Data Sheet and Service Manual

EC9355 - LA SPECIALISTA PRESTIGIO

Revision Date: 20.12.2021

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1. TECHNICAL DATA

Voltage	220 – 240V / 50 - 60Hz (INT – AU/NZ) 120V / 60Hz (US/CA) 100V / 50 - 60Hz (JP)
Max. Input Power	1450 W

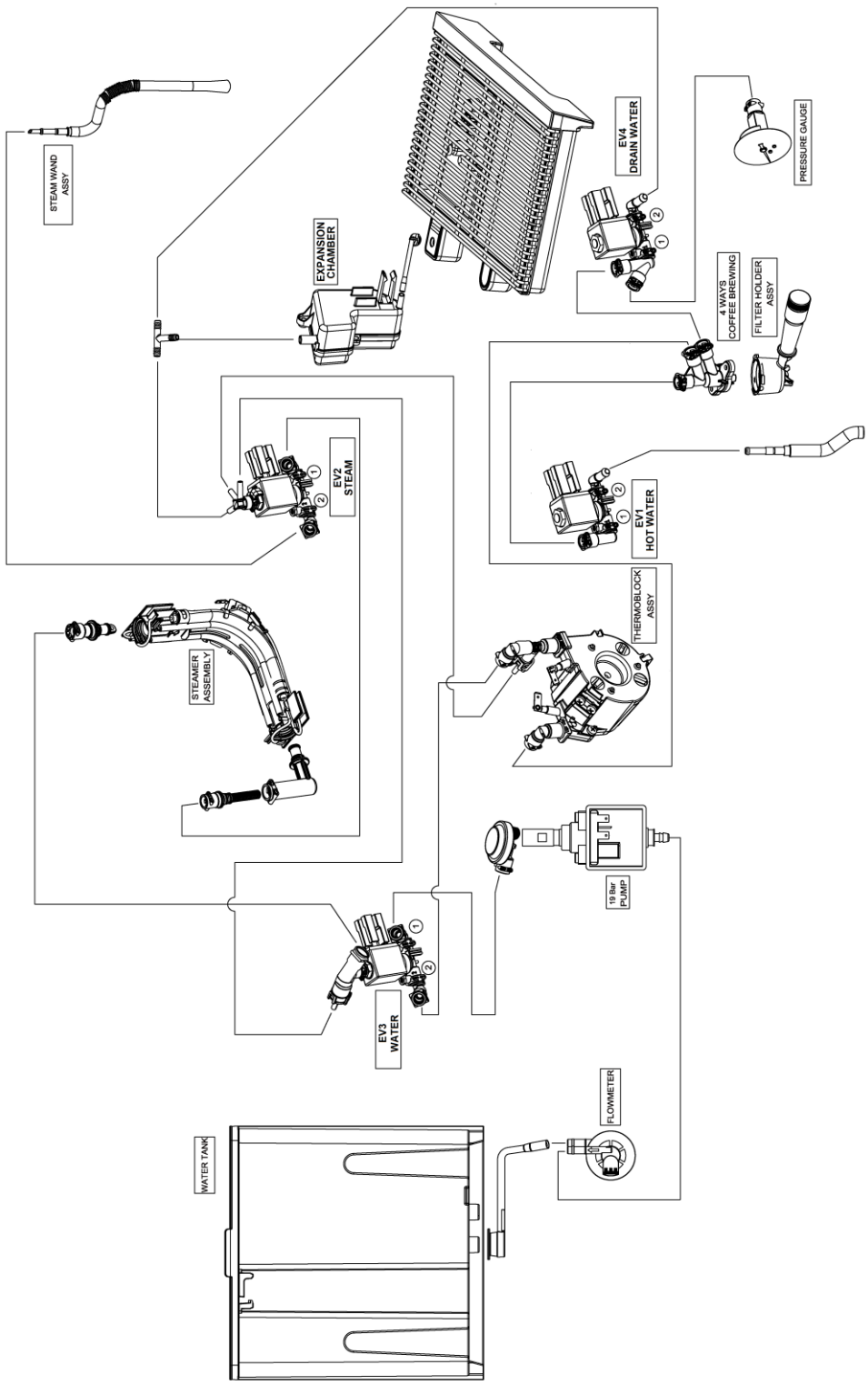
COMPONENTS

Pump	220 – 240Vac / 70W – 19Bar (INT – AU/NZ) 120Vac / 70W – 19Bar (US/CA) 100Vac / 55W – 19Bar (JP)
Grinder motor	230Vac (INT – AU/NZ) ÷ 120Vac (US/CA) 100Vac (JP)
Solenoid valves EV1 ÷ EV4	230Vac (INT – AU/NZ) ÷ 120Vac (US/CA) 100Vac (JP)
Thermoblock	
- Temperature probe	NTC sensor
- Thermal fuse TCO	192°C
- Heating element	230Vac – 1300W – R≈41Ohm (INT – AU/NZ) 120Vac – 1300W – R≈11Ohm (US/CA) 100Vac – 1300W – R≈8Ohm (JP)
Steamer	
- Temperature probe	NTC sensor
- Thermal fuse TCO	318°C
- Heating element	230Vac – 1070W (2 x 535W) – R≈50Ohm (INT – AU/NZ) 120Vac – 1070W (2 x 535W) – R≈14Ohm (US/CA) 100Vac – 1070W (2 x 535W) – R≈9Ohm (JP)

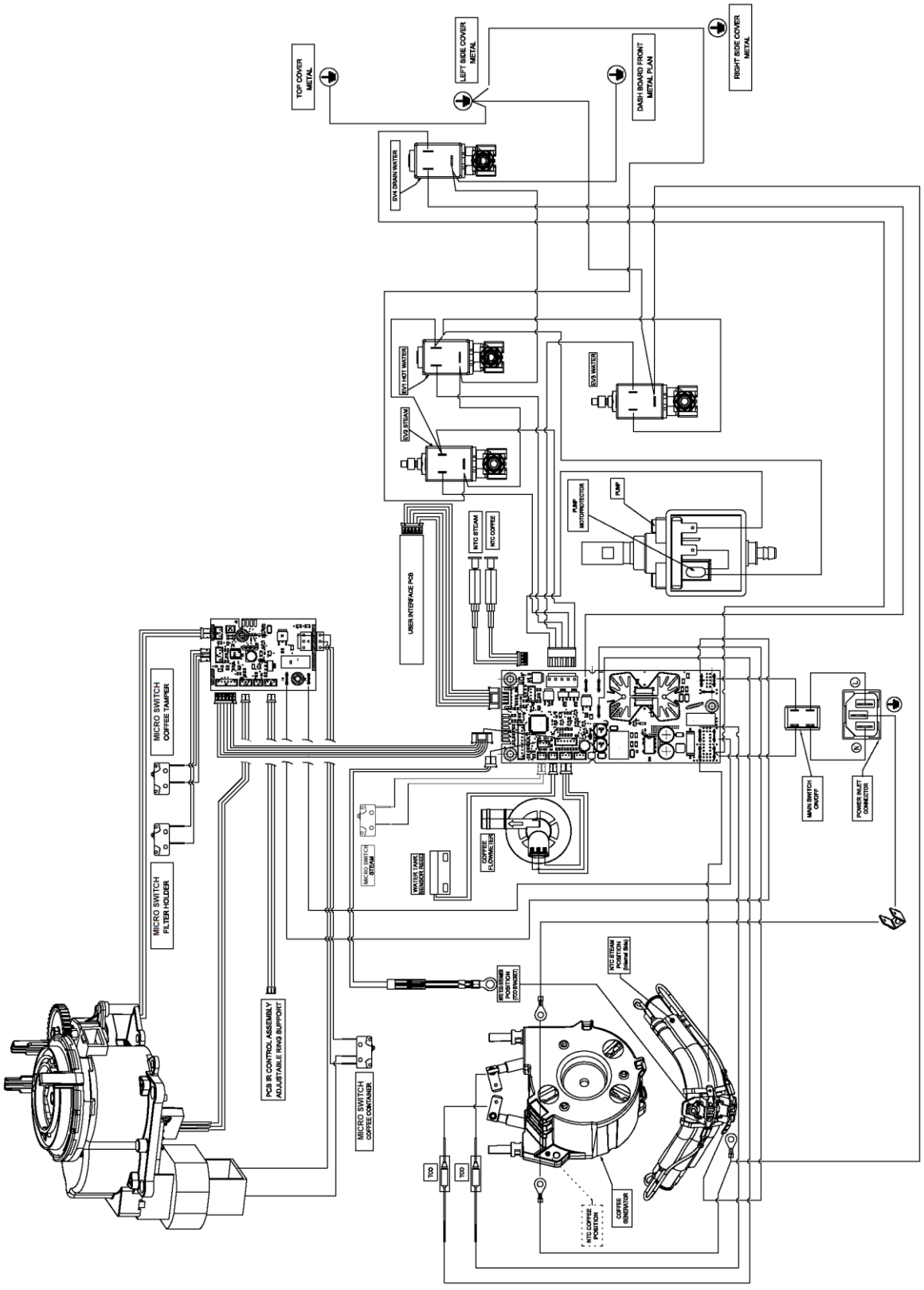
NTC Resistance-Temperature Characteristics (Thermoblock and Steamer)

TEMP. °C	MINIMUM kΩ	NOMINAL kΩ	MAXIMUM kΩ	Temp. Accy ±°C	Resi. Accy ±%
0.0	310.0	328.9	348.8	1.17	6.05
20.0	118.6	124.6	130.9	1.10	5.00
40.0	50.75	52.85	55.02	1.01	4.10
60.0	23.82	24.61	25.43	0.92	3.31
80.0	12.09	12.41	12.73	0.81	2.62
100.0	6.557	6.691	6.825	0.60	2.00
120.0	3.664	3.759	3.855	0.94	2.55
140.0	2.161	2.228	2.296	1.22	3.06
160.0	1.327	1.375	1.423	1.51	3.51
180.0	0.8445	0.8781	0.9126	1.82	3.93
200.0	0.5541	0.5783	0.6033	2.14	4.32

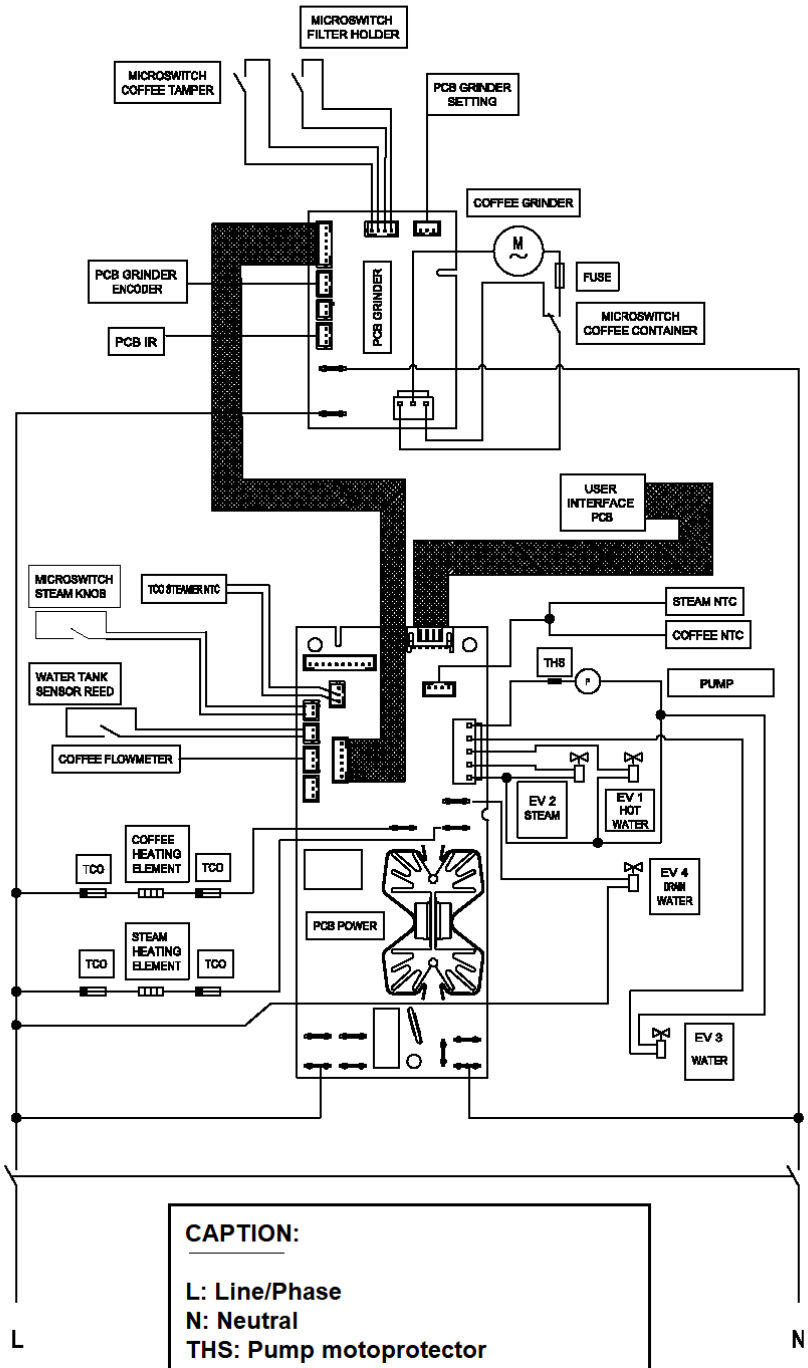
2. HYDRAULIC DIAGRAM



3. WIRING DIAGRAM



CIRCUIT DIAGRAM



CAPTION:

L: Line/Phase
N: Neutral
THS: Pump motoprotector

EV1: Hot Water - 2 ways solenoid valve
EV2: Steam - 3 ways solenoid valve
EV3: Water - 3 ways solenoid valve
EV4: Drain - 2 ways solenoid valve

TCO - Thermal Cut-Off

4. WORKING PRINCIPLE

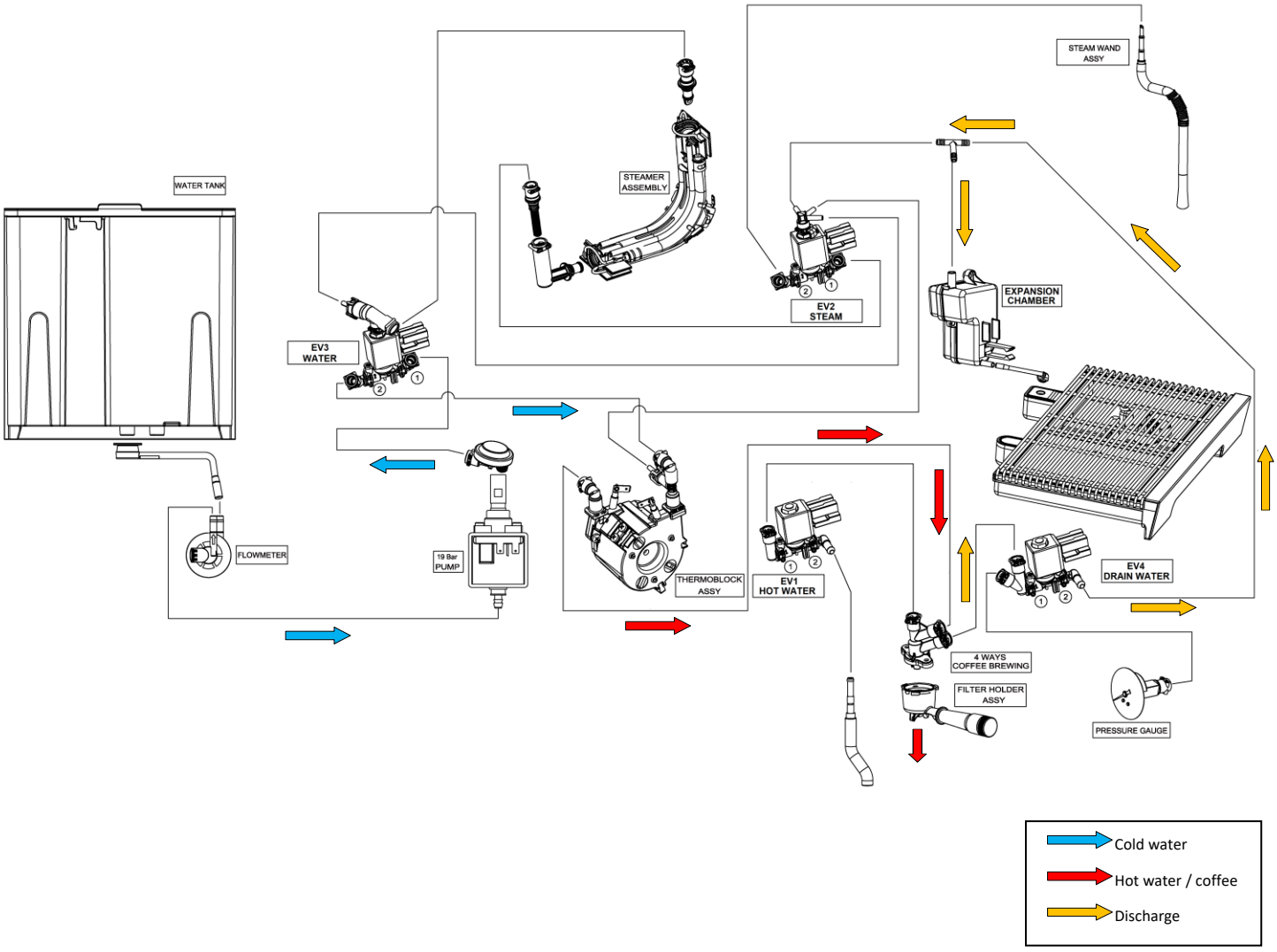
4.1. MICROSWITCHES, SENSORS AND SOLENOID VALVES

MICROSWITCHES	Function	Logic
COFFEE TAMPER MICRO SWITCH	Detects when the tamping is done	"CLOSED" when the lever is in position 0
FILTER HOLDER MICRO SWITCH	Detects when the sump is inserted	"NO" when the sump is NOT inserted
BEANS CONTAINER MICRO SWITCH	Detects when the container is inserted	3-pin micro-switch. When the beans container is inserted and the grinder adjustment ring is between 1 and 8: - the contact for the beans container detection is "OPEN"; - the contact for the grinder power supply is "CLOSED".
STEAM KNOB MICRO SWITCH	Detects when steam knob is in I position	"NO" when the steam knob is NOT in I position.

REED AND ENCODER	Function	Logic
REED SENSOR WATER TANK	Detects when the water level is at minimum	

SOLENOID VALVES	Function	Logic
EV1 = 2-ways HOT WATER solenoid valve	It allows the hot water flow to go to the hot water pipe	
EV2 = 3-ways STEAM solenoid valve	When activated, it allows the steam flow coming out from the steamer to be addressed to the steam wand branch. When deactivated, it discharges the residual pressure of the steam branches towards the expansion chamber.	
EV3 = 2-ways WATER solenoid valve	When activated, it allows the water coming from the pump to flow towards the Thermoblock. When deactivated, it allows the water coming from the pump to flow towards the Steamer.	
EV4 = 2-ways DRAIN WATER solenoid valve	When the coffee delivery finishes, it activates for 1 seconds to eliminate the pressure from the coffee branch (the gauge drops to zero) and, therefore, to dry the coffee pod. The removed pressure is released towards the expansion chamber.	

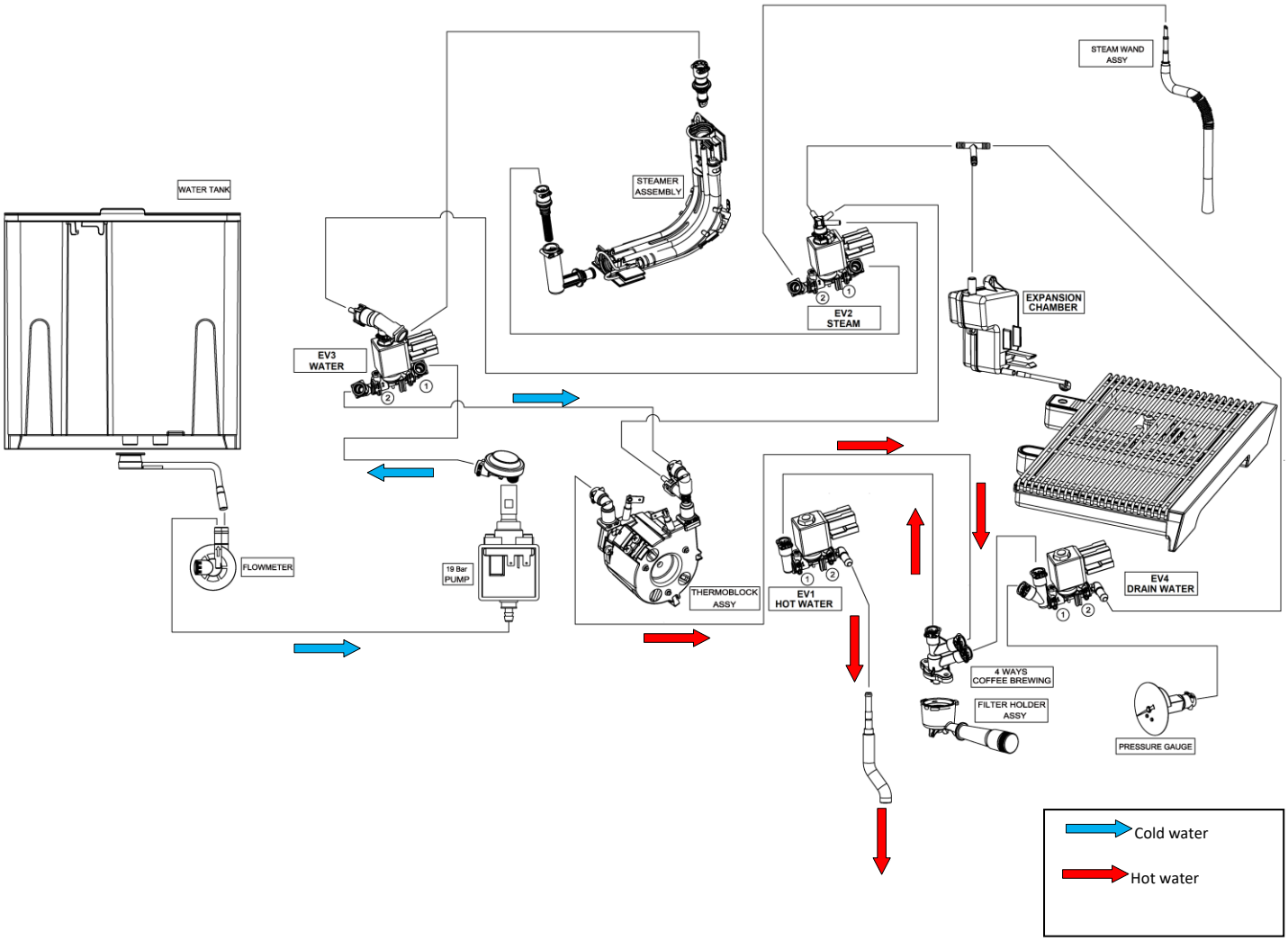
4.2. COFFEE PREPARATION



Coffee Preparation Steps:

- The Thermoblock is activated, EV3 solenoid valve is activated to force the water to flow towards the Thermoblock.
- The pump is activated in <u>continuous mode</u> for the coffee delivery.
- At the end of the coffee delivery, the pump, the Thermoblock and EV3 stop, the EV4 solenoid valve opens for 1 second to drain the residual pressure/water from the coffee filter towards the expansion chamber.

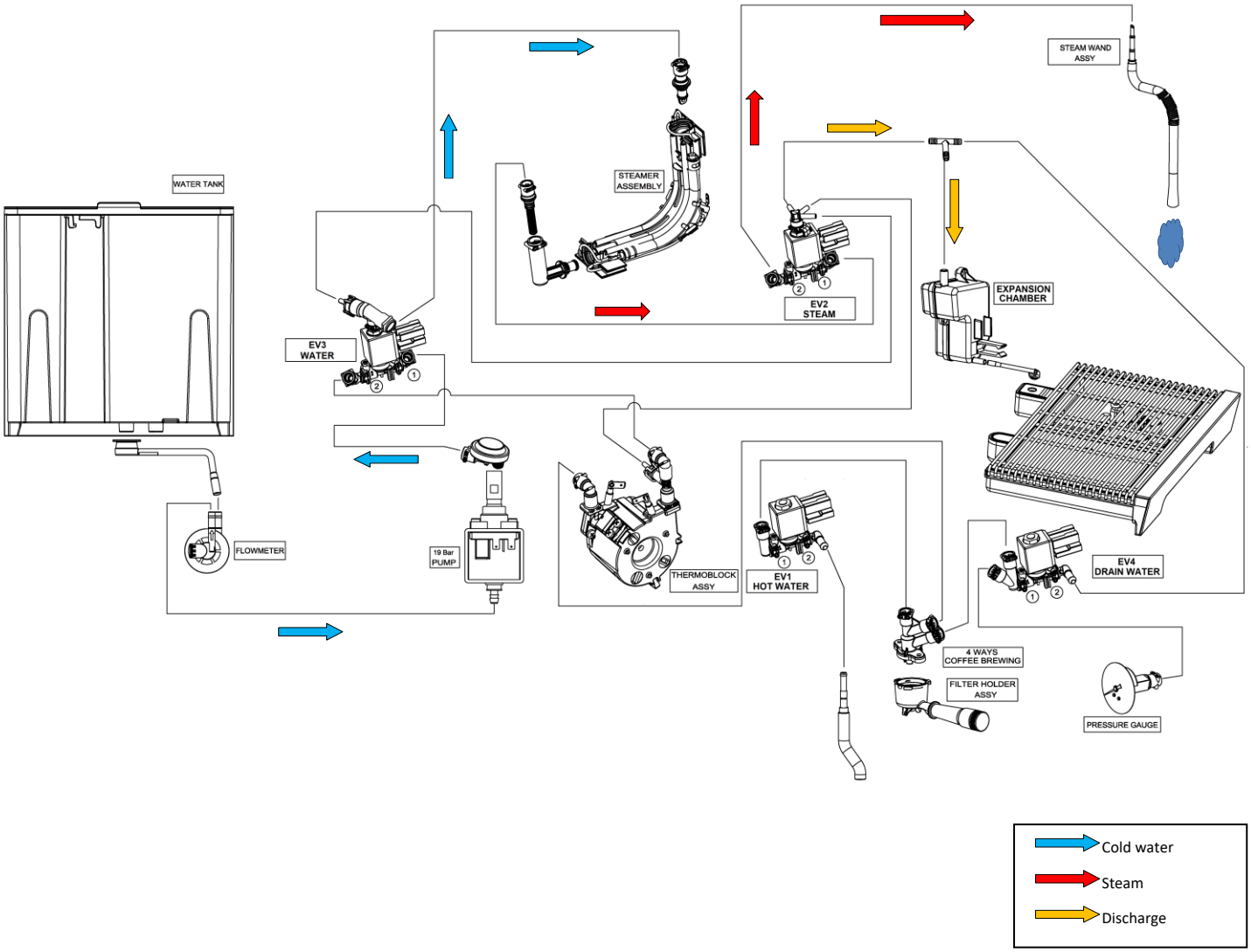
4.3. HOT WATER DELIVERY



Hot Water Delivery Steps:

- The Thermoblock is activated, EV3 solenoid valve is activated to force the water to flow towards the Thermoblock.
- The pump is activated in fast pulsing mode, EV1 solenoid valve opens to deliver hot water.
- The pump and the Thermoblock stop, EV1 and EV3 close.

4.4. STEAM DELIVERY



Steam Delivery Steps:

- The Steamer is activated.
- EV2 solenoid valve is activated.
- The pump is activated in slow pulsing mode to inject water into the Steamer for steam preparation.
- Steam is delivered from the wand.
- The pump stops, the Steamer and EV2 solenoid valve are deactivated.
- The residual pressure is discharged from the steam outlet branch towards the expansion chamber.

4.5. BEVERAGES QUANTITIES

ESPRESSO				
Selected Coffee	**Quantity**	**Program. Qty.**	**Pre-Inf.**	**Filter**
ESPRESSO	35 cc	25-90 cc	Yes	Single
ESPRESSO X2	70 cc	50-180 cc	Yes	Double

COFFEE				
Selected Coffee	**Quantity**	**Program. Qty.**	**Pre-Inf.**	**Filter**
COFFEE	80 cc	50-120 cc	No	Single
COFFEE X2	160 cc	120-240 cc	No	Double

AMERICANO/LONG BLACK (*)						
Selected Coffee	**Quantity (Coffee + Water)**	**Pre-Inf.**	**Filter**	**Program. Coffee Qty.**	**Program. Water Qty.**	**Sequence**
LONG BLACK	100 cc (35-65)	Yes	Single	25-60 cc	25-120 cc	1. Water 2. Coffee
LONG BLACK X2	200 cc (70-130)	Yes	Double	50-120 cc	50-240 cc	1. Water 2. Coffee
AMERICANO	120 cc (35-85)	Yes	Single	25-60 cc	25-120 cc	1. Coffee 2. Water
AMERICANO X2	240 cc (70-170)	Yes	Double	50-120 cc	50-240 cc	1. Coffee 2. Water

(*) Long Black recipe will be available only on machines produced for the Australian market, the appliances of the other markets will have the Americano beverage.

OTHER FUNCTIONS		
Selected Function	**Quantity**	**Programming**
STEAM	120 sec	No
HOT WATER	250 cc	No

4.6. DESCALING LEVELS

WATER HARDNESS	IMPULSE VALUE	WATER LITERS (*)
SOFT WATER	312.000	156 lt.
MEDIUM WATER	168.000	84 lt.
HARD OR VERY HARD WATER	96.000	48 lt.

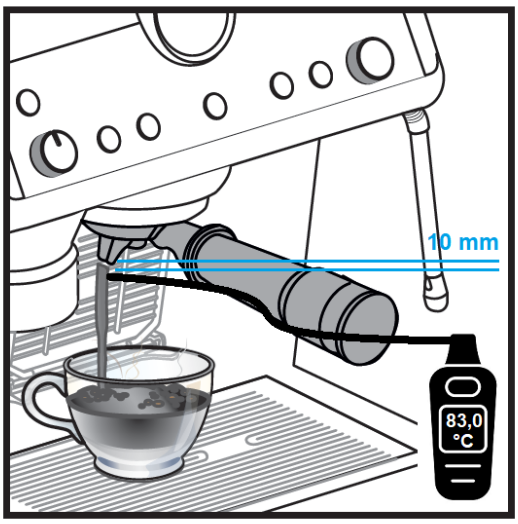
(*) Please note that these values consider the usage of machine only for coffee delivery.
Hot water production counts 3 times the value and steam counts for 6 times.
For example, at value medium, 18 lt. for coffee and 10 lt. for hot water correspond to the descaling alarm target (i.e. 18 + 10x3 = 48 lt.).

4.7. TEMPERATURE TEST

Coffee Temperature Test

To perform a coffee temperature test, follow in sequence the below steps:

- Turn the appliance ON.
- Make sure the ECO mode is deactivated (refer to the user manual for more details).
- Simulate the preparation of four **2x ESPRESSO** beverages in a row, by keeping the filter holder with the empty 2-cup filter connected to the coffee outlet, to warm up the entire coffee circuit.
- Set the appliance to prepare a **2x ESPRESSO** beverage (refer to the user manual for more details).
- Start the **2x ESPRESSO** beverage preparation into a unique cup.
- Wait until at least 20cc of coffee have been delivered into the cup.
- Measure the coffee flow temperature at about 2÷10mm from the coffee spout, as shown in the below picture:



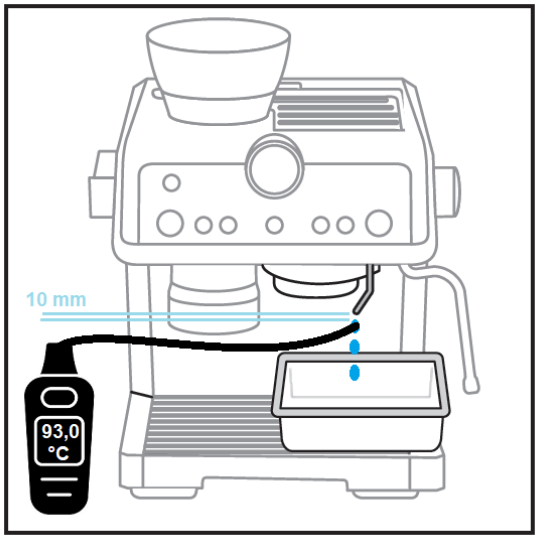
- The **optimal indicative temperature measurement** for coffee for **each of the 3 available temperature settings** of the appliance is resumed in the below table:

TEMPERATURE SETTING	TEMPERATURE MEASUREMENT
1	84°C±3°C
2	86°C±3°C
3	88°C±3°C

Hot Water Temperature Test

To perform a hot water temperature test, follow in sequence the below steps:

- Turn the appliance ON.
- Make sure the ECO mode is deactivated (refer to the user manual for more details).
- Press the **TEA** button to deliver hot water, to warm up the hot water circuit.
- Once the warm-up delivery is completed, press again the **TEA** button to start the hot water delivery into a cup.
- Wait until at least 20cc of hot water have been delivered into the cup.
- Measure the hot water flow temperature at about 2÷10mm from the hot water outlet, as shown in the below picture:



The **optimal indicative temperature measurement** for hot water should be **93°C±2°C**.

5. TEST MODE

5.1. HOW TO ENTER IN THE VARIOUS TEST MODES/STATISTICS

NOTE: To access properly the test modes, make sure the appliance is ON from both the main back switch and from the front ON/STAND-BY switch. Then, turn the appliance OFF from the main back switch and follow the below steps.

a. Set the position of the coffee dose knob as indicated in the second column and the beverages knob as indicated in the third column of the below table:

TEST	COFFEE DOSE KNOB	BEVERAGES KNOB
USER INTERFACE TEST	NOT PRE-GROUND	ESPRESSO
FUNCTIONAL TEST	NOT PRE-GROUND	AMERICANO/LONG BLACK
LOAD TEST	NOT PRE-GROUND	COFFEE
INPUT TEST	NOT PRE-GROUND	DESCALING
STATISTICS	PRE-GROUND	--

b. Turn on the coffee machine by the main switch while holding the ON/STAND-BY button pressed for more than 5s. Do not release at the first blinking but wait for the 5 seconds. This will allow the unit to access the corresponding test mode indicated in the first column.

c. To quit the test mode switch the coffee machine OFF from the main switch on the back.

5.2. USER INTERFACE TEST

BUTTONS TEST

BUTTON PUSHED	LEDS STATE				
	x2	TEMPERATURE	OK	TEA	MY
x2	ON	OFF	OFF	OFF	OFF
TEMPERATURE	OFF	ON	OFF	OFF	OFF
OK	OFF	OFF	ON	OFF	OFF
TEA	OFF	OFF	OFF	ON	OFF
MY	OFF	OFF	OFF	OFF	ON
ON/OFF	ON	ON	ON	ON	ON

NOTICE:

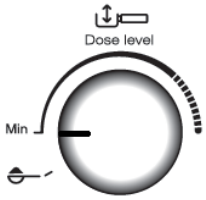
- By holding the **TEMPERATURE** button pressed, the three LED bars of the temperature icon will illuminate in sequence.
- By holding the **OK** button pressed, the OK icon will turn color from white to orange in sequence.

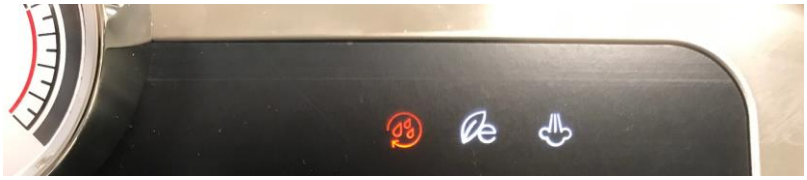
COFFEE DOSE KNOB TEST

For each position of the dose knob, a series of symbols will progressively turn ON on the control panel:

- Pre-Ground Position:

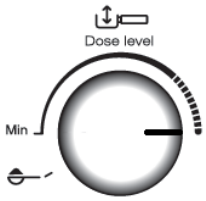
- MIN Position:





- MED Position:

- MAX Position:



BEVERAGE KNOB TEST

KNOB POSITION 	LEDs STATE			
	TAMPER	BEANS PRESENCE	BEANS CONTAINER	DESCALING
ESPRESSO	ON	ON	ON	ON
AMERICANO/LONG BLACK	OFF	ON	ON	ON
COFFEE	OFF	OFF	ON	ON
DESCALING	OFF	OFF	OFF	ON

5.3. FUNCTIONAL TEST

In this mode LEDs Tank, Rinse/Clean, Energy Label and Steam are ON

TEST	HOW TO ACTIVATE TEST	NOTE	LED	LOAD STATE							
				PUMP	EV1	EV2	EV3	EV4	HEATER	STEAMER	GRINDER
"STEAM" HYDRAULIC CIRCUIT	KEEP TEMP. PUSHED	Water from Steam Wand	Temp. Flash, Others OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
"COFFEE" HYDRAULIC CIRCUIT	KEEP OK PUSHED	Water from Coffee Spout	OK Flash, Others OFF	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
GRINDER	PUSH TEA	Place filter holder under Tamper	TEA Flash, Others OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	About 7 seconds
EMPTYING HYDRAULIC CIRCUIT	PUSH MY (*Empty water Tank before starting*)	PHASE 1 (also reset "first use")	MY Flash, Others OFF	ON	ON	OFF	ON	OFF	ON 110 °C	OFF	OFF
		PHASE 2	MY Flash, Others OFF	ON	OFF	ON	OFF	OFF	OFF	ON 120 °C	OFF
RESET TO FACTORY DEFAULT	PUSH ON/OFF	RESET ALL PARAMETERS TO FACTORY DEFAULT (also reset "first use")									

5.4. LOAD TEST

In this mode LEDs Tamper, Empty Beans, Beans Container Missing and Descaling are ON

LOAD	LOAD STATE	LOAD STATE								LED
		PUMP	EV1	EV2	EV3	EV4	HEATER	STEAMER	GRINDER	
EV1	X2 PUSHED	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	X2 Flash, Others OFF
EV2	X2 + MY PUSHED	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	X2 + MY Flash, Others OFF
EV3	TEMP. PUSHED	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	Temp. Flash, Others OFF
EV4	TEMP. + MY PUSHED	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	Temp. + MY Flash, Others OFF
STEAMER	OK PUSHED	OFF	OFF	OFF	OFF	OFF	OFF	ON 120 °C	OFF	OK Flash, Others OFF
PUMP	TEA PUSHED	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	TEA Flash, Others OFF
HEATER	MY PUSHED	OFF	OFF	OFF	OFF	OFF	ON 110 °C	OFF	OFF	MY Flash, Others OFF
GRINDER	ON/OFF PUSHED	OFF	OFF	OFF	OFF	OFF	OFF	OFF	About 17 seconds	

NOTE: To activate the grinder from the Load Test, connect the filter holder to the tamping station.

5.5. INPUT TEST

INPUT	LEDS STATE					
	TAMPER	ECO	BEANS CONTAINER	BEANS PRESENCE	STEAM	WATER TANK
TAMPER DOWN	ON	OFF	OFF	OFF	OFF	OFF
FILTER HOLDER (Grinder Side)	OFF	ON	OFF	OFF	OFF	OFF
BEANS CONTAINER PRESENCE	OFF	OFF	ON	OFF	OFF	OFF
COFFEE BEANS SENSOR	OFF	OFF	OFF	ON	OFF	OFF
STEAM KNOB ON I POSITION	OFF	OFF	OFF	OFF	ON	OFF
WATER TANK MISSING	OFF	OFF	OFF	OFF	OFF	ON

GRINDER GEAR POSITIONS	LEDS STATE				
	X2	TEMPERATURE	OK	TEA	MY
1÷2	ON	OFF	OFF	OFF	OFF
3÷4	ON	ON	OFF	OFF	OFF
5÷6	ON	ON	ON	OFF	OFF
7÷8	ON	ON	ON	ON	OFF
>8	ON	ON	ON	ON	ON

5.6. STATISTICS

- Turn the beverage knob to select the correct statistics you would like to display, then press OK to visualize it.
- The “X2” LED will flash to separate units, tens, hundreds, thousands and tens of thousands of every statistic.
- Every time “X2” will flash, the number of other LEDs which illuminate will indicate the value of the digit of the selected statistic counter.
- Therefore, “X2” will flash 5 times and together the other LEDs which are representing the numeric value of the digit of the counter.

BUTTON TO BE PRESSED	STATISTIC VALUE
BEVERAGES KNOB ON ESPRESSO  STEAM KNOB OFF	Total Amount of Beverages (Espresso + Americano/Long Black + Coffee)
BEVERAGE KNOB ON AMERICANO  STEAM KNOB OFF	Litres for all Coffee Beverages
BEVERAGE KNOB ON COFFEE  STEAM KNOB OFF	Litres for Hot Water
BEVERAGE KNOB ON DESCALING  STEAM KNOB OFF	Number of Descaling Processes
STEAM KNOB ON	Water for Steam Production (counted in Decilitres)

Example of How to Read Statistics

Here below an example of LEDs flashing sequence while reading statistics for the Total Amount of Beverages delivered (beverage knob on ESPRESSO, OK button pressed):

First flashing: X2 + 9 LEDs are illuminated

⇨ UNITS = 9

Second flashing: X2 + 7 LEDs are illuminated

⇨ TENS = 7

Third flashing: X2 + 1 LED are illuminated

⇨ HUNDREDS = 1

Fourth flashing: X2 and no other LEDs are illuminated

⇨ THOUSANDS = 0

Fifth flashing: X2 and no other LEDs are illuminated

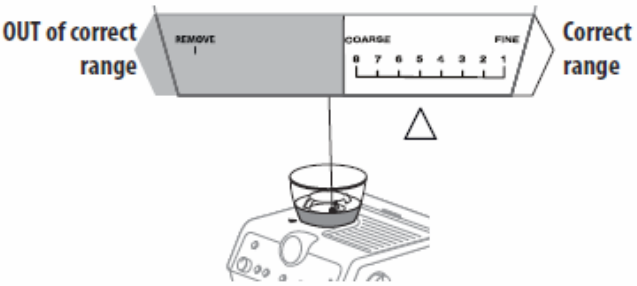
⇨ TENS OF THOUSANDS = 0

⇨ TOTAL AMOUNT OF BEVERAGES = 00179

6. TROUBLESHOOTING

EXPLANATION OF LIGHTS

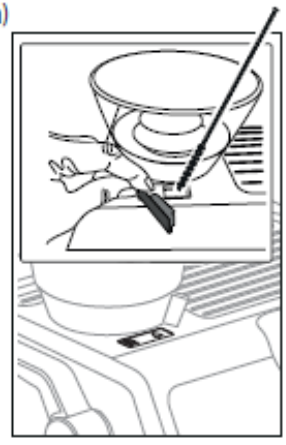
LIGHTS	EXPLANATION OF LIGHTS	OPERATION
All the lights flash briefly	Turning the machine on	Self-diagnosis
on	The appliance is being turned on for the first time and the water circuit must be filled	Fill the water circuit as described in the User Manual
OK on (white)	The machine is ready to delivery	Prepare the machine and proceed with delivery
on	Energy saving is enabled	To disable it, follow the instructions reported in the User Manual (Menu Settings)
on	The beans container is empty	Fill the beans container
flashing	You are trying to grind coffee but the beans container is empty	Fill the beans container
flashes briefly at regular intervals	The dial has been turned to the maximum adjustment possible 	When not enough coffee is ground to reach the correct quantity, select the new grinding range as described in section "Extra grinding adjustment" of the User Manual
on	Insufficient water in tank or water tank not inserted correctly	Fill the tank or extract the tank and put it back correctly
flashing	You are trying to deliver a beverage but water tank is empty	Fill the tank
	The grinding is too fine and the coffee is delivered too slowly or not at all	Extract the filter holder and repeat the operations to make the coffee, bearing in mind the indications reported in the User Manual
	The coffee baskets are clogged.	Clean the coffee baskets as described in the User Manual
	The tank has been inserted incorrectly and the valves on the bottom are not open	Press the tank down lightly to open the valves on the bottom
	Scale in the water circuit	Descale the appliance as described in the User Manual
on	The appliance is on and ready for use	The appliance is at the right temperature to deliver steam. To deliver steam, turn the steam dial
flashing	The appliance is on and energy saving is enabled. The steam dial is in the steam delivery position	The light flashes to indicate that the appliance is preparing to deliver steam. Delivery begins as soon as the appliance is at temperature
	The appliance is heating up to be ready for use	The appliance is at temperature when the light remains on steadily
	The appliance is delivering steam	

LIGHTS	EXPLANATION OF LIGHTS	OPERATION
on	The bean container is not inserted	Insert bean container or check that is completely locked. The container is correctly inserted when the arrow is lined up with the symbol and you hear a "click".
flashing	The finess of the grind regulation is incorrect (or out of correct range)	Move the selector within the 8 levels from coarse to fine, keeping in mind to: • Always adjust the coffee mill during the grinding • Adjust one grinding level at a time and make at least 5 coffees before adjusting again
		
on	Presser lever is not in the correct position	Turn the lever back in place. 
flashing	Pressing is needed	The coffee has just been ground and the filter holder is attached to the coffee mill
	The portafilter has been detached from the coffee mill without pressing	Follow the instructions of the User Manual for the coffee preparation with pre-ground coffee
	The portafilter has been detached before grinding has ended or pressing has been performed too quickly	Repeat grinding
	The slide of coffee grinder is clogged	Clean the Smart Tamping Station as described in the User Manual
	The burrs are blocked by foreign matter	Remove the foreign matter and clean the burrs as described in the User Manual
on (red)	Descaling must be performed	Descale the appliance as described in the User Manual
on (red) + OK flashing (orange)	Descaling is underway	Complete the descaling process as described in the User Manual
on (red) + OK on (white)	The rinsing cycle of descaling must be performed	

LIGHTS	EXPLANATION OF LIGHTS	OPERATION
on (red) + OK flashing (white)	The rinsing cycle of descaling is underway	
on (orange)	Cleaning of the coffee outlet must be performed	Clean the coffee outlet as described in the User Manual
flashing (orange)	Cleaning of the coffee outlet is underway	
All the lights flash	General alarm	Check and/or replace the NTC sensors

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
There is water in the drip tray	It is normal: due to the internal water circuits operations	Regularly empty and clean the drip tray
No espresso coffee is delivered	No water in the tank	Fill the tank
	The light is on to indicate that the coffee or steam circuit is empty	Press the button corresponding to the light to fill the circuit
	Thecoffee basket is blocked	Rinse the basket under abundant running water.
	The tank has been inserted incorrectly and the valves on the bottom are not open	Press the tank down lightly to open the valves on the bottom
	Limescale in the water circuit	Descale as described in the User Manual
	Coffee grind too fine or too much coffee	Adjust coffee dose and grinding (refer to Quick Guide)
The portafilter cannot be attached to the appliance	The ground coffee has not been pressed or is too much	Repeat grinding with new settings. Reduce the powder quantity: check if the filter (single or double filter) is the same size as the selector of grinding quantity (2x button selected or not)
The espresso coffee drips from the edges of the portafilter rather than the holes	The portafilter is inserted incorrectly	Attach the portafilter correctly and rotate firmly as far as it will go
	The coffee outlet gasket has lost elasticity or is dirty	Replace the coffee outlet gasket
	The coffee basket is clogged	Rinse the basket under abundant running water.
The coffee crema is too light (delivered from the spout too fast)	The appliance settings need reviewing	Refer to quick guide for suggestions
The coffee crema is too dark (delivered from the spout too slowly)	The appliance settings need reviewing	Refer to quick guide for suggestions
At the end of descaling, the appliance requests a further rinse	During the rinse cycle, the water tank has not been filled to the MAX level	Complete the rinse cycle of the Descaling process

PROBLEM	CAUSE	SOLUTION
The appliance does not grind the coffee	There is foreign matter that cannot be ground in the coffee mill	Clean the burrs as described in the User Manual, making sure you remove all the beans from the beans container before extracting it. Before putting the burr back, vacuum all residues from the housing.
	The coffee beans container is not in the right position	The container is correctly inserted when the arrow ▲ is lined up with the 🔒 symbol and you hear a "click".
If you want to change the type of coffee	You must remove all the beans present in the machine	• Empty the beans container (if necessary, operate the coffee mill without beans or use a vacuum cleaner to remove any remaining beans) • Attach the filter holder and operate the coffee mill a number of times without beans to free the grinder. Attach the filter holder to the outlet of the grinder (A19), lining it up with "INSERT", then turning it to the right. Grinding begins when the filter holder reaches the CLOSE position and stops automatically. Repeat until the filter is empty • Place the new coffee in the beans container • If the amount of coffee ground is not enough to reach the perfect dose, proceed setting the appliance as for the first use
After grinding, the coffee filter is empty After tamping, there is too much coffee in the filter	The coffee grinder coffee funnel is clogged	Clean the Smart Tamping Station as described in the User Manual. If the problem persists, access the guide by opening the hatch and free it using the brush) 

PROBLEM	CAUSE	SOLUTION
After grinding, the ground coffee in the filter does not reach the "perfect dose"	The "Smart Tamping Station" needs cleaning	Clean the Smart Tamping Station, then grind again
	The quantity of ground coffee needs adjusting	Adjust the quantity of coffee with the dial. If the dial is already in the max. position, select the extra grinding adjustment (as described in the User Manual). If the problem persists, replace the burrs as described the User Manual
	Over time the burrs wear down	Replace the burrs as described in the User Manual