Saeco

Rispetto per il Caffè

Saeco GranAroma

SM648x series
SM658x series

Saeco GranAroma Deluxe

SM668x series

Contents

Important repair instructions

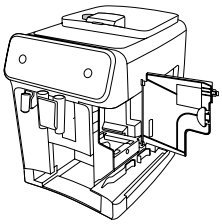
- Only skilled personnel should carry out the repair.
- After repair the appliance should function properly.
- After repair the appliance has to meet the regulatory- and safety requirements that were applicable at the time of release of the model.
- After repair the appliance always has to be tested for electrical safety according VDE 0701-0702 and for medical products IEC 62353.

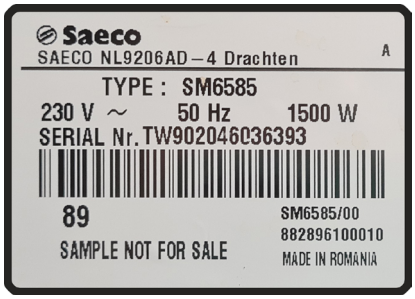
General information

Technical information

- Voltage : 220 - 240 V
- Frequency : 50 - 60 Hz
- Power consumption : 1500 W
- Standby power consumption: 0.25 W
- Auto shut-off time : 15 min
- Capacity water tank : 1.8 litres removable
- Capacity coffee bean : 300 g
- Capacity Milk Carafe : 600 ml
- Capacity Coffee grounds : 12 pucks
- Cord lengh : 1.2 m
- Pump pressure : 15 bar
- Adjustable spout height : 87 - 147 mm
- Weight and dimensions:
  -Weight of product : 8.5 - 9 kg
  -Dimensions of product : 262 x 383 x 448 mm (WxHxD)

Production date (or serial number)





Maintenance products

·	Descaler	996530067222
·	Jar of Grease 1Kg	421945054671
·	Jar of Grease 250g	421945054681
·	Silicone grease	996530045784

Optional (accessories)

- AquaClean water filter CA6903
- Descaling solution CA6700
- Brew group grease HD5061
- Coffee oil remover tablets CA6704

General information

Overview

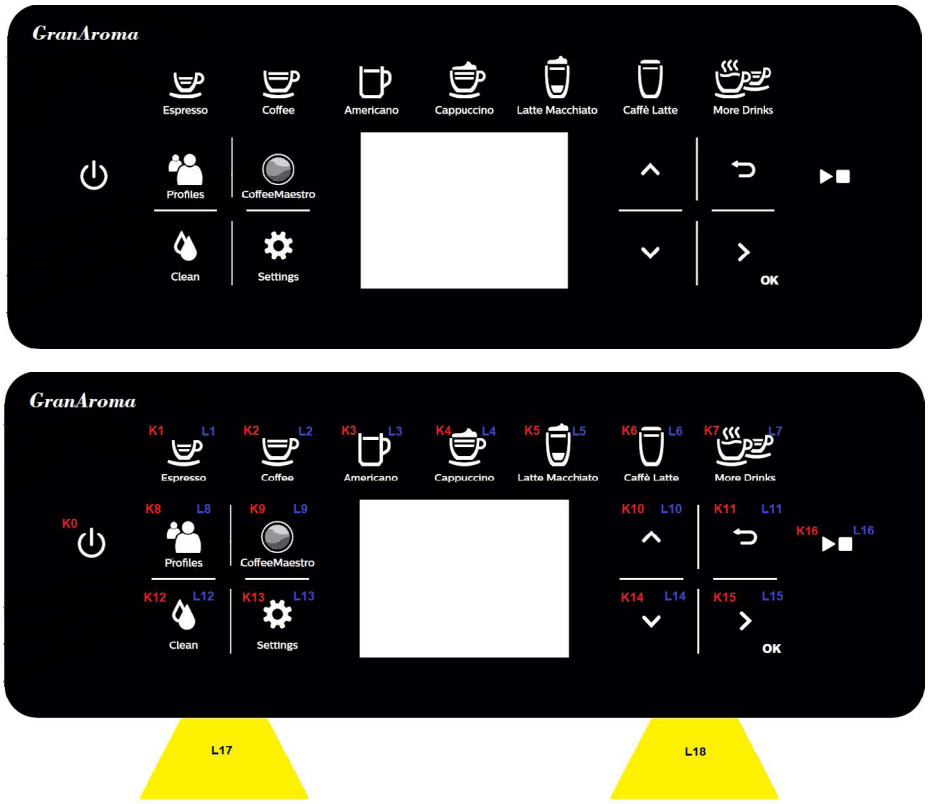
Series SM6480x

Series SM6580x

Series SM668x

General information

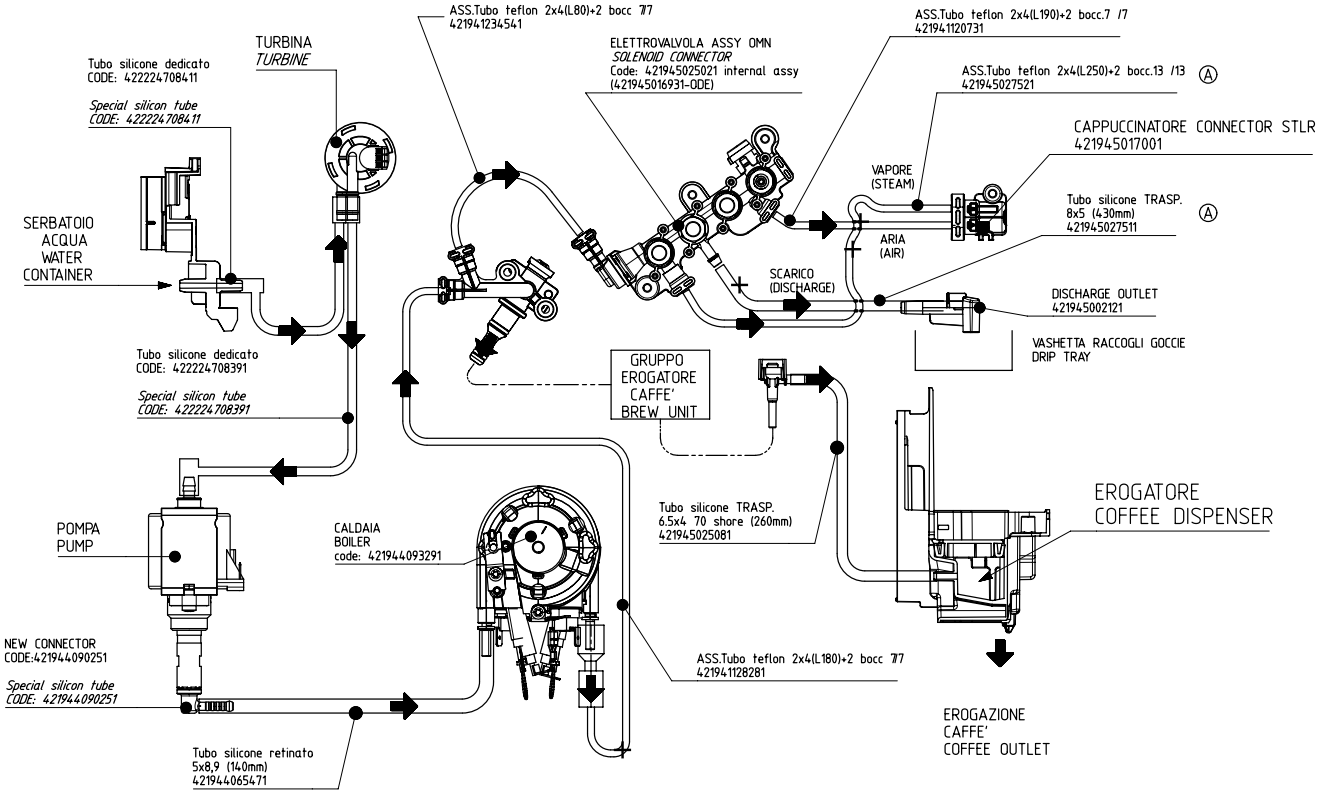
Series SM6480x



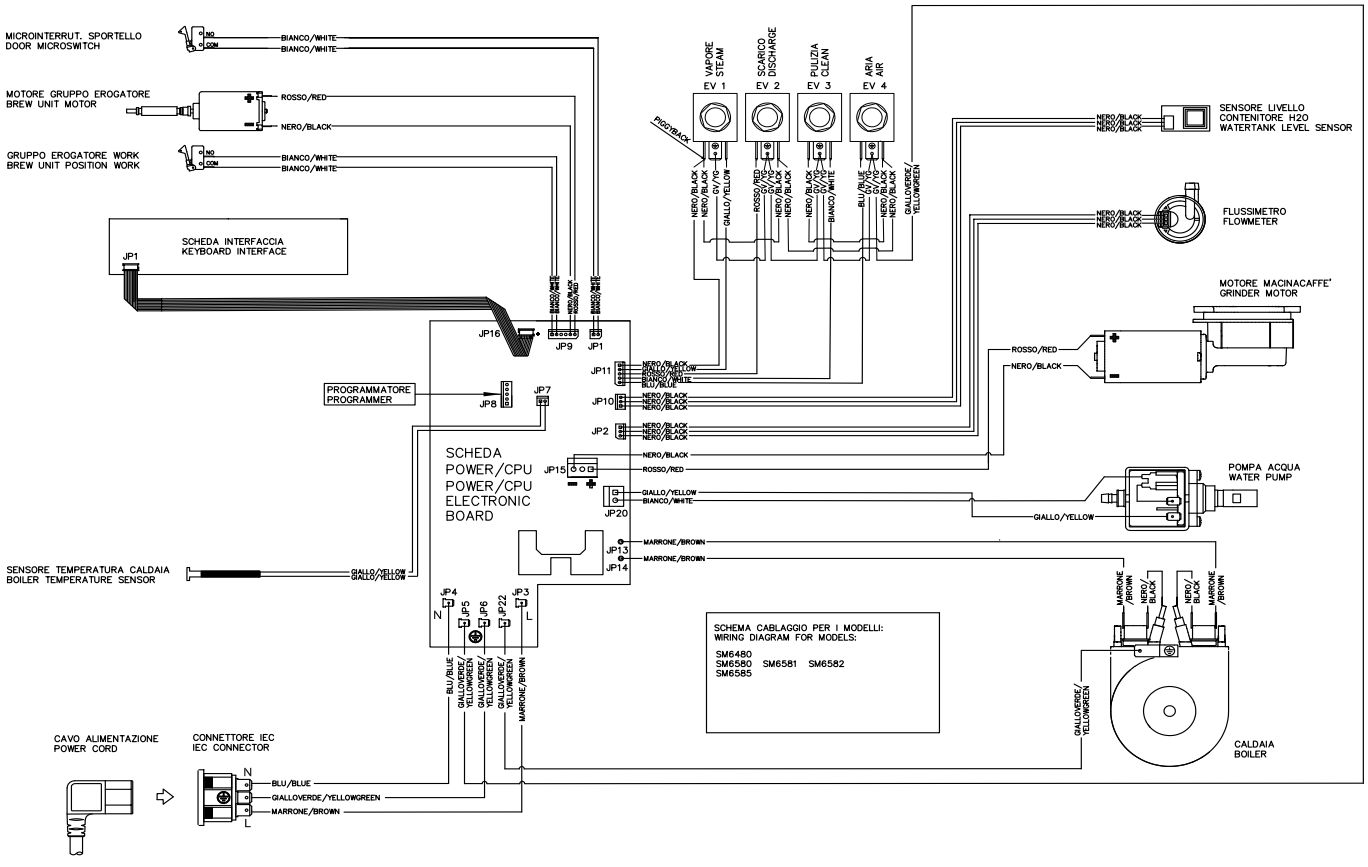
Series SM6580x

Technical information

Water circuit



Electric circuit



Saeco GranAroma / Saeco GranAroma Deluxe

Technical information

Coffee and machine specifications (Only for Saeco GranAroma)

Drinks	Min. qty (ml)	Default qty (ml)	Max. qty (ml)
Ristretto	20	30	40
Espresso	30	40	70
Espresso lungo	60	80	180
Coffee	90	120	220
Caffè Crema	110	140	220
Americano (Coffee+Water)	30 (60)	40 (80)	90 (120)
Espresso macchiato (Coffee+Milk)	30 (20)	40 (30)	70 (60)
Cappuccino (Coffee+Milk)	20 (90)	40 (120)	80 (210)
Flat white* (2xCoffee+Milk)	30x2 (60)	40x2 (80)	70x2 (140)
Caffè latte (Coffee+Milk)	30 (80)	60 (140)	90 (340)
Cafè au lait (Coffee+Milk)	50 (50)	90 (90)	150 (150)
Latte macchiato (Coffee+Milk)	20 (80)	40 (200)	80 (340)
Italian Cappuccino	20 (90)	40 (120)	80 (210)
Travel mug* (2xCoffee)	120x2	120x2	180x2
Milk froth	40	180	320
Hot water	100	150	300
Warm milk	40	180	320
*only available for SM6582 and SM6585			

Technical information

Coffee and machine specifications (Only for Saeco GranAroma Deluxe)

Drinks	Min. qty (ml)	Default qty (ml)	Max. qty (ml)
Ristretto (Coffee)	20	40	60
Espresso (Coffee)	30	60	90
Verlangerter (Coffee+Water)	20 (20)	60 (40)	80 (60)
Espresso lungo (Coffee)	60	120	180
Espresso doppio (2xCoffee)	30x2 (60)	120	90x2 (180)
Coffee (Coffee)	100	120	220
Caffè Crema (Coffee)	100	120	220
Americano (Coffee+Water)	20 (40)	60 (120)	80 (160)
Kleiner brauner (Coffee+Milk)	20 (10)	50 (60)	70 (70)
Espresso macchiato (Milk+Coffee)	30 (20)	40 (50)	70 (70)
Café cortado (Coffee+Milk)	20 (10)	50 (60)	70 (70)
Großer brauner (Coffee+Milk)	40 (10)	40 (60)	80 (70)
Melange (Milk+Coffee)	50 (50)	60 (60)	110 (110)
Cappuccino (Milk+Coffee)	20 (90)	60 (120)	80 (210)
Flat white (Milk+2xCoffee)	20x2 (40)	60 (120)	70x2 (160)
Caffè latte (Coffee+Milk)	20 (80)	60 (260)	80 (340)
Cafè au lait (Coffee+Milk)	50 (50)	130 (130)	180 (180)
Grand crème (Coffee+Milk)	50 (50)	130 (130)	180 (180)
Latte macchiato (Milk+Coffee)	20 (80)	60 (260)	80 (340)
Milk froth (Milk)	40	240	280
Hot water (Water)	60	360	420
Warm milk (Milk)	40	240	280
Galao (Coffee+Milk)	20 (60)	50 (180)	70 (240)
Italian Cappuccino (Coffee+Milk)	20 (180)	50 (180)	70 (240)
Travel mug (2xCoffee)	120x2	120	180x2

Technical information

Coffee grounds drawer	Description and values
Time-out for coffee grounds drawer	5 seconds
Reset dreg counter	Dreg emptying alarm, if the coffee grounds drawer is removed for more than 5 seconds.
STANDBY	**Description and values**
Time (default)	30 minutes
Time programmed by Consumer/Service	15min - 180min
Boiler temperature during Standby	Boiler OFF
WATER TANK	**Description and values**
Water reserve (pulses) with water filter	40 ml (80 pulses)
Water reserve (pulses) with no water filter	40 ml (80 pulses)
Water reserve modifiable by Production/Service departments	NO
“Fill tank” alarm	YES
Connect to water mains	NO

Specific tools and equipment

Description	Notes
Flathead screwdriver	# 0, # 2
Torx screwdriver	(T10)
Pliers for Oetiker clamps	
Digital Thermometer	Type K (accuracy for temperature of 0,05 % or ± 0,3°C)
Temperature probe	80PK-22 (80AK-A Thermocouple adapter required)
Scale	KERN EMB 500-1 or comparable device with a base accuracy of 0,05 % or ± 0,5 g
Power meter	Voltcraft EnergyCheck 3000 or comparable device with a base accuracy of 1 % or ± 5W
Stopwatch	Basic model
Serkit	Tool needed for programming with our service tool
EP series cable	Cable for Philips EP1200-2200-3200 series
EPSC (Espresso Philips Service Center)	Tool used to flash the SW on the machines (for SW upgrade and diagnostics mode). Refer to SDA_114585

Technical information

Specification for the measurement of the coffee products temperature

Before measuring the in-cup temperature make sure the following conditions will be met:

Conditions:

a) Water temperature in tank: 23°C (+/-2°C).
b) Use a plastic cup (see picture 1).
c) Use a digital thermometer (see picture 2) (e.g. type K probe diameter max 2mm (see picture 3).
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.

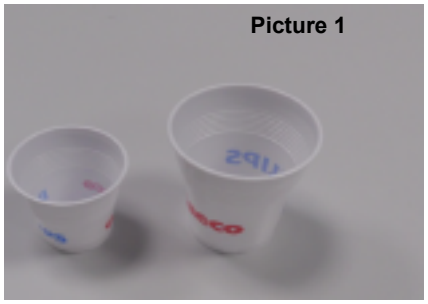
Procedure:

1. Place the plastic cup under the dispensing spout. (picture 1)
2. Dispense coffee
3. Measure the temperature immediately after coffee has being dispensed, you need to finish the measurement within 12 seconds. The temperature in the cup is measured by placing the probe of the thermometer in the cup near the bottom. Then stir the probe in the cup for 5 to 6 times and read out the thermometer values during stirring. Hold the probe still in the center of the cup.
4. Record the highest value.

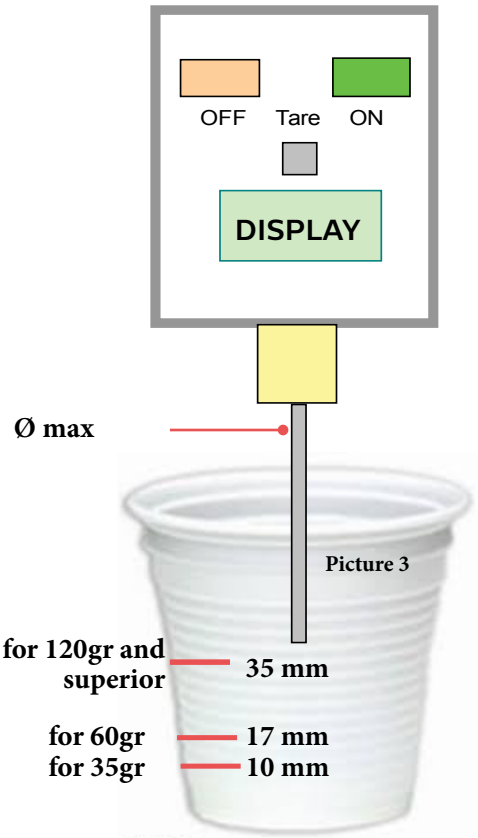
Depending on the coffee volume selected to measure, you would need to position the probe on several height levels to measure the correct temperature in the plastic cup.
10mm for 35gr - 17mm for 60gr - 35mm for 120gr (see Picture 3).

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

Coffee Q.ty 120 gr.
Temperature of 1st product 72°C ≤ 85°C


Picture 1


Picture 2



Picture 3

Technical information

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.

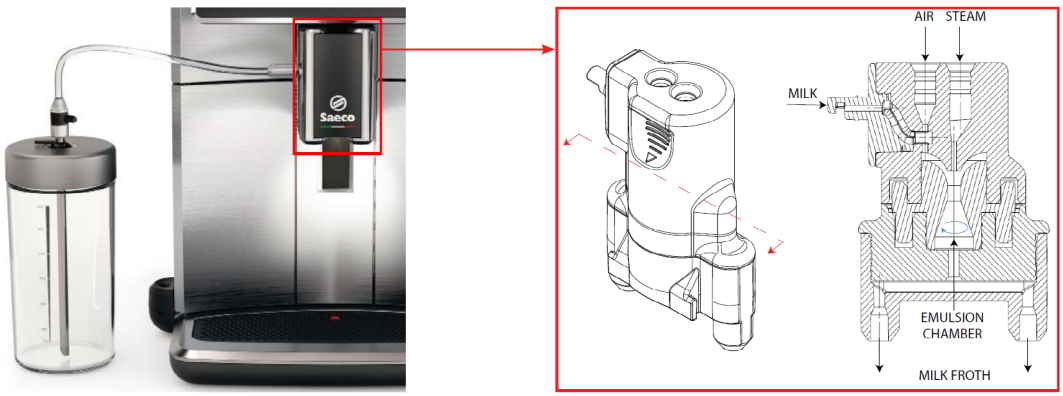
Parameters to be respected:

The parameters to be respected are: milk temperature and height of the cream.

Milk temperature in the beaker:

With milk at Trefr. (about 4-10 °C): ≥ 40

1. The milk is heated in the first chamber of the cappuccinatore thanks to the steam.
2. Then, it is mixed with air and frothed in the middle chamber.
3. Finally, in the outlet chamber, the 'typhoon effect' perfects the milk texture by removing the large bubbles.



Height of the milk cream in the beaker:

Automatic system: Cappuccinatore ≥ 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 nonmetallic 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. The measurement has to be taken at 10mm from the bottom of the beaker. Stir the milk before measuring to keep a constant temperature.

Technical information

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 Trefr..

Automatic System: Carafe, Cappuccinatore

After setting the machine to brew of 100gr. of product:

1. Launch the "milk froth" 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 Trefr.

In case the machine allows modify of the emulsion through the menu, use the machine with 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

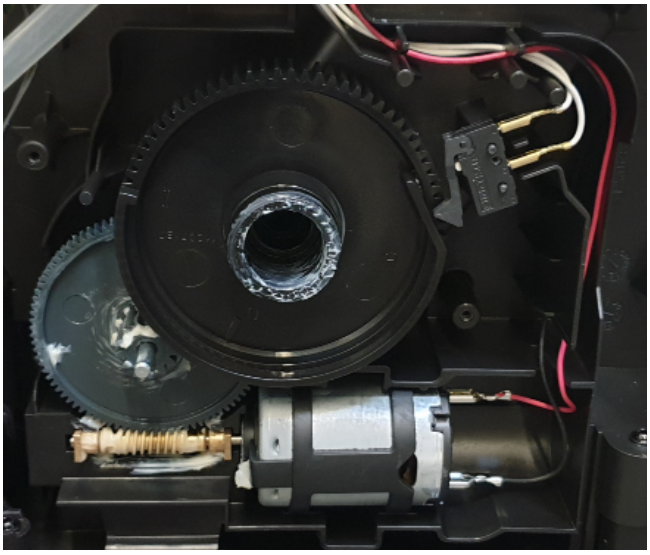
To verify the height of the cream, a practical example is to add to dispensed product a small amount of coffee. The addition of coffee immediately highlights the surface of separation between liquid and cream.

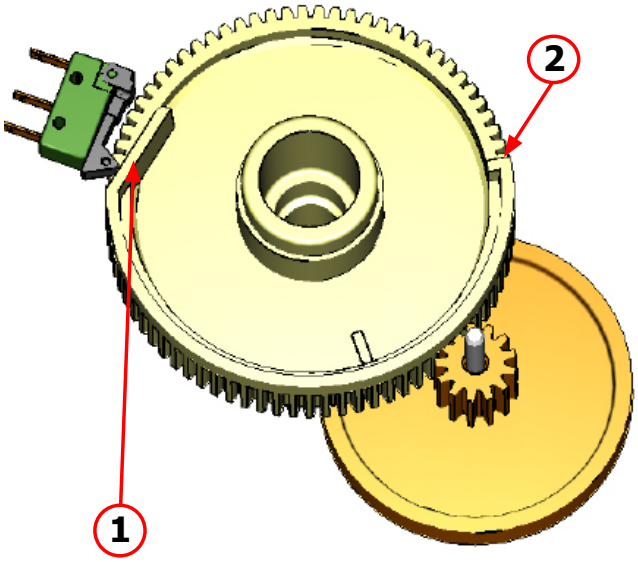
Technical information

Operating logic

Switching on

When the machine is switched on, the gear motor repositions itself as follows:
- It acts on microswitch 1
- The gear motor changes its rotation direction and moves upwards again by approx. 1-2 mm.
- The boiler begins to heat the water for approx. 45 sec, in order to reach the optimal temperature (established by the software).





The gear motor is powered by a direct current motor that engages with the smaller double toothed wheel using a worm screw. The unit is mounted on the axle of the large gear wheel and when a coffee is requested, it moves from the standby position to the dispensing position, and then back to the standby position again. The microswitch indicates to the gear motor when the brew group is in the work position or home position.

- Standby position: 1
- Dispensing position: 2

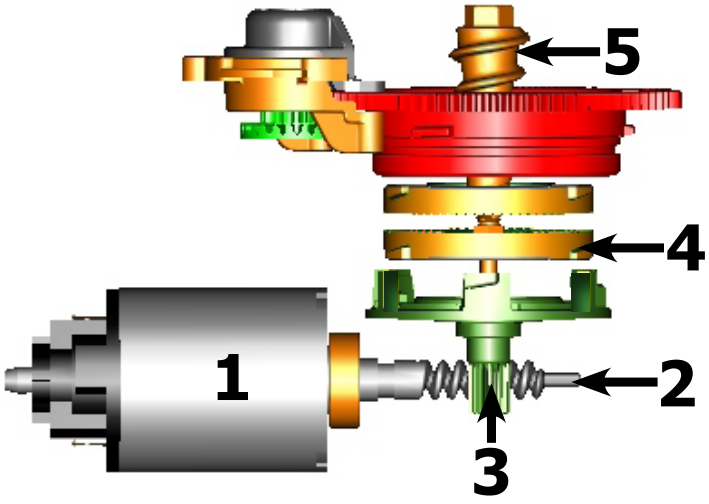
Temperature sensor (adjustment)

Temp. (°C)	R nom (kΩ)	ΔR (+/- %)
20	61.465	4.0
50	17.617	3.1
75	7.214	2.4
80	6.121	2.3
85	5.213	2.2
90	4.459	2.1
100	3.3	1.8
125	1.653	2.4
150	0.893	2.8

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

Technical information

Coffee grinder



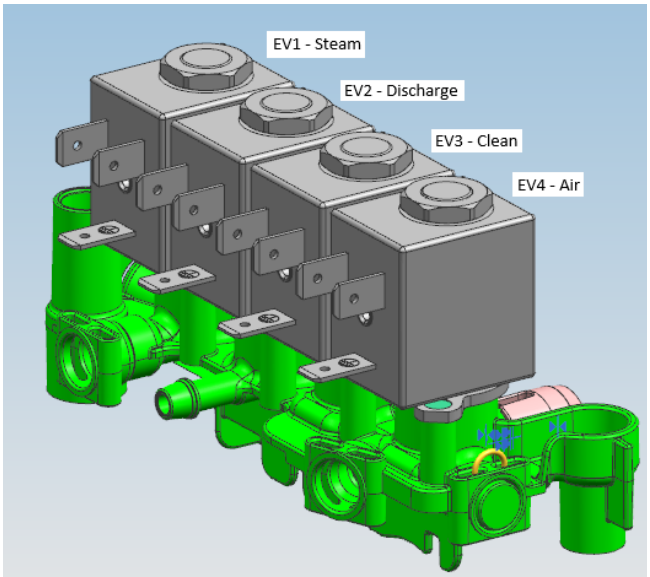
The coffee grinder is driven by a direct current motor (1) using a worm screw helicoidal wheel transmission (2). The worm screw (2) drives a plastic gear wheel (3), which turns the lower grinder (4) and the increment pin (5)

Coffee grinder blocked

When the coffee grinder is working, the software monitors the current consumption. If the current value is very high, the machine concludes that the coffee grinder is blocked; instead, if the current value is in the middle, the machine concludes that all is ok and it goes on to do the product.
Because the current consumption of grinder changes depending on the situations (motor new or old, cold or hot, coffee blends, etc.), these current targets are not static, but dynamic.

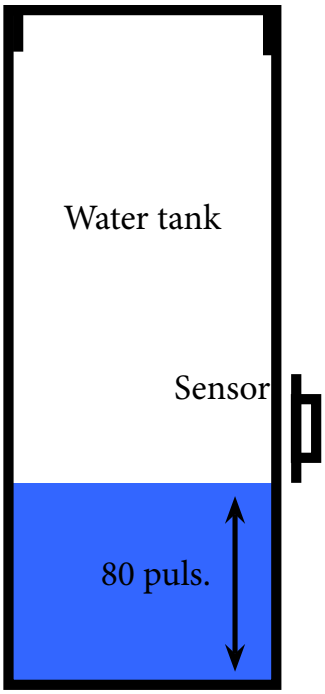
Technical information

Electrovalves



The EV assy is a critical spare part component because it's assembled and tested in production. For this reason only the whole assembly is available as a spare part, not the singular components.
Pay close attention when replacing this assembly:

1. The component should not come into contact with powders or coffee powders;
2. Remove it from the packaging only when it is to be mounted in the machine;
3. Handle with gloves;
4. It is not advisable to cannibalize the individual parts of the assembly.



"Water low" message (water reserve)

Function:
The water level is monitored by a capacitive 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 above mentioned level, a water reserve remains available for the dispensing process underway (this will cover 80 flow meter 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.

Technical information

AquaClean water filter

The AquaClean filter is designed to reduce limescale deposits in the coffee machine and provide filtered water to preserve the aroma and flavor of each cup of coffee. By using a series of 8 AquaClean filters, there is no need to descale the machine for 5000 cups (It depends both on the type of coffee used, rinsing and cleaning programs).

We recommend installing the water filter AquaClean the first use of the machine to the maximum before using 5 L of water. The machine display will indicate when the filter needs to be replaced. The maximum limit is equivalent to 110 L of water.

The conditions related to the filter work environment (water, therefore, an active environment for bacteria and microorganisms), require the replacement with a minimum frequency (we suggest 3 months from the activation to ensure the best performance). The filter starts' working from the time is filled with water and continues working even with the machine off. It cannot be deactivated manually, as it must end its life cycle.

At the filter activation the display shows the icon with the percentage of use:

- Initially 100% then decreasing.
  When the autonomy of the current filter becomes less than 8 L of water the display shows:
- The icon flashing slowly. It means 10%.
  When the autonomy of the current filter becomes less than 2 L of water the display shows
- The icon flashing quickly. It means 0%.
  After a maximum of 110 L of water supplied the flashing light turn off and the machine needs to be descaled.

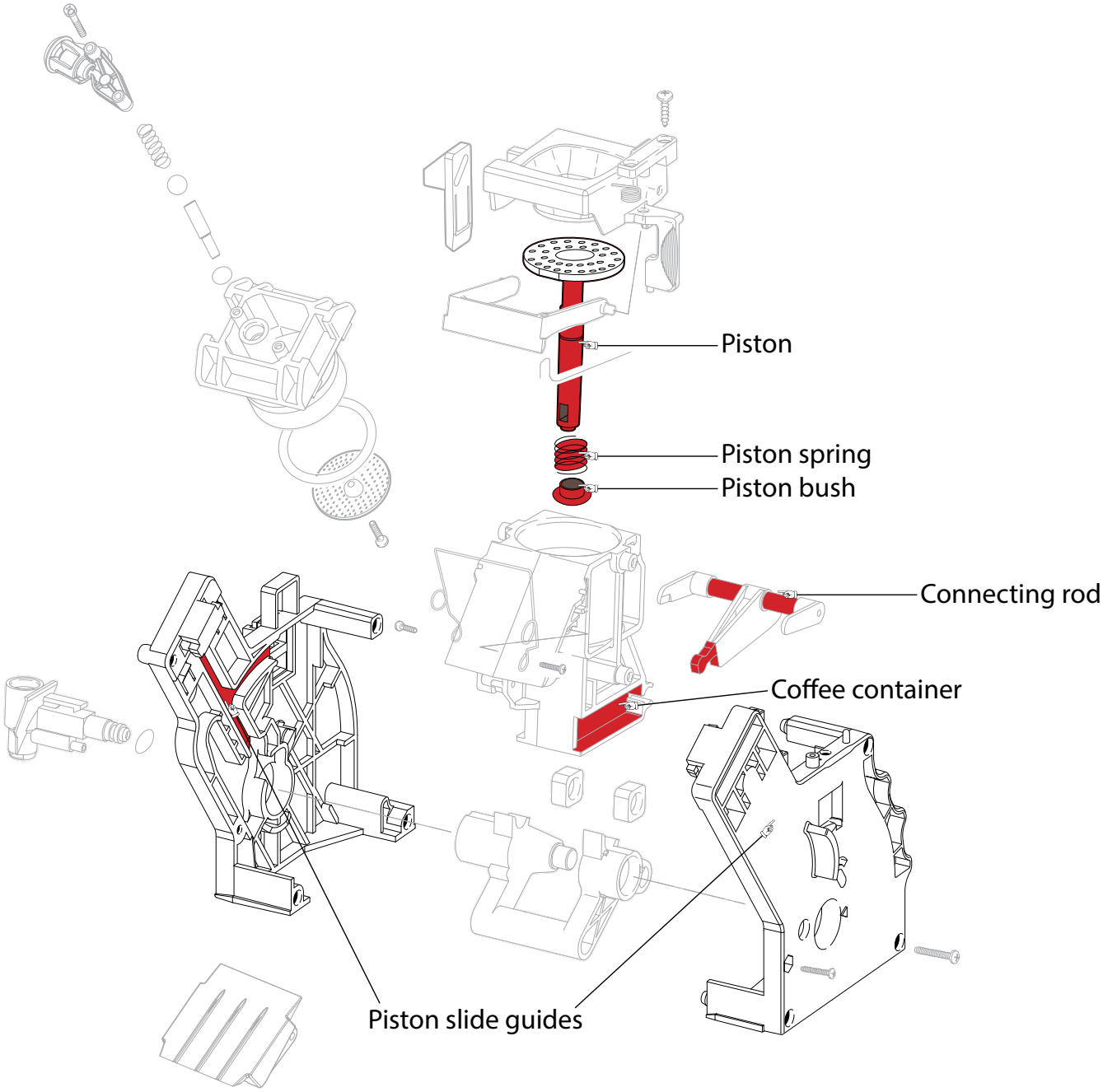
Descaling request

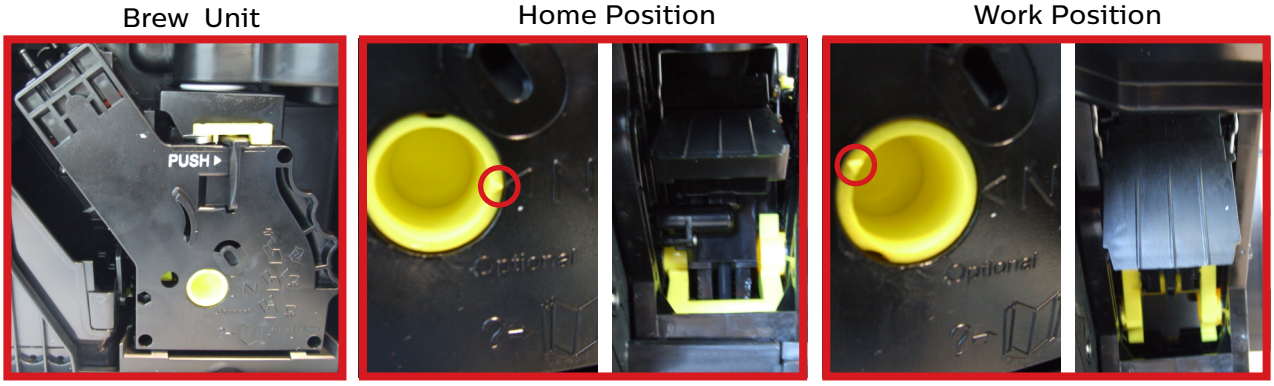
Descaling frequency in AQUACLEAN					
The first activation must make before you've paid up to 5000ml products because mind thinks as if he had the filter					
Hardness	**Filter number**	**Percentual on display 10% the icon flashes slowly. (encourage the consumer to buy the filter)**	**Percentual on display 0% the icon flashes quickly. (tell the consumer to change the filter)**	**MAX Quantity water, the icon turns off. (repla-ce filter)**	
Indifferent	From 1/8 to 7/8	8050ml	2000ml	110000ml	Replace filter (you can not turn off)
	8/8				Descaling

If after descaling or after the use of a filter this is not reactivated , the machine recognizes the water hardness setting and calculates as in the table below			
Descaling cycle frequency			
Hardness	**WATER HARDNESS**	**Without water filter**	**Not reactivating the filter**
1	Soft (up to 7°dH)	240 litres (480,000 pulses)	210 litres (420,000 pulses)
2	Medium (7° - 14°dH)	120 litres (240,000 pulses)	105 litres (210,000 pulses)
3	Hard (15° - 21°dH)	60 litres (120,000 pulses)	52.5 litres (105,000 pulses)
4	Very hard (over 21°dH)	30 litres (60,000 pulses)	26.25 litres (52,500 pulses)
The default water hardness level is 4. Each litre of water corresponds to approximately 2,000 pulses.			

Technical information

Brew Unit mainteinance - where to grease and positions





Disassembly – and Reassembly advice

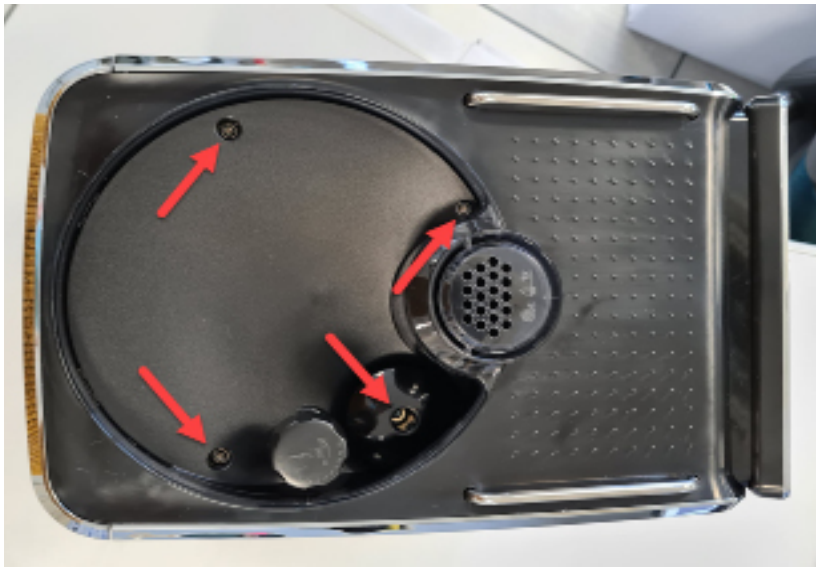
Before you start dismantling!

⚠ *For your safety be sure the plug is disconnected from the mains!*

The product is designed for easy access to the internal components. Make sure that all accessories have been removed.

Removal of the housing:

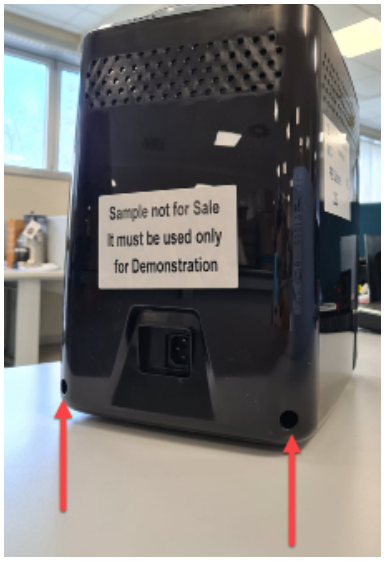
1. Make sure the power cable is unplugged.
2. Take out the four screws and pull up the upper cover.



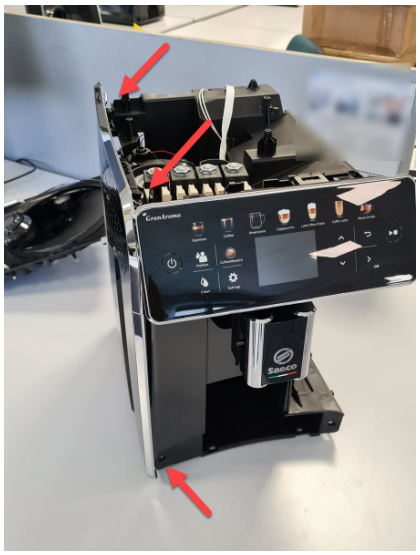
Disassembly – and Reassembly advice

3. When assemby the finger-protection screw make sure to use torque force 1.2±0.1 Nm". Also Make sure to mount the finger protector as shownin the picture.

4. Take out the two screws in the back panel and remove it.



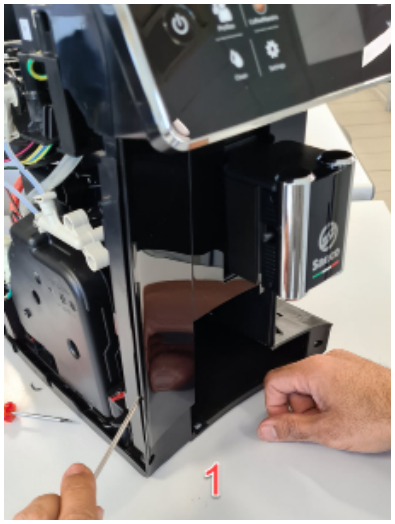
5. To remove the two laterals panel take out 3 screws from left and 2 screws from right panel.



Disassembly – and Reassembly advice

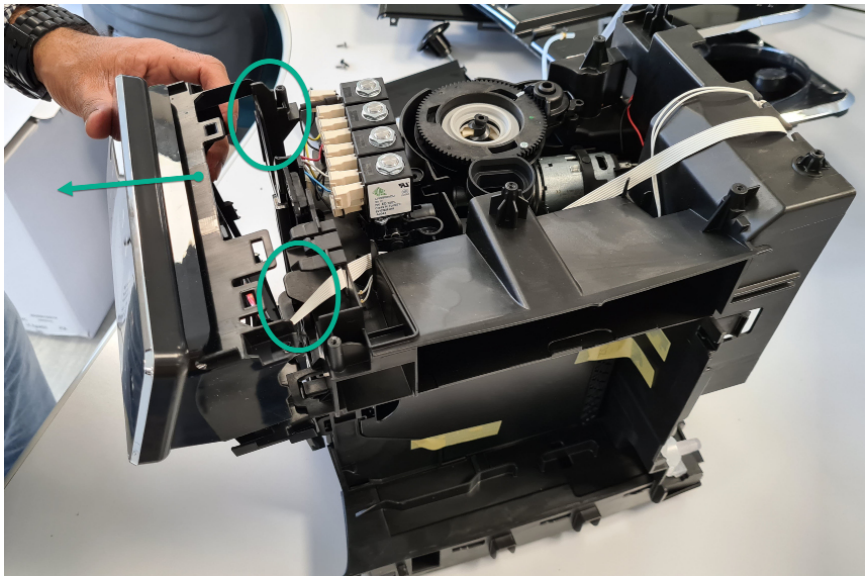
Removal of the Coffee and Water spout

1. To remove the front panel start at the lower snap (1), then press the 2 hooks (in green circle) to release the panel (2).



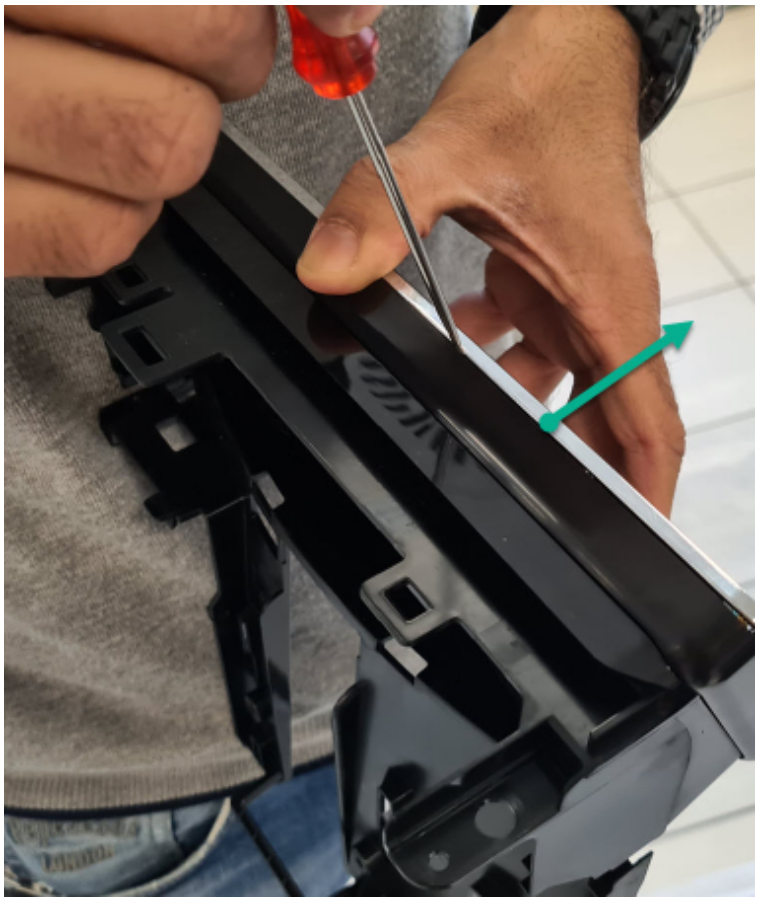
2. Pull down the coffee spout, then remove the pipe.
3. Take out the 2 screws.

4. Unsnap the click (as shown in green circle) and pull the front case cover to remove it (some force is needed).



Removal of the UI

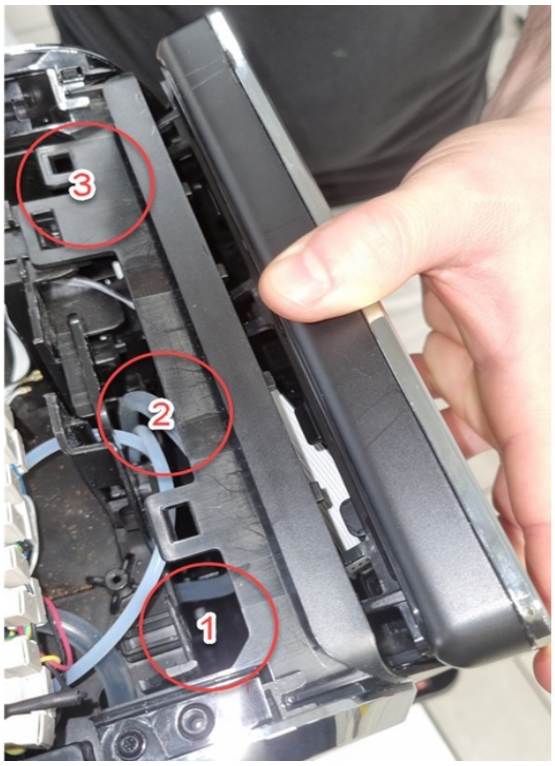
1. Using a screwdriver cover with a bit of paper unlock the frame from the panel.

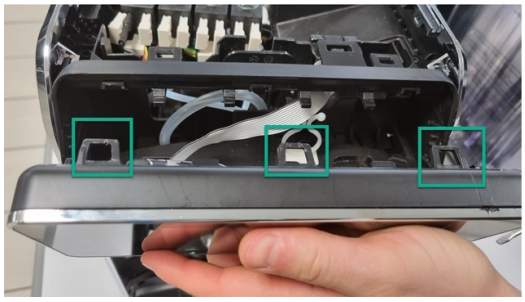


Disassembly – and Reassembly advice

Removal of the UI (GranAroma Deluxe only)

1. With a screwdriver unsnap the hooks behind the UI starting from the top left (1) , then top center (2), continue with top right (3), then unsnap the hook from the bottom left side and pull towards yourself.



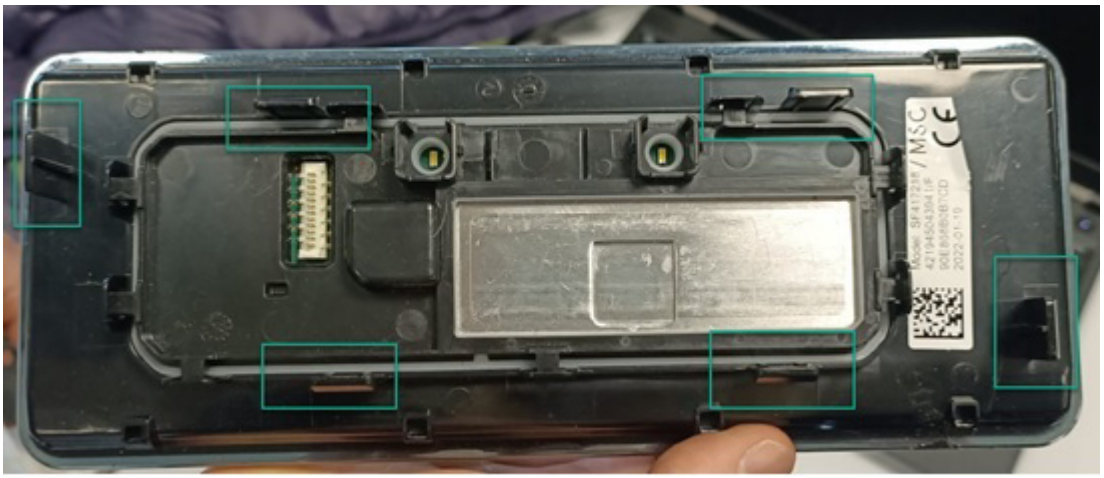


2. Disconnect the flat cable.

Disassembly – and Reassembly advice

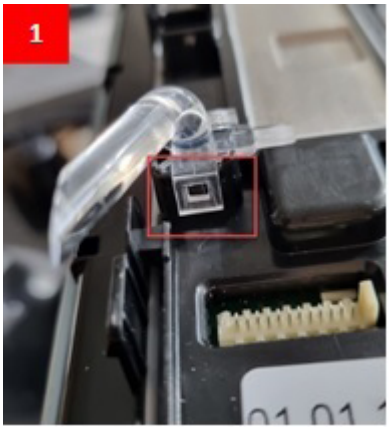
How to remove the UI frame (GranAroma Deluxe only)

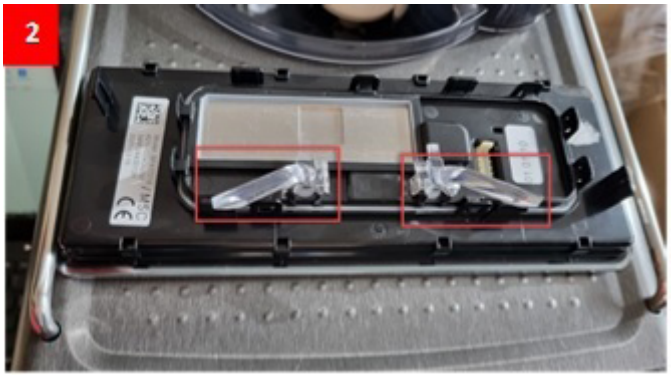
Unsnap the hooks between the UI and the frame, then remove the frame.

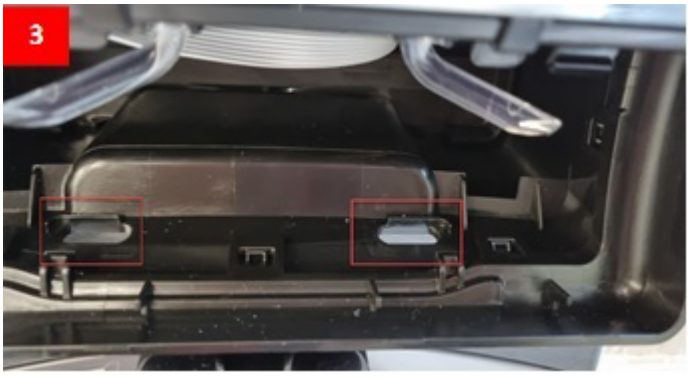


How to insert the lightguide:

Insert the lightguide by matching the black hooks with the transparent ones (pic.1) with the ends facing down (pic.2) in order to match the holes in the structure (pic.3).



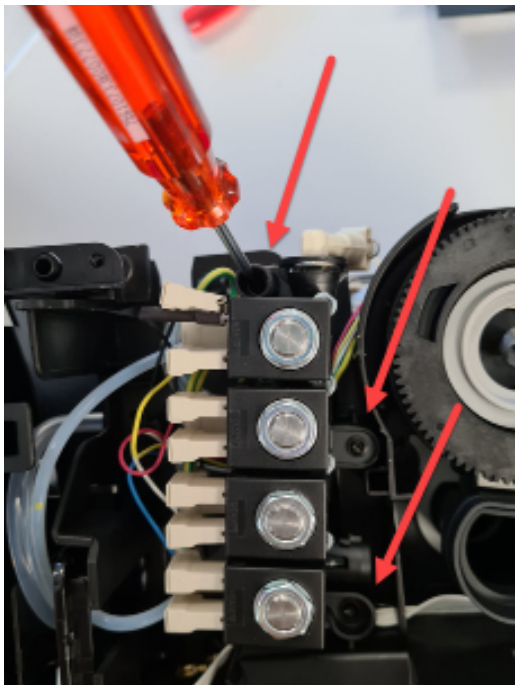




Disassembly – and Reassembly advice

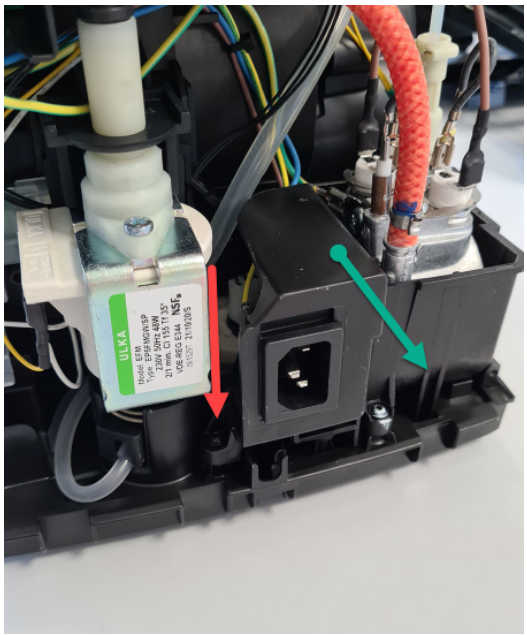
Removal of the Electrovalves

1. Take out the 3 screws, then remove all the pipes



Removal of the IEC Connector

1. Remove the screw as shown in the picture, then you are free to unlock it and to remove the connection.



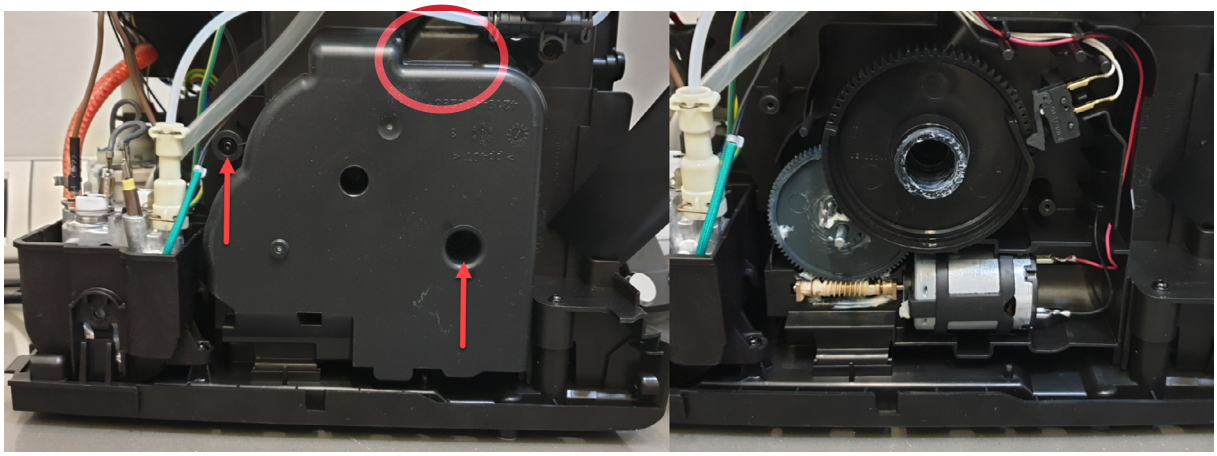
Removal of the Grinder

1. Pull out the grinder assy
2. Remove the electric connections

Disassembly – and Reassembly advice

Removal of the Gear motor

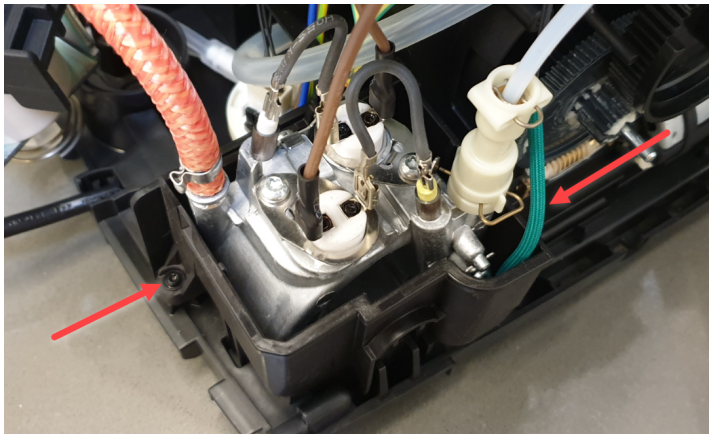
1. Take out the brew unit motor cover removing the 2 screws



Be aware there is an empty hole (in the red circle). Do not insert any screw inside

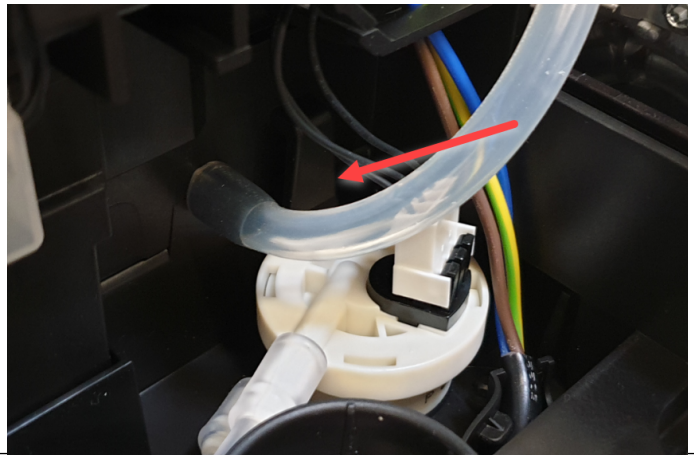
Removal of the Boiler

1. Remove all the electrical and water circuit connections
2. Take out the 2 screws from the boiler support.



Removal of the Flowmeter

1. Remove the electric connection
2. Press on the holder to pull out the flowmeter, then remove water connections.

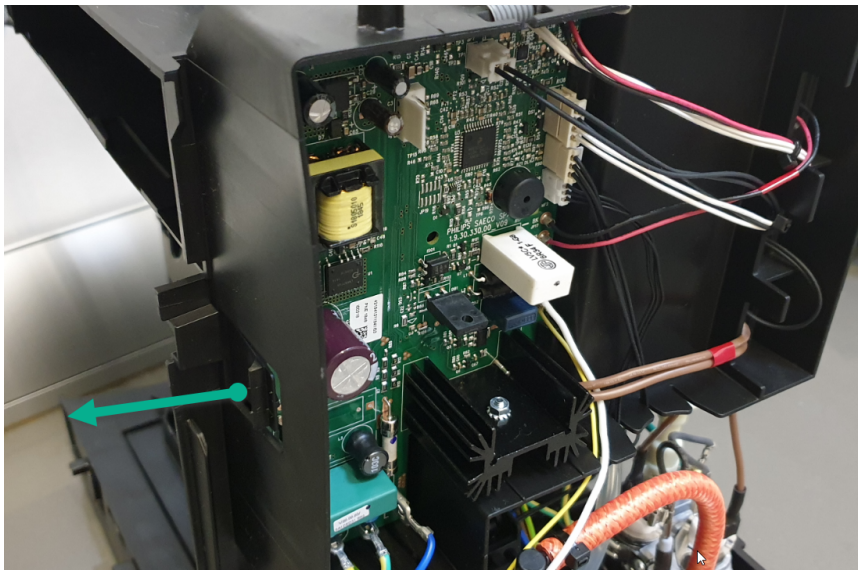


Disassembly – and Reassembly advice

Removal of the Mainboard

1. Remove all the electric connections
2. Keep pressing on the left holder to be able to release the board.

To completely remove the mainboard from the appliance, disconnect all fixed wires from their destination component.



Removal of the Pump

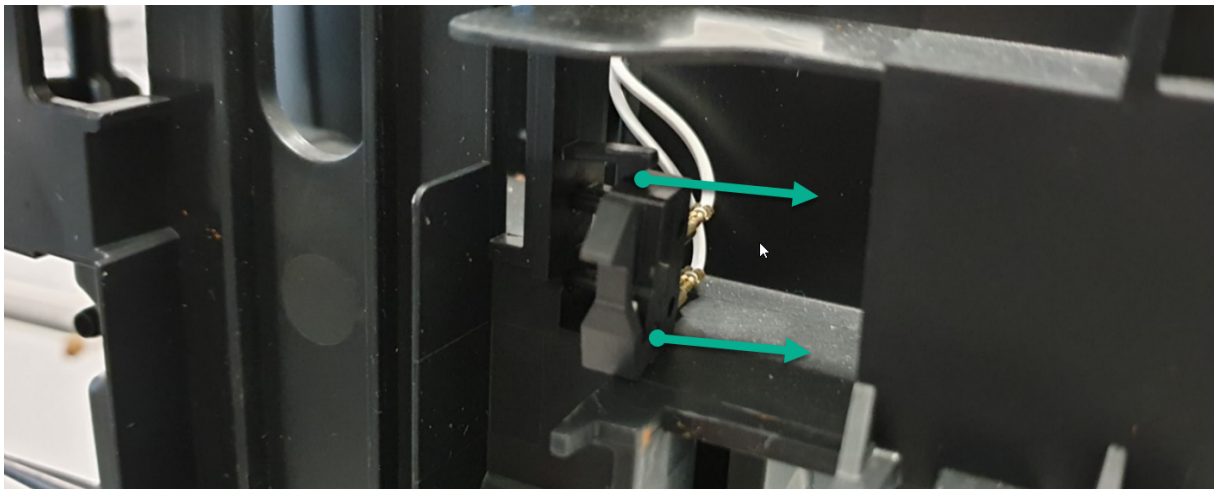
1. Pull the pump holder to the right
2. Remove all the connection

When reassembling the pump, ensure to use hot melt to fix the thermal fuse.

Disassembly – and Reassembly advice

Removal of the Microswitch

1. To remove the microswitch please take extra care, slowly pulling it out from its place, then remove the connections.



Test mode

Introduction (Only for Saeco GranAroma)

Test mode is used to test the machine in its mechanics and electronic components

How it works

The machine enters in test mode by pressing in sequence K15 - K10 - K11 - K14 in the first two seconds after switching on the machine by mean of the main switch on the backside of the CA.

Series SM6480x

Series SM6580x

Test mode

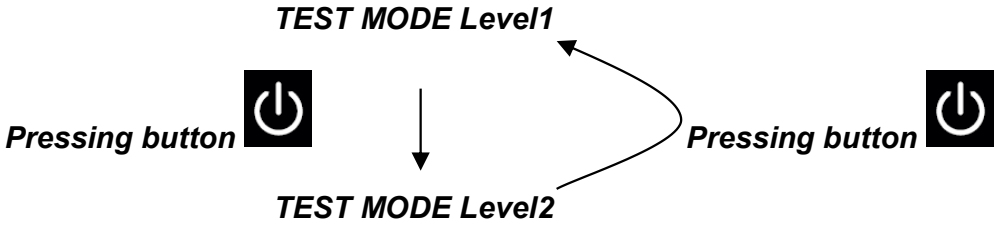
There are 3 different levels, in each level the coffee-machine can execute different commands,

- **Level 1:** In this level the operator can
    1. test all the Buttons and Leds activation and color:
        a. Buttons : K1, K2, K3, K4, K5, K6, K7, K8, K10, K11, K12, K13, K14, K15, K16.
        b. Leds :L1(W), L2(W), L3(W), L4(W), L5(W), L6(W), L7(W), L8(R), L8(G), L8(B), L10(W), L11(W), L12(W), L13(W), L14(W), L15(W), L16(W), L17(W), L18(W).
    2. Check the version of the UI SW.
    3. Check the version of the Main SW.
    4. Check the version of the UI Boot.
    5. Check the version of the Main Boot.
    6. Check the frequency of the net (50 Hz, 60 Hz).
    7. Check the voltage of the net (120 V, 230 V).
    8. Check the buzzer sound.

- **Level 2:** In this level the operator can:
    1. Test all the loads:
        a. Move the Brew Unit upward and downward.
        b. Open/Closed the EVs.
        c. Start the Pump.
        d. Start the Heater.
        e. Start the Grinder.
    2. Test all the sensors:
        a. Microswitch door activated/not activated.
        b. Microswitch BU position (work/home) activated/not activated.
        c. Hall sensor water level activated/not activated.
        d. Flowmeter
        e. NTC
    3. Execute special functions:
        a. Steam-out (see dedicated documents).
        b. execute the Reset to default (see dedicated document).
        c. Reset of the Error log
        d. Reset of the Grinder parameters.

The user can switch the level by pressing the Button K0.

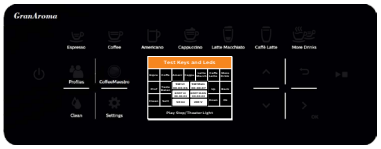
Legend:
(O) = Orange
(B) = Blu
(R) = Red
(G) = Green
(W) = White



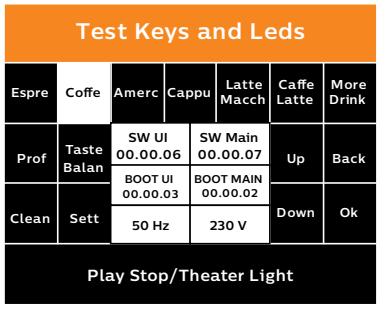
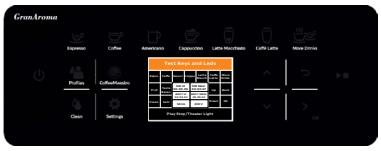
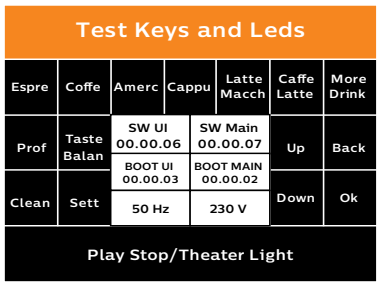
At the start up all loads are turned off. The software allow to have multiple loads active at the same time.

Level 1 (Keys, Buzzer, Leds, SW version, Net frequency, Net voltage)

Start condition: NO BU, No drag drawer, Door open, No Water	UI/DISPLAY STATUS
	On UI: All Leds; On Display: Name of the buttins, all tiles OFF

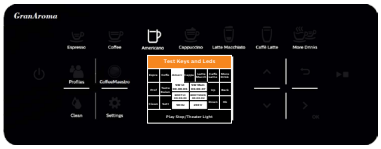
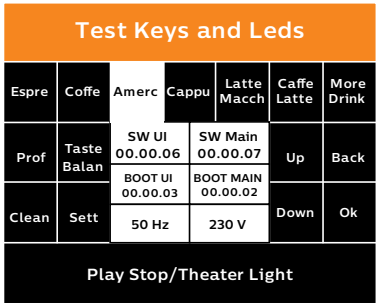
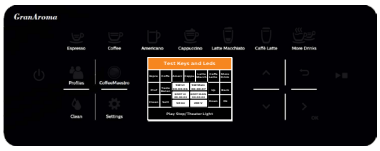
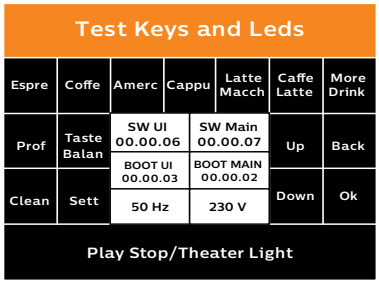
Sequence of actions by user	Reaction of the appliance			
	PASS	**FAIL**	**Cause of failure**	**Solution**
Press button K1	L1 White ON in UI panel + 	L1 OFF & BoxK1 White	L1 damaged	Change UI board
		L1(!W) ON & BoxK1 White	L1 wrong color	Change UI board
		Other Lx toggle	Short circuit in Led	Change UI board
	BoxK1 White in Display + **Test Keys and Leds** Espre / Coffe / Amerc / Cappu / Latte Macch / Caffe Latte / More Drink Prof / Taste Balan / SW UI 00.00.06 / SW Main 00.00.07 / Up / Back BOOT UI 00.00.03 / BOOT MAIN 00.00.02 Clean / Sett / 50 Hz / 230 V / Down / Ok Play Stop/Theater Light	Other BoxKx White	Short circuit in Buttons	Change UI board
	Hear the feedback sound.	It's not possible to hear the sound	The drive of the Buzzer or the Buzzer in the Main is damaged	Change Main Board
		The sound is persistent	The drive of the Buzzer or the Buzzer in the Main is damaged	Change Main Board
	The text on the Tile of the UI panel is equal to the text on the Display	The text on the Tile of the UI panel is different to the text on the Display	Wrong software uploaded in the UI	Change the UI SW
Press button K1 (optional)	· L1 OFF in UI panel +  · BoxK1 OFF in Display + **Test Keys and Leds** Espre / Coffe / Amerc / Cappu / Latte Macch / Caffe Latte / More Drink Prof / Taste Balan / SW UI 00.00.06 / SW Main 00.00.07 / Up / Back BOOT UI 00.00.03 / BOOT MAIN 00.00.02 Clean / Sett / 50 Hz / 230 V / Down / Ok Play Stop/Theater Light			

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td>Press button K1 (optional)</td><td>· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
<tr><td rowspan="6">Press button K2</td><td>L2 White ON in UI panel +
  </td><td>L2 OFF & BoxK2 White</td><td>L2 damaged</td><td>Change UI board</td></tr>
<tr><td></td><td>L2(!W) ON & BoxK2 White</td><td>L2 wrong color</td><td>Change UI board</td></tr>
<tr><td></td><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI board</td></tr>
<tr><td>BoxK2 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The text on the Tile of the UI panel is equal to the text on the Display</td><td>The text on the Tile of the UI panel is different to the text on the Display</td><td>Wrong software uploaded in the UI</td><td>Change Main Board</td></tr>
<tr><td>Press button K2 (optional)</td><td>· L2 OFF in UI panel +
 
· BoxK2 OFF in Display +
 

· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
</table>

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="8">Press button K3</td><td>· L3 White ON in UI panel +
  </td><td>L3 OFF &
BoxK3 White</td><td>L3 damaged</td><td>Change UI boad</td></tr>
<tr><td></td><td>L3(!W) ON &
BoxK3 White</td><td>L3 wrong color</td><td>Change UI boad</td></tr>
<tr><td></td><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>· BoxK3 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI boad</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The text on the Tile of the UI panel is equal to the text on the Display</td><td>The text on the Tile of the UI panel is different to the text on the Display</td><td>Wrong software uploaded in the UI</td><td>Change the UI SW</td></tr>
<tr><td rowspan="3">Press button K3 (optional)</td><td>· L3 OFF in UI panel +
  </td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>· BoxK3 OFF in Display +
 
</td></tr>
<tr><td>· Hear the feedback sound.</td></tr>
</table>

Test mode

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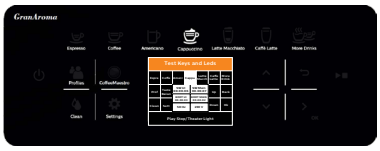
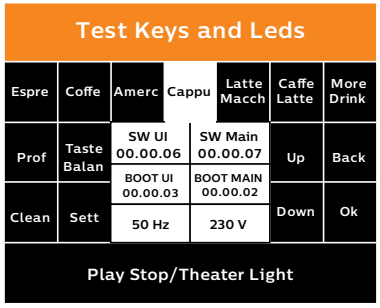
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="8">Press button K4</td><td rowspan="3">L4 White ON in UI panel +
  </td><td>L4 OFF & BoxK4 White</td><td>L4 damaged</td><td>Change UI board</td></tr>
<tr><td>L4(!W) ON & BoxK4 White</td><td>L4 wrong color</td><td>Change UI board</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI board</td></tr>
<tr><td>BoxK4 White in Display +
  </td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
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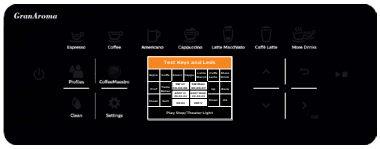
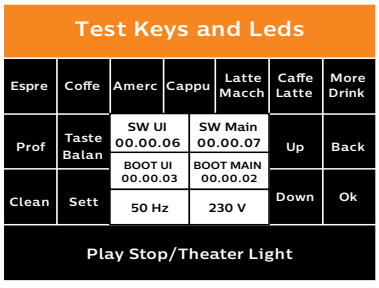
<tr><td rowspan="3">Press button K4 (optional)</td><td colspan="3">· L4 OFF in UI panel +
 
· BoxK4 OFF in Display +
 
· Hear the feedback sound.</td><td></td><td></td></tr>
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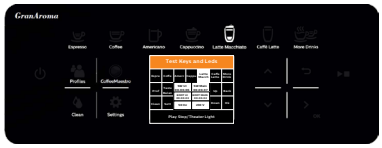
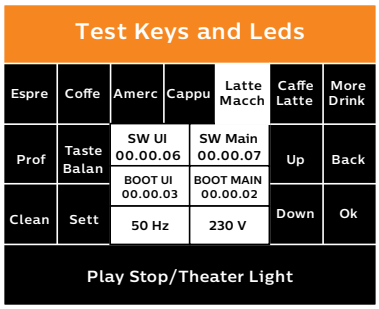
<tr><td rowspan="8">Press button K5</td><td rowspan="3">L5 White ON in UI panel +
  </td><td>L5 OFF &
BoxK5 White</td><td>L5 damaged</td><td>Change UI boad</td></tr>
<tr><td>L5(!W) ON &
BoxK5 White</td><td>L5 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK5 White in Display +
  </td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
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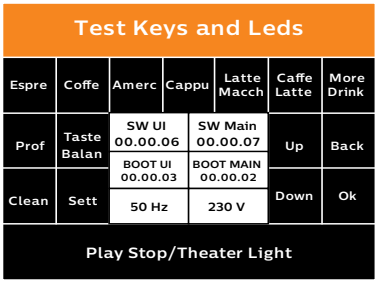
<tr><td>Press button K5 (optional)</td><td>· L5 OFF in UI panel +
 
· BoxK5 OFF in Display +
 
· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
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Test mode

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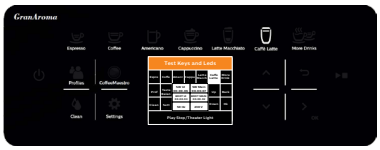
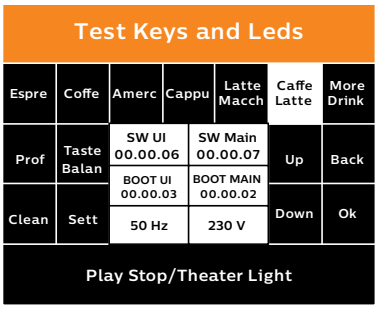
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="7">Press button K6</td><td rowspan="3">L6 White ON in UI panel +
  </td><td>L6 OFF & BoxK6 White</td><td>L6 damaged</td><td>Change UI board</td></tr>
<tr><td>L6(!W) ON & BoxK6 White</td><td>L6 wrong color</td><td>Change UI board</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI board</td></tr>
<tr><td>BoxK6 White in Display +
  </td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
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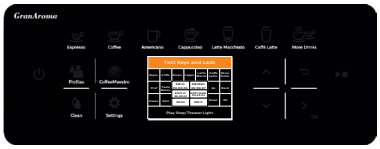
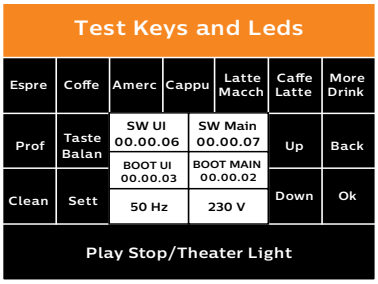
<tr><td>The text on the Tile of the UI panel is equal to the text on the Display</td><td>The text on the Tile of the UI panel is different to the text on the Display</td><td>Wrong software uploaded in the UI</td><td>Change Main Board</td></tr>
<tr><td>Press button K6 (optional)</td><td>· L6 OFF in UI panel +
 
· BoxK6 OFF in Display +
 
· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
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Test mode

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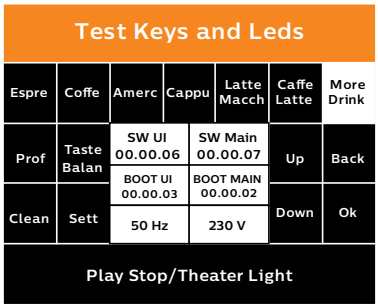
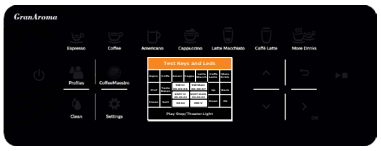
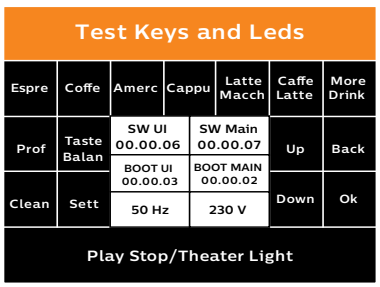
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="8">Press button K7</td><td rowspan="3">L7 White ON in UI panel +
  </td><td>L7 OFF & BoxK7 White</td><td>L7 damaged</td><td>Change UI boad</td></tr>
<tr><td>L7(!W) ON & BoxK7 White</td><td>L7 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK7 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The text on the Tile of the UI panel is equal to the text on the Display</td><td>The text on the Tile of the UI panel is different to the text on the Display</td><td>Wrong software uploaded in the UI</td><td>Change the UI SW</td></tr>
<tr><td rowspan="2">Press button K7 (optional)</td><td colspan="3">· L7 OFF in UI panel +
 
· BoxK7 OFF in Display +
 

· Hear the feedback sound.</td></tr>
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Test mode

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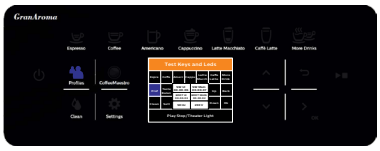
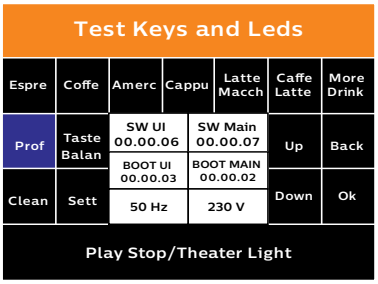
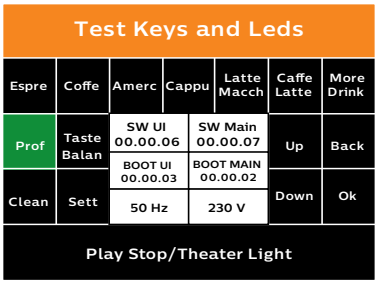
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K8</td><td rowspan="3">L8 Blu ON in UI panel +
  </td><td>L8 OFF & BoxK8 Blu</td><td>L8 damaged</td><td>Change UI boad</td></tr>
<tr><td>L8 (!W) ON & BoxK8 Blu</td><td>L8 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK8 Blu in Display +
  </td><td>Other BoxKx Blu</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td rowspan="6">Press button K8</td><td rowspan="3">L8 Green ON in UI panel +
  </td><td>L8 OFF & BoxK8 Green</td><td>L8 damaged</td><td>Change UI board</td></tr>
<tr><td>L8(!W) ON & BoxK8 Green</td><td>L8 wrong color</td><td>Change UI board</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI board</td></tr>
<tr><td>BoxK8 Green in Display +
  </td><td>Other BoxKx Green</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
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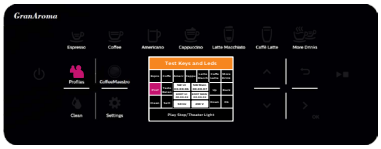
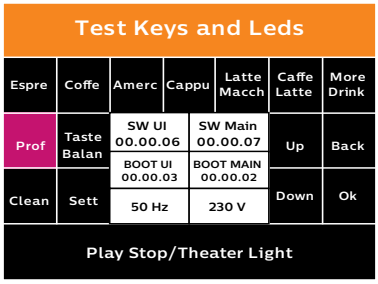
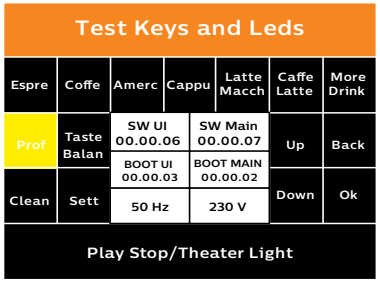
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="7">Press button K8</td><td rowspan="3">L8 Magenta ON in UI panel +
  </td><td>L8 OFF & BoxK8 Magenta</td><td>L8 damaged</td><td>Change UI boad</td></tr>
<tr><td>L8(!W) ON & BoxK8 Magenta</td><td>L8 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK8 Magenta in Display +
  </td><td>Other BoxKx Magenta</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td rowspan="7">Press button K8</td><td rowspan="3">L8 Yellow ON in UI panel +
  </td><td>L8 OFF & BoxK8 Yellow</td><td>L8 damaged</td><td>Change UI boad</td></tr>
<tr><td>L8(!W) ON & BoxK8 Yellow</td><td>L8 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK8 Yellow in Display +
  </td><td>Other BoxKx Yellow</td><td>Short circuit in Buttons</td><td>Change UI boad</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
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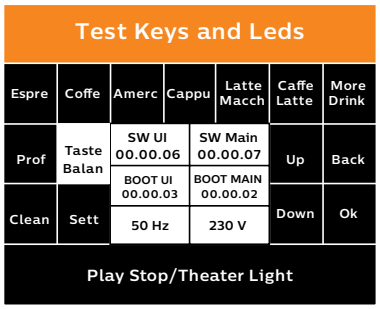
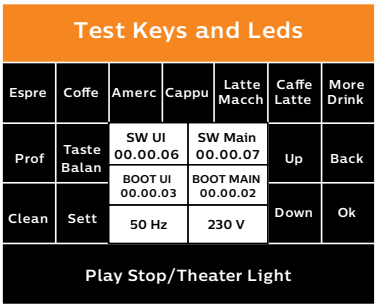
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K9</td><td rowspan="2">L9 White ON in UI panel +
  </td><td>L9 OFF & BoxK9 White</td><td>L9 damaged</td><td>Change UI boad</td></tr>
<tr><td>L9(!W) ON & BoxK9 White</td><td>L9 wrong color</td><td>Change UI boad</td></tr>
<tr><td>BoxK9 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI boad</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K9(optional)</td><td>· L9 OFF in UI panel +
 
· BoxK9 OFF in Display +
 

· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
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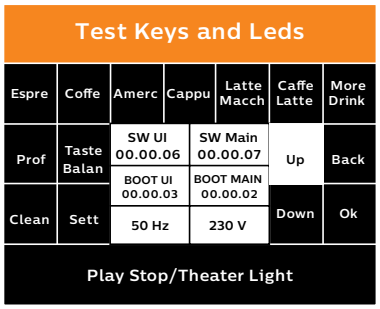
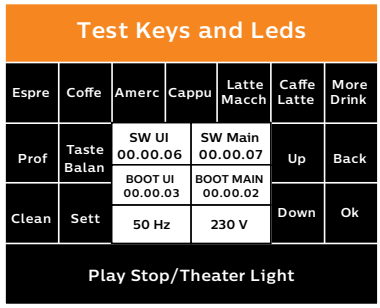
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K10</td><td rowspan="3">L10 White ON in UI panel +
  </td><td>L10 OFF & BoxK10 White</td><td>L10 damaged</td><td>Change UI boad</td></tr>
<tr><td>L10(!W) ON & BoxK10 White</td><td>L10 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK10 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI boad</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K10 (optional)</td><td>· L10 OFF in UI panel +
 
· BoxK10 OFF in Display +
 

· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
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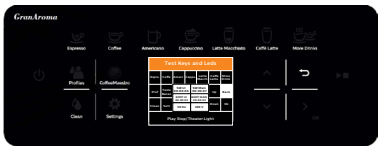
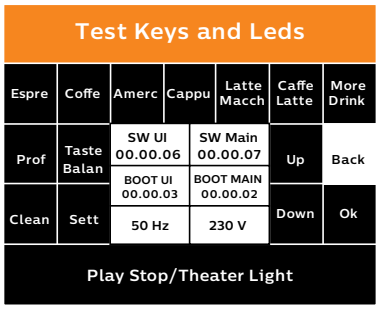
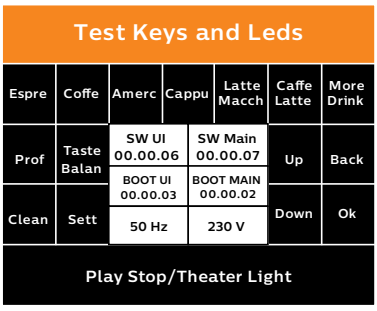
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K11</td><td rowspan="3">L11 White ON in UI panel +
  </td><td>L11 OFF & BoxK11 White</td><td>L11 damaged</td><td>Change UI board</td></tr>
<tr><td>L11(!W) ON & BoxK11 White</td><td>L11 wrong color</td><td>Change UI board</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI board</td></tr>
<tr><td>BoxK11 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K11 (optional)</td><td>· L11 OFF in UI panel +
 
· BoxK11 OFF in Display +
 

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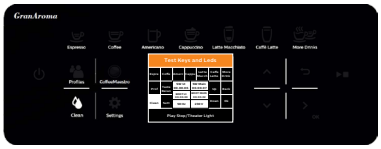
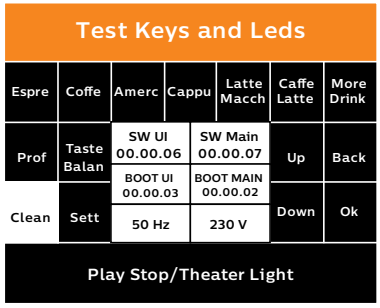
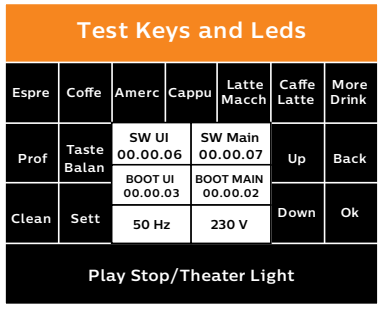
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K12</td><td rowspan="3">L12 White ON in UI panel +
  </td><td>L12 OFF & BoxK12 White</td><td>L12 damaged</td><td>Change UI boad</td></tr>
<tr><td>L12(!W) ON & BoxK12 White</td><td>L12 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK12 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K12 (optional)</td><td>· L12 OFF in UI panel +
 
· BoxK12 OFF in Display +
 

· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
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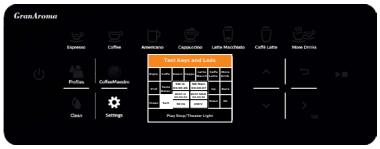
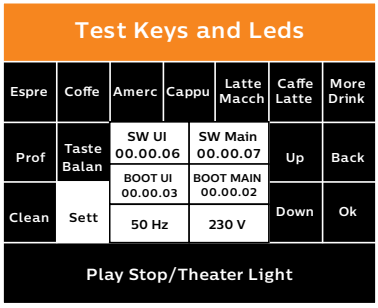
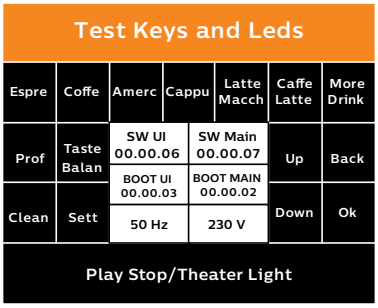
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K13</td><td rowspan="2">L13 White ON in UI panel +
  </td><td>L13 OFF & BoxK13 White</td><td>L13 damaged</td><td>Change UI boad</td></tr>
<tr><td>L13(!W) ON & BoxK13 White</td><td>L13 wrong color</td><td>Change UI boad</td></tr>
<tr><td>BoxK13 White in Display +
  </td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>he drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K13 (optional)</td><td>· L13 OFF in UI panel +
 
· BoxK13 OFF in Display +
 
· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
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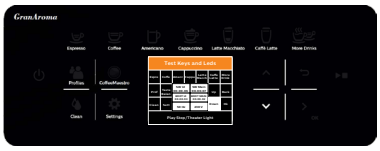
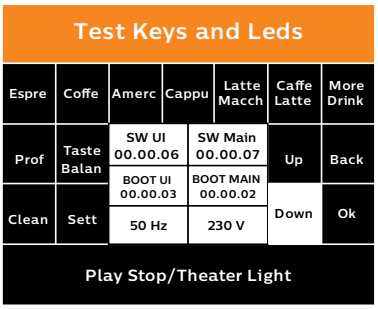
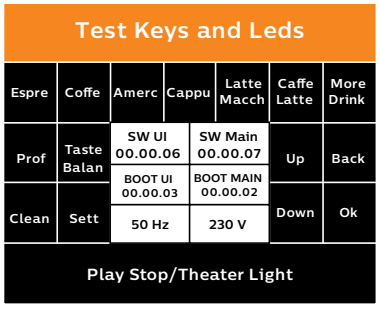
<tr><td rowspan="6">Press button K14</td><td rowspan="3">L14 White ON in UI panel +
  </td><td>L14 OFF & BoxK14 White</td><td>L14 damaged</td><td>Change UI board</td></tr>
<tr><td>L14(!W) ON & BoxK14 White</td><td>L14 wrong color</td><td>Change UI board</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI board</td></tr>
<tr><td>BoxK14 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K14 (optional)</td><td>· L14 OFF in UI panel +
 
· BoxK14 OFF in Display +
 

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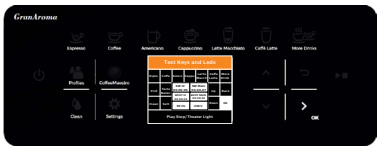
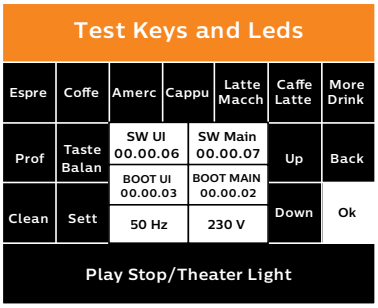
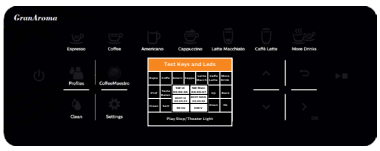
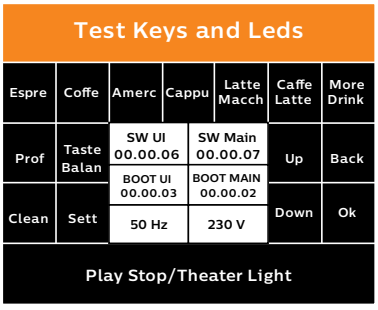
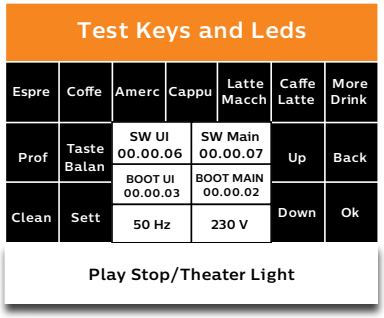
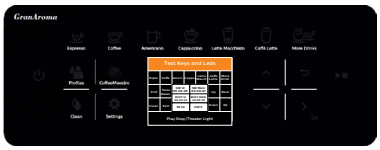
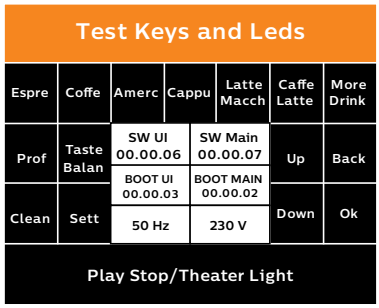
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="6">Press button K15</td><td rowspan="3">L15 White ON in UI panel +
  </td><td>L15 OFF & BoxK15 White</td><td>L15 damaged</td><td>Change UI boad</td></tr>
<tr><td>L15(!W) ON & BoxK15 White</td><td>L15 wrong color</td><td>Change UI boad</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI boad</td></tr>
<tr><td>BoxK15 White in Display +
 
</td><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI board</td></tr>
<tr><td rowspan="2">Hear the feedback sound.</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K15 (optional)</td><td>· L15 OFF in UI panel +
 
· BoxK4 OFF in Display +
 

· Hear the feedback sound.</td><td></td><td></td><td></td></tr>
</table>

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="11">Press button K16</td><td rowspan="11">L16 White ON in UI panel +
L17 White ON in left side+
L18 White ON in right side
  </td><td>L16 OFF & BoxK16 White</td><td>L16 damaged</td><td>Change UI Board</td></tr>
<tr><td rowspan="4">L17 OFF & BoxK16 White</td><td>L17 damaged</td><td>Change UI Board</td></tr>
<tr><td>Wrong back cover</td><td>Change UI Board</td></tr>
<tr><td>Missing left light guide</td><td>Add Light Guide</td></tr>
<tr><td>Wrong theater</td><td>Change Theater</td></tr>
<tr><td rowspan="4">L18 OFF & BoxK16 White</td><td>L18 damaged</td><td>Change UI Board</td></tr>
<tr><td>Wrong back cover</td><td>Change UI Board</td></tr>
<tr><td>Missing right light guide</td><td>Add Light Guide</td></tr>
<tr><td>Wrong theater</td><td>Change Theater</td></tr>
<tr><td rowspan="3">BoxK16 White in Display +
 
</td><td>(L16(!W) ON or L17(!W) ON or L18(!W) ON) & BoxK15 White</td><td>L16 or L17 or L18 wrong color</td><td>Change UI Board</td></tr>
<tr><td>Other Lx toggle</td><td>Short circuit in Led</td><td>Change UI Board</td></tr>
<tr><td>Other BoxKx White</td><td>Short circuit in Buttons</td><td>Change UI Board</td></tr>
<tr><td rowspan="2">· Hear the feedback sound.
· Check the two theater leds (only in the EP544x model)</td><td>It’s not possible to hear the sound</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The sound is persistent</td><td>The drive of the Buzzer or the Buzzer in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press button K16 (optional)</td><td>· L16 OFF in UI panel +
L17 White OFF in left ide+
L18 White OFF in right side
·
 
· BoxK16 OFF in Display +
 

· Hear the feedback sound.</td><td colspan="3"></td></tr>
</table>

Test mode

Finish condition: NO BU, NO drag drawer, Door open, No Water	LED INDICATION
	All Leds OFF (in case that also optional was done)

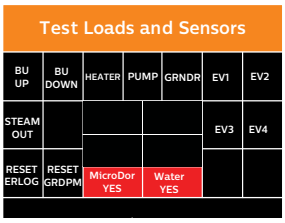
Legenda

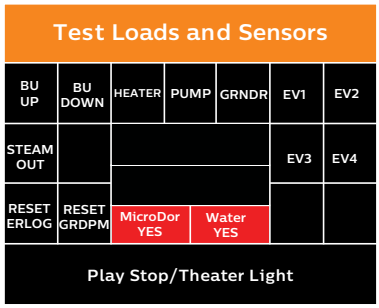
Text	Group	Description
Press button Bx	Sequence of actions by user	Press the button Bx. Valid in all models
Press button Bx (only X&Y)	Sequence of actions by user	Press the button Bx. Valid only in the model X & Y
Press button Bx (optional)	Sequence of actions by user	Press the button Bx. Not requested but if the operator will do it the machine will react in the descripted way.
Lx (y) ON	Reaction of the appliance	The led Lx switches On with the color y. Color code: y=W -> color White y=R -> color Red y=B -> color Blu y=Y -> color Yellow y=M -> color Magenta y=G -> color Green
Lx OFF	Reaction of the appliance	The led Lx switches Off.
Lx (!y) ON	Reaction of the appliance	The led Lx switches On with a different color from the expected y. FAILURE MODE.

Test mode

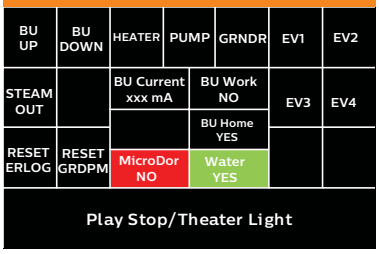
Level 2 (Loads and Sensors)

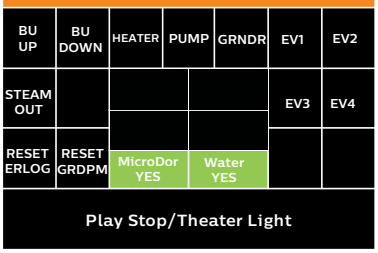
Start condition: NO BU, NO drag drawer, Door open, No Water	UI/DISPLAY STATUS



Sequence of actions by user	Reaction of the appliance			
	PASS	**FAIL**	**Cause of failure**	**Solution**
Check the start condition	 · Lx OFF in UI panel + · BoxT5 Red in Display BoxT6 Red in Display  Test Loads and Sensors BU UP / BU DOWN / HEATER / PUMP / GRNDR / EV1 / EV2 STEAM OUT / EV3 / EV4 RESET ERLOG / RESET GRDPM / MicroDor YES / Water YES Play Stop/Theater Light	**Water YES** **BoxT6 Green in Display**	Water level sensor damaged (short circuit)	Change Water level sensor
			Connector JP14 in Main damaged (short circuit)	Change Main board
			uP U2 in Main damaged (short circuit in Pin9)	Change Main board
		Micro Door YES **BoxT5 Green in Display**	L25 damaged	Change UI boad
			The Microswitch is not well placed	Check assembly of microswitch
			Microswitch damaged (short circuit)	Change microswitch
			Connector JP3 in Main damaged (schort circuit)	Change Main board
			uP U2 in Main damaged (short circuit in Pin26)	Change Main board
Insert BrewUnit & Close Door (No Dump Box)	No changes	**Micro Door YES** **BoxT5 Green in Display**	Assembly issue of the microswitch or mechanical lever.	Check icroswitch position and mechanical lever.
Insert a full water tank	· Lx OFF in UI panel + 	**Water NO** **BoxT6 remain Red in Display**	Water level sensor not in position	Change the position of Water level sensor
			Water level sensor damaged (open circuit)	Change Water level sensor

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td rowspan="2">Insert a full water tank</td><td>· BoxT5 Red in Display +
BoxT6 Green in Display
Test Loads and Sensors
 

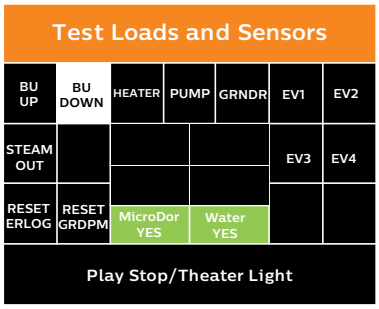
· BoxT6 in Display change</td><td>Water NO
BoxT6 remain Red in Display</td><td>Wiring of the water level sensor not connected</td><td>Check the wiring</td></tr>
<tr><td>uP U2 in Main damaged (open circuit in Pin9)</td><td>Change Main Boad</td></tr>
<tr><td rowspan="5">Insert Dreg drawer and rip tray</td><td rowspan="5">· Lx OFF in UI panel +
 
· BoxT5 Green in Display +
BoxT6 Green in Display
Test Loads and Sensors
 

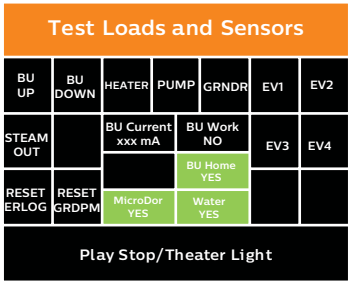
· BoxT5 in Display change</td><td rowspan="5">Micro Door NO
BoxT5 remain Red in Display</td><td>The Microswitch is not well placed</td><td>Check assembly of microswitch</td></tr>
<tr><td>Microswitch damaged (open circuit)</td><td>Change microswitch</td></tr>
<tr><td>Wiring of the microswicth not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the microswicth damaged (open)</td><td>Change the wiring</td></tr>
<tr><td>uP U2 in Main damaged (open circuit in Pin26)</td><td>Change Main boad</td></tr>
</table>

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">Brew Unit (Test valid only if the Brew Unit is inserted)</td></tr>
<tr><td rowspan="11">Press and release K1 to move BU to work.
N.B:
* If the BU is already moving to home then stop the movement and change the direction into work.
* If the BU is already moving to work then stop the movement.</td><td rowspan="3">· L1 White ON in UI panel +
 
· BoxK1 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
Test Loads and Sensors
BU UP | BU DOWN | HEATER | PUMP | GRNDR | EV1 | EV2
STEAM OUT | BU Current xxx mA | BU Work NO | EV3 | EV4
BU Home YES
RESET ERLOG | RESET GRDPM | MicroDor YES | Water YES
Play Stop/Theater Light
· BU Move to Work</td><td rowspan="3">BU not move</td><td>Wiring of the BU motor not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the BU motor damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>Motor of BU damaged</td><td>Change the BU motor</td></tr>
<tr><td rowspan="2">When BU has reached work position:
· L1 OFF in UI panel +
  </td><td>The drive of the motor in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>BU blocked</td><td>Check the BU</td></tr>
<tr><td rowspan="2">· BoxK1 OFF in Display +
BoxT2 Green in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
Test Loads and Sensors
BU UP | BU DOWN | HEATER | PUMP | GRNDR | EV1 | EV2
STEAM OUT | Bu Current 124mA | Micro Work YES | EV3 | EV4
Micro Home NO
RESET ERLOG | RESET GRDPM | MicroDor YES | Water YES
Play Stop/Theater Light
· BU Stop to Move</td><td rowspan="2">Gears or motor not well assembled</td><td rowspan="2">Check the assembly of the gear and motor</td></tr>
<tr><td>BU move to Home</td></tr>
<tr><td>BoxT1 Red in Display</td><td>BU Current 350 mA</td><td>Wiring of BU motor are inverted</td><td>Check the Motor BU wiring</td></tr>
<tr><td rowspan="6">BoxT2 Red in Display. L1 OFF & Work not reached and BU OFF.</td><td>The absorbed current exceed the limit (xxxmA).</td><td>Check the assembly of the gear and motor, check the BU</td></tr>
<tr><td>The BU Microswitch is not well placed</td><td>Check assembly of BU microswitch</td></tr>
<tr><td>BU Microswitch damaged (open circuit)</td><td>Change BU microswitch</td></tr>
<tr><td>Wiring of the BU microswicth not Connected</td><td>Check the wiring</td></tr>
<tr><td>Micro Work NO
Wiring of the BU microswicth damaged (open)</td><td>Change the wiring</td></tr>
<tr><td>uP U2 in Main damaged (open circuit in Pin26)</td><td>Change Main boad</td></tr>
</table>

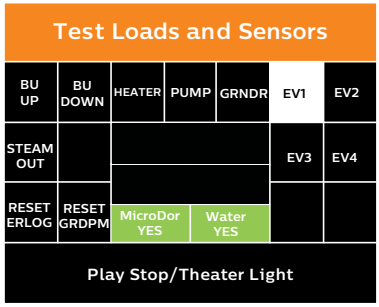
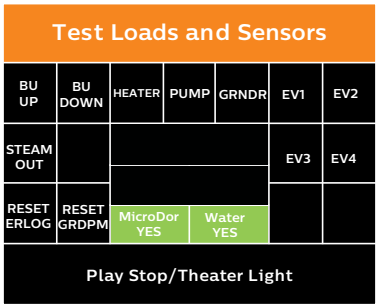
Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">Brew Unit (Test valid only if the Brew Unit is inserted)</td></tr>
<tr><td rowspan="11">Press and release K2 to move BU to home.
N.B:
* If the BU is already moving to work then stop the movement and change the direction into home.
* If the BU is already moving to home then stop the movement.</td><td rowspan="5">· L2 White ON in UI panel +
 
· BoxK2 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

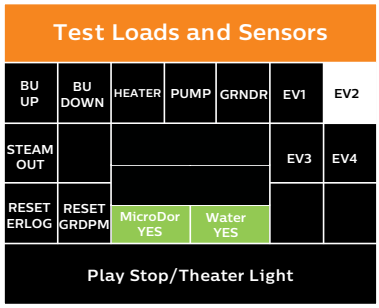
· BU Move to Home</td><td rowspan="4">BU not move</td><td>Wiring of the BU motor not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the BU motor damaged (open)</td><td>Change the motor BU wiring</td></tr>
<tr><td>Motor of BU damaged</td><td>Change the BU Motor</td></tr>
<tr><td>The drive of the motor in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>BU blocked</td><td>Check the BU</td></tr>
<tr><td rowspan="2">BU move to Work</td><td>Gears or motor not well assembled</td><td>Check the assembly of the gear and motor</td></tr>
<tr><td>Wiring of BU motor are inverted</td><td>Check the Motor BU wiring</td></tr>
<tr><td rowspan="6">When BU has reached home position:
· L2 OFF in UI panel +
 
· BoxK2 OFF in Display +
BoxT4 Green in Display +
BoxT5 Green in Display +
· BoxT6 Green in Display
 

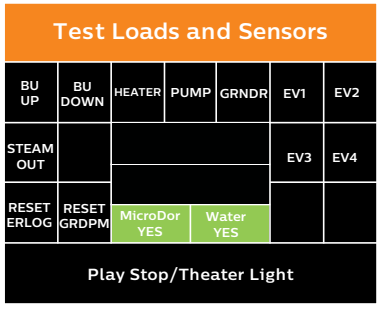
· BU Stop to Move</td><td rowspan="6">BoxT1 Red in Display
Micro Home NO
BoxT4 Red in Display. L2 OFF & Home not reached and BU OFF.</td><td>The absorbed current exceed the limit (300mA).</td><td>Check the assembly of the gear and motor, check the BU</td></tr>
<tr><td>The BU Microswitch is not well placed</td><td>Check assembly of BU microswitch</td></tr>
<tr><td>BU Microswitch damaged (open circuit)</td><td>Change BU microswitch</td></tr>
<tr><td>Wiring of the BU microswicth not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the BU microswicth damaged (open)</td><td>Change the wiring</td></tr>
<tr><td>uP U2 in Main damaged (open circuit in Pin26)</td><td>Change Main boad</td></tr>
</table>

Test mode

Sequence of actions by user	Reaction of the appliance			
	PASS	FAIL	Cause of failure	Solution
EV1				
Press and release K6 to toggle the EV. If it was closed, then will be open.	· L6 White ON in UI panel +  · BoxK6 White in Display + BoxT5 Green in Display + BoxT6 Green in Display  · It's possible to hear the "click".	**The "click" is no audible. The EV remain closed**	Wiring of the EV1 not connected	Check the wiring
			Wiring of the EV1 damaged (open)	Change Main Board
			EV1 damaged	Change the EV1
			The drive of the EV1 in the Main is damaged	Change Main Board
Press and release K6 to toggle the EV. If it was open, then will be closed.	· L6 OFF in UI panel +  · BoxK6 OFF in Display + · BoxT5 Green in Display + · BoxT6 Green in Display  · It's possible to hear the "click".	**The "click" is no audible. The EV remain open**	EV1 damaged	Change the EV1
			The drive of the motor in the Main is damaged	Change Main Board

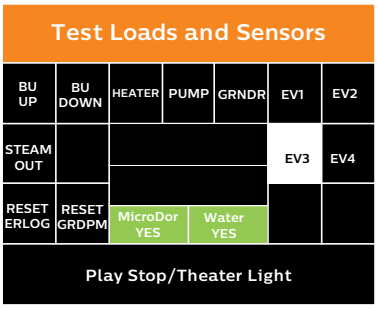
Test mode

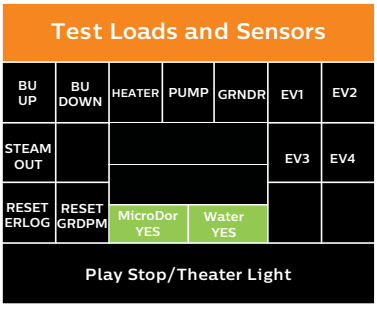
<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">EV2</td></tr>
<tr><td rowspan="4">Press and release K7 to toggle the EV.
If it was closed, then will be open.</td><td rowspan="4">· L7 White ON in UI panel +
 
· BoxK7 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

· It’s possible to hear the “click”.</td><td rowspan="4">The “click” is no audible. The EV remain closed</td><td>Wiring of the EV2 not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the EV2 damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>EV2 damaged</td><td>Change the EV2</td></tr>
<tr><td>The drive of the EV2 in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press and release K7 to toggle the EV.
If it was open, then will be closed.</td><td>· L7 OFF in UI panel +
 
· BoxK7 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

· It’s possible to hear the “click”.</td><td>The “click” is no audible. The EV remain open</td><td>EV2 damaged</td><td>Change the EV2</td></tr>
</table>

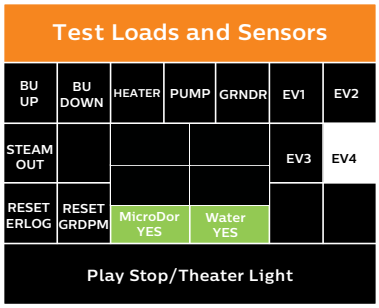
Test mode

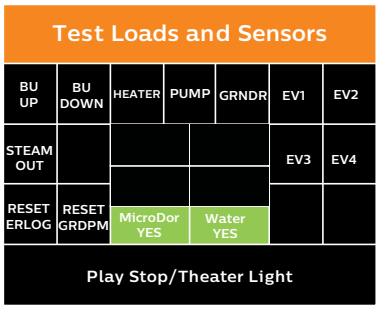
<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">EV3</td></tr>
<tr><td rowspan="5">Press and release K10 to toggle the EV.
If it was closed, then will be open.</td><td rowspan="5">· L10 White ON in UI panel +
 
· BoxK10 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

· It’s possible to hear the “click”.</td><td rowspan="5">The “click” is no audible. The EV remain closed</td><td>Wiring of the EV3 not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the EV3 damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>EV3 damaged</td><td>Change the EV3</td></tr>
<tr><td>The drive of the EV3 in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Press and release K10 to toggle the EV.
If it was open, then will be closed.</td><td>· L10 OFF in UI panel +
 
· BoxK10 OFF in Display +
· BoxT5 Green in Display +
· BoxT6 Green in Display
 

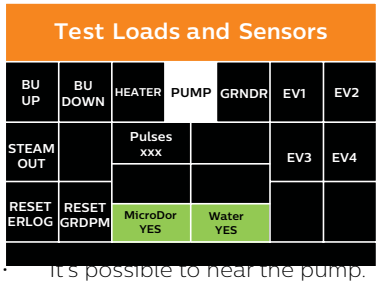
· It’s possible to hear the “click”.</td><td>The “click” is no audible. The EV remain open</td><td>EV3 damaged</td><td>Change the EV3</td></tr>
</table>

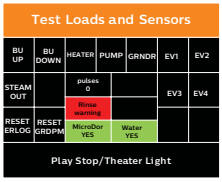
Test mode

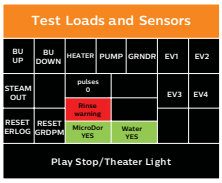
<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">EV4</td></tr>
<tr><td rowspan="4">Press and release K11 to toggle the EV.
If it was closed, then will be open.</td><td rowspan="4">· L11 White ON in UI panel +
 
· BoxK11 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

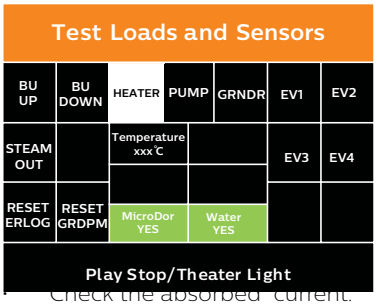
· It’s possible to hear the “click”.</td><td rowspan="4">The “click” is no audible. The EV remain closed</td><td>Wiring of the EV4 not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the EV4 damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>EV4 damaged</td><td>Change the EV4</td></tr>
<tr><td>The drive of the EV4 in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press and release K11 to toggle the EV.
If it was open, then will be closed.</td><td>· L11 OFF in UI panel +
 
· BoxK11 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

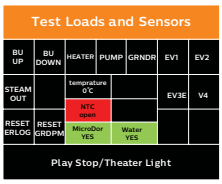
· It’s possible to hear the “click”.</td><td>The “click” is no audible. The EV remain open</td><td>EV4 damaged</td><td>Change the EV4</td></tr>
</table>

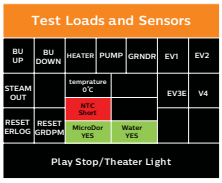
<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">Pump and Flowmeter</td></tr>
<tr><td rowspan="7">Press and release K4 to switch on the Pump (100 impulses). With the EV open the water goes out from the HotWater spout.
With the EV closed and the BU in Work, the water goes out from the Coffeespout.</td><td rowspan="7">· L4 White ON in UI panel +
 
· BoxK4 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

· It's possible to hear the pump.
· BoxT1 will count impulses</td><td rowspan="2"> 

BoxK4 OFF + BoxT3 Red.
It's possible to hear the pump but the flowmeter is not able to detect the impules.</td><td>Wiring of the Flowmeter not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the Flowmeter damaged (open)</td><td>Change the wiring</td></tr>
<tr><td>Flowmeter damaged</td><td>Change the Flowmeter</td></tr>
<tr><td>Connector JP20 in Main damaged (short circuit)</td><td>Change Main Board</td></tr>
<tr><td>uP U2 in Main damaged (short circuit in Pin18)</td><td>Change Main Board</td></tr>
<tr><td> 

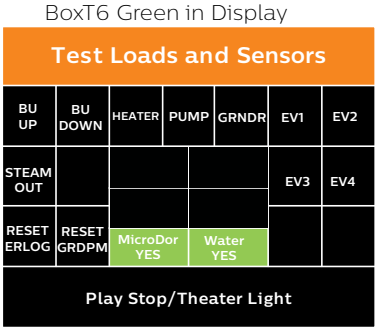
BoxK4 OFF + BoxT3 Red.It's NOT</td><td>Wiring of the PUMP not connected</td><td>Change Main Board</td></tr>
<tr><td>Wiring of the PUMP damaged (open)</td><td>Change the PUMP</td></tr>
<tr><td>PUMP damaged</td><td>Change the PUMP</td></tr>
<tr><td>The drive of the Pump in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td colspan="5">ThermoBlock and NTC</td></tr>
<tr><td rowspan="6">Press and release K3 to toggle the ThermoBlock.
Check the absorbed current. In this case we suppose that was OFF, then will be ON 100%.</td><td rowspan="6">· L3 White ON in UI panel +
 
· BoxT5 Green in Display +
BoxT6 Green in Display
 

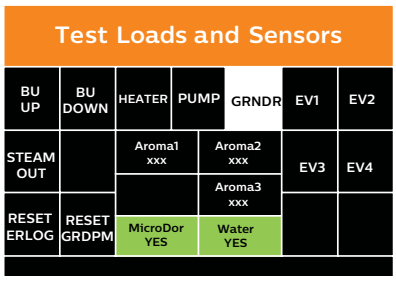
· Check the absorbed current.
· BoxT1 will show the temperature</td><td rowspan="2"> 

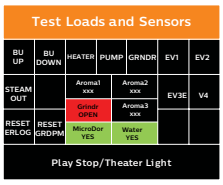
BoxK3 OFF + BoxT3 Red.
The NTC is open</td><td>Wiring of the NTC not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the NTC damaged (open)</td><td>Change the wiring</td></tr>
<tr><td>NTC damaged (short)</td><td>Change the wiring</td></tr>
<tr><td>Connector JP15 in Main damaged (short circuit)</td><td>Change Main Board</td></tr>
<tr><td rowspan="2"> 

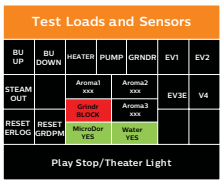
BoxK3 OFF + BoxT3 Red.
The NTC is short</td><td>uP U2 in Main damaged (short circuit in Pin24)</td><td>Change Main Board</td></tr>
</table>

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">ThermoBlock and NTC</td></tr>
<tr><td>Press and release K3 to toggle the ThermoBlock. Check the absorbed current < 0,5A. In this case we suppose that was ON, then will be OFF.</td><td>· L3 OFF in UI panel +
 
· BoxK3 OFF in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

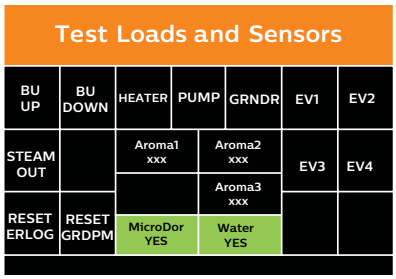
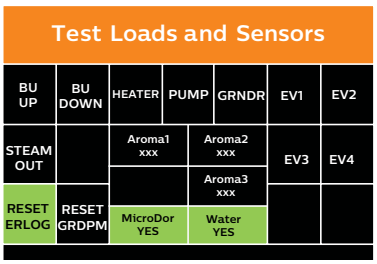
· The Thermoblock is OFF.
· Check if the absorbed current is 0.</td><td>The current is still present>0,5A.</td><td>The drive of the TB in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td colspan="5">Grinder</td></tr>
<tr><td rowspan="5">Press and release K5 to toggle the Grinder. If it was OFF, then will be ON and will move in clockwise direction.</td><td rowspan="5">· L5 White ON in UI panel +
 
· BoxK5 White in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 

· The Grinder is ON.
· Check the rotation</td><td> 

BoxK5 OFF + BoxT3 Red.
The grinder in not moving.</td><td>Wiring of the Grinder not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the Grinder damaged (open)</td><td>Change the wiring</td></tr>
<tr><td>Grinder damaged</td><td>Change the Grinder</td></tr>
<tr><td>Grinder blocked</td><td>Change the Grinder</td></tr>
<tr><td> 

BoxK5 OFF + BoxT3 Red.
The grinder in not moving.</td><td>The drive of the Grinder in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The rotation direction is wrong: anticlockwise</td><td>Wirings of Grinder are inverted</td><td>Check the Grinder wiring</td></tr>
</table>

Test mode

<table>
<tr><th rowspan="2">Sequence of actions by user</th><th colspan="4">Reaction of the appliance</th></tr>
<tr><th>PASS</th><th>FAIL</th><th>Cause of failure</th><th>Solution</th></tr>
<tr><td colspan="5">Grinder</td></tr>
<tr><td>Press and release K5 to toggle the Grinder. If it was ON, then will be OFF.</td><td>· L5 OFF in UI panel +
 
· BoxK5 OFF in Display +
BoxT5 Green in Display +
BoxT6 Green in Display
 
· The grinder is stop.</td><td>The grinder is still rotating.</td><td>The drive of the Grinder in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td colspan="5">Special functions. Use it only if proper trained.</td></tr>
<tr><td colspan="5">Reset Error Log</td></tr>
<tr><td>Keep release K12 for more than 3 sec. to toggle Reset the Error Log.</td><td> 
· BoxK12 Green in Display +
 
N.B: The other BoxTx are not relevant</td><td></td><td></td><td></td></tr>
</table>

Test mode

Sequence of actions by user	Reaction of the appliance			
	PASS	FAIL	Cause of failure	Solution
Reset Grinder Parameters				
Keep release K13 for more than 3 sec. to toggle Reset the Grinder Parameters.	 · BoxK13 Green in Display + **Test Loads and Sensors** BU UP / BU DOWN / HEATER / PUMP / GRNDR / EV1 / EV2 STEAM OUT / Aroma1 xxx / Aroma2 xxx / EV3 / EV4 Aroma3 xxx RESET ERLOG / RESET GRDPM / MicroDor YES / Water YES **Play Stop/Theater Light** N.B: The other BoxTx are not relevant			

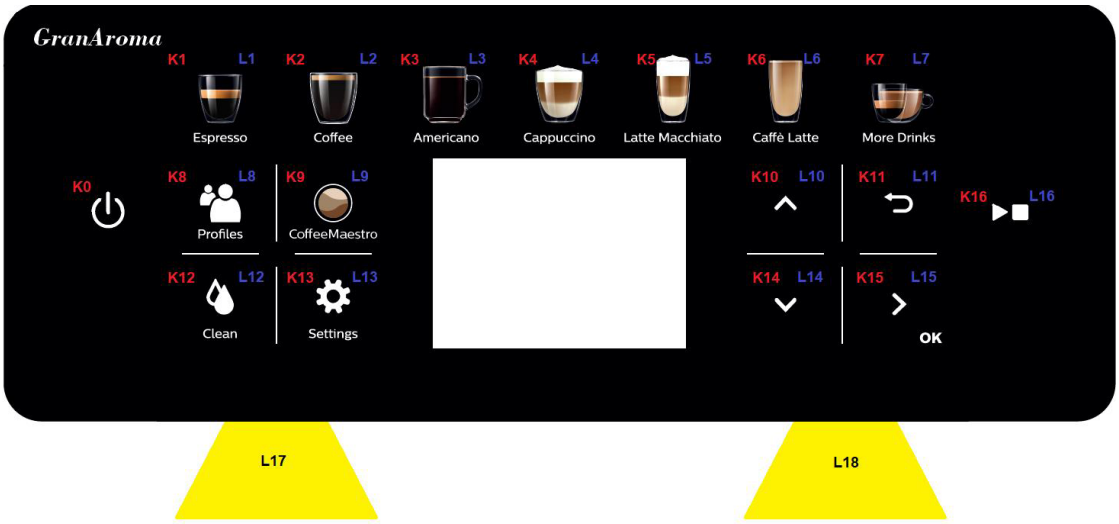
If the Dreg drawer is not inserted or the Service door is not closed the following loads cannot be tested:

1. BU

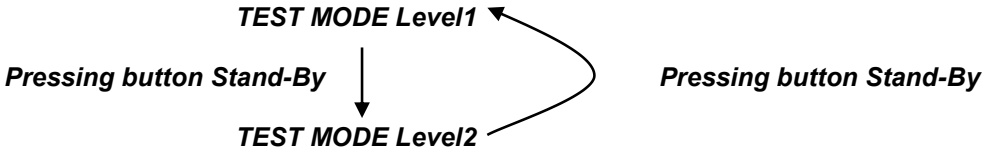
Functions/features explanation

Steam out

The Steam Out feature is available in the Test Mode.
The machine enters in Test Mode by pressing in sequence K15, K10, K11, K14 in the first two seconds after switching on the machine by mean of the main switch on the backside of the CA.
There are 2 different levels, in each level the coffee-machine can execute different commands.
The Steam Out command is available in the Level 2.



The user can switch the level by pressing the Button K0.
Legend:
(O) = Orange
(B) = Blu
(R) = Red
(G) = Green
(W) = White



At the start up all loads are turned off. The software allow to have multiple loads active at the same time.

Functions/features explanation

Level 2 (Steam Out)

	UI/DISPLAY STATUS
Start condition: BU Present, Dragdrawer and Door closed, No Water	Test Loads and Sensors BU UP | BU DOWN | HEATER | PUMP | GRNDR | EV1 | EV2 STEAM OUT | EV3 | EV4 RESET ERLOG | RESET GRDPM | MicroDor YES | Water NO Play Stop/Theater Light

Steam Out		
Long press K8 for more than 3 sec. to start the steam out	· Steam out is on going	· L8 White Blinking in UI panel  Test Loads and Sensors BU UP | BU DOWN | HEATER | PUMP | GRNDR | EV1 | EV2 STEAM OUT | EV3 | EV4 RESET ERLOG | RESET GRDPM | MicroDor YES | Water NO Play Stop/Theater Light
	· Steam out is completed	· L8 OFF in UI panel  · BoxK8 Green in Display + Test Loads and Sensors BU UP | BU DOWN | HEATER | PUMP | GRNDR | EV1 | EV2 STEAM OUT | EV3 | EV4 RESET ERLOG | RESET GRDPM | MicroDor YES | Water NO Play Stop/Theater Light

The following conditions are mandatory for the Steam Out procedure:

1. The Ntc sensor must work correctly; if there is a failure on NTC (Ntc disconnected or in short circuit) the operation cannot be performed (turn off the machine and repair before do Steam-out operation).
2. The DREGDRAWER must be in place and the DOOR must be closed; if someone is not in place the operation cannot be performed. To start again the operation insert drag drawer and close service door.

When the Steam-Out is complete the following parameters are reset to their default values:

Parameters	Default Value	Description	Memory map
All recipes book	See req.	All recipes book restored to the default. See 20191002_OmniaRecipes08	N
Alarm_Refill	TRUE	Request priming circuit next power-on of the machine	N
Bu_Loaded	FALSE	Set Brew-unit clean and not fill with coffee	N
Initial_Rinsing	TRUE	At the start up the machine will perform the initial rinsing.	N
Temperature	Medium	The temperature in the setting will set to Medium	N
First use	TRUE	At the start up the machine will request the first installation	N
Brightness of the display	Medium	The Brightness of the display is set in to Medium	N
Unit	ml	The Unit is set to ml.	N
Profile Active	BLUE	The Profile active is set to BLUE	N
AquaClean reminder	5	The AquaClean reminder is restored.	N
Aroma Very Mild Time (ms)	5900	Grinding time for aroma 1 (ms)	Y
Aroma Mild/Medium Time (ms)	6500	Grinding time for aroma 2 (ms)	Y
Aroma Strong/ExtraStrong Time (ms)	7150	Grinding time for aroma 3 (ms)	Y
BU Unload Current Array [i]	150	Array of last 4 brew unit effort during rinsing cycle (in milliamperes). → Autozero for new autodose system. (i = 1..4)	Y
Max Grinder Time (ms)	10000	Maximum time for the grinder	Y
Grinder Num Skip Adjust Dose	2		Y
Array BU Pointer	0	Pointer in the BU Unloaded current	Y
Coffee Grounds	12	Number of grounds in dregs drawer	Y
AquaClean Filter Autonomy (ml)	0	Autonomy of last Aqua clean filter activated	Y
AquaClean Filter Startup (ml)	10000	Counter of water for enable first Aqua Clean filter; if expire, the machine need a descaling action to activate a new filter.	Y
AquaClean Actual Filter	0	Number of Aqua clean filter active in aquaclean chain	Y

Functions/features explanation

Parameters	Default Value	Description	Memory map
ErrorLog [i]	0	Array Error saved in machine reset (i=1..10)	Y
Acoustic Tone	Yes	Buzzer activation	Y
Language	ENGLISH	Languages selection	Y
Standby Time (minutes)	30	Auto switch off after x minutes	Y
Theater light	ON during brewing	Theater light	Y
Beverage counters	0*	All beverage counters	Y
*Only in case the total number of beverages is below 20. In the other cases the counters will remain untouched.			

Coffee specifications

Drinks	Min. qty (ml)	Default qty (ml)	Max. qty (ml)
Ristretto	20	30	40
Espresso	30	40	70
Espresso lungo	60	80	180
Coffee	90	120	220
Caffè Crema	110	140	220
Americano (Coffee+Water)	30 (60)	40 (80)	90 (120)
Espresso macchiato (Coffee+Milk)	30 (20)	40 (30)	70 (60)
Cappuccino (Coffee+Milk)	20 (90)	40 (120)	80 (210)
Flat white* (2xCoffee+Milk)	30x2 (60)	40x2 (80)	70x2 (140)
Caffè latte (Coffee+Milk)	30 (80)	60 (140)	90 (340)
Cafè au lait (Coffee+Milk)	50 (50)	90 (90)	150 (150)
Latte macchiato (Coffee+Milk)	20 (80)	40 (200)	80 (340)
Italian Cappuccino	20 (90)	40 (120)	80 (210)
Travel mug* (2xCoffee)	120x2	120x2	180x2
Milk froth	40	180	320
Hot water	100	150	300
Warm milk	40	180	320
*only available for SM6582 and SM6585			

Descaling

Please use Philips descaler only. Under no circumstances should you use a descaler based on sulfuric acid, hydrochloric acid, sulfamic or acetic acid (vinegar) as this may damage the water circuit in your machine and not dissolve the limescale properly. Not using the Philips descaler will void your warranty. Failure to descale the appliance will also void your warranty.

When the machine needs descaling, a message appears on the display.

Please use Philips descaler only. Under no circumstances should you use a descaler based on sulfuric acid, hydrochloric acid, sulfamic or acetic acid (vinegar) as this may damage the water circuit in your machine and will not dissolve the limescale properly. Not using the Philips descaler will void your warranty. Failure to descale the appliance will also void your warranty. You can buy Philips descaler in the online shop at **www.saeco.com/care.**

1. When the machine asks you to descale it, press the start/stop button to start. To start descaling without being prompted by the machine, tap the Clean icon and select 'Descale'.
2. Remove the drip tray, the coffee grounds container and the HygieSteam container (Fig. 35), empty them and put them back into place.
3. Remove the water tank and empty it. Then remove the AquaClean filter.
4. Pour the whole bottle of Philips descaler into the water tank and then fill it with water up to the CALC CLEAN level (Fig. 51). Then place it back into the machine.
5. Place a large container (1.5 l) under the coffee dispensing spout.
6. Make sure that the HygieSteam container is correctly assembled (Fig. 44) and attached to the machine (Fig. 45). Place the milk tube in the milk tube holder (Fig. 46).
7. Follow the instructions on the screen to start the descaling procedure. The descaling procedure lasts approx. 30 minutes and consists of a descaling cycle and a rinsing cycle.
8. Once the descaling cycle is finished, you need to rinse the water tank and water circuit. Follow the instructions on the screen.
9. Place a new AquaClean filter in the water tank and activate it (see 'Activating the AquaClean water filter (5 min.)').

Tip: Using the AquaClean filter reduces the need for descaling!

What to do if the descaling procedure is interrupted

You can exit the descaling procedure by pressing the on/off button on the control panel. If the descaling procedure is interrupted before it is completely finished, do the following:

1. Empty and rinse the water tank thoroughly.
2. Fill the water tank with fresh water up to the Calc / Clean level indication and switch the machine back on. The machine will heat up and perform an automatic rinsing cycle.
3. Before brewing any drinks, perform a manual rinsing cycle. To perform a manual rinsing cycle, first dispense half a water tank of hot water by repeatedly selecting the hot water function and then brew 2 cups of pre-ground coffee without adding ground coffee.

Note: If the descaling procedure was not completed, the machine will require another descaling procedure as soon as possible.

Test mode

Introduction (Only for Saeco GranAroma Deluxe)

This document describes the test mode of the GranAroma Deluxe machine model SM6680, SM6682, SM6685. This application is used in order to test the machine in its mechanics and electronic components.

1. Test mode

The machine enters in test mode by pressing in sequence K1, K2 K3 K4 in the first two seconds during the SAECO logo and after switching on the machine by mean of the main switch on the backside of the CA.

There are 3 different cards, in each cards the coffee-machine can execute different commands,

Card 1: In this level the operator can

1. Check the version of the Main FW
2. Check the version of the Main Boot
3. Check the version of the UI Boot
4. Check the version of the UI Rootfs Ro
5. Check the version of the UI Rootfs Rw
6. Check the version of the UI App
7. Check the version of the Touch FW
8. Check the version of the UI Kernel
9. Check the version of the U-Boot
10. Check the frequency of the net (50Hz, 60Hz)
11. Check the voltage of the net (120V, 230V)
12. Execute special functions:
    a. Reset of the Error log
    b. Reset of the Grinder parameters
    c. Steam-out (see dedicated documents)
    d. Water Level Sensor Calibration
    e. Debug message (see dedicated documents)
    f. Reset to default (see dedicated document)

Card 2: In this level the operator can

1. Check the touch and the report rate via the drawing line test
2. Check the colors in the display (Red, Green, Blue, White, Black)
3. Check the buzzer sound.

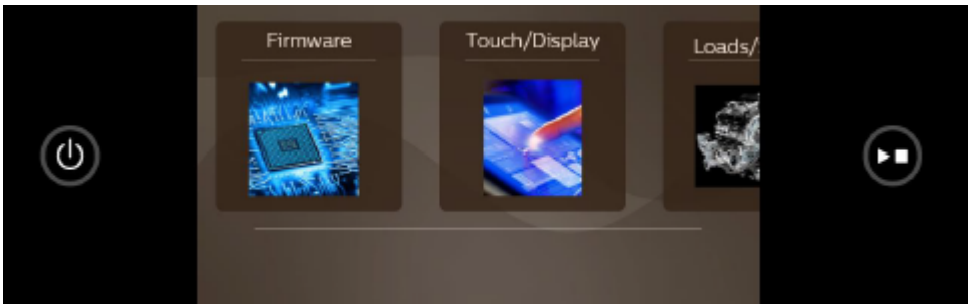
Card 3: In this level the operator can:

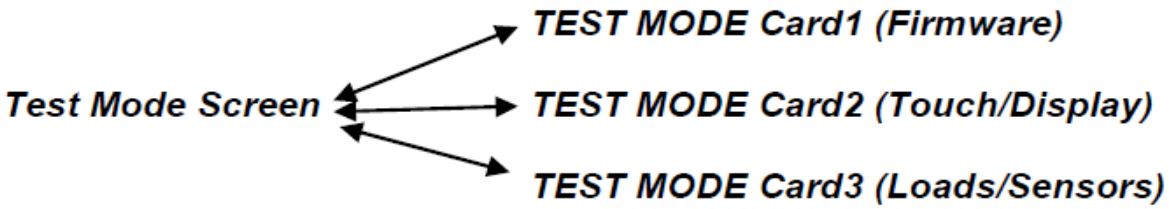
1. Test all the loads:
    a. Move the Brew Unit upward and downward.
    b. Open/Closed the EVs.
    c. Start the Pump.

d. Start the Heater
e. Start the Grinder

2. Test all the sensors:
   a. Microswitch door activated/not activated.
   b. Microswitch BU position (work/home) activated/not activated.
   c. Hall sensor water level activated/not activated.
   d. Flowmeter
   e. NTC

The user can navigate in the different cards by pressing the Back Button or Play/Stop (in 5") and then press again the Card needed.



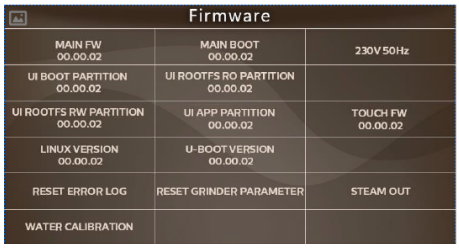
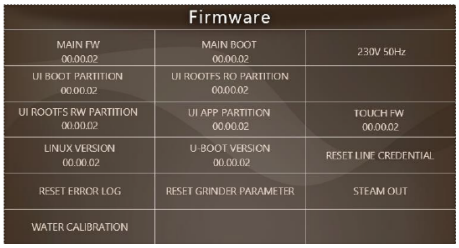


At the start up all loads are turned off. The software allow to have multiple loads active at the same time.

Test mode

1.1 Level 1 (SW version, Net frequency, Net voltage)

This button allows to check the firmware version

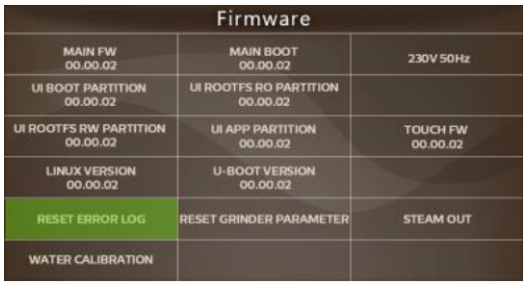
Start condition: NO BU, NO drag drawer, Door open, No Water. **OptionA.** Present in case the system was moved already to normal boot and the line wifi credential was already deleted. **OptionB.** Present in case the system is still in the factory boot: the function “reset line credential” is visible. **N.B:** All the following screens are based on the OptionA, except for the function itself.	**UI/DISPLAY STATUS** OptionA:  OptionB: 

Sequence of actions by user	**Reaction of the appliance**			
	PASS	**FAIL**	**Cause of failure**	**Solution**
Check the versions of all the FW	· The versions are in line with the BOM	**The versions are not in line with the BOM**	Wrong software uploaded	Upload the new SW
Check the frequency and voltage value	· The frequency and voltage are in line with the machine model	**The frequency are not in line with the machine model**	Wrong line set up	Change the line setup.

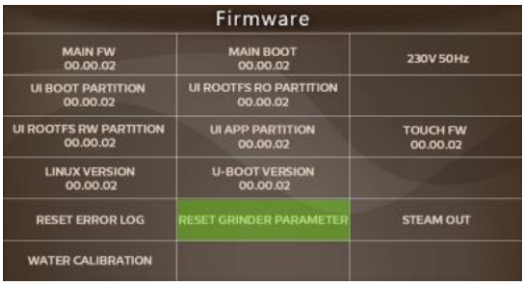
Test mode

Special functions. Use it only if proper trained.

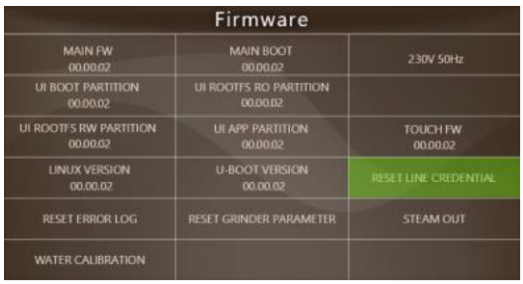
Reset Error Log: To be performed after repairing the machine

Keep “RESET ERROR LOG” for more than 3 sec. to Reset the Error Log.	· “RESET ERROR LOG” Green 			

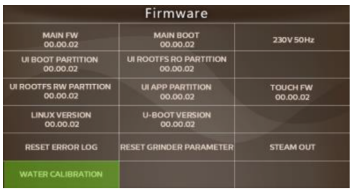
Reset Grinder Parameters: To be performed when the grinder is repaired

Keep “RESET GRINDER PARAMETER” for more than 3 sec. to Reset the Grinder Parameters.	· “RESET GRINDER PARAMETER” Green 			

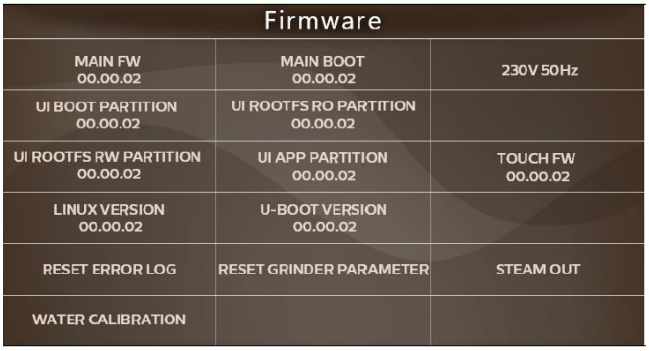
Reset Line Credential: To be performed when the UI is repaired

Keep “RESET LINE CEDENTIAL” for more than 3 sec. to delete the Wifi Line Credential and move from Factory Boot to Normal Boot.	· “RESET LINE CREDENTIAL” Green 			

Test mode

Water Level Sensor Calibration: To be performed when the water level sensor is repaired. Remove the water tank before performing.				
Sequence of actions by user	**Reaction of the appliance**			
	PASS	**FAIL**	**Cause of failure**	**Solution**
Keep “WATER CALIBRATION” for more than 3 sec. to perform the water level sensor calibration.	 · Water calibration change in green	WATER CALIBRATION **Water calibration change in Red**	The Water Level sensor is not well placed	Check assembly of Water Level sensor
			Water Level sensor damaged	Change water level sensor
			Wiring of the water level sensor not connected	Check the wiring
			Wiring of the microswitch damaged (open)	Change the wiring
			uP I2C in Main damaged	Change Main boad

Finish condition: NO BU, NO drag drawer, Door open, No Water	**UI/DISPLAY STATUS**



Functions/features explanation

Introduction

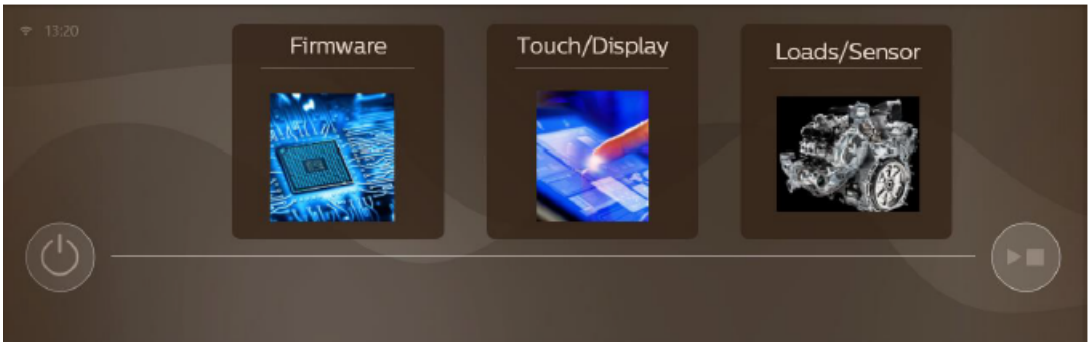
This document describes the Steam Out of the GranAroma Deluxe machine model SM6680, SM6682, SM6685. This application is used in order to empty the heater and reset some variables.

1. Steam Out

The Steam Out feature is available in the Test Mode.

The machine enters in test mode by pressing in sequence K1, K2 K3 K4 in the first two seconds during the SAECO logo and after switching on the machine by mean of the main switch on the backside of the CA.

There are 3 different cards, in each cards the coffee-machine can execute different commands.

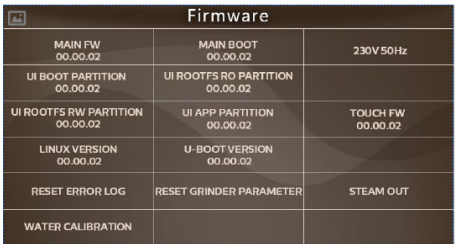
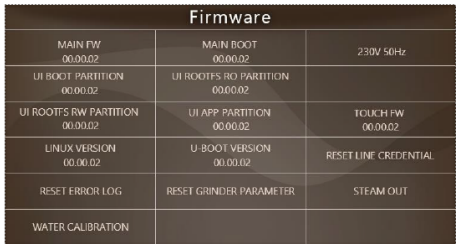


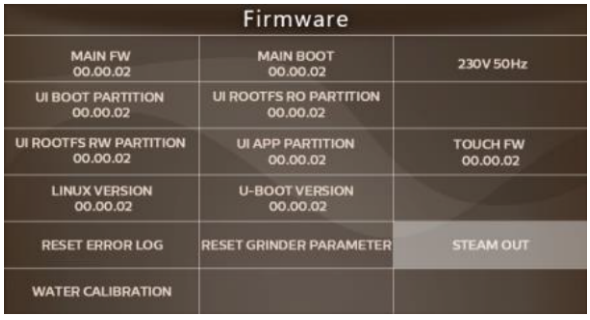
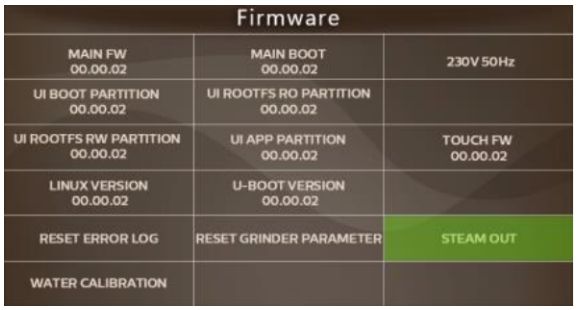
The steam-out is included in the Card 1 (Firmware).

Touch this Firmware card to enter.

Functions/features explanation

1.1 Level 1 (Steam Out)

Start condition: NO BU, NO drag drawer, Door open, No Water. **OptionA**. Present in case the system was moved already to normal boot and the line wifi credential was already deleted. **OptionB.** Present in case the system is still in the factory boot: the function “reset line credential” is visible. **N.B:** All the following screens are based on the OptionA, except for the function itself.	**UI/DISPLAY STATUS** OptionA:  OptionB: 

Steam Out		
Keep “STEAM OUT” for more than 3 sec. to execute the steam out.	• Steam out is on going	During the steam out process the sector will be white. 
	• Steam out is completed	At the end of the Steam out process the sector will be green. 

The following conditions are mandatory for the Steam Out procedure:

1. The Ntc sensor must work correctly; if there is a failure on NTC (Ntc disconnected or in short circuit) the operation cannot be performed (turn off the machine and repair before do Steam-out operation).
2. The DREGDRAWER must be in place and the DOOR must be closed; if someone is not in place the operation cannot be performed. To start again the operation insert drag drawer and close service door.

The Steam Out command will:

1. trigger the user factory reset. See dedicated document.
2. trigger the UI to reset same more variables:

Parameters	Default value	Description
First use	TRUE	At the start up the machine will request the first installation
AquaClean reminder	5	The AquaClean reminder is restored.
Language	None	Languages selection
Country	None	Country selection
Beverage counters	0*	All beverage counters

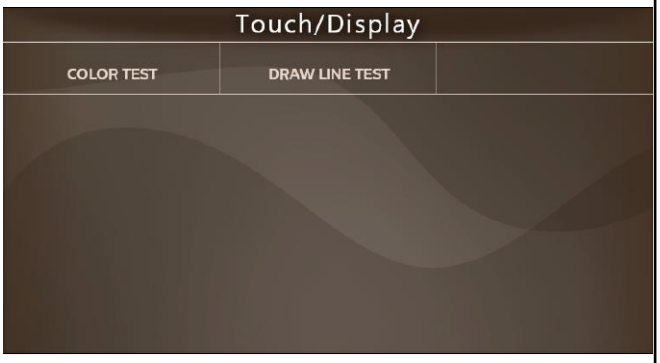
*Only in case the total number of beverages is below 20. In the other cases the counters will remain untouched.

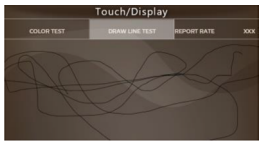
3. send the BRS command BRS_COMMAND_RESET_NVM_TO_STEAMOUT_DEFAULT from UI to Main. c

Functions/features explanation

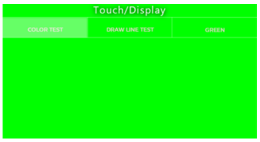
Parameters	Default value	Description
Alarm_Refill	TRUE	Request priming circuit next power-on of the machine
Bu_Loaded	FALSE	Set Brew-unit clean and not fill with coffee
Initial_Rinsing	TRUE	At the start up the machine will perform the initial rinsing.
Aroma Very Mild Time (ms)	5900	Grinding time for aroma 1 (ms)
Aroma Mild/Medium Time (ms)	6500	Grinding time for aroma 2 (ms)
Aroma Strong/ExtraStrong Time (ms)	7150	Grinding time for aroma 3 (ms)
BU Unload Current Array [i]	150	Array of last 4 brew unit effort during rinsing cycle (in milliamperes). → Autozero for new autodose system. (i = 1..4)
Max Grinder Time (ms)	10000	Maximum time for the grinder
Grinder Num Skip Adjust Dose	2	
Array BU Pointer	0	Pointer in the BU Unloaded current
Coffee Grounds	12	Number of grounds in dregs drawer
AquaClean Filter Autonomy (ml)	0	Autonomy of last Aqua clean filter activated
AquaClean Filter Startup (ml)	10000	Counter of water for enable first Aqua Clean filter; if expire, the machine need a descaling action to activate a new filter.
AquaClean Actual Filter	0	Number of Aqua clean filter active in aquaclean chain
ErrorLog [i]	0	Array Error saved in machine reset (i = 1..10)

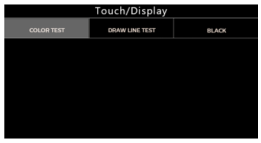
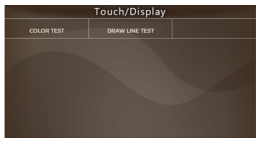
1.2 Level 2 (Touch, Display)

Start condition: NO BU, NO drag drawer, Door open, No Water.	**UI/DISPLAY STATUS**
	

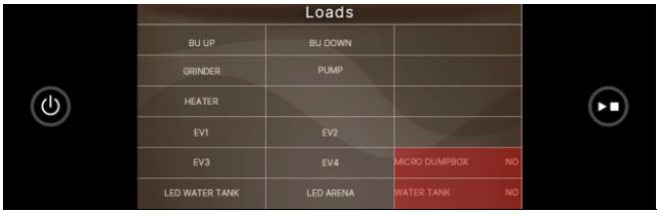
Sequence of actions by user	**Reaction of the appliance**			
	PASS	**FAIL**	**Cause of failure**	**Solution**
Press and release “DRAW LINE TEST” and start to draw a line on the display	· “DRAW LINE TEST” White  · Check the continuity of the drawn line · Check the report rate	**The line is not continuous & “COLOR TEST” White**	Touch Module damaged	Change UI Module
		The line is not drawn & “COLOR TEST” White	Touch Module damaged	Change UI Module
		The report rate<60 & “COLOR TEST” White	Touch Module damaged	Change UI Module
Press and release “COLOR TEST” to change the background	· “COLOR TEST” White  · Check the background red · Check the present of dots visible · Check the sound	**The background is not RED & “COLOR TEST” White**	UI Module damaged	Change UI Module
		The background is not uniform & “COLOR TEST” White	UI Module damaged	Change UI Module
		Some dots are visible & “COLOR TEST” White	UI Module damaged	Change UI Module
		The sound is persistent	The drive of the Buzzer or the Buzzer in the UI is damaged	Change UI Module

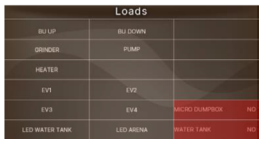
Functions/features explanation

Press and release “COLOR TEST” to change the background	· “COLOR TEST” White  · Check the background green · Check the present of dots visible	**The background is not GREEN & “COLOR TEST” White**	UI Module damaged	Change UI Module
		The background is not uniform & “COLOR TEST” White	UI Module damaged	Change UI Module
		Some dots are visible & “COLOR TEST” White	UI Module damaged	Change UI Module
Press and release “COLOR TEST” to change the background	· “COLOR TEST” White  · Check the background blue · Check the present of dots visible	**The background is not BLUE & “COLOR TEST” White**	UI Module damaged	Change UI Module
		The background is not uniform & “COLOR TEST” White	UI Module damaged	Change UI Module
		Some dots are visible & “COLOR TEST” White	UI Module damaged	Change UI Module
Press and release “COLOR TEST” to change the background	· “COLOR TEST” White · Check the background white · Check the present of dots visible	**The background is not WHITE & “COLOR TEST” White**	UI Module damaged	Change UI Module
		The background is not uniform & “COLOR TEST” White	UI Module damaged	Change UI Module
		Some dots are visible & “COLOR TEST” White	UI Module damaged	Change UI Module

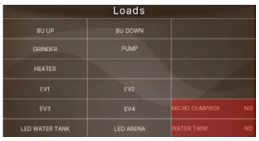
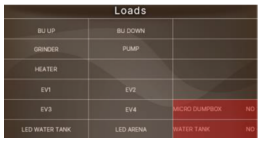
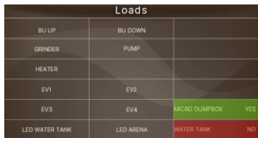
Press and release “COLOR TEST” to change the background	· “COLOR TEST” White  · Check the background white · Check the present of dots visible	**The background is not BLACK & “COLOR TEST” White**	UI Module damaged	Change UI Module
		The background is not uniform & “COLOR TEST” White	UI Module damaged	Change UI Module
		Some dots are visible & “COLOR TEST” White	UI Module damaged	Change UI Module
Press and release “COLOR TEST” to change the background (optional)	· “COLOR TEST” OFF  · Check the background			

1.2 Level 3 (Loads and Sensors)

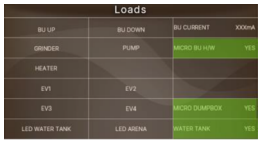
Start condition: NO BU, NO drag drawer, Door open, No Water.	**UI/DISPLAY STATUS**
	

Sequence of actions by user	**Reaction of the appliance**			
	PASS	**FAIL**	**Cause of failure**	**Solution**
Check the start condition	· Micro DumpBox Red Water Tank Red 	 **Water Tank Green**	Water level sensor damaged (short circuit)	Change Water level sensor
			Connector JP10 in Main damaged (short circuit)	Change Main boad
			uP U3 in Main damaged (short circuit in Pin35)	Change Main boad
		 Micro DumpBox Green	The Microswitch is not well placed	Check the assembly of microswitch
			Microswitch damaged (short circuit)	Change microswitch
			Connector JP9 in Main damaged (short circuit)	Change Main boad
			uP U3 in Main damaged (short circuit in Pin30)	Change Main boad
			Assembly issue of the microswitch or mechanical lever.	Check microswitch position and mechanical lever

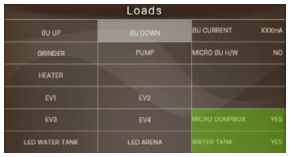
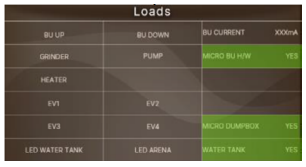
Functions/features explanation

Insert BewUnit	· No change 			
Close Door	· No change 			
Insert Dump Box	· Water Tank Red  · Micro DumpBox change	 **Micro DumpBox remain Red**	The Microswitch is not well placed	Check assembly of microswitch
			Microswitch damaged (open circuit)	Change microswitch
			Wiring of the microswitch not connected	Check the wiring
			Wiring of the microswitch damaged (open)	Change the wiring
			uP U3 in Main damaged (open circuit in Pin30)	Change Main boad
Insert a full water tank	· Micro DumpBox Green  · Water Tank change	 **Water Tank remain Red**	Water level sensor not in position	Change the position of Water level sensor
			Water level sensor damaged (open circuit)	Change Water level sensor
			Wiring of the water level sensor not connected	Check the wiring
			Wiring of the water level sensor damaged (open)	Check the wiring
			uP U3 in Main damaged (open circuit in Pin35)	Change Main Boad

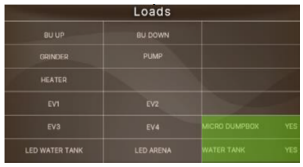
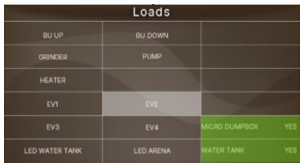
Functions/features explanation

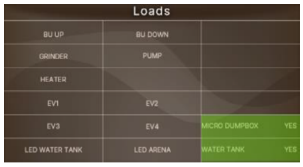
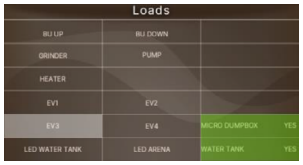
Brew Unit (Test valid only if the Brew Unit is inserted)				
Press and release “BU UP” to move BU to work. N.B: * If the BU is already moving to home then stop the movement. * If the BU is already moving to work then stop the movement.	• “BU UP” White in Display • Micro DumpBox Green  • BU Move to Work	**BU not move**	Wiring of the BU motor not connected	Check the wiring
			Wiring of the BU motor damaged (open)	Change Main Board
			Motor of BU damaged	Change the BU motor
			The drive of the motor in the Main is damaged	Change Main Board
			BU blocked	Check the BU
			Gears or motor not well assembled	Check the assembly of the gear and motor
		BU move to Home	Wiring of BU motorare inverted	Check the Motor BU wiring
		 **BU Current Red**	The absorbed current exceeds the limit (xxxmA).	Check the assembly of the gear and motor, check the BU
	• When BU has reached work position: • “BU UP” OFF • Micro DumpBox Green  • BU Stop to Move • Micro BU H/W change	 **Micro BU H/W Red.** **“BU UP” OFF & Work not reached & BU OFF.**	The BU Microswitch is not well placed	Check assembly of BU microswitch
			BU Microswitch damaged (open circuit)	Change BU microswitch
			Wiring of the BU microswitch not connected	Check the wiring
			Wiring of the BU microswitch damaged (open)	Change the wiring
			uP U3 in Main damaged (open circuit in Pin15)	Change Main boad

Functions/features explanation

<table>
<tr>
<td rowspan="11">Press and release “BU DOWN” to move BU to home.
N.B:
* If the BU is already moving to work then stop the movement.
* If the BU is already moving to home then stop the movement.</td>
<td rowspan="9">· “BU DOWN” White in Display
· Micro DumpBox Green
 
· BU Move to Home</td>
<td rowspan="7">BU not move</td>
<td>Wiring of the BU motor not connected</td>
<td>Check the wiring</td>
</tr>
<tr>
<td>Wiring of the BU motor damaged (open)</td>
<td>Change the motor BU wiring</td>
</tr>
<tr>
<td>Motor of BU damaged</td>
<td>Change the BU motor</td>
</tr>
<tr>
<td>The drive of the motor in the Main is damaged</td>
<td>Change Main Board</td>
</tr>
<tr>
<td>BU blocked</td>
<td>Check the BU</td>
</tr>
<tr>
<td>Gears or motor not well assembled</td>
<td>Check the assembly of the gear and motor</td>
</tr>
<tr>
<td>BU move to Work</td>
<td>Wiring of BU motor are inverted</td>
<td>Check the Motor BU wiring</td>
</tr>
<tr>
<td> 
BU Current Red</td>
<td>The absorbed current exceeds the limit (300mA).</td>
<td>Check the assembly of the gear and motor, check the BU</td>
</tr>
<tr>
<td rowspan="4">· When BU has reached home position:
· “BU DOWN” OFF
· Micro DumpBox Green
 
· BU Stop to Move
· Micro BU H/W change</td>
<td rowspan="4"> 
Micro BU H/W Red.
“BU DOWN” OFF & Home not reached & BU OFF.</td>
<td>The BU Microswitch is not well placed</td>
<td>Check assembly of BU microswitch</td>
</tr>
<tr>
<td>BU Microswitch damaged (open circuit)</td>
<td>Change BU microswitch</td>
</tr>
<tr>
<td>Wiring of the BU microswitch not connected</td>
<td>Check the wiring</td>
</tr>
<tr>
<td>Wiring of the BU microswitch damaged (open)</td>
<td>Change the wiring</td>
</tr>
<tr>
<td>uP U2 in Main damaged (open circuit in Pin26)</td>
<td>Change Main boad</td>
</tr>
</table>

Functions/features explanation

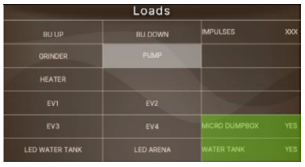
<table>
<tr><th colspan="5">EV1</th></tr>
<tr><td rowspan="4">Press and release “EV1” to toggle the EV. If it was closed, then will be open.</td><td rowspan="4">· “EV1” White
· Micro DumpBox Green
 
· It’s possible to hear the “click”.</td><td rowspan="4">The “click” is no audible. The EV remain closed</td><td>Wiring of the EV1 not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the EV1 damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>EV1 damaged</td><td>Change the EV1</td></tr>
<tr><td>The drive of the EV1 in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td rowspan="2">Press and release “EV1” to toggle the EV. If it was open, then will be closed.</td><td rowspan="2">· “EV1” OFF
· Micro DumpBox Green
 
· It’s possible to hear the “click”.</td><td rowspan="2">The “click” is no audible. The EV remain open</td><td>EV1 damaged</td><td>Change the EV1</td></tr>
<tr><td>The drive of the motor in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><th colspan="5">EV2</th></tr>
<tr><td rowspan="4">Press and release “EV2” to toggle the EV. If it was closed, then will be open.</td><td rowspan="4">· “EV2” White
· Micro DumpBox Green
 
· It’s possible to hear the “click”.</td><td rowspan="4">The “click” is no audible. The EV remain closed</td><td>Wiring of the EV2 not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the EV2 damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>EV2 damaged</td><td>Change the EV2</td></tr>
<tr><td>The drive of the EV2 in the Main is damaged</td><td>Change Main Board</td></tr>
</table>

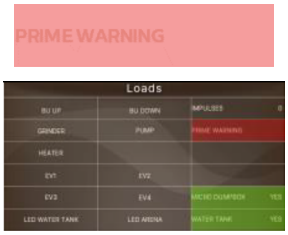
Press and release “EV2” to toggle the EV. If it was open, then will be closed.	• “EV2” OFF • Micro DumpBox Green  • It’s possible to hear the “click”.	**The “click” is no audible. The EV remain open**	EV2 damaged	Change the EV2
EV3				
Press and release “EV3” to toggle the EV. If it was closed, then will be open.	• “EV3” White • Micro DumpBox Green  • It’s possible to hear the “click”.	**The “click” is no audible. The EV remain closed**	Wiring of the EV3 not connected	Check the wiring
			Wiring of the EV3 damaged (open)	Change Main Board
			EV3 damaged	Change the EV3
			The drive of the EV3 in the Main is damaged	Change Main Board
Press and release “EV3” to toggle the EV. If it was open, then will be closed.	• “EV3” OFF • Micro DumpBox Green  • It’s possible to hear the “click”.	**The “click” is no audible. The EV remain open**	EV3 damaged	Change the EV3

Functions/features explanation

<table>
<tr><th colspan="5">EV4</th></tr>
<tr><td rowspan="4">Press and release “EV4” to toggle the EV. If it was closed, then will be open.</td><td rowspan="4">· “EV4” White
· Micro DumpBox Green
 
· It’s possible to hear the “click”</td><td rowspan="4">The “click” is no audible. The EV remain closed</td><td>Wiring of the EV4 not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the EV4 damaged (open)</td><td>Change Main Board</td></tr>
<tr><td>EV4 damaged</td><td>Change the EV4</td></tr>
<tr><td>The drive of the EV4 in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>Press and release “EV4” to toggle the EV. If it was open, then will be closed.</td><td>· “EV4” OFF
· Micro DumpBox Green
 
· It’s possible to hear the “click”.</td><td>The “click” is no audible. The EV remain open</td><td>EV4 damaged</td><td>Change the EV4</td></tr>
</table>

Functions/features explanation

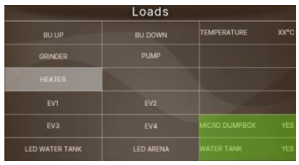
<table>
<tr><th colspan="5">Pump and Flowmeter</th></tr>
<tr>
<td rowspan="8">Press and release “PUMP” to switch on the Pump (100 impulses). With the EVs open the water goes out from the Milk spout. With the EV closed and the BU in Work, the water goes out from the Coffee spout.</td>
<td rowspan="8">· “PUMP” White
· Micro DumpBox Green Water Tank Green
 

· It’s possible to hear the pump.
· “IMPULSES” will count impulses</td>
<td rowspan="4"> 

“PUMP” OFF + “PRIME WARNING” Red. It’s possible to hear the pump but the flowmeter is not able to detect the impulses.</td>
<td>Wiring of the Flowmeter not connected</td>
<td>Check the wiring</td>
</tr>
<tr>
<td>Wiring of the Flowmeter damaged (open) Flowmeter damaged</td>
<td>Change the wiring Change the Flowmeter</td>
</tr>
<tr>
<td>Connector JP20 in Main damaged (short circuit)</td>
<td>Change Main Board</td>
</tr>
<tr>
<td>uP U3 in Main damaged (short circuit in Pin12)</td>
<td>Change Main Board</td>
</tr>
<tr>
<td rowspan="4"> 

“PUMP” OFF + “PRIME WARNING” Red. It’s NOT possible to hear the pump.</td>
<td>Wiring of the PUMP not connected</td>
<td>Check the wiring</td>
</tr>
<tr>
<td>Wiring of the PUMP damaged (open)</td>
<td>Change Main Board</td>
</tr>
<tr>
<td>PUMP damaged</td>
<td>Change the PUMP</td>
</tr>
<tr>
<td>The drive of the Pump in the Main is damaged</td>
<td>Change Main Board</td>
</tr>
</table>

Functions/features explanation

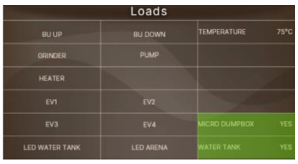
<table>
<tr><th colspan="5">ThermoBlock and NTC</th></tr>
<tr>
<td rowspan="10">Press and release “HEATER” to toggle the ThermoBlock.
Check the absorbed current. In this case we suppose that was OFF, then will be ON 100%.</td>
<td rowspan="10">· “HEATER” White
· Micro DumpBox Green
 

· The Thermoblock is ON.
· Check the absorbed current.
· “TEMPERATURE” will show the temperature</td>
<td rowspan="2"> 

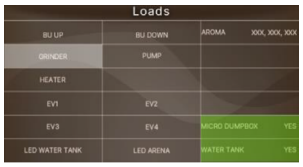
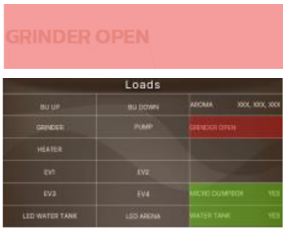
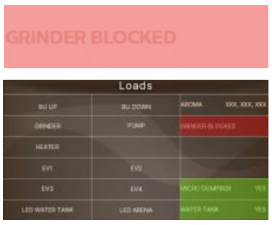
“HEATER” OFF
+
“NTC OPEN”
Red.
The NTC is open</td>
<td>Wiring of the NTC not connected</td>
<td>Check the wiring</td>
</tr>
<tr>
<td>Wiring of the NTC damaged (open)</td>
<td>Change the wiring</td>
</tr>
<tr>
<td rowspan="3"> 

“HEATER” OFF
+
“NTC SHORT”
Red.
The NTC is short</td>
<td>NTC damaged (short)</td>
<td>Change the wiring</td>
</tr>
<tr>
<td>Connector JP7 in Main damaged (short circuit)</td>
<td>Change Main Board</td>
</tr>
<tr>
<td>uP U2 in Main damaged (short circuit in Pin24)</td>
<td>Change Main Board</td>
</tr>
<tr>
<td rowspan="2">The current is out of range</td>
<td>TB damaged</td>
<td>Change the TB</td>
</tr>
<tr>
<td>The drive of the TB in the Main is damaged</td>
<td>Change Main Board</td>
</tr>
<tr>
<td> 

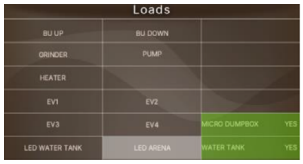
HEATER” OFF
+
“TEMPERATURE”
Red.
The temperature of the Thermoblock is too high. Cool down to perform the test.</td>
<td>The TB has reached the max temperature (80°c).</td>
<td>Brew water to reduce the temperature. And repeat the test</td>
</tr>
</table>

		The current is very low <0,5A	Wiring of the TB not connected	Check the wiring
			TCO open	Change the TCOs
			Wiring of the TB damaged (open)	Change the wiring
			TB damaged	Change the TB
			The drive of the TB in the Main is damaged	Change Main Board
Press and release “HEATER” to toggle the ThermoBlock. Check the absorbed current < 0,5A. In this case we suppose that was ON, then will be OFF.	· “HEATER” OFF · Micro DumpBox Green  · The Thermoblock is OFF. · Check if the absorbed current is 0.	**The current is still present>0,5A.**	The drive of the TB in the Main is damaged	Change Main Board

Functions/features explanation

<table>
<tr><th colspan="5">Grinder</th></tr>
<tr><td rowspan="6">Press and release “GRINDER” to toggle the Grinder. If it was OFF, then will be ON and will move in clockwise direction.</td><td rowspan="6">· “GRINDER” White
· Micro DumpBox Green
 
· The Grinder is ON.
· Check the rotation</td><td> 
“GRINDER” OFF
+
“GRINDER OPEN” Red.
The grinder in not moving.</td><td>Wiring of the Grinder not connected</td><td>Check the wiring</td></tr>
<tr><td>Wiring of the Grinder damaged (open)</td><td>Change the wiring</td></tr>
<tr><td> 
“GRINDER” OFF
+
“GRINDER BLOCKED” Red.
The grinder in not moving</td><td>Grinder damaged</td><td>Change the Grinder</td></tr>
<tr><td>Grinder blocked</td><td>Change the Grinder</td></tr>
<tr><td>The drive of the Grinder in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td>The rotation direction is wrong: anticlockwise</td><td>Wirings of Grinder are inverted</td><td>Check the Grinder wiring</td></tr>
<tr><td>Press and release “GRINDER” to toggle the Grinder. If it was ON, then will be OFF.</td><td>· “GRINDER” OFF
· Micro DumpBox Green
 
· The grinder is stop.</td><td>The grinder is still rotating.</td><td>The drive of the Grinder in the Main is damaged</td><td>Change Main Board</td></tr>
<tr><td colspan="5">Led Water Tank (NOT AVAILABLE)</td></tr>
</table>

Functions/features explanation

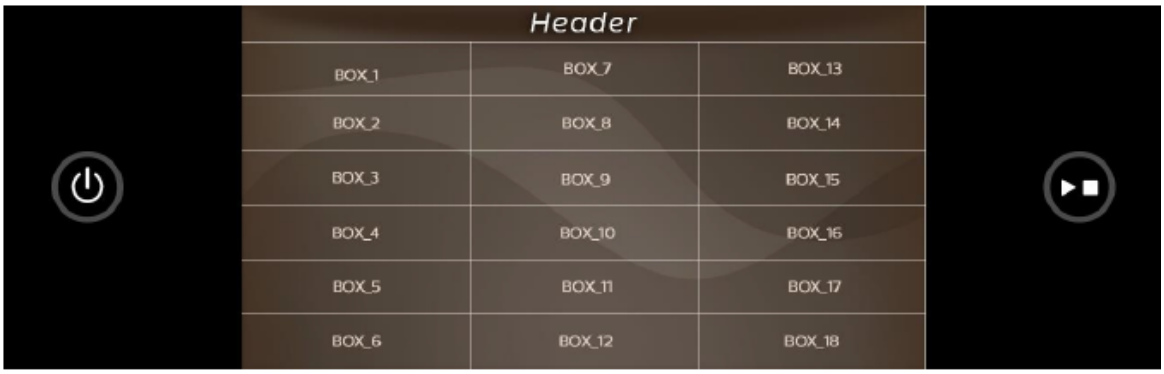
Led Arena				
Press and release “LED ARENA” to turn on the led	· LED ARENA” White · Micro DumpBox Green  · Check the arena led on	**The Left Led is not turned ON & “LED ARENA” White**	LED damaged	Change UI Module
			Missing left light guide	Add light guide
			Wrong theater	Change theater
		The Right Led is not turned ON & “LED ARENA” White	LED damaged	Change UI Module
			Missing right light guide	Add light guide
			Wrong theater	Change theater
		The Leds are not White & “LED ARENA” White	LED wrong color	Change UI Module
Press and release “LED ARENA” to turn off the led (optional)	· “LED ARENA” OFF · Micro DumpBox Green  · Check the arena led off	**The Leds are not turned OFF & “LED ARENA” OFF**	LED damaged	Change UI Module

N.B:
If the Dreg drawer is not inserted or the Service door is not closed the following loads cannot be tested:

1. BU

Functions/features explanation

GranAroma 5”



Descaling

Please use Philips descaler only. Under no circumstances should you use a descaler based on sulfuric acid, hydrochloric acid, sulfamic or acetic acid (vinegar) as this may damage the water circuit in your machine and not dissolve the limescale properly. Not using the Philips descaler will void your warranty. Failure to descale the appliance will also void your warranty.

When the machine needs descaling, a message appears on the display.

Please use Philips descaler only. Under no circumstances should you use a descaler based on sulfuric acid, hydrochloric acid, sulfamic or acetic acid (vinegar) as this may damage the water circuit in your machine and will not dissolve the limescale properly. Not using the Philips descaler will void your warranty. Failure to descale the appliance will also void your warranty. You can buy Philips descaler in the online shop at **www.saeco.com/care.**

Tip: Using the AquaClean filter reduces the need for descaling!

What to do if the descaling procedure is interrupted

You can exit the descaling procedure by pressing the on/off button on the control panel. If the descaling procedure is interrupted before it is completely finished, do the following:

1. Empty and rinse the water tank thoroughly.
2. Fill the water tank with fresh water up to the Calc / Clean level indication and switch the machine back on. The machine will heat up and perform an automatic rinsing cycle.
3. Before brewing any drinks, perform a manual rinsing cycle. To perform a manual rinsing cycle, first dispense half a water tank of hot water by repeatedly selecting the hot water function and then brew 2 cups of pre-ground coffee without adding ground coffee.

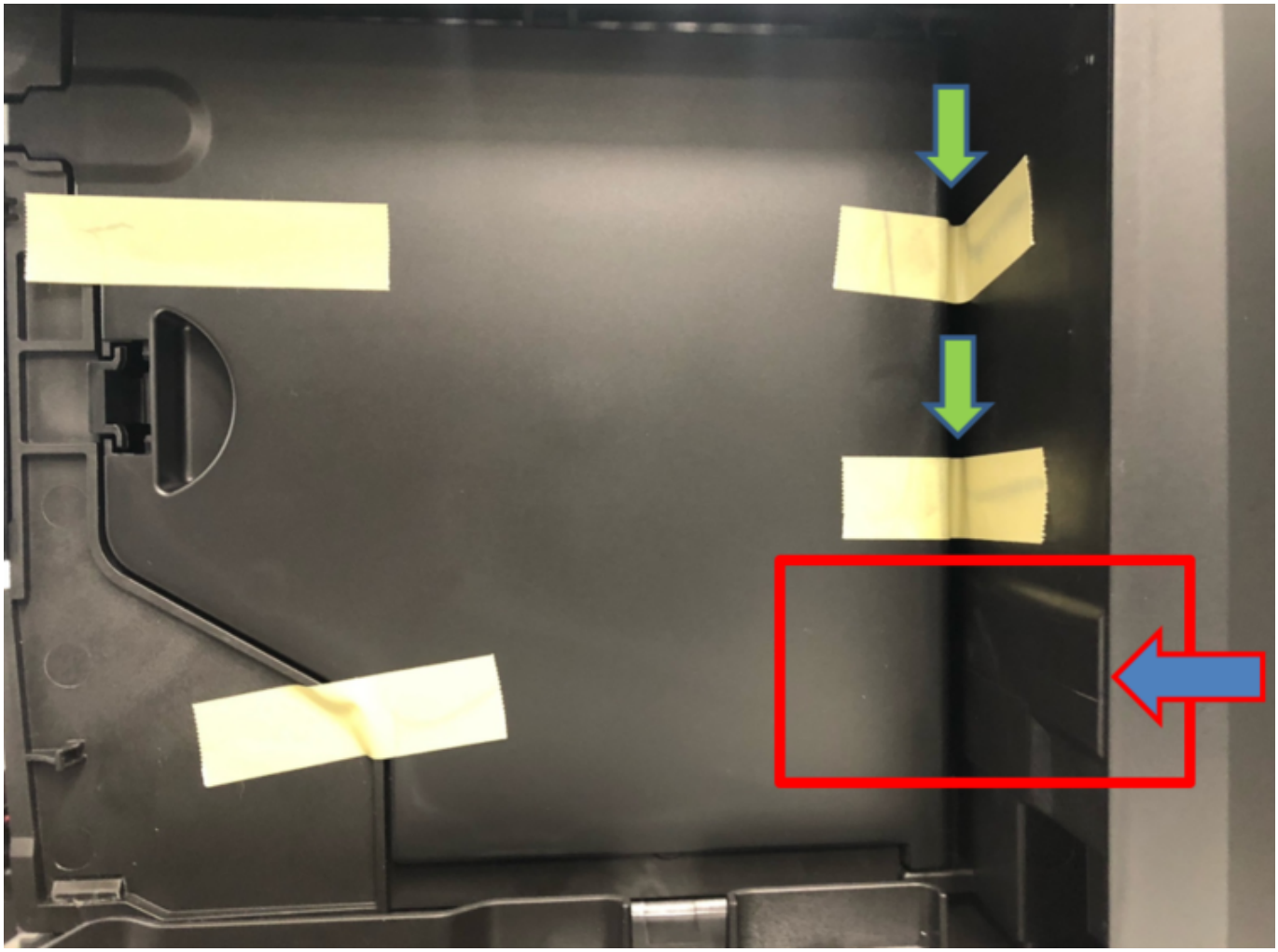
Note: If the descaling procedure was not completed, the machine will require another descaling procedure as soon as possible.

Temporary solutions

Tape for service door

Before the shipment of the appliances, is required to apply 4 pcs of adhesive tape as shown in picture.

1. Do not cover the water sensor area (in red)
2. Do not leave any gap between the tape and the corner (green arrows)



Functions/features explanation

Espresso Philips Service Center (EPSC)

EPSC is the Service tool to upload the software on the machine and run the diagnostic mode.
It can be downloaded from the following link: **https://www.epsc.versuni.com/ServiceCenterPortal/**
The application can be used only in combination with the Saeco Programming Device:
Cod. ***996530009845 "KIT PROGRAMMER SERKIT SSC2"***.
A new cable ***421946047151 "WIRING SERPROG OMN PROGRAMMER ASSY."*** is required.
They can be ordered as spare parts.
All details related to the registration and operation are explained in the enclosed Quick start guide (QSG).

Espresso Philips Service Center– Quick Start Guide

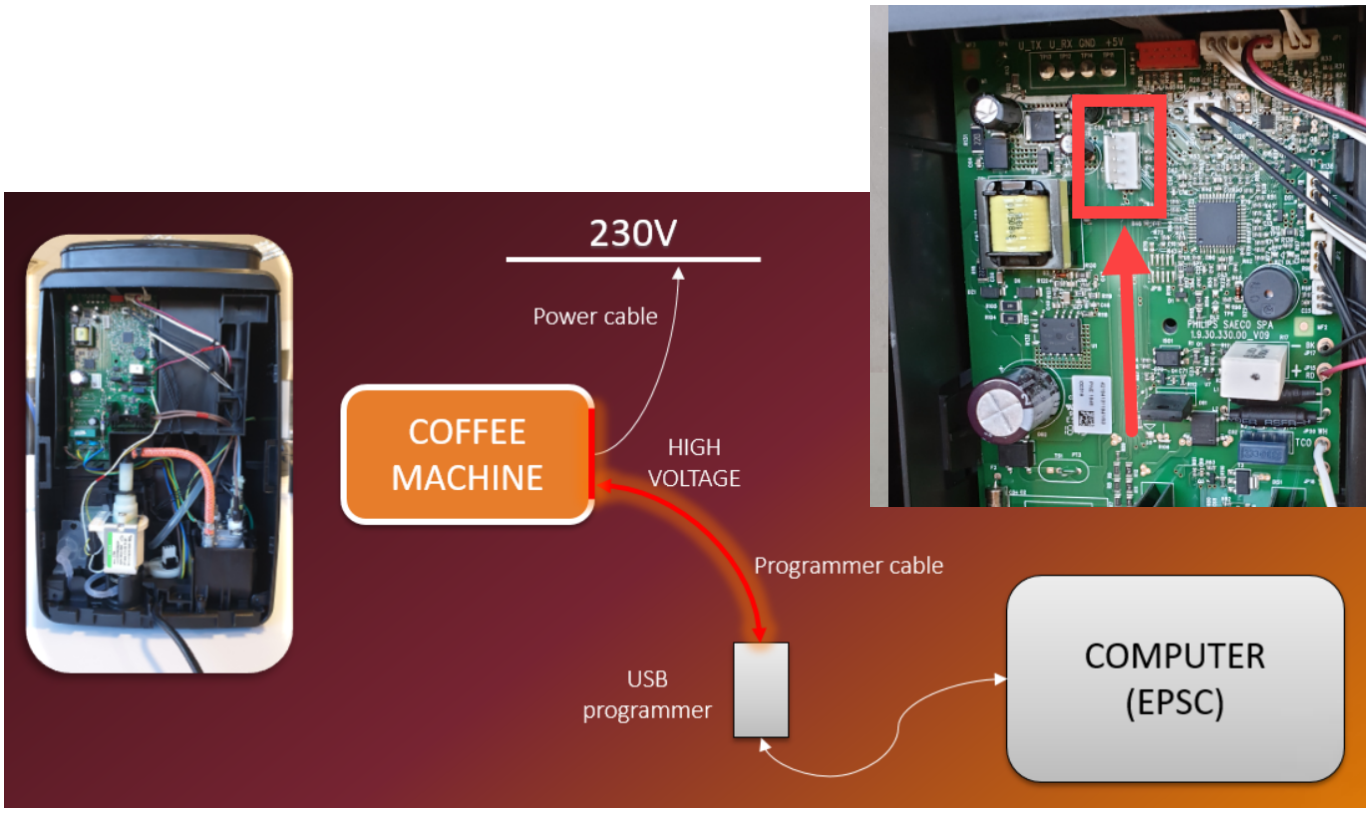
Press the icon to view the document
To open the attached document is necessary to save the service manual on your PC.
The main Diagnostic Parameters description is available on the GDA_114331.

For your safety, be sure the plug is disconnected from the mains!

In order to connect the machine to the PC, we need to remove the back panel, which will expose the complete mainboard

REMEMBER: The board is working at 230V

Please take extra care before you start to open the machine or connect/disconnect the programmer cable, as till the USB programmer, high voltage is going through



Functions/features explanation

UI software update

This section is only for Saeco GranAroma Deluxe

UI software update needs to be run via wi-fi and not via EPSC.
When receiving a Saeco GranAroma Deluxe check if the machine was already connected with the wi-fi and make sure the machine is updated with the latest version. Check into saeco.com on the support FAQ section to view latest software version available.

Action:

Check if consumer has accepted the privacy consent. If so:
- Connect the machine to Wi-Fi using local workshop credentials.
- Update SW => setting, manual SW update.
- In case of good connection speed download time ±10min (run unattended).
- After download the booting/update time is ± 3min (run unattended).
- Once all finished, delete the credentials used to update (setting, Wi-Fi).
- Important to not actuate “factory reset” (keeps machine info, profiles and Wi-Fi credentials from consumer).

UI replacement:

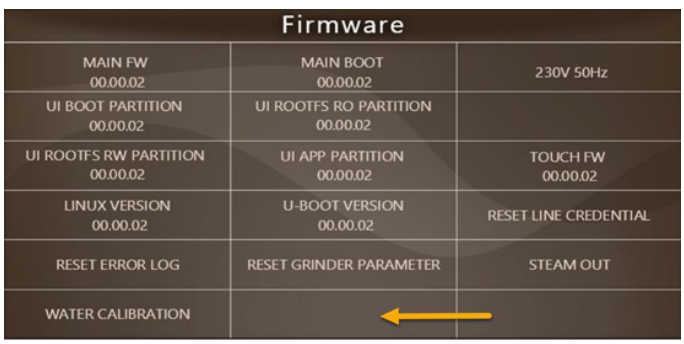
Follow above procedure, but after finishing apply “factory reset” as anyhow the consumer information/ profiles etc. was lost due to UI defect.

If privacy consent was not provided by consumer:
- Connect machine to Wi-Fi and accept privacy consent.
- Run the update of the software.
- After update apply “reset to factory”.

Hot to exit Test mode and Debug mode in replaced UI:

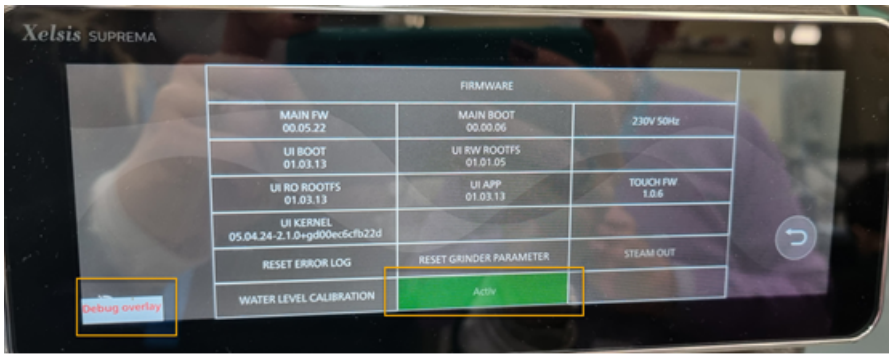
1. In case the replaced UI switches on automatically in “test mode” the following steps needs to be performed:
   To exit the Test mode:
- Choose “Firmware”
- Press for 3 second the button “Reset Line Credential”
- Switch Off and On the appliance from the main switch

2. Debug Mode:
   To exit the Debug mode:
- Choose “Firmware”
- Press and hold the lower central button (indicated by the arrow) until a green background appear and the “Active” test appear on the button:



- Now by pressing the button you can switch the debug function ON and OFF.

When it is “ON” a “Debug overlay” text appear on the lower left side of the screen.



- Press and hold the button until the green background and also the debug overlay icon disappear
- Switch off and on appliance from the main switch
- Turn on the appliance
- Make sure the Debug overlay icon is disappeared

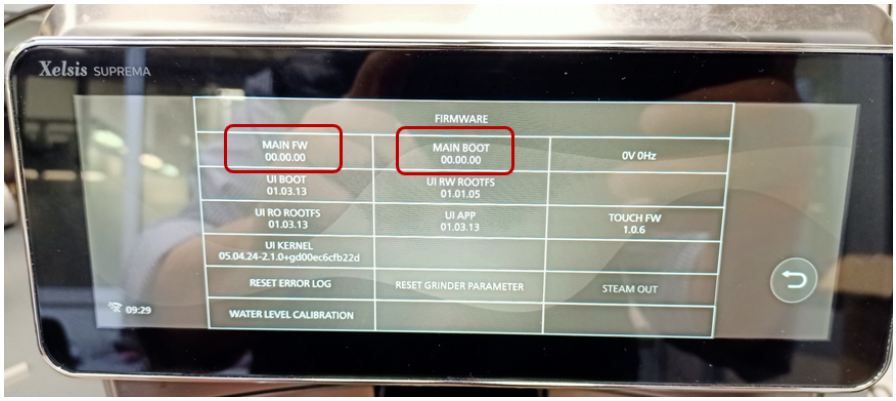
Follow above procedure, but after finishing apply “factory reset” as anyhow the consumer information/ profiles etc. was lost due to UI defect.

If privacy consent was not provided by consumer:

- Connect machine to Wi-Fi and accept privacy consent.
- Run the update of the software.
- After update apply “reset to factory”.

MAINBOARD software update:

By detecting the SW version 00.00.00 in the MAIN board field on the test mode screen, means there is a missing communication between the MAIN and UI boards. if that happens, one of the boards is defective and needs to be replaced.



Functions/features explanation

Repair Flow

Process stap	Saeco No.	Action
Inkate	1	Visual inspection (transport damage) take care for pictures
	2	Check Type/Serial number
	3	Log all available accessory, counte check with info from consumer
Diagnosis	4	Check product for consumer complaint and main function (NFF contact consumer)
	5	Run Diagnostic to get error codes and relevant set statistics (EPSC) refer SDA_114585
	6	Opening machine
Repair	7	Repair the fault(s) encountered (view Symptom Cure)
	8	Checking any modifications (view Symptom Cure, new software, etc.) **Refer Annex tabs per family (if available)**
	9	**Basic Functional test while the application is open** (linked to consumer complaint or what you may have detected)
Coffee		*Make e 2 cups at the same time. Are the volumes equal*
- Crema		*Blow on the coffee. Does the crema come back together*
		Is the crema colour correct (Hazelnut)
- Temperature		*Is the coffee temperature within spec refer SDA_97832*
Steam		*Does the steam work*
How Water		*Does the hot water work*
Milk		*(if applicable)*
- Cappuccino		*Does the cappuccinatore produce good froth*
	10	check water circuit for any leakage, such as Oetiker clamps, boiler and valve connection and hoses
	11	Check mechanism for good movement and unexpected noise
	12	Assembly
Inspection	13	Do cabinet parts fit well together
- Visual	14	Check for damages
- Power Check	15	Will the set switch on
- Accessories	16	Do the accessories match with the intake
- Consumer complaint	17	Check the product for the consumer complaint
Quick Functional test	18	Make 2 cups at the same time. Are the volumes equal
Coffee	19	Is the sound normal ?
Leakage	20	Did the product leak during the testing
Steam out	21	**Steam out** before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. **No need for those families** Minuto Family (all platform); Incanto Family New .; Pico Baristo ; Gran Baristo; Intelia V2 ; Philips 2000 – 2100 ; Incanto Executive; Xelsis-New; Moltio Family (all Platform) **Please also check for GDA_113455**
Reset Error code	22	New devices like Xelsis-New have the possibility to reset the error code, once captured it need to be reset to see if it appear afterwards again
Claim Administration	23	**Provide precise IRIS code, according dedicated code table for Garment Care products. The location code from the part you have worked on MUST be completed always with the part reference from exploded view !** **Primary fault and corresponding IRIS code should be claimed first.**
Cleaning	25	Clean water reservoir, bean reservoir, brew chamber and conveyor
	26	Clean and dry brew unit, coffee bin and drip tray
	27	External cleaning (housing surface)

Functions/features explanation

Process stap	Saeco No.	Action
Safety check	28	Earth leakage, Isolation test, resistor of earth wire grounding, as requested in certain country's (VDE, ISO) or H-POT TEST
Visual	29	Check the mains cord for damages
Packing	30	Packing
	31	Check completeness (accessories) according income log refer #3
	32	Neatly pack the product
Documentation	33	Info for Consumer by packed ? e.g. service brochure, FAQ, NFF letter, s/c etc....
	34	Descaling instruction with changed procedure (S/C) if available
Repair report	35	Is there an answer to **ALL** consumer questions/complaints (see complaint)
	36	add set statistic and give, if needed clear instruction towards consumer
	37	Is it indicated which documents are added
	38	Are there tips how to prevent issues

Error Codes

CODE	Description	Notes
01	Grinder fail (grinder blocked)	
02	Grinder fail (grinder turns not detected)	
03	Bu movement toward WORK fail	
04	Bu movement toward HOME fail	
05	Water circuit fail	
10	NTC short circuit fail	
11	NTC open circuit fail	
14	Heater over-temperature fail	
15	Heater time-out fail	
19	Zero-Crossing fail	

The error codes stored by the machine can be accessed via the USCP CONFIG MODE.

The information related to the error codes are available in the ErrorLog made up of 10 records.

The error codes are stored according to a FIFO concept.

The last error will be always at the first position ErrorLog1. And the older ones will be shifted down every time a new error code is added in the first position.

Position	Time0	Time1	Time3	Time4	...	TimeN	TimeN+1
ErrorLog 1	0	A	G	R		C	Z
ErrorLog 2	0	0	A	G		B	C
ErrorLog 3	0	0	0	A		R	B
ErrorLog 4	0	0	0	0		G	R
ErrorLog 5	0	0	0	0		H	G
ErrorLog 6	0	0	0	0		I	H
ErrorLog 7	0	0	0	0		O	I
ErrorLog 8	0	0	0	0		R	O
ErrorLog 9	0	0	0	0		G	R
ErrorLog 10	0	0	0	0		A	G

Version history

21/01 Version 1.1: SM648x & SM658x series initial release.

21/10 Version 1.2: Added Saeco GranAroma Deluxe SM668x series to the cover page.

On page 4: Under General information, added overview of Saeco GranAroma Deluxe SM668x series figure.

On page 8: Under Technical information, added coffee and machine specifications for Saeco GranAroma Deluxe SM668x series.

On page 63 - 67: Under Test mode, added test mode information for Saeco GranAroma Deluxe SM668x series.

On page 68 - 82: Under Functions/features explanation, added steam out information for Saeco GranAroma Deluxe SM668x series.

22/04 Version 1.3: On page 22 - 23: Under Disassembly - and Reassembly advice added procedure for disassembly of the UI for Granaroma Deluxe SM668x series.

23/03 Version 1.4: From page 65 to page 89 changed Test Mode section for GranAroma Deluxe machine.

On page 93 - 94: Under Functions/features explanation, added UI software update information for Saeco GranAroma Deluxe SM668x series.

23/05 Version 1.5: On page 94: Under Functions/features explanation, added Mainboard software update information.

On page 92: Under Functions/features explanation, updated EPSC link to new server environment and QSG guide.

https:// www.saeco.com