 (4) EV_EVP3
(5) EV_EVP4 (6)COM_EVP
(7)+24 (ALIM)

CPU board

BASSA TENSIONE – CPU 2/2



SENSORE PRESSIONE 3/4 – ARANCIO

PIN: (1)VCC_SP3 (2) VCC_SP4
(3)SIG_SP3 (4) SIG_SP4
(5)GND_SP3 (6) GND_SP4

NTC BOILER 3/4 – CELESTE

PIN: (1)NTC_B3 (2) NTC_B4
(3)NTC_B3 (4) NTC_B4

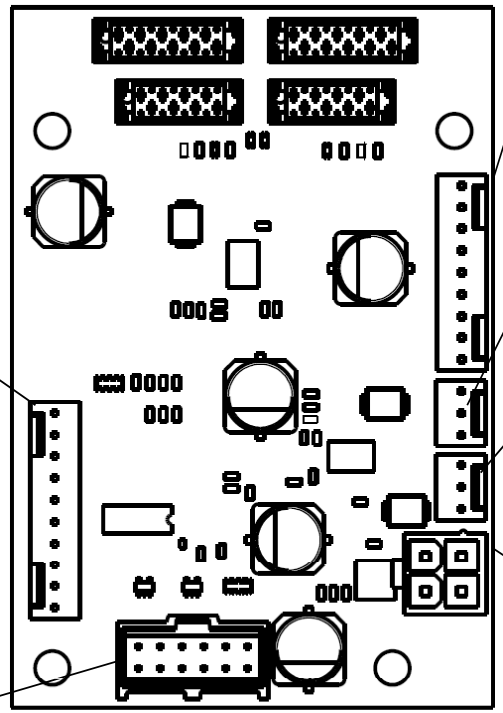
SENSORE PRESSIONE 1/2 – ARANCIO

PIN: (1)VCC_SP1 (2) VCC_SP2
(3)SIG_SP1 (4) SIG_SP2
(5)GND_SP1 (6) GND_SP2

NTC BOILER 1/2– BIANCO

PIN: (1)NTC_B2 (2) NTC_B2
(3)NTC_B1 (4) NTC_B1

BASSA TENSIONE – SCHEDA ALIM DISP



FLAT DISPLAT GR2/GR3/GR4

FLAT DISPLAT SERVIZI/GR1

LED SERVIZI/GR1/GR2 -BIANCO

PIN: (1) COM_LED SER (2) VCC_LED SER
(3) GND_LED SER (4) COM_LED GR1
(5)VCC_LED GR1 (6) GND_LED GR1
(7) COM_LED GR2 (8) VCC_LED GR2
(9) GND_LED GR2

TURBOSTEAM

PIN: (1)TS1 (2)C_TS1
(3)TS3 (4)C_TS3
(5)TS2 (6)C_TS2
(7)STOP (8)C_STOP
(9)TS4 (10)C_TS4

LED GR3 -BIANCO

PIN: (1) COM_LED SER (2) VCC_LED SER
(3) GND_LED SER

LED GR4 -BIANCO

PIN: (1) COM_LED SER (2) VCC_LED SER
(3) GND_LED SER

TASTIERE/SK-DISPLAY M100–GIALLO

PIN: (1)SDA (2)SCI
(3)INT (4)RST
(5)AUX1 (6)AUX2
(7)GND1 (8)GND2
(9)--- (10)---
(11)10Vac (12)10Vac

ALIMENTAZIONE DISPLAY

PIN: (1)GND 24V ALIM
(2)GND 24V ALIM
(3)VCC 24V ALIM S.
(4) VCC 24V ALIM S.

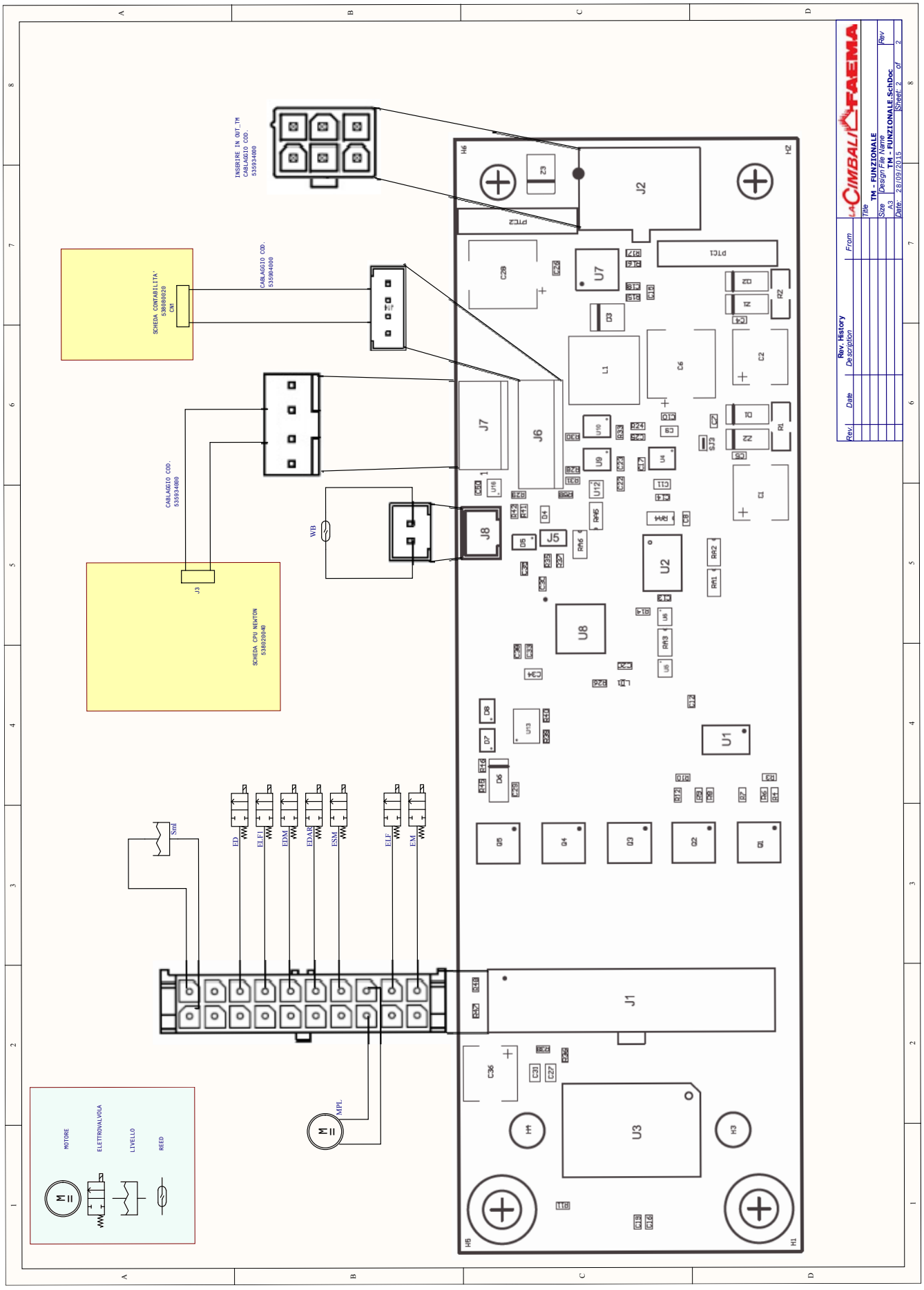
WIRING DIAGRAM LEGEND

Asw = Switching power supply
Bt = Terminal block
Ct = Voltage changing
F = Pump fuse
Fi = Filter
IG = Main switch
Mo = Terminal strip
MP = Motor pump
RB... = Coffee Boiler resistance
RC = Service Boiler resistance
Rsc = Cup heater resistance
St = Triac board
TC = Service Boiler supply security thermostat
TB... = Coffee Boiler supply security thermostat
Tl = Contactor
TR = Transformer

Connector list

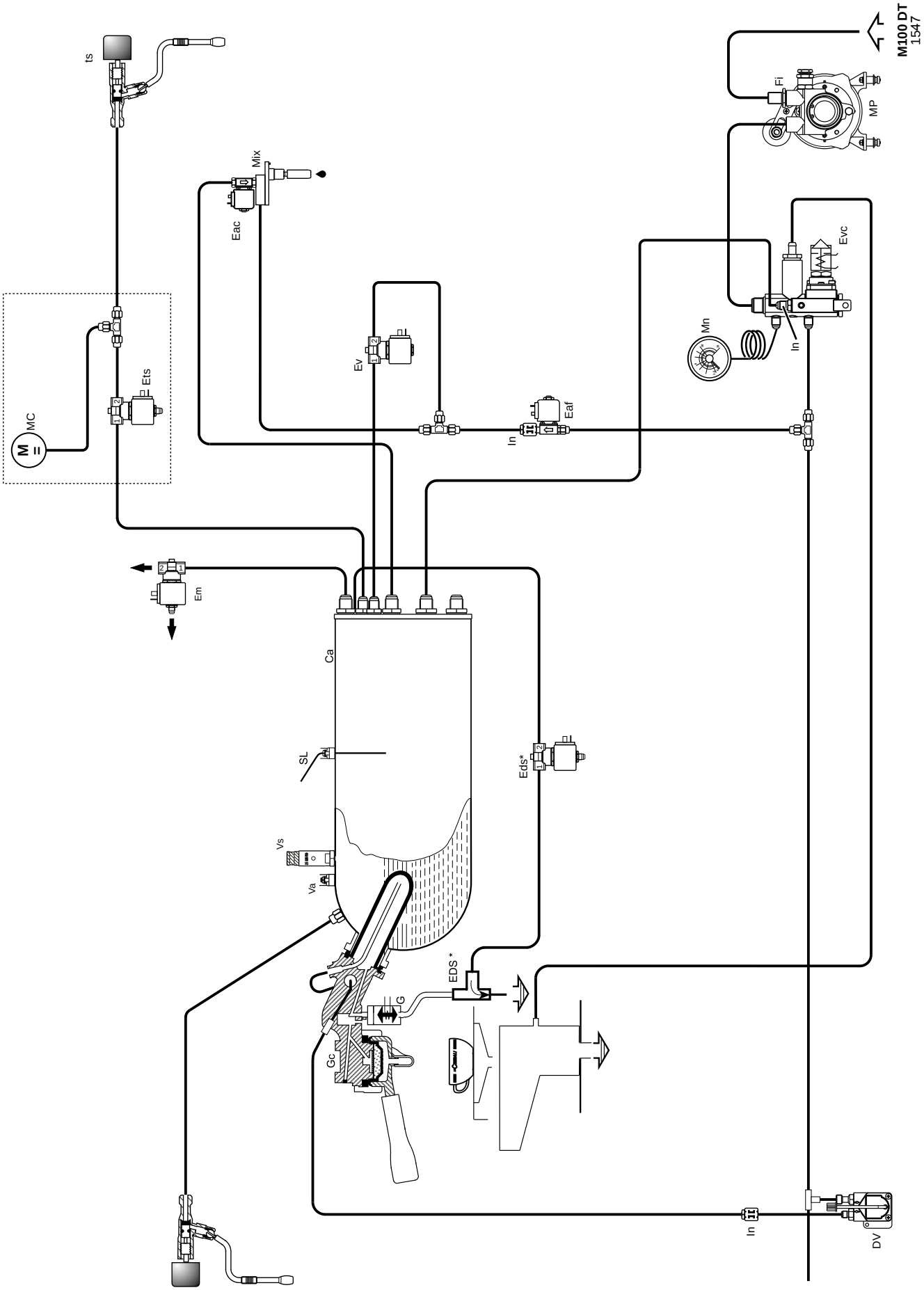
BT = Battery
J1 = Keyboards
J2 = Turbosteam
J3 = Services Led, gr.1, gr.2
J4 = Display feed
J7 = Led gr.3
J8 = Led gr.4
J9 = Flat cable of services display, gr.1
J10 = Flat cable of gr.1, gr.2, gr.3, gr.4 display
P1 = Volumetric meter gr.1, gr.2
P3 = Pressure sensor gr.3, gr.4
P4 = Boiler NTC gr.3, gr.4
P5 = Pressure sensor gr.1, gr.2
P6 = Level sensor, services boiler NTC
P7 = NTC boiler gr.1, gr.2
P8 = Keyboards
P9 = Card feed
P11 = Proportional solenoid valve feed Gp
P12 = Solenoid valve feed: G1, G2, Evc, Eac, Eds, Va, Eaf, Ev
P13 = Volumetric meter gr.3, gr.4, G3, G4
P16 = Ets Turbosteam Solenoid valve feed, MC Turbosteam compressor feed
TS = Turbosteam sensor
TM1 = Alignment Turbosteam sensor Trimmer
TM2 = Display contrast setting Trimmer

Functional Turbo Milk



English

HYDRAULIC CIRCUIT

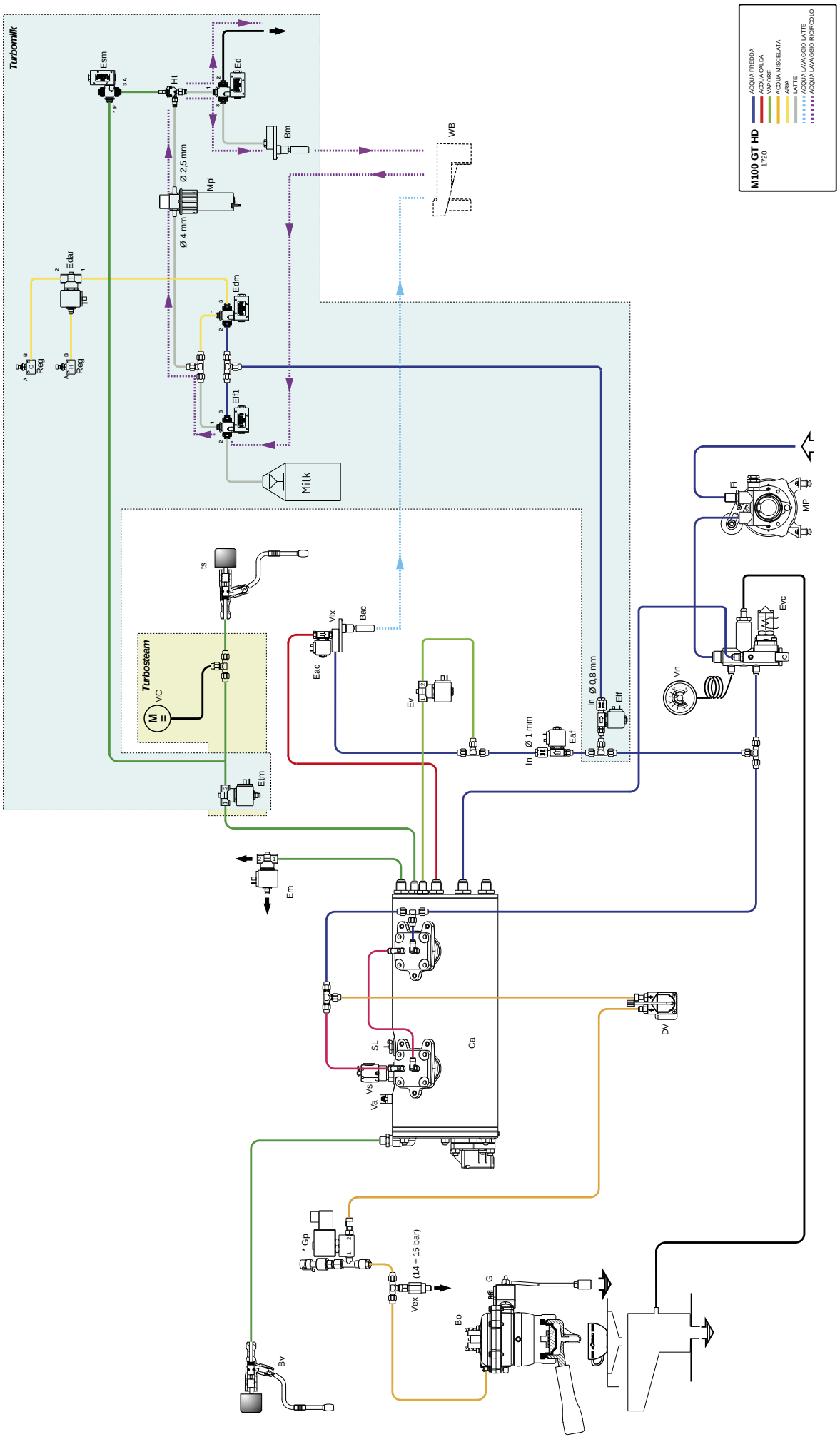


HYDRAULIC DIAGRAM LEGEND

Ca = Boiler
DV = Volumetric meter
Em = Anti-suction solenoid valve
Eac = Hot water solenoid valve
Eaf = Cold water solenoid valve
Ets = Turbosteam solenoid valve
Ev = Steam solenoid valve
Evc = Boiler supply solenoid valve
Fi = Pump filter
G = Coffee solenoid valve
Gc = Coffee preparation group
Eds = Electronic Drying System
In = Injector
ts = Turbosteam selector
Mix = Water mixer
Mn = Pressure gauge
MP = Volumetric pump
SL = Boiler level probe
MC = Compressore motor
Va = Anti-suction valve
Vs = Boiler safety valve

English

Hydraulic circuit (version with Turbo Milk)



HYDRAULIC DIAGRAM KEY (VERSION WITH TURBO MILK)

Bac = Hot water dispenser
Bm = Milk delivery spout
Ca = Boiler
DV = Volumetric meter
Em = Anti-suction solenoid valve
Eac = Hot water solenoid valve
Eaf = Cold water solenoid valve
Etm = Turbomilk solenoid valve
Ev = Steam solenoid valve
Evc = Boiler supply solenoid valve
Ed = Diverter solenoid valve
Elf.. = Washing solenoid valve
Esm = Milk safety solenoid valve
Edar = Air diverter solenoid valve
Fi = Pump filter
G = Coffee solenoid valve
Gp = Proportional solenoid valve
Ht = Heater
Bo = Coffee boiler
Bv = Steam spout
Edm = Solenoid valve for milk deviation
In = Injector
ts = Turbosteam selector
Mix = Water mixer
Mn = Pressure gauge
MP = Volumetric pump
Mpl = Milk pump
Reg.. = Air regulator
SL = Boiler level probe
MC = Compressore motor
Va = Anti-suction valve
Vex = Expansion valve
Vs = Boiler safety valve
WB = Washing box sensor

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