## Service Service **Service**



# ServiceManual

### Rev. 00 MAY 2019

TYPE	12NC	DESCRIPTION
RI8180/01	886818001010	GAGGIA BESANA 230 WE

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Technical specification	
Power supply and output:	230V ~ 50Hz 1400W
Power consumption:	During heating phase- approx. 5.6 A
Boiler: Stainless steel	230V ~ 1300W for coffee, hot water and steam dispensing
Safety system:	2 thermostats at 190°C self resetting
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/FMGW 230V, 50 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.
Auto shut off time:	30 min.
Adjustable spout height:	Up to 95 mm
Housing material	Thermoplastic material
Size (w x h x d)	295 x 325 x 385 mm
Weight	8,6 kg
Power Cord length	800 mm
Cup size	Up to 95 mm
Water tank	1.0 litres - Removable type
Water fileter	Brita Filter 12NC-996530010484
Coffee bean hopper capacity	170 g
Coffee grounds drawer capacity	8 pucks
Energy Efficiency Label	В
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 TU901721042631	TU90= product + production location - 1721 = year & Production week - 042631 = unique following number
	GAGGIA



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## CHAPTER 1 INTRODUCTION

#### 1.1. Specific tools and equipment

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 $\pm$ 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 $\pm$ 0,5 g
-	Power meter	Voltcraft EnergyCheck 3000 or comparable device with a base accuracy of 1 % or $\pm$ 5W
_	Stopwatch	Basic model
996530009845	Serkit	Tool needed for programming with our service tool

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

#### 1.2. Maintenance Products

12NC Code	Material	Description	
-	Thermal paste	Heat resistance > 200°C	
996530067222	Descaler	"ACC SAE DECALCIFIER 5 L 1 UNIT"	
132253695601	Jar of Grease	"PARALIQ GB 363"	
996530045784	Silicone grease	"ACC TUBE FIN FOOD GREASE 2 400 ML"	

#### 1.3. 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.

### 1.4. Water circuit diagram



From this point circuit in pressure



From this point circuit High temperaure



### 1.5. Electrical diagram



1.6. Service POLICY grid as used for coffee machine

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

### 1.7. External machine parts



1	Control panel
2	Steam icon
3	Control dial
4	Coffee bean icon
5	Espresso button
6	Regular coffee button
7	Hot water icon
8	Descaling light
9	Warning light
10	2-cup light
11	'Water tank empty' light
12	On/off button with light
13	Hot water/steam wand
14	Protective handle
15	classic milk frother (specific
	types only)
16	Water tank
17	Coffee spout
18	Drip tray cover
19	'Drip tray full' indicator
20	Drip tray
21	Coffee grounds container
22	Brewing unit
23	Maintenance door
24	Grinding degree adjustment
	knob
25	Ceramic coffee grinder
26	Coffee bean container
27	Grinding degree adjustment
- 20	
28	LIG OF COFFEE DEAN CONTAINER

1.8. Brew Unit mainteinance: Where to grease.



1.9. Position of the Brew Unit



### 1.10. Internal machine parts



### **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:  $23^{\circ}C$  (+/- $2^{\circ}C$ ).

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).



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

Milk evaluation

To carry out the test, a partially skimmed UHT milk with a percentage of grease between 1.5-1.8% at a refrigerator temperature Trefr. (between 4 to 10°C) must be used.

The milk product must be checked on a beaker of 250 ml of capability and with an inner diameter of 70mm, brewing 100gr of product.

Parameters to be respected:

The parameters to be respected are: milk temperature and height of the cream. Each of these parameters, however, must be evaluated depending on the type of system used for the production of hot milk. Actually three types of devices are present on the appliances:

• Manual system (pannarello)

Height of the milk cream in the beaker: Manual system (pannarello)  $\geq$  15mm 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. The measurement has to be taken at 10mm from the bottom of the beaker. Stir the milk before measuring to keep a constant temperature.

### 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.

### 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.

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	

### 2.3. Machine parameters and performance

PRODUCT QUANTITY	Minimum amount (ml)	Default quantity coffee (ml)	Maximum amoun	User programmable
Espresso	35 +/- 10	80 +/- 10	300 +/- 10	Yes
Coffee	35 +/- 10	200 +/- 10	300 +/- 10	Yes
Hot water	Continues until the water supply has been exhausted (capacitive sensor)			
Steam	Continues until the water supply has been exhausted (capacitive sensor			

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
Time (default)	15 minutes
Time programmed by Consumer/Service	No
Boiler temperature during Standby	Boiler OFF

WATER TANK	Description
Water reserve (pulses)	200
Water reserve modifiable by Production/Service departments	No
"Fill tank" alarm	Yes
Connect to water mains	No

## CHAPTER 3 OPERATING LOGIC

#### 3.1. Single microswitch gear motor

### 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 starts heating to heat the water for approx. 45 sec, in order to reach the optimal temperature.



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
  - 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

A thermistor, NTC type (Negative temperature coefficient), 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 Temperature sensor (adjustment)

### 3.3. Coffee grinder



The coffee grinder is activated by a direct current motor (1) via helicoidal wheel transmission and a worm screw (2).

The worm screw (2) activates a plastic toothed wheel (3), which turns the lower grinder blade (4) and the increment pin (5).

There are two magnets (6) in the toothed wheel and with every rotation they transmit two pulses to a Hall sensor, which in turn transmits them to the electronic system.

3.4. Detection of coffee bean absence, dose adjustment, blocked coffee grinder



#### 3.5. 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:

- 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.

The algorithm compares the maximum average value of the power consumed by the gear motor, 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.

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)				
	Default level	+2	0	-4	-10	-10 and CYCLE ABORTED
Aroma of the grinded product		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, the adjustment of the machine should be performed by the user according to the type of coffee used. 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.





In coffee dispensing the mushroom valve opens at 4bar +/- 0.5 In manual water dispensing Manual steam delivery

3.7. Coffee cycle



Notes: \* Only with Pre-brewing

Status Microswitch (gear motor)	OFF		ON		
---------------------------------------	-----	--	----	--	--

Coffee cycle

see below the steps related both coffee and milk cycle:

1. The coffee grinder starts the grinding process (controlled by Time);

2. The brewing unit moves to the brewing position;

3. The preliminary dispensing phase starts (short pump activity, short pause);

4. the machine starts dispensing coffee (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);

### 3.8. 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.



### 3.9. Descaling request **Flow meter pulses**

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

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

#### Filter off:

If the function is 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.

### 3.10. 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.

### 3.11. Descaling cycle frequency

Descaling cycle frequency				
Default Hardness	WATER HARDNESS	Whit or without water filter		
3	Hard (15° - 21°dH)	60 litres		

# **CHAPTER 4**

### **SERVICE MODE**

Double Coffee Led

### This document describes the test mode of Gaggia Besana machine. This application is used in order to test the machine in its mechanics and electronic components. GAGGIA Long Coffee button Alarm Led No water Led Activity Led C C 5 GAGGIA GAGGIA Water Position Steam Position The machine enters in test mode by moving the knob in the Water position then pushing the COFFEE short button and then connecting the machine to the plug and then connecting the machine to the plug As long as the COFFEE short button is pressing the machine shows the Led Calc-Clean, Led Activity, Led Alarm, Led NoWater, Led DoubleCoffee, flashing with rotation. When the COFFEE short button is release the machine pass to the first level of the test. There are 4 different level, in each level the coffee-machine can execute different commands: Level 1: The machine can test the input signal: a) Microswitch present of the brewing unit b) Microswitch present of the dreadrawer c) Microswitch door closed/opened d) Button Short Coffee e) Button Long Coffee f) Button ON-OFF g) Photosensor Water

#### 4.1 **Test Mode**

Short Coffee button

Descaling Led

**ON/QFF** button

h) Photosensor Steam (only in Middle-TOP model)

### Level 2: The machine can test the loads in low voltage:

- a) Brewing unit (24V DC)
- Level 3: The machine can test the Pump in high voltage: a) Pump (120-230V AC)
- Level 4: The machine can test the Heater load in high voltage: a) Heater (120-230V AC)

### Level 5: The machine can test the Grinder load in high voltage:

a) Grinder (320V DC)

### The user can switch the level by pressing the Button ON/OFF:

As long as the button ON-OFF is pressing the machine show the level of the test:

- 1. Level 1 : Led DoubleCoffee ON (G), Led Calc-Clean OFF (O), Led Activity OFF (G), Led Alarm OFF (R), Led Water OFF (R)
- 2. Level 2 : Led DoubleCoffee ON (G), Led Calc-Clean ON (O), Led Activity OFF (G), Led Alarm OFF (R), Led Water OFF (R)
- **3. Level 3 :** Led DoubleCoffee ON (G), Led Calc-Clean ON (O), Led Activity ON (G), Led Alarm OFF (R), Led Water OFF (R)
- 4. Level 4 : Led DoubleCoffee ON (G), Led Calc-Clean ON (O), Led Activity ON (G), Led Alarm ON (R), Led Water OFF (R)
- 5. Level 5 : Led DoubleCoffee ON (G), Led Calc-Clean ON (O), Led Activity ON (G), Led Alarm ON (R), Led Water ON (R)

### 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 1 (Input, Led)

	LED INDICATION				
Start condition: NO BU, NO drag drawer, No	Led	Led	Led	Led	Led
tank, door open.	Activity	Descaling	Alarm	NoWater	Double Coffee
	OFF	OFF	OFF	ON	OFF
			LED INDI	CATION	
Action by user	Led	Led	Led	Led	Led
	Activity	Descaling	Alarm	NoWater	Double Coffee
Inser	t a full wa	iter tank			
Switch on the red led NoWater	OFF	OFF	OFF	OFF	OFF
ERROR: The led NoWater remain on , check the capacitive sensor and the wiring (JP23)	OFF	OFF	OFF	ON	OFF

I	insert the	BU			
The red led alarm blinks one time	OFF	OFF	One blink	N.A.	OFF
ERROR: The led alarm remains off , check the BU microswitch and the wiring (JP14)	OFF	OFF	OFF	N.A.	OFF
Inser	t the drag	drawer			
The red led alarm blinks one time	OFF	OFF	One blink	N.A.	OFF
ERROR: The led alarm remains off , check the microswitch on the drag drower and the wiring (JP16)	OFF	OFF	OFF	N.A.	OFF
C	lose the c	loor			
The red led alarm blinks one time. When all micro (3) are closed the green led double coffee remains on.	OFF	OFF	One blink	N.A.	ON
ERROR: The led double coffee remains off, check the microswitch on the door and the wiring (JP16)	OFF	OFF	OFF	N.A.	OFF
Press the	coffee s	hort buttor	า		
Switch on the activity led	ON	OFF	N.A.	N.A.	N.A.
ERROR: The led activity remain off , check the interface board and the flat cable (JP21)	OFF	OFF	N.A.	N.A.	N.A.
Press the coffee long button					
Switch on the activity led	ON	OFF	N.A.	N.A.	N.A.
ERROR: The led activity remain off , check the interface board and the flat cable (JP21)	OFF	OFF	N.A.	N.A.	N.A.

	LED INDICATION				
Action by user	Led	Led	Led	Led	Led
	Activity	Descaling	Alarm	NoWater	Double Coffee
Move the kr	ob in the	water positi	on		
Switch on the activity led	ON	OFF	N.A.	N.A.	N.A.
ERROR: The led activity remain off , check the interface board and the flat cable (JP21)	OFF	OFF	N.A.	N.A.	N.A.
Move the know	ob in the	steam pos	ition		
Switch on the activity led temp	ON	OFF	N.A.	N.A.	N.A.
ERROR: The led activity remain off , check the interface board and the flat cable (JP21)	OFF	OFF	N.A.	N.A.	N.A.
Finish condition with tank PUL drag		L	ED INDI	CATION	
drawer and door closed. Knob in the cen-	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
	OFF	OFF	OFF	OFF	ON

### Level 2 (Brewing unit)

			LED INDI	CATION	
Start condition: BU, drag drawer and door closed. Knob in the central position	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
	OFF	OFF	OFF	OFF	OFF
			LED INDI	CATION	
Action by user	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
Press the coffee b	utton to I	move the BU	to work		
When the BU reaches the work position and the current is $OK \Rightarrow$ the green led activity is switched on.	ON	OFF	OFF	OFF	OFF
ERROR: the BU moves to Home; check the polarity of the motor	N.A.	OFF	OFF	OFF	OFF
ERROR: led activity remains OFF; Check the work microswitch (is broken), the BU motor (is blocked) and the wiring (JP16).	OFF	OFF	OFF	OFF	OFF
ERROR: led alarm Switch ON, check the BU; * with BU the absorbed current is much more 300mA * without BU the absorbed current is much more 200mA	N.A.	OFF	ON	OFF	OFF

Press the long bu	tton to m	ove the BU 1	to home		
When the BU reaches the home position and the current is $OK \Rightarrow$ the green led activity is switched on.	ON	OFF	OFF	OFF	OFF
ERROR: the BU moves to Work; check the polarity of the motor	N.A.	OFF	OFF	OFF	OFF
ERROR: led activity remains OFF; Check the work microswitch (is broken), the BU motor (is blocked) and the wiring (JP16).	OFF	OFF	OFF	OFF	OFF
ERROR: led alarm Switch ON, check the BU; * with BU the absorbed current is much more 300mA * without BU the absorbed current is much more 200mA	N.A.	OFF	ON	OFF	OFF
	LED INDICATION				
Finish condition	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
	N.A.	N.A.	OFF	N.A.	N.A.

### Level 3 (Pump)

	LED INDICATION				
Start condition:	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
	OFF	OFF	OFF	OFF	OFF
			LED INDI	CATION	
Action by user	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
Press the coffee	button to	switch on th	e Pump		
The led activity flashing	Flashing	OFF	OFF	OFF	OFF
ERROR: the led activity remains OFF and the led alarm swithc ON; check the pump, the flowmeter, the wiring from the flowmeter to the CPU/POWER board (JP5) and the wiring from the pump to the CPU/POWER board (JP24)	OFF	OFF	OFF	OFF	OFF
		^			
		L	ED INDI	CATION	
Finish condition	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
	N.A.	N.A.	OFF	N.A.	N.A.

### Level 4 (Heater)

	LED INDICATION				
Start condition:	Led Activity	Led Descaling	Led Alarm	Led NoWater	Led Double Coffee
	OFF	OFF	OFF	OFF	OFF
		· · · · · ·		CATION	
Action by user	Lad	Lod			Lad
	Led Activity	Led Descaling	Alarm	Led NoWater	Led Double Coffee
Checl	k the tem	perature			
The red led General Alarm remains OFF	OFF	OFF	OFF	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 (JP17-3) and the other wiring	OFF	OFF	ON	OFF	OFF
Press the coffee b	outton to s	switch on th	e Heater		
The user checkers that the absorbed current is OK	N.A.	N.A.	N.A.	N.A.	N.A.
ERROR: the absorbed current is KO; check the wiring from the heater to the CPU/POWER board (JP17-3) and the other wiring	N.A.	N.A.	N.A.	N.A.	N.A.
			I FD INDI	CATION	
	Led	Led	l ed	Led	Led
Finish condition	Activity	Descaling	Alarm	NoWater	Double Coffee
Lovel E (Crinder)	N.A.	N.A.	OFF	N.A.	N.A.
			LED INDI	CATION	
	Led	Led	Led	Led	Led
Start condition:	Activity	Descaling	Alarm	NoWater	Double Coffee
	OFF	OFF	OFF	OFF	OFF
			LED INDI	CATION	
Action by user	Led	Led	Led	Led	Led
	Activity	Descaling	Alarm	NoWater	Double Coffee
Press the coffee b	utton to s	witch on the	e Grinder		
The led activity flashing	Flashing	OFF	OFF	OFF	OFF
ERROR: the led activity remains OFF and the led alarm swithc ON; check the hall sensor board in the Grinder, the Grinder, the wi- ring from the hall sensor board to the CPU/ POWER board (JP2) and the wiring from the Grinder to the CPU/POWER board (JP8)	OFF	OFF	ON	OFF	OFF
			LED INDI	CATION	
Finish condition	Led	Led	Led	Led	Led
	Activity	Descaling	Alarm	NoWater	Double Coffee
	N.A.	N.A.	OFF	N.A.	N.A.
					0/7

### 4.2 Steam Out

This document describes the procedure of SteamOut in Gaggia Besana machine. This application is used in order to empty the heater.

The machine enters in SteamOut mode by moving the knob in the water position

then pushing the COFFEE LONG button

and then connecting the machine to the plug.

As long as the COFFEE LONG button is pressing the machine shows all LEDS ON: Led Activity, Led Double Coffee, Led Alarm, Led NO\_Water, Led CalclClean.

When the COFFEE LONG button is release the machine starts the Steam Out: Led CalcClean flashing. During this phase if the knob is moving in the central position the steam out procedure will be interrupted and the red led "General Alarm" will be switched On, in order to continue the steam out procedure move back the knob in the water position.

When the steam out procedure is completed the Led Double Coffee switch on and the Led CalcClean switch OFF.

Now is possible to switch off the machine or repeat the procedure moving the knob in the central position and after moving again the knob in the water position.





### **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.

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.

The main Diagnostic Parameters description is available on the GDA\_114331.

### **CHAPTER 6**

### SERVICE AND MAINTENANCE

### 6.1. Repair Flow

Intake	Proces stap	Saeco no.	Action
2       Check Type/Serialnumber         3       Log all analbia accessory, counter check with info from consumer         Obigmosis       4         6       Denning machine         7       Repairing the fault(s) encountered (view Service information (NFF contact communer)         8       Contexting any modifications (view Service information, new software, etc.)         Refer (FSC)       Refer (FSC)         8       Bask Functional test while the applance is open (linked to consumer complaint or what you may have detected)         8       Bask Functional test while the applance is open (linked to consumer complaint or what you may have detected)         8       Bask Functional test while the applance is open (linked to consumer complaint or what you may have detected)         1       Inter offee.         1       Bite construct (Histerburg)         1       End and the confee. Does the some time. Are the volumes equal         1       Bite construct (Histerburg)         1       End and the confee to construct (Histerburg)         1       Check mechanism for good movement and unexpected noise         1       Check mechanism for good movement and unexpected noise         1       Check mechanism for good movement and unexpected noise         1       Assembly       Assembly         1       Obecoshine parts fit well toget	Intake	1	Visual inspection (transport damage) take care for pictures
B log all available accessory. Counter check with info from consumer         Diagnosis       4 Check product for consumer compilaint and main function (in/EVC) refer SDA_114585         Bogening machine       7 Repaints the fault(5) encountered (view Service Information in EPC)         Repair       7 Repaints the fault(5) encountered (view Service Information in EPC)         Basic Prestional text while the appliance is open (linked to consumer complaint or what you may have detected)         Moke s2 clusts at the some time. Are the volumes equal         Biole on the coffee. Does the crems come back together         Biole on the coffee. Does the crems come back together         Biole on the coffee. Does the crems come back together         Biole on the coffee. Does the crems come back together         Coffee         Milk or the coffee. Does the crems come back together         Does the steam work.         Does the steam wor		2	Check Type/serialnumber
Diagnosis         4 Check product for consumer complaint and main function (NFF contact consumer)           Stam Diagnositic og en errors codes and relevant set statistics (IPSC) refer SDA_114585         6 Opening machine           Repair         2 Repairing the full(3) encountered (view Service information in EPSC)           Coffee         9 Basic Functional test while the appliance is open (linked to consumer complaint or what you may have detacted)           Decising any modifications (view Service information in EPSC)         8 Refer EPSC           Coffee         Make e 2 caps or the same time. Are the volumes equal           Blow on the coffee. Does the crema come back together         18 the core come code core credit refer chapter 2.1 of service manual           Steam         Does the target curve within spec refer chapter 2.1 of service manual           Hot Water         If the copplectatore mode: good forth           Does the copplectatore produce good forth         9 Does the copplectatore produce good forth           - Cappuccino         10 check water circuit for any leakage, such as Oetkler clamps, boiler and valve connection and hoses           11 Check mechanism for good movement and unexpected noise         12 Assembly           Power check         15 Will the same time. Are the volumes equal           - Visual         14 Check for damages           - Accessories         16 Do the accessories match with the intable           - Consumer Complaint		3	Log all available accessory, counter check with info from consumer
S Bun Diagnostic to get error codes and relevent set statistic (EPSC) refer SDA .114585         Repair       7 Repairing the fault(s) encountered (view Service information in EPSC)         Repaire       8 Checking any modifications (view Service information, new software, etc.) Refer EPSC         Confee       9 Basic Functional test while the appliance is open (linked to consumer complaint or what you may have detected)         - Crema       9 Basic Functional test while the appliance is open (linked to consumer complaint or what you may have detected)         - Temperature       15 the corran code work (view) correct	Diagnosis	4	Check product for consumer complaint and main function (NFF contact consumer)
6 Opening machine         Repair       7 Repairing the fault(5) encountered (view Service information, new software, etc.)         Refer EPS         Coffee       9 Back Functional test while the appliance is open (linked to consumer complaint or what you may have detected)         Detecting any modifications (view Service information, new software, etc.)         Refer EPS         Coffee       Make 2 cups at the same time. Are the volumes equal         Dow on the coffee. Does the creme come back together         Is the corrent codour correct (interiout)         Temperature         Steam         Does the thort water work         Mike         (fig applicable)         Does the coppec charge region movement and unexpected noise         12 Assembly         Inspection         Visual         Power check         15 Will the set switch on         Accessories         16 Do the accessories match with the instale         - consumer complaint         17 Check the product for the consumer complaint         Quick Functional test         18 Box consumer complaint         19 Do the accessories match with the instale         10 Dock the accessories match with the instale         10 Dock the accessories match with the instale		5	Run Diagnostic to get error codes and relevant set statistics (EPSC) refer SDA 114585
Repair         Provide the full(s) encountered lytex Service information, in EPSC)           8         Checking any modifications (view Service information, new software, etc.)           Bease Functional test while the appliance is open (linked to consumer complaint or what you may have detected)           - Crema         Biow on the coffee. Desite the rema come back together           - Temperature         Is the coffee temperature within spec refer dapter 2.1 of service manual Des: the stee rema colour correct (Hazelout)           Steam         Des: the steem work           Milk         (if opplicable)           Des: the steem work         Des: the come colour correct (Hazelout)           Is stee confige temperature within spec refer dapter 2.1 of service manual Des: the steem work         Des: the steem work           Milk         (if opplicable)         Des: the come work           Des: the explorecinatore produce good froth         Des: the come colour orget (Hazelout)           Inspection         13         Do cabinet parts (It well together           - visual         14         Check the product for the consumer complaint           - Outser recomplaint         10         Check the product for the consumer complaint           Outk Functional test         18         Make 2 (ups at the same time. Are the volumes equal           Coffee         19         The secestorins match with the intake		6	Opening machine
8       Checking any modifications (view Service information, new software, etc.)         1       Basic Functional test while the appliance is open (linked to consumer complaint or what you may have detected)         2       Basic Functional test while the appliance is open (linked to consumer complaint or what you may have detected)         2       Coffee       Moke a 2 ups at the same time. Are the volumes equal         3       Blow on the coffee Emperature within spec refer chapter 2.1 of service manual         5       Steam       Does the steam work         Not Water       Does the comparature produce good froth         - Cappuccino       Does the computer good good froth         - Cappuccino       Does the computer good good froth         - Cappuccino       10       check mechanism for good movement and unexpected noise         11       Check mechanism for good movement and unexpected noise       12         12       Assembly       13       Do calone parts fit well together         - visual       14       Check for damages       -         - Power check       15       Milk ext work during the testing         20       Do the accessories match with the intake       -       -         - Consumer complaint       12       Check the product liek during the testing       -       -         20       Do the	Repair	7	Repairing the fault(s) encountered (view Service information in EPSC)
lefer FPSC           29         Set Functional test while the appliance is open (linke to consumer complaint or what you may have detected)           Coffee         Make 2 cups at the same time. Are the volumes equal           Temperature         Is the coffee. Does the creme come back together           Is the coffee. Does the creme come back together         Is the coffee. Does the creme come back together           Steam         Does the steam work.           Hot Water         Does the come colour correct (hacelouit)           Cappuccino         Does the computer work.           10         Check water circuit for any leakage, such as Oetiker clamps, boller and valve connection and hoses           11         Check water circuit for any leakage, such as Oetiker clamps, boller and valve connection and hoses.           12         Assembly           Inspection         13         Do cabinet parts fit well together           - Visual         14         Check for domages           - Consumer complaint         17         Check the product fit as the wolumes equal           Coffee         19         Diff. for domages           20         Doid they consult fit mell together         Noneed for those families:           - Consumer complaint         17         Check the product fit as during the tosting           20         Doid they product reak during the tosti	-	8	Checking any modifications (view Service information, new software, etc.)
9       Pasic Functional test while the appliance 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         Blow on the coffee. Does the creme come back together       is         1       Temperature         Stem       Does the creme colure correct (hazelmu)         - Crema       Does the compreter (hazelmu)         - Cappuccino       Does the compuccinatore produce good forth         - Cappuccino       Does the compuccinatore produce good forth         - Cappuccino       Does the compuccinatore produce good forth         - Cappuccino       10       check water circuit for any leakage, such as Detiker clamps, boiler and valve connection and hoses         11       Check mechanism for good movement and unexpected noise       12         12       Assembly       13       Does oblinet parts find 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 for eshipping out, if temperature is below 0* to prevent any damaged due to frozen water. No need for those familities:         Steam Out       Steam out before shipping out, if			Refer EPSC
detected)         detected)           Crema         Bow on the coffee. Does the crema come back together           Steam         Is the crema colour correct (frequency)           Temperature         Is the crema colour correct (frequency)           Steam         Does the steom work           Milk         Does the other work           Milk         (frequency)           - Cappuccino         Does the coppuccinatore produce good forth.           - Cappuccino         Does the coppuccinatore produce good forth.           - Cappuccino         Doe sthe coppuccinatore produce good forth.           - Coppuccino         Doe sthe coppuccinatore produce good forth.           - Coppuccino         Doe sthe coppuccinatore produce good forth.           - Coppuccino         10 check water circuit for any leakage, such as Oettker 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           - 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 Othe paro		9	Basic Functional test while the appliance is open (linked to consumer complaint or what you may have
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- Crema       Blow on the coffee. Does the crema come back together         - Temperature       Is the coffee temperature within spec refer chapter 2.1 of service manual         Steam       Does the steam work         Hot Water       Does the computer within spec refer chapter 2.1 of service manual         Dest the steam work       Does the computer work         Milk       (if applicable)         Dest the steam work       Does the computer work         Milk       (if applicable)         Dest the computer work       Does the computer work         Milk       (if applicable)         Dest the computer work       Does the computer work         Milk       (if applicable)         Dest the computer work       Does the computer work         Name       Doe above the computer work         Inspection       12         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	Coffee		Make e 2 cups at the same time. Are the volumes equal
Is the crema colour correct (Hazelnar)           • Temperature           Steam           Does the steam work           Does the confluct environment and unexpected noise           10           Deck water circuit for any leakage, such as Oetiker clamps, holler and valve connection and hoses           11           Check mechanism for good movement and unexpected noise           12           Assembly           13         Do cabinet parts fit well together           - visual         14           Check for damages           - Consumer complaint         17           Check the product for the consumer complaint           00 (betkex 2 cups at the wolumes equal           Coffee         19           19         Is the sound normal ?           Leakage         20           Obit the product fack during the testing           Steam Out         Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families: Gagagi Velasca (or GDA_113455           Reset Error code         New devices have the possibility to reset the error code, once c	- Crema		Blow on the coffee. Does the crema come back together
- Temperature Steam Is the coffee temperature within spec refer chapter 2.1 of service manual Does the starm work Does the hot water work (If applicable) Does the hot water work (If applicable) Does the computcinatore produce good froth Does the computcinatore produce good good good good good good good goo			Is the crema colour correct (Hazelnut)
Steam       Does the steam work         Milk       Does the team work         Outs       Does the not work (milk)         (if applicable)       Does the computationation provide good froth         0       Does the computationation for any leakage, such as Oetliker clamps, boiler and valve connection and hoses         11       Does the computation for any leakage, such as Oetliker clamps, boiler and valve connection and hoses         12       Assembly         13       Do cabinet parts fit well together         - visual       14         14       Check for damages         - Consumer complaint       17         17       Check the product for the consumer complaint         20/cike the product teak during the testing         Steam Out       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Caggie Velasc (ON)       Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it         12       appear afterwards again         Claim Administration       Provide precise IRIS code, according dedicated code table for Gament Care products. The location code from the part you have worked on MUST be completed always with the part reference from exploaded view view 1         23       Prima	- Temperature		Is the coffee temperature within spec refer chapter 2.1 of service manual
Hot Water Milk         Does the hot water work           C- Cappuccino         Does the cappuccinatore produce good froth           - Visual         Leheck machanism for good movement and unexpected noise           - 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         Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:           Gaggia Velasca (Only 230V) and Babila (120-230V)         11           Please also check for GDA_113455           Reset Error code         New devices have the possibility to reset the error code, once captured it need to be reset to see if it apapear	Steam		Does the steam work
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Cappuccino     Dees the cappuccinatore produce good froth     Oes the campa for good movement and unexpected noise     Description     See the cappuccinatore produce good froth     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     Oes the campa for good movement and unexpected noise     See the campa for good movement and unexpected noise     Oes the campa for good movement and unexpected noise     Consumer complaint     Oes the accessories match with the intake     Consumer complaint     Oes the accessories match with the intake     Consumer complaint     Oes the sound normal ?     Leakage     OD bid the product leak during the testing     Steam Out     See the fore shipping out, if temperature is below 0° to prevent any damaged due to frozen water.     No need for those families:     Gagoia Velasca (Ohy 230V) and Babila (120-230V)     Please also check for GDA_113455     Reset Error code     New devices have the possibility to reset the error code, once captured it need to be reset to see if it     22 appear afterwards again     Provide precise IRIS code, according dedicated code table for Gammet Care products. The location code     from the part you have worked on MUST be completed always with the part reference from exploded     view 1     See an out preve writh, coffee bin and drip tray     Zesternal cleaning (housing surface)     Safety check     28 Earth leakage, isolation test, resistor of earth wire grounding, as reque	Milk		(if applicable)
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         13       Do cabinet parts fit well together         - visual       14         Check for damages         - Power check       15         14       Check the ord out of 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         Coffice       19         Is the sound normal ?         Leakage       20         Did the product leak during the testing         Steam Out       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Gagia Velaces (Only 230V) and Babila (120-230V)         Please also check for GDA_113455         Reset Error code       21         23       appear afterwards again         Claim Administration       Provide precise INIS 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 vie	- Cappuccino		Does the cappuccinatore produce good froth
11       Check mechanism for good movement and unexpected noise         12       Assembly         13       Do cabinet parts fit well together         - visual       14         - Power check       15         - Sommer 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         Steam Out       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for thes families:         Gaggia Velaca (Only 230V) and Babila (120-230V)       Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it 22 appear afterwards again         Claim Administration       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 I         23       Primary fault and corresponding IRIS code should be claimed first.         Clean water reservoir, bean reser		10	check water circuit for any leakage, such as Oetiker clamps, boiler and valve connection and hoses
12       Assembly         13       Deschinet parts fit well together         • visual       14         • Power check       15         • Power check       15         • Power check       16         • Do the accessories match with the intake         • Consumer complaint       17         Check the product for the consumer complaint         Quick Functional test       18         Leakage       20         Do the before shipping out, if temperature is below 0° to prevent any damaged due to frozen water.         No need for those families:         Gaggia Velasca (Ohy 230V) and Babila (120-230V)         Please also check for GD_113455         Reset Error code         New devices have the possibility to reset the error code, once captured it need to be reset to see if it         21       appear afterwards again         Claim Administration       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 !         23       Primary fault and corresponding IRIS code should be claimed first.         Clean water reservoir, bean reservoir, bean reservoir, bean reservoir, brean reservoir, bean reservoir, pean reservoir, pean reservoir, pean reser		11	Check mechanism for good movement and unexpected noise
Inspection       13       Do cabinet parts fit well together         - visual       14       Check for damages         - Power check       15       Will the sets witch 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       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Gaggia Velasca (Only 230V) and Babila (120-230V)       Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it 21 appear afterwards again         Claim Administration       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 1         23       Primary fault and corresponding IRIS code should be claimed first.         Clean water reservoir, bean reservoir, bean reservoir, brean chamber on and conveyor         26       Clean andar reservoir, bean reservoir, bean dand orip tray <td></td> <td>11</td> <td></td>		11	
Automation       Automate and any frequency of any and any frequency of any any frequency of any any frequency of any any frequency of any	Inspection	12	Do cabinet parts fit well together
1 Section Control         1 Power Check         2 Consumer complaint         1 Check the product for the consumer complaint         2 Consumer complaint         1 Check the product for the consumer complaint         Quick Functional test         2 Consumer complaint         2 Check the product for the consumer complaint         Quick Functional test         2 Did the product leak during the testing         Steam Out         Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Gaggia Velasca (Only 230V) and Babila (120-230V)         Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it         2 appear afterwards again         Claim Administration       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 1         23 Primary fault and corresponding IRIS code should be claimed first.         Cleaning       25 Clean water reservoir, bean reservoir, brew chamber and conveyor         26 Clean and rly brew unit, coffee bin and drip tray         27 External cleaning (housing surface)         Safety check       28 Earth leakage, lsolation test, re		13	Check for damages
10 of block       12 of the accessories match with the intake         - Cacessories       16 D 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 7         Leakage       20 Did the product leak during the testing         Steam Out       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Gaggia Velasca (Only 230V) and Babila (120-230V)       Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it 22 appear afterwards again         Claim Administration       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 1         23 Primary fault and corresponding IRIS code should be claimed first.         Cleaning       25 Clean and dry brew unit, coffee bin and drip tray         27 External cleaning (housing surface)       28         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       23	- Power check	14	Will the set switch on
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 feak during the testing         Steam Out       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Gaggia Velasca (Only 230V) and Babila (120-230V)       Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it 21 appear afterwards again         Claim Administration       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 I         23       Primary fault and corresponding IRIS code should be claimed first.         Clean water reservoir, bean reservoir, brew chamber and conveyor       26         26       Clean and dry bre wuit, coffee bin and drip tray         27       External cleaning (housing surface)         Safety check       28       Farth leakage, loolation 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         Pa		15	Do the accessories match with the intake
Constants       Companie         Quick Functional test       18         Make 2 cups of the same time. Are the volumes equal         Coffee       19         Is the sound normal ?         Leakage       20         Steam Out       Steam out before shipping out, if temperature is below 0° to prevent any damaged due to frozen water. No need for those families:         Gaggia Velasca (Only 230V) and Babila (120-230V)         Please also check for GDA_113455         Reset Error code       New devices have the possibility to reset the error code, once captured it need to be reset to see if it 22 appear afterwards again         Provide precise IRIS code, accoding 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 I         23       Primary fault and corresponding IRIS code should be claimed first.         Clean ing       25         25       Clean and dry brew unit, coffee bin and drip tray         27       External cleaning (housing surface)         Safety check       28         29       Check the mains cord for damages         20       Check the product         20       Check the product         21       Decking         31       Info for Consumer by packed ? e.g. service brochure, FAQ, NFF letter, s/c etc	- Consumer complaint	10	Check the product for the consumer complaint
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## CHAPTER 7

### DISASSEMBLY

### 7.1. Outer shell



Remove the dreg drawer, water tank, drip tray, coffee container lid, brewing unit and the pannarello.

**Upper cover** 



Side cover





Unscrew the highlighted screws and slip off the upper cover casing.



Unscrew the highlighted screws and slip off the side cover casing.



Service door

Open the service door and slip off it.

### 7.2. KYB interface



Slip off the righ and left guide and the flat cable.



Using a flat screwdriver, slip off the crown that holds the steam/water gear.



Unscrew the highlighted screws.



Using a flat screwdriver, slip off the coffee dispenser.



Lower the coffee dispenser and slip off the water/steam gear and KYB assy.

### 7.3. The control knob and coffee keys





- 1) Slip off the KYB;
- 2) Slip off the buttons;
- 3) Slip off the control Knob.









### 7.5. Coffee dispenser

### To reprogram the P.C.B. connect the S.S.C

- 1) Loosen the screw shown and remove the P.C.B. protection.
- **2**) Slide out the P.C.B., removing all connections.



Using a flat screwdriver, slip off the coffee dispenser.

### 7.6. The boiler





**1**) Loosen the screws shown.

**2**) Loosen the screw and remove the plastic support. Disconnect the hydraulic and electrical connections.



### 7.7. Pump and turbine

Slide out the support as shown.

Remove connection **1**, slide out the silicone hoses.

To prevent annoying vibrations when reassembling the pump, take extra care when positioning spring  $\mathbf{2}$ .

At this point, the turbine may also be removed from its recess.



7.8. Flow selector faucet

Loosen the screw and disconnect the hydraulic connections, remove the flow selector faucet.

### 7.9. Casing bottom insert





 Loosen the screw shown;
 Loosen the screw shown and disonnect the hydraulic connections;
 Loosen the screw shown and disonnect the electrical connection





7.10. Pin boiler

Loosen the screws shown and remove the pin boiler.

7.11. Coffee grinder



**1)** To remove the coffee grinder, simply slide it out and remove its connections.



**2)** When replacing it, make sure the spring (A) and the coffee pipe (B) are positioned correctly.

### 7.12. Gearmotor









**1**) Loosen the screws holding the boiler pin in place, remove it and loosen the other screws shown

**2**) The following are located inside the compartment protected by the casing:

- Brew drive (A) with gears (B) and (C) for transmission and timing of the dispensing head.
- Grounds drawer present microswitch (D).
- Brewing unit present microswitch (E).
- Microswitch (F) 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

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

**4**) When replacing the motor and the transmission shaft, make sure the bearings (L) are in the right position.

Grease the shaft thoroughly and evenly

### 7.13. Grinder adjustment/assembly and disassembly



**1)** To remove the upper grinder support, using a hex key push down and turn clockwise to release the grinder support from the bayonet coupling

**2)** To remove the grinder blade from the upper support, turn it anti-clockwise until it detaches from the bayonet coupling

**3)** To remove the lower grinder blade, keep the increment pin (A) locked in position and turn the grinder blade anti-clockwise, until it detaches from the bayonet coupling

**4)** When refitting the upper grinder support, make sure you reposition it so that the mark is as illustrated in the photo

### 7.14. Oetiker clamps assembly and disassembly





**Replacing the hoses** 

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

2) Tighten the clamp as illustrated

### 7.15. Tightening torques

The purpose of this paragraph is to define the correct tightening torque of each screw present on the Gaggia Besana machine models.

A manual dynamometer must be used to check the tightening torque.

Screw	Quantity	Image	tightening torque
Flow selctor faucet.	2		0,5 Nm ± 0,1
Mounting plate cover 1	6		0,65 Nm ± 0,1
Mounting plate cover 2	1		0,6 Nm ± 0,1
Mounting plate	1		0,7 Nm ± 0,1
Casing bottom insert	2		0,6 Nm ± 0,1
Capacitiv sensor	1	PLZGE	0,4 Nm ± 0,05
Safety valve	1		1,0 Nm ± 0,1
Boiler support	3		0,6 Nm ± 0,1

Screw	Quantity	Image	tightening torque
Temperature sensor	1		2,0 Nm ± 0,5
Boiler and thermostat	2		1,5 Nm ± 0,5
Coffee grinder plate 1	2		0,6 Nm ± 0,1
Coffee grinder plate 2	1		0,6 Nm ± 0,1
Steam/water tube support	1	CORPORATION OF THE CORPORATION O	0,7 Nm ± 0,1
КҮВ	2		0,6 Nm ± 0,1
Power board protection	1		0,6 Nm ± 0,1
Left side cover 1	1		0,7 Nm ± 0,1
Left side cover 2	2		0,7 Nm ± 0,1

Screw	Quantity	Image	tightening torque
Left side cover 3	1	10	0,6 Nm ± 0,1
Upper cover casing 1	2		0,6 Nm ± 0,1
Upper cover casing 2	2		0,7 Nm ± 0,1
Bean container finger protection	1		1,2 Nm ± 0,1