Coffee Machine

Service
Service
Service

Philips 3000 V2

ServiceManual

Rev. 02 - DEC 2018

TYPE	12NC	DESCRIPTION
HD8827/01	882882701010	HD8827/01 PHI 3000 V2 CMF BK 230 WE
HD8827/09	882882709300	HD8827/09 PHI 3000 V2 CMF BK 230 CEE
HD8827/09	882882709870	HD8827/09 PHI 3000 V2 CMF BK 230 RU
HD8829/01	882882901010	HD8829/01 PHI 3000 V2 EASYCAP. BK 230 WE
HD8829/09	882882909300	HD8829/09 PHI 3000 V2 EASYCAP. BK 230 CE
HD8829/09	882882909870	HD8829/09 PHI 3000 V2 EASYCAP. BK 230 RU
HD8829/11	882882911010	HD8829/11 PHI 3000 V2 EASYCAP. SIL 230/5
HD8829/11	882882911300	HD8829/11 PHI 3000 V2 EASYCAP. SL 230 EU
HD8829/15	882882915470	HD8829/15 PHI 3000 V2 EASYCAP. SL 220/60
HD8830/10	882883010220	HD8830/10 PHI 3000 V2 EASYCAP. GBK 230/50
HD8830/12	882883012220	HD8830/12 PHI 3000 V2 EASYCAP. GWH 230/50

MODIFICATIONS TO SERVICE MANUAL				
From Rev.	To Rev.	Chapter	Inserted	Modified
Rev01	Rev02			Updated index of involved models
Rev01	Rev02	1.1		Updated CRP list

Published by Philips

Subject to modification

EN 4219 400 00040

06-DECEMBER-2018

PHILIPS

PHILIPS 3000 V2

Technical specification	
Power supply and output:	240 V~ 50 Hz 1850 W - 230 V~ 50/60 Hz 1850 W - 120 V~ 60 Hz 1500 W
Power consumption:	During heating phase- approx. 5.6 A
Boiler: Stainless steel	(230 V~) 1900 W - (120 V~) 1300 W - (100 V~) 1100 W for coffee, hot water and steam dispensing
Safety system:	2 thermostats at 190°C one shot
Temperature monitoring:	(NTC) variable resistor sensor - transmits the value to the electronic card
Automatic dosage:	Dose adjustment controlled by the electronic system
Gear motor:	2 rotation directions; power supply 24VC
Coffee grinder:	Direct current motor with flat ceramic grinder blades
Pump:	Ulka Type EP5/S GW approx. 13-15 bar with reciprocating piston and thermal switch 100°C 48 W, 230V, 50 Hz, 120V, 60Hz 100V, 50/60 Hz
Overpressure valve:	Opening at approx. 16-18 bar
Water circuit filling time:	Approx. 15 sec Max. on first filling cycle
Heating time:	Approx. 45 sec.
Grinding time:	Approx. 8-10 sec.
Housing material	Thermoplastic material
Size (w x h x d)	215 x 330 x 429 mm (data may vary depending on the model)
Weight	7 Kg
Power Cord length	0,8 -1,2 m
Cup size	Up to 152 mm
Water tank	1800 ml
Water filter	In tank
Coffee bean hopper capacity	250g
Coffee grounds drawer capacity	15 pucks
Energy Efficiency Label	A
Energy saving mode consumption	< 1 Wh
Pump pressure	15 bar
Boiler	Stainless steel type
Safety devices	Thermal fuse
Nominal voltage - Power rating – Power supply	Data stored on the below label placed inside the service door
Serial Number TW901616236813	TW90= product + production location - 1616 = year & production week - 236813 = unique following number

PHILIPS 3000 V2

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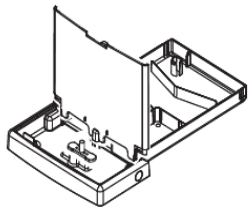
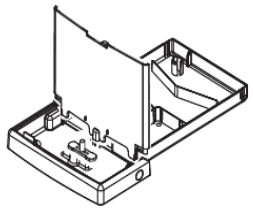
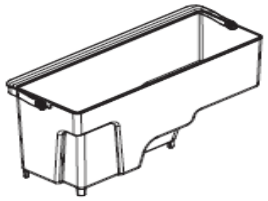
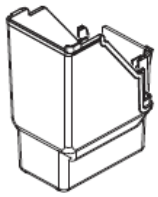
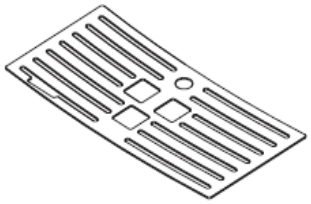
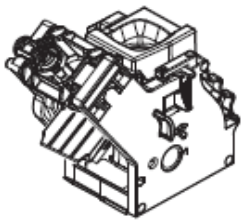
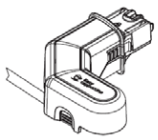
CHAPTER 1

INTRODUCTION

1.1. Consumer Replaceable Parts (CRP) List

Consumer Replaceable Parts are parts which we encourage consumers to replace themselves (as required); these parts can be removed without help of a screwdriver

CRP CTN	12NC	Description	Compatible for	Picture (assembled)
CP0165/01	421941308111	Dip tray	All black models(exept glossy black)	
CP0507/01	421941310521	Dip tray	Silver models	
CP0150/01	996530073476	Water container	All models	
CP0166/01	421941308121	Dump box	All models	
CP0151/01	421944034471	Drip tray grate	All models	
CP0739/01	421944092331	Brew group	All models	
CP0504/01	421944070662	BEAN COF.CONTAINER LID (from S.N:FROM S/N. TW901645704032)	All models	

CP0159/01	421941306191	Black water dispenser	Easycap only	
CP0158/01	996530068626	Black milk intake tube connector	Easycap only	
CP0332/01	421944066941	Cappuccinatore	Easycap only	
CP0377/01	421944068711	Complete milk carafe	Easycap only	

1.2. Material

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

1.3. Specific tools and equipment

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

12NC	Description	Notes
-	Flathead screwdriver	# 0, # 2
-	Torx screwdriver	(T10-T20)
-	Cutter	
-	Cable tie tightening tool	
-	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
996530009845	Serkit	Tool needed for programming with our service tool
-	EPSC (Espresso Philips Service Center)	Tool used to flash the SW on the machines (for SW upgrade and diagnostics mode). Refer to SDA_114585.

1.4. Safety warnings

Please, read the Service manual of the machine before starting any maintenance.
Operation, maintenance and/or repair of this device has to be carried out only by qualified persons, trained for work at or with electric devices.

The technicians to operate under safety conditions, needs to:
1. Use personal safety devices;
2. Disconnect the appliance from the power mains before repairing;
3. Before and after repair, it is recommended to perform dielectric strength tests (This domestic appliance is rated as insulation class 1).

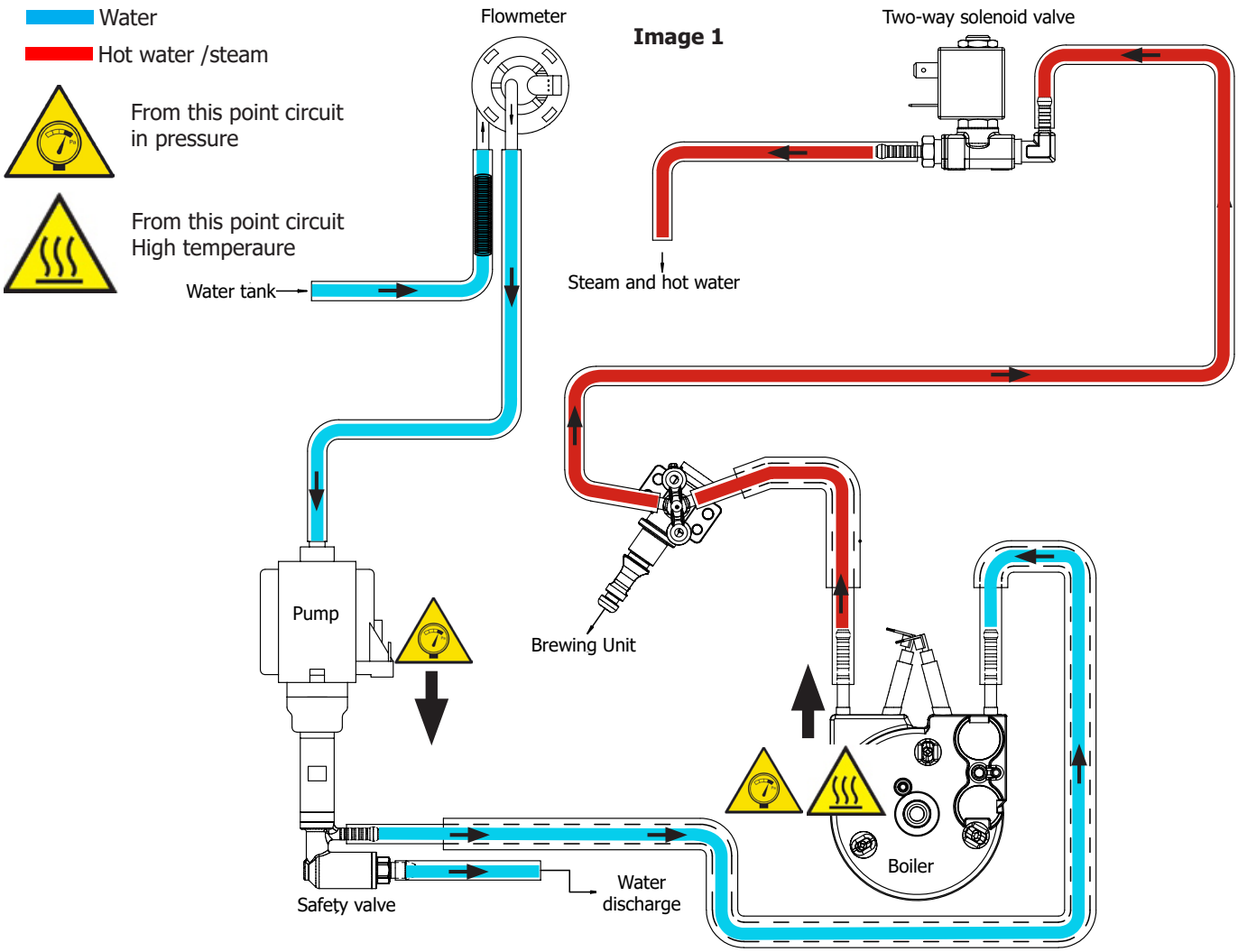
During the machine disassembly the operator has to pay attention to hot and under pressure parts.
All parts involved can be find in the hydraulic circuit below schema.

The machine hydraulic circuit can reach maximum pressure of 16/18 bar.

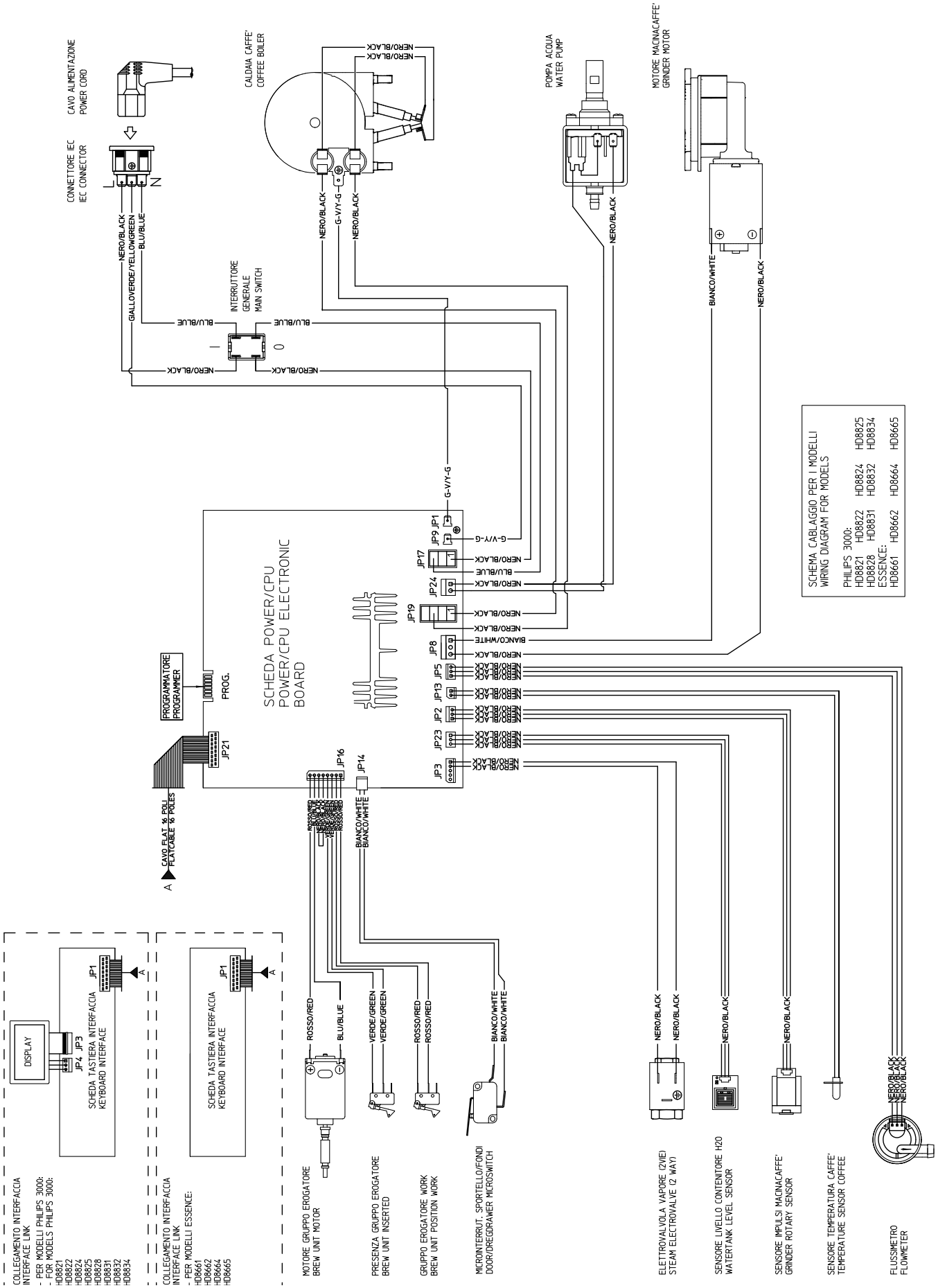
When the machine arrives at the Service Center in descaling mode interrupted, or making Descaling , take EXTREME CARE to avoid any unintentional contacts with the descaler.

After the product has been repaired, it should function properly and has to meet the safety requirements and legal regulations as officially laid down at this moment.

1.5. Water circuit diagram



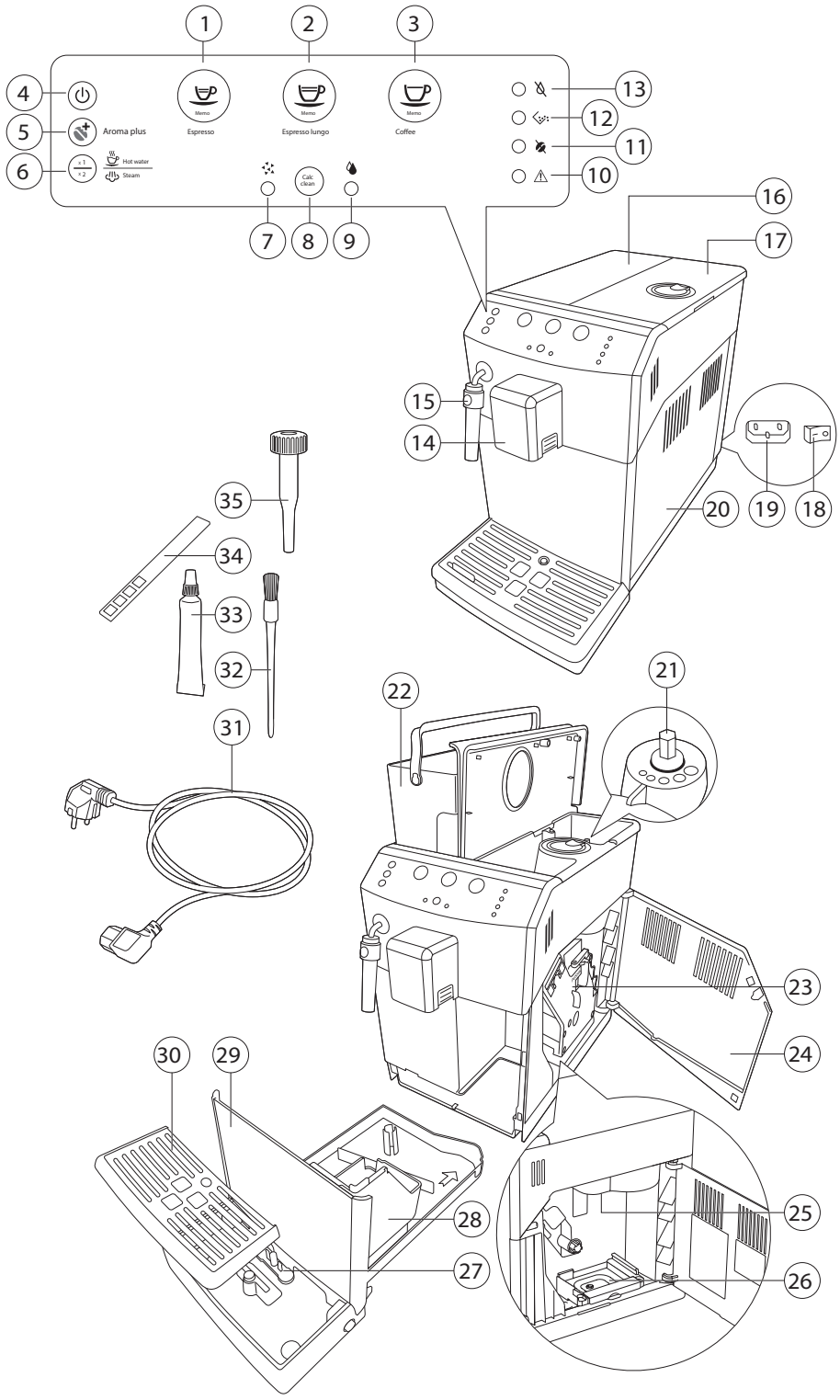
1.6. Electrical diagram



1.7. Service POLICY grid as used for coffee machines

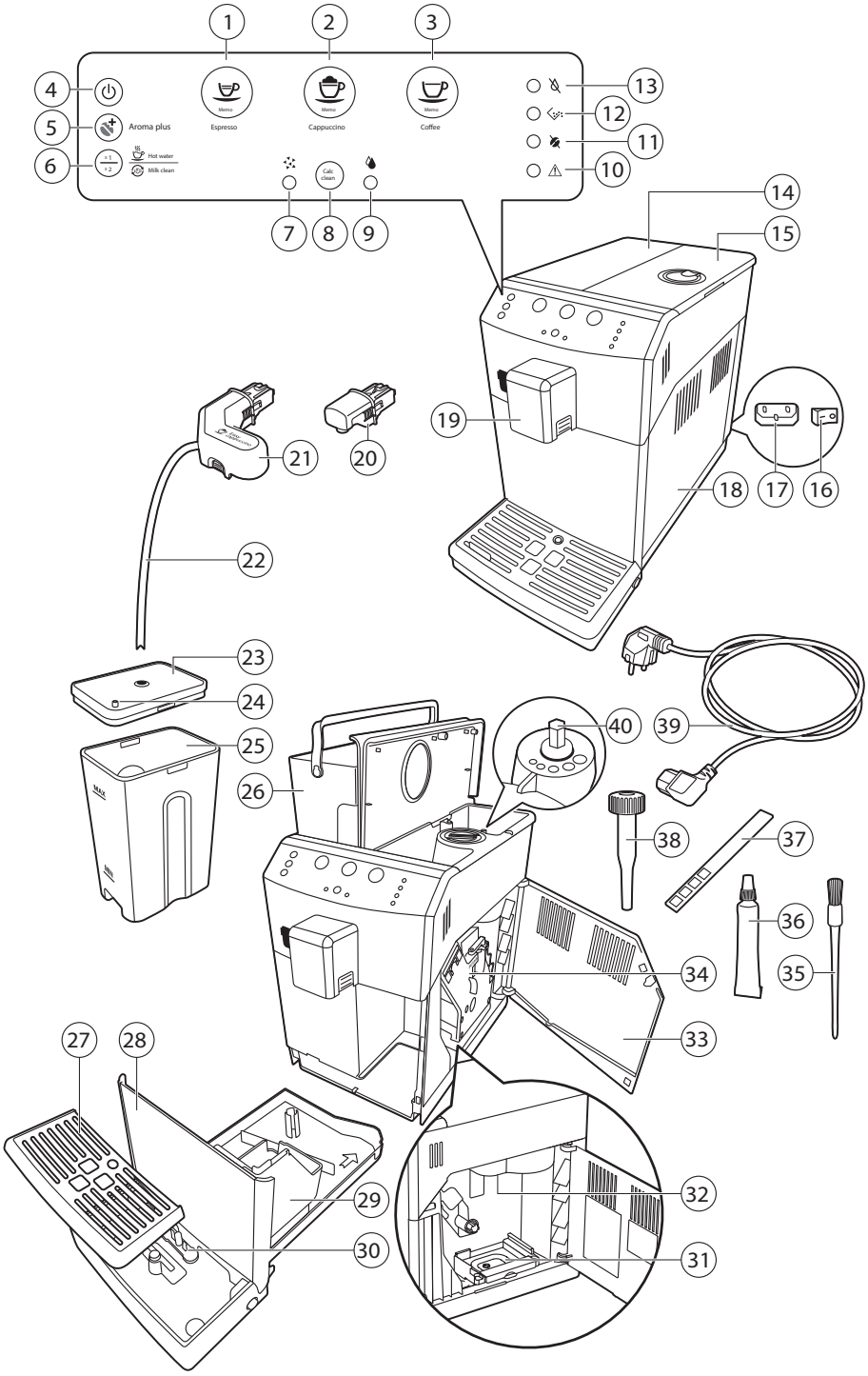
During the repair is always recommended to use, if possible, single parts rather than the correspondent assembly.

1.8. External machine parts Philips 3000 V2 CMF



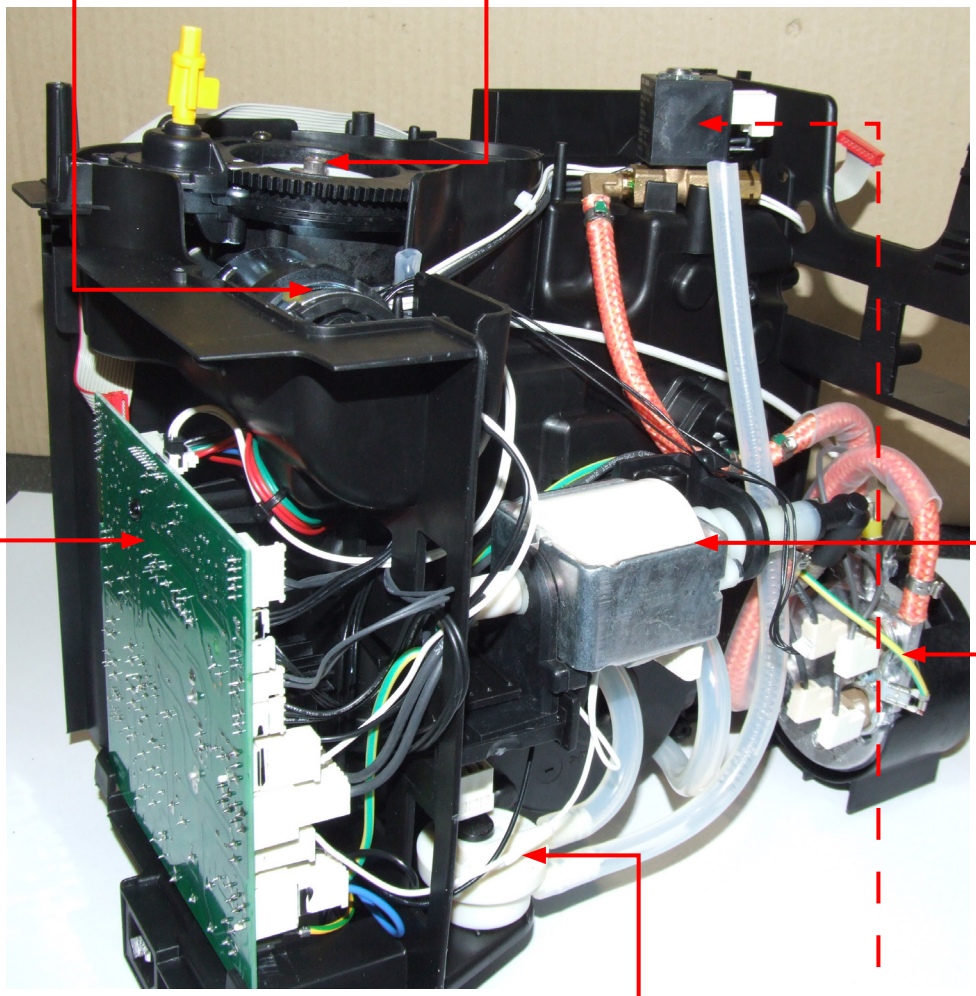
1	ESPRESSO button
2	ESPRESSO LUNGO button
3	COFFEE button
4	ON/OFF button
5	AROMA STRENGTH button
6	HOT WATER/ STEAM button
7	Descaling cycle light
8	CALC CLEAN button
9	Rinse cycle light
10	General warning light
11	No coffee light
12	Empty coffee grounds container light
13	No water light
14	Coffee dispensing spout
15	Classic milk frother
16	Lid of the water tank
17	Lid of the bean hopper
18	Main switch
19	Socket for cord
20	Service door
21	Grinder adjustment knob
22	Water tank
23	Brew group
24	Inside of maintenance door with cleaning instructions
25	Coffee exit duct
26	Coffee residues drawer
27	Drip tray full indicator
28	Coffee grounds container
29	Drip tray
30	Drip tray cover
31	Cord
32	Cleaning brush
33	Grease
34	Water hardness tester
35	Multifunctional tool (grinder adjustment key and coffee duct cleaning tool)

1.9. External machine parts Philips 3000 V2 EASY CAPPUCCINO

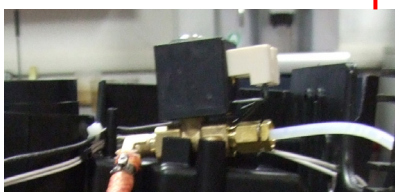


1	ESPRESSO button
2	CAPPUCCINO button
3	COFFEE button
4	ON/OFF button
5	AROMA STRENGTH button
6	HOT WATER/ MILK CLEAN button
7	Descaling cycle light
8	CALC CLEAN button
9	Rinse cycle light
10	General warning light
11	No coffee light
12	Empty coffee grounds container light
13	No water light
14	Lid of the water tank
15	Lid of the bean hopper
16	Main switch
17	Socket for cord
18	Service door
19	Coffee dispensing spout
20	Hot water dispensing spout
21	Automatic milk frother
22	Suction tube
23	Top of the milk carafe
24	Pin on top of the milk carafe
25	Milk carafe
26	Water tank
27	Drip tray cover
28	Drip tray
29	Coffee grounds container
30	Drip tray full indicator
31	Coffee residues drawer
32	Coffee exit duct
33	Inside of service door with cleaning instructions
34	Brew group
35	Cleaning brush
36	Grease
37	Water hardness tester
38	Multifunctional tool
39	Cord
40	Grinder adjustment knob

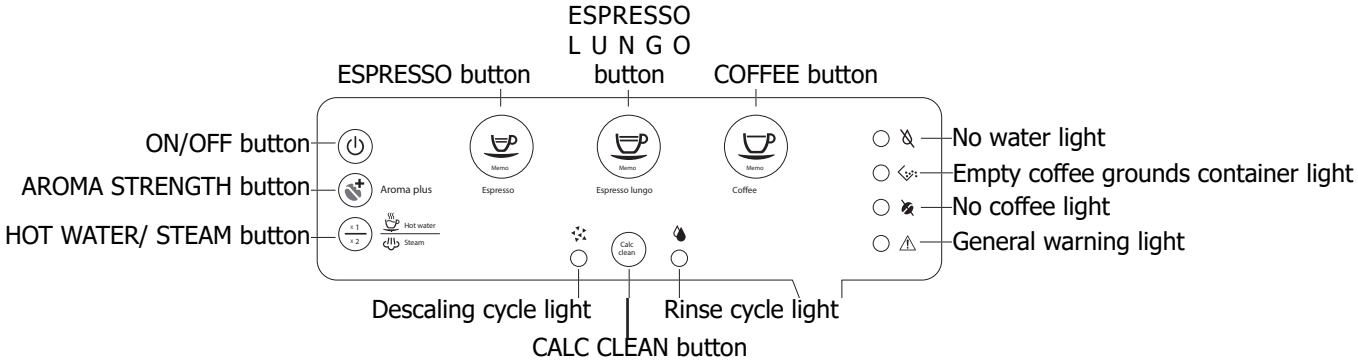
1.10. Internal machine parts



Valve



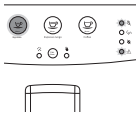
1.11. Customer menu in the Philips 3000 V2 CMF



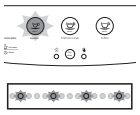
Meaning of light signals

The ESPRESSO and COFFEE buttons flash. The machine is warming up or performing an automatic rinsing cycle.

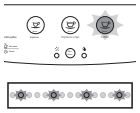
The ESPRESSO, ESPRESSO LUNGO, COFFEE and HOT WATER/STEAM buttons flash. The machine is ready to brew a beverage.



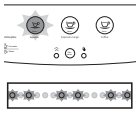
The ESPRESSO button lights up continuously, the no water and general warning lights flash. You have to prime the circuit, press the ESPRESSO button and the light of the ESPRESSO button goes out. The no water and general warning lights flash during the circuit priming, the lights go out when the circuit priming is completed.



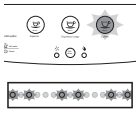
The ESPRESSO button flashes slowly. The machine is brewing one cup of espresso.



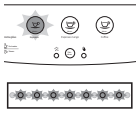
The COFFEE button flashes slowly. The machine is brewing one cup of coffee.



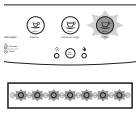
The ESPRESSO button flashes twice quickly. The machine is brewing two cups of espresso.



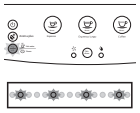
The COFFEE button flashes twice quickly. The machine is brewing two cups of coffee.



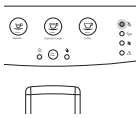
The ESPRESSO button flashes quickly. The machine is programming the amount of espresso to brew.



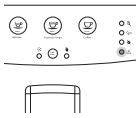
The COFFEE button flashes quickly. The machine is programming the amount of coffee to brew.



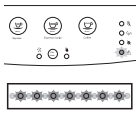
The HOT WATER/STEAM button flashes slowly. The machine is dispensing hot water or steam.



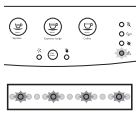
The no water light lights up continuously. Fill the water tank.



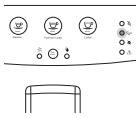
The general warning light lights up continuously. Insert the drip tray with the coffee grounds container into the machine and close the service door.



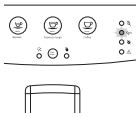
The general warning light lights up continuously. Insert the drip tray with the coffee grounds container into the machine and close the service door.



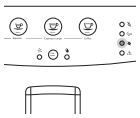
The general warning light flashes slowly. Insert the brew group.



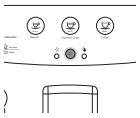
The empty coffee grounds container light lights up continuously. Empty the coffee grounds container.



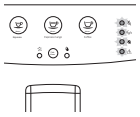
The empty coffee grounds container light flashes. The coffee grounds container is not inserted into the machine. Wait until the empty coffee grounds container light goes out and the general warning light lights up continuously. Insert the coffee grounds container and close the service door.



The no coffee light lights up continuously. Fill the coffee bean hopper with coffee beans and restart the brewing cycle. The no coffee light goes out when you press the button of the desired beverage. You can also dispense steam and hot water when the machine shows this warning signal.

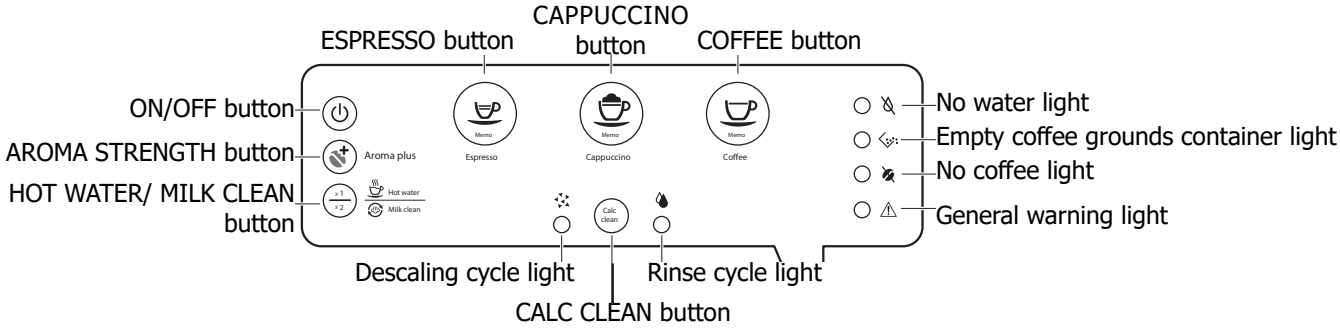


The CALC CLEAN light lights up continuously. You need to descale the machine.



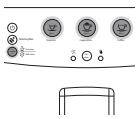
The no water, empty coffee grounds container, no coffee and general warning lights flash simultaneously. The machine is out of order. Switch off the machine and switch it back on after 30 seconds. Repeat this procedure 2 or 3 times. If the machine does not switch back on, contact the Philips Consumer Care Centre in your country.

1.12. Customer menu in the Philips 3000 V2 EASY CAPPUCCINO



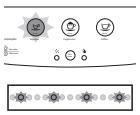
Meaning of light signals

The ESPRESSO and COFFEE buttons flash. The machine is warming up or performing an automatic rinsing cycle.

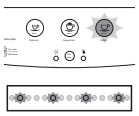


The ESPRESSO, CAPPUCCINO, COFFEE and HOT WATER/MILK CLEAN buttons lights light up continuously. The machine is ready to brew a beverage.

The ESPRESSO button lights up continuously, the no water and general warning lights flash. You have to prime the circuit. Insert the hot water dispensing spout and press the ESPRESSO button and the light of the ESPRESSO button goes out. The no water and general warning lights flash during the circuit priming, the lights go out when the circuit priming is completed.

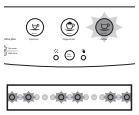


The ESPRESSO button flashes slowly. The machine is brewing one cup of espresso.

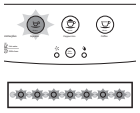


The COFFEE button flashes slowly. The machine is brewing one cup of coffee.

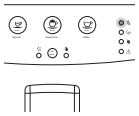
The ESPRESSO button flashes twice quickly. The machine is brewing two cups of espresso.



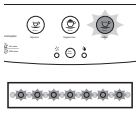
The COFFEE button flashes twice quickly. The machine is brewing two cups of coffee.



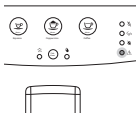
The ESPRESSO button flashes quickly. The machine is programming the amount of espresso to brew.



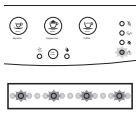
The no water light lights up continuously. Fill the water tank.



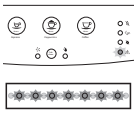
- The COFFEE button flashes quickly. The machine is programming the amount of coffee to brew.
- The HOT WATER/MILK CLEAN button flashes slowly. The machine is dispensing hot water or steam.



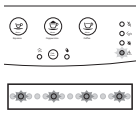
The general warning light lights up continuously. Insert the drip tray with the coffee grounds container into the machine and close the service door.



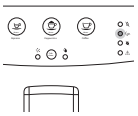
The general warning light flashes slowly. Insert the hot water dispensing spout.



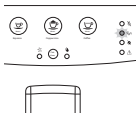
The general warning light flashes quickly. The brew group is being reset due to machine reset.



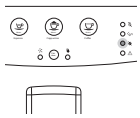
The general warning light flashes slowly. Insert the brew group.



The empty coffee grounds container light lights up continuously. Empty the coffee grounds container.

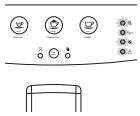


The empty coffee grounds container light flashes. The coffee grounds container is not inserted into the machine. Wait until the empty coffee grounds container light goes out and the general warning light lights up continuously. Insert the coffee grounds container and close the service door.



The no coffee light lights up continuously. Fill the coffee bean hopper with coffee beans and restart the brewing cycle. The no coffee light goes out when you press the button of the desired beverage. You can also dispense steam and hot water when the machine shows this warning signal.

The CALC CLEAN light lights up continuously. You need to descale the machine.



The no water, empty coffee grounds container, no coffee and general warning lights flash simultaneously. The machine is out of order. Switch off the machine and switch it back on after 30 seconds. Repeat this procedure 2 or 3 times. If the machine does not switch back on, contact the Philips Consumer Care Centre in country.

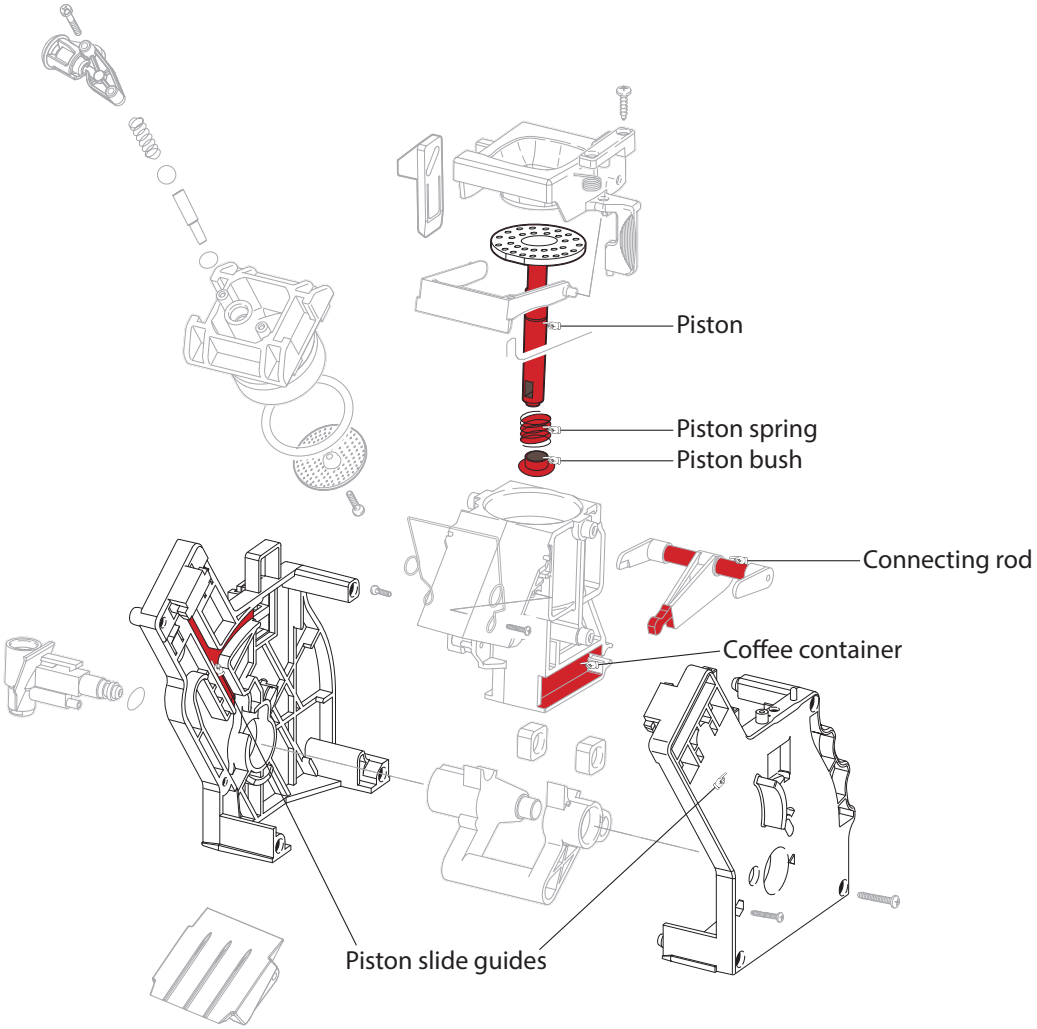
1.13. Troubleshooting

Problem	Cause	Solution
There is water under the machine.	The drip tray is too full and overflowed.	Empty the drip tray when the drip tray full indicator pops up through the drip tray. Always empty the drip tray before you start descaling the machine.
	The machine is not placed on a horizontal surface.	Place the machine on a horizontal surface so that the drip tray full indicator works properly.
The machine does not switch on.	The machine is disconnected.	Check if the power supply cord is inserted correctly.
Check if the power supply cord is inserted correctly.	This is normal. The machine uses water to rinse the internal circuit and brew group. Some water flows through the internal system directly into the drip tray.	Empty the drip tray when the 'drip tray full' full indicator pops up through the drip tray cover.
		Place a cup under the dispensing spout to collect rinsing water.

Problem	Cause	Solution
The machine does not dispense hot water after pressing the HOT WATER button. **(Only Easy Cappuccino)**	The hot water dispensing spout is not inserted.	Insert the hot water dispensing spout and press the HOT WATER button again.
The brew group cannot be removed.	The brew group is not positioned correctly.	Close the maintenance door. Switch the machine off and back on again. Wait for the machine ready screen to appear and then remove the brew group.
	The coffee grounds container is not removed.	Remove the coffee grounds container before removing the brew group.
	The machine is still in the descaling process.	You cannot remove the brew group when the descaling process is active. First complete the descaling process and then remove the brew group.
The brew group cannot be inserted.	The brew group is not in the correct position.	The brew group was not put in rest position before it was placed back. Make sure that the lever is in contact with the base of the brew group and that the hook of the brew group is in the correct position.
		Reset the machine by switching it on and off. Place the drip tray and the coffee grounds container back. Leave the brew group out. Close the maintenance door and switch the machine on and off. Then try to reinsert the brew group.
The coffee has too little crema or is watery.	The grinder is set to a coarse setting.	Adjust the grinder to a finer setting.
	The brew group is dirty.	Clean the brew group. For thorough cleaning, follow the monthly cleaning procedure with the degreasing tablet.
	The coffee exit duct is dirty.	Clean the coffee exit duct thoroughly with the handle of the multifunctional tool or a spoon handle.
	The coffee blend is not the correct one.	Try another coffee blend.
	The machine is performing its self-adjustment.	Brew a few cups of coffee.

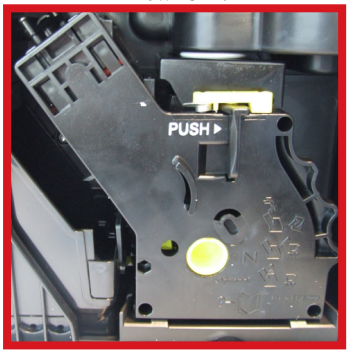
Problem	Cause	Solution
The coffee is not hot enough.	The cups you use are cold.	Preheat the cups by rinsing them with hot water.
	You added milk.	Whether the milk you add is warm or cold, it will always decrease the temperature of the coffee to some extent.
The machine grinds the coffee beans, but coffee does not come out.	The grind is set too fine.	Adjust the grinder to a coarser setting.
	The brew group is dirty.	Clean the brew group.
	The coffee dispensing spout is dirty.	Clean the coffee dispensing spout and its holes with a pipe cleaner.
	The coffee exit duct is blocked.	Clean the coffee exit duct with the handle of the multifunctional tool or a spoon handle.
The coffee comes out slowly.	The grind is ground too finely.	Change the grinder to a coarser setting.
	The brew group is dirty.	Clean the brew group.
	The coffee exit duct is blocked.	Clean the coffee exit duct with the handle of the multifunctional tool or a spoon handle.
	The machine circuit is blocked by limescale.	Descale the machine.
The milk does not froth.	The automatic milk frother is dirty or not assembled or installed correctly.	Clean the automatic milk frother and make sure it is correctly assembled or installed.
	The type of milk used is not suitable for frothing.	Different types of milk result in different amounts of froth and different froth qualities. Semi-skimmed or full-fat cow's milk give good results.
The filter does not fit.	You need to remove air from the filter.	Let air bubbles come out of the filter.
	There is still water in the water tank.	Empty the water tank before you install the filter.
The coffee grounds container light lights up too early.	Coffee grounds container as been emptied with while the machine was switched off and the counter did not reset.	Empty the coffee grounds container with the machine switched on.

1.14. Brew Unit mainteinance: Where to grease.

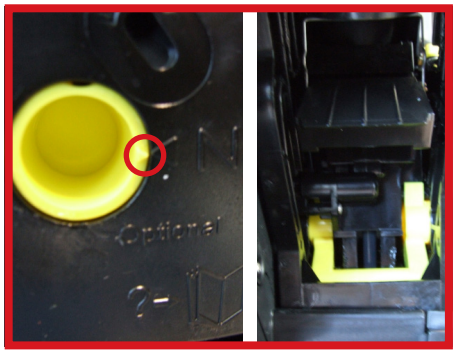


1.15. Position of the Brew Unit

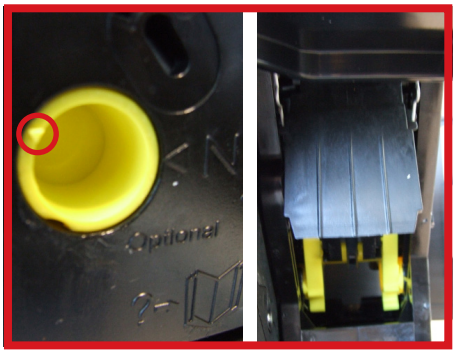
Brew Unit



Home Position



Work Position



CHAPTER 2

TECHNICAL SPECIFICATIONS

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

The below procedure is also contained in the Symptom Cure 97832.

The temperature is influenced by the flow from the dispenser and stratification of temperatures in the glass. In order to consider these phenomena and to introduce measures that allow comparisons in controlled conditions, below guidelines must be followed:
Conditions:
a) Water temperature in tank: 23°C (+/-2°C).
b) It must be used a plastic cup (see picture N°1).
c) It must be used a thermocouple thermometer (e.g. type K - see picture N°2).
d) The coffee machine is tested without any change of parameters or calibrations, which may affect the temperature of products, so the measurement of temperature must be done with machine in default factory setting.
Procedure:

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

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

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

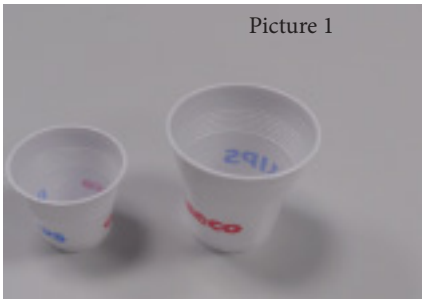
4. Test measurement: from end of dispensing to the end of rotations must be completed within 12 seconds.

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

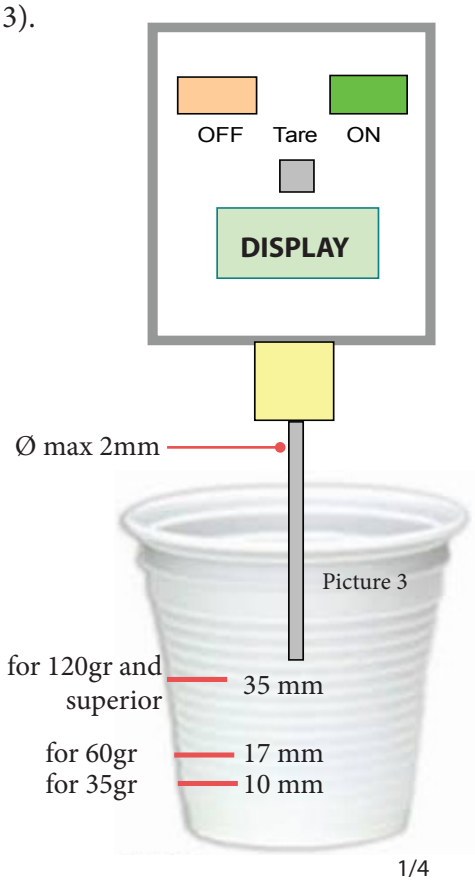
Limits of acceptability
The acceptance limits are divided by features and products and are the following:

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

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


Picture 1


Picture 2



Picture 3

2.2. Specification for the measurement of the Milk products temperature.

Milk evaluation
To carry out the test, a partially skimmed UHT milk with a percentage of grease between 1.5-1.8% at a refrigerator temperature Trefr. (between 4 to 10°C) must be used.
The milk product must be checked on a beaker of 250 ml of capability and with an inner diameter of 70mm, brewing 100gr of product.

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

Milk temperature in the beaker:
System without Pinless Wonder:
With milk at Trefr. (about 4-10 °C): $\Delta \geq 36$

Height of the milk cream in the beaker:

Manual system (pannarello) ≥ 15mm on 100gr. of brewed product

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

How to measure the temperature of the milk.

1. The measurement is carried out in the beaker, immediately after the end of milk brew, positioned on a non-metallic surface, using a thermocouple thermometer (eg. Type K). Stop the preparation of mixed product: at the end of milk brewing, where "One Touch product" function is present.
2. The temperature is measured by immersing the probe of the thermometer, positioning the probe inside the beaker at about 10mm from the bottom of the container, then the probe moves in a circular motion for 3-5 turns, stopping at the end, at the center of the beaker. It detects the maximum temperature reached in a time of relief between 3 to 5 seconds. It is important the mixing of milk before the measurement at 10mm from the bottom of the beaker. If the mixing is correct, temperature, for a few fractions of a second, during the measurement should not oscillate.

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

Manual systems (Pannarello)

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

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

Semi-automatic systems (Cappuccino)

Pours milk at Trefr. in a container ; with the machine in steam mode:

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

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

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

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

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

2.3. Machine parameters and performance

PRODUCT QUANTITY	Minimum amount (gr. ±10)	Default amount (gr. ±10)	Maximum amount (±10%)	**Programm. by the user**	**Machines**
Espresso	10	40	230	Yes	
Espresso lungo	10	80	230	Yes	Only HD8827
Cappuccino	10	50	230	Yes	Only HD8829
Coffee	10	120	230	Yes	
Hot water	No timeout				
Steam for frother	Max 180 seconds				

DREG DRAWER	Description and values
Time-out for dreg drawer	5 sec.
Reset dreg counter	Dreg emptying alarm, if the dreg drawer is removed for more than 5 seconds.

STANDBY	Description and values
Inlet time (default)	15 minutes
Inlet time programmed by Production/Service	Yes
Boiler temperature during Standby	Boiler OFF

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

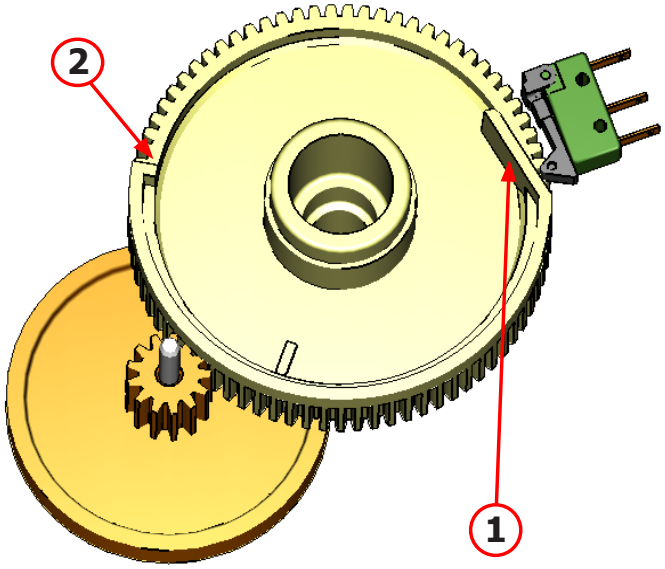
CHAPTER 3

OPERATING LOGIC

3.1. Single microswitch

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., at full power, in order to reach the optimal temperature. The temperature will then remain at a constant level.



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.

- Standby position: 1

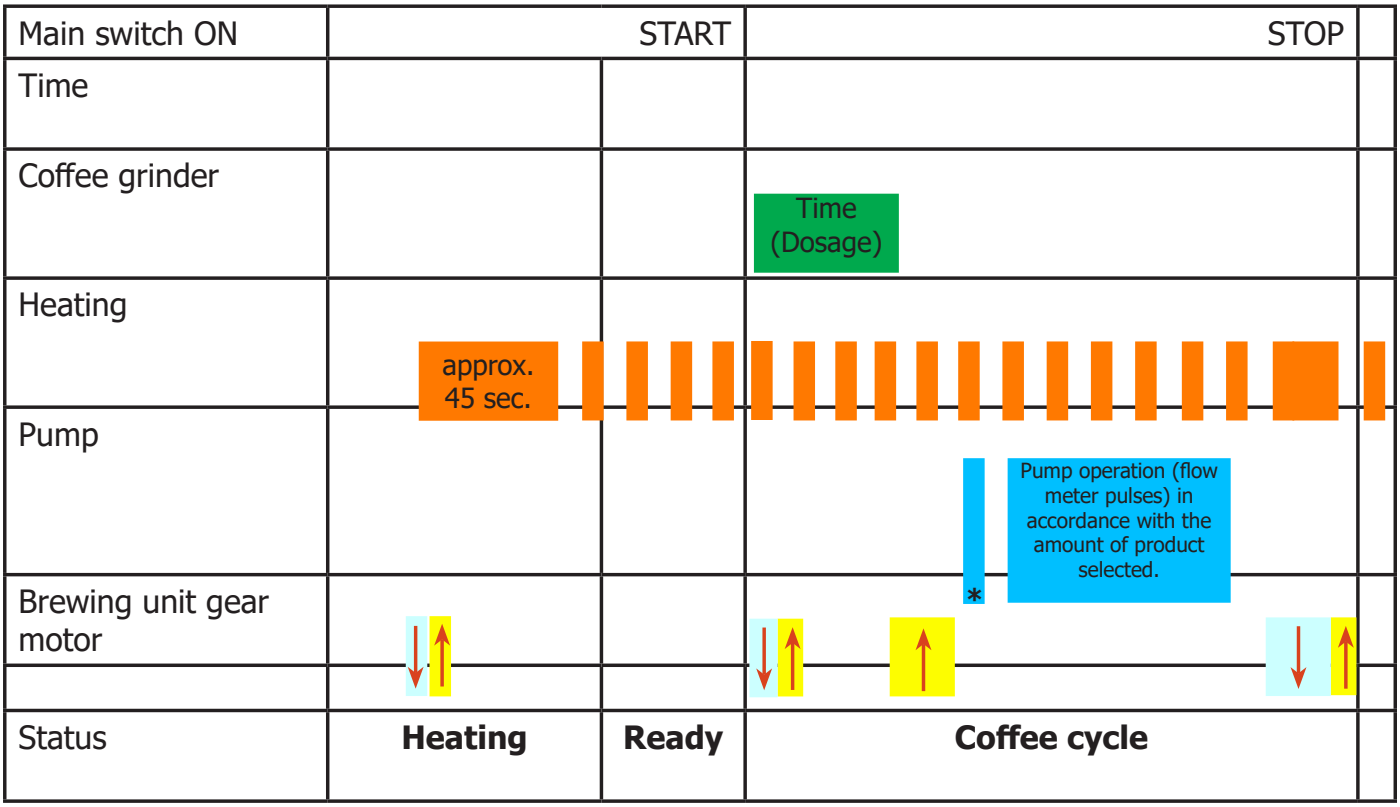
- Dispensing position: 2

3.2. Temperature sensor (adjustment)

Temp. (°C)	R nom (kΩ)	ΔR (+/- %)
20	61.465	8.6
50	17.599	5.9
75	7.214	4.1
80	6.121	3.7
85	5.213	3.4
90	4.459	3.1
100	3.3	2.5
125	1.653	3.9
150	0.893	5.1

An NTC is used as a temperature sensor; in the event of overheating this reduces 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.

3.3. Coffee cycle



Notes: * Only with Pre-brewing

Single microswitch gear motor

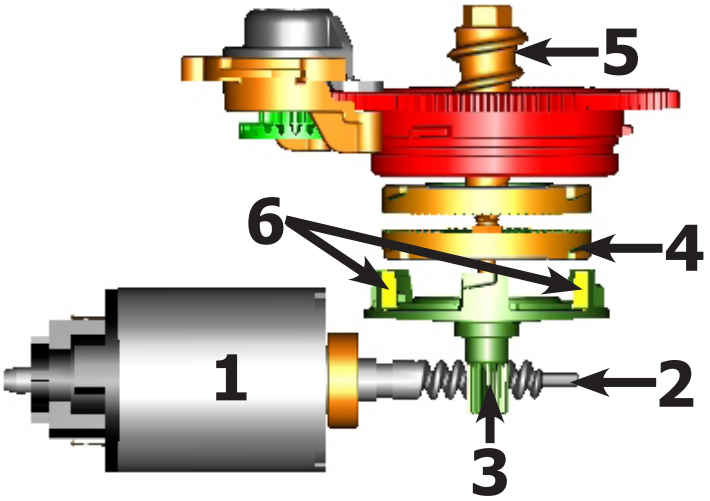
Switching on

When the machine is switched on, the gear motor repositions itself as follows:
- It acts on microswitch 1 (see following chapter).
- 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., at full power, in order to reach the optimal temperature. The temperature will then remain at a constant level.

Coffee cycle

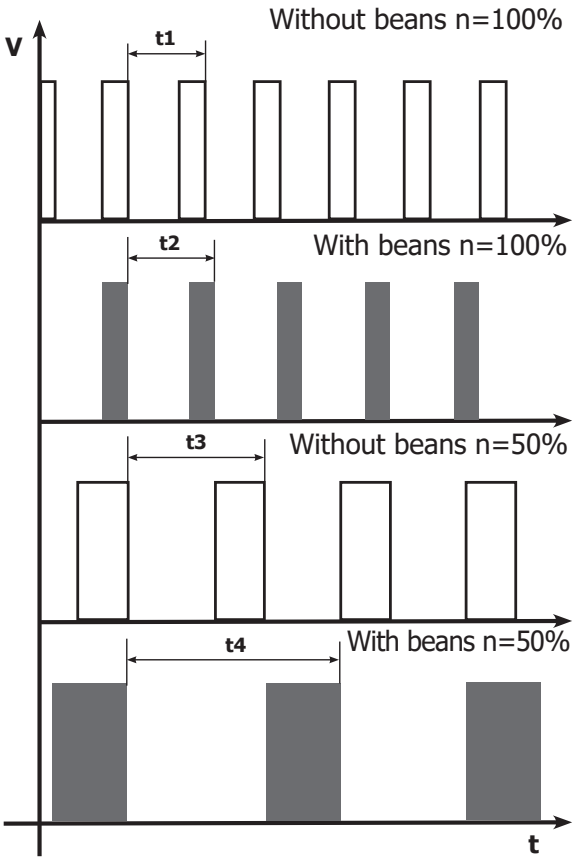
1. The coffee grinder starts the grinding process (controlled by Time).
2. The gear motor (brewing unit) moves to the brewing position.
3. Preliminary dispensing phase (short pump activity, short pause).
4. Product dispensing (the pump operation period is defined by the amount of product dispensed).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

3.4. Coffee grinder Philips 3000 V2



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

3.5. Low bean level detection, dose quantity adjustment, coffee grinder blocked



No coffee
A low coffee bean level is detected by the Hall sensor, after variations in the pulse frequency (with or without coffee).
If there are no coffee beans (operation while empty), the number of rotations – and therefore the number of pulses – will be greater.
t1 = no coffee indication

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

t3 and t4 = this measurement is performed at the end of each grinding process

Dose quantity adjustment
The dose quantity is adjusted in accordance with the pulses detected (number of rotations proportional to the selected flavor – mild, medium or strong).

Coffee grinder blockage
If the coffee grinder becomes blocked for any reason, pulses will no longer be transmitted to the electronic system and the grinder will come to a stop.

3.6. Dose self-learning (SAS)

The aim of this function is to automatically regulate the average dose of ground coffee (SELF-LEARNING); this takes place with an algorithm based on the following values and setting by the user:

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

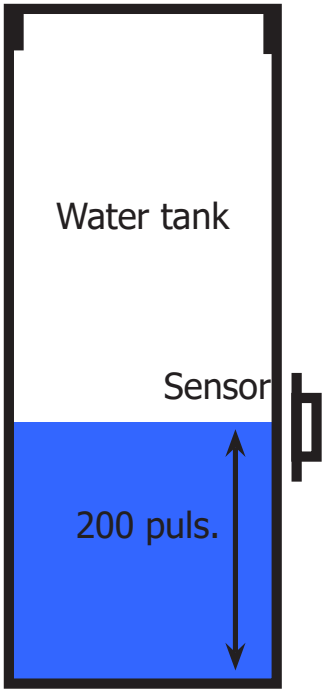
The algorithm compares the maximum average value of the power consumed by the gear motor with the value listed in the table for the selected aroma, in order to calculate the new grinding pulse value for the next coffee produced.
If the power consumption value is less than the minimum current value, the grinding pulses will be increased by 2.
If the power consumption value is greater than the maximum current value, the grinding pulses will be decreased by 4.
If the power consumption value falls within the "over-torque" interval, the product will be dispensed and the grinding pulses will be decreased by 10.
If the power consumption value falls within the "abort cycle" interval, the dreg will be expelled and the grinding pulses will be decreased by 10.
If the "pre-ground" flavour is selected by the user, no modification will be made.

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

				DOSE ADJUSTMENT (NUMBER OF GRINDER IMPULSES) TO APPLY TO MED AROMA				
		3 levels	**5 levels**	**+2**	**0**	**-4**	**-10**	**-10 and CYCLE ABORTED**
Aroma of the grinded product	**A**	Light	Very Light	MAX_CURRENT_mA <150mA	<=150mA MAX_CURRENT_mA <=250mA	MAX_CURRENT_mA >250mA	MAX_CURRENT_mA >800mA	MAX_CURRENT_mA >1000mA
	B	Med	Light Med	MAX_CURRENT_mA <250mA	<=250mA MAX_CURRENT_mA <=350mA	MAX_CURRENT_mA >350mA	MAX_CURRENT_mA >800mA	MAX_CURRENT_mA >1000mA
	C	Strong	Strong Very Strong	MAX_CURRENT_mA <350mA	<=350mA MAX_CURRENT_mA <=500mA	MAX_CURRENT_mA >500mA	MAX_CURRENT_mA >800mA	MAX_CURRENT_mA >1000mA

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

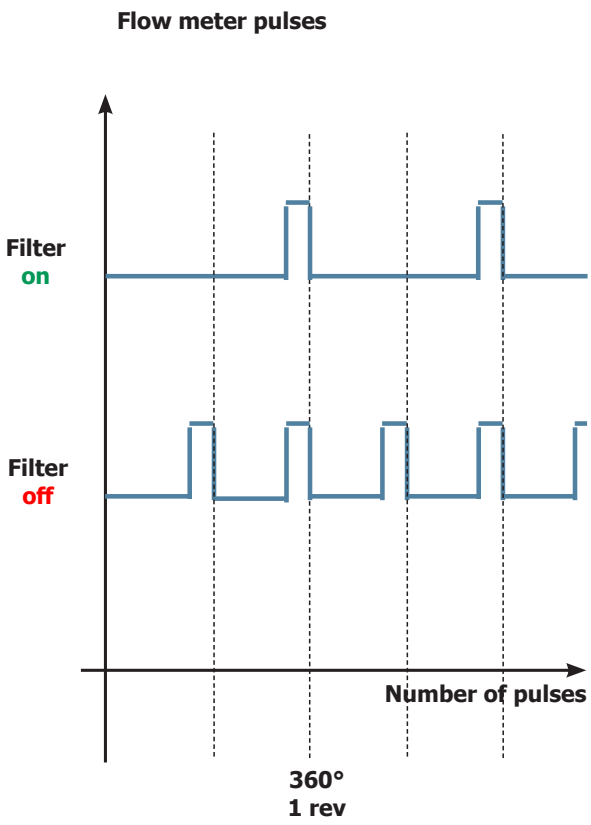
3.7. Water level detection (water tank)



"Water low" message (water reserve)

Function:
The water level is monitored by a capacitative sensor, located one third of the way up the water tank wall.
If the electronics assembly detects, by means of the sensor, that the amount of water in the tank has dropped below the above mentioned level, a water reserve remains available for the dispensing process underway (this will cover 200 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.

3.8. Descaling request



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

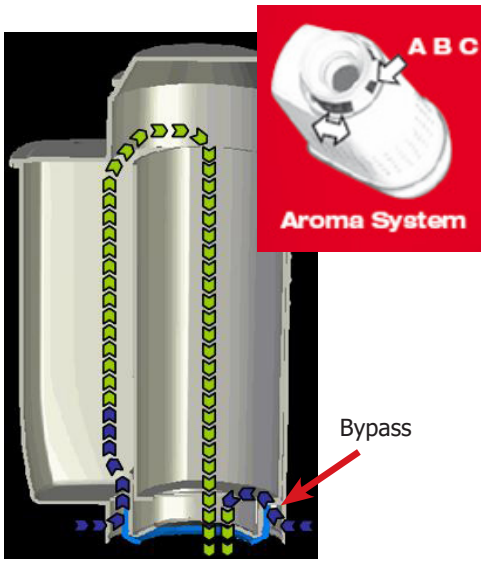
The water hardness is set on the basis of the regional water hardness analysis (1, 2, 3, 4).

Filter off:
If the function is turned off the electronics assembly monitors the flow meter pulses, recording one pulse each turn.

Filter on:
If the function is turned on the electronics assembly monitors the flow meter pulses, recording one pulse every two turns.

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

3.9. Water filter



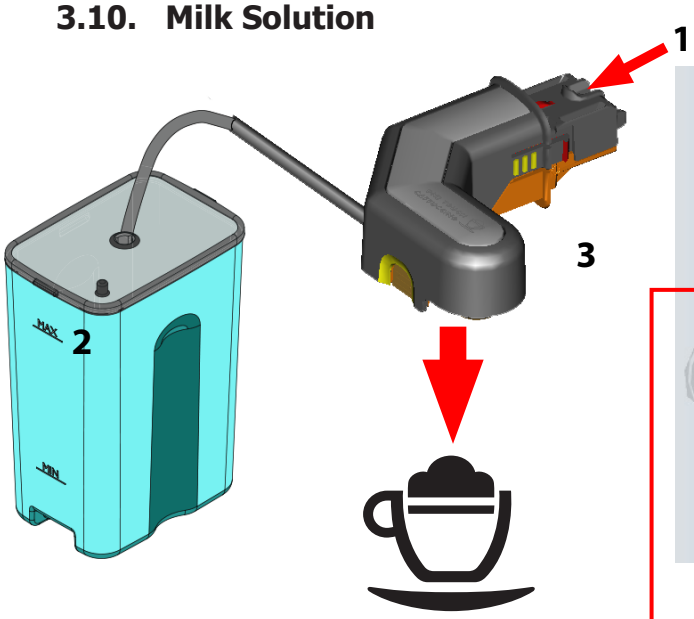
Function:
- Reduced limescale deposits which take longer to form.
- Improved water quality.
- Improved taste due to the ideal water hardness.

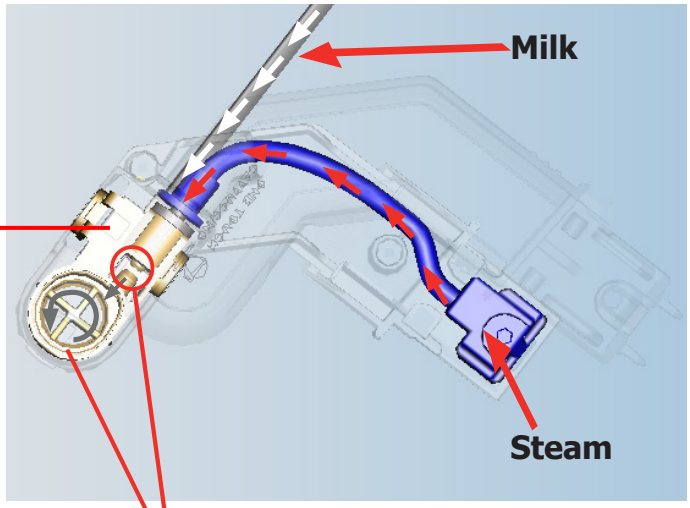
Life span / descaling performance:
- - 10 ° dH
- 60 litres
- 2 months

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

Descaling cycle frequency			
Hard-ness	**Water hardness**	**Without water filter**	**With water filter**
1	Soft (up to 7°dH)	240 litres (480,000 pulses)	480 litres (960,000 pulses)
2	Medium (7° - 14°dH)	120 litres (240,000 pulses)	240 litres (480,000 pulses)
3	Hard (15° - 21°dH)	60 litres (120,000 pulses)	120 litres (240,000 pulses)
4	Very hard (over 21°dH)	30 litres (60,000 pulses)	60 litres (120,000 pulses)
Each litre of water corresponds to approximately 1925 pulses.			

3.10. Milk Solution





1)Steam input
2)Milk container
3)Cappuccinatore

The milk is heated by the steam and taken towards the emulsion chamber where it is mixed with air and transformed into foam.

The steam passes through the pipe creating a sucking effect that pulls the milk upwards.

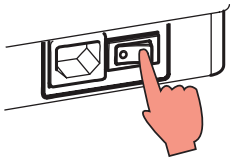
CHAPTER 4

SERVICE MODE

4.1. Test Mode Philips 3000 V2

Philips 3000 V2 CMF

Philips 3000 V2 EASY CAPPUCCINO



To enter Test Mode
The machine enters in test mode by holding together Espresso and Calc-Clean button while switching on the machine by mean of the main switch on the backside of the CA.
Once entered shows Led Espresso, Led Coffee flashing in series (Level 0).
There are 6 different level, in each level the coffee-machine can execute different commands,

Level 0: Entry Level; in this level can be done Reset to default

Level 1: The machine can test the interface (Leds & Buttons):
a) Button "Espresso"
b) Button "Coffee"
c) Button "Espresso Lungo" (CMF) or "Easy Cappuccino" (AMF)
d) Button "Calc-Clean";
e) Button "Aroma Plus" & Led Aroma Plus under the button;
f) Button "Steam/Hot-Water" & Led Steam Hot-Water under the button;
g) Button "Stand-By" & Led Stand-By under the button;
h) No Water LED
i) General Alarm LED
j) Descale LED
k) Rinsing LED
l) Dreg drawer full LED
m) No Beans LED

Level 2: The machine can test other input signal:
a) Microswitch door closed/opened
b) Microswitch present of the brewing unit
c) Water Tank sensor

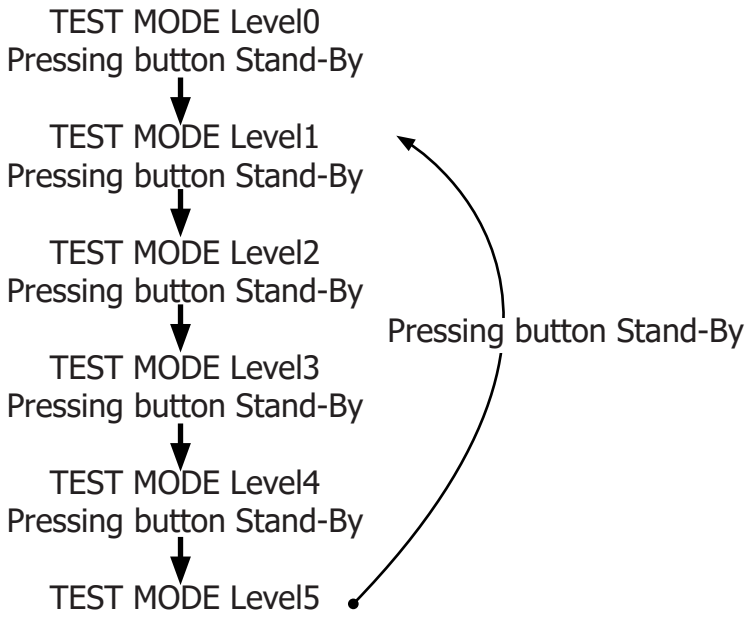
Level 3: The machine can test the loads in low voltage:
a) Brew Unit movement upward and downward (24V DC)

Level 4: The machine can test the loads:
a) Pump (230V AC)
b) DC Solenoid Valve @24V.
c) Flow Meter

Level 5: The machine can test:
a) Heater (100-120-230V AC)
b) Grinder (140-170-320V DC)
c) Grinder sensor

The user can switch the level by pressing the Button Stand-By, the machine shows the level of the test:
a) Level 1 : Led Espresso ON (G), Led Stand-by ON (R)
b) Level 2 : Led Espresso ON (G), Led Descale ON (O)
c) Level 3 : Led Espresso ON (G), Led Descale ON (O), Led Calc-Clean ON (O)
d) Level 4 : Led Espresso ON (G), Led Descale ON (O), Led Calc-Clean ON (O), Led Rinsing ON(O)
e) Level 5 : Led Espresso ON (G), Led Descale ON (O), Led Calc-Clean ON (O), Led Rinsing ON(O), Led Coffee ON (G).

Legend:
(O) = Orange
(G) = Green
(R) = Red



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

Level 0 (Start Test mode)

Start condition: NO BU, NO drag drawer, Door open, No Water sensor	LED INDICATION	
	Led Espresso	Led Coffee
	Blink Alternately	

Press BUTTON Stand-By to move to the next screen

Level 1 (Key)

Start condition: NO BU, NO drag drawer, door open and No Water sensor	LED INDICATION					
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full	Led Descale	Led Rinsing
	OFF	OFF	OFF	OFF	OFF	OFF

Press Espresso Button						
Action by user	LED INDICATION					
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full	Led Descale	Led Rinsing
Switch on Red Leds NoWater & Dreg drawer full	OFF	**ON**	OFF	**ON**	OFF	OFF
ERROR: Led NoWater remains off, check the interface board and flat cable (JP21)		OFF		**ON**		
ERROR: Led Dreg drawer full remains off, check the interface board and flat cable (JP21)		**ON**		OFF		
ERROR: Led NoWater & Dreg drawer full remain off, check the interface board and flat cable (JP21)		OFF		OFF		

Press CalcCLean Button						
Action by user	LED INDICATION					
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full	Led Descale	Led Rinsing
Switch on Orange Leds Descale & Rinsing	OFF	OFF	OFF	OFF	**ON**	**ON**
ERROR: Led Descale remains off, check the interface board and flat cable (JP21)					OFF	**ON**
ERROR: Led Rinsing remains off, check the interface board and flat cable (JP21)					**ON**	OFF
ERROR: Led Descale & Rinsing remain off, check the interface board and flat cable (JP21)					OFF	OFF

Press Coffee Button						
Action by user	LED INDICATION					
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full	Led Descale	Led Rinsing
Switch on Red Leds GenAlarm & NoBeans	**ON**	OFF	**ON**	OFF	OFF	OFF
ERROR: Led NoBeans remains off, check the interface board and flat cable (JP21)	OFF		**ON**			
ERROR: Led GenAlarm remains off, check the interface board and flat cable (JP21)	**ON**		OFF			
ERROR: Led NoBeans & GenAlarm remain off, check the interface board and flat cable (JP21)	OFF		OFF			

Press "Espresso Lungo" (CMF) or "Easy Cappuccino" (AMF) Button						
Action by user	LED INDICATION					
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full	Led Descale	Led Rinsing
Switch on Red Leds Dreg drawer full & No-Beans	ON	OFF	OFF	ON	OFF	OFF
ERROR: Led NoBeans remains off, check the interface board and flat cable (JP21)	OFF			ON		
ERROR: Led Dreg drawer full remains off, check the interface board and flat cable (JP21)	ON			OFF		
ERROR: Led NoBeans & Dreg drawer full remain off, check the interface board and flat cable (JP21)	OFF			OFF		

Press Steam/Hot Water Button		
Action by user	LED INDICATION	
	Led Steam/Hot-Water Button	Led Aroma Plus Button
Switch on green Led under the Steam/Hot-Water Button	ON	OFF
ERROR: Led Steam/Hot-Water remains off, check the interface board and flat cable (JP21)	OFF	OFF

Press AromaPlus Button		
Action by user	LED INDICATION	
	Led Steam/Hot-Water Button	Led Aroma Plus Button
Switch on green Led under the Aroma Plus button	OFF	ON
ERROR: Led Aroma Plus remains off, check the interface board and flat cable (JP21)	OFF	OFF

Finish condition: NO BU, NO drag drawer, door open and No Water sensor	LED INDICATION					
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full	Led Descale	Led Rinsing
	OFF	OFF	OFF	OFF	OFF	OFF

Level 2 (Input)

Start condition: NO BU, NO drag drawer, door open, no Water Spout or Carafe (only AMF), and No Water sensor	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	ON* only AMF	**ON**	**ON**	**ON**

Insert a full Water Tank				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
Switch off Red Leds NoWater	NA	OFF	NA	NA
ERROR: Led NoWater remains on, check the capacitive sensor (fixing) and the wiring (JP23)	NA	**ON**	NA	NA

Insert the Brew Unit				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
Switch off Red Leds GenAlarm	NA	NA	OFF	NA
ERROR: Led GenAlarm remains on, check the BU presence Microswitch and the wiring (JP16).	NA	NA	**ON**	NA

Insert Water Spout* Only AMF				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
Switch off Red Leds NoBeans	OFF	NA	OFF	NA
ERROR: Led NoBeans remains on, check the Carafe Board and the wiring (JP4).	**ON**	NA	NA	NA

Insert Dreg drawer and close the service door				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
Switch off Red Led Dreg drawer full	NA	NA	NA	OFF
ERROR: Led Dreg drawer full remains on, check the Microswitch for the door and the wiring (JP14). NOTE: without the Dreg drawer correctly inserted the indication cannot change!	NA	NA	NA	**ON**

Finish condition: With BU, Drag Drawer, door closed and Tank	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF

Level 3 (Brewing unit)

Start condition: NO BU, Drag drawer, door Closed and No Water sensor	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF
If the Dreg drawer is not inserted or the Service door is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, Led Dreg drawer full will be RED	NA	NA	NA	**ON**

Press the Espresso button to move BU to work				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
When the BU reaches the work position the Led NoBeans is switched on	**ON**	NA	NA	NA
ERROR: Led NoBeans remains off, Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16).	NA	NA	NA	NA
ERROR: led GenAlarm Switch ON; the absorbed current is much more 300mA (with BU) or 200mA (without BU) check the BU and the motor	NA	NA	**ON**	NA

Press the Coffee button to move BU to home				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
When the BU reaches the home position the Led NoBeans is switched on	**ON**	NA	NA	NA
ERROR: Led NoBeans remains off, Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16).	NA	NA	NA	NA
ERROR: led GenAlarm Switch ON; the absorbed current is much more 300mA (with BU) or 200mA (without BU) check the BU and the motor	NA	NA	**ON**	NA

Finish condition: With BU, Drag Drawer, door closed	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF

Level 4 (Pump)

Start condition: BU not inserted, Drag drawer and service door closed, no water sensor	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF
If the Dreg drawer is not inserted or the Service door is not closed the EV cannot be opened and test cannot be performed. If these 2 inputs are not in the right position, Led Dreg drawer full will be RED	NA	NA	NA	**ON**

Press the Espresso button to open the EV				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
It is possible to hear the "click" from ElectroValve. The Led NoBeans is switched on	**ON**	NA	NA	NA

Press and release the Coffee button to switch on the Pump (100 impulses)				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
The water goes out from the dispensing spout,the NoWater LED blink every Flowmeter pulse.	NA	**BLINK**	NA	NA
ERROR: the NoWater LED does't flashing and after 5sec this LED Switch ON; check: 1) The EV (open?) 2) Pump (is ON?), 3) The flowmeter (works rightly?) 4) the wiring from the flowmeter to the CPU/POWER board (JP5) 5) the wiring from the pump to the CPU/POWER board (JP24)	NA	**ON**	NA	NA

Finish condition: With BU, Drag Drawer, door closed	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF

Level 5 (Grinder-Heater)

Start condition: NO BU, NO drag drawer, door open and No Water sensor	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF

Check the Temperature				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
The red led General Alarm remains OFF	NA	NA	OFF	OFF
ERROR: The temperature sensor is shorted or opened, the led GenAlarm switch ON; check the wiring from the heater to the CPU/POWER board (JP13).	NA	NA	**ON**	**ON**

Press the Espresso button to switch on the Heater				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
The user check that the absorbed current is OK	NA	OFF	NA	NA
ERROR: the absorbed current is KO; check the wiring from the heater to the CPU/POWER board (JP17-3) and the other wiring	NA	OFF	NA	NA
ERROR: If temperature is over 100°C, the NoWater LED turn ON. This is a ALERT message to avoid heating the HEATER element over dangerous temperature; and Heater test cannot be performed.	NA	**ON**	NA	NA

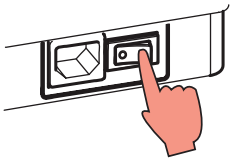
Press the Coffee button to switch on the Grinder				
Action by user	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
The grinder rotates and Led NoBeans Blink every grinder pulses.	**BLINK**	NA	OFF	NA
ERROR: the led NoBeans remains OFF and after the led NoBeans switch ON; check the hall sensor board in the Grinder, the Grinder, the wiring from the hall sensor board to the CPU/POWER board (JP2) and the wiring from the Grinder to the CPU/POWER board (JP8)	**ON**	NA	**ON**	NA

Finish condition: With BU, Drag Drawer, door closed	LED INDICATION			
	Led NoBeans	Led NoWater	Led GenAlarm	Led Dreg drawer full
	OFF	OFF	OFF	OFF

4.2. SteamOut

Philips 3000 V2 CMF

Philips 3000 V2 EASY CAPPUCCINO



To enter in SteamOut
The machine enters SteamOut mode by holding pressed together the **COFFEE** button and the **CALC_CLEAN** button while switching on the machine.

Once entered the machine shows **Led Descale and Led Rinsing flashing in series**.

If there is a failure on NTC (Ntc disconnected or in short circuit) the operation cannot be performed and the **LED General Alarm will blink** (turn off the machine and repair before do Steam-out operation).

If Door is opened or drag drawer is removed **LED WASTE FULL will be switched on**. To start again the
operation insert drag drawer and close service door.
At the end of procedure **LED ESPRESSO and LED COFFEE turns on.**

When the Steam-Out is complete the following parameters are resetted to their default values:
• Length Espresso product
• Length Coffee product
• Stand-By Time
• Count Coffee (Ground counter)
• The request for Priming the Circuit at the first switch on is set.

- Aroma
- Aroma Impulses
- Filter Presence
- Filter Pulses
- Dynamic threshold
- History of grindings for Beans Presence detection

CHAPTER 5

ESPRESSO PHILIPS SERVICE CENTER

5.1. Espresso Philips Service Center (EPSC)

The EPSC is a Service tool developed to upload the SW on the machine and run the diagnostic mode.
It can be downloaded from the following link: https://www.epsc.philips.com/ServiceCenterPortal/
The application can be used only in combination with the Saeco Programming Device:
Cod. 996530009845 “KIT PROGRAMMER SERKIT SSC2”.
It can be ordered as Spare part and includes the programmer + connection cables.
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.
You can find it both in AYS or by using the below link.

Main Parameters description & standardization in the EPSC diagnostic tool.

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

CHAPTER 6

SERVICE AND MAINTENANCE

6.1. Repair Flow

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

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

CHAPTER 7

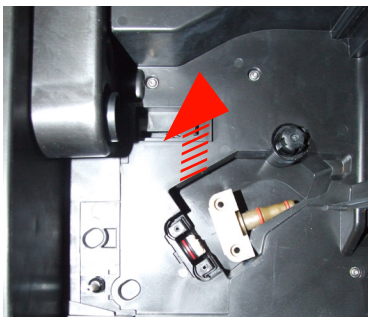
DISASSEMBLY

7.1. Outer Shell

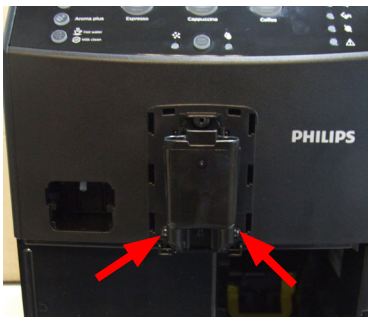
Philips 3000 V2 Easy Cappuccino

Remove the water tank, caraffe, water spout, cappuccinatore or pannarello, drip tray, dump box, brewing unit.

Coffee dispenser



Remove the dispenser cover



Unscrew the screw shown and remove the cover

Upper cover

Up to SN. TW901645704031

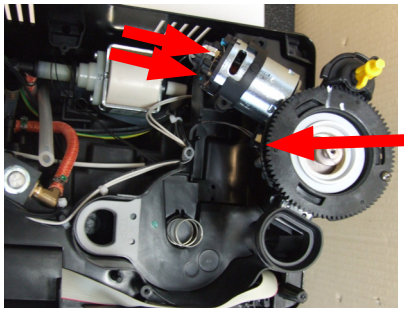
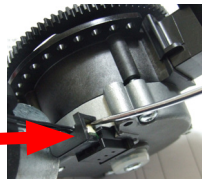
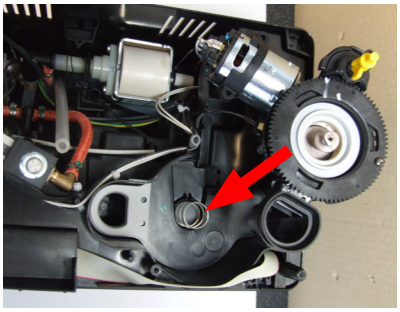
From SN. TW901645704032

Unscrew the screws shown, raise the top cover and remove the water circuit connections.

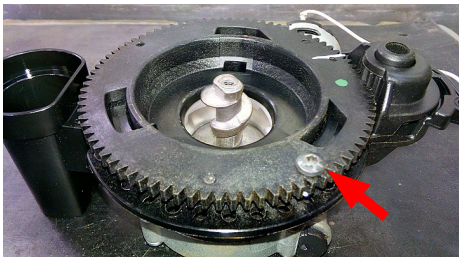
For Models UP TO S/N.TW901645704031 see SDA_112764. For models from S/N.TW901645704032 the position of water level sensor has been moved to avoid its oxidation (not inserted the rubber cover).

Remove the electrical connections.

7.2. Coffee grinder

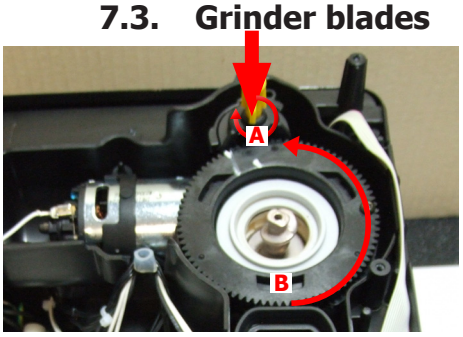





Raise the coffee grinder and remove the connections. When reassembling the coffee grinder, make sure the spring is repositioned correctly (see photo).



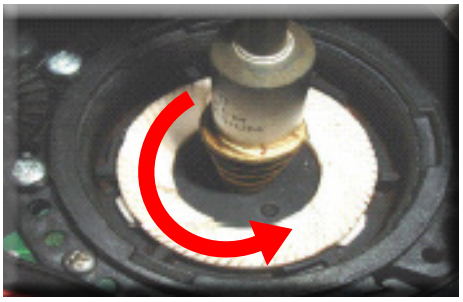
The new machines have a coffee grinder with the screw to prevent the disassembly of the upper coffee grinder support (see photo).

7.3. Grinder blades

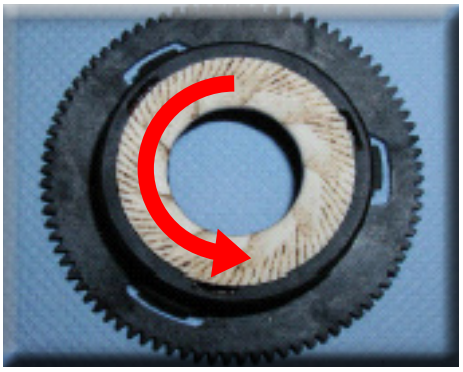


Caution in the new coffee grinder with the screw, Unscrew this last, before disassembly of the upper coffee grinder support.

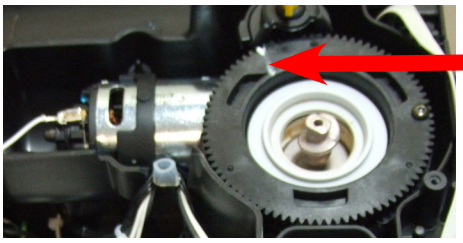
To extract the top support of the appliance, press on the grinding adjustment spindle (A) and turn the support anticlockwise until it unhooks.



Turn the grinder blades anticlockwise out of the support.

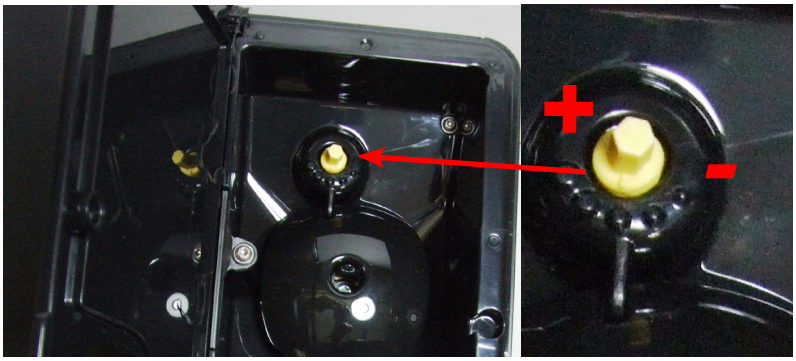


Turn the grinder blades clockwise out of the support. The bayonet connections can be accessed from the rear.

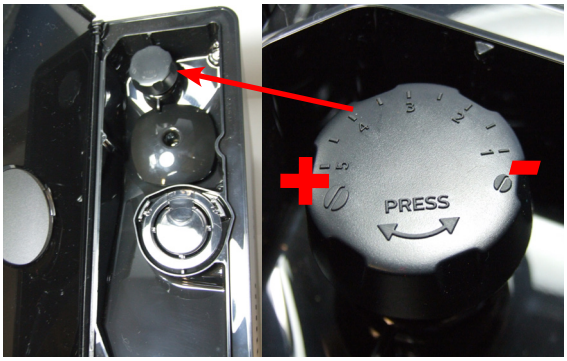



For a standard adjustment, both markings must be aligned.

7.4. Coffee grinder adjustment

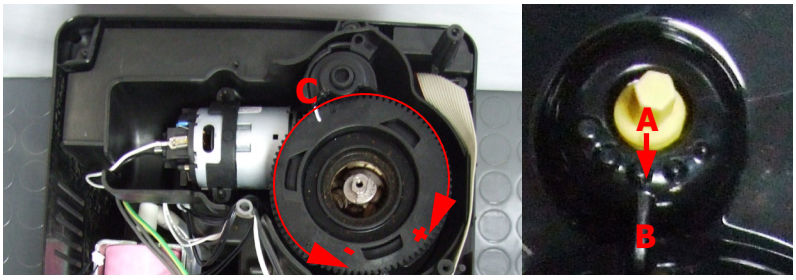


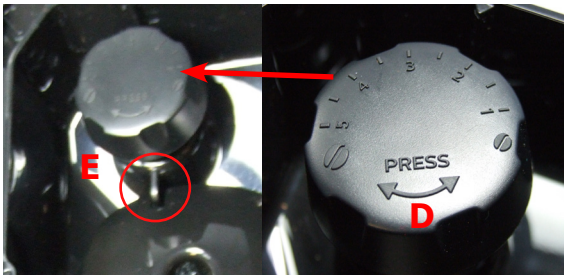
For Models UP TO S/N.TW901645704031 the grinding adjustment can be set by the user (only with the coffee grinder in operation) by pressing and turning (only by one click at a time) the insert inside the coffee bean hopper with the aid of the wrench supplied.



For Models from S/N.TW901645704032 the grinding adjustment can be set by the user pressing and turning the grinder adjustment knob

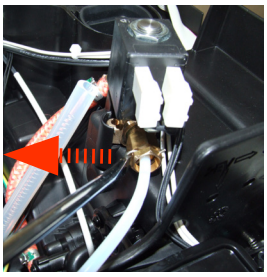
Adjustment by a service center



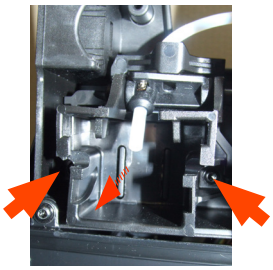


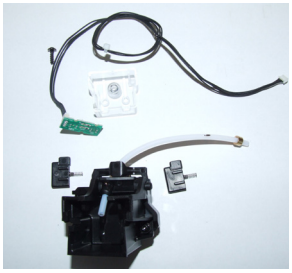
To adjust grinding further, the engineer can work directly on the coffee grinder by pressing and turning the ring nut (C) shown. (clockwise + to increase the particle size of the coffee and anticlockwise - to decrease it).
If there are any remains of coffee powder between the two grinding blades it is recommended to tighten by max. two marks at a time.
Lastly, move the arrow (A) on the adjustment knob to the center of the adjustment dots on the cover (B) for Models UP TO S/N.TW901645704031, instead for models from S/N.TW901645704032 ascertain that the center line of the “PRESS” (D) is in correspondence of the fin (E).

7.5.Carafe connection and hot/steam water dispenser



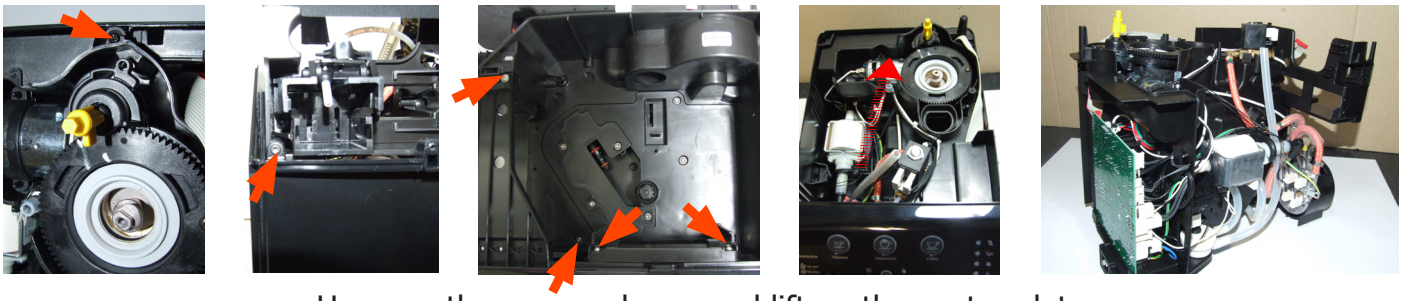
Slide out the fork as illustrated





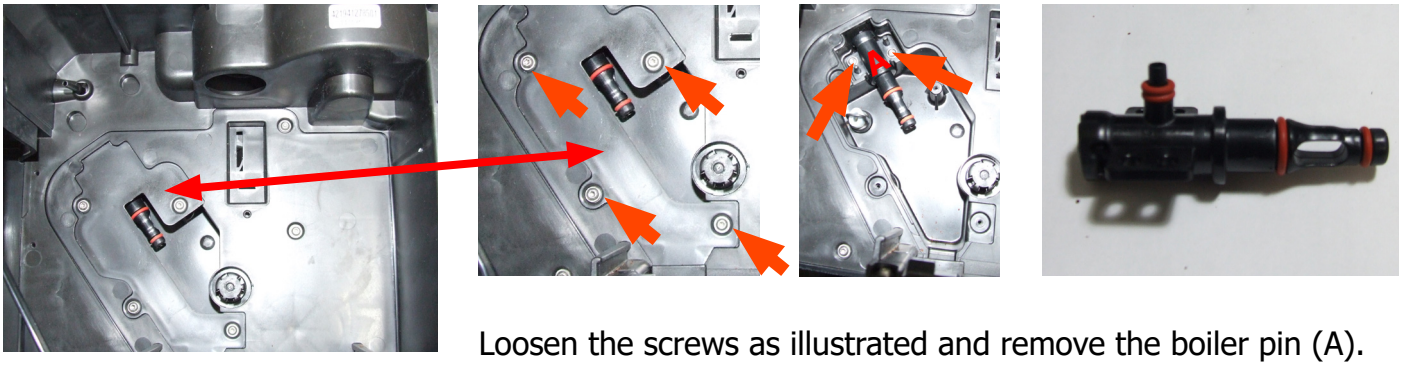
Loosen the screws holding the cappuccinatore. When reassembling the assembly to be careful to correctly position the spring.

7.6. Central plate



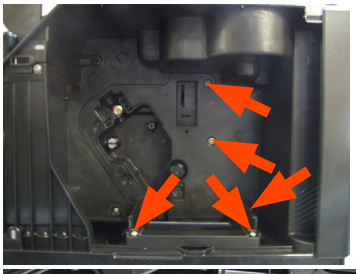
Unscrew the screws shown and lift up the center plate

7.7. Pin boiler

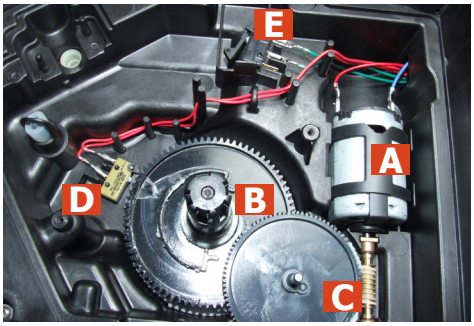


Loosen the screws as illustrated and remove the boiler pin (A).

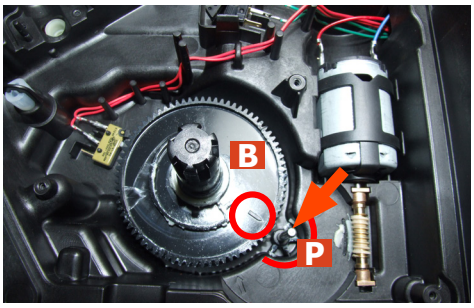
7.8. Gear motor



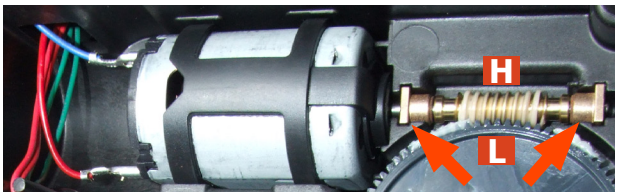
Loosen the screws as illustrated and remove the gear motor cover.



The following are located inside the compartment protected by the casing:
- Electric motor (A) with gears (B) and (C) for transmission and timing of the dispenser.
- Brewing unit present microswitch (E).
- Microswitch (D) detecting brewing unit home and work positions.
- Remove the gear (C) that meshes with the motor transmission shaft.
- Remove the large gear (B).
- Remove the motor (A), complete with transmission shaft.

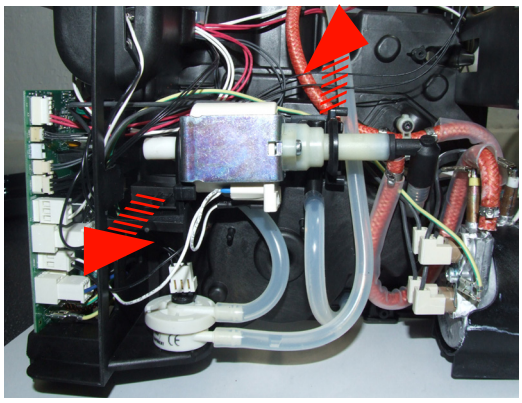


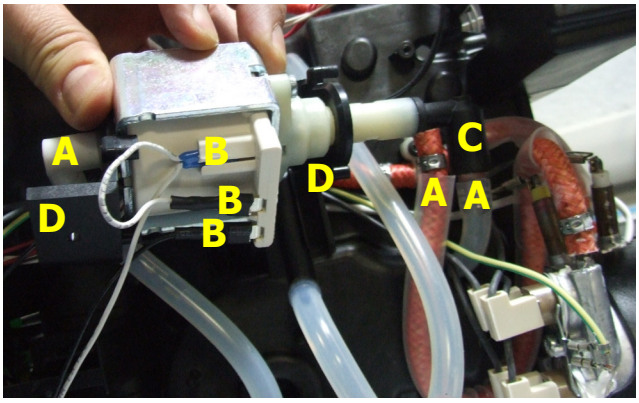
Replace the gear (B), making sure that the imprint of the arrow is aligned with the opening containing the pin (P).



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

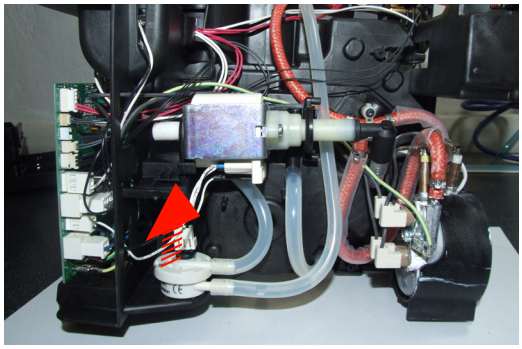
7.9. Pump

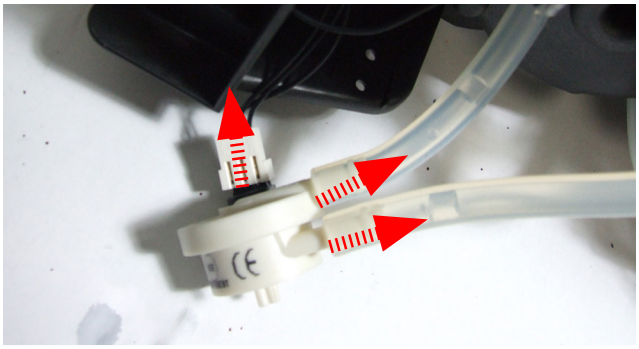




Unhook the pump from the supports, and disconnect the water circuit connections (A) and electrical connections (B), loosen the safety valve (C) and slide the pump off the brackets (D).

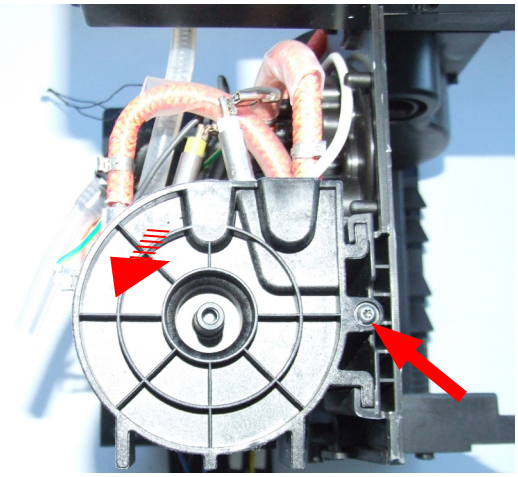
7.10. Flow-meter



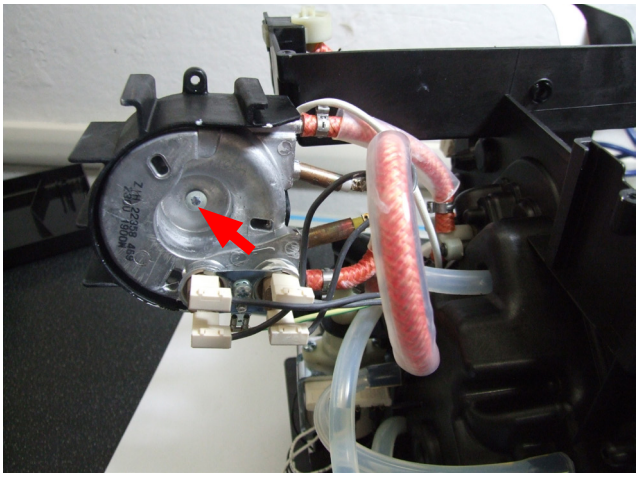


Lift the flow meter out of the casing assembly and remove the electrical and water circuit connections.

7.11. Boiler

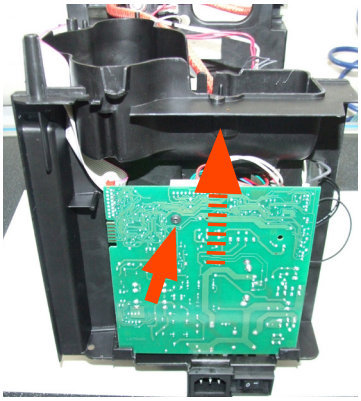


Unscrew the screw shown at unthread the support boiler



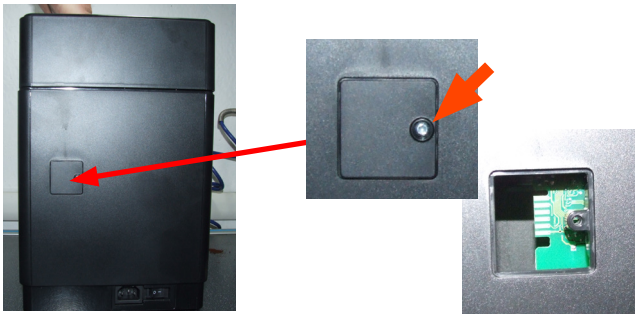
Unscrew the screw shown and remove the electrical and water circuit connections.

7.12. CPU board



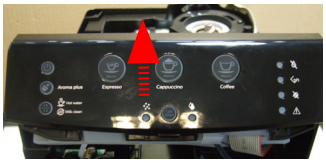
Loosen the screws slide the card off the support and disconnect the electrical connections.

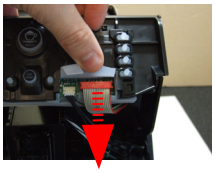
7.13. Programming access for EPSC (Espresso Philips Service Center)



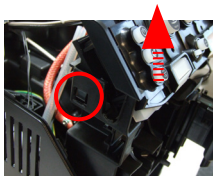
Loosen the screw for remove the cover.

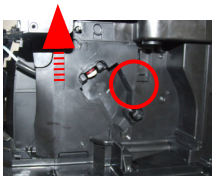
7.14. KYB interface and display





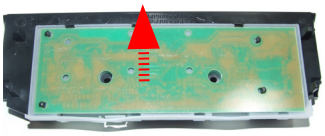
Remove the cover and disconnect the electrical connections.



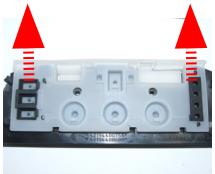


Press as photos and remove the display support

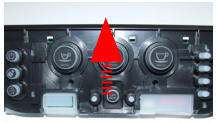
Remove the keyboard support



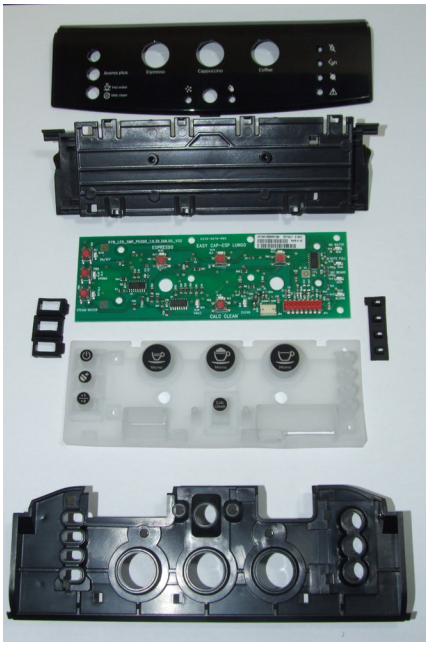
Remove the keyboard



Remove the silicon key

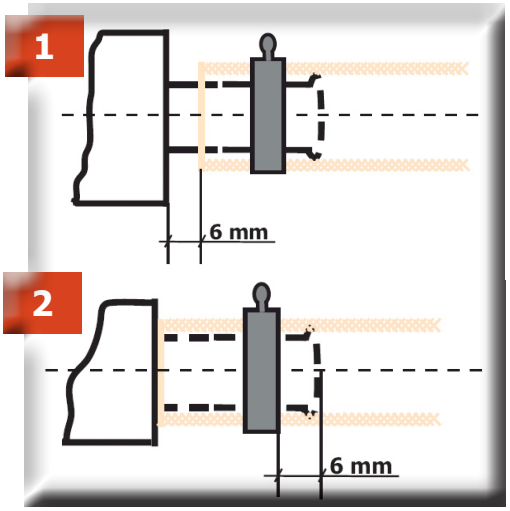


Remove the front pannel



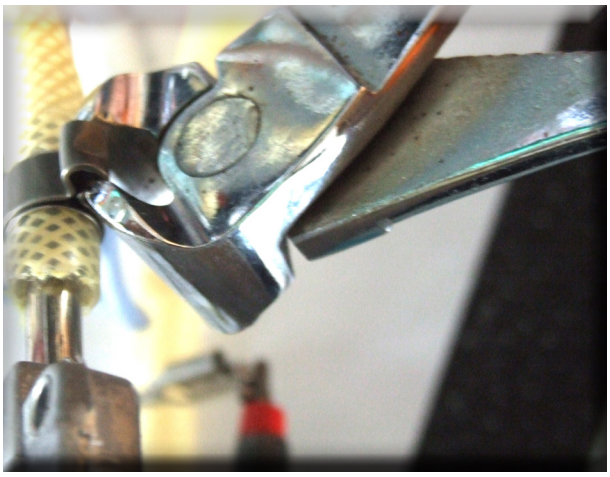
All component

7.15. Fitting and removing Oetiker clamps



1) Boiler connection.

2) Other connections.



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

Tighten the clamp as illustrated.