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<td></td>
</tr>
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<td><strong>10 Electrical diagram</strong></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION
### 1.1 Documentation required

The following documentation is needed for repair procedures:

- Instruction booklet for specific model
- Technical documentation for specific model (diagrams, exploded view, symptom cure and service manual)

### 1.2 Tools and equipment required

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

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screwdriver</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Pliers for Oetiker clamps</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>CC - A - Vdc tester</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Digital thermometer</td>
<td>Scale limit &gt; 150°C</td>
</tr>
<tr>
<td>1</td>
<td>SSC (Saeco Service Center)</td>
<td>Programmer (for programming and diagnostics mode)</td>
</tr>
</tbody>
</table>

### 1.3 Material

<table>
<thead>
<tr>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal paste</td>
<td>Heating element &gt; 200°C</td>
</tr>
<tr>
<td>Descaler</td>
<td>Saeco descaler</td>
</tr>
<tr>
<td>Grease solvent</td>
<td>Personal choice</td>
</tr>
<tr>
<td>Silicone grease</td>
<td>Safe to use with food</td>
</tr>
</tbody>
</table>

### 1.4 Safety warnings

We recommend you consult the technical manual of the machine before performing any maintenance work.

Observe all applicable standards relating to the repair of electrical appliances.

Always disconnect the power plug from the mains before beginning repair work. **Simply turning off the main machine power switch is not an adequate safety precaution.**

This domestic appliance is rated as insulation class I. On completion of the repair work, insulation and dielectric rigidity tests must be performed.
1.5 Service POLICY grid as used for coffee machine

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

List of principal assembly present in all our coffee machines

<table>
<thead>
<tr>
<th>Components</th>
<th>Assembly use</th>
<th>Single components available</th>
</tr>
</thead>
<tbody>
<tr>
<td>COFFEE GRINDER</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the machine or of the Coffee Grinder on website</td>
</tr>
<tr>
<td>BREWING UNIT</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the machine or of the Brewing unit on website</td>
</tr>
<tr>
<td>BOILER</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the machine on website</td>
</tr>
<tr>
<td>GEAR MOTOR</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the machine on website</td>
</tr>
<tr>
<td>FILTER HOLDER</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the machine on website</td>
</tr>
<tr>
<td>MILK CARAFE</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the Thermal Carafe on website</td>
</tr>
<tr>
<td>THERMAL CARAFE</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the Thermal Carafe on website</td>
</tr>
<tr>
<td>MILK ISLAND</td>
<td>Only for OOW repairs</td>
<td>YES, to consult the specific exploded-view of the Milk Island on website</td>
</tr>
</tbody>
</table>
1.6.1 External machine parts

- Minuto Pure
- Automatic Milk Frother (also for steam dispensing) (Class)
- Classic Milk Frother (also for water/steam dispensing) (Focus)
- Water tank
- Pre-ground coffee compartment
- Coffee bean hopper with lid
- Hot water dispensing spout
- Milk carafe
- Coffee dispenser
- Brew Unit
- Dreg drawer
- Drip tray+grille
- Service door
- Power cable socket and main switch
- Espresso/Coffee selection level
- Special products button
- ON/OFF button
- MENU
- Espresso brew button
- Coffee brew button
- Cappuccino brew button
- Pre-ground coffee button
- "Aroma" button
- Special products button
MINUTO 01 INTRODUCTION

FOCUS

Descaling button
ON/OFF button
Hot water button
Steam button
Espresso brew button

CLASS

“Aroma” Pre-ground coffee button
Coffee brew button
Espresso brew button

MENU

Espresso brew button Coffee brew button

PURE

Espresso brew button Coffee brew button
“No water” light
“Warning” light
“Descaling” light
Descaling button
“Coffee grounds drawer” light
“No coffee” light
“Start descaling” light

CAPPUCINO for USA

ON/OFF button
Long Coffee brew button
Medium Coffee brew button
Espresso brew button
Pre-ground coffee button
Cappuccino brew button

Espresso/Coffee selection level

Page 04/06
Classic Milk Frother (also for water/steam dispensing)  
(Class)

Automatic Milk Frother (also for steam dispensing)  
(Class)

Steam wand + rubber grip for 
Automatic Milk Frother  
(also for hot water dispensing)

Classical Milk Frother (also for water/steam dispensing)  
(Focus)

Espresso/Coffee selection level

ON/OFF button

Menu button

“Aroma”  
Pre-ground coffee button  
Hot water/steam button

Long coffee brew button

Medium coffee brew button

Espresso brew button

CLASS  
for USA

Descaling button

“No water” light

No coffee” light  
General warning light

Empty coffee grounds drawer” light

PURE  
for USA

Rinse cycle light  
Descaling button

“No water” light
1.6.2 Internal machine parts

- Power board
- Pump
- Flow-meter
- Thermostat
- Boiler
- Grinding adjustment insert
- Coffee grinder
- Safety valve
- 2-way solenoid valve
- Steam pipe
- Coffee dispenser
- Boiler pin
CHAPTER 2

TECHNICAL SPECIFICATIONS
## 2.1. Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply and output:</td>
<td>240 V~ 50 Hz 1850 W - 230 V~ 50/60 Hz 1850 W - 120 V~ 60 Hz 1500 W</td>
</tr>
<tr>
<td>Temperature monitoring:</td>
<td>(NTC) variable resistor sensor - transmits the value to the electronic card</td>
</tr>
<tr>
<td>Safety system:</td>
<td>2 thermostats at 190°C one shot</td>
</tr>
<tr>
<td>Coffee heat exchanger output:</td>
<td>Stainless steel (230 V~) 1900 W - (120 V~) 1300 W - (100 V~) 1100 W for coffee, hot water and steam dispensing</td>
</tr>
<tr>
<td>Gear motor:</td>
<td>2 rotation directions; power supply 24VC</td>
</tr>
<tr>
<td>Pump:</td>
<td>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</td>
</tr>
<tr>
<td>Overpressure valve:</td>
<td>Opening at approx. 16-18 bar</td>
</tr>
<tr>
<td>Water filter:</td>
<td>In tank</td>
</tr>
<tr>
<td>Coffee grinder:</td>
<td>Direct current motor with flat ceramic grinder blades</td>
</tr>
<tr>
<td>Automatic dosage:</td>
<td>Dose adjustment controlled by the electronic system</td>
</tr>
<tr>
<td>Power consumption:</td>
<td>During heating phase- approx. 5.6 A</td>
</tr>
<tr>
<td>Dimensions: W x H x D in mm:</td>
<td>215 x 330 x 429 mm / 8.5”x13”x16.9”</td>
</tr>
<tr>
<td>Weight:</td>
<td>6.7 kg / 14.77 lbs</td>
</tr>
<tr>
<td>Water tank capacity:</td>
<td>1.5 l</td>
</tr>
<tr>
<td>Coffee bean hopper capacity:</td>
<td>250 g. / 1 cup</td>
</tr>
<tr>
<td>Dreg drawer capacity:</td>
<td>15</td>
</tr>
<tr>
<td>Water circuit filling time:</td>
<td>Approx. 15 sec Max. on first filling cycle</td>
</tr>
<tr>
<td>Heating time:</td>
<td>Approx. 45 sec.</td>
</tr>
<tr>
<td>Grinding time:</td>
<td>Approx. 8-10 sec.</td>
</tr>
</tbody>
</table>
2.2.1. Specification for the measurement of the coffee products temperature.

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

**Conditions:**
a) Water temperature in tank: 23°C (+/-2°C).

b) It must be used a plastic cup (see picture N°1).

c) It must be used a thermocouple thermometer (e.g. type K - see picture N°2).

d) The coffee machine is tested without any change of parameters or calibrations, which may affect the temperature of products, so the measurement of temperature must be done with machine in default factory setting.

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

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

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.

**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
2.2.2. Specification for the measurement of the Milk products temperature.

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

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

- Manual system (pannarello)
- Semi-Automatic system (cappuccinatore)
- Automatic system (carafe, Pinless wonder system, etc.)

**Milk temperature in the beaker:**
System without Pinless Wonder: e.g. Xelsis, Exprelia, Syntia, Intelia.
With milk at \(T_{\text{refr.}}\) (about 4-10 °C): \(\Delta \geq 36\)

With milk at \(T_{\text{refr.}}\) (about 4-10 °C): \(\Delta \geq 45\)

**Height of the milk cream in the beaker:**
Manual system (pannarello)  
\(\geq 15\text{mm on 100gr. of brewed product}\)

Semi-automatic system (cappuccinatore)  
\(\geq 20\text{mm on 100gr. of brewed product}\)

Automatic system: carafe, cappuccinatore, Pinless wonder (New Royal, Energica Pure, Intelia EVO latte)  
\(\geq 20\text{mm on 100gr. of brewed product}\)

**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 (T_refr 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 $T_{refr}$ 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 $T_{refr}$ in a container ; with the machine in steam mode:

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

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

1. Launch the “hot milk” function.
2. Collect the product in a beaker with a 250ml of capacity and with an inner diameter of
   70 mm, and verify the result obtained on milk. Carry out the test using milk at a $T_{refr}$.

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

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

<table>
<thead>
<tr>
<th>Grams of Product</th>
<th>Minimum Height of the milk cream</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 130</td>
<td>≥ 30mm</td>
</tr>
<tr>
<td>120</td>
<td>≥ 25mm</td>
</tr>
<tr>
<td>110</td>
<td>≥ 22mm</td>
</tr>
<tr>
<td><strong>100</strong></td>
<td>≥ 20mm</td>
</tr>
<tr>
<td>90</td>
<td>≥ 16mm</td>
</tr>
<tr>
<td>80</td>
<td>≥ 13mm</td>
</tr>
<tr>
<td>70</td>
<td>≥ 11mm</td>
</tr>
</tbody>
</table>

NB: To verify more accurately the height of the cream, a practical expedient dictated by expe-
rience 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

<table>
<thead>
<tr>
<th>PRODUCT QUANTITY</th>
<th>Minimum quantity (Puls.)</th>
<th>Default quantity (Puls.)</th>
<th>Maximum quantity (Puls.)</th>
<th>User programmable</th>
<th>Programm. by Production / Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Espresso</td>
<td>50</td>
<td>165</td>
<td>600</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Long coffee</td>
<td>70</td>
<td>440</td>
<td>600</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Hot water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steam pannarello (frother)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Espresso: Minimum quantity 50, Default quantity 165, Maximum quantity 600, User programmable Yes, Programmable by Production / Service No.
- Long coffee: Minimum quantity 70, Default quantity 440, Maximum quantity 600, User programmable Yes, Programmable by Production / Service No.
- Hot water: Continues until the water supply has been exhausted (capacitive sensor).
- Steam pannarello (frother): Continues until the water supply has been exhausted (capacitive sensor).

### Descaling cycle frequency

<table>
<thead>
<tr>
<th>Hardness</th>
<th>Water hardness</th>
<th>Without water filter</th>
<th>With water filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Soft (up to 7°dH)</td>
<td>240 litres (480,000 pulses)</td>
<td>480 litres (960,000 pulses)</td>
</tr>
<tr>
<td>2</td>
<td>Medium (7° - 14°dH)</td>
<td>120 litres (240,000 pulses)</td>
<td>240 litres (480,000 pulses)</td>
</tr>
<tr>
<td>3</td>
<td>Hard (15° - 21°dH)</td>
<td>60 litres (120,000 pulses)</td>
<td>120 litres (240,000 pulses)</td>
</tr>
<tr>
<td>4</td>
<td>Very hard (over 21°dH)</td>
<td>30 litres (60,000 pulses)</td>
<td>60 litres (120,000 pulses)</td>
</tr>
</tbody>
</table>

The default water hardness level is 4. Each litre of water corresponds to approximately 2,000 pulses.

**In the machines where is not possible change the water hardness the default hardness level is 3.**

### DREG DRAWER

- **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

- **Inlet time (default)**: 30 minutes
- **Inlet time programmed by Production/Service**: Yes
- **Boiler temperature during Standby**: Boiler OFF

### WATER TANK

- **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

USER INSTRUCTIONS
3.1. Customer menu in the Minuto Cappuccino

This machine is equipped with a colour-coded system to make your understanding of the display signals easier. The icons are colour-coded according to the traffic light principle.

Machine ready signals (**GREEN colour**)

- The machine is ready to brew products.
- The machine is ready to brew pre-ground coffee.
- The machine is brewing one cup of espresso.
- The machine is brewing one cup of coffee.
- The machine is brewing two cups of espresso.
- The machine is brewing two cups of Coffee.
- The machine is programming the amount of coffee to be brewed.
- Coffee brewing using pre-ground coffee in progress.
- Milk froth or hot water selection.
- Hot water dispensing.
- Milk froth brewing.
- The machine is frothing the milk for the cappuccino.
- The machine is brewing the coffee for the cappuccino.
- The machine is programming the amount of milk to dispense for cappuccino.
- The machine is programming the amount of coffee to be brewed for cappuccino.
- The machine is programming the amount of milk to dispense for milk froth.
- Insert the water dispensing spout and press the “” button to start dispensing. Press “” to exit.
- The machine will remind the user that the carafe must be inserted.
- The machine will remind the user that the carafe must be inserted when programming a product containing milk.
MINUTO                                        03 USER INSTRUCTIONS

The machine needs to be descaled. Press the “ ” button to start the descaling process. Follow the steps described in the “Descaling” chapter of this manual. If you want to descale later, press the “ ” button to continue using the machine. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

Machine ready signals (YELLOW colour)

The machine is heating up to brew beverages or dispense hot water/steam. The brew group is being reset due to machine reset.

The machine is performing the rinse cycle. Wait until the machine has completed the cycle. Refill the coffee bean hopper with coffee beans and restart the cycle.

The machine needs the “INTENZA+” water filter to be replaced. The machine automatically primes the water circuit.

Fill the coffee bean hopper and refit the lid. Fill the water tank.

The brew group must be inserted into the machine.

Machine ready signals (RED colour)

Completely insert the drip tray with the coffee grounds drawer into the machine and close the service door.

Empty the coffee grounds drawer. Wait about 5 seconds before reinserting it.

Turn off the machine. After 30 seconds, turn it on again. Try this 2 or 3 times. If the machine does not start, contact the Philips SAECO hotline in your country and quote the error code shown on the display. The contact details can be found in the warranty booklet packed separately or on www.philips.com/support.
3.2. Customer menu in the Minuto Cappuccino for USA

This machine is equipped with a colour-coded system to make your understanding of the display signals easier. The icons are colour-coded according to the traffic light principle.

Machine ready signals (GREEN colour)

- The machine is ready to brew products.
- The machine is ready to brew pre-ground coffee.
- The machine is brewing one cup of espresso.
- The machine is programming the amount of espresso to be brewed.
- Coffee brewing using pre-ground coffee in progress.
- The machine is brewing one cup of medium coffee.
- The machine is programming the amount of medium coffee to be brewed.
- The machine brewing one cup of long coffee.
- The machine is programming the amount of long coffee to be brewed.
- Select the programming menu or special beverages menu.
- Froth milk or hot water selection.
- Hot water dispensing.
- Milk froth brewing.
- The machine is frothing the milk for the cappuccino.
- The machine is brewing the coffee for the cappuccino.
- The machine is programming the amount of milk to dispense for cappuccino.
- The machine is programming the amount of coffee to be brewed for cappuccino.
- The machine is programming the amount of milk to dispense for froth milk.
The machine will remind the user that the carafe must be inserted when programming a product containing milk.

The machine will remind the user that the carafe must be inserted.

Insert the water dispensing spout and press the “” button to start dispensing. Press “” to exit.

The machine needs the “INTENZA+” water filter to be replaced.

The brew group is being reset due to machine reset.

The machine needs to be descaled. Press the “” button to start the descaling process. Follow the steps described in the “Descaling” chapter of this manual. If you want to descale later, press the “” button to continue using the machine. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

The machine is performing the rinse cycle. Wait until the machine has completed the cycle.

The brew group is being reset due to machine reset.

The brew group must be inserted into the machine.

Machine ready signals (YELLOW colour)

The brew group is being reset due to machine reset.

The machine is in warm-up phase to brew beverages or dispense hot water/steam.

The brew group is being reset due to machine reset.

The machine is performing the rinse cycle. Wait until the machine has completed the cycle.

The machine is in warm-up phase to brew beverages or dispense hot water/steam.

The machine automatically primes the water circuit.

The machine is in warm-up phase to brew beverages or dispense hot water/steam.

The machine automatically primes the water circuit.

The machine needs to be descaled. Press the “” button to start the descaling process. Follow the steps described in the “Descaling” chapter of this manual. If you want to descale later, press the “” button to continue using the machine. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

The machine needs to be descaled. Press the “” button to start the descaling process. Follow the steps described in the “Descaling” chapter of this manual. If you want to descale later, press the “” button to continue using the machine. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

Machine ready signals (RED colour)

The brew group must be inserted into the machine.

The brew group must be inserted into the machine.

Complete the steps described in the “Descaling” chapter of this manual. If you want to descale later, press the “” button to continue using the machine. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

Complete the steps described in the “Descaling” chapter of this manual. If you want to descale later, press the “” button to continue using the machine. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.
3.3. Customer menu in the Minuto Class and Focus

This machine is equipped with a colour-coded system to make your understanding of the display signals easier. The icons are colour-coded according to the traffic light principle.

Machine ready signals (GREEN colour)

- The machine is ready to brew products.
- The machine is ready to brew pre-ground coffee.
- Hot water dispensing.
- Steam dispensing.
- The machine is brewing one cup of espresso.

Machine ready signals (YELLOW colour)

- The machine is heating-up to brew beverages or dispense hot water.
- The machine performs the rinsing cycle. Wait until the machine has completed the cycle.
- The machine needs the “INTENZA+” water filter to be replaced.
- The brew group is being reset due to machine reset.
Refill the coffee bean hopper with coffee beans and restart the cycle. 

Prime the circuit.

The machine needs to be descaled. Press the " " button to enter the descaling menu.

If you want to descale later, press the " " button to continue using the machine.

Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

Machine ready signals (**RED colour**)

- Insert the drip tray with the coffee grounds drawer into the machine and close the service door.
- The brew group must be inserted into the machine.
- Empty the coffee grounds drawer.
- Fill the coffee bean hopper.
- Fill the water tank.

Turn off the machine. After 30 seconds, turn it on again. Try this 2 or 3 times.

If the machine does not start, contact the Philips SAECO hotline in your country and communicate the the Error-code which you see on the display. You can find its contact details in the warranty booklet by-packed separately or on www.philips.com/support.
3.4. Customer menu in the Minuto Class and Focus for USA

This machine is equipped with a colour-coded system to make your understanding of the display signals easier. The icons are colour-coded according to the traffic light principle.

Machine ready signals (GREEN colour)

- The machine is ready to brew products.
- The machine is ready to brew pre-ground coffee.
- Steam or hot water selection.
- Hot water dispensing.
- Steam dispensing.
- The machine is brewing one cup of espresso
- The machine is brewing two cups of espresso.
- The machine is programming the amount of coffee to be brewed.
- Espresso brewing using pre-ground coffee in progress.
- The machine is brewing one cup of medium coffee.
- The machine is programming the amount of medium coffee to be brewed.
- The machine is brewing one cup of long coffee.
- The machine is programming the amount of long coffee to be brewed.
Machine ready signals (YELLOW colour)

The machine is heating-up to brew beverages or dispense hot water.

Class
The machine is in warm-up phase to brew beverages or dispense hot water/steam.

Focus
The machine is performing the rinse phase. Wait until the machine has completed the cycle.

- The machine needs the “INTENZA+” water filter to be replaced.
- The brew group is being reset due to machine reset.
- The machine needs to be descaled. Press the “ ” button to enter the descaling menu.
  - If you want to descale later, press the “ ” button to continue using the machine.
  - Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

Machine ready signals (RED colour)

- Completely insert the drip tray with the coffee grounds drawer into the machine and close the service door.
- Fill the coffee bean hopper.
- Fill the water tank.
- Set the “ESPRESSO” or “COFFEE” selection lever to “ESPRESSO” within 30 seconds to complete brewing.
- Set the “ESPRESSO” or “COFFEE” selection lever to “COFFEE” within 30 seconds to complete brewing.
- A beverage has been selected without the coffee bean hopper inner lid on the machine. Place the coffee bean hopper lid on the machine within 30 seconds to complete brewing.

- Turn off the machine. After 30 seconds, turn it on again. Try this 2 or 3 times.
  - If the machine does not start, contact the Philips SAECO hotline in your country and communicate the the Error-code which you see on the display.
  - You can find its contact details in the warranty booklet by-packed separately or on www.philips.com/support.
3.5. Customer menu in the Minuto Pure

Warning signals

The machine is busy and is performing one of the following operations:
- Warm-up
- Automatic rinse.
The machine automatically manages phases in order to complete the operations.

The machine is priming the circuit.

The machine is programming the amount of espresso to brew.

The machine is programming the amount of coffee to be brewed.

Fill the water tank.

Completely insert the drip tray with the coffee grounds drawer into the machine and close the service door.
The brew group is being reset due to machine reset.

Fit the Brew Group.

Empty the coffee grounds drawer.

While emptying the coffee grounds drawer.

**Note:**
The coffee grounds drawer should only be inserted after completion of the reset that takes place when the "" light turns off and the "" light becomes steady on.

Refill the coffee bean hopper with coffee beans and restart the cycle.

The machine needs to be descaled. Follow the steps described in the “Descaling” chapter of this manual.

**Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.**

Turn off the machine. After 30 seconds, turn it on again. Repeat the procedure 2 or 3 times. If the machine does not start, contact the Philips SAECO hotline in your country.
3.6. Customer menu in the Minuto Pure for USA

The machine is performing one of the following operations:
- Warm-up
- Automatic rinse.

You have to prime the machine by pressing the espresso button. Once pressed, the "    " button turns off. During priming the "    " and "    " keep on flashing. They stop flashing when the priming is finished.

The machine is ready for use.

The machine is programming the amount of espresso to brew.

The machine is dispensing steam.

Quickly double flashing
Flashing Quickly
The machine is in the stop steam dispensing phase

Flashing slowly
The machine is dispensing hot water.

Steady on
Fill the water tank.

Steady on
The brew group is being reset due to machine reset.

Flashing Quickly
Empty the coffee grounds drawer.

Flashing slowly
Completely insert the drip tray with the coffee grounds drawer into the machine and close the service door.

Steady on
The brew group is being reset due to machine reset.

Flashing slowly
Insert the brew group properly.

Flashing
The coffee grounds drawer is not inserted into the machine. Wait a few seconds till the “□” goes out and the “△” is steady on. Then insert the coffee grounds drawer in the machine and close the service door.

Steady on
Refill the coffee bean hopper with coffee beans and try again to make a coffee. The light turns off only when the bean hopper lid has been placed back. It is possible to dispense steam and hot water when this warning light shows.

Steady on
The bean hopper lid has been removed after having selected a coffee product. Put the lid back on.

Flashing slowly
The machine needs to be descaled. Follow the steps described in the “Descaling” chapter of this manual. Please note that not descaling your machine will ultimately make it stop working properly. In this case repair is NOT covered under your warranty.

Steady on
Turn off the machine. Turn it back on after 30 seconds. Repeat the procedure 2 or 3 times.
If the machine does not start, contact the Philips SAECO hotline in your country (contact details in the warranty booklet)
3.7. Operation, cleaning and maintenance

Operating the machine

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fill water tank</td>
</tr>
<tr>
<td>2</td>
<td>Fill the coffee bean hopper</td>
</tr>
<tr>
<td>3</td>
<td>Switch on the appliance</td>
</tr>
<tr>
<td>4</td>
<td>Press the button to start the appliance</td>
</tr>
<tr>
<td>5</td>
<td>Heating</td>
</tr>
<tr>
<td>6</td>
<td>Rinse</td>
</tr>
<tr>
<td>7</td>
<td>Machine ready</td>
</tr>
</tbody>
</table>

Lubricate the brewing unit After 500 dispensing cycles or when the grease is no longer present on the brewing unit

Clean the unit housing Weekly

H Descaling

CLEANING AND TECHNICAL SERVICING

A Empty the dregs drawer When indicated
B Empty the drip tray As necessary
C Clean the water tank Weekly
D Clean the coffee bean hopper As necessary
E Clean the casing As necessary
F Clean the brewing unit Every time the coffee bean hopper is filled or weekly
Lubricate the brewing unit After 500 dispensing cycles or when the grease is no longer present on the brewing unit

Clean the unit housing Weekly

H Descaling When indicated

Descaling cycle frequency

<table>
<thead>
<tr>
<th>Hardness</th>
<th>Water hardness</th>
<th>Without water filter</th>
<th>With water filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Soft (up to 7°dH)</td>
<td>240 litres (480,000 pulses)</td>
<td>480 litres (960,000 pulses)</td>
</tr>
<tr>
<td>2</td>
<td>Medium (7° - 14°dH)</td>
<td>120 litres (240,000 pulses)</td>
<td>240 litres (480,000 pulses)</td>
</tr>
<tr>
<td>3</td>
<td>Hard (15° - 21°dH)</td>
<td>60 litres (120,000 pulses)</td>
<td>120 litres (240,000 pulses)</td>
</tr>
<tr>
<td>4</td>
<td>Very hard (over 21°dH)</td>
<td>30 litres (60,000 pulses)</td>
<td>60 litres (120,000 pulses)</td>
</tr>
</tbody>
</table>
CHAPTER 4

OPERATING LOGIC
4.1. Water circuit Minuto Cappuccino
4.2. Water circuit Minuto Class and Focus
4.3. Water circuit Minuto Pure
4.4. Milk Carafe

1) Steam input
2) Bring the cappuccino maker into dispensing position
3) Milk tank

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

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.
4.5. Coffee cycle

<table>
<thead>
<tr>
<th>Main switch ON</th>
<th>START</th>
<th>STOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffee grinder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brewing unit gear motor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>Heating</td>
<td>Ready</td>
</tr>
</tbody>
</table>

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 pulses generated by a sensor).
2. The gear motor (brewing unit) moves to the brewing position.
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).
4.6. Single microswitch

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

4.7. Temperature sensor (adjustment)

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

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.
4.8. Coffee grinder

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

4.9. 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.

\[ t_1 = \text{no coffee indication} \]

If, however, there are coffee beans, the number of rotations will be lower due to the force created by the grinding.

\[ t_2 = \text{no indication} \]

\[ t_3 \text{ and } t_4 = \text{this measurement is performed at the end of each grinding process} \]

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.
4.10. 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.

<table>
<thead>
<tr>
<th>Aroma of the ground product</th>
<th>3 levels</th>
<th>5 levels</th>
<th>+2</th>
<th>0</th>
<th>-4</th>
<th>-10</th>
<th>-10 and CYCLE ABORTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>MAX_CURRENT mA</td>
<td>&lt;150mA</td>
<td>150mA &lt;= MAX_CURRENT mA &lt;= 250mA</td>
<td>250mA &lt; MAX_CURRENT mA</td>
<td>350mA &lt; MAX_CURRENT mA</td>
<td>500mA &lt; MAX_CURRENT mA</td>
<td>&gt;800mA</td>
</tr>
<tr>
<td>Very Light</td>
<td>MAX_CURRENT mA</td>
<td>&lt;=250mA</td>
<td>&gt;250mA</td>
<td>&gt;350mA</td>
<td>&gt;500mA</td>
<td>&gt;800mA</td>
<td>&gt;1000mA</td>
</tr>
<tr>
<td>B</td>
<td>MAX_CURRENT mA</td>
<td>&lt;250mA</td>
<td>250mA &lt;= MAX_CURRENT mA &lt;= 350mA</td>
<td>350mA &lt; MAX_CURRENT mA</td>
<td>500mA &lt; MAX_CURRENT mA</td>
<td>800mA &lt; MAX_CURRENT mA</td>
<td>&gt;1000mA</td>
</tr>
<tr>
<td>Light</td>
<td>MAX_CURRENT mA</td>
<td>&lt;=250mA</td>
<td>&gt;250mA</td>
<td>&gt;350mA</td>
<td>&gt;500mA</td>
<td>&gt;800mA</td>
<td>&gt;1000mA</td>
</tr>
<tr>
<td>Med</td>
<td>MAX_CURRENT mA</td>
<td>&lt;=350mA</td>
<td>&gt;350mA</td>
<td>&gt;500mA</td>
<td>&gt;800mA</td>
<td>&gt;1000mA</td>
<td></td>
</tr>
<tr>
<td>Strong</td>
<td>MAX_CURRENT mA</td>
<td>&lt;350mA</td>
<td>350mA &lt;= MAX_CURRENT mA &lt;= 500mA</td>
<td>500mA &lt; MAX_CURRENT mA</td>
<td>800mA &lt; MAX_CURRENT mA</td>
<td>1000mA &lt; MAX_CURRENT mA</td>
<td></td>
</tr>
<tr>
<td>Very Strong</td>
<td>MAX_CURRENT mA</td>
<td>&lt;=500mA</td>
<td>&gt;500mA</td>
<td>&gt;800mA</td>
<td>&gt;1000mA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Important:

For perfect operation, machine adjustment should take place in the area of the fields highlighted in green (A, B, C). When the type or brand of coffee is changed, there may be variations in the size of the beans and their stickiness or roasting level. This leads to variations in power consumption (mA), with resulting excessive or insufficient doses (until the necessary adjustments have been made to compensate for this change).

Caution: In the case of excessive dosage, powder may be expelled into the dreg drawer. This is not a fault, but can occur during preliminary operation or after a service.
4.11. 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.

4.12. 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.
4.13. 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:**
- $-10^\circ \text{dH}$
- 60 litres
- 2 months

To achieve the best possible operating mode consistency over the total life span, the water is channelled using a 3-stage bypass (A, B, C) depending on the degree of hardness. See small image.
CHAPTER 5

TROUBLESHOOTING
5.1.1. Minuto Cappuccino test mode

To enter Test Mode
The machine enters Test Mode by holding pressed together Espresso and Menu buttons, while switching on the machine by mean of the main switch on the backside of the CA. Once entered in Test Mode, the display shows the firmware version.
The Test Mode is organized into 5 different pages:

Page 0: The display shows:
  a) Firmware version.
  b) Type.
  c) Main supply voltage
  d) Main supply frequency (50 or 60 Hz).

Page 1: Keyboard and display’s colour test:
  a) Espresso button
  b) Coffee button
  c) Cappuccino button
  d) Special button
  e) Menu button
  f) Aroma button
  g) Stand-by button
  h) Backlight colors

Page 2: Input signals test:
  a) Water level sensor
  b) Microswitch door closed/opened
  c) Microswitch presence of the Brew Unit
  d) Lever position on Espresso
  e) Lever position on Drip

Page 3: Low voltage loads test:
  a) Brew Unit movement upward and downward (24V DC)

Page 4: High/Low voltage loads test (Pump, E.Valve ) :
  a) Pump (120-230V AC)
  b) Electro Valve 1 (24Vdc) ( The door must be closed !!)
  c) Electro Valve 2 (24Vdc) ( The door must be closed !!)

Page 5: High voltage loads test (Heater, Grinder ):
  a) Heater (120-230V AC)
  b) Grinder (170-320V DC)
The user can change the page by pressing the **STAND-BY** button.
Page 0 is accessible only entering Test Mode from PowerOFF.
At the start up all loads are turned off.

![Diagram showing TEST MODE Levels 0 to 5]

**Firmware Software version**

Firmware version on the display.
The machine model is shown (TOP).
The voltage of the main supply "230V/120V"
The frequency of the main supply is shown (50 or 60 Hz)

**ERROR:** If machine model is different from TOP, change the interface.

Press **STAND BY** ".middle" to move to the next screen

The machine passes to the Page 1 (KEYBOARD)
**ERROR:** The page does not change; Check the interface board and the flat cable (JP21)
Press buttons from 1 to 7

Only when a button is pressed a O appears on the relative position of button pressed.
In the middle of display appears the name of the button pressed. Pressing buttons on the left the backlight color changes from GREEN to YELLOW.
Pressing button on the right the backlight color changes from GREEN to RED.
When a button is pressed, also the Stand-By led (RED) turn ON.

Note: Press button STANDBY as the last once, since it makes change the test page.
Note: If 2 or more buttons are pressed the name that appears on display could be wrong.

ERROR: If nothing appears on display; check the interface board and the flat cable (JP21).

ERROR: If during the movement the backlight remain green check the wiring (JP1) from the interface board and the display.

ERROR: The name displayed is wrong; check the position of jumper in interface. It must be the same of machine model:
· Jumper on JP5 for Focus machine model
· Jumper on JP6 for Class machine model

Press STAND_BY “ ” to move to the next screen

The machine passes to the level 2 (INPUTS)

Insert a full Water Tank
The indication H20 changes from “N” to “Y”.

Note: the switching from “N” to “Y” requires about 1-2 seconds.
ERROR: The indication TANK-H2O doesn’t change; check the capacitive sensor (fixing) and the wiring (JP23)

Insert the BrewUnit
The indications BU-P changes from “N” to “Y”.

Note: removing the BrewUnit the indication from “Y” to “N” requires about 2-3 seconds to switch.
ERROR: Check the BU presence Microswitch and the wiring (JP16).

Close the Door and Dreg Drawer
The indication DOOR change from “N” to “Y”
ERROR: The indication DOOR does not change; check the Microswitch for the door and the wiring (JP14).

Note: without the Dreg Drawer correctly inserted the DOOR indication cannot change!
The machine passes to the Page 3 (BU PAGE).

Press the ESPRESSO button to move the BU to Work

**IMPORTANT NOTE:** If the DREGDRAWER is not inserted or the DOOR is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

When the BU reaches the work position the indication WORK changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

**ERROR:** The indication WORK doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16).

**ERROR:** (Without BU) The absorbed current is more than 200mA, the display backlight changes from green to red; check the BU and the motor.

**ERROR:** (With BU) The absorbed current is more than 300mA, the display backlight changes from green to red; check the BU and the motor.

Press the CAPPuccino button to move the BU to Home

When the BU reaches the home position the indication HOME changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

**ERROR:** The indication HOME doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (is broken), the BU motor (is blocked) and the wiring (JP16).

**ERROR:** (Without BU) The absorbed current is higher than 200mA, the display backlight changes from green to red; check the BU and the motor.
ERROR: (With BU) The absorbed current is higher than 300mA, the display backlight changes from green to red; check the BU and the motor.

Press STAND_BY “ ” to move to the next screen

The machine passes to the Page 4 (EV - PUMP)

Press the ESPRESSO button to open the Electro Valve 1

IMPORTANT NOTE: If the DREGDRAWER is not inserted or the DOOR is not closed the EV test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

It is possible to hear the “click” from Electro Valve. The indication beside the EV1 changes from “OFF” to “ON”.

Press the COFFEE button to open the Electro Valve 2

It is possible to hear the “click” from Electro Valve. The indication beside the EV2 changes from “OFF” to “ON”.

Press the STEAM button to switch on the pump

The water goes out from the pipe and the indication IMP shows increasing numbers. The indication L/H must be within the range 10-18.

ERROR: The display backlight changes from green to red and the impulse remains 0; If water comes out the pipe: check the wiring from the flowmeter to the CPU/POWER board (JP5). If no water comes out the pipe: check the pump and the wiring from the pump to the CPU/POWER board (JP24).

ERROR: The L/H is zero or very low; the Electro Valve does not open. Check the wiring from the Electro Valve to the CPU/POWER board (JP3) and the Electro Valve.

Press STAND_BY “ ” to move to the next screen
The machine passes to the level 5 (Heater-Grinder)

Press the STEAM button to switch on the grinder
The grinder rotates and in the indication GRINDER the number increasing up to 40. The other numbers inside the GRINDER box are not important for this test.

ERROR: The number remains 0 or the grinder does not run, the display backlight changes from green to red; check the Hall sensor board of 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)

Check the temperature
The number shows the heater temperature.

ERROR: In the indication HEATER appears “SHORT”, the NTC temperature-sensor is shorted, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

ERROR: In the indication HEATER appears “OPEN”, the NTC temperature-sensor is detached or broken, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

Press the ESPRESSO button to switch on the Heater
The absorbed current (Amperometer on the main supply) is OK, the indication HEATER changes from “OFF” to “ON” and the temperature starts increasing.

If temperature is over 135°C, the backlight change from GREEN to YELLOW. This is a ALERT message to avoid heating the HEATER element over dangerous temperature.

ERROR: the absorbed current is KO or the temperature does not increase; check the wiring from the heater to the CPU/POWER board (JP19) and the wiring of the NTC temperature-sensor (JP13).
5.1.2. SteamOut

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

Once entered the Steam Out mode the display shows the “STEAM OUT” indication. Buttons can be released

**IMPORTANT NOTE:** to execute the Steam-Out procedure the DREGDRAWER must be in place and the DOOR must be closed.
If these 2 conditions are not respected a warning message is shown on the display and the Steam-Out is interrupted.

The machine starts the Steam Out and the display change the backlight (yellow) and appears the indication “ON”.
While the Steam Out runs the Electrovalve is opened and water comes out the Water/Steam pipe.

When the Steam Out is complete the message “COMPLETE” is shown on the Display. The Electrovalve automatically closes and the machine can be switched off.

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

- Length Espresso product
- Length Coffee product
- Length Cappuccino (Coffee + Milk product)
- Length Milk product
- StandBy Time
- Count Coffee
- The request for Priming the Circuit at the first switch on is set.
- Brewing Unit Empty
- Aroma
- Aroma Impulses
- Filter Presence
- Filter Pulses
- Dynamic threshold
- History of grindings for Beans Presence detection
5.2.1. Minuto Cappuccino test mode for USA

To enter Test Mode
The machine enters Test Mode by holding pressed together Espresso and Menu buttons, while
switching on the machine by mean of the main switch on the backside of the CA. Once entered in
Test Mode, the display shows the firmware version.
The Test Mode is organized into 5 different pages:

Page 0: The display shows:
   a) Firmware version.
   b) Type.
   c) Main supply voltage
   d) Main supply frequency (50 or 60 Hz).

Page 1: Keyboard and display’s colour test:
   a) Espresso button
   b) Medium Coffee button
   c) Long Coffee button
   d) Cappuccino button
   e) Aroma button
   f) Menu button
   g) Stand-by button
   h) Backlight colors

Page 2: Input signals test:
   a) Water level sensor
   b) Microswitch door closed/opened
   c) Coffee Beans cover presence
   d) Microswitch presence of the Brew Unit
   e) Lever position on Espresso
   f) Lever position on Drip

Page 3: Low voltage loads test:
   a) Brew Unit movement upward and downward (24V DC)

Page 4: High/Low voltage loads test (Pump, E.Valve):
   a) Pump (AC voltage)
   b) Electro Valve (24Vdc) ( The door must be closed !!)

Page 5: High voltage loads test (Heater, Grinder):
   a) Heater (120-230V AC)
   b) Grinder (170-320V DC)
The user can change the page by pressing the **STAND-BY** button. Page 0 is accessible only entering Test Mode from PowerOFF. At the start up all loads are turned off.

![Flowchart of Test Modes]

**Firmware Software version**

Firmware version on the display.
The machine model is shown (TOP).
The voltage of the main supply “230V/120V”
The frequency of the main supply is shown (50 or 60 Hz)

**ERROR:** If machine model is different from TOP, change the interface.

---

**Press STAND_BY “** † †” to move to the next screen

The machine passes to the Page 1 (KEYBOARD)

**ERROR:** The page does not change; Check the interface board and the flat cable (JP21)
Press buttons from 1 to 7
Only when a button is pressed a O appears on the relative position of button pressed.
In the middle of display appears the name of the button pressed.
Pressing buttons on the left the backlight color changes from GREEN to YELLOW.
Pressing button on the right the backlight color changes from GREEN to RED.
When a button is pressed, also the Stand-By led (RED) turn ON.

Note: Press button STANDBY as the last once, since it makes change the test page.
Note: If 2 or more buttons are pressed the name that appears on display could be wrong.

ERROR: If nothing appears on display; check the interface board and the flat cable (JP21).

ERROR: If during the movement the backlight remain green check the wiring (JP1) from the interface board and the display.

ERROR: The name displayed is wrong; check the position of jumper in interface. It must be the same of machine model:
· Jumper on JP5 for Focus machine model
· Jumper on JP6 for Class machine model

Press STAND_BY “ ” to move to the next screen

The machine passes to the level 2 (INPUTS)

Insert a full Water Tank
The indication H20 changes from “N” to “Y”.
Note: the switching from “N” to “Y” requires about 1-2 seconds.
ERROR: The indication TANK-H2O doesn’t change; check the capacitive sensor (fixing) and the wiring (JP23)

Insert the BrewUnit
The indications BU-P changes from ”N” to ”Y”.
Note: removing the BrewUnit the indication from “Y” to “N” requires about 2-3 seconds to switch.
ERROR: Check the BU presence Microswitch and the wiring (JP16).

Close the Door and Dreg Drawer
The indication DOOR change from “N” to “Y”
ERROR: The indication DOOR does not change; check the Microswitch for the door and the wiring (JP14).
Note: without the Dreg Drawer correctly inserted the DOOR indication cannot change!
The indications BEAN-C changes from “N” to “Y”.

**ERROR:** The indication BEAN-C does not change; check the reed for the cover and the wiring (JP25).

**Move Pressure Lever in COFFEE position**
The indications DRIP changes from “N” to “Y”.

**Move Pressure Lever in ESPRESSO position**
The indication ESP change from “N” to “Y”.

**IMPORTANT NOTE:** If the Pressure Lever is not inserted (on 120V version) a warning message will be shown and the display turns to yellow.

Check JP4 on interface board.

**Press STAND_BY “ ” to move to the next screen**

The machine passes to the Page 3 (BU PAGE)

**Press the ESPRESSO button to move the BU to Work**

**IMPORTANT NOTE:** If the DREGDRAWER is not inserted or the DOOR is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

When the BU reaches the work position the indication WORK changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

**ERROR:** The indication WORK doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16).
**ERROR:** (Without BU) The absorbed current is more than 200mA, the display backlight changes from green to red; check the BU and the motor.

**ERROR:** (With BU) The absorbed current is more than 300mA, the display backlight changes from green to red; check the BU and the motor.

Press the LONG COFFEE button to move the BU to Home

When the BU reaches the home position the indication HOME changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

**ERROR:** The indication HOME doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (is broken), the BU motor (is blocked) and the wiring (JP16).

**ERROR:** (Without BU) The absorbed current is higher than 200mA, the display backlight changes from green to red; check the BU and the motor.

**ERROR:** (With BU) The absorbed current is higher than 300mA, the display backlight changes from green to red; check the BU and the motor.

Press STAND_BY “ ” to move to the next screen

The machine passes to the Page 4 (EV - PUMP)

Press the ESPRESSO button to open the Electro Valve 1

**IMPORTANT NOTE:** If the DREGDRAWER is not inserted or the DOOR is not closed the EV test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.
It is possible to hear the “click” from Electro Valve. The indication beside the EV1 changes from “OFF” to “ON”.

Press the MEDIUM COFFEE button to open the Electro Valve 2
It is possible to hear the “click” from Electro Valve. The indication beside the EV2 changes from “OFF” to “ON”.

Press the CAPPUCCINO button to switch on the pump
The water goes out from the pipe and the indication IMP shows increasing numbers. The indication L/H must be within the range 10-18.

**ERROR:** The display backlight changes from green to red and the impulse remains 0; If water comes out the pipe: check the wiring from the flowmeter to the CPU/POWER board (JP5). If no water comes out the pipe: check the pump and the wiring from the pump to the CPU/POWER board (JP24).

**ERROR:** The L/H is zero or very low; the Electro Valve does not open. Check the wiring from the Electro Valve to the CPU/POWER board (JP3) and the Electro Valve.

Press STAND_BY “ ” to move to the next screen

The machine passes to the level 5 (Heater-Grinder)

Press the CAPPUCCINO button to switch on the grinder
**IMPORTANT NOTE:** If the COFFEE BEANS Cover is not inserted the Grinder test cannot be performed in 120V. If this input is not in the right position, a warning message will be shown and the display turns to yellow.

The grinder rotates and in the indication GRINDER the number increasing up to 40. The other numbers inside the GRINDER box are not important for this test.
**ERROR:** The number remains 0 or the grinder does not run, the display backlight changes from green to red; check the Hall sensor board of 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).

**Check the temperature**

The number shows the heater temperature.

**ERROR:** In the indication HEATER appears “SHORT”, the NTC temperature-sensor is shorted, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

**ERROR:** In the indication HEATER appears “OPEN”, the NTC temperature-sensor is detached or broken, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

**Press the ESPRESSO button to switch on the Heater**

The absorbed current (Amperometer on the main supply) is OK, the indication HEATER changes from “OFF” to “ON” and the temperature starts increasing.

If temperature is over 100°C, the backlight change from GREEN to YELLOW. This is a ALERT message to avoid heating the HEATER element over dangerous temperature.

**ERROR:** the absorbed current is KO or the temperature does not increase; check the wiring from the heater to the CPU/POWER board (JP19) and the wiring of the NTC temperature-sensor (JP13).
5.2.2. SteamOut

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

Once entered the Steam Out mode the display shows the “STEAM OUT” indication. Buttons can be released.

**IMPORTANT NOTE:** to execute the Steam-Out procedure the DREGDRAWER must be in place and the DOOR must be closed.
If these 2 conditions are not respected a warning message is shown on the display and the Steam-Out is interrupted.

The machine starts the Steam Out and the display change the backlight (yellow) and appears the indication “ON”.
While the Steam Out runs the Electrovalve is opened and water comes out the Water/Steam pipe.

When the Steam Out is complete the message “COMPLETE” is shown on the Display. The Electrovalve automatically closes and the machine can be switched off.

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

- Length Espresso product
- Length Medium Coffee product
- Length Large coffee product
- Length Milk product
- StandBy Time
- Count Coffee
- The request for Priming the Circuit at the first switch on is set.
- Brewing Unit Empty
- Aroma
- Aroma Impulses
- Filter Presence
- Filter Pulses
- Dynamic threshold
- History of grindings for Beans Presence detection
5.3.1. Minuto Focus/Class test mode

To enter Test Mode
The machine enters Test Mode by holding pressed together Espresso and Menu buttons (or Calc-Clean button in Focus version) while switching on the machine by mean of the main switch on the backside of the CA. Once entered in Test Mode, the display shows the firmware version. The Test Mode is organized into 5 different pages:

Page 0: The display shows:
   a) Firmware version.
   b) CLASS or FOCUS type.
   c) "120" if the machine is a 120V model.
   d) Main supply frequency (50 or 60 Hz).

Page 1: Keyboard and display’s colour test:
   a) Espresso button
   b) Cafè Crème button
   c) Steam button
   d) Water button
   e) Menu button (or CalcClean button in FOCUS version)
   f) Aroma button
   g) Stand-by button
   h) Backlight colors

Page 2: Input signals test:
   a) Water level sensor
   b) Microswitch door closed/opened
   c) Microswitch presence of the Brew Unit
   d) Lever position on Espresso
   e) Lever position on Drip

Page 3: Low voltage loads test:
   a) Brew Unit movement upward and downward (24V DC)

Page 4: High/Low voltage loads test (Pump, E.Valve):
   a) Pump (120-230V AC)
   b) Electro Valve (24Vdc) (The door must be closed !!)

Page 5: High voltage loads test (Heater, Grinder):
   a) Heater (120-230V AC)
   b) Grinder (170-320V DC)
**Firmware Software version**

Firmware version on the display.
The machine model is shown (FOCUS or CLASS).
The voltage of the main supply “230V/120V”
The frequency of the main supply is shown (50 or 60 Hz)

**ERROR:** If machine model is different from CLASS or FOCUS, change the interface.

| Press STAND_BY “ ” to move to the next screen |

**Operational check – keys**

Start condition

Only when a button is pressed a O appears on the relative position of button pressed.
In the middle of display appears the name of the button pressed.
Pressing buttons on the left the backlight color changes from GREEN to YELLOW.
Pressing button on the right the backlight color changes from GREEN to RED.
When a button is pressed, also the Stand-By led (RED) turn ON.
**Note:** Press button STANDBY as the last once, since it makes change the test page.
**Note:** If 2 or more buttons are pressed the name that appears on display could be wrong.

**ERROR:**
If nothing appears on display; check the interface board and the flat cable (JP21).
If during the movement the backlight remain green check the wiring (JP1) from the interface board and the display.
The name displayed is wrong; check the position of jumper in interface. It must be the same of machine model:
· Jumper on JP5 for Focus machine model
· Jumper on JP6 for Class machine model

| Press STAND_BY “ ” to move to the next screen |
**Operational check microswitches and sensors**

Start condition

Insert a full Water Tank
The indication H2O changes from “N” to “Y”.
NOTE: the switching from "N" to "Y" requires about 1-2 seconds.

ERROR: The indication TANK-H2O doesn’t change; check the capacitive sensor (fixing) and the wiring (JP23)

Insert the BrewUnit
The indications BU-P changes from “N” to “Y”.
NOTE: removing the BrewUnit the indication from “Y” to “N” requires about 2-3 seconds to switch.

ERROR: Check the BU presence Microswitch and the wiring (JP16).

Close the Door and Dreg Drawer
The indication DOOR change from “N” to “Y”

ERROR: The indication DOOR does not change; check the Microswitch for the door and the wiring (JP14). NOTE: without the Dreg Drawer correctly inserted the DOOR indication cannot change!

Move Pressure Lever in DRIP position (120V only)
The indications DRIP changes from “N” to “Y”. (120V only)

Move Pressure Lever in ESPRESSO position (120V only)
The indication ESP change from “N” to “Y”. (120V only)

IMPORTANT NOTE: If the Pressure Lever is not inserted (on 120V version) a warning message will be shown and the display turns to yellow..
Check JP4 on interface board.

Press the STAND-BY button
The machine passes to the Page 3 (BU PAGE)
Operational check – brewing unit

Start condition

Press the ESPRESSO button to move the BU to Work
IMPORTANT NOTE: If the DREGDRAWER is not inserted or the DOOR is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

When the BU reaches the work position the indication WORK changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

ERROR: The indication WORK doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16)

ERROR: (Without BU) The absorbed current is more than 200mA, the display backlight changes from green to red; check the BU and the motor.

ERROR: (With BU) The absorbed current is more than 300mA, the display backlight changes from green to red; check the BU and the motor

Press the AROMA button to move the BU to Home

When the BU reaches the home position the indication HOME changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

ERROR: The indication HOME doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (is broken), the BU motor (is blocked) and the wiring (JP16).

ERROR: (Without BU) The absorbed current is higher than 200mA, the display backlight changes from green to red; check the BU and the motor.

ERROR: (With BU) The absorbed current is higher than 300mA, the display backlight changes from green to red; check the BU and the motor

Press STAND_BY “ ” to move to the next screen
**Operational check - solenoid valves and pump**

Start condition

**Press the ESPRESSO button to open the Electro Valve**

IMPORTANT NOTE: If the DREGDRAWER is not inserted or the DOOR is not closed the EV test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

It is possible to hear the “click” from Electro Valve. The indication beside the EV1 changes from “OFF” to “ON”.

**Press the STEAM button to switch on the pump**

The water goes out from the pipe and the indication IMP shows increasing numbers. The indication L/H must be within the range 10-18.

**ERROR:** The display backlight changes from green to red and the impulse remains 0; If water comes out the pipe: check the wiring from the flowmeter to the CPU/POWER board (JP5). If no water comes out the pipe: check the pump and the wiring from the pump to the CPU/POWER board (JP24).

**ERROR:** The L/H is zero or very low; the Electro Valve does not open. Check the wiring from the Electro Valve to the CPU/POWER board (JP3) and the Electro Valve.

**Press STAND_BY “ ” to move to the next screen**

**Operational check - coffee grinder and boiler**

Initial status

**Press the STEAM button to switch on the grinder**

The grinder rotates and in the indication GRINDER the number increasing up to 40. The other numbers inside the GRINDER box are not important for this test.

**ERROR:** The number remains 0 or the grinder does not run, the display backlight changes from green to red; check the Hall sensor board of 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)
Check the temperature
The number shows the heater temperature.

ERROR: In the indication HEATER appears “SHORT”, the NTC temperature-sensor is shorted, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

ERROR: In the indication HEATER appears “OPEN”, the NTC temperature-sensor is detached or broken, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

Press the ESPRESSO button to switch on the Heater
The absorbed current (Amperometer on the main supply) is OK, the indication HEATER changes from “OFF” to “ON” and the temperature starts increasing.

If temperature is over 135°C, the backlight change from GREEN to YELLOW. This is a ALERT message to avoid heating the HEATER element over dangerous temperature.

ERROR: the absorbed current is KO or the temperature does not increase; check the wiring from the heater to the CPU/POWER board (JP19) and the wiring of the NTC temperature-sensor (JP13).
5.3.2. SteamOut

To enter in SteamOut
The machine enters SteamOut mode by holding pressed together the CAFE’ CREME button and the MENU/CALC CLEAN button while switching on the machine.

Once entered the Steam Out mode the display shows the “STEAM OUT” indication. Buttons can be released

IMPORTANT NOTE: to execute the Steam-Out procedure the DREGDRAWER must be in place and the DOOR must be closed. If these 2 conditions are not respected a warning message is shown on the display and the Steam-Out is interrupted.

The machine starts the Steam Out and the display change the backlight (yellow) and appears the indication “ON”. While the Steam Out runs the Electrovalve is opened and water comes out the Water/Steam pipe.

When the Steam Out is complete the message “COMPLETE” is shown on the Display. The Electrovalve automatically closes and the machine can be switched off.

When the Steam-Out is complete the following parameters are reset to their default values:
Count Coffee
Aroma
Length Espresso product
Length Coffee product
Filter Presence
Filter Pulses
Aroma Impulses
Dynamic threshold
History of grindings for Beans Presence detection
StandBy Time
The request for Priming the Circuit at the first switch on is set.
5.4.1. Minuto Focus/Class test mode for USA

To enter Test Mode
The machine enters Test Mode by holding pressed together Z1 and Z6 buttons (or Cleaning cycle button in Focus version) while switching on the machine by mean of the main switch on the back-side of the CA. Once entered in Test Mode, the display shows the firmware version.

The Test Mode is organized into **5 different pages**:

**Page 0: The display shows:**
- a) Firmware version.
- b) CLASS or FOCUS type.
- c) Voltage supply.
- d) Main supply frequency.

**Page 1: Keyboard and display's colour test:**
- a) Z1 button
- b) Z2 button
- c) Z3 button
- d) Z4 button
- e) Z5 button
- f) Z6 button
- g) Z7 button
- h) Backlight colors

**Page 2: Input signals test:**
- a) Water level sensor
- b) Microswitch door closed/opened
- c) Microswitch presence of the Brew Unit
- d) Lever position on Espresso
- e) Lever position on Drip

**Page 3: Low voltage loads test:**
- a) Brew Unit movement upward and downward (24V DC)

**Page 4: High/Low voltage loads test** *(Pump, E.Valve)*:
- a) Pump (AC voltage)
- b) Electro Valve (24Vdc) (The door must be closed !!)

**Page 5: High voltage loads test** *(Heater, Grinder)*:
- a) Heater (120-230V AC)
- b) Grinder (170-320V DC)
**Firmware Software version**

Firmware version on the display.
The machine model is shown (FOCUS or CLASS).
The voltage of the main supply “230V/120V”
The frequency of the main supply is shown (50 or 60 Hz)

ERROR: If machine model is different from CLASS or FOCUS, change the interface.

**Operational check – keys**

Start condition

Only when a button is pressed a O appears on the relative position of button pressed.
In the middle of display appears the name of the button pressed.
Pressing buttons on the left the backlight color changes from GREEN to YELLOW.
Pressing button on the right the backlight color changes from GREEN to RED.
When a button is pressed, also the Stand-By led (RED) turn ON.

**Note:** Press button STANDBY as the last once, since it makes change the test page.

**Note:** If 2 or more buttons are pressed the name that appears on display could be wrong.

ERROR:
If nothing appears on display; check the interface board and the flat cable (JP21).
If during the movement the backlight remain green check the wiring (JP1) from the interface board and the display.
The name displayed is wrong; check the position of jumper in interface. It must be the same of machine model:
· Jumper on JP5 for Focus machine model
· Jumper on JP6 for Class machine model

Press STAND_BY “ ” to move to the next screen
Start condition

Insert a full Water Tank
The indication H20 changes from “N” to “Y”.
NOTE: the switching from “N” to “Y” requires about 1-2 seconds.

ERROR: The indication TANK-H2O doesn’t change; check the capacitive sensor (fixing) and the wiring (JP23)

Insert the BrewUnit
The indications BU-P changes from “N” to “Y”.
NOTE: removing the BrewUnit the indication from “Y” to “N” requires about 2-3 seconds to switch.

ERROR: Check the BU presence Microswitch and the wiring (JP16).

Close the Door and Dreg Drawer
The indication DOOR change from “N” to “Y”

ERROR: The indication DOOR does not change; check the Microswitch for the door and the wiring (JP14). NOTE: without the Dreg Drawer correctly inserted the DOOR indication cannot change!

Insert the Coffee Beans Cover (120V NA only)
The indications BEAN-C changes from “N” to “Y”.

ERROR: The indication BEAN-C does not change; check the reed for the cover and the wiring (JP25).

Move Pressure Lever in DRIP position
The indications DRIP changes from “N” to “Y”.

Move Pressure Lever in ESPRESSO position
The indication ESP change from “N” to “Y”.

IMPORTANT NOTE: If the Pressure Lever is not inserted (on 120V version) a warning message will be shown and the display turns to yellow.
Check JP4 on interface board.

Press the STAND-BY button
The machine passes to the Page 3 (BU PAGE)

Press STAND_BY “ ” to move to the next screen
Operational check – brewing unit

Start condition

**Press the Z1 button to move the BU to Work**

NOTE: If the DREGDRAWER is not inserted or the DOOR is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

When the BU reaches the work position the indication **WORK** changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

**ERROR:** The indication **WORK** doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16)

**ERROR: (Without BU)** The absorbed current is more than 200mA, the display backlight changes from green to red; check the BU and the motor.

**ERROR: (With BU)** The absorbed current is more than 300mA, the display backlight changes from green to red; check the BU and the motor

**Press the Z3 button to move the BU to Home**

When the BU reaches the home position the indication **HOME** changes from “N” to “Y”, the number of the current is minus than 200mA (without BU) or 300mA (with BU).

**ERROR:** The indication **HOME** doesn’t change and remain “N”, the display backlight changes from green to red; Check the work microswitch (is broken), the BU motor (is blocked) and the wiring (JP16).

**ERROR: (Without BU)** The absorbed current is higher than 200mA, the display backlight changes from green to red; check the BU and the motor.

**ERROR: (With BU)** The absorbed current is higher than 300mA, the display backlight changes from green to red; check the BU and the motor
**Operational check - solenoid valves and pump**

Start condition

**Press the Z1 button to open the Electro Valve**
IMPORTANT NOTE: If the DREGDRAWER is not inserted or the DOOR is not closed the EV test cannot be performed. If these 2 inputs are not in the right position, a warning message will be shown and the display turns to yellow.

It is possible to hear the “click” from Electro Valve. The indication beside the EV1 changes from “OFF” to “ON”.

**Press the Z4 button to switch on the pump**
The water goes out from the pipe and the indication IMP shows increasing numbers. The indication L/H must be within the range 10-18.

**ERROR:** The display backlight changes from green to red and the impulse remains 0; If water comes out the pipe: check the wiring from the flowmeter to the CPU/POWER board (JP5). If no water comes out the pipe: check the pump and the wiring from the pump to the CPU/POWER board (JP24).

**ERROR:** The L/H is zero or very low; the Electro Valve does not open. Check the wiring from the Electro Valve to the CPU/POWER board (JP3) and the Electro Valve.

---

**Operational check - coffee grinder and boiler**

Initial status

**Press the Z4 button to switch on the grinder**
IMPORTANT NOTE: If the COFFEE BEANS Cover is not inserted the Grinder test cannot be performed in 120V. If this input is not in the right position, a warning message will be shown and the display turns to yellow.

The grinder rotates and in the indication GRINDER the number increasing up to 40. The other numbers inside the GRINDER box are not important for this test.

**ERROR:** The number remains 0 or the grinder does not run, the display backlight changes from green to red; check the Hall sensor board of 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).
Check the temperature
The number shows the heater temperature.

ERROR: In the indication HEATER appears “SHORT”, the NTC temperature-sensor is shorted, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

ERROR: In the indication HEATER appears “OPEN”, the NTC temperature-sensor is detached or broken, the display backlight changes from green to red; check the wiring from the NTC temperature-sensor to the CPU/POWER board (JP13).

Press the Z1 button to switch on the Heater
The absorbed current (Amperometer on the main supply) is OK, the indication HEATER changes from “OFF” to “ON” and the temperature starts increasing.

If temperature is over 135°C, the backlight change from GREEN to YELLOW. This is a ALERT message to avoid heating the HEATER element over dangerous temperature.

ERROR: the absorbed current is KO or the temperature does not increase; check the wiring from the heater to the CPU/POWER board (JP19) and the wiring of the NTC temperature-sensor (JP13).
Once entered the Steam Out mode the display shows the "STEAM OUT" indication. Buttons can be released.

IMPORTANT NOTE: to execute the Steam-Out procedure the DREGDRAWER must be in place and the DOOR must be closed. If these 2 conditions are not respected a warning message is shown on the display and the Steam-Out is interrupted.

The machine starts the Steam Out and the display change the backlight (yellow) and appears the indication "ON". While the Steam Out runs the Electrovalve is opened and water comes out the Water/Steam pipe.

When the Steam Out is complete the message “COMPLETE” is shown on the Display. The Electrovalve automatically closes and the machine can be switched off.

When the Steam-Out is complete the following parameters are reset to their default values:
Count Coffee
Aroma
Length Espresso product
Length Medium Coffee product
Filter Presence
Filter Pulses
Aroma Impulses
Dynamic threshold
History of grindings for Beans Presence detection
StandBy Time
The request for Priming the Circuit at the first switch on is set.
5.5.1. Minuto Pure test mode

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

Level 0: Entry Level:
  a) In this level can be done Reset to default

Level 1: The machine can test the button:
  a) Button Espresso
  b) Button Coffee
  c) Button Calc_Clean
  d) No Water LED
  e) Alarm General LED
  f) Decale LED
  g) Rinsing LED
  h) Drip Tray/Coffee Dreg Drawer LED
  i) 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) Microswitch present of the dregdrawer

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 load in high voltage:
  a) Pump (100-120-230V AC)
     a. Brew Unit must be in inserted and in Work position.

Level 5: The machine can test two loads in high voltage (Heater, Grinder):
  a) Heater (100-120-230V AC)
  b) Grinder (140-170-320V DC)
The user can switch the level by pressing the Button ON/OFF, 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 CalcClean ON (O)
d) **Level 4**: Led Espresso ON (G), Led Descale ON (O), Led CalcClean ON (O), Led Rinsing ON (O)
e) **Level 5**: Led Espresso ON (G), Led Descale ON (O), Led CalcClean ON (O), Led Rinsing ON (O), Led Coffee ON (G).

**Legend:**

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

![Diagram showing the levels and the sequence of pressing the button](image)

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)**

<table>
<thead>
<tr>
<th>Start condition: NO BU, NO drag drawer, door open, No Water sensor</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led Espresso</td>
</tr>
<tr>
<td></td>
<td>Led Coffee</td>
</tr>
<tr>
<td></td>
<td>Blink Alternately</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen
## Level 1 (Key)

### LED INDICATION

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start condition:</strong> NO BU, NO drag drawer, door open and No Water sensor</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

### Press Espresso Button

#### Action by user

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch on Red Leds NoWater &amp; GenAlarm</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

ERROR: Led NoWater remains off, check the interface board and flat cable (JP21)

ERROR: Led GenAlarm remains off, check the interface board and flat cable (JP21)

ERROR: Led NoWater & GenAlarm remain off, check the interface board and flat cable (JP21)

### Press CalcClean Button

#### Action by user

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch on Orange Leds Descale &amp; Rinsing</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>

ERROR: Led Descale remains off, check the interface board and flat cable (JP21)

ERROR: Led Rinsing remains off, check the interface board and flat cable (JP21)

ERROR: Led Descale & Rinsing remain off, check the interface board and flat cable (JP21)

### Press Coffee Button

#### Action by user

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch on Red Leds Dreg &amp; NoBeans</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

ERROR: Led NoBeans remains off, check the interface board and flat cable (JP21)

ERROR: Led Dreg remains off, check the interface board and flat cable (JP21)

ERROR: Led NoBeans & Dreg remain off, check the interface board and flat cable (JP21)

### Finish condition: NO BU, NO drag drawer, door open and No Water sensor

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen
**Level 2 (Input)**

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

**Insert a full Water Tank**

| Action by user | LED INDICATION |
|---|---|---|---|---|
| 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 |
|---|---|---|---|---|
| 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 |

**Close the door and Dreg Drawer**

| Action by user | LED INDICATION |
|---|---|---|---|---|
| Switch off Red Led Dreg | NA | NA | NA | OFF |
| ERROR: Led Dreg remains on, check the Microswitch for the door and the wiring (JP14). NOTE: without the Dreg Drawer correctly inserted the DOOR 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 |
| 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 |
| OFF | OFF | OFF | OFF |

If the DREGDRAWER is not inserted or the DOOR is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, Led Dreg will be RED.
### Press the Espresso button to move BU to work

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the BU reaches the work position the Led NoBeans is switched on</td>
<td>ON</td>
</tr>
<tr>
<td>ERROR: Led Dreg remains on, check the Microswitch for the door and the wiring (JP14). NOTE: without the Dreg Drawer correctly inserted the DOOR indication cannot change!</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: led GenAlarm Switch ON; the absorbed current is much more 300mA (with BU) or 200mA (without BU) check the BU and the motor</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Press the Coffee button to move BU to home

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the BU reaches the work position the Led NoBeans is switched on</td>
<td>ON</td>
</tr>
<tr>
<td>ERROR: Led NoBeans remains off, Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16).</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: led GenAlarm Switch ON; the absorbed current is much more 300mA (with BU) or 200mA (without BU) check the BU and the motor</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Finish condition: With BU, Drag Drawer, door closed

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
</tr>
<tr>
<td>OFF</td>
</tr>
<tr>
<td>OFF</td>
</tr>
<tr>
<td>OFF</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen

### Level 4 (Pump)

<table>
<thead>
<tr>
<th>Start condition: BU inserted, Drag drawer, door Closed and No Water sensor</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the DREGDRAWER is not inserted or the DOOR is not closed the BU cannot be moved in work position and test cannot be performed. If these 2 inputs are not in the right position, Led Dreg will be RED</td>
<td>NA</td>
</tr>
<tr>
<td>If the BU is not inserted, the test will not be performed, so Led GenAlarm will be switched ON</td>
<td>NA</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen
### Press the Espresso button to move BU to work

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the BU reaches the work position the Led NoBeans is switched on</td>
<td>ON  NA  NA  NA</td>
</tr>
<tr>
<td>ERROR: Led NoBeans remains off, Check the work microswitch (broken?), the BU motor (blocked?) and the wiring (JP16).</td>
<td>NA  NA  NA  NA</td>
</tr>
</tbody>
</table>

### Press the Coffee button to switch on the Pump

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The water goes out from the dispensing spout, the NoWater LED blink every Flowmeter pulse</td>
<td>NA  BLINK  NA  NA</td>
</tr>
<tr>
<td>ERROR: the NoWater LED doesn't flashing and after 5sec this LED Switch ON; check: 1) the BU is in work position, 2) pump, 3) the flowmeter, 4) the wiring from the flowmeter to the CPU/POWER board (JP5) 5) the wiring from the pump to the CPU/POWER board (JP24)</td>
<td>NA  ON  NA  NA</td>
</tr>
</tbody>
</table>

### Press the Espresso button to move BU to Home

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the BU leave the work position the Led NoBeans is switched off, and BU move to Home Position to end L4 Test</td>
<td>OFF  NA  NA  NA</td>
</tr>
</tbody>
</table>

### Finish condition: With BU, Drag Drawer, door closed

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF  OFF  OFF  OFF</td>
</tr>
</tbody>
</table>

#### Press BUTTON ON/OFF to move to the next screen

### Level 5 (Grinder-Heater)

#### Start condition: NO BU, NO drag drawer, door open and No Water sensor

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF  OFF  OFF  OFF</td>
</tr>
</tbody>
</table>
### Check the Temperature

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The red led General Alarm remains OFF</td>
<td>NA NA OFF NA</td>
</tr>
<tr>
<td>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).</td>
<td>NA NA ON NA</td>
</tr>
</tbody>
</table>

### Press the Espresso button to switch on the Heater

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The user checkers that the absorbed current is OK</td>
<td>NA NA OFF NA</td>
</tr>
<tr>
<td>ERROR: the absorbed current is KO; check the wiring from the heater to the CPU/POWER board (JP17-3) and the other wiring</td>
<td>NA NA OFF NA</td>
</tr>
<tr>
<td>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.</td>
<td>OFF</td>
</tr>
</tbody>
</table>

### Press the Coffee button to switch on the Grinder

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The grinder rotates and Led NoBeans Blink</td>
<td>BLINK NA OFF NA</td>
</tr>
<tr>
<td>ERROR: the led NoBeans remains OFF and after the led NoBeans switch ON; check the hall sensor board in 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)</td>
<td>ON NA OFF NA</td>
</tr>
</tbody>
</table>

### Finish condition:

<table>
<thead>
<tr>
<th>With BU, Drag Drawer, door closed</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>
5.5.2. SteamOut

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 shows LED Descale and LED Rinsing flashing in series.

If brewing unit is not inserted in the machine, LED General Alarm will be switched on. If Door is opened or drag drawer is removed LED WASTE FULL will be switched on.

In these 2 conditions Brewing Unit cannot be moved at work so SteamOut will not be performed; After Brewing Unit reach work position SteamOut start.

At the end of procedure Brewing Unit will be moved to rest position and LED ESPRESSO and LED COFFEE turns on.

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

· Count Coffee
· Aroma
· Length Espresso product
· Length Coffee product
· Filter Presence
· Filter Pulses
· Aroma Impulses
· Dynamic threshold
· History of grindings for Beans Presence detection
· StandBy Time
· The request for Priming the Circuit at the first switch on is set.
5.6.1. Minuto Pure test mode for USA

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

Level 0: Entry Level:
a) In this level can be done Reset to default

Level 1: The machine can test the button:
a) Button Espresso
b) Button Coffee
c) Button Steam
d) Button Hot Water
e) Button Calc_Clean
f) No Water LED
g) Alarm General LED
h) Drip Tray/Coffee Dreg Drawer LED
i) No Beans LED
j) Decale LED
k) Rinsing LED

Level 2: The machine can test other input signal:
a) Microswitch door closed/opened & dregdrawer
b) Microswitch present of the brewing unit
c) Water sensor
d) Coffee beans cover 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:
a) Pump (100-120 AC)
a. Electro-valve.

Level 5: The machine can test two loads in high voltage (Heater, Grinder):
a) Heater (100-120 AC)
b) Grinder (140-170 DC)
The user can switch the level by pressing the Button ON/OFF, 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 CalcClean ON (O)
d) **Level 4**: Led Espresso ON (G), Led Descale ON (O), Led CalcClean ON (O), Led Rinsing ON (O)
e) **Level 5**: Led Espresso ON (G), Led Descale ON (O), Led CalcClean 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)**

<table>
<thead>
<tr>
<th>Start condition: NO BU, NO drag drawer, Door open, No Water in tank, Coffee Beans cover open</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led Espresso</td>
</tr>
<tr>
<td></td>
<td>Led Coffee</td>
</tr>
<tr>
<td></td>
<td>Blink Alternately</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen
### Level 1 (Key)

**Start condition:** NO BU, NO drag drawer, Door open, No Water in tank, Coffee Beans cover open

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

**Press Espresso Button**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch on Red Leds NoWater &amp; GenAlarm</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>ERROR: Led NoWater remains off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
<td></td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERROR: Led Dreg remains off, check the interface board and flat cable (JP21)</td>
<td>ON</td>
<td></td>
<td></td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERROR: Led NoWater &amp; Dreg remain off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Press CalcClean Button**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch on Orange Leds Descale &amp; Rinsing</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>ERROR: Led Descale remains off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td>ON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERROR: Led Rinsing remains off, check the interface board and flat cable (JP21)</td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>ERROR: Led Descale &amp; Rinsing remain off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Press Coffee Button**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch on Red Leds Dreg &amp; NoBeans</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>ERROR: Led NoBeans remains off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
<td></td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERROR: Led GenAlarm remains off, check the interface board and flat cable (JP21)</td>
<td>ON</td>
<td></td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERROR: Led NoBeans &amp; GenAlarm remain off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Press Steam Button

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led Steam Button</td>
</tr>
<tr>
<td>Switch on Steam Button LED</td>
<td>ON</td>
</tr>
<tr>
<td><strong>ERROR:</strong> Led Steam Button remains off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
</tr>
</tbody>
</table>

### Press Steam Button

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led Steam Button</td>
</tr>
<tr>
<td>Switch on Hot Water Button LED</td>
<td>OFF</td>
</tr>
<tr>
<td><strong>ERROR:</strong> Led Hot Water Button remains off, check the interface board and flat cable (JP21)</td>
<td>OFF</td>
</tr>
</tbody>
</table>

### Finish condition:

**NO BU, NO drag drawer, Door open, No Water in tank, Coffee Beans cover open**

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
</tr>
</tbody>
</table>

---

**Press BUTTON ON/OFF to move to the next screen**

### Level 2 (Input)

**Start condition:** NO BU, NO drag drawer, Door open, No Water in tank, Coffee Beans cover open

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Led NoBeans</td>
</tr>
<tr>
<td>ON</td>
</tr>
</tbody>
</table>

### Insert a full Water Tank

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led NoBeans</td>
</tr>
<tr>
<td>Switch off Red Leds NoWater</td>
<td>NA</td>
</tr>
<tr>
<td><strong>ERROR:</strong> Led NoWater remains on, check the capacitive sensor (fixing) and the wiring (JP23)</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Insert the Brew Unit

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led NoBeans</td>
</tr>
<tr>
<td>Switch off Red Leds GenAlarm</td>
<td>NA</td>
</tr>
<tr>
<td><strong>ERROR:</strong> Led GenAlarm remains on, check the BU presence Microswitch and the wiring (JP16).</td>
<td>NA</td>
</tr>
</tbody>
</table>
## Close the door and Dreg Drawer

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led NoBeans</td>
</tr>
<tr>
<td>Switch off Red Led Dreg</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: Led Dreg remains on, check the Microswitch for the door and the wiring (JP14). NOTE: without the Dreg Drawer correctly inserted the DOOR indication cannot change!</td>
<td>NA</td>
</tr>
</tbody>
</table>

## Close coffee beans cover

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led NoBeans</td>
</tr>
<tr>
<td>Switch off Red Leds GenAlarm</td>
<td>OFF</td>
</tr>
<tr>
<td>ERROR: Led GenAlarm remains on, check the BU presence Microswitch and the wiring (JP16).</td>
<td>ON</td>
</tr>
</tbody>
</table>

## Finish condition:
With BU, NO drag drawer inserted, Door closed, Water in tank, Coffee Beans cover closed

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen

## Level 3 (Brewing unit)

### Start condition:
NO BU, Drag drawer inserted, door closed, No Water sensor, Coffee beans cover open

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
</tr>
</tbody>
</table>

If the DREGDRAWER is not inserted or the DOOR is not closed the BU test cannot be performed. If these 2 inputs are not in the right position, Led Dreg will be RED

### Press the Espresso button to move BU to work

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Led NoBeans</td>
</tr>
<tr>
<td>When the BU reaches the work position the Led NoBeans is switched on</td>
<td>ON</td>
</tr>
<tr>
<td>ERROR: Led NoBeans remains off, Check the work microswitch (broken?), the BU motor (blocked?) and the wiring.</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: led GenAlarm Switch ON; the absorbed current is much more 300mA (with BU) or 200mA (without BU) check the BU and the motor</td>
<td>NA</td>
</tr>
</tbody>
</table>
### Press the Coffee button to move BU to home

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the BU reaches the work position the Led NoBeans is switched on</td>
<td><strong>ON</strong></td>
</tr>
<tr>
<td>ERROR: Led NoBeans remains off, Check the work microswitch (broken?), the BU motor (blocked?) and the wiring.</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: led GenAlarm Switch ON; the absorbed current is much more 300mA (with BU) or 200mA (without BU) check the BU and the motor</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Finish condition:** No BU, Drag Drawer inserted, door closed, No Water sensor, Coffee beans cover open

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFF</strong></td>
</tr>
</tbody>
</table>

### Level 4 (Pump)

**Start condition:** No BU, Drag drawer, door Closed and No Water sensor, Coffee beans cover closed

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFF</strong></td>
</tr>
</tbody>
</table>

If the DREGDRAWER is not inserted or the DOOR is not closed the BU cannot be moved in work position and test cannot be performed.

If these 2 inputs are not in the right position, Led Dreg will be RED

<table>
<thead>
<tr>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ON</strong></td>
</tr>
</tbody>
</table>

### Press the Espresso Button

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn On Ev1</td>
<td><strong>ON</strong></td>
</tr>
<tr>
<td>ERROR: If Ev remain closed check EV (broken?), and the wiring</td>
<td><strong>ON</strong></td>
</tr>
</tbody>
</table>

### Press the Lungo button to switch on the Pump

<table>
<thead>
<tr>
<th>Action by user</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The water goes out from the dispensing spout, the NoWater LED blink every Flowmeter pulse</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: the NoWater LED doesn't flashing and after 5sec this LED Switch ON; check: 1) EV open?, 2) pump, 3) the flowmeter, 4) the wiring from the flowmeter to the CPU/POWER board (JP5) 5) the wiring from the pump to the CPU/POWER board (JP24)</td>
<td><strong>NA</strong></td>
</tr>
</tbody>
</table>
**Finish condition:** No BU, Drag drawer, door closed and No Water sensor, Coffee beans cover closed

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Press BUTTON ON/OFF to move to the next screen

### Level 5 (Grinder-Heater)

**Start condition:** NO BU, NO drag drawer, door open and No Water sensor

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

If the Coffee Beans cover is opened the grinder is disabled and test cannot be performed. If this input are not in the right position, Led NoBeans & Led Dreg will be RED

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>NA</td>
<td>NA</td>
<td>ON</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Check the Temperature**

**Action by user**

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>The red led General Alarm remains OFF</td>
<td>NA</td>
<td>NA</td>
<td>OFF</td>
<td>NA</td>
</tr>
<tr>
<td>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).</td>
<td>NA</td>
<td>NA</td>
<td>ON</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Press the Espresso button to switch on the Heater**

**Action by user**

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>The user checkers that the absorbed current is OK</td>
<td>NA</td>
<td>NA</td>
<td>OFF</td>
<td>NA</td>
</tr>
<tr>
<td>ERROR: the absorbed current is KO; check the wiring from the heater to the CPU/POWER board (JP17-3) and the other wiring, or thermostats.</td>
<td>NA</td>
<td>NA</td>
<td>OFF</td>
<td>NA</td>
</tr>
<tr>
<td>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.</td>
<td>ON</td>
<td>NA</td>
<td>OFF</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Press the Coffee button to switch on the Grinder**

**Action by user**

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>The grinder rotates and Led NoBeans Blink every grinder pulses.</td>
<td>BLINK</td>
<td>NA</td>
<td>OFF</td>
<td>NA</td>
</tr>
<tr>
<td>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)</td>
<td>ON</td>
<td>NA</td>
<td>OFF</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Finish condition:** With BU, Drag Drawer, door closed

<table>
<thead>
<tr>
<th>LED INDICATION</th>
<th>Led NoBeans</th>
<th>Led NoWater</th>
<th>Led GenAlarm</th>
<th>Led Dreg</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>
5.6.2. SteamOut

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 shows Led Descale and Led Rinsing flashing in series.

If Door is opened or drag drawer is removed LED WASTE FULL will be switched on.

At the end of procedure Brewing Unit will be moved to rest position and LED ESPRESSO and LED COFFEE turns on.

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

- Length Espresso product
- Length Coffee product
- StandBy Time
- Count Coffee
- 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
## 5.7. Error codes

<table>
<thead>
<tr>
<th>ERROR CODES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>The coffee grinder is blocked (grinder blades jammed or sensor not reading properly)</td>
</tr>
<tr>
<td>03</td>
<td>The brewing unit is blocked in work position (microswitch not released in up position after 3”, torque error trying to move down, descent time out exceeded)</td>
</tr>
<tr>
<td>04</td>
<td>The brewing unit is blocked in home position (microswitch not released in down position after 3”, torque error trying to move up, ascent time out exceeded)</td>
</tr>
<tr>
<td>05</td>
<td>Water circuit / flow meter problems (water circuit blocked or no flow meter signal)</td>
</tr>
<tr>
<td>10</td>
<td>Boiler temperature sensor short circuited</td>
</tr>
<tr>
<td>11</td>
<td>Boiler temperature sensor open circuit</td>
</tr>
<tr>
<td>14</td>
<td>The boiler temperature has exceeded the maximum allowed value (165°C)</td>
</tr>
<tr>
<td>15</td>
<td>The boiler temperature has not increased by x°C in y sec (boiler power supply disconnected, incorrect boiler fitted must be a 1300W boiler, partial power supply to boiler, cut out thermostat tripped)</td>
</tr>
<tr>
<td>19</td>
<td>Mains voltage trouble</td>
</tr>
<tr>
<td>22</td>
<td>Interface missing or unknown</td>
</tr>
</tbody>
</table>
CHAPTER 6

STANDARD CHECKS
6.1. Repair schedule

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual inspection (transport damage)</td>
</tr>
<tr>
<td>2</td>
<td>Machine data check (rating plate)</td>
</tr>
<tr>
<td>3</td>
<td>Operational check / problem analysis</td>
</tr>
<tr>
<td>4</td>
<td>Opening machine</td>
</tr>
<tr>
<td>5</td>
<td>Visual inspection</td>
</tr>
<tr>
<td>6</td>
<td>Operational tests</td>
</tr>
<tr>
<td>7</td>
<td>Repairing the faults encountered</td>
</tr>
<tr>
<td>8</td>
<td>Checking any modifications (view Symptom Cure, new software, etc.)</td>
</tr>
<tr>
<td>9</td>
<td>Service activities in accordance with the operating schedule</td>
</tr>
<tr>
<td>10</td>
<td>Internal cleaning</td>
</tr>
<tr>
<td>11</td>
<td>Operational test while the appliance is open</td>
</tr>
<tr>
<td>12</td>
<td>Assembly</td>
</tr>
<tr>
<td>13</td>
<td>Final inspection test</td>
</tr>
<tr>
<td>14</td>
<td>Draining the circuit (in winter)</td>
</tr>
<tr>
<td>15</td>
<td>External cleaning</td>
</tr>
<tr>
<td>16</td>
<td>Lubricating the brewing unit with suitable grease</td>
</tr>
<tr>
<td>17</td>
<td>Insulation test HG 701 (dielectric)</td>
</tr>
<tr>
<td>18</td>
<td>Documentation</td>
</tr>
</tbody>
</table>

6.2. Service schedule

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
<th>Support/tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water filter</td>
<td>P/S</td>
<td></td>
</tr>
<tr>
<td>Water tank lip seal</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Boiler pin O-ring</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Brewing unit</td>
<td>ES/P</td>
<td>Grease solvent / Grease</td>
</tr>
<tr>
<td>Hoses, attachments and Oetiker clamps</td>
<td>ES</td>
<td></td>
</tr>
<tr>
<td>Pump</td>
<td>ES/TR</td>
<td></td>
</tr>
<tr>
<td>Gear motor</td>
<td>ES/TR</td>
<td></td>
</tr>
<tr>
<td>Coffee grinder</td>
<td>P/R</td>
<td>Vacuum cleaner / brush</td>
</tr>
<tr>
<td>Water circuit</td>
<td>D</td>
<td>Saeco descaler</td>
</tr>
<tr>
<td>Hot water/steam valve</td>
<td>ES/S</td>
<td></td>
</tr>
</tbody>
</table>
## 6.3. Final test

<table>
<thead>
<tr>
<th>Test</th>
<th>Procedure</th>
<th>Support/tool</th>
<th>Standard</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Espresso</td>
<td>2-3 Espressos for adjustment purposes</td>
<td>Measuring scoop</td>
<td>Same amount</td>
<td>15%</td>
</tr>
<tr>
<td>Coffee</td>
<td>2-3 Coffees for adjustment purposes</td>
<td>Measuring scoop</td>
<td>Same amount</td>
<td>15%</td>
</tr>
<tr>
<td>Noise</td>
<td></td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Amount of cream</td>
<td>Blow into the cup until the cream separates</td>
<td></td>
<td>The cream should</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>come together</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>again to form a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>complete layer</td>
<td></td>
</tr>
<tr>
<td>Cream colour</td>
<td></td>
<td></td>
<td>Hazel brown</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Reading taken while dispensing</td>
<td>Thermometer</td>
<td>84 °C</td>
<td>± 4 °C</td>
</tr>
<tr>
<td>Grinding level</td>
<td>Check the grain size of the ground coffee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot water</td>
<td>Dispense water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steam</td>
<td>Dispense steam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dreg drawer missing indication</td>
<td>Remove the dreg drawer</td>
<td></td>
<td>Dreg drawer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>missing indication</td>
<td></td>
</tr>
<tr>
<td>Low bean level indication</td>
<td>Start brewing a coffee while the coffee bean</td>
<td></td>
<td>Low bean level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hopper is empty</td>
<td></td>
<td>indication</td>
<td></td>
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CHAPTER 7

DISASSEMBLY
7.1. Outer Shell

Remove the water tank, coffee container cover, drip tray, dreg drawer, brewing unit.

Coffee dispenser Minuto

Remove the dispenser cover

Unscrew the screws shown and remove the dispenser

Unscrew the screws and proceed as illustrated in the following pages.

exploded view of the coffee dispenser
Coffee dispenser Minuto for USA

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

Remove the lower dispenser and unscrew the screws shown for the lever.

Unscrew the screws and proceed as illustrated below.

Remove the steam pipe cover as picture and unscrew the screw shown.

Unscrew the screws shown, raise the top cover and remove the electrical and water circuit 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).
7.3. Grinder blades

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

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.

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).
7.5.1 Two-way solenoid valve

Remove the board support assembly and disconnect the electric connection.
Loosen the screws holding the solenoid valve to the upper plate.
Disconnect all electrical and water circuit connections.

Two-way solenoid valve in Minuto Cappuccino

7.5.2 Carafe connection and hot water dispenser in Minuto Cappuccino

Slide out the fork as illustrated.
Loosen the screws holding the carafe connection.
When reassembling the assembly to be careful to correctly position the spring.

7.6. Pin boiler

Loosen the screws as illustrated and remove the boiler pin (A).
7.7. 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.

7.8. Central plate

unscrew the screws shown

Lift up the center plate
7.9. Pump

Unhook the pump from the supports.

7.10. Flow-meter

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

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.
7.14. KYB interface and display

Loosen the screws for remove the cover.

Disconnect the electrical connections. Press to right and left and lift the assembly KYB

Loosen the screws slide the card off the support and disconnect the electrical connections.
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.
CHAPTER 8
NOTES
CHAPTER 9

WATER CIRCUIT DIAGRAM
Minuto Cappuccino

3D view to indicate the mounting of the exhaust pipe to the tank compartment.

Water discharge

Two-way solenoid valve

Two-way solenoid valve

Carafe connection

Boiler

Pump

Flowmeter

Safety valve

Water discharge

Brewing Unit
Minuto Focus and Class

Flow meter

Turbina

Water tank

Serbatoio acqua

Assy Solenoid valve

Assieme Elettrovalvole

steam pipe

Boiler pin

Perno caldaia

Boiler

Caldia

Water drain

Scarico acqua

Safety valve

Valvola di sicurezza

Pump

Pompa
Minuto Pure

Flow meter

Water tank

Exit closed

Boiler pin

Boiler

Water drain

Safety valve

Pump
CHAPTER 10

ELECTRICAL DIAGRAM
Minuto Cappuccino Focus and Class