Coffee Machine

Service
Service
Service

Xelsis

ServiceManual

Rev. 05 MAY 2016

TECHNICAL INFORMATION

Power supply and output:	240 V~ 50 Hz 1400 W - 230 V~ 50/60 Hz 1400 W - 120 V~ 60 Hz 1500 W - 100 V~ 50/60 Hz 1300 W
Temperature monitoring:	(NTC) variable resistor sensor - transmits the value to the electronic card
Safety system:	2 manual reset or one-shot thermostats (175°C)
Dimensions: W x H x D in mm:	290 x 375 x 444 mm
Stand-by power consumption	< 1 W
Weight:	16 kg
Water tank capacity:	1.6 l
Coffee bean hopper capacity:	350 g. of coffee beans
Dreg drawer capacity:	13
Heating time:	Approx. 45 sec.
Water circuit filling time:	Approx. 15 sec Max. on first filling cycle
Power consumption:	During heating phase- approx. 5.6 A
Automatic dosage:	Dose adjustment controlled by the electronic system

2014-December-23

PHILIPS

Saeco

XELSIS

MODIFICATIONS TO SERVICE MANUAL				
From Rev.	**To Rev.**	**Chapter**	**Inserted**	**Modified**
Rev.00	**Rev01**	01		Par. 1.3. Material
				Par. 1.4. Safety warnings
		02		Par. 2.2.1. Specification for the measurement of the milk products temperature
			Par. 2.2.2. Specification for the measurement of the Milk products temperature.	
		05	Par. 5.4. Saeco Service Center - Quick Start Guide	
		06		Par. 6.1. Reapair flow

CHAPTER 1

INTRODUCTION

1.1   Documentation required

The following documentation is needed for repair procedures:

• Instruction booklet for specific model
• Technical documentation for specific model (diagrams, exploded drawings)

1.2   Tools and resources

As well as the standard equipment, the following is required:

Qty.	Description	Notes
1	Screwdriver	Torx T 8 - T 10 - T 20
1	Pliers for Oetiker clamps	
1	CC -A - Vdc tester	
1	Digital thermometer	Scale limit > 150°C
1	SSC (Saeco Service Center)	Programmer (for programming and diagnostics mode)

1.3   Material

Material	Code and Description
Thermal paste	Heat resistance > 200°C
Descaler	21001901 "ACC SAE DECALCIFIER 5 L 1 UNIT"
Grease solvent	132253695601 "PARALIQ GB 363"
Silicone grease	14-INTGR22004 "ACC TUBE FIN FOOD GREASE 2 400 ML"

1.4   Safety warnings

We recommend you consult the technical manual of the machine before performing any maintenance work.
Observe all applicable standards relating to the repair of electrical appliances.
Always disconnect the power plug from the mains before beginning repair work.

Simply turning off the main machine power switch is not an adequate safety precaution.
This domestic appliance is rated as insulation class I.
On completion of the repair work, insulation and dielectric rigidity tests must be performed.

Disassembling the machine, the operator must pay attention to hot and under Pressure parts: boiler, pin-boiler, valves, dispensing, steam tube, brew unit, connections and pipes to avoid burns. Please refer to specific hydraulic circuit (Image1) to know the parts in detail.
The machine hydraulic circuit can reach maximum pressure of 16/18 bar.
To operate in safety condition is recommended to perform the Steam Out procedure in order to remove the pressure and hot water inside the hydraulic circuit.

Image 1

AL TUBO VAPORE / ACQUA CALDA

ALLA CARAFFA LATTE

ALLO SCARICO
SU PROTEZIONE
EMULSIONATORE

AL GRUPPO CAFFE'

CALDAIA VAPORE

ALLO SCARICO

SERBATOIO ACQUA

ALLO SCARICO

CALDAIA CAFFE'

POMPA CAFFE'

POMPA VAPORE

■ Water

■ Hot water /

From this point circuit
in pressure

From this point circuit
High temperaure
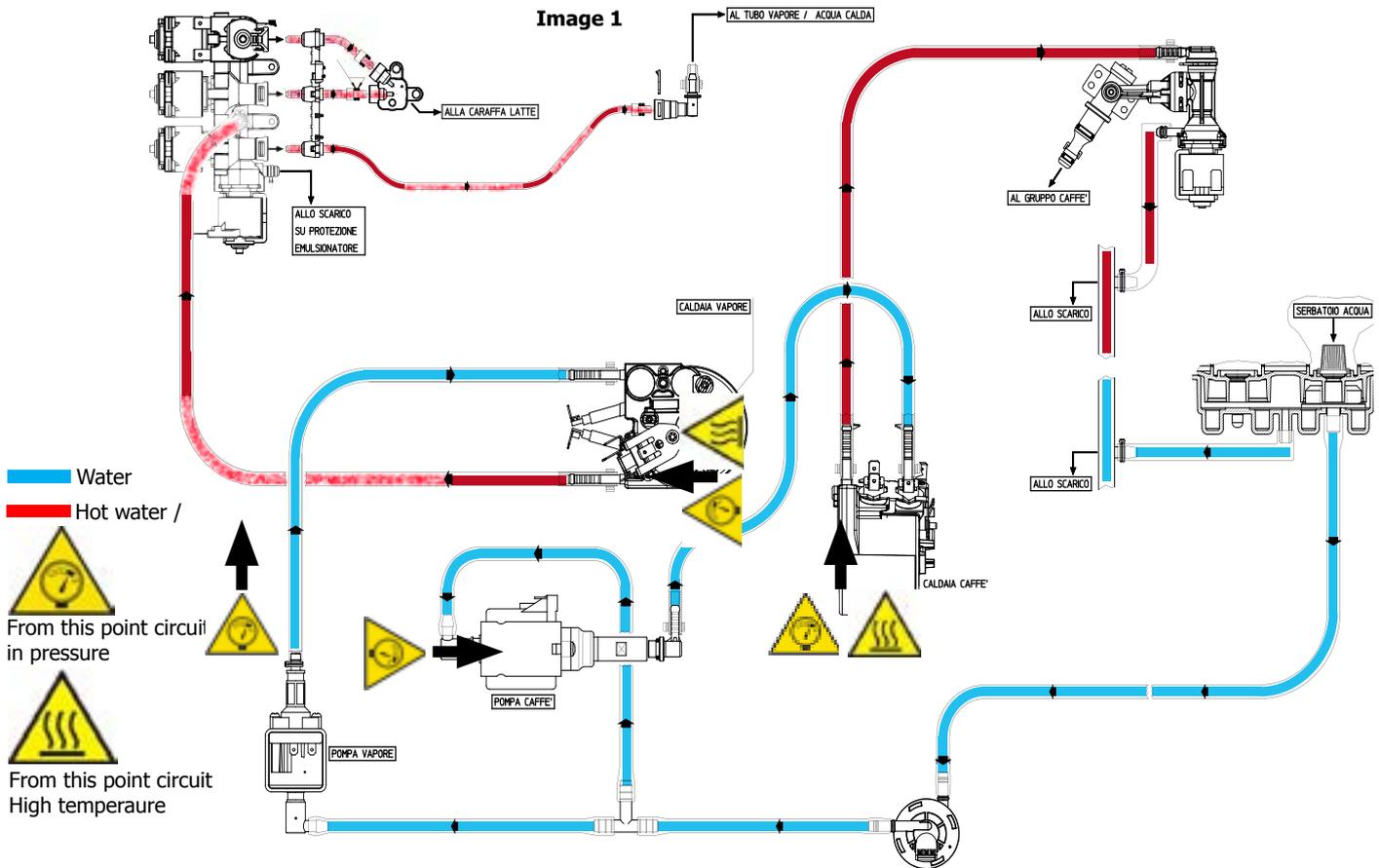
1.5   Service POLICY grid as used for coffee machine

For IN WARRANTY repairs is raccomanded to use when and where possible the single components, available in the exploded views of the coffee machines or of the specific components. If you find the information "SEE THE EXPLODED VIEW E........" in the assembly description field, it means that the single components of the assembly are available in the other pages of the exploded view. It's possible to use the assembly only if there is a specific Symptom Cure that include this possibility or when the single components are not available for the order.

List of principal assembly present in all our coffee machines

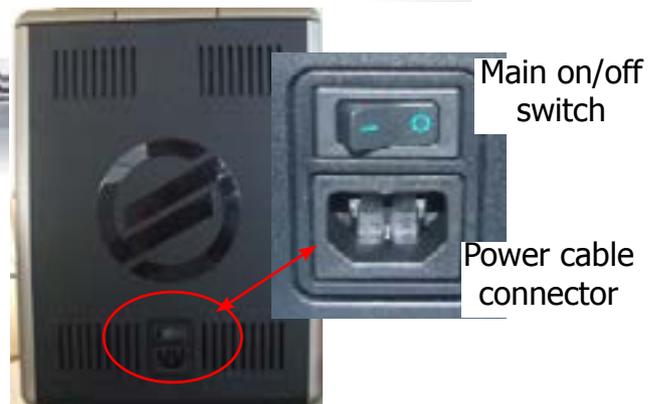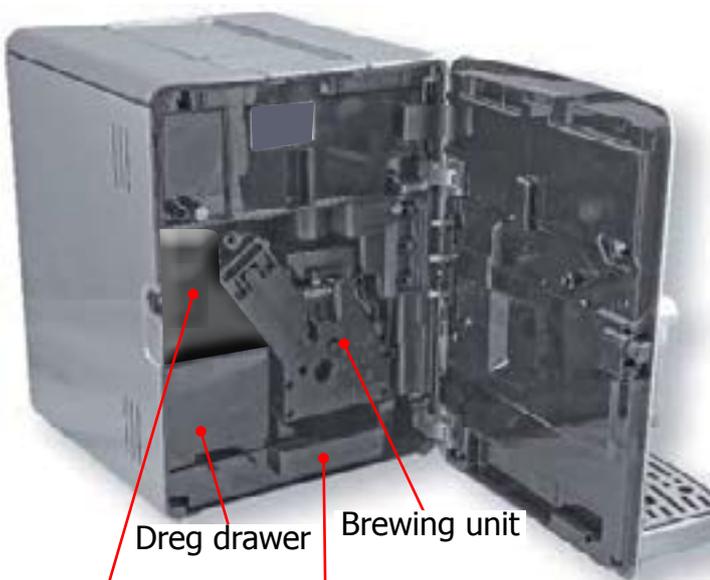| Components	Assembly use	Single components available
COFFEE GRINDER	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the machine or of the Coffee Grinder on website
BREWING UNIT	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the machine or of the Brewing unit on website
BOILER	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the machine on website
GEAR MOTOR	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the machine on website
FILTER HOLDER	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the machine on website
MILK CARAFE	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the machine on website
THERMAL CARAFE	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the Thermal Carafe on website
MILK ISLAND	**Only for OOW repairs**	**YES**, to consult the specific exploded-view of the Milk Island on website

1.6.1 External machine parts

Cup heater plate

Coffee bean hopper with lid

Water tank

Adjustment device for grinding

Compartment for pre-ground coffee

ID=digital fingerprint identification

Control panel

Service hatch

SBS

Milk tank attachment

Dispensing unit

Hot water/steam dispensing pipe

Full tray floating indicator

Drip tray+grille

Milk tank

Dreg drawer

Brewing unit

Main on/off switch

Power cable connector

Dreg drawer protection device

Drip tray

3/4

1.6.2 Internal machine parts

Power card

Water level capacitive sensor

Steam boiler

Multi-way valve

Coffee boiler cover

Steam pump

Coffee boiler

Water pump

Flow-meter

Coffee container cover presence sensor

Water tank connection

Coffee grinder

Water tank present/ missing tab

Ground coffee channel

CHAPTER 2

TECHNICAL SPECIFICATIONS

2.1.   Technical specifications

Power supply and output:	240 V~ 50 Hz 1400 W - 230 V~ 50/60 Hz 1400 W - 120 V~ 60 Hz 1500 W - 100 V~ 50/60 Hz 1300 W
Temperature monitoring:	(NTC) variable resistor sensor - transmits the value to the electronic card
Safety system:	2 manual reset or one-shot thermostats (175°C)
Coffee heat exchanger output: Stainless steel	(230/120 V~) 1300 W - (100 V~) 1100 W for coffee, hot water and steam dispensing
Steam heat exchanger output: Stainless steel	As above
Gearmotor:	2 rotation directions; power supply 24VC
Coffee pump	Ulka Type EP5/S GW Approx. 13-15 bar with reciprocating piston and 120°C cutout 48 W, 230V, 50 Hz, 120V, 60Hz 100V, 50/60 Hz
Steam pump	Ulka MF with reciprotcating piston 230V, 50 Hz, 120V, 60Hz 100V, 50/60 Hz
Overpressure valve: (multi-way valve)	Opening at approx. 17-23 bar
Water filter:	In tank
Coffee grinder:	Direct current motor with flat ceramic grinder blades
Automatic dosage	Dose adjustment controlled by the electronic system
Power consumption:	During heating phase- approx. 5.6 A
Consumption in Standby	< 1 W
Dimensions: W x H x D in mm:	290x375x444
Weight:	16 kg
Water tank capacity:	1.6 l.
Coffee container capacity	350 g coffee beans
Dreg drawer capacity	13
Heat exchanger capacity:	Approx. 10 cc
Water circuit filling time:	Approx. 15 sec Max. on first filling cycle
Heating time:	Approx. 45 sec.
Grinding time:	Approx. 8-10 sec.

2.2.1. Specification for the measurement of the coffee products temperature.

The temperature is influenced by the flow from the dispenser and stratification of temperatures in the glass. In order to consider these phenomena and to introduce measures that allow comparisons in controlled conditions, below guidelines must be followed:

Conditions:
a) Water temperature in tank: 23°C (+/-2°C).
b) It must be used a plastic cup (see picture N°1).
c) It must be used a thermocouple thermometer (e.g. type K - see picture N°2).
d) The coffee machine is tested without any change of parameters or calibrations, which may affect the temperature of products, so the measurement of temperature must be done with machine in default factory setting.

Procedure:
1. The temperature must be measured in the cup, immediately after dispensing. Cup has to be placed on a non-metal surface using a thermocouple thermometer (Picture 1).

2. The temperature in the cup is measured by immersing the probe of the thermometer up to touch the bottom.The probe then must be moved in a circular motion for 5/6 rotations. At the of the rotations, stop in the center of the cup (Picture 2).

3. The highest temperature measured during the rotations is the value we are searching for, and that must be reported;

4. Test measurement: from end of dispensing to the end of rotations must be completed within 12 seconds.

5. the distance of the probe from the bottom of the glass is a function of the quantity of coffee dispensed: 10mm for 35gr - 17mm for 60gr - 35mm for 120gr and superior (Picture 3).

Limits of acceptability
The acceptance limits are divided by features and products and are the following:

Espresso Coffee Italy Q.ty 25/40 gr.
Temperature of 1st product 69°C ≤ 85°C
Temperature of 2nd product 72°C ≤ 85°C

Coffee Q.ty 70/120 gr.
Temperature of 1st product 69°C ≤ 85°C
Temperature of 2nd product 72°C ≤ 85°C
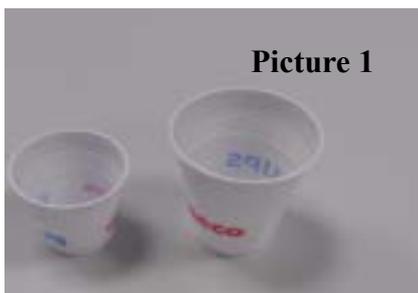
Picture 1

Picture 2

OFF   Tare   ON

DISPLAY

Ø max 2mm

Picture 3

for 120gr   and
        superior   35 mm

for 60gr   17 mm
for 35gr   10 mm

2/6

2.2.2.   Specification for the measurement of the Milk products temperature.
Milk evaluation
To carry out the test, a partially skimmed UHT milk with a percentage of grease between 1.5-1.8% at a refrigerator temperature Trefr. (between 4 to 10°C) must be used.
The milk product must be checked on a beaker of 250 ml of capability and with an inner diameter of 70mm, brewing 100gr of product.
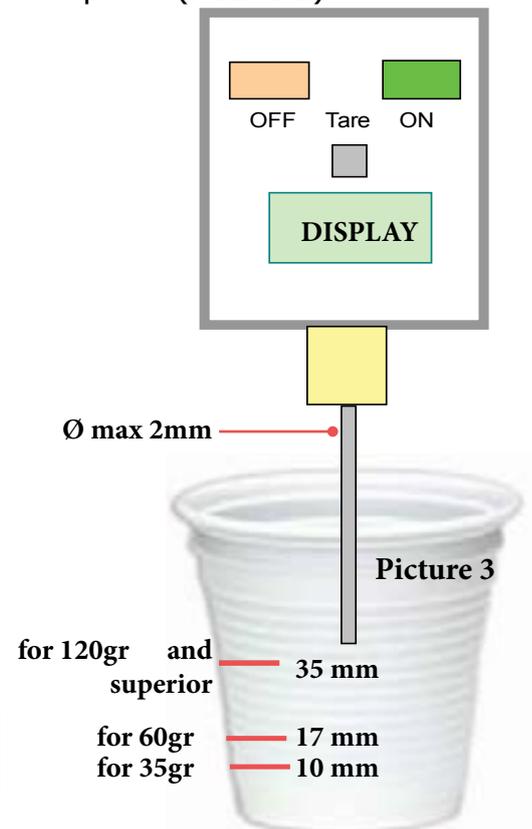
Parameters to be respected:
The parameters to be respected are: milk temperature and height of the cream. Each of these parameters, however, must be evaluated depending on the type of system used for the production of hot milk. Actually three types of devices are present on the appliances:
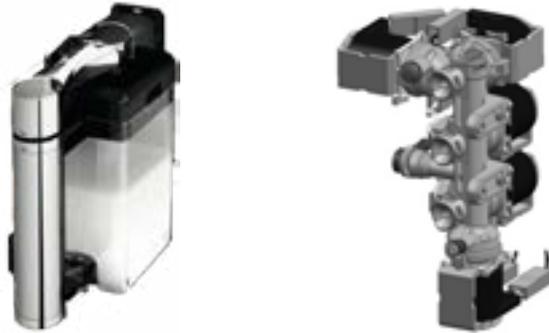- Manual system (pannarello)
- Semi-Automatic system (cappuccinatore)
- Automatic system (carafe, Pinless wonder system, etc.)

Milk temperature in the beaker:
System without Pinless Wonder: With milk at Trefr. (about 4-10 °C): → $\Delta \geq 36$
how does it work:
> 1. The cold milk is frothed with air in the first chamber.
> 2. Then, the frothed milk is heated in the second chamber thanks to the steam.

Height of the milk cream in the beaker:
Manual system (pannarello) ≥ 15mm on 100gr. of brewed product

Semi-automatic system (cappuccinatore) ≥ 20mm on 100gr. of brewed product

Automatic system: carafe, cappuccinatore, Pinless wonder e.g. (New Royal, Energica Pure, Intelia EVO latte) ≥ 20mm on 100gr. of brewed product

How to measure the temperature of the milk.

1. The measurement is carried out in the beaker, immediately after the end of milk brew, positioned on a non-metallic surface, using a thermocouple thermometer (eg. Type K). Stop the preparation of mixed product: at the end of milk brewing, where "One Touch product" function is present.

2. The temperature is measured by immersing the probe of the thermometer, positioning the probe inside the beaker at about 10mm from the bottom of the container, then the probe moves in a circular motion for 3-5 turns, stopping at the end, at the center of the beaker. It detects the maximum temperature reached in a time of relief between 3 to 5 seconds. It is important the mixing of milk before the measurement at 10mm from the bottom of the beaker. If the mixing is correct, temperature, for a few fractions of a second, during the measurement should not oscillate.

How to measure the milk cream.
The temperature (Trefr or Tamb) of the milk doesn't affect as much the test result on measuring the milk cream; by convection is assumed to always use milk at refrigerator temperature **T**refr..

Manual systems (Pannarello)
Pour 100cc. of milk at Trefr. in a beaker of 250 ml of capacity and with a inner diameter of 70 mm; with machine in steam mode:

1. Open the steam knob to discharger water circuit for 4 sec, then close the knob.
2. Place the beaker with the frother dipped in milk, open the steam knob to maximum and start the chronometer.
3. After about 30 to 60 seconds, close the knob and check the result on milk.

Semi-automatic systems (cappuccino)
Pours milk at Trefr. in a container ; with the machine in steam mode:

1. Open the steam knob to discharge water circuit for 4 sec. then close the knob.
2. Insert the silicone tube in the milk container, placing a beaker of 250 ml capacity and with an inner diameter of 70 mm under the cappuccino maker and open the steam knob.
3. After having provided 100gr. of product, close the knob and check the result obtained on milk. Note: The same applies to machines which have a steam key on the user interface and a solenoid valve in place of the steam tap.

Automatic: Carafe, Cappuccino Pinless wonder e.g.:(New Royal, Energica Pure, Intelia EVO Latte), etc..
After setting the machine to delivery of 100gr. of product:

1. Launch the "hot milk" function.
2. Collect the product in a beaker with a 250ml of capacity and with an inner diameter of 70 mm, and verify the result obtained on milk. Carry out the test using milk at a **T**refr..

In case the machine allows modify of the emulsion through the menu, use the machine with the emulsion set to the default value.

Related to the above testing procedure derives the following table of acceptability:

Manual, Semi-Automatic and Automatic's Milk System	
Grams of Product	Minimun Height of the milk cream
≥ 130	≥ 30mm
120	≥ 25mm
110	≥ 22mm
100	≥ 20mm
90	≥ 16mm
80	≥ 13mm
70	≥ 11mm

NB: To verify more accurately the height of the cream, a practical expedient dictated by experience is to add to the product just delivered a small amount of coffee. The addition of coffee immediately put in evidence the surface of separation between liquid and cream.

2.3. Machine parameters and performance

PRODUCT QUANTITIES	Minimum quantity (Puls.)	Default quantity (Puls.)	Maximum quantity (Puls.)	Programm. by the user	Programm. by Production/Service department
Espresso	50	130 - 170 *	600	Yes	No
Large coffee	70	200 - 230 *	600	Yes	No
Pre-ground	Yes				
Hot water	Continues for 400 pulses				
Steam from hot water pipe	Continues until the water has been used up (capacitive sensor)				

* Depends on the language selected by the user

RINSE	Initial rinse	Final rinse
When performed	When the machine is switched on and the boiler temperature is ≤ 50°C	When the machine is switched off electronically, manually or automatically after 60', if at least one coffee has been dispensed, before switching off
No. of pulses	130	100
Stopping option	Yes, by pressing any key	Yes, by pressing any key
User disable option	Yes	No
Production/Service department disable option	No	No
No. of pulses user adjustment option	No	No
No. of pulses Production/ Service department adjustment option	No	No
Pulse range (Min. - Max.)	No	No

Descaling cycle frequency			
Hardness	**Water hardness**	**Without water filter**	**With water filter**
1	Soft (up to 7°dH)	240 litres (480,000 pulses)	480 litres (960,000 pulses)
2	Medium (7° - 14°dH)	120 litres (240,000 pulses)	240 litres (480,000 pulses)
3	Hard (15° - 21°dH)	60 litres (120,000 pulses)	120 litres (240,000 pulses)
4	Very hard (over 21°dH)	30 litres (60,000 pulses)	60 litres (120,000 pulses)

The default water hardness level is 4. Each litre of water corresponds to approximately 2,000 pulses.
In the machines where is not possible change the water hardness the default hardness level is 3.

DREG DRAWER	Description and values
Time-out for dreg drawer	5 sec.
Warning to empty dreg drawer after	Yes, after 10 lots of dregs
Empty dreg drawer blocking alarm after (double coffee is the last product dispensed)	13 lots of dregs (14 lots of dregs)
Reset dregs counter	The dreg drawer must be emptied only when prompted by the machine ensuring the machine is switched on and removing the drawer for more than 5 seconds.

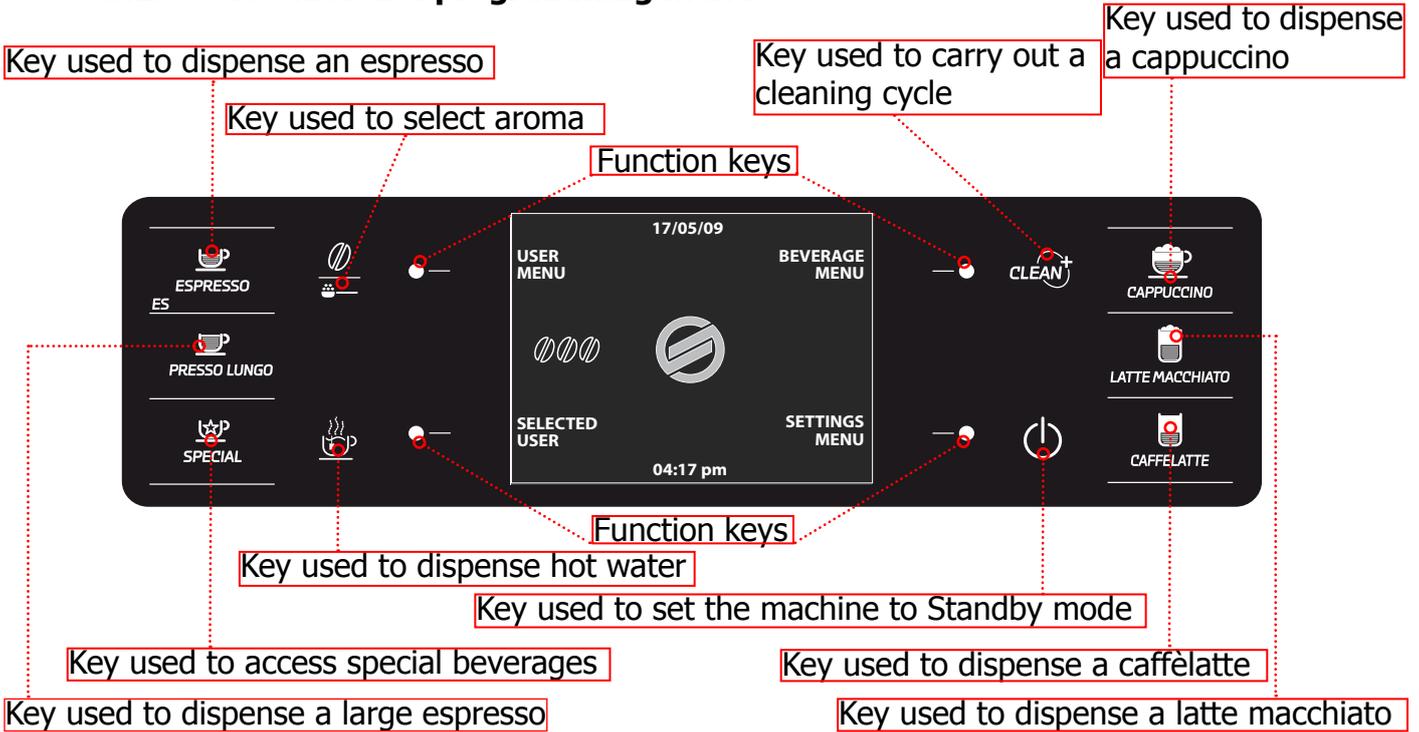| STANDBY	Description and values
Inlet time (min. - max.)	15 minutes - 180 minutes
Inlet time (default)	60 minutes
Inlet time programmed by user	Yes
Inlet time programmed by Production/Service department	Yes
Boiler temperature during Standby	Boiler OFF
Cup heater during Standby	Cup heater OFF
Timer and Standby	Yes **

** The machine switches on at the TimerOn (Timer) value and switches off when the "Standby time" (Delay - Time) has elapsed

WATER TANK	Description
Water reserve (pulses) with water filter	200
Water reserve (pulses) with no water filter	200
Water reserve modifiable by Production/ Service departments	No
"Fill tank" alarm	Yes
"No tray" alarm	No
Water mains	No

CHAPTER 3

BRIEF INSTRUCTIONS

3.1. Customer and programming menu

Key used to dispense an espresso

Key used to select aroma

Key used to carry out a cleaning cycle

Key used to dispense a cappuccino

Function keys

Function keys

Key used to dispense hot water

Key used to set the machine to Standby mode

Key used to access special beverages

Key used to dispense a caffèlatte

Key used to dispense a large espresso

Key used to dispense a latte macchiato

USER MENU
The machine offers customised settings for each beverage, depending on the user selected.

SELECT USER
Selects the customized icon.
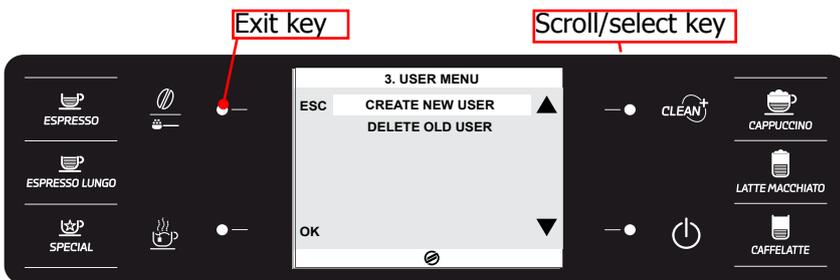
Exit key   Scroll/select key

Select/confirm key   Scroll/select key

CREATE NEW USER
This new user may program all beverages in accordance with his/her personal tastes.

DELETE OLD USER
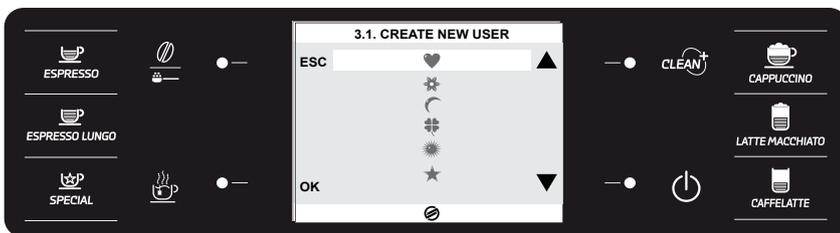Deletes a user stored previously.
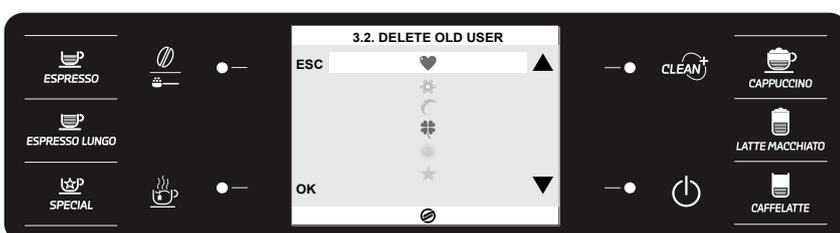

CREATE NEW USER
Select an icon using the (▲) and (▼) keys
Confirm with (OK).
Each icon may be programmed with any of the beverages. Programming may be carried out by adjusting the parameters managed within the "BEVERAGE MENU".

DELETE OLD USER
Select an icon using the (▲) and (▼) keys
Confirm with (OK)
Each icon may be programmed with any of the beverages. Programming may be carried out by adjusting the parameters managed within the "BEVERAGE MENU".
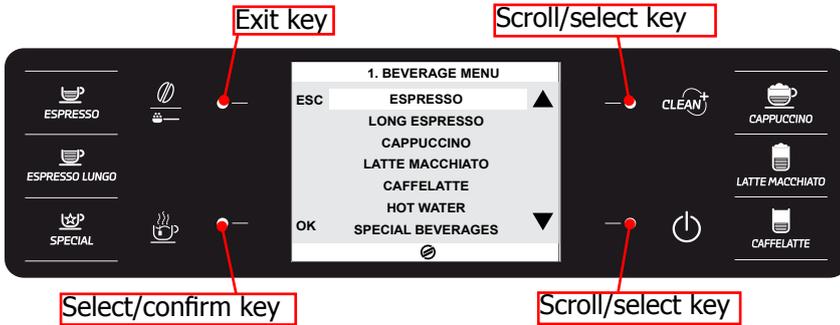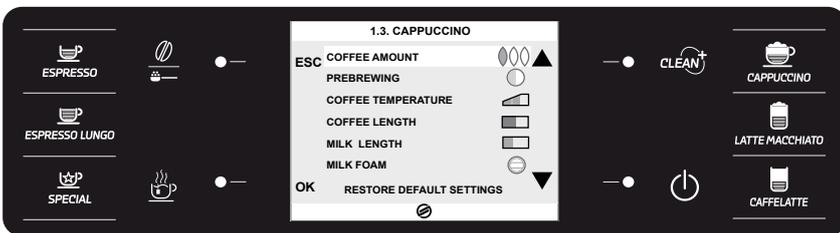
17/05/09
USER MENU   BEVERAGE MENU
SELECTED USER   SETTINGS MENU
04:17 pm

CLEAN+
ESPRESSO
ESPRESSO LUNGO
SPECIAL
CAPPUCCINO
LATTE MACCHIATO
CAFFELATTE

BEVERAGE MENU
Press to select the beverage settings.

Exit key   Scroll/select key

1. BEVERAGE MENU
ESC   ESPRESSO ▲
      LONG ESPRESSO
      CAPPUCCINO
      LATTE MACCHIATO
      CAFFELATTE
      HOT WATER
OK   SPECIAL BEVERAGES ▼

Select/confirm key   Scroll/select key

The pre-set values may be programmed for every type of beverage.

E.g.: CAPPUCCINO

1.3. CAPPUCCINO
ESC   COFFEE AMOUNT
      PREBREWING
      COFFEE TEMPERATURE
      COFFEE LENGTH
      MILK LENGTH
      MILK FOAM
OK   RESTORE DEFAULT SETTINGS ▼

The standard values set as a default for each beverage by the manufacturer may be reprogrammed. Once this function has been selected, the custom settings will be deleted.

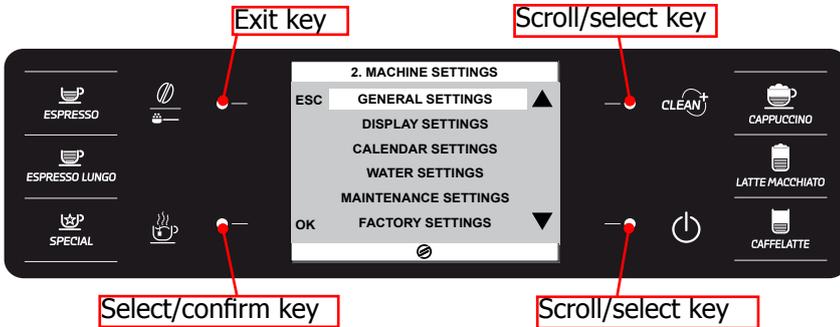| COFFEE AMOUNT | MILD | MEDIUM | STRONG |

| PREBREWING | NORMAL | EXTRA | OFF |

| COFFEE TEMPERATURE | LOW | NORMAL | HIGH |

| COFFEE LENGTH | |

| MILK LENGTH | |

| MILK FOAM | MINIMUM | NORMAL | MAXIMUM |

1.6. HOT WATER
ESC   WATER LENGTH ▲
      RESTORE DEFAULT SETTINGS
OK   ▼
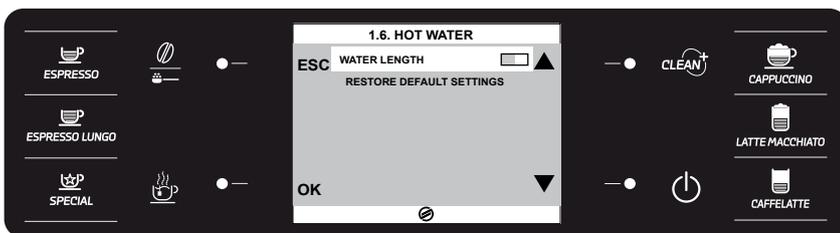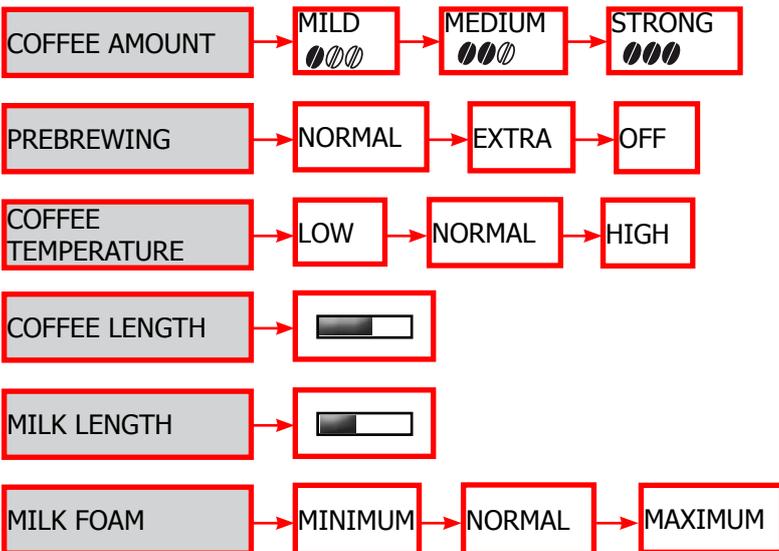
HOT WATER
Return to "BEVERAGE MENU", select "HOT WATER" and program the amount.

| WATER LENGTH | |

SETTINGS MENU
Press to select the machine settings

Exit key Scroll/select key

Select/confirm key Scroll/select key

GENERAL SETTINGS → CUP WARMER → RINSING → ACOUSTIC TONE   DISPLAY SETTINGS — LANGUAGE — BRIGHTNESS

CALENDAR SETTINGS → TIME → DATE → STAND-BY → POWER-ON TIMER

MAINTENANCE SETTINGS → PRODUCT COUNTERS → DESCALING CYCLE → BREW GROUP CLEANING CYCLE → ECOMODE FUNCTION → CARAFE CLEAN

Programming with DI (Digital Identification)

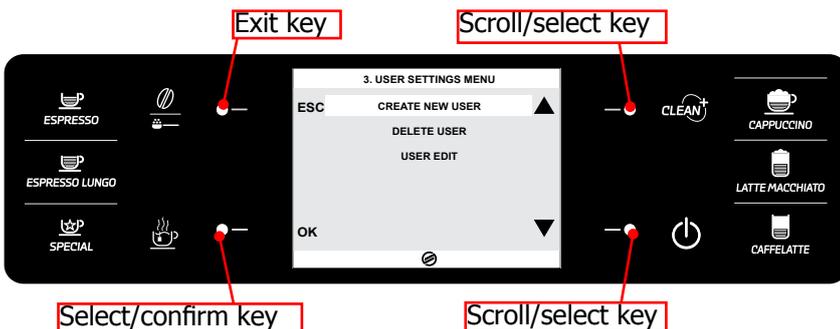This function is only available in machines with DI.

USER MENU
The machine offers customised settings for each beverage, depending on the user selected

USER SELECTION
Selects the customised icon

Exit key Scroll/select key
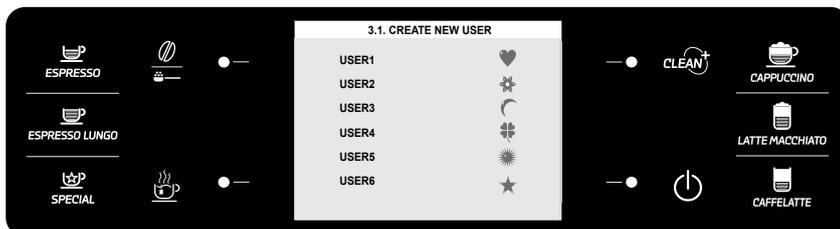
CREATE NEW USER
This new user may program all beverages in accordance with his/her personal tastes

DELETE USER
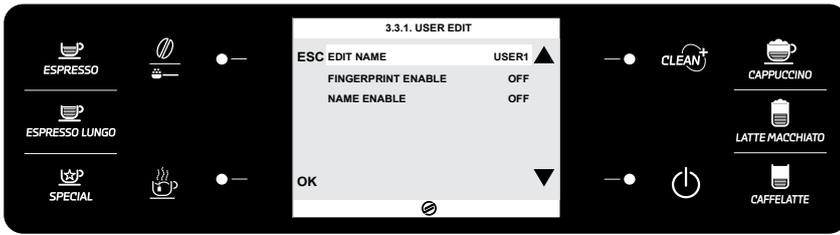Deletes an existing user and all corresponding programming

Select/confirm key Scroll/select key

MODIFY USER
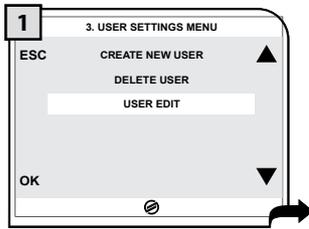Used to modify the settings for each user created previously

CREATE NEW USER
Each user can be assoicated with a single icon. Select one using the keys ▲ and ▼ confirm using the (OK) key.
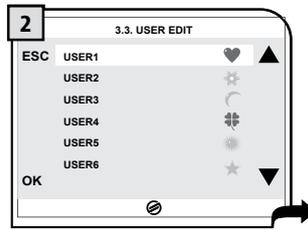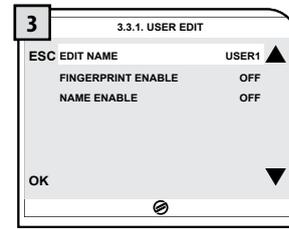
3.3.1. USER EDIT

ESC EDIT NAME   USER1
    FINGERPRINT ENABLE   OFF
    NAME ENABLE   OFF

OK

MODIFY USER
Used to modify the settings for each user created previously

1 3. USER SETTINGS MENU

ESC   CREATE NEW USER
       DELETE USER
       USER EDIT

OK

Select the function and press the "OK" key

2 3.3. USER EDIT

ESC   USER1   ♥
      USER2   ☼
      USER3   ☽
      USER4   ✤
      USER5   ☀
      USER6   ★

OK

Select the desired user, modify and press the "OK" key

3 3.3.1. USER EDIT

ESC EDIT NAME   USER1
    FINGERPRINT ENABLE   OFF
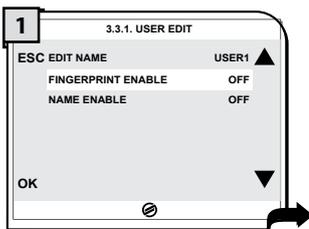   NAME ENABLE   OFF

OK

It will now be possible to modify the user

This function can be used to modify the name associated with the icon. The name may be displayed instead of the icon if the "DISPLAY NAME" function has been activated.

TExit key

Horizontal scroll/select character

Icon to save and exit

1 3.3.1.1. EDIT NAME

ESC   U S E R 1
      0 1 2 3 4 5 6 7 8 9
      A B C D E F G H I J
      K L M N O P Q R S T
      U V W X Y Z Ä Ë Ö Ü
OK   Æ Ñ Ø   - 💾
              ♥

2 3.3.1.1. EDIT NA...

ESC   U S E R
      0 1 2 3 4 5
      A B C D E F G
      K L M N O P Q R
      U V W X Y Z Ä Ë Ö Ü
OK   Æ Ñ Ø   💾
              ♥

Key to confirm character and move to the next character
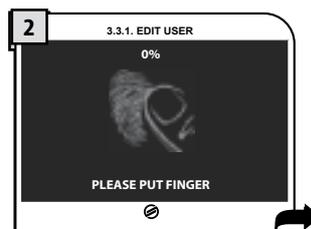
Vertical scroll/select character
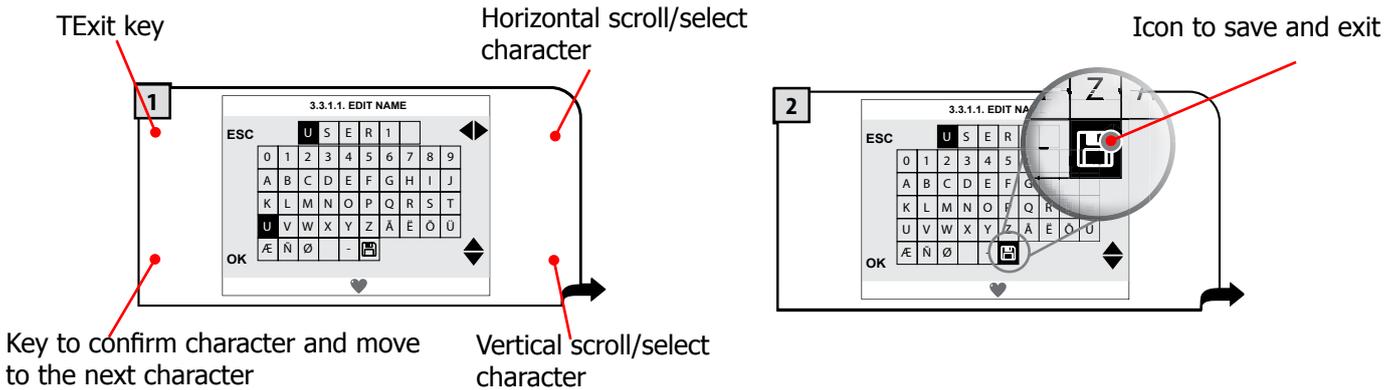
Digital fingerprint recognition

This function can be used to activate and modify the digital fingerprint for user selection.
The machine will ask you to place your finger on the sensor 3 times; this maximises the fingerprint reading area to optimise system reliability.
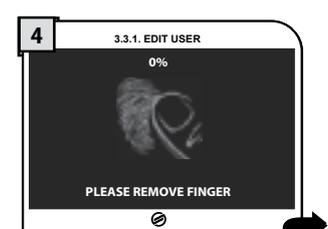
1 3.3.1. USER EDIT

ESC EDIT NAME   USER1
    FINGERPRINT ENABLE   OFF
    NAME ENABLE   OFF

OK

SSelect the function and press the "OK" key
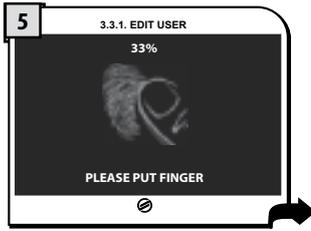
2 3.3.1. EDIT USER
         0%

    PLEASE PUT FINGER

The machine will ask you to place your finger on the sensor for an initial reading

3
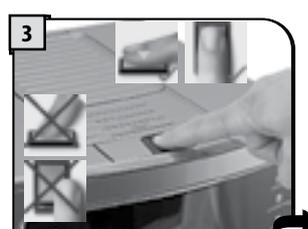
Place your finger firmly on the sensor
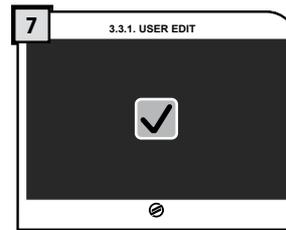
4 3.3.1. EDIT USER
         0%

   PLEASE REMOVE FINGER

When requested, remove your finger from the sensor. Wait...

5 | 3.3.1. EDIT USER
33%

PLEASE PUT FINGER

The machine will ask you to place the finger used previously on the sensor for a second reading

6 | 3.3.1. EDIT USER
33%

PLEASE REMOVE FINGER
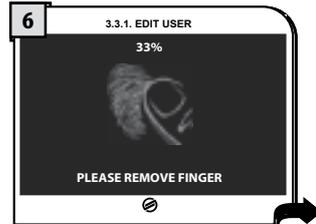
When requested, remove your finger from the sensor. Wait...
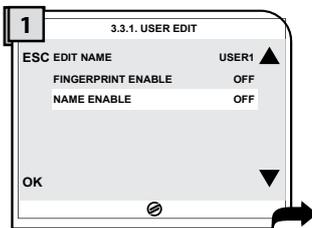
7 | 3.3.1. USER EDIT

✓

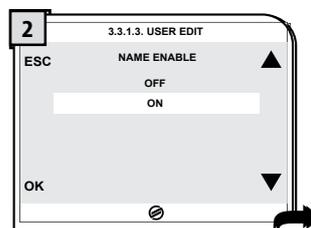The machine confirms that it has read and saved all the data correctly

In the case that the symbol ✗ appears on the display, proceed again with the procedure. Change the finger for reading.
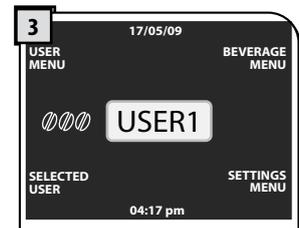
DISPLAY NAME

This function can be used to activate the name display function instead of the icon.

1 | 3.3.1. USER EDIT

ESC EDIT NAME   USER1 ▲
      FINGERPRINT ENABLE   OFF
      NAME ENABLE   OFF

OK   ▼

Select the function and press the "OK" key

2 | 3.3.1.3. USER EDIT

ESC   NAME ENABLE   ▲
              OFF
              ON

OK   ▼

Select "ON" to activate the function

3 | 17/05/09

USER   BEVERAGE
MENU   MENU

∅∅∅ USER1

SELECTED   SETTINGS
USER   MENU
          04:17 pm

When the function has been activated, the name will be displayed instead of the icon

3.1.2. Machine indications
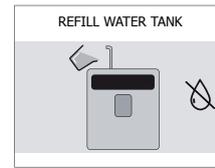
CLOSE HOPPER DOOR
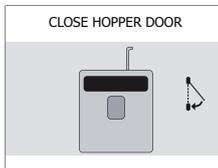
Close the coffee bean hopper lid to enable delivery of any beverage.

CLOSE FRONT DOOR

For the machine to become operative, the service hatch must be closed.

ADD COFFEE

Fill the coffee container.

REFILL WATER TANK
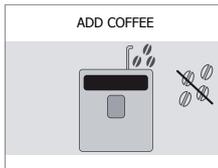
Take out the tank and fill it with fresh drinking water.

INSERT BREW GROUP

Insert the brewing unit in its correct location.

EMPTY DRIP TRAY

Open the front hatch and empty the drip tray underneath the brewing unit. You should also empty the dreg drawer, as the dregs counter will also be reset when the machine is switched on.

INSERT GROUNDS DRAWER

Insert the dreg drawer.

ROTATE THE MILK CARAFE
DISPENSING SPOUT INTO BREWING
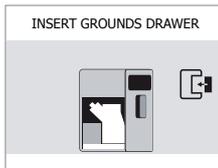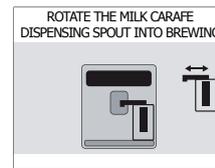
A beverage containing milk has been selected. The machine asks you to place the carafe handle spout in its dispensing position.
Press "ESC" to cancel the procedure.

EMPTY COFFEE GROUNDS DRAWER

Remove the dreg drawer.
N.B.: the dreg drawer must be emptied only when prompted by the machine ensuring the machine is switched on and removing the drawer for more than 5 seconds.

ROTATE THE MILK CARAFE
DISPENSING SPOUT INTO RINSING

The carafe rinse function has been selected.
Press "ESC" to cancel the procedure.

5/9
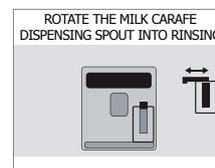
RESTART TO SOLVE THE PROBLEM

(E xx)

The machine is out of service.
Remove brewing unit, clean, grease and refit.Restart the machine.
After three attempts, contact a Service Centre.
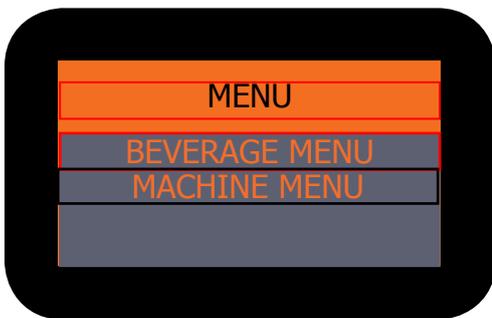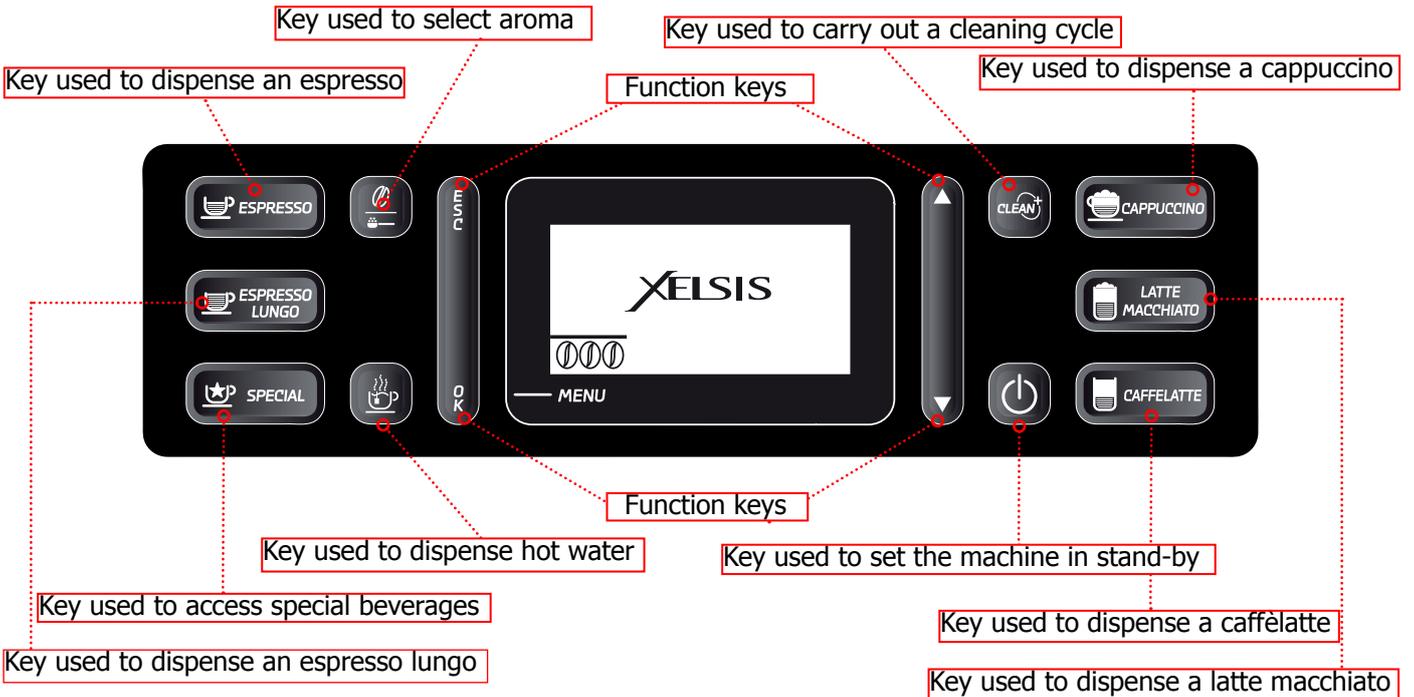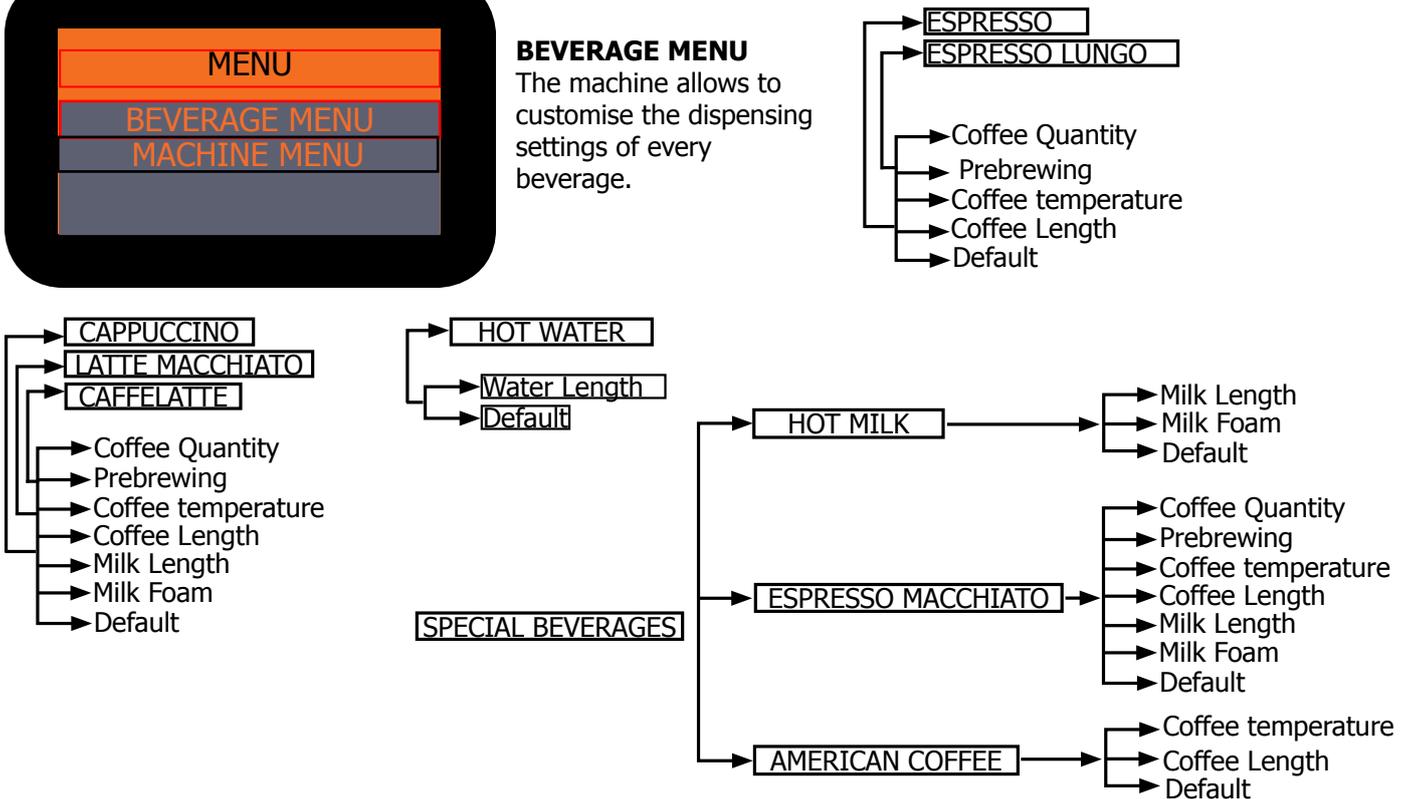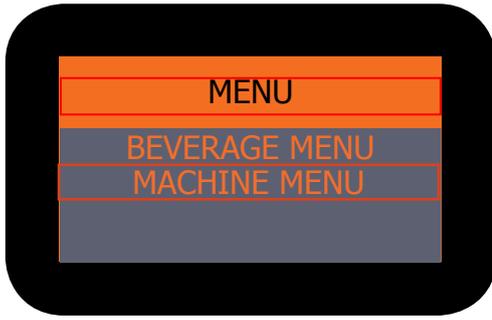(E XX) error code **(see table 5.2, chp. 05 Troubleshooting)**

3.2   Customer and programming menu Focus

Key used to select aroma

Key used to carry out a cleaning cycle

Key used to dispense an espresso

Function keys

Key used to dispense a cappuccino

Function keys

Key used to dispense hot water

Key used to set the machine in stand-by

Key used to access special beverages

Key used to dispense a caffèlatte

Key used to dispense an espresso lungo

Key used to dispense a latte macchiato

MENU

BEVERAGE MENU

MACHINE MENU

BEVERAGE MENU
The machine allows to customise the dispensing settings of every beverage.

ESPRESSO
ESPRESSO LUNGO

► Coffee Quantity
► Prebrewing
► Coffee temperature
► Coffee Length
► Default

CAPPUCCINO
LATTE MACCHIATO
CAFFELATTE

► Coffee Quantity
► Prebrewing
► Coffee temperature
► Coffee Length
► Milk Length
► Milk Foam
► Default

HOT WATER

► Water Length
► Default

SPECIAL BEVERAGES

HOT MILK
► Milk Length
► Milk Foam
► Default

ESPRESSO MACCHIATO
► Coffee Quantity
► Prebrewing
► Coffee temperature
► Coffee Length
► Milk Length
► Milk Foam
► Default

AMERICAN COFFEE
► Coffee temperature
► Coffee Length
► Default

6/9

MENU

BEVERAGE MENU

MACHINE MENU

MACHINE MENU
Press to select the machine settings

GENERAL MENU
→ Acoustic alarm
→ Ecomode
→ Cup Warmer

DISPLAY MENU
→ Language
→ Brightness

CALENDAR
→ Time
→ Date
→ Stand-by Mode
→ Power-on timer

WATER MENU
→ Hardness
→ Enable Filter
→ Activate Filter

MAINTENANCE
→ Counters
→ Brewine group cleaning
→ Jug cleaning
→ Descaling
→ Clean Carafe

FACTORY SETTINGS

3.2.2 Machine signals

CLOSE
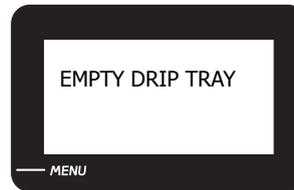HOPPER DOOR
— MENU

Close the coffee bean container lid for any beverage to be dispensed

CLOSE
FRONT DOOR
— MENU

The front door must be closed for the machine to be functional

ADD COFFEE
— MENU

Fill the coffee container

EMPTY DRIP TRAY
— MENU

Open the front door and empty the drip tray is found beneath the coffee unit. Empty also the dreg drawer, as the dregs counter will also be reset when the machine is switched on.

INSERT BREW GROUP
— MENU

Insert the coffee unit into its housing

REFILL
WATER TANK
— MENU

Remove the tank and fill it with fresh drinking water

INSERT COFFEE
GROUNDS DRAWER
— MENU

Insert the dreg drawer

TURN CARAFE
INTO
BREWING POSITION
____
ESC
— MENU

A beverage containing milk has been selected. The machine requires the carafe handle spout to be placed in the dispensing position. Press "ESC" to cancel the operation.

EMPTY COFFEE
GROUNDS DRAWER
— MENU
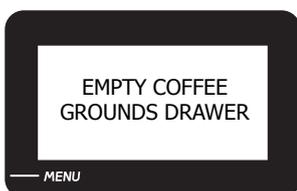
Empty dreg drawer. Note: the dreg drawer must only be emptied when prompted by the machine and which must be switched on.
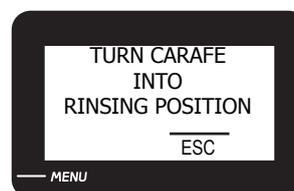
TURN CARAFE
INTO
RINSING POSITION
____
ESC
— MENU

The carafe rinse function has been selected. Press "ESC" to cancel the operation.

INSERT CARAFE

____

ESC

MENU
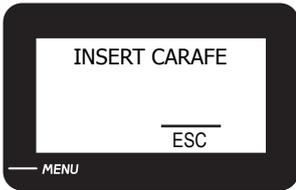
An operation that requires a dispensing cycle from the milk container has been selected. Insert the container and press the "esc" key to cancel the selection.

12/10/10

XELSIS

MENU
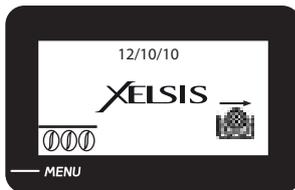
The machine notifies that the „Intenza" water filter must be replaced. The alarm is only displayed if the "Enable Filter" function is ON.

12/10/10

XELSIS

MENU

The machine requests a descaling cycle . The machine can be used with this message present but good functioning may be compromised.

CLEAN   CAPPUCCINO

LATTE MACCHIATO

CAFFELATTE

Flashing red LED. Machine in Stand-By   "⏻"

RESTART TO SOLVE

MENU

An event has occurred that requires machine re-start. Make note of the code (Exx) shown at the bottom. (see table 5.2 chap. 05 Troubleshooting) Switch the machine off and back on again after 30 seconds. If the problem repeats, contact the service centre.

3.3. Operation, cleaning and maintenance

Operating the machine		
1	Fill water tank	
2	Fill the coffee bean container	
3	Switch on the appliance	
4	Press the key to switch the machine on	⏻
5	Select the language as desired	Store
6	Heating	When the heating phase begins, wait for it to finish
7	Rinse	Carry out a rinse cycle for the internal circuits
8	Machine ready	The machine is ready to dispense beverages

CLEANING AND TECHNICAL SERVICING		
A	Empty the dreg drawer	When indicated
B	Empty the drip tray	As necessary (float indicator)
C	Clean the water tank	Weekly
D	Clean the coffee bean container	As necessary
E	Clean the casing	As necessary
F	Clean the brewing unit	As required, when noticing the flow of coffee is reduced (at least once a week)
	Lubricate the brewing unit	After 500 dispensing cycles or when the grease is no longer present on the brewing unit
	Clean the unit housing	Weekly
H	Perform descaling	When indicated or every three (3) months whichever occurs first

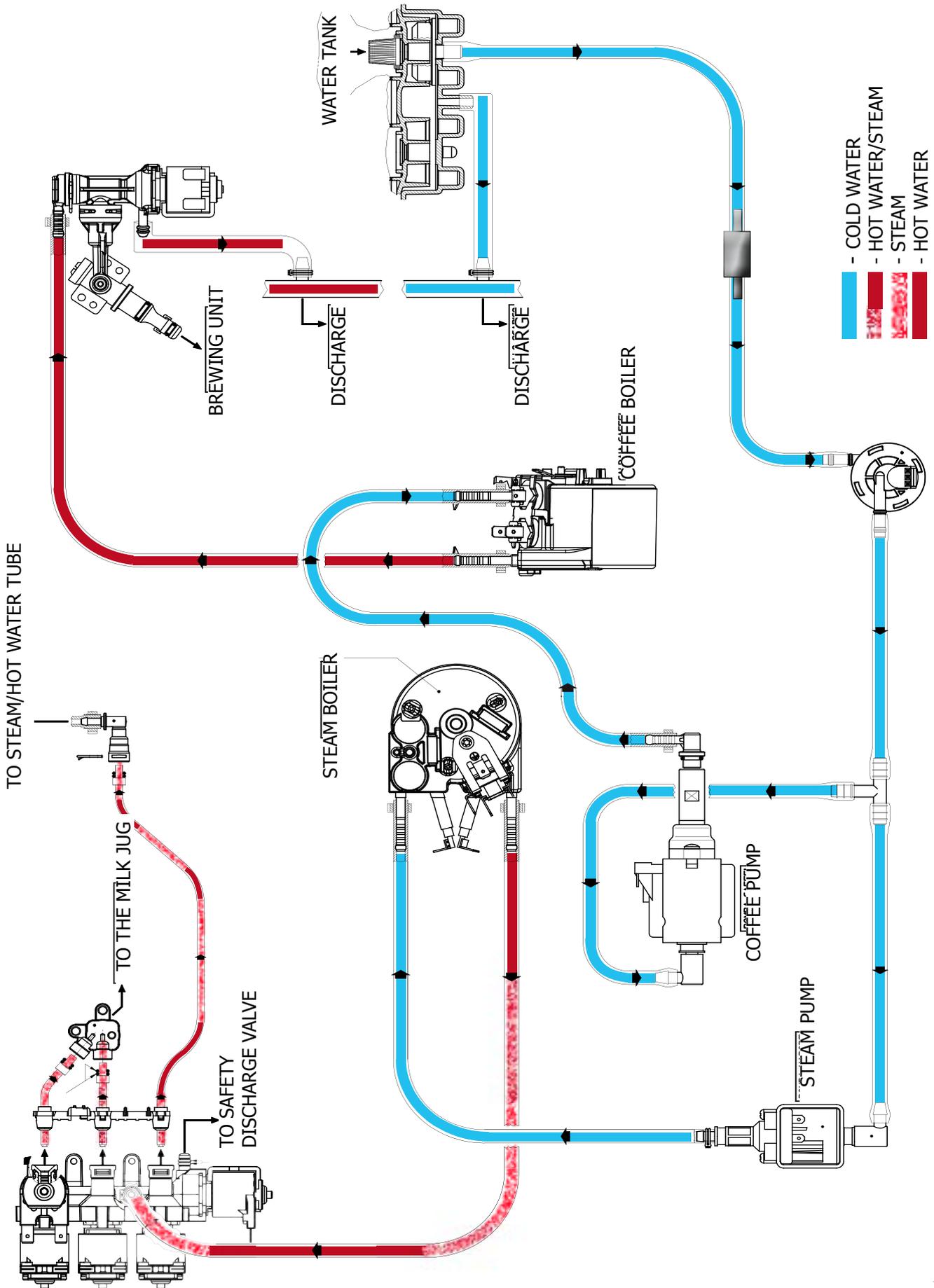| Descaling cycle frequency			
Hardness	Water hardness	Without water filter	With water filter
1	Soft (up to 7°dH)	240 litres (480,000 pulses)	480 litres (960,000 pulses)
2	Medium (7° - 14°dH)	120 litres (240,000 pulses)	240 litres (480,000 pulses)
3	Hard (15° - 21°dH)	60 litres (120,000 pulses)	120 litres (240,000 pulses)
4	Very hard (over 21°dH)	30 litres (60,000 pulses)	60 litres (120,000 pulses)

The default water hardness level is 4. Each litre of water corresponds to approximately 2,000 pulses
In the machines where is not possible change the water hardness the default hardness level is 3.
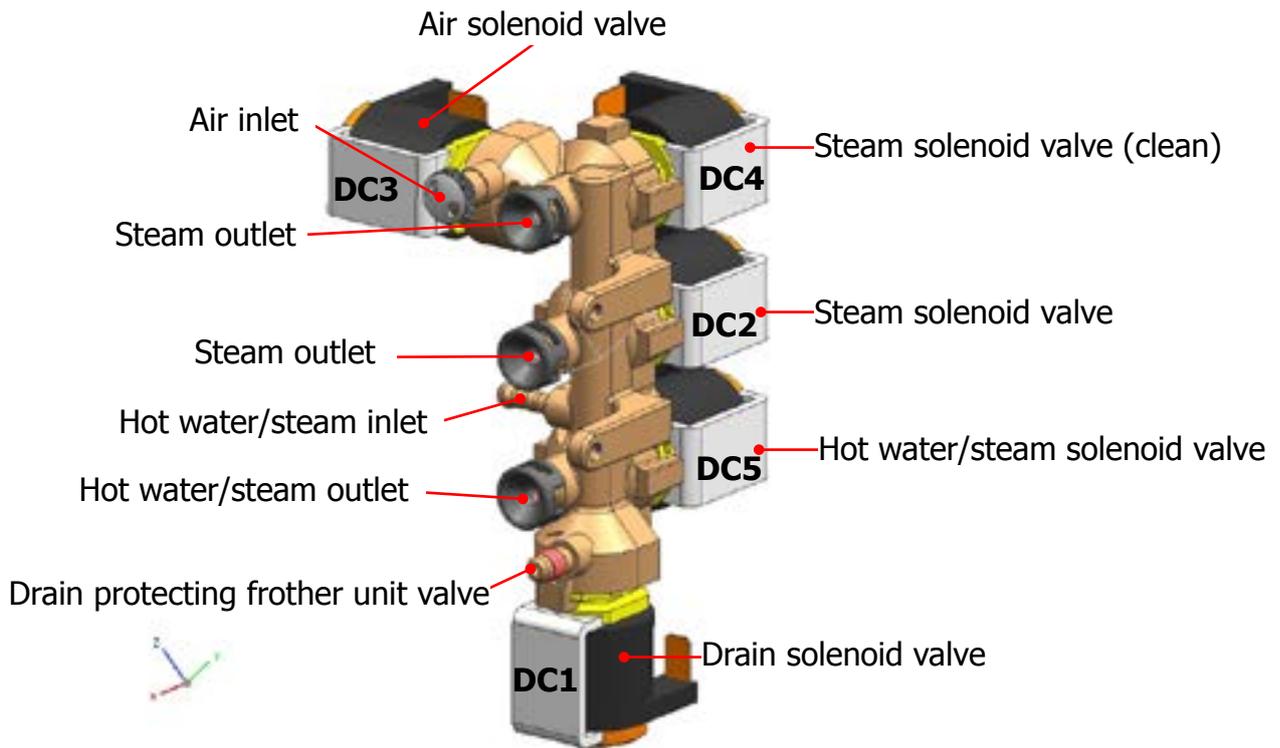
CHAPTER 4

OPERATING LOGIC

4.1. Water circuit

WATER TANK

BREWING UNIT

DISCHARGE

DISCHARGE

- COLD WATER
- HOT WATER/STEAM
- STEAM
- HOT WATER

COFFEE BOILER

TO STEAM/HOT WATER TUBE

TO THE MILK JUG

TO SAFETY DISCHARGE VALVE

STEAM BOILER

COFFEE PUMP

STEAM PUMP

4.2. Frother unit valve assembly

Air solenoid valve

Air inlet

Steam solenoid valve (clean)

DC3

DC4

Steam outlet

Steam outlet

Steam solenoid valve

DC2

Hot water/steam inlet

Hot water/steam solenoid valve

Hot water/steam outlet

DC5

Drain protecting frother unit valve

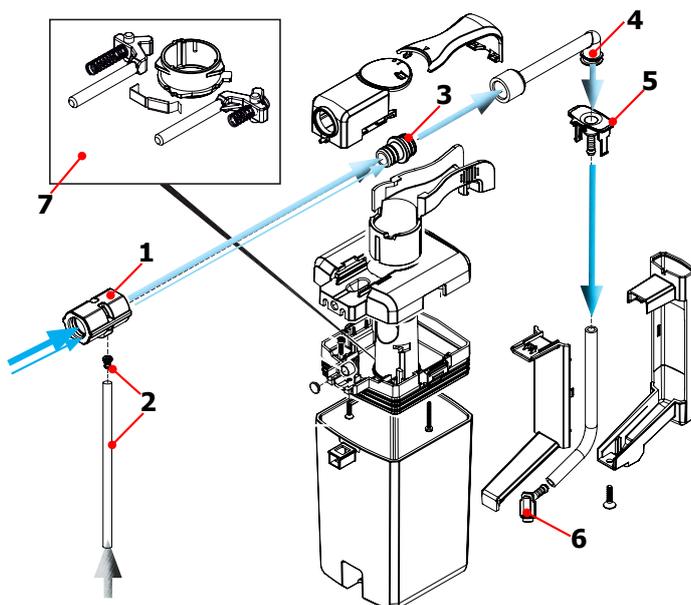Drain solenoid valve

DC1

Features and requirements
Maximum operating pressure 3 bar
Maximum pressure in the water/steam circuit does not exceed 4.5 bar 0/+1
Hot water temperature 90°
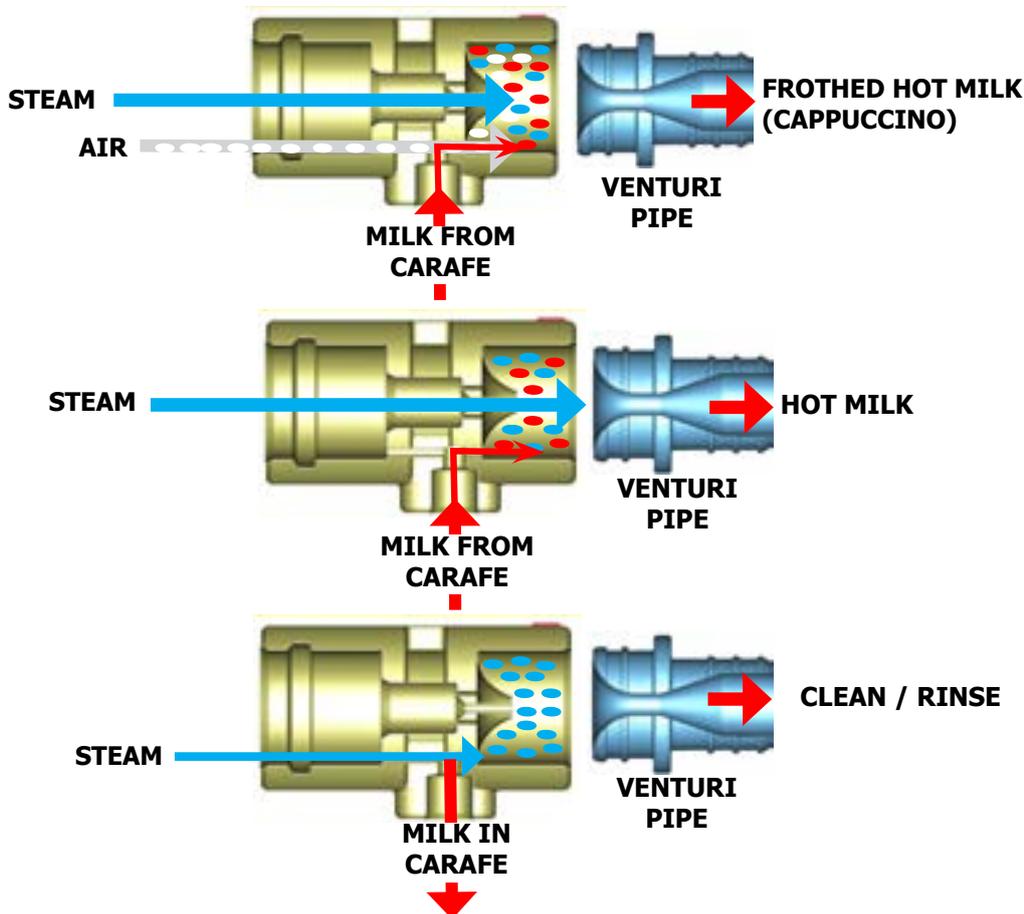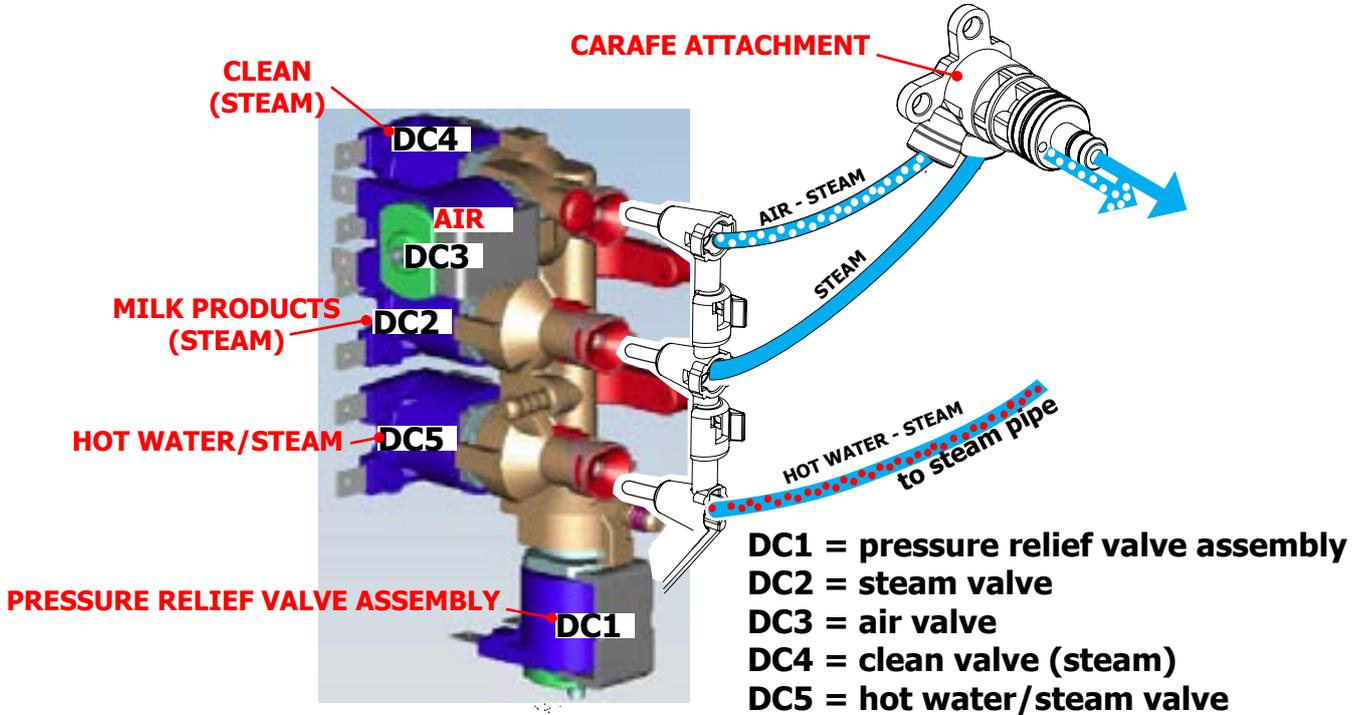Steam temperature 125°

4.2.1 General carafe assembly

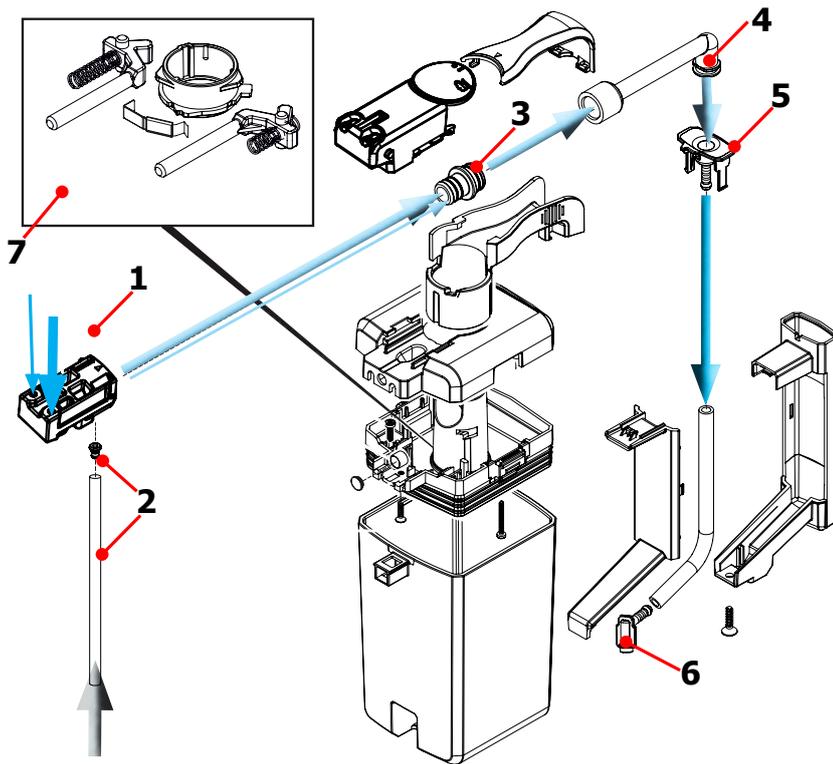|	
1	Cappuccino valve body
2	Milk suction pipe and attachment
3	Venturi pipe
4	Milk dispenser pipe
5	Upper attachment of drain pipe for carafe
6	Lower attachment of drain pipe for carafe
7	Levers, springs and pin for carafe present/missing indication and dispenser positioning

Functional method for the production of milk-based beverages and circuit cleaning

When the solenoid valves open and let air or hot water/steam through, the following situations occur:

- **DC3+DC2**   STEAM + AIR = Frothing and heating of frothed milk
- **DC2**   STEAM FROM CENTRAL HOLE = Heating of non-frothrd milk
- **DC4**   STEAM FROM LOWER HOLE = Cleaning of milk circuits

CARAFE ATTACHMENT

CLEAN (STEAM) DC4

AIR DC3

MILK PRODUCTS (STEAM) DC2

HOT WATER/STEAM DC5

PRESSURE RELIEF VALVE ASSEMBLY DC1

AIR - STEAM

STEAM

HOT WATER - STEAM to steam pipe

DC1 = pressure relief valve assembly
DC2 = steam valve
DC3 = air valve
DC4 = clean valve (steam)
DC5 = hot water/steam valve

STEAM
AIR
MILK FROM CARAFE
VENTURI PIPE
FROTHED HOT MILK (CAPPUCCINO)

STEAM
MILK FROM CARAFE
VENTURI PIPE
HOT MILK

STEAM
MILK IN CARAFE
VENTURI PIPE
CLEAN / RINSE

4.2.2 General carafe assembly V2

1	Cappuccino valve body
2	Milk suction pipe and attachment
3	Venturi pipe
4	Milk dispenser pipe
5	Upper attachment of drain pipe for carafe
6	Lower attachment of drain pipe for carafe
7	Levers, springs and pin for carafe present/missing indication and dispenser positioning

Functional method for the production of milk-based beverages and circuit cleaning

When the solenoid valves open and let air or hot water/steam through, the following situations occur:

- **DC3+DC2**   STEAM + AIR = Frothing and heating of frothed milk
- **DC2**   STEAM FROM CENTRAL HOLE = Heating of non-frothrd milk
- **DC4**   STEAM FROM LOWER HOLE = Cleaning of milk circuits

DC1 = pressure relief valve assembly
DC2 = steam valve
DC3 = air valve
DC4 = clean valve (steam)
DC5 = hot water/steam valve
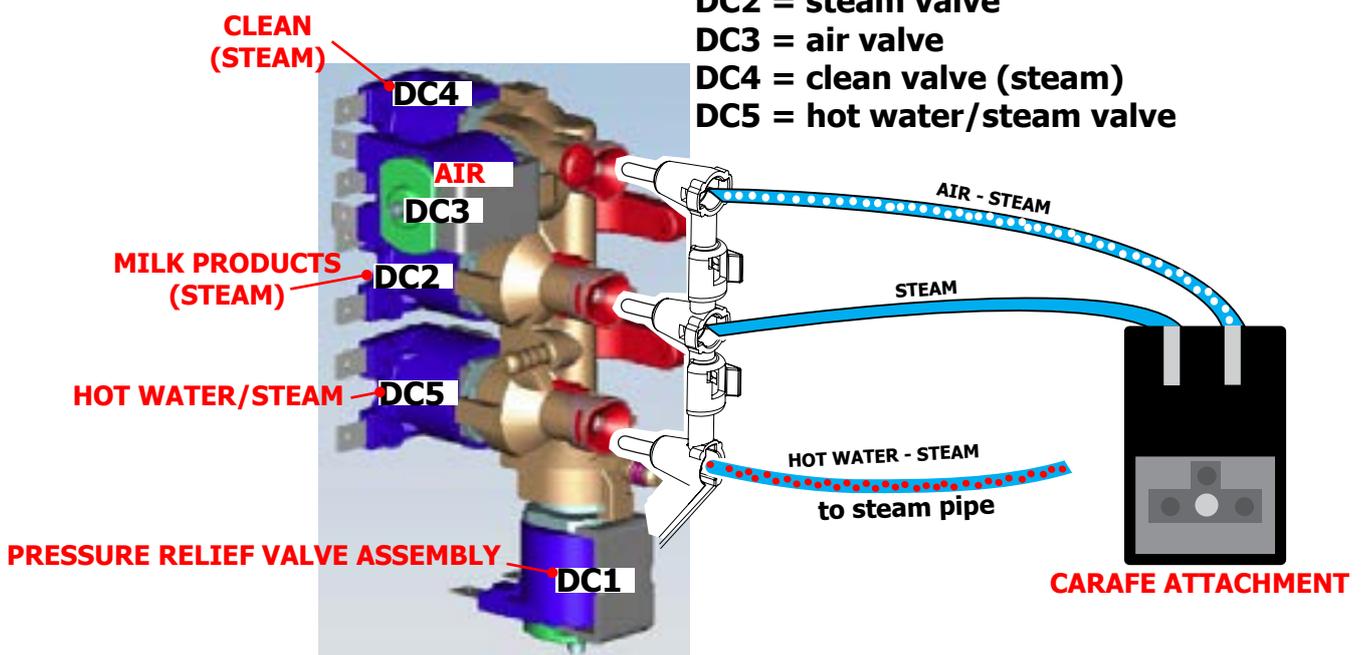
4.3   Multi-way valve
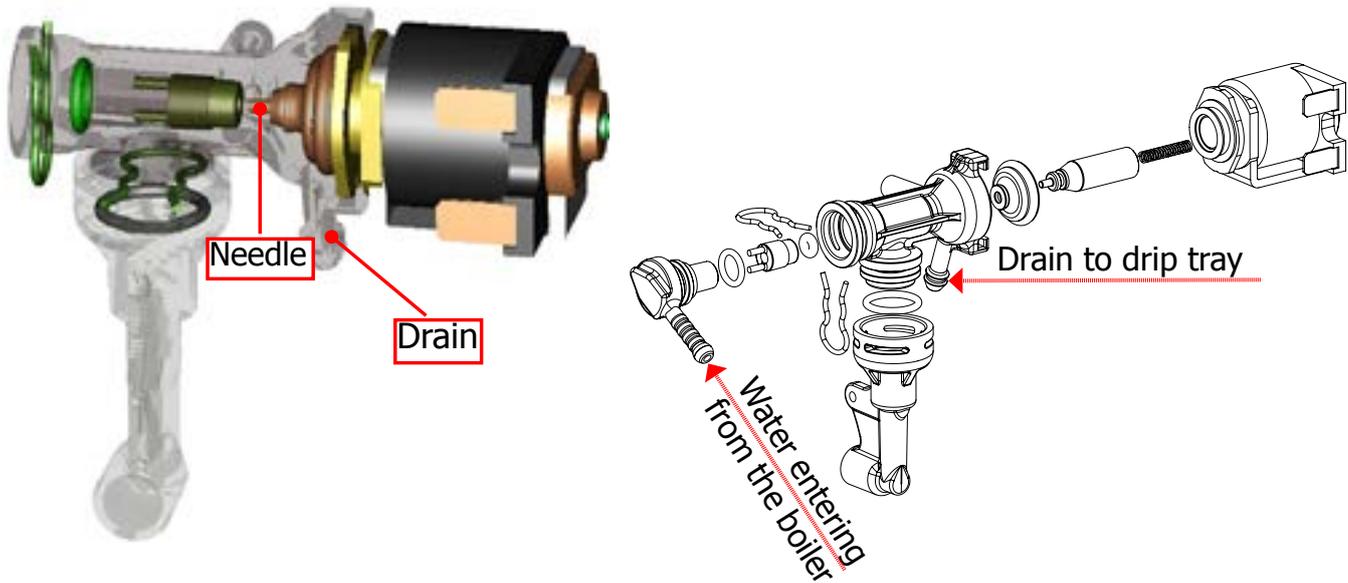
Functions:

Pressure relief valve: functions as a safety valve by opening towards the drain in the event that the pressure rises above 16-19 bar.

Filling the circuit: the solenoid valve opens (drain position) and the pump is activated, automatically refilling the circuit by expelling the air in the pipe.

Draining the unit: before the unit descends it opens briefly, discharging the pressure created to prevent spraying and making the pad drier.

Coffee produced: when a coffee beverage is selected, the pump is charged briefly during the grinding process and the valve assumes the drain position in order to fill the pipes with hot water.

4.4   Coffee cycle

Main switch ON		START		STOP	
Time					
Coffee grinder			Pulses (Dosage)		
Heating	approx. 45 sec.				
Pump				* Pump action (flow-meter pulses) based on amount of product selected	
Gearmotor Brewing unit	↓↑		↑	↓↑	
Status	**Heating**	**Ready**	**Coffee cycle**		

Notes: * Only with Pre-brewing

Status Microswitch	OFF			ON		

**Single microswitch gearmotor**

Switching on

When the machine is switched on, the gearmotor repositions itself as follows:
- It acts on microswitch 1 (see following chapter).
- The gearmotor changes its rotation direction and moves upwards again by approx. 1-2 mm.
- The boiler begins to heat the water for approx. 45 sec., at full power, in order to reach the optimal temperature. The temperature will then remain at a constant level.

Coffee cycle

1. The coffee grinder starts the grinding process (controlled by pulses generated by a sensor).
2. The gearmotor (brewing unit) moves to the dispensing position.
3. Preliminary dispensing phase (short pump activity, short pause).
4. Product dispensing (the pump operation period is defined by the amount of product dispensed).
5. The gearmotor moves to its home position (the dregs are expelled automatically).

4.5   Single microswitch
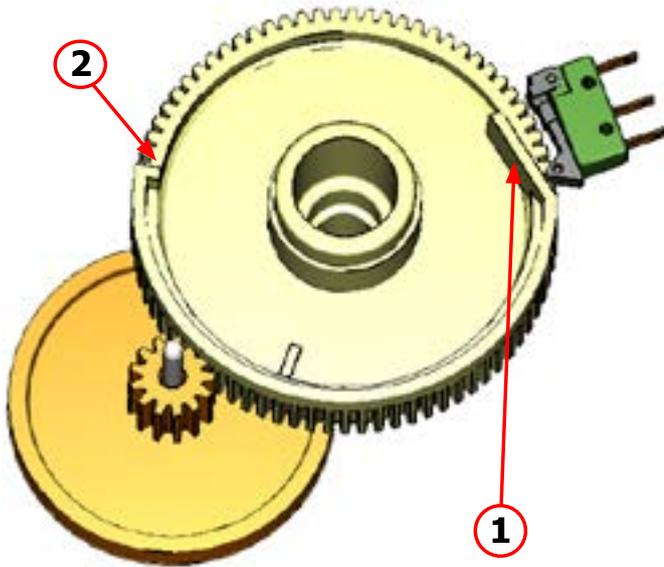
The gearmotor is powered by a direct current motor that engages with the smaller double toothed wheel using a worm screw. The brewing unit is mounted on the axle of the large gear wheel and when a coffee is requested, it moves from the home position to the dispensing position, and then back to the home position again.

- **- Home position:**   **1**

- **- Dispensing position:**   **2**

4.6   Temperature sensor (adjustment)

Temp. (°C)	R nom (kΩ)	ΔR (+/- %)
20	61,465	8,6
50	17,599	5,9
75	7,214	4,1
80	6,121	3,7
85	5,213	3,4
90	4,459	3,1
100	3,3	2,5
125	1,653	3,9
150	0,893	5,1

An NTC is used as a temperature sensor; in the event of overheating this reduces the boiler power consumption.
The electronic system detects the current boiler temperature from the drop in voltage of the sensor and adjusts it accordingly.
Resistor values and corresponding temperatures: see table.

4.7   Coffee grinder
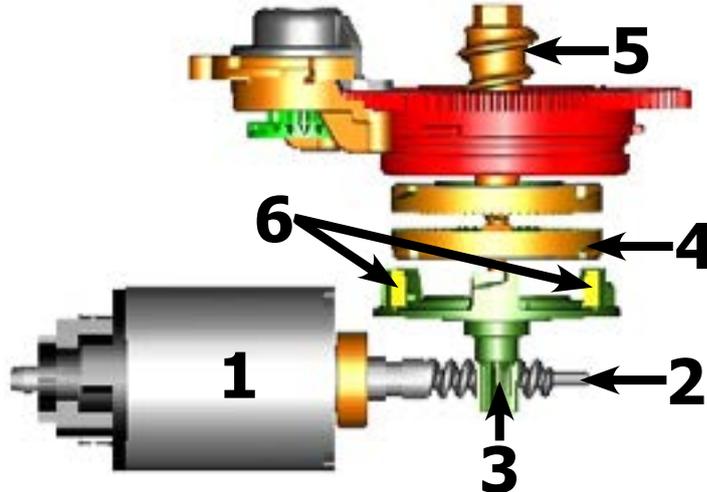
The coffee grinder is driven by a direct current motor (1) using a worm screw helicoidal wheel transmission (2).
The worm screw (2) drives a plastic gear wheel (3), which turns the lower grinder (4) and the increment pin (5)
There are two magnets (6) in the gear wheel; at every rotation these induce two pulses to a Hall sensor, which in turn transmits them to the electronic system.

4.8   Low bean level detection, dose quantity adjustment, coffee grinder blocked
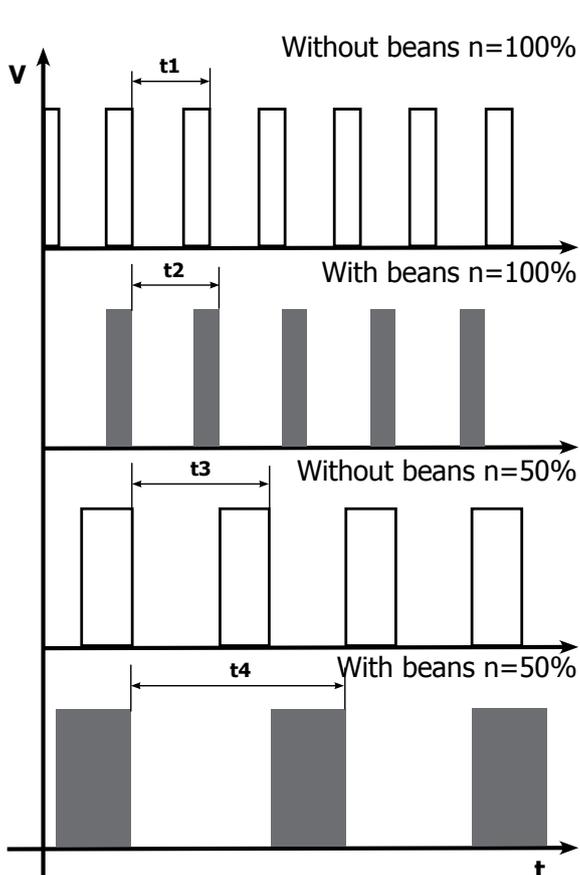
No coffee
Low coffee bean level is detected by the Hall sensor, after variations in the pulse frequency (with or without coffee). If there are no coffee beans (operation while empty), the number of rotations - and therefore the number of pulses - will be greater
t1 = no coffee indication

If, however, there are coffee beans, the number of rotations will be lower due to the force created by the grinding
t2 = no indication

t3 and t4 = this measurement is performed at the end of each grinding process
Dose quantity adjustment
The dose quantity is adjusted in accordance with the pulses detected (number of rotations proportional to the weak/medium/strong aroma setting)
Coffee grinder blockage
If the coffee grinder becomes blocked for any reason, pulses will no longer be transmitted to the electronic system and the grinder will come to a stop

4.9   Dose self-learning (SAS)

The aim of this function is to automatically regulate the average dose of ground coffee (SELF-LEARNING); this occurs by means of an algorithm based on three pieces of information detected by the machine electronic board:

1. Number of coffee grinder pulses during the grinding cycle
2. Max. average value of the power consumed by the group motor during the coffee brewing cycle
3. Aroma selected by the user

The algorithm compares the maximum average value of the power consumed by the group motor with the value listed in the table for the selected aroma, in order to calculate the new grinding pulse value for the next coffee produced.

If the power consumption value is less than the minimum current value, the grinding pulses will be increased by 2.

If the power consumption value is greater than the maximum current value, the grinding pulses will be decreased by 4.

If the power consumption value falls within the "over-torque" interval, the product will be dispensed and the grinding pulses will be decreased by 10.

If the power consumption value falls within the "abort cycle" interval, the pad will be expelled and the grinding pulses will be decreased by 10.

If the "pre-ground" flavour is selected by the user, no modification will be made.

This guarantees that, regardless of the coffee type used, the grinding level setting and the wear on the grinders always remains constant.

Setting/Status		Power consumption in mA	Pulses corrected in the next grinding process	
			Exceeded by	Deficient by
A	Mild aroma	200 - 300 mA	- 4	+2
B	Medium Aroma	301 - 450 mA	- 4	+2
C	Strong Aroma	451 - 600 mA	- 4	+2
D	Over-limit	601 - 800 mA	- 4	
E	Over-torque	801 - 1,000 mA	- 10	
F	Abort cycle	> 1000 mA	- 10	

Important:
For perfect operation, machine adjustment should take place in the area of the fields highlighted in green (A, B, C). When the type or brand of coffee is changed, there may be variations in the size of the beans and their stickiness or roasting level. This leads to variations in power consumption (mA), with resulting excessive or insufficient doses (until the necessary adjustments have been made to compensate for this change).
Caution: In the case of excessive dosage, powder may be expelled into the dreg drawer. This is not a fault, but can occur during preliminary operation or after a service.

4.10 SBS
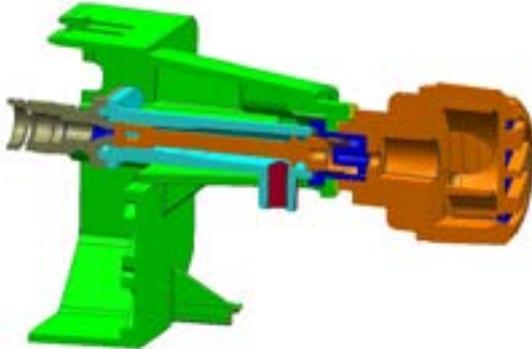
SBS - Saeco Brewing System - Principle
Controlling the flow speed, which influences the contact time between the coffee and water, changes the extraction and therefore the taste intensity and strength of the coffee.
- Slower flow: strong extraction
- Fast flow: lighter extraction

SBS / dispensing valve
Turning the SBS control knob leads to brewing taking place inside the brewing unit, where the flow speed is adjusted using a cream valve.
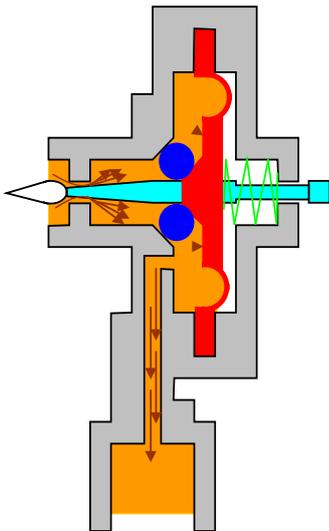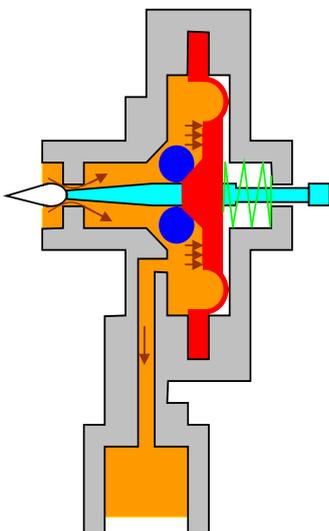

Cream valve control
Fast flow (slight extraction)
If the SBS valve is open, the coffee flows more easily because the pressure is lower and the membrane, with the support of the spring, remains almost in its original position.
The control needle does not close off the opening and the flow is not diminished.

Cream valve control
Slow flow (strong extraction)
The coffee can only be dispensed slowly with a closed SBS valve - a pressure is created which forces the membrane to the side, pushing it against the spring force.
In the next stage, the valve needle closes off the opening, thus reducing the flow.

4.11 Water tank fill level detection
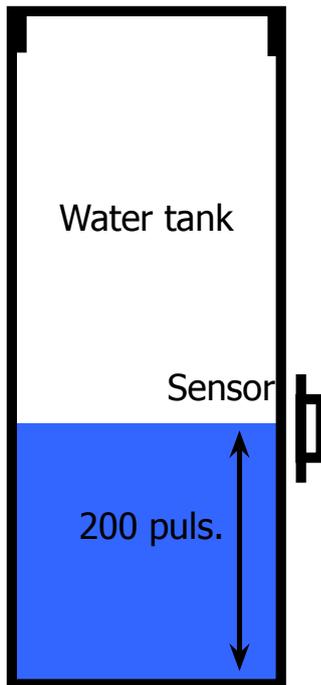
"Water low" message (water reserve)

Function:
The water level is monitored by a capacitative sensor, located one third of the way up the water tank wall.
If the electronics assembly detects, by means of the sensor, that the amount of water in the tank has dropped below the abovementioned level, a water reserve remains available for the dispensing process underway (this will cover 200 turbine pulses).
The product dispensing process will then come to an end.
If a dispensing cycle ends after the sensor has been triggered (in the reserve) then the display "Water low" continues to be displayed during the following dispensing cycle.

Water tank

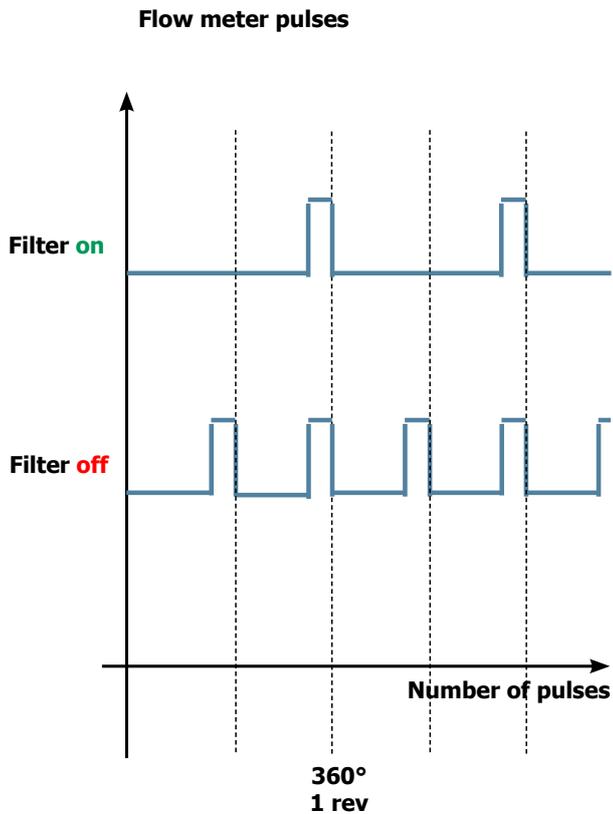Sensor

200 puls.

4.12 Drip tray water level detection
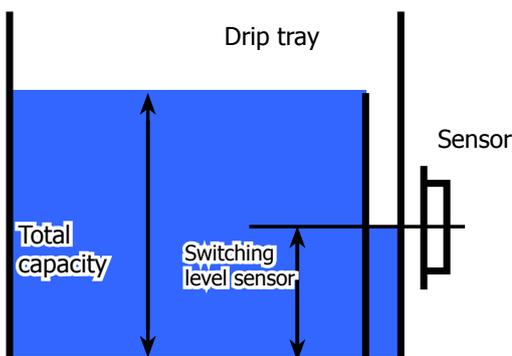
"Empty drip tray" - message

Function:
The residual water level is monitored using a capacitive sensor. The sensor is located approximately halfway up the upper edge of the drip tray. To ensure the best possible use of the drip tray capacity, the sen sor is positioned near a dam device. Therefore, the drip tray fills up to the upper edge of the dam and overflows inside, triggering the sensor and thus the "Empty drip tray" message.

Drip tray

Sensor

Total capacity

Switching level sensor

11/12

4.13 Descaling request

Flow meter pulses

Filter **on**

Filter **off**

**360°
1 rev**

Number of pulses

"Descaling" - message with water filter inserted
(appliances with display only)

The water hardness is set on the basis of the regional water hardness analysis
(1, 2, 3, 4).

Filter off:
If the function is **off** the electronics assembly monitors the turbine pulses, recording **one pulse for every revolution.**
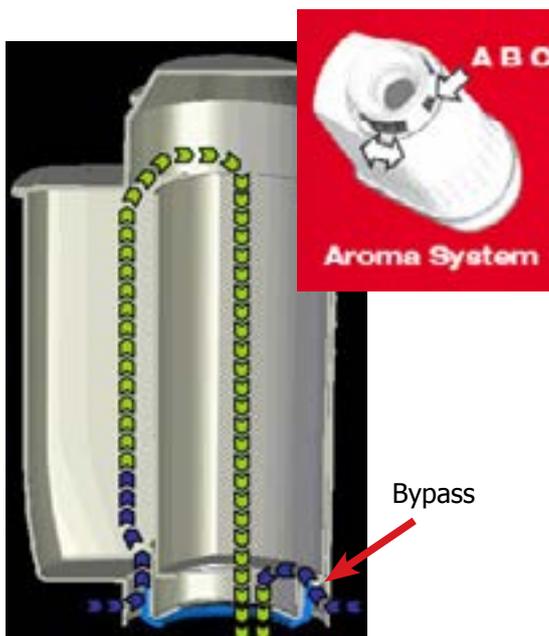
Filter on:
If the function is **on** the electronics assembly monitors the turbine pulses, recording **one pulse for every two revolutions.**

"Change water filter" message
The electronics assembly uses the turbine impulses to keep track of the amount of water which has flowed through; after the specified amount (set in accordance with the water hardness level), the "Replace filter" message appears.

4.15. Limescale filter

Bypass

Water filter

Function:
- Reduced limescale deposits which take longer to form.
- Improved water quality.
- Improved taste due to the ideal waterhardness.

Life span / descaling performance:
- - 10°dH
- 60 litres
- 2 months

To achieve the best possible operating mode consistency over the total life span, the water is channelled using a 3-stage bypass (A, B, C) depending on the degree of hardness.
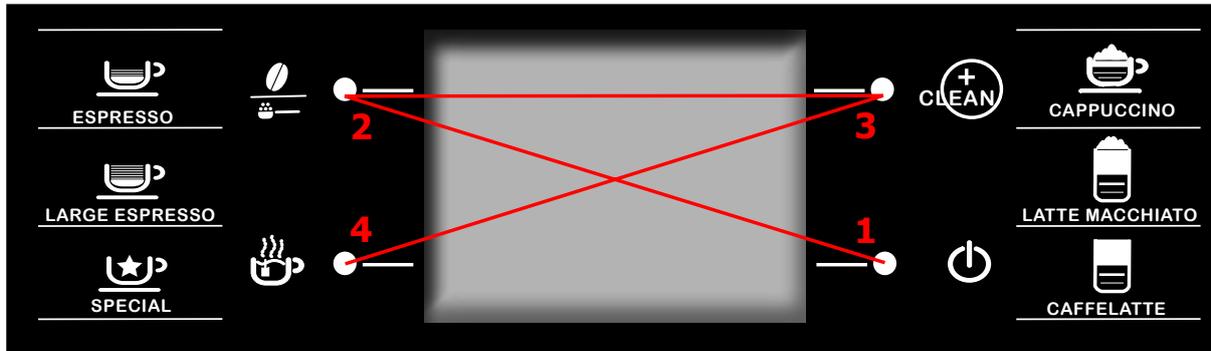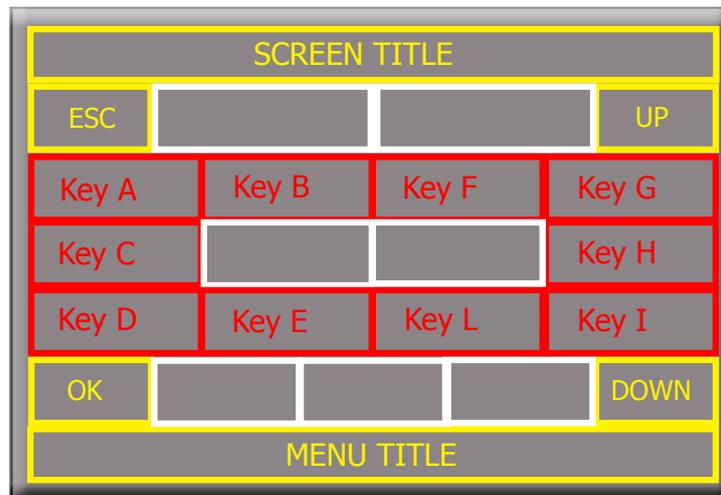See small image.

CHAPTER 5

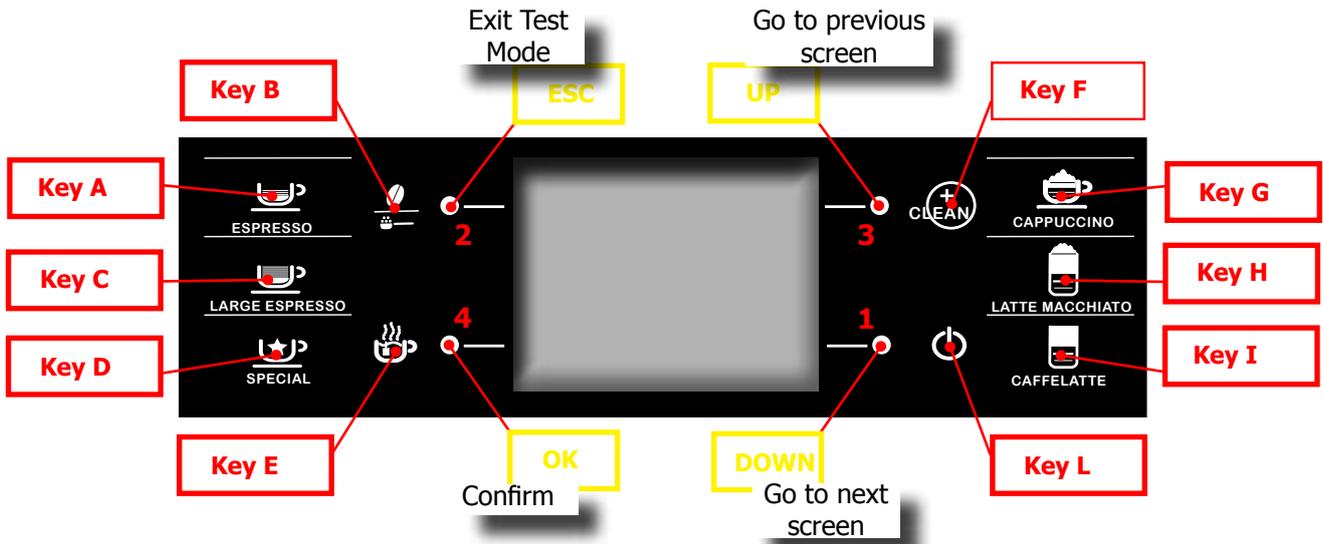# SERVICE MODE

5.1.1 Test mode

To enter Test Mode:
- Switch on the machine
- Wait for the text XELSIS or SELF-TEST to appear
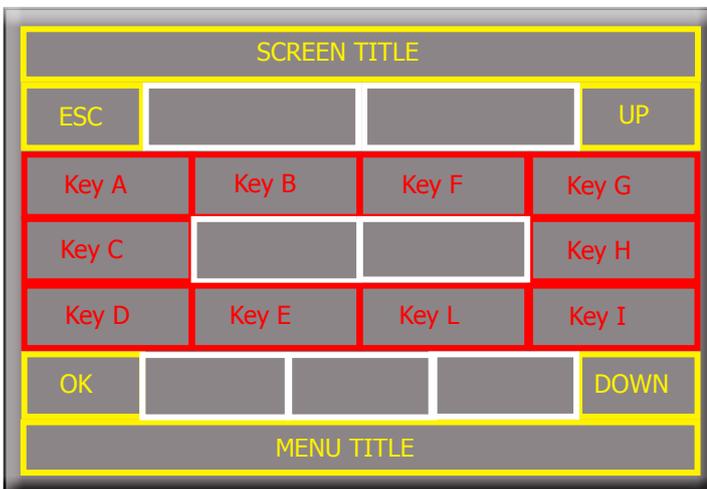- Press the four function keys in the sequence indicated below (1, 2, 3, 4)

Entry into Test Mode results in a screen divided into sections, as illustrated in the diagram below

   	Fields with the screen title and active menu indication
   	Fields relating to the function of the 4 buttons at the sides of the display (1,2,3,4)
	Indicate the status of the sensors, microswitches or monitoring variables
   	Fields displaying the various loads which may be activated by pressing the corresponding buttons
✱	If present, this symbol indicates that no function is associated with that field on that particular screen

When a field becomes active (because a load has been activated or because a sensor changes status), the field changes from having a black background with red or white text to having a white background with black text

Exit Test Mode

ESC

Go to previous screen

UP

Key B

Key F

Key A

ESPRESSO

2

CLEAN

3

CAPPUCCINO

Key G

Key C

LARGE ESPRESSO

4

1

LATTE MACCHIATO

Key H

Key D

SPECIAL

CAFFELATTE

Key I

Key E

OK

Confirm

DOWN

Go to next screen

Key L

Load activation

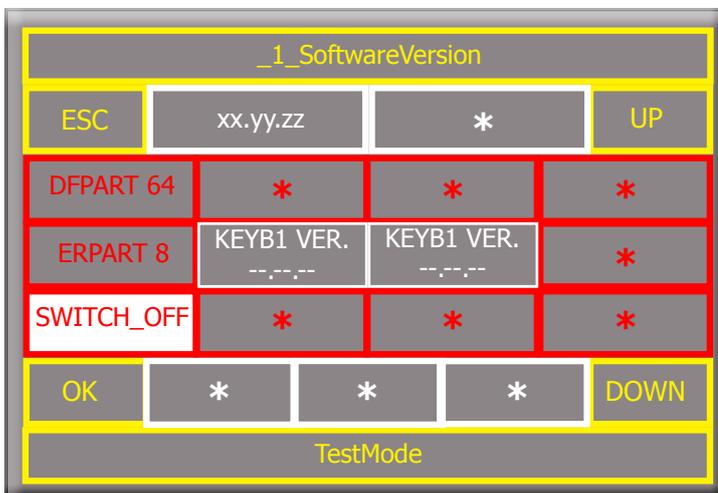| SCREEN TITLE			
ESC			UP
Key A	Key B	Key F	Key G
Key C			Key H
Key D	Key E	Key L	Key I
OK			DOWN
MENU TITLE			

In Test Mode, all loads are initially deactivated.
To activate a load, simply press the corresponding key on the keyboards at the side just once.
The load is deactivated by pressing the same lined key just once.
A load may be deactivated automatically when:
- **a work cycle ends**
  (e.g. coffee grinder or unit activation)
- **a time-out is reached**
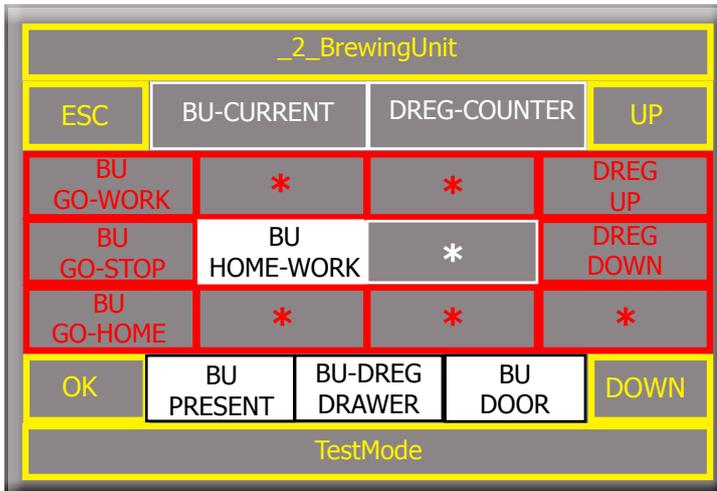 (e.g. for boilers -10 sec-)

Software version

This is the first screen of the Test Mode.

_1_SoftwareVersion			
ESC	xx.yy.zz	*	UP
DFPART 64	*	*	*
ERPART 8	KEYB1 VER. --.--.--	KEYB1 VER. --.--.--	*
SWITCH_OFF	*	*	*
OK	*	*	*	DOWN
TestMode			

- **(xx.yy.zz):** software version loaded onto the machine
- **(DFPART and ERPART):** these values provide information on storage settings and, from sw 01.00.10, should have values of 64 and 8.
- **SWITCH_OFF**: This highlights whether the machine, once it has been powered via the electromechanical switch (1/O), switches to Standby mode. The "Standby at PowerOn" function is activated/deactivated by pressing key "D" once.
- **KEYB1_SW**: software version for the right-hand keyboard
- **KEYB2_SW**: software version for the left-hand keyboard

Press DOWN to move on to the next screen

BrewingUnit

_2_BrewingUnit			
ESC	BU-CURRENT	DREG-COUNTER	UP
BU GO-WORK	*	*	DREG UP
BU GO-STOP	BU HOME-WORK	*	DREG DOWN
BU GO-HOME	*	*	*
OK	BU PRESENT	BU-DREG DRAWER	BU DOOR	DOWN
TestMode			

This screen corresponds to the management of the area inside the front hatch.

Operation:
- **BU GO-WORK**: if pressed, switches the unit into its work position
- **BU GO-STOP**: if pressed, stops the unit instantly
- **BU GO-HOME**: if pressed, switches the unit into its Home position
- **DREG UP**: increases the coffee dregs counter
- **DREG DOWN**: decreases the coffee dregs counter

Indicators:
- **BU_CURRENT**: the maximum current (in mA) consumed by the unit when moving
- **BU HOME_WORK**: Becomes active (white) when the unit reaches a position between WORK and HOME
- **DREG_COUNTER**: indicates the coffee dregs counter value
- **BU_PRESENT**: if active, this indicates that the unit is inserted
- **BU_DREG DRAWER**: if active, this indicates that the dreg drawer is active
- **BU_DOOR**: if active, this indicates that the front hatch is open

Press DOWN to move on to the next screen

HydraulicCircuit

| _3_HydraulicCircuit			
ESC	FLOW_METER (p/s)	FREQUENCY (Hz)	UP
BOILER1 (°C)	PUMP1 COFFEE	EV_DC4 CLEAN	EV_DC2 STEAM
BOILER2 (°C)	DRIP DRAY	WATER TANK	EV_DC1 DISCHARGE
EV_AC COFFEE	PUMP2 WATER&STEAM	EV_DC5 HOTWATER	EV_DC3 AIR
OK	CARAFFE CLEAN	CARAFFE MILK	CARAFFE PRESENT	DOWN
TestMode			
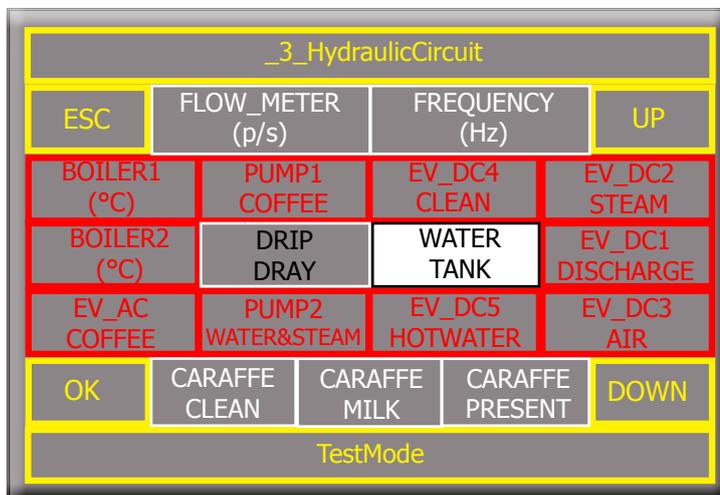
This screen corresponds to water circuit management.

Operation:
- **BOILER1**: if pressed, this activates the coffee boiler. The boiler is deactivated either by pressing the button again or automatically after 5 seconds. The temperature is indicated in the window
- **BOILER2**: if pressed, activates the steam/hot water boiler. The boiler is deactivated either by pressing the button again or automatically after 5 seconds. The temperature is indicated in the window
- **EV_AC COFFEE**: if pressed, activates the 230 V solenoid valve
- **PUMP1 COFFEE**: if pressed, activates the coffee boiler pump. If pressed again, deactivates it
- **PUMP2 WATER&STEAM**: if pressed, activates the steam/hot water boiler pump. If pressed again, deactivates it
- **EV_DC1 DISCHARGE**: activates the 24 V solenoid valve for draining
- **EV_DC2 STEAM**: activates the 24 V steam dispensing solenoid valve
- **EV_DC3 AIR**: activates the 24 V milk frothing solenoid valve
- **EV_DC4 CLEAN**: activates the 24 V solenoid valve for milk circuit cleaning
- **EV_DC5 HOTWATER**: activates the 24 V hot water dispensing solenoid valve

Indicators:
- **FLOW_METER**: indicates the water flow rate in the turbine, expressed in pulses per second
- **FREQUENCY**: indicates the mains electricity voltage frequency
- **DRIP DRAY**: indicates the status of the tray level sensor. If activated, it signals that the level has been reached
- **WATER TANK**: indicates the status of the water tank level sensor. If activated, it signals that the level has been reached
- **CARAFFE CLEAN**: if activated, it indicates that the milk carafe is in the CLEAN position
- **CARAFFE MILK**: if activated, it indicates that the milk carafe is in the MILK dispensing position
- **CARAFFE PRESENT**: if activated, it indicates that the milk carafe is inserted

---

Press DOWN to move on to the next screen

GrinderUnit
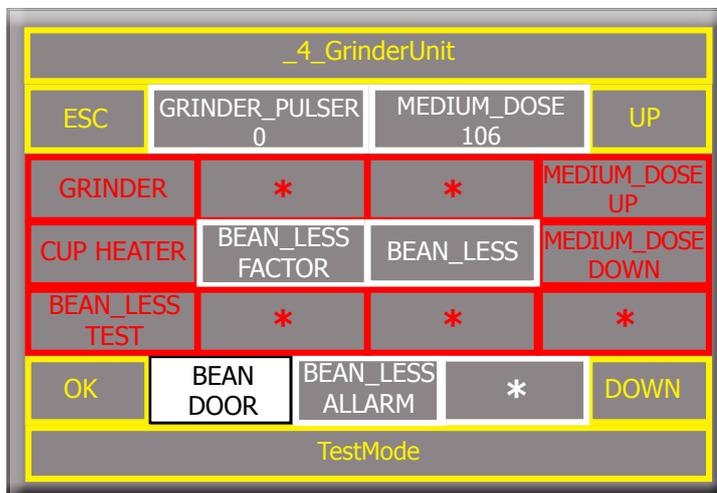
This screen corresponds to coffee grinder and cup heater management.

Operation:
- **GRINDER**: if pressed, activates the coffee grinder. To stop it, press the button again. If it is not stopped, it will grind for 200 pulses; the corresponding countdown appears in the window.
- **CUP HEATER**: if pressed, activates the cup heater. It can be deactivated by pressing the button again.
- **BEAN_LESS TEST**: if pressed, the coffee present/missing test is performed. When the coffee grinder is activated, a number of pulses equal to the number set for the "MEDIUM DOSE" is performed. At the end of the grinding cycle, the values of the "BEAN_LESS FACTOR" and "BEAN_LESS" fields are updated and, if the missing coffee signal has been detected, the "BEAN_LESS ALARM" field is activated
- **MEDIUM_DOSE UP**: if pressed, increases the medium dose value displayed in "MEDIUM DOSE"
- **MEDIUM_DOSE DOWN**: if pressed, decreases the medium dose value displayed in "MEDIUM DOSE"

Indicators:
- **GRINDER_PULSE**: indicates, during grinding, the real-time grinding pulse countdown
- **MEDIUM_DOSE**: indicates the pulses corresponding to the medium dose
- **BEAN_LESS FACTOR**: indicates the result of the most recent grinding cycle, calculated using the automatic dose regulation algorithm
- **BEAN_LESS**: Indicates the threshold set by the dynamic threshold algorithm for the detection of a low coffee level
- **BEAN_DOOR**: indicates the status of the bean hopper door sensor (if active, it indicates that the door is closed)
- **BEAN_LESS ALARM**: indicates the result of the coffee present/missing test (if active, it indicates that coffee is missing)

Press DOWN to move on to the next screen

SteamOutUnit

_5_SteamOutUnit			
ESC	BOILER1 (°C)	BOILER2 (°C)	UP
START STEAM-OUT	*	*	*
*	TIME-OUT (sec)	*	*
*	*	*	*
OK	*	*	*	DOWN
TestMode			
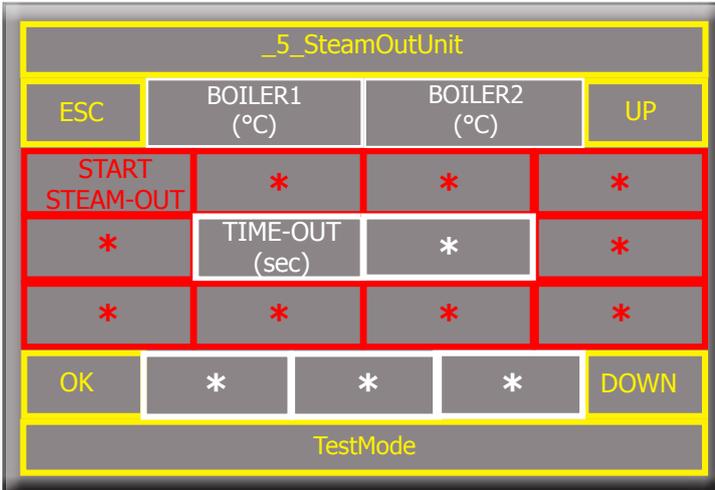
**This screen corresponds to the steam_out cycle, used to empty the coffee boiler and the hot water/steam boiler.**

Operation:
- **START STEAM-OUT**: when pressed, activates the steam-out procedure and the text linked to the button is displayed. The cycle ends when the two boilers (boiler1 and boiler2) have reached a temperature of 100°C and at least 5 seconds has elapsed.

Indicators:
- **BOILER1 (°C)**: indicates the temperature of the coffee boiler
- **BOILER2 (°C)**: indicates the temperature of the hot water/steam boiler

5.1.2. Focus test mode
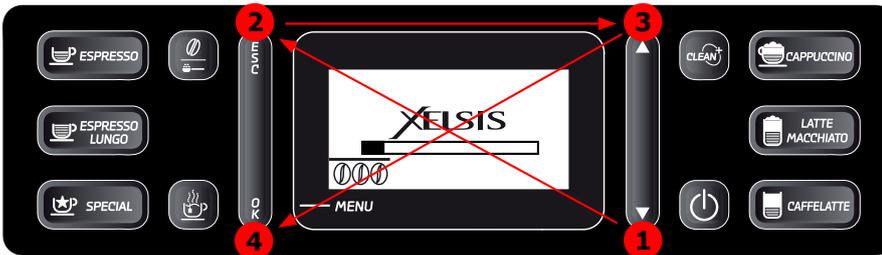
To enter Test Mode:
- Switch the machine on
- Wait for XELSIS to be displayed
- Press the four function keys in the sequence indicated (1, 2, 3, 4)

Below find button correspondence in detail:
The central rectangle in every screen indicates the progressive number of the screens in square brackets [ ], while the 4 dashed sectors at the bottom are used to indicate the status of the sensors, micro switches or control variables.
The presence of the asterisk (*) in a sector indicates that no function is associated to the sector itself in that screen.
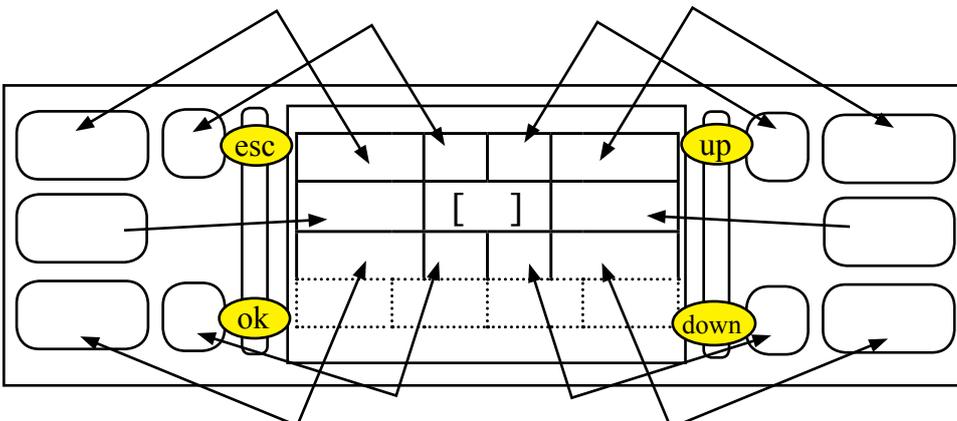
The 4 buttons (ESC, OK, UP and DOWN) highlighted in yellow, at the side of the display, can be used to scroll through the Test Mode:

UP goes to the previous page
DOWN goes to the next page
OK confirms
ESC exit Test Mode

Load activation
All loads are initially deactivated in Test Mode.
To activate a load, simply press the corresponding button on the side keyboards once: The load is deactivated by pressing the same associated key once again.
Other conditions for which a load can be deactivated in automatic without keys being pressed are:
-if a work cycle is defined, when this cycle ends (as, for example, the coffee grinder or the brew unit)
- a time-out has been reached (e.g. 5 sec for the boilers)

Software version

D:64	*	*	Debug
E:8	01.06.00		*
Swiss	POff	*	*
*	*	*	*

This is the first screen of the Test Mode. From here read the software version loaded in the machine.

The sectors with letters "D" and "E" give control information reserved for the developers and must have values of 64 and 8.

Controls:
- **Debug**: if activated, it enables debug messages of automatic dosing only for the next restart and allows the machine to immediately enter stand-by after switch-on from the master switch. Switch the machine off to deactivate it.
- **Swiss**: if activated, the machine will have "ECO-MODE" enabled by default.
- **BEAN_LESS TEST**: if pressed, the coffee present/missing test is performed. When the coffee grinder is activated, a number of pulses equal to the number set for the "MEDIUM DOSE" is performed. At the end of the grinding cycle, the values of the "BEAN_LESS FACTOR" and "BEAN_LESS" fields are updated and, if the missing coffee signal has been detected, the field is activated"BEEN_LESS ALARM"
- **MEDIUM_DOSE UP**: if pressed, the medium dose value displayed in "MEDIUM DOSE" is increased
- **MEDIUM_DOSE DOWN**: if pressed, the medium dose value displayed in "MEDIUM DOSE" is decreased.

Debug:
The following information will be visible on the display following activation of the debug messages:
- stress of the unit in correspondence with the last grinding cycle
- real number of pulses that produced the unit stress
- medium flavour after correction of automatic dosing following the grinding cycle
The stress of the unit and the real number of pulses corresponding to it, are available on the display as soon as the unit goes into "work" mode, while the medium flavour pulses, corrected by automatic dosing, are visible when the machine goes back to "ready".
The aspect of the display in appliance ready mode with debug messages active, is the following:

dd/mm/yy

XELSIS

| | 375 | 105 | 100 |

Coffee unit stress in mA

Coffee grinder real pulses

Medium flavour after the correction of automatic dosing

Press DOWN to pass to the next screen

Keyboard

Espresso	Aroma	Clean	Cappuccino
Espresso lungo	[1]		Latte macchiato
Special	hot water	Off	Caffelatte
*	*	*	*

This is the page relative to the buttons test: a box on the display corresponds to every product. This box changes colour when the relative button is pressed.

Brew Unit

Work	*	*	0mA
Home	[2]		Drg -
*	*	5	Drg+
Dreg	H/W	Door	Pres

This page lets the user control the inner area of the front door.

The various sectors have the following meanings:
Operation:
- Work: if pressed continuously, it takes the unit to the WORK position
- Home: if pressed continuously, it takes the unit to the HOME position
- Drg-: if pressed, the remaining number of dregs to be removed is decreased
- Drg + : if pressed, the remaining number of dregs to be removed is increased

Indicators:
- m: indicates the real-time maximum current (in mA) absorbed by the brew unit when running. The value must not exceed 300 mA.
- H/W: becomes active (illuminated) when a „Work" or „Home" position is reached by the unit
- Pres: if active, it indicates that the unit is connected
- Dreg: if active, it indicates that the dreg container is in its seat
- Door: if active, it indicates that the front door is closed

Idraulic Circuit

DcV1	*	*	DcV4
DcV2	[3]		DcV5
DcV3	*	*	Ac V
Tank	Clean	Milk	Pres

This is the first page relative to water circuit management

The various sectors have the following meanings:
Operation:
- Ac V: if pressed, the 230 V solenoid valve is activated
- DcV1 DISCHARGE: activates the 24 V solenoid valve for the draining process
- DcV2 STEAM: activates the 24 V steam dispensing solenoid valve
- DcV3 AIR: activates the 24 V milk frothing solenoid valve
- DcV4 CLEAN: activates the 24 V milk circuit cleaning solenoid valve
- DcV5 HOTWATER: activates the 24 V hot water dispensing solenoid valve

Indicators:
- Tank: indicates the status of the water tank level sensor. If activated, the sensor indicates that the level has been reached.
- Clean: if activated, it indicates that the milk carafe is in the CLEAN position.
- Milk: if activated, it indicates that the milk carafe is in the MILK dispensing position
- Pres: if activated, it indicates that the milk carafe is in the housing
- Press DOWN to pass to the next screen.

Idraulic Circuit

Boil1	*	*	Pmp1
Boil2	[4]		Pmp2
*	*	*	p/s 0
21.8	22.2	D Tray	50 Hz

The various sectors have the following meanings:

Operation:
- Boil1: if pressed, the coffee boiler is activated. The boiler is deactivated by pressing the button again or automatically after 5 seconds. The temperature is shown in the corresponding box at the bottom.
- Boil2: if pressed, the steam/hot water boiler is activated. The boiler is deactivated by pressing the button again or automatically after 5 seconds. The temperature is shown in the corresponding box at the bottom.
- Pmp1 if pressed, activates the coffee boiler pump. The pump is switched off by pressing the button again
- Pmp2: if pressed, the steam/hot water boiler pump is activated. The pump is switched off by pressing the button again

Indicators:
- p/s: indicates the real-time flow rate of water in the turbine, expressed in pulses per second. When the coffee pump 1 is switched on, the 230V solenoid valve is activated (AcV in the previous screen). The value must not be less than 10 p/sec. When the water&steam pump 2 is switched-on, the drain solenoid valve is activated (DcV5 in the previous screen). The value must not be below 5 p/sec. (If we bring the brewing unit in work position the water passes through the dispenser).
-)
- 50 Hz: indicates the frequency of the electric power supply voltage
- DTray: indicates the status of the tray level sensor. If activated, the sensor indicates that the level has been reached.

Press DOWN to pass to the next screen

Grinder

	GTest	A +	*	Pl: 0	Instant threshold (variable)
It switches on if there is no coffee	[5]			22	Reference threshold (variable)
Pulses for medium flavour (variable)	*	A -	*	17	"Z-cross" signal (not used)
	100	DDoor	BLess	Z-Cr	

The various sectors have the following meanings:

Operation:
- GTest: motor tests. if pressed, the coffee grinder is activated. To stop it, press the button again. If the coffee grinder is not stopped it grinds for 200 pulses (Pl) and the decrease can be see in this box BTest: bean present/missing control test. if pressed, the coffee grinder is activated. To stop it, press the button again. If it is not stopped, the no coffee test is performed. At the end of the test, 2 values will appear in the "instant threshold" and "reference threshold" boxes: if "instant threshold" is lower than "reference threshold"
- then the system believes that the coffee grinder is empty. The numbers "48" and "17" are a display example.
- A +: increases the number of pulses for medium flavour A-: decreases the number of pulses for medium flavour

Indicators:
- Pl: indicates during grinding, the real-time grinding pulse countdown
- BLess: It is activated when the system detects there is no coffee. To annul the alarm, lift and lower the beans lid to simulate loading the coffee.
- DDOOR: indicates the status of the bean container door sensor (if activated, it indicates that the door is closed)
- Medium flavour pulses: selection of coffee grinding flavour. If pressed, the selection of the flavour is switched into the three values allowed: forte = strong, medio = medium, leggero = mild. The number of coffee grinder pulses, assigned to the three different grinding levels are displayed in the sector below.
- Z-Cr: NOT CURRENTLY USED

The „100" value in the bottom left is an example of the number of pulses for medium flavour: it can be modified manually using the "A+" and "A-" keys or automatically from the automatic dosing algorithm

Press DOWN to pass to the next screen

Display

C +	*	*	C -
L +	[6]		L -
*	*	*	*
40	47	*	*

The various sectors have the following meanings:

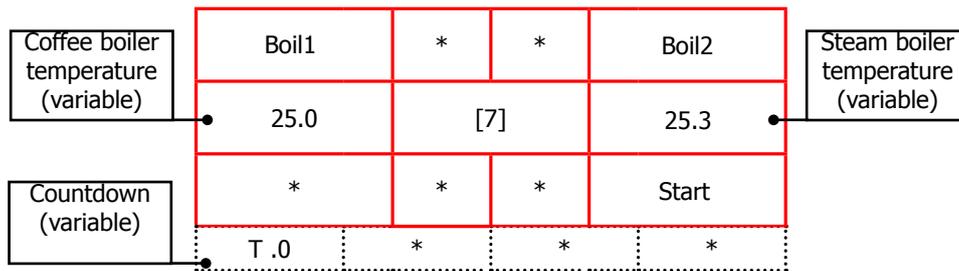**Operation:**

Left hand side controls:
- C+: increases display contrast
- C-: decreases display contrast
- L+: increases display brightness
- L-: decreases display brightness

Indicators:

the values at the bottom represent brightness and contrast: these values are saved in eeprom (note: it is also possible to regulate brightness from the user menu, but not the contrast).

Press DOWN to pass to the next screen

Steam - out

Coffee boiler temperature (variable)		Boil1	*	*	Boil2	Steam boiler temperature (variable)
		25.0	[7]		25.3	
Countdown (variable)		*	*	*	Start	
		T .0	*	*	*	

The various sectors have the following meanings:

Operation:

left side:
- Boil1: it lights up when the coffee boiler is powered
- Boil2: it lights up when the steam boiler is powered

right side:
- Start: starts the emptying process and displays the countdown in the box indicated T0. The machine can be switched off at the end of the count.

Indicators:

the values in the central line are the temperatures of the two boilers detected during emptying.
This is the last screen of the Test Mode.
Pressing ESC in any screen exits the TEST mode and re-start of the machine in normal mode.

5.2.1 Diagnostics mode

To enter Diagnostics mode:
- Switch on the machine
- Wait for the text XELSIS or SELF-DIAGNOSIS to appear
- Press the four function keys in the sequence indicated below (1, 2, 3, 4)
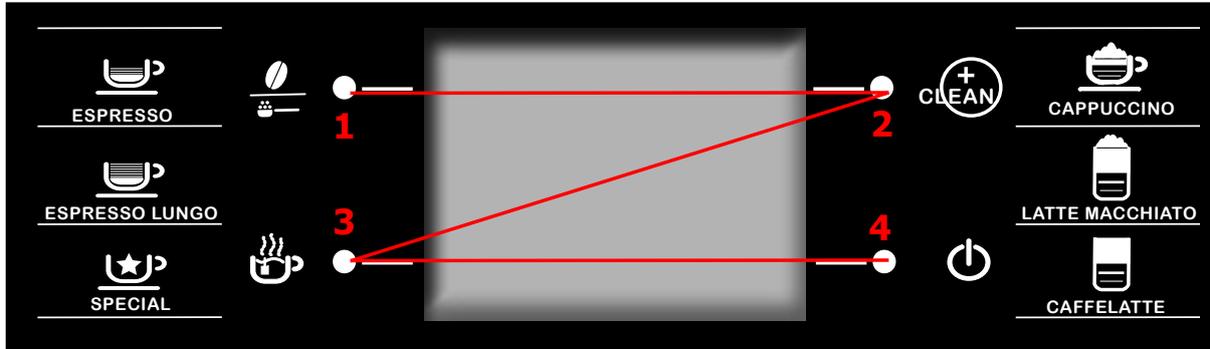
Entry into Diagnostics mode will be indicated by the appearance of the eight main menu options.

4. SERVICE SETTINGS	
ESC PRODUCT COUNTERS	▲
ERROR COUNTERS	
WATER COUNTERS	
BREWING UNIT RINSING	ON
MAX GRINDER DOSE	170
MAX GROUND	15
OK HOTWOTER FLOWRATE	120 ▼

4a. SERVICE SETTINGS	
ESC	▲
CUP TEMPERATURE	78
FINGERPRINT	ON
OK	▼

PRODUCT COUNTERS ((displays, for each individual beverage, the number of dispensing cycles performed by the machine).

4.1 PRODUCT COUNTERS	
ESC ESPRESSO 4	▲
ESPRESSO LUNGO 2	
CAPPUCCINO 7	
LATTE MACCHIATO 3	
CAFFELATTE 9	
HOT WATER 5	
OK AMERICAN COFFEE 0	▼

4.1 PRODUCT COUNTERS	
ESC HOT MILK 6	▲
ESPRESSO MACCHIATO 8	
OK	▼

ERROR COUNTERS (displays the errors which have occurred in the system)..

4.2. ERROR COUNTERS

ESC

ERROR LOG   1

ERROR VECTOR

ERROR RESET

▲

OK

▼
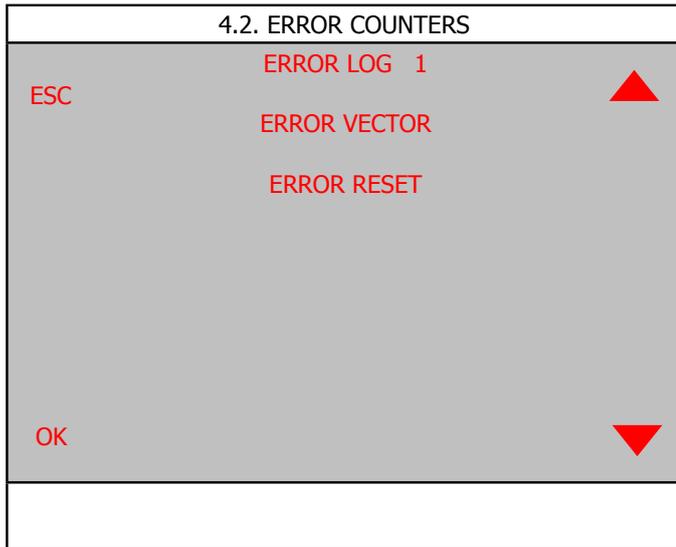
ERROR LOG: displays the total number of errors which have¬occurred in the system.

ERROR VECTOR: select to display the type of error which has occurred in the system.

ERROR RESET: select to reset all the errors which have occurred in the system.

A maximum of 20 errors may be logged; these can be displayed using the two red up/down arrows(once 20 errors have already been logged, if another error occurs, the system stores it by deleting the first error in the list).

4.2.1. ERROR LOG

ESC

ERROR INDEX   1 / 1

ERROR CODE: 3

ERROR TEXT:

BREWING UNIT BLOCKED WORK

ERROR TIME: 10:42

ERROR DATE: 15/10/09

▲

OK

▼
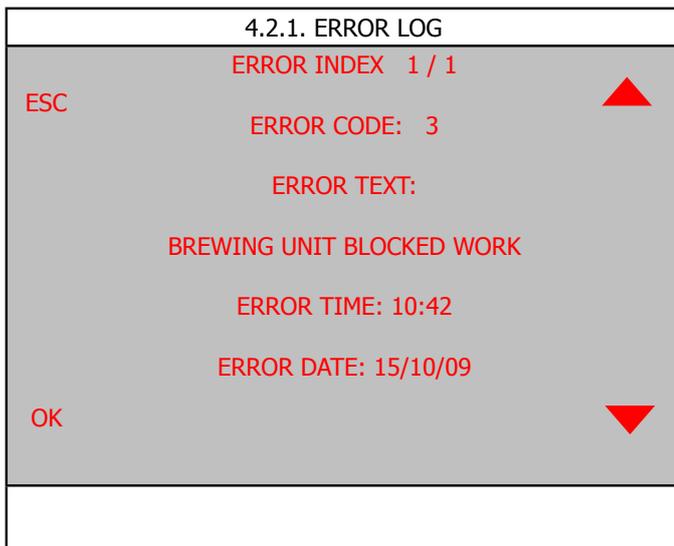
ERROR INDEX: displays the numerical position of the error.

ERROR CODE: is the numerical code corresponding to the type of error which has occurred.
See section 5.3. Error messages.

ERROR TEXT: short description of the error which has occurred.
See section 5.3. Error messages.

ERROR TIME: the time at which the error occurred.

ERROR DATE: the date on which the error occurred.

Displays a list of errors (see section 5.3. Error messages) which can occur within the machine.
.

4.2.2. ERROR VECTOR

ESC

GRINDER BLOCKED
0
GRINDER BLOCKED WORK
0
BREWING UNIT BLOCKED HOME
0
WATER CIRCUIT INTERRUPTED
0
DC VALVE SHORT CIRCUIT
0
COFFEE TEMP. SENSOR SHORTH CIRCUIT
0
COFFEE TEMP. SENSOR OPEN CIRCUIT
0

▲

OK

▼

4.2.2. ERROR VECTOR

ESC

STEAM TEMP. SENSOR OPEN CIRCUIT
0
STEAM TEMP. SENSOR SHORT CIRCUIT
0
BOILER COFFEE ERROR
0
BOILER STEAM ERROR
0
BREWING UNIT SHORT CIRCUIT
0
REAL TIME CLOCK ERROR
0
ZERO CROSSING ERROR
0

▲

OK

▼

WATER COUNTERS (displays the water consumption in litres during beverage production, descaling cycle, unit cleaning cycle and filter activation).

4.3 WATER COUNTERS
ESC   DESCALING CYCLE   ▲
BREWING UNIT CLEANING
WATER FILTER
WATER SINCE PRODUCTION
0
OK   ▼
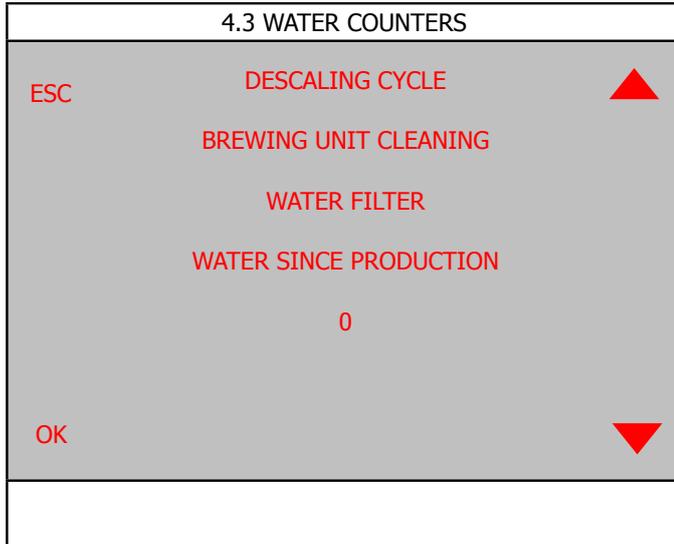
DESCALING CYCLE: consumption of water in litres during decalcification cycles.

BREWING UNIT CLEANING: consumption of water in litres during brewing unit cleaning cycles.

WATER FILTER: consumption of water in litres while the water filter is activated.

WATER SINCE PRODUCTION: consumption of water in litres from the start of production (switching on the machine for the first time)
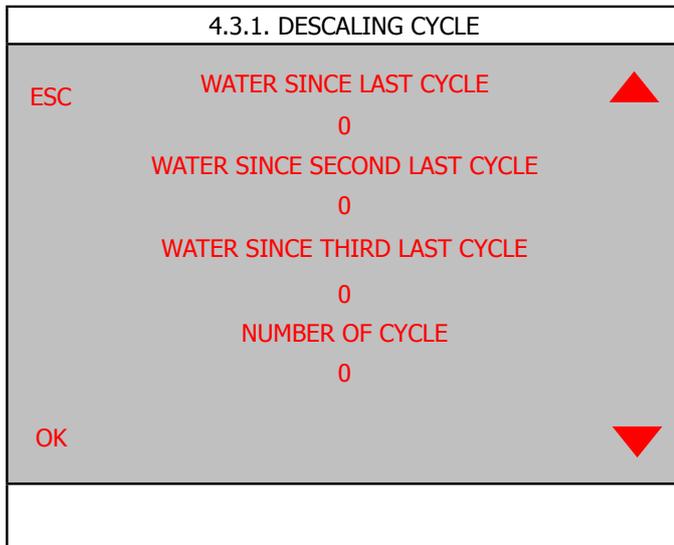
4.3.1. DESCALING CYCLE
ESC   WATER SINCE LAST CYCLE   ▲
0
WATER SINCE SECOND LAST CYCLE
0
WATER SINCE THIRD LAST CYCLE
0
NUMBER OF CYCLE
0
OK   ▼

WATER SINCE LAST CYCLE: consumption of water in litres during beverage production since the last¬ decalcification cycle.

WATER SINCE SECOND LAST CYCLE: con¬sumption of water in litres during beverage production since the penultimate decalcification cycle.

WATER SINCE THIRD LAST CYCLE: con¬sumption of water in litres during beverage production since the third-last decalcification cycle.

NUMBER OF CYCLE: the number of decalcification cycles carried out.

4.3.2. BREWING UNIT CLEANING
ESC   WATER SINCE LAST CYCLE   ▲
0
NUMBER OF CYCLE
0
OK   ▼
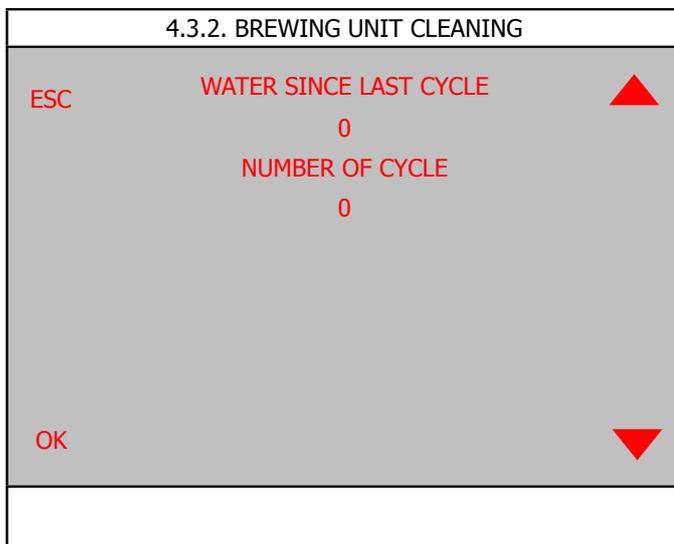
WATER SINCE LAST CYCLE: consumption of water in litres since the last unit cleaning cycle
(after each unit cleaning cycle, the value is reset to "0").

NUMBER OF CYCLE: the number of unit cleaning cycles carried out.

4.3.3. WATER FILTER

ESC

WATER SINCE LAST RESET

0

NUMBER OF RESET

0

▲

OK   ▼

4.4. BREWING UNIT RINSING

ESC

▲

OFF

ON

OK   ▼
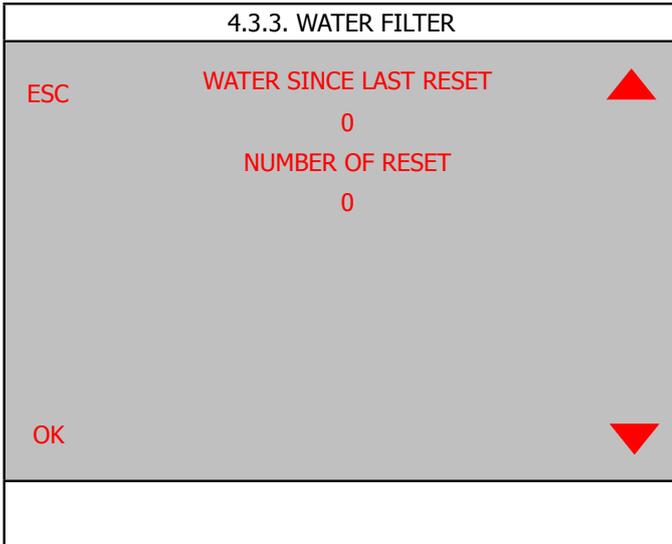
WATER SINCE LAST RESET: consumption of water in litres since the last time the water filter was activated (after each water filter activation procedure, the value is reset to "0").

NUMBER OF RESET: the number of water filter activation cycles carried out.
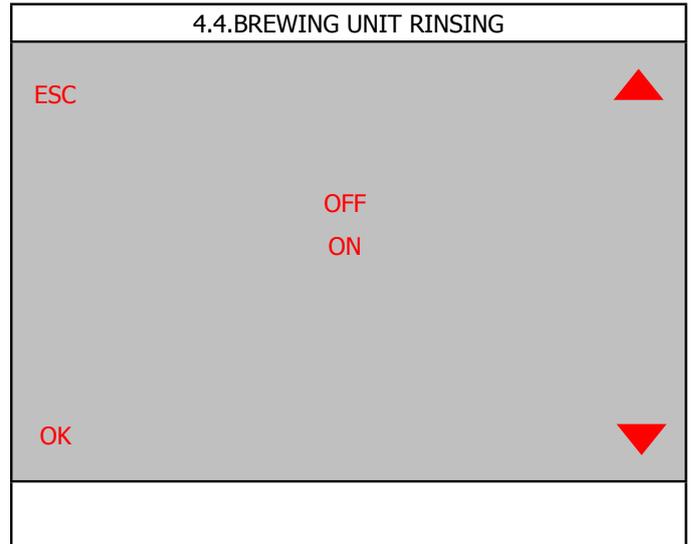
BREWING UNIT RINSING ((offers the option of activating or deactivating the "unit rinsing" function).

4.5. MAX GRINDER DOSE

ESC

▲

120

OK   ▼

4.6. MAX GROUND

ESC

▲

15

OK   ▼
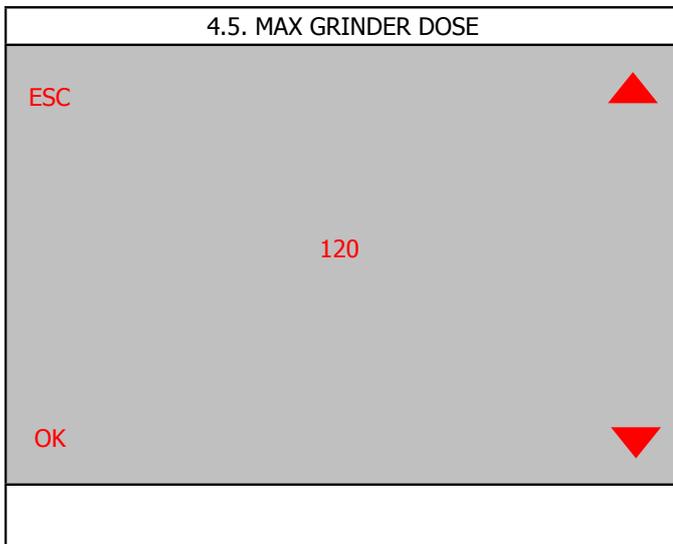
MAX GRINDER DOSE (can be used to select the maximum threshold value for the coffee grinder dose. The range may be set between 100 and 170, with intervals of 5).
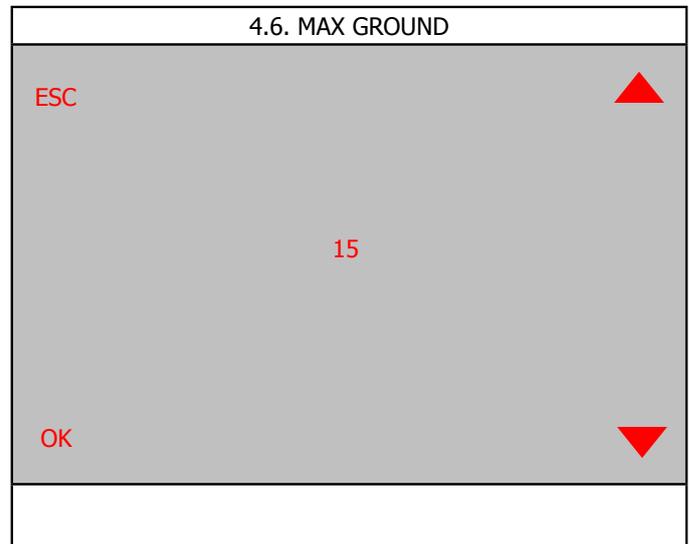
MAX GROUND (can be used to select the maximum number of coffee grounds batches . The range may be set between 10 and 20).

4.7. HOTWATER FLOWRATE
ESC
120
OK

4a.1. CUP TEMPERATURE
ESC
78
OK
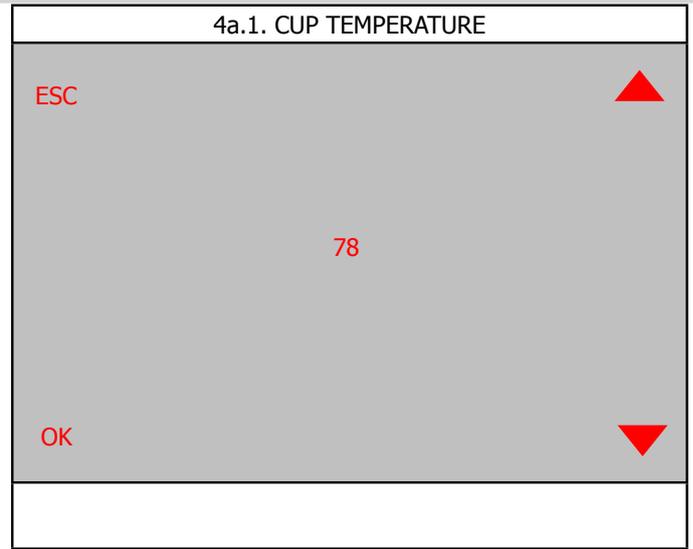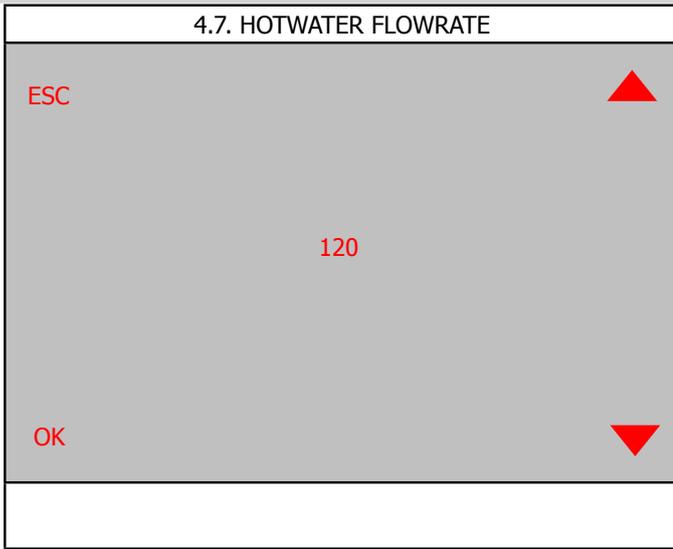
HOTWATER FLOWRATE (can be used to select the maximum delay between two water pulses in the flow meter. The range may be set between 100 ms and 150 ms).

CUP TEMPERATURE (can be used to select the average temperature of the coffee in the cup. The range may be set between 75°C and 85°C).

4a. SERVICE SETTINGS	
ESC	
CUP TEMPERATURE	78
FINGERPRINT	OFF
OK	

4a.2. FINGERPRINT
ESC
CALIBRATE
OK
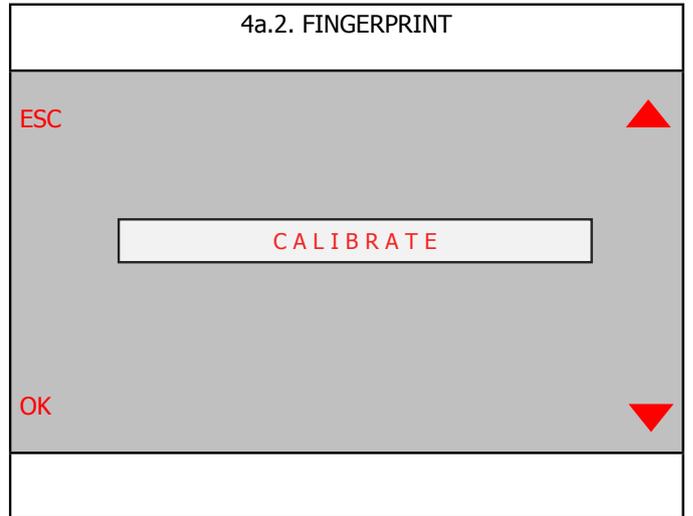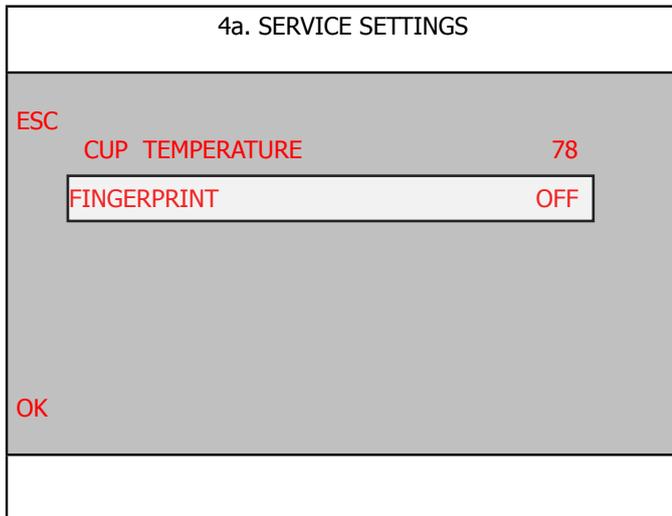
FINGERPRINT
This function is only used if the DI or CPU board is replaced (OFF).
(Press OK)

CALIBRATE
Press OK to start calibrating the sensor (if calibration is not carried out, the machine does not carry out any of the functions relating to DI.

4a.2. FINGERPRINT
ESC
FINGERPRINT CALIBRATION RUNNING
OK
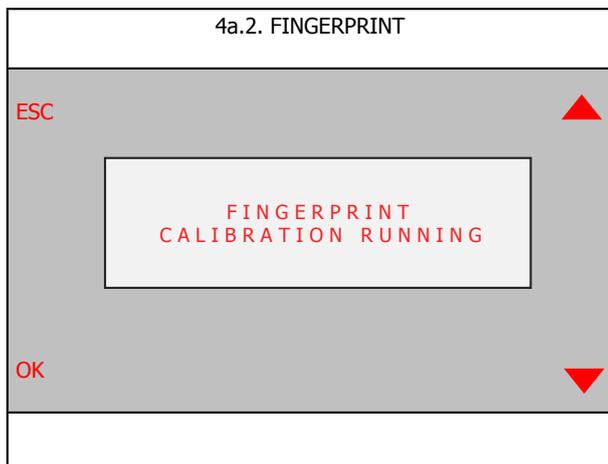
Wait for the procedure to end.

5.2.2.   Focus diagnosis mode

To enter Diagnostics:
- Switch the machine on
- Wait for XELSIS to be displayed
- Press the four function keys in the sequence indicated (1, 2, 3, 4)
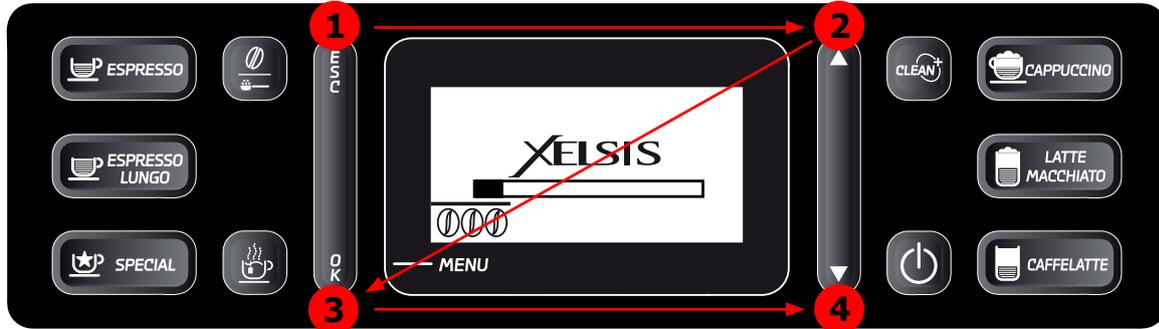
The entry to Diagnostics Mode shows a screen as seen in the figure at the side and pressing [IMG] allows to scroll through all menus present.

MENU	DESCRIPTION
PRODUCT COUNTER	Represents the number of dispensing cycles performed by the coffee machine for each product
ERROR COUNTER	Displays the total „out of service" (fail) errors that have occurred in the system and allows to reset. The max. number of "fails" counted is 20.
WATER COUNTER	Shows water consumption (in pulses) following dispensing of products, at the de-scaling cycle, at the unit cleaning cycle and on filter activation
MAX GRINDER DOSE	Allows to select the maximum threshold value of the dose that the coffee machine can assume.
MAX GROUND	Allows to select the maximum number of coffee dregs. The range of variation of the number of dregs selected can vary from 10 to 20
HOTWATER FLOWRATE	Allows to select the maximum delay between two water pulses in the flow meter.
CUP TEMPERATURE	Allows to select the average or normal temperature of coffee in cup.

1. PRODUCT COUNTERS

• ESPRESSO (default value 0)	• n° of dispensing cycles
• CAFFE (default value 0)	• n° of dispensing cycles
• CAFFE LUNGO (default value 0)	• n° of dispensing cycles
• HOT WATER (default value 0)	• n° of dispensing cycles
• CAPPUCCINO (default value 0)	• n° of dispensing cycles
• LATTE MACCHIATO (default value 0)	• n° of dispensing cycles
• HOT MILK (default value 0)	• n° of dispensing cycles

2. ERROR COUNTERS

• ERRORS LOG	• ERROR CODE • (default value 0)	ERROR CODE - represents the code relative tot he type of error occurring (see Tab. 5.3 Error messages)
	• ERROR INDEX • (default value 0)	NUMERICAL POSITION - represents the numerical position of the error in the internal list for max. n° of 20
	• ERROR TEXT • (default value 0)	ERROR DESCRIPTION - represents the text description of the type of error occurring

• ERRORS RESET	All errors are reset

3. WATER COUNTERS

• DESCAILING CYCLES	• WATER SINCE LAST CYCLES	Represents the water consumption after the last descaling cycle
	• WATER SINCE SECOND	As above, but for the penultimate descaling cycle
	• WATER SINCE THIRD	As above, but for the penultimate descaling cycle
	• WATER SINCE LAST CYCLE	total no of descaling cycles performed

• BREWING UNIT CLEANING	• SINCE LAST • (default value 0)	Represents the water consumption after the last unit cleaning cycle. When performed, it goes back to 0.
	• NUMBER OF EXECUTION • (default value 0)	Represents the number of unit cleaning cycles performed on the coffee machine.

• SINCE PRODUCT	Total water consumption in litres (default value 0)
• WATER FILTER	

	• SINCE LAST RESET • (default value 0)	Represents the water consumption after the last filter activation cycle. When performed, it goes back to 0.
	• NUMBER OF RESET • (default value 0)	Total no of filter activation cycles performed.

4. MAX GRINDER DOSE

100 ÷ 170 (default value 170)

5. MAX GROUND

10 ÷ 20 (default value 10)

6. HOTWATER FLOWRATE

100 ÷ 150 (default value 120)

7. CUP TEMPERATURE

75 ÷ 85 (default value 78)

5.3. Error messages

Code	Brief description	Description
01	Coffee grinder blocked	The coffee grinder is blocked (grinder blades jammed or sensor not reading properly)
03	Brewing unit blocked in 'work' position	Descent time-out exceeded
04	Brewing unit blocked in 'home' position	Ascent time-out exceeded
05	Water circuit blocked	No water in flow meter or flow meter not turning (jammed)
06	Frother unit solenoid valve	Frother unit solenoid valve short-circuit
10	Coffee boiler short-circuit	Coffee boiler temperature sensor short-circuit
11	Coffee boiler in open circuit	Coffee boiler temperature sensor in open circuit
12	Steam boiler short-circuit	Steam boiler temperature sensor short-circuit
13	Steam boiler in open circuit	Steam boiler temperature sensor in open circuit
14	Various temperature errors (in the coffee boiler)	Coffee boiler temperatures out of control
15	Various temperature errors (in the steam boiler)	Steam boiler temperatures out of control
16	Group motor short-circuit	Brewing unit microswitch short-circuit
17	Not used	
18	Clock error	Memory fault or impossible to set
19	No zero crossing	No zero crossing on card, could be caused by power card
20	Not used	

5.4 Saeco Service Center - Quick Start Guide

Saeco Service Center (SSC) is a tool with which you can re-program the machine and check the diagnostic of the same.

You can download the software from the following link: http://logsave.logtronics.com/SSC2/publish.htm

In support of this tool it is essential to order the Saeco Programming Device:

Cod. 20000490 "KIT PROGRAMMER SERKIT SSC2".

This kit includes the programmer and cables helpful.

All details related to the registration and operation are explained in the enclosed Quick start guide (QSG).

<div align="center">

Saeco Service Center – Quick Start Guide

</div>

Press the icon to view the document 📎

To open the attached document is necessary to save the service manual on your PC.

CHAPTER 6

SERVICE AND MAINTENANCE

6.1. Repair Flow

Proces stap	Saeco no.		Action
Intake		1	Visual inspection (transport damage) take care for pictures
		2	Check Type/serialnumber
			Log all available accessory
Diagnosis		3	Check product for consumer complaint (NFF contact consumer)
		4	Opening machine
			Run Diagnostic to get error codes and relevant set statistics (Saeco Service Center SSC)
		5	Visual inspection check for loosen parts, leaking etc..
		6	Operational tests
Repair		7	Repairing the faults encountered
			Checking any modifications (view Symptom Cure, new software, etc.)
		8	Refer Annex tabs per family
		9	*Service activities in accordance with the operating schedule*
			Check/Replace Waterfilter (the small filter, not the Britta filter)
			Check/Replace Water tank lip seal
			Check/Replace Boiler pin O-ring
			Clean/align Coffee grinder (Vacuum cleaner / brush)
			Descale the water Circuit
			Check/Replace Hot water/steam valve
		10	*Internal check / cleaning*
			Check/Clean/Grease Brewing unit
		11	Operational test while the appliance is open
			Check Hoses, attachments and Oetiker clamps
			Check Pump for operation & noise
			Check Gear motor for operation & noise
			Check for leakage
		12	Assembly
		13	Final inspection test
			Steam out before shipping out, if temperature is below 0° to prevent any demaged due to frozen water.
		14	No need for those families Minuto family (all platform); Incanto family new; Pico Baristo; Gran Baristo; Intelia V2; Philips 2000-2100; Incanto Executive; Moltio family (all platform). Please also check for GDA_113455
		15	Provide precise IRIS code, according dedicated code table for Coffee products. The location code from the part you have worked on MUST be completed always with the part reference from exploded view !
Inspection visual			
			Do cabinet parts fit well together
			Check for damages
Power check			Will the set switch on
Accesoires			Do the accessories match with the intake
Consumer complaint			Check the product for the consumer complaint
Coffee			Basic Functional test
Dispense			Make 2 * coffee. Are both amounts equal
			Make e 2 cups at the same time. Are the volumes equal
Noise			Is the sound normal
Crema			Blow on the coffee. Does the crema come back together
			Is the crema colour correct (Hazelnut)
Temperature			Is the coffee temperature within spec
Grinder			Is the grinder noise normal
Steam			
Steam			Does the steam work
Hot Water			Does the hot water work
Milk			(if applicable)
Cappuchino			Does the cappuccinatore produce good froth

Leakage			
Leakage		14	Did the product leak during the testing
		15	Draining the circuit (in winter)
Cleaning			Clean water reservoir, bean reservoir, brew chamber and conveyor
		16	Clean and dry brew unit, coffee bin and drip tray.
			Lubricating the brewing unit with suitable grease
			External cleaning
Safety check			
			Earth leakage, Isolation test, resistor of earth wire grounding, as requested in certain country's (VDE, ISO)
visueel			Check the mains cord for damages
Packing			
		18	Packing
			Check completeness (accessories) according income log
		19	Neatly pack the product
Documentation			NFF letter
			Descaling instruction with changed procedure (S/C)
			Other instructions according S/C
Repair report			Is there an answer to ALL consumer questions/complaints (see complaint)
			add set statistic and give, if needed clear instruction towards consumer
			Is it indicated which documents are added
			Are there tips how to prevent issues

CHAPTER 7

DISASSEMBLY

7.1.   Outer elements

Remove the water tank, coffee container cover, water drip tray, coffee dispenser and carafe.
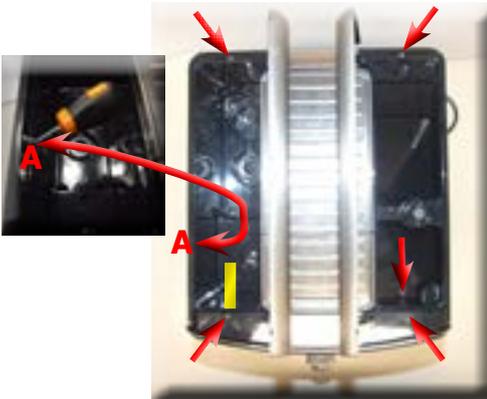
Loosen the screws as illustrated and press inside the gap (A) using a flat head screwdriver.

Remove the connection as illustrated (connection to the cup warmer card).
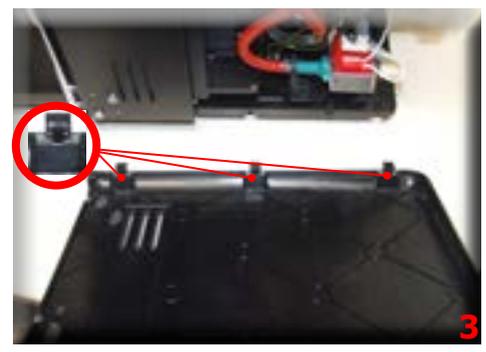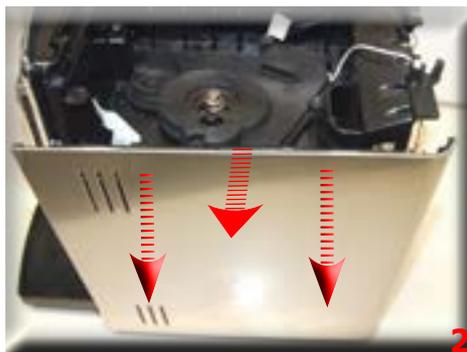
1) Loosen the screws as illustrated.
2 - 3) Lift the cover outwards and press downwards to release the anchoring tabs.
4) Repeat the procedure for all covers.

7.2. Coffee grinder
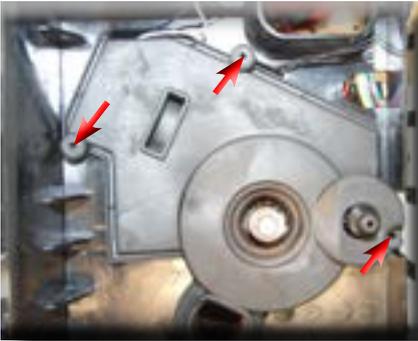
Loosen the screws as illustrated and remove the sound insulating cover of the coffee grinder.

Lift the coffee grinder.

Remove the connections as illustrated.

When reassembling the coffee grinder, make sure the spring is repositioned correctly (see photo).

7.3. Grinder
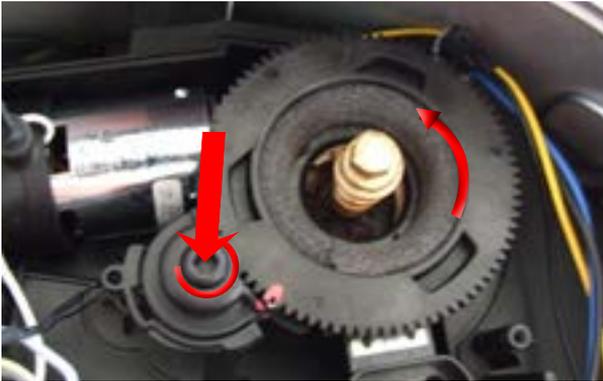
Press down on the grinder adjuster and then turn the upper grinder blades support anticlockwise until it stops.

Turn the grinder blades anticlockwise out of the support.

Turn the grinder blades clockwise out of the support. The bayonet connections can be accessed from the rear.
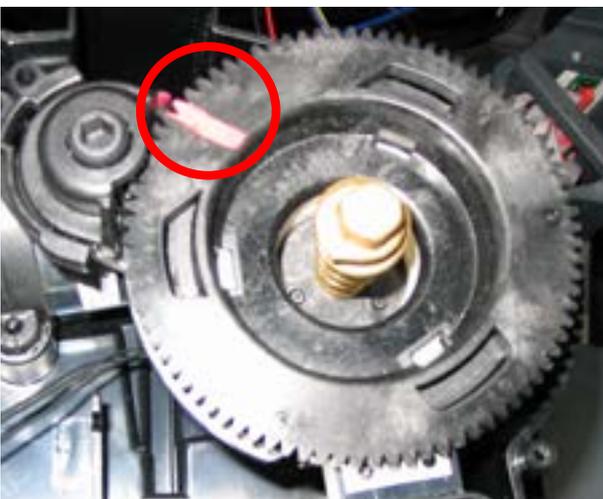
In the start position, both markings must be aligned.

7.4.   Coffee grinder adjustment

The user can set the grinding level (only while the coffee grinder is in operation) by pressing and turning the knob inside the coffee bean container one notch at a time.

Coffee bean container

Adjustment knob

Knob adjustment range

Coffee bean container lid
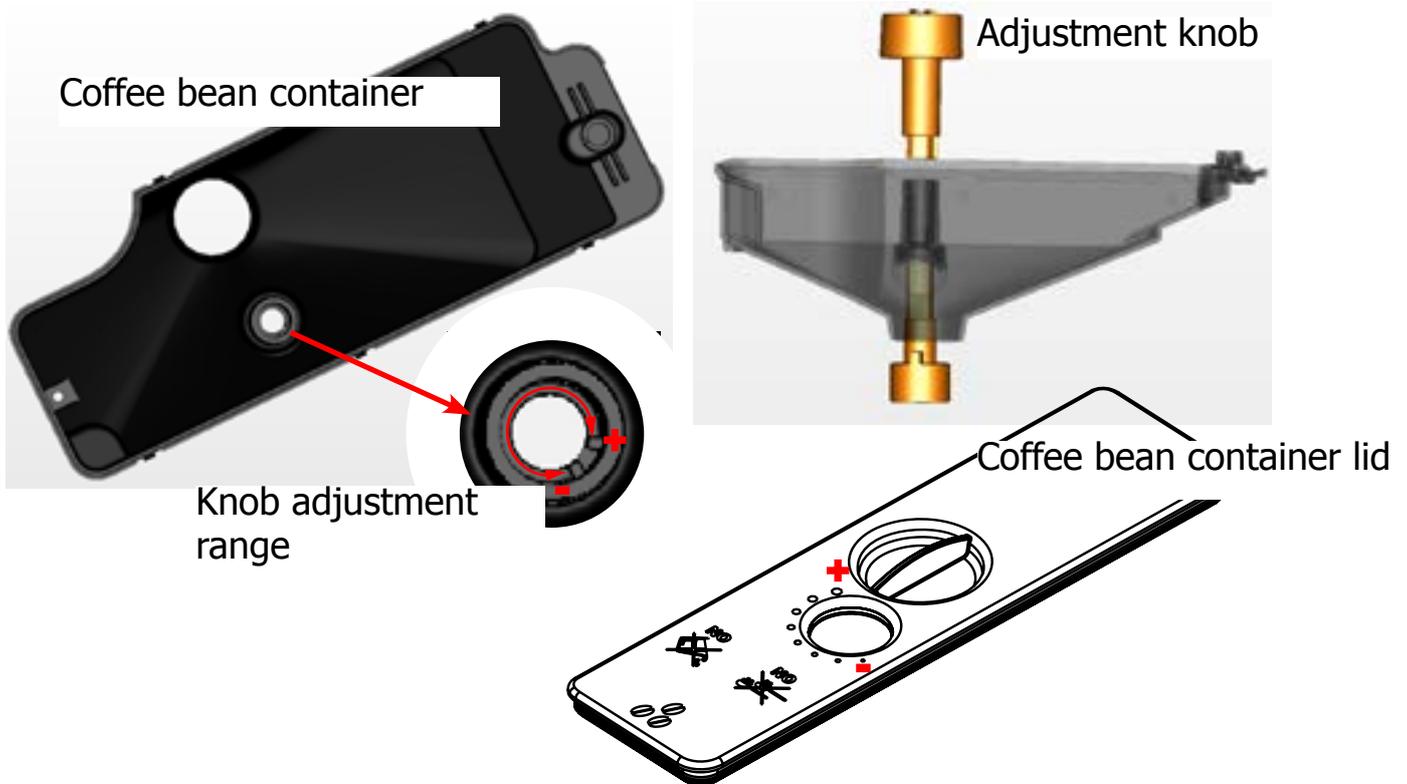
Adjustment by assistance centres

A technician will be able to adjust the grinding level even further, working directly on the coffee grinder by pressing and turning the ringnut (C) as illustrated. (clockwise + to increase the coffee grain size and anticlockwise - to decrease it)
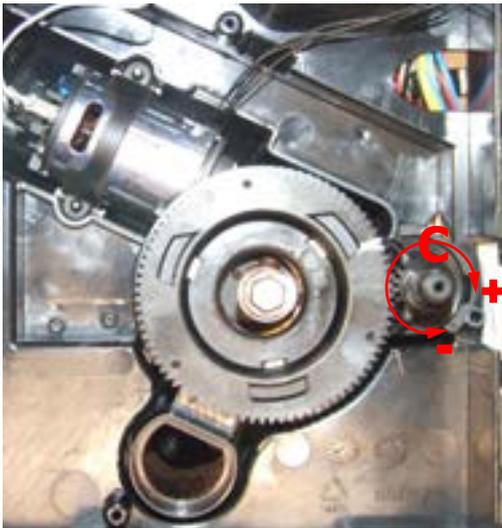
If you find ground coffee residue between the two grinders, we recommend tightening the adjustment, a max. of two notches at a time.

Finally, return the arrow (A) on the adjustment knob to a central position in relation to the adjustment dots on the lid (B).
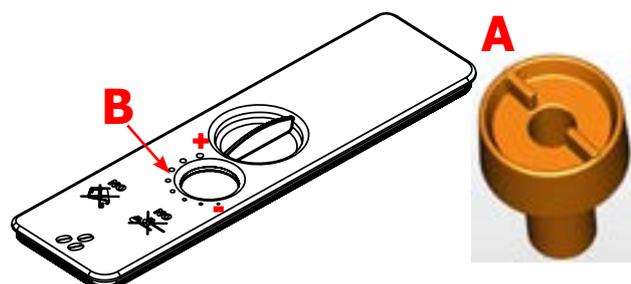
7.5. Steam pump
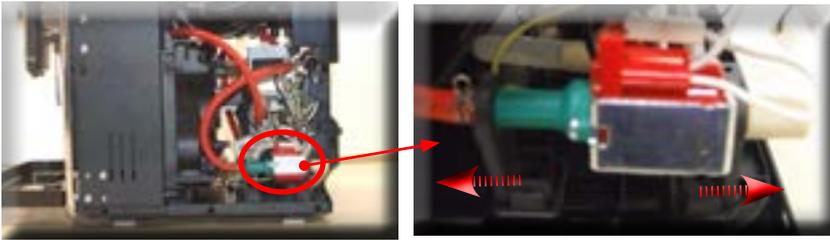
Slide out the two pump supports (highlighted) fixed to the housing and disconnect the electrical and water circuit connections.

7.6. Coffee pump

1) Loosen the screws as illustrated.
2) Remove the connections from the component mounting support.
This process makes it easier to remove several components (coffee pump, boiler, etc.).
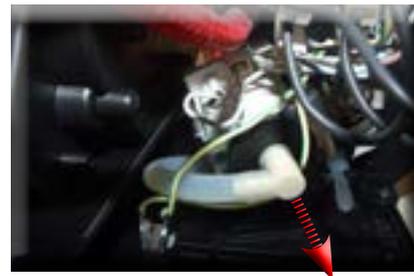
Slide out the two pump supports (highlighted) fixed to the component mounting support and disconnect the electrical and water circuit connections.

7.7. Flow-meter
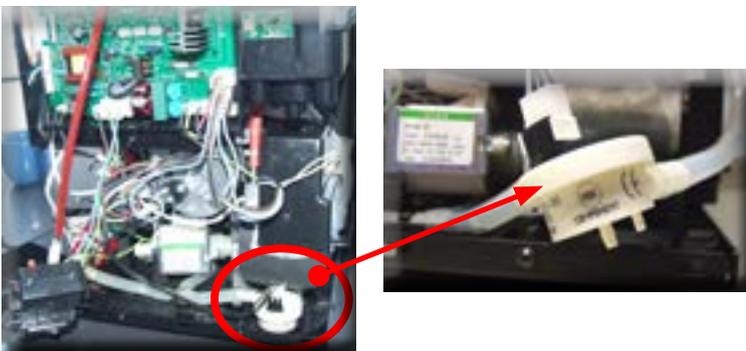
Lift the flow-meter out of the component mounting support and disconnect all electrical and water circuit connections.

7.8. Multi-way valve

Unscrew the screws as indicated to reach the screw anchoring the multi-way valve to the support

Loosen the screw as illustrated and remove the clip

Disconnect the electrical and water circuit connections

7.9. Power board
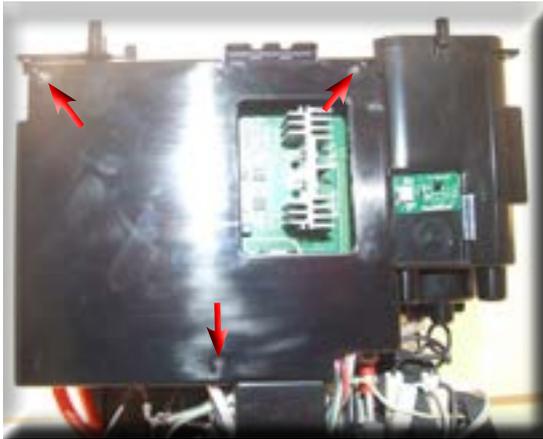
1) Loosen the screws as illustrated and remove the card cover.
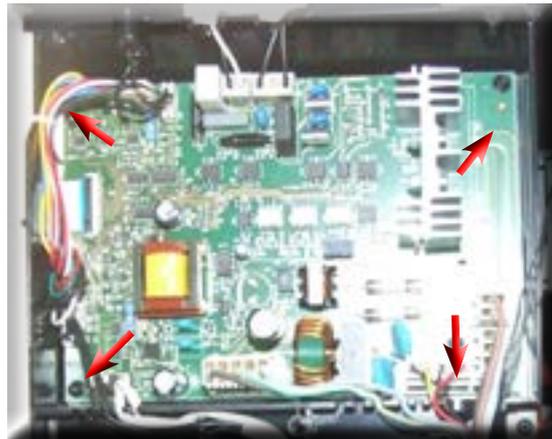
2) Loosen the screws as illustrated and remove all electrical connections.

7.10. Steam boiler

Loosen the screw as illustrated

Loosen the screw as illustrated and disconnect the electrical and water circuit connections.

7.11. Coffee boiler

Loosen the screw as illustrated
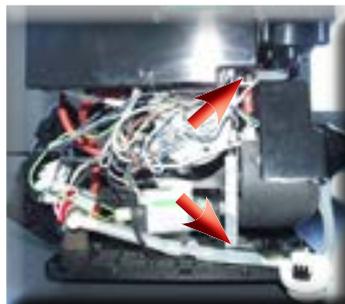
Loosen the screw as illustrated and remove the boiler cover and disconnect the electrical and water circuit connections.
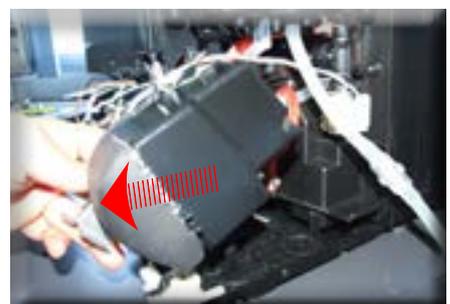
7.12. Gearmotor
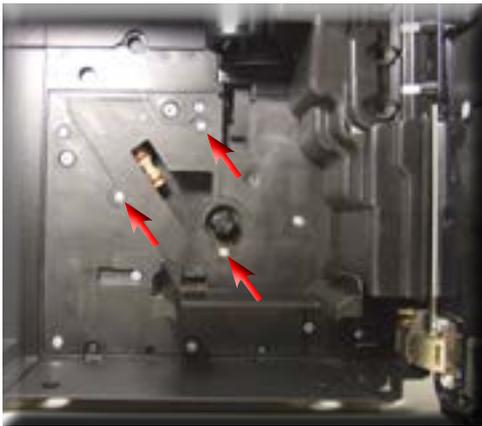
Loosen the screws as illustrated and remove the boiler pin.

Loosen the screws as illustrated and remove the boiler pin.
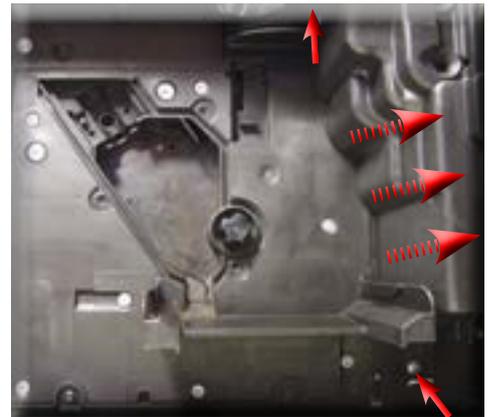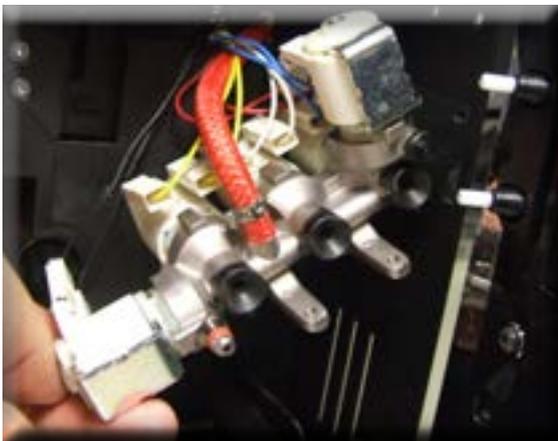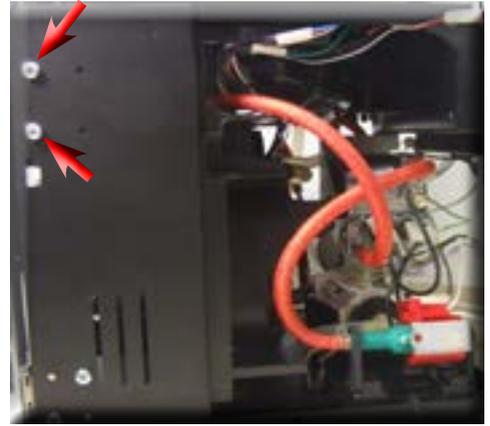

Loosen the screws as illustrated and remove the frothing valve protection.
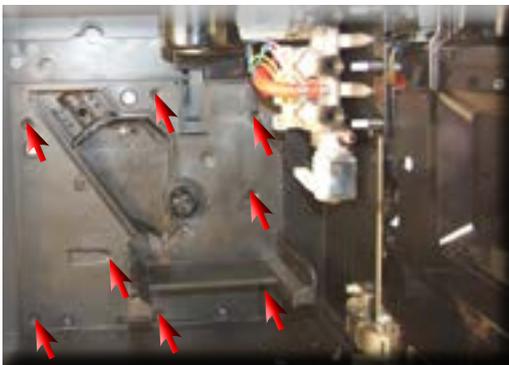
Loosen the screws as illustrated and remove the gearmotor cover.
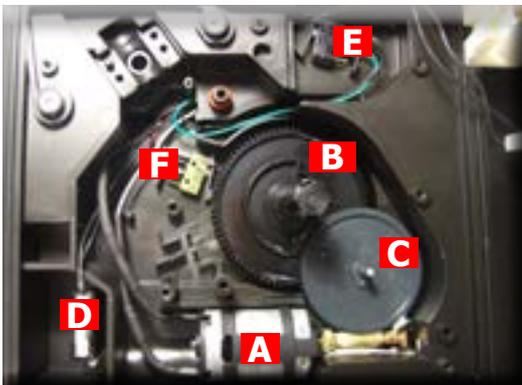
The following are located inside the compartment protected by the casing:
- Electric motor (A) with gears (B) and (C) for transmission and timing of the dispensing unit.
- Dreg drawer presence sensor (D).
- Dispensing unit presence microswitch (E).
- Microswitch (F) detecting the dispensing unit home and dispensing phases.
- Remove the gear (C) that meshes with the motor transmission shaft.
- Remove the large gear (B).
- Remove the motor (A), complete with transmission shaft.
- (G) Multi-way valve drain.
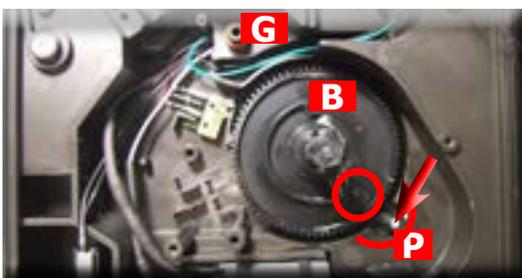
Replace the gear (B), making sure that the imprint of the arrow is aligned with the opening containing the pin (P).

When replacing the motor and the transmission shaft, make sure the guide runners (L) are in the right position. Grease the shaft thoroughly and evenly.

7.13. Frother unit valve assembly
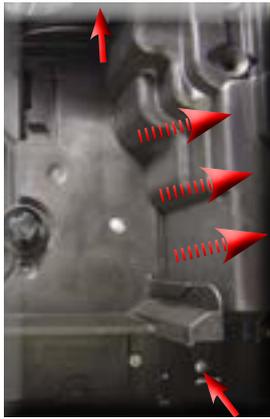
Loosen the screws as illustrated and remove the frothing valve protection.
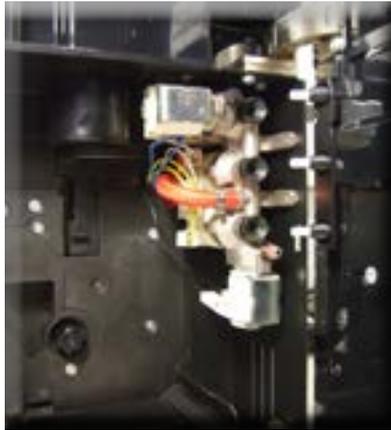
Loosen the screws as illustrated, making sure that the frothing valve does not fall and damage the connections.

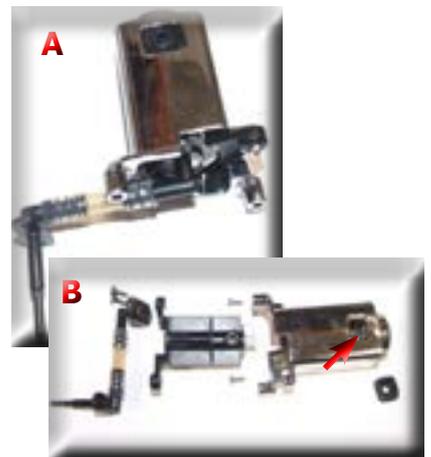Disconnect all electrical and water circuit connections.

7.14. Dispenser assembly
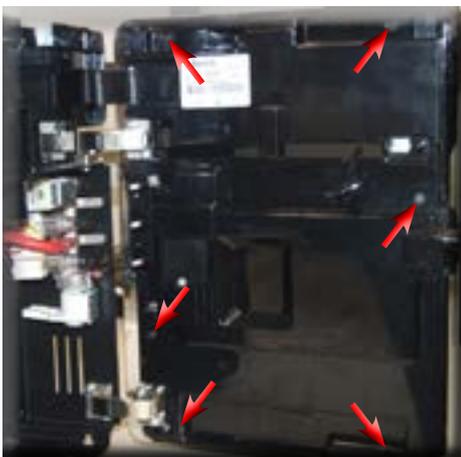
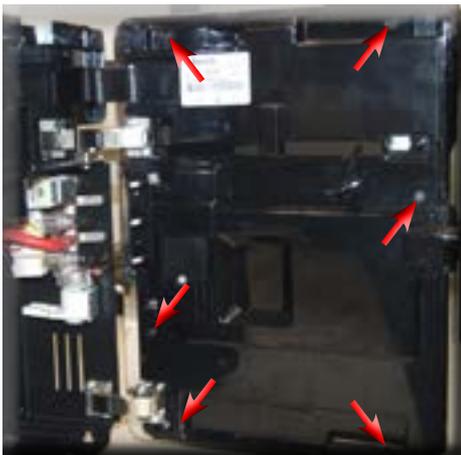Loosen the screws as illustrated to remove the inner front panel cover.

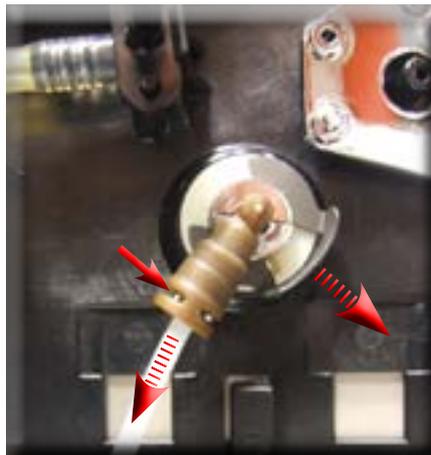Loosen the screws as illustrated and slide out the coffee dispenser assembly (photo A).

Remove the dispenser (photo B); when replacing it, make sure the spring highlighted is positioned correctly.

7.15. Steam pipe assembly

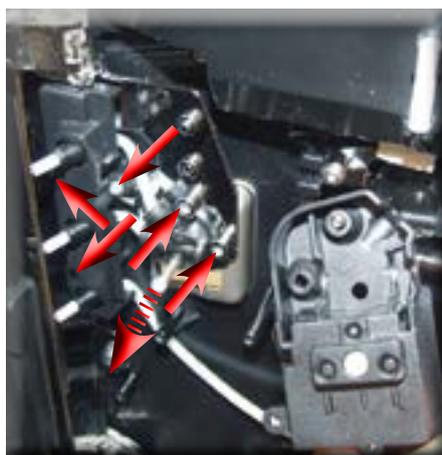Loosen the screws as illustrated to remove the inner front panel cover.

Remove the fork spring and the steam pipe washer, disconnect the pipe from the Teflon by removing the fork.

7.16.1. Teflon pipe support and cafare attachment assembly
(version up to s/n 9009SA40298916
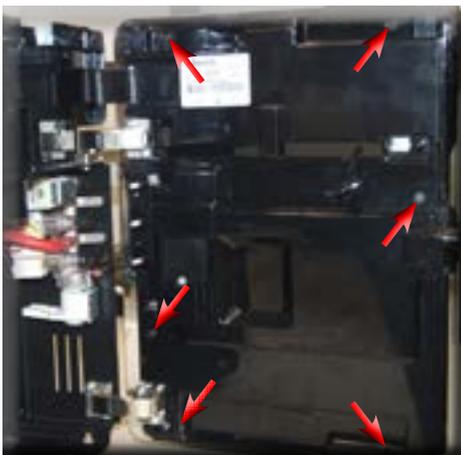
Loosen the screws as illustrated to remove the inner front panel cover.

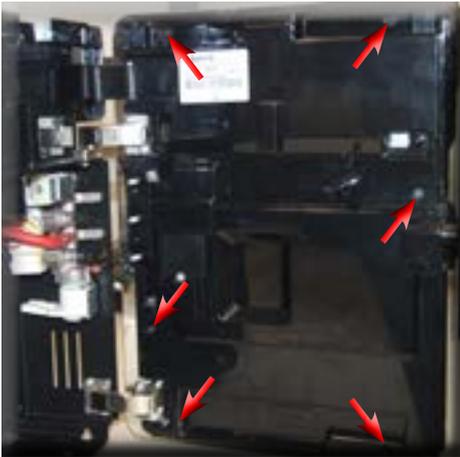Loosen the screws as shown and slide out the spring and insert, which gives the connector its flexibility.

Loosen the screws as illustrated to remove the carafe attachment (**A**) and the Teflon pipe support (**B**).

7.16.2 Teflon pipe support and cafare attachment assembly
(version up to s/n 9009SA40298917

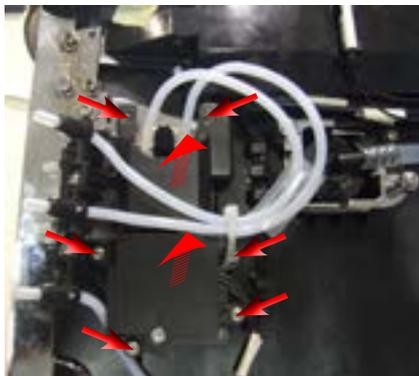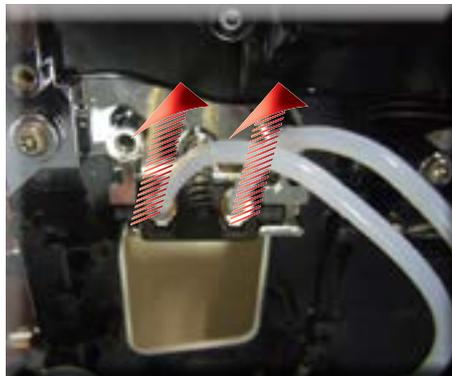# Carafe attachment, new version

Loosen the screws as illustrated to remove the inner front panel cover.

Remove the screws shown and pull the Teflon pipe support cover away from the carafe

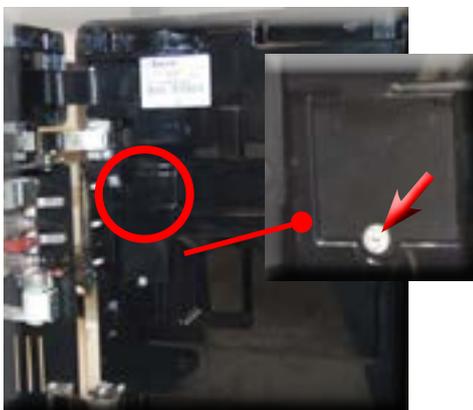Remove the screws shown and pull out the front panel insert

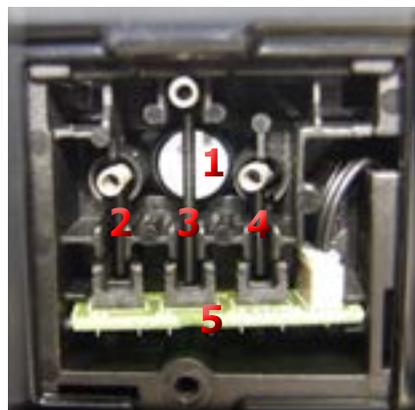Remove the Teflon pipe support assembly

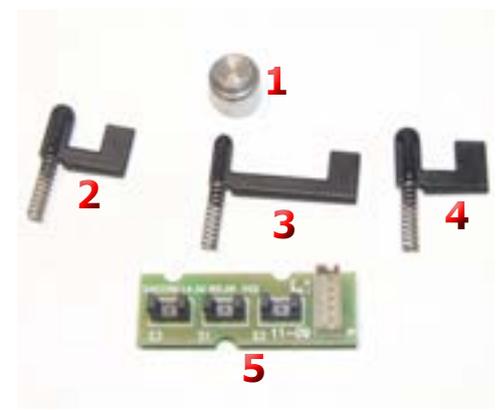When replacing it, make sure you reposition the spring correctly
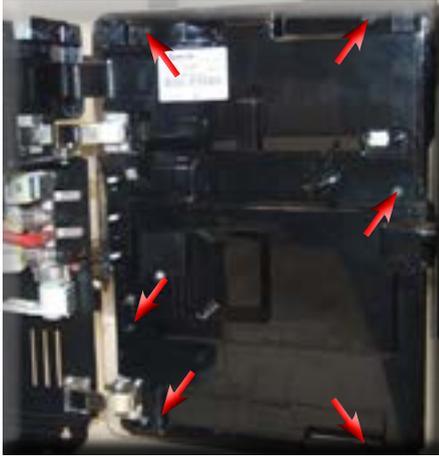
7.17. General carafe card assembly
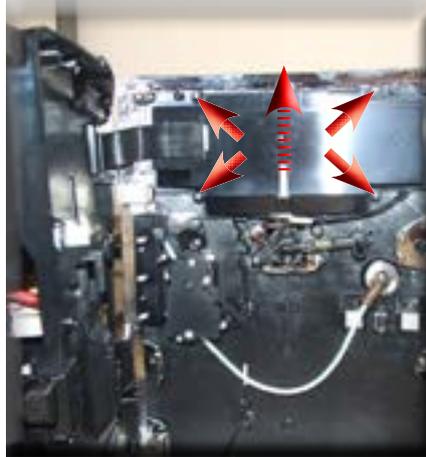

Loosen the screw as shown.

1) Magnet to improve carafe adherence to the door.
2,3,4) Carafe presence and position sensors.
5) Carafe card.

7.18. CPU and display card

Loosen the screws as illustrated to remove the inner front panel cover.

Loosen the screws as illustrated, slide out the door presence reed sensor and remove the CPU card cover.
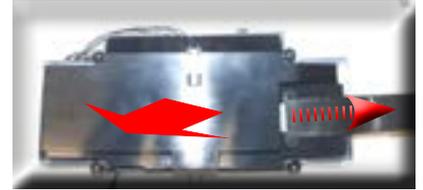
Slide out the front panel and remove the card cover, making sure you disconnect the flat cable connected to the POWER.

Loosen the screws as illustrated and remove all electrical connections.
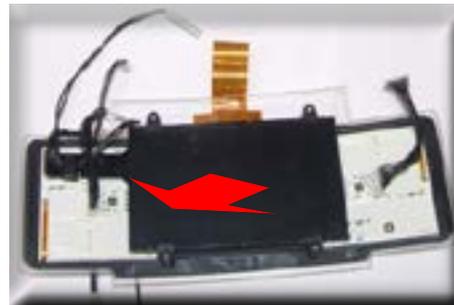
Remove the display support.

CAPACITIVE KEYBOARD
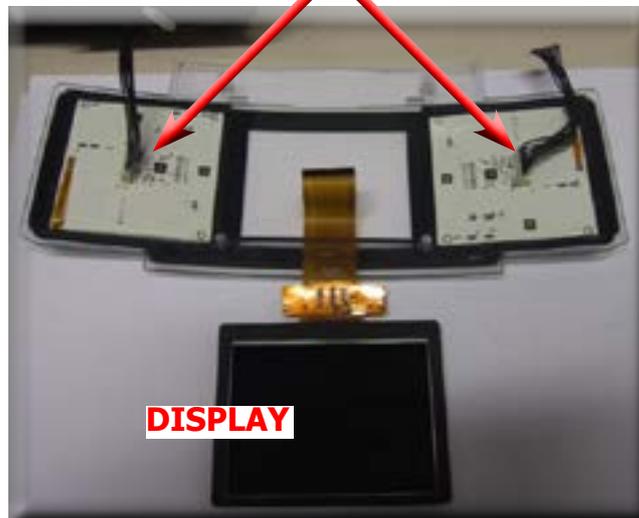
DISPLAY

7.19 CPU and display card Focus
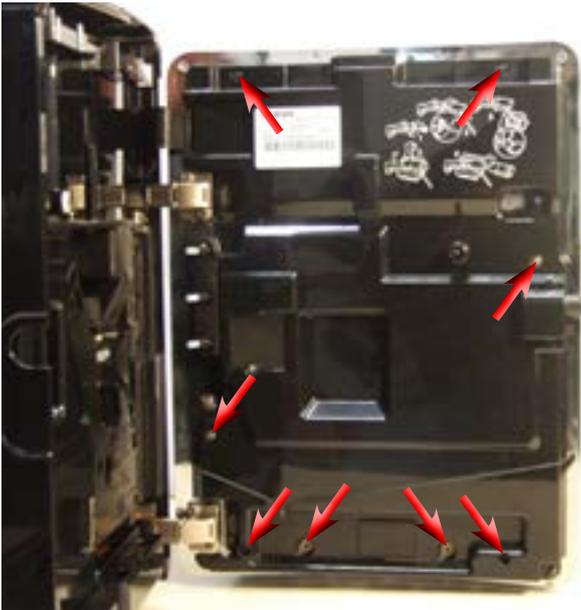
Loosen the screws as shown to remove the inner cover of the front panel
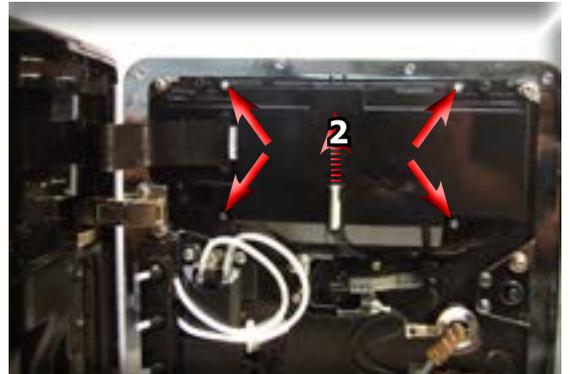
Slide the capacitive sensor out (1) along with the door presence reed sensor (2), loosen the screws highlighted and remove the CPU board cover.
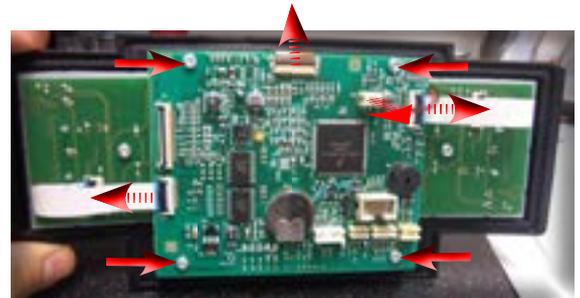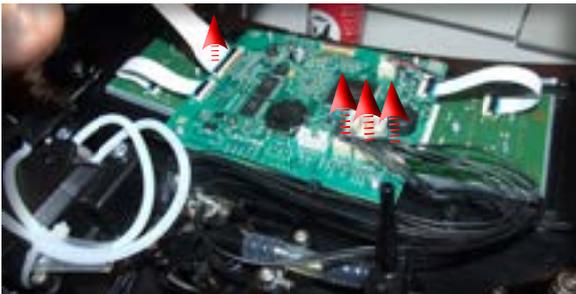
Remove the connections, loosen the screws highlighted and remove the board
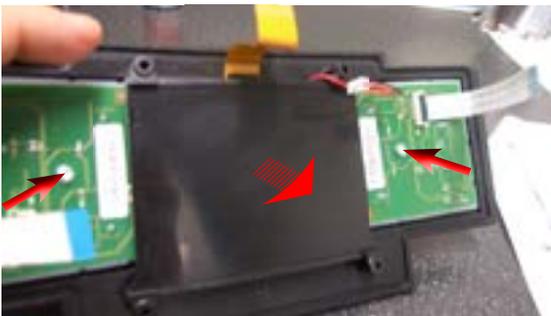
Remove the display support, loosen the screws highlighted and draw out the board, keys and the display.

7.20. Removing the digital ID

Digital ID (digital fingerprint identification device)
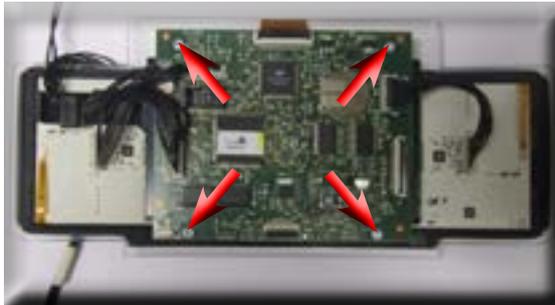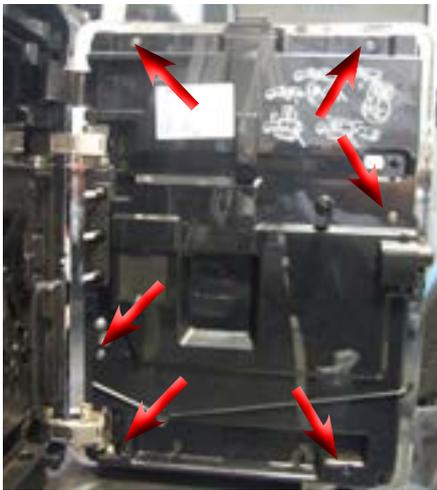

Loosen the screws as illustrated to remove the inner front panel cover
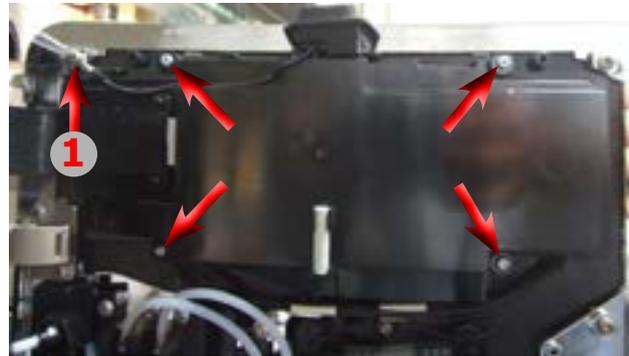
Loosen the screws as illustrated to remove the inner front panel cover.
Loosen the screw (1) fixing the earthing wire of the digital ID in place
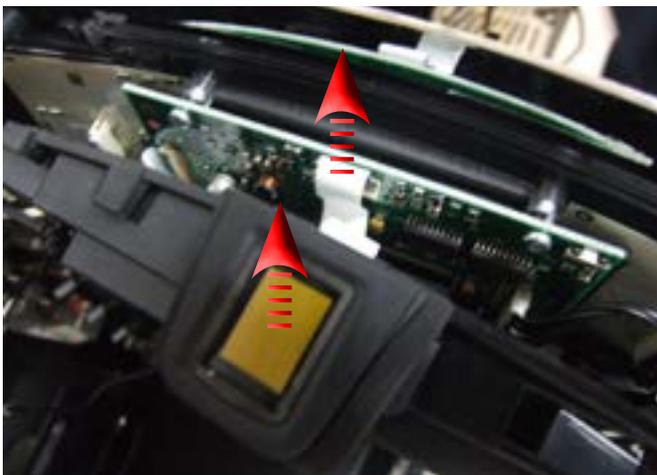
Remove the connection on the board and lift out the digital ID

7.21. Fitting and removing Oetiker clamps

14/14
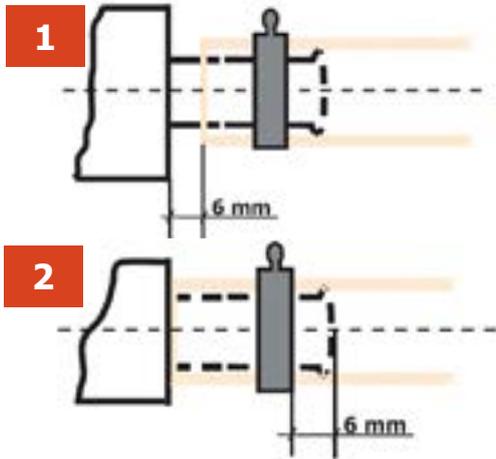
1) Boiler connection.

2) Other connections.

Replacing the hoses

1) Use a suitable pair of pliers to remove the clamp (as illustrated).

2) Tighten the clamp as illustrated.

CHAPTER 8

NOTES

CHAPTER 9

WATER CIRCUIT DIAGRAM

SERBATOIO ACQUA

Tappo 1 resca valvola di scarico MY89
cod. 11012247

ASSEME VALVOLA DI SCARICO V2 MY89
230V — cod. 11006995
120V — cod. 11022038
100V — cod. 11022037

Raccordo scarico acqua valvola di scarico MY89
cod. 11012337

Raccordo scarico acqua valvola di scarico MY89
cod. 11012337

Fascetta stringitubo D=11 / 11.6
cod. NV99.087

Tubo silicone 5x10 — 60 Sh. — L=240 mm.
cod. 9972.173

ASSEME PERNO V2 PER CALDAIA
cod. 11005060

AL GRUPPO CAFFE'

ALLO SCARICO

ALLO SCARICO

ASSEME TURBINA D=12 — 932-852/90
cod. 12000781

Tubo silicone retinato 5x8,9 — L=135 mm. rosa
cod. 11005701

CALDAIA CAFFE'
ASS. CALDAIA ALL TUBOLAME STD C1
1300W / 230V — cod. 11009778
1300W / 120V — cod. 11009778
1100W / 100V — cod. 11012032

Tubo silicone 5x10 — 60 Sh. — L=70 mm.
cod. 229369400

Forcella per tubo d=4
cod. 9011.144

AL TUBO VAPORE / ACQUA CALDA

ASSEME TUBO VAPORE MY89
cod. 11013244

Fascetta Oetiker
cod. NF11.052

Raccordo 90° tubo vapore
cod. 11013532

Tubo D=6.5 — Sp.=2,5 — L=10 Nero
cod. 11021903

OR 2015 Silicone/PTFE FDA
cod. 140328059

CALDAIA VAPORE
ASS. CALDAIA ALL TUBOLAME STD C1
1300W / 230V — cod. 11009778
1300W / 120V — cod. 11009778
1100W / 100V — cod. 11012032

Raccordo 90° uscita pompe
cod. 11001054

OR 2031 Termoli
cod. 140321961

Tubo silicone retinato 5x8,9 — L=210 mm. rosa
cod. 11004051

Raccordo a "T"
cod. 147920300

Asseme tubo teflon 2x4 — L=75 mm + 2 boccole preformato
cod. 11014036

Raccordo per caraffa MY89 nero
cod. 11013462

ALLA CARAFFA LATTE

Asseme tubo teflon 2x4 — L=58 mm + 2 boccole preformato
cod. 11014035

Asseme tubo teflon 2x4 — L=290 mm + 1 boccola c/smusso
cod. 11013913

POMPA CAFFE'
POMPA ULKA EP5/S — EMP/S
GM 230V~50Hz — cod. 12000140
GM 220V~40Hz — cod. 12000182
GM 240V~50Hz — cod. 12000167
120V~60Hz — cod. 12000142
GM 100V~50/60Hz — cod. 12000130

Tubo silicone 5x10 — 60 Sh. — L=160 mm. rosa
cod. 228367900

OR 2015 Silicone/PTFE FDA
cod. 140328059

Tubo silicone retinato 5x8,9 — L=240 mm. rosa
cod. 11000756

Raccordo ingresso pompa a 90°
cod. 147920150

POMPA VAPORE
POMPA ULKA MF
230V~50Hz — cod. 12001212
220V~50/60Hz — cod. 12001348
240V~50Hz — cod. 12001349
120V~60Hz — cod. 12001346
100V~50/60Hz — cod. 12001347

ALLO SCARICO
SU PROTEZIONE
EMULSIONATORE

OR 2015 Silicone/PTFE FDA
cod. 140328059

Tubo silicone retinato 5x8,9 — L=330 mm. rosa
cod. 11004554

Tubo silicone 5x10 — 60 Sh. — L=90 mm.
cod. 229369400

ASSEME VALVOLA EMULSIONATORE MY89
cod. 11013165

Molla stringitubo D=9,5 zincata giallo/bianca
cod. 184320000

Raccordo ingresso pompa Ulka MF a 90°
cod. 11012193

1/1

CHAPTER 10

ELECTRICAL DIAGRAM