Data Sheet And Service Manual

EC9335 EX:4 LA SPECIALISTA (ALL COUNTRIES)

Date: 09.10.2020



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1. TECHNICAL DATA

Voltage	220-230v / 50-60 Hz (INT – AU/NZ) 120v / 60 Hz (US/CA)
Max. input power	1450 W

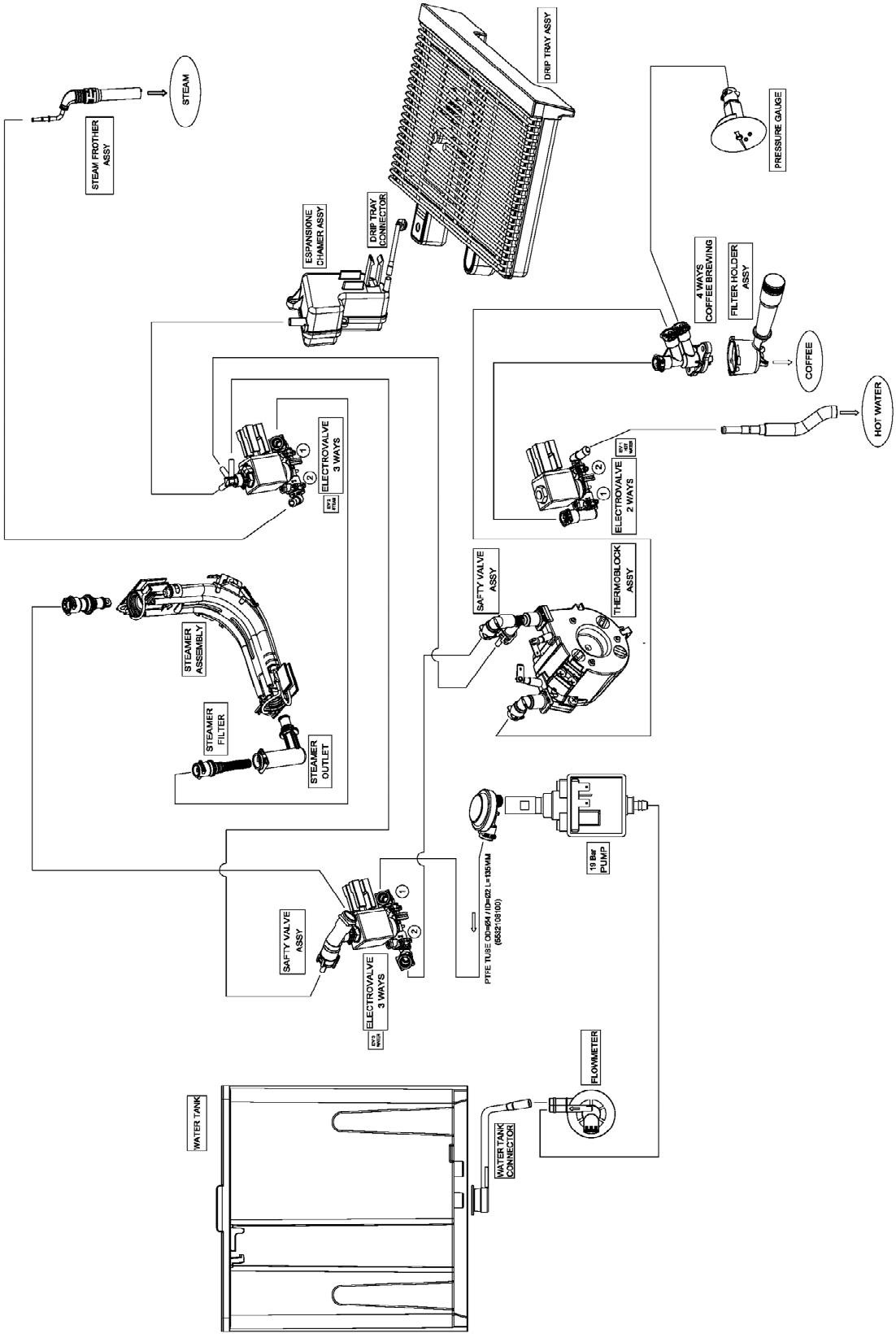
COMPONENTS

Pump	220-240v AC - 70 W – 19 BAR (INT – AU/NZ) 120v AC - 70 W – 19 BAR (US/CA)
Grinder motor	230 V Ac (INT – AU/NZ) - 120v AC (US/CA)
Solenoid valves EV1 EV2	230 V Ac (INT – AU/NZ) - 120v AC (US/CA)
Coffee thermoblock	
- Temperature probe	NTC sensor
- Thermal fuse TCO	192 °C
- Heating element	230v AC – 1300 W - R ≈ 41 Ohm (INT – AU/NZ) 120v AC – 1300 W - R ≈ 11 Ohm (US/CA)
Steam generator	
- Temperature probe	NTC sensor
- Thermal fuse TCO	318 °C
- Heating element	230v AC – 1070 W (535 W x 2) – R ≈ 50 Ohm (INT – AU/NZ) 120v AC – 1070 W (535 W x 2) – R ≈ 14 Ohm

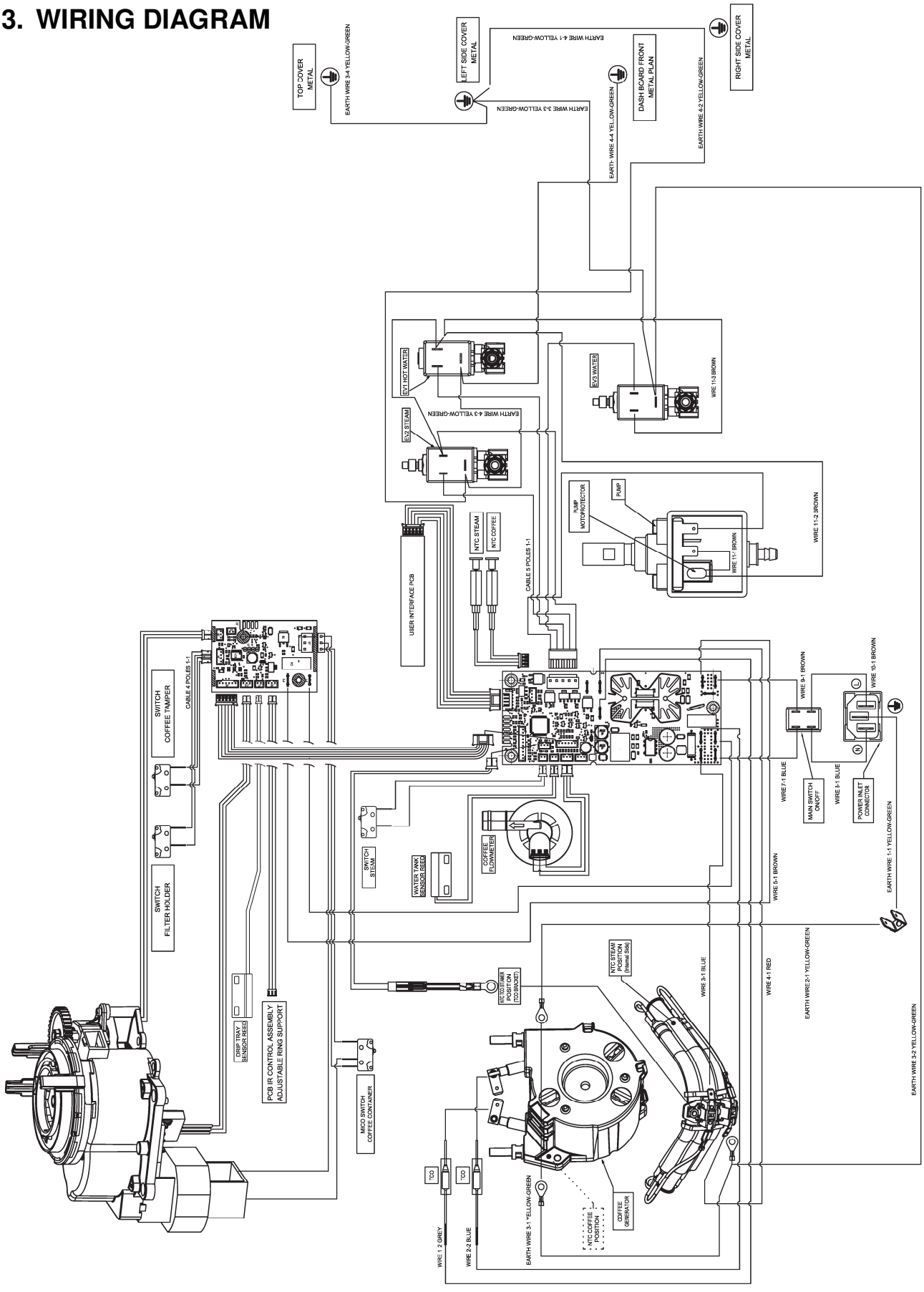
NTC temperature characteristics (thermoblock and steam generator)

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

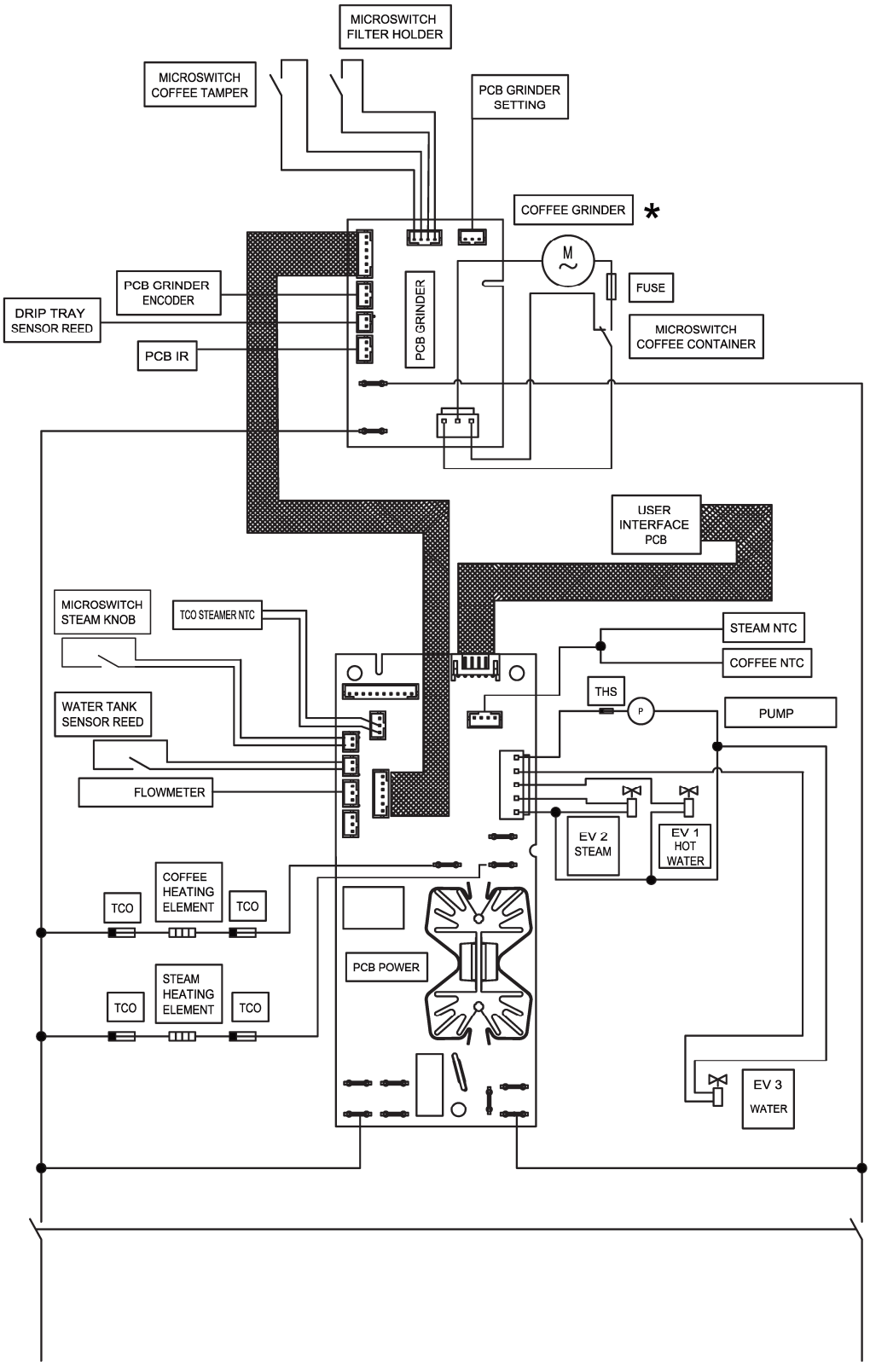
2. HYDRAULIC DIAGRAM



3. WIRING DIAGRAM



CIRCUIT DIAGRAM



4. WORKING PRINCIPLE

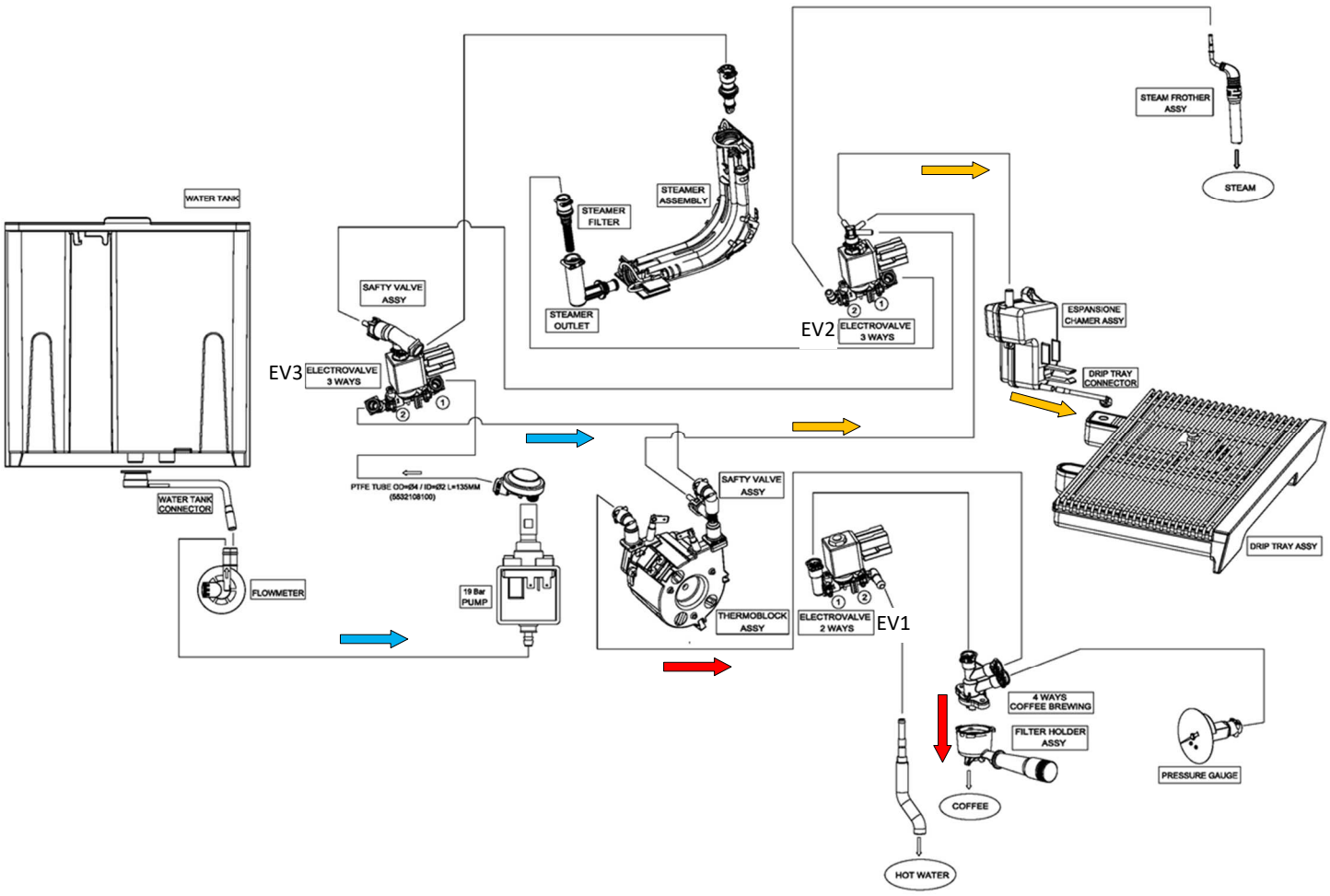
4.1. MICROSWITCHES, SENSORS AND ELECTROVALVES

MICROSWITCHES	Function	Logic
MICROSWITCH COFFEE TAMPER	Detects when the tampering is done	NC when the lever is in position 0
MICROSWITCH FILTER HOLDER	Detects when the sump is inserted	NO when the sump is NOT inserted
MICROSWITCH COFFEE CONTAINER	Detects when the container is inserted	NC when the container is inserted
MICROSWITCH STEAM	Detects when steam function is selected	NO when the function is NOT selected

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

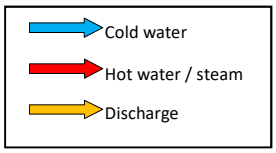
ELECTROVALVES	Function	Logic
EV1 = 2 ways HOT WATER solenoid valve	Allows the hot water flow going to the hot water pipe	
EV2 = 2 ways STEAM solenoid valve	Allows the steam flow going to the frother	
EV3 = 3 ways WATER solenoid valve	Allows water from pump to go into coffee circuit or steam circuit	

4.2. COFFEE DELIVERY

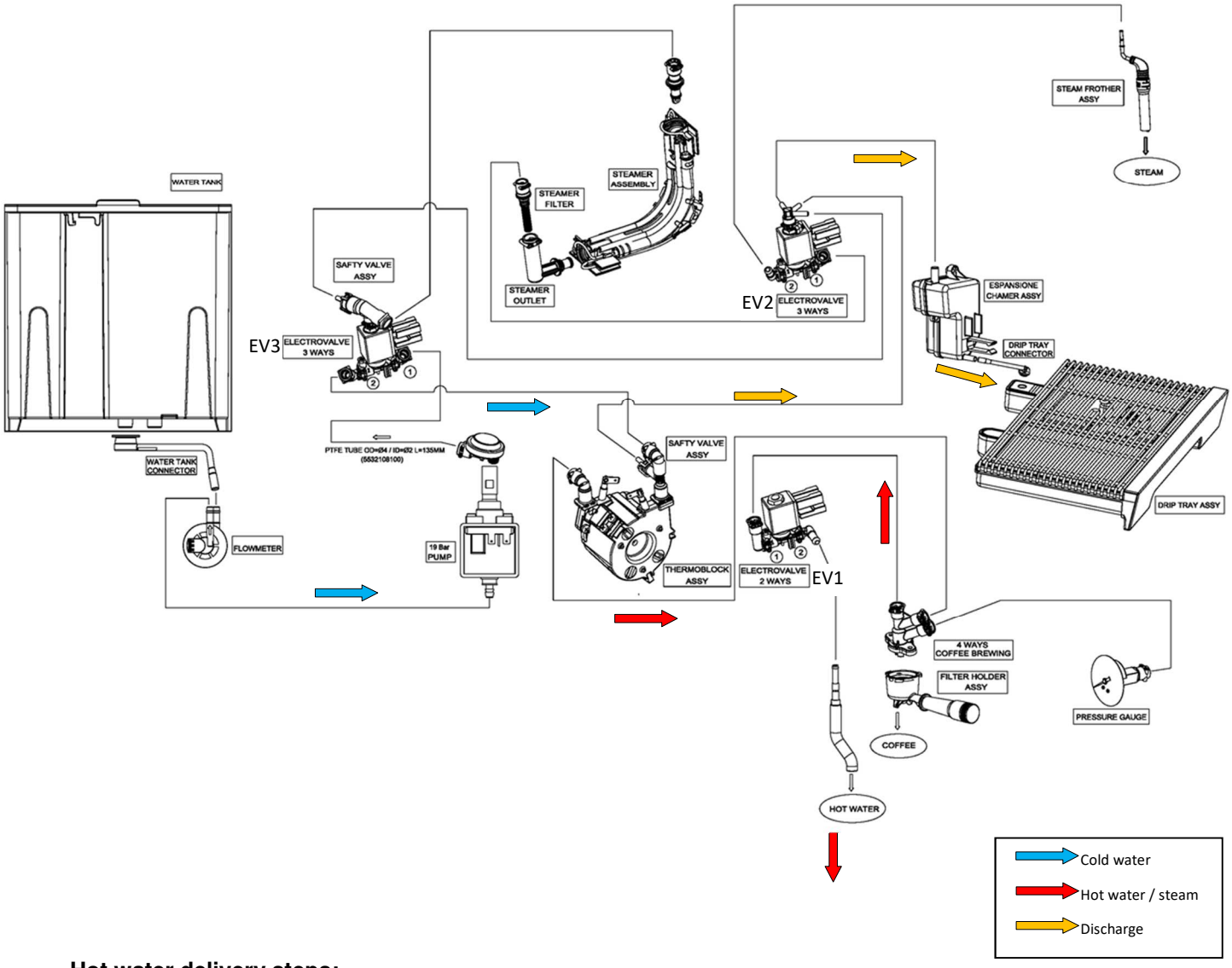


Espresso delivery steps:

- Thermoblock is activated
- EV3 open
- Pump is activated for pre-infusion and coffee delivering
- Pump and thermoblock stop
- EV3 Close



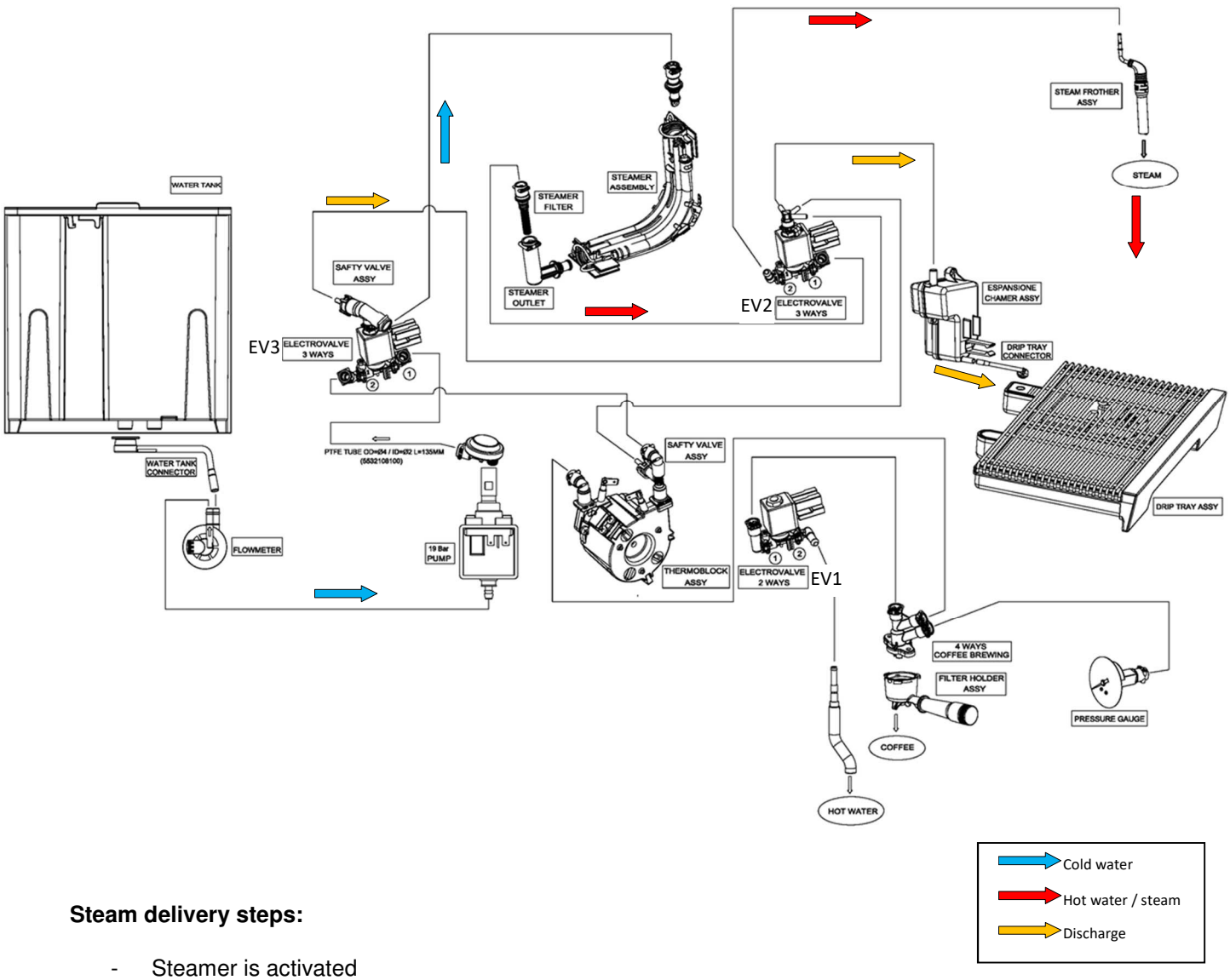
4.3. HOT WATER DELIVERY



Hot water delivery steps:

- Thermoblock is activated
- EV3 open
- Pump is activated for water delivering
- EV1 open to delivery water
- Pump and thermoblock stops, EV1 and EV3 close

4.4. STEAM DELIVERY



Steam delivery steps:

- Steamer is activated
- EV2 open
- Pump is activated for steam delivering
- Pump and steamer stop
- EV2 close

1.1. BEVERAGES QUANTITIES

ESPRESSO				
Selected coffee	**Quantity**	**Q.ty programm.**	**Preinf.**	**Filter**
ESPRESSO	35 cc	25-90 cc	Yes	single
ESPRESSO X2	70 cc	50-180 cc	Yes	double

COFFEE				
Selected coffee	**Quantity**	**Q.ty programm.**	**Preinf.**	**Filter**
COFFEE	70 cc	50-120 cc	No	single
COFFEE X2	140 cc	120-240 cc	No	double

AMERICANO/LONG BLACK (*)						
Selected coffee	**Quantity (coffee + water)**	**Preinf.**	**Filter**	**Program. Coffee Q.ty**	**Program. Water Q.ty**	**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 will be on machines produced for Australian market, other market will have the Americano

OTHER FUNCTIONS		
Selected function	**Quantity**	**Programming**
STEAM	120 sec	No
HOT WATER	360 cc	No

1.2. DESCALING LEVELS

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

(*) 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 L for coffee and 10 L for hot water correspond to the descaling alarm target (18 + 10x3 = 48 L)

1.3. TEMPERATURE TEST

COFFEE DELIVERY: 85 ° ± 3° with temperature set at Normal
If temperature set at High, the value is increased by approx. 2°

Coffee temperature is measured at 10mm from coffee spout outlet while producing a single long coffee and after a preliminary rinse function

HOT WATER DELIVERY: Tea function: approx. 92-95°
Hot water for Americano / Long Black: approx.. 85°

2. TEST MODE

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

a. Set the position of the knobs as follow:

TEST	QUANTITY 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 the on/off key is pushed for more than 5s. Do not release at the first blinking but wait for the 5 seconds.

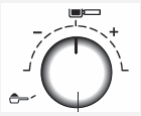
c. To exit from the test mode switch off the coffee machine by the main switch.

2.2. USER INTERFACE TEST

BUTTON SWITCHES TEST

BUTTON SWITCH PUSHED	LEDS STATE				
	x2	RINSE	OK	TEA	MY
x2	ON	OFF	OFF	OFF	OFF
RINSE	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

QUANTITY POTENTIOMETER TEST

KNOB POSITION 	LEDS STATE			
	TANK	GENERAL ALARM	ECO	STEAM
MAX	OFF	OFF	OFF	ON
MEDIUM	OFF	OFF	ON	ON
MIN	OFF	ON	ON	ON
PRE-GROUND	ON	ON	ON	ON

BEVERAGE POTENTIOMETER TEST

KNOB POSITION 	LEDS STATE			
	TAMPER	BEANS CONTAINER	OVERHEATING	DESCALING
DESCALE	OFF	OFF	OFF	ON
COFFEE	OFF	OFF	ON	ON
AMERICANO/LONG BLACK	OFF	ON	ON	ON
ESPRESSO	ON	ON	ON	ON

2.3. FUNCTIONAL TEST

In this mode LEDs Tank, Generic Alarm, Energy Label and Steam are ON

TEST	HOW TO ACTIVATE TEST	NOTE	LED	LOAD STATE						
				PUMP	HOT WATER EV1	WATER EV3	STEAM EV2	HEATER	STEAMER	GRINDER
"STEAM" HYDRAULIC CIRCUIT	KEEP RINSE PUSHED	Water from Steam Spout	Rinse Flash, Others OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
"COFFEE" HYDRAULIC CIRCUIT	KEEP OK PUSHED	Water from Coffee Spout	OK Flash, Others OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
GRINDER	PUSH TEA	Place filter holder under Tamper	TEA Flash, Others 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	ON	OFF	ON 110 °C	OFF	OFF
		PHASE 2	MY Flash, Others OFF	ON	OFF	OFF	ON	OFF	ON 120 °C	OFF
RESET TO FACTORY DEFAULT	PUSH ON/OFF	RESET ALL PARAMETERS TO FACTORY DEFAULT (also reset "first use")								

2.4. LOAD TEST

In this mode LEDs Tamper, Beans, Overheat and Descaling are ON

LOAD	LOAD STATE	LOAD STATE							LED
		PUMP	HOT WATER EV1	WATER EV3	STEAM EV2	HEATER	STEAMER	GRINDER	
STEAMER	PUSH OK	OFF	OFF	OFF	OFF	OFF	ON 120 °C	OFF	OK Flash, Others OFF
PUMP	PUSH TEA	ON	OFF	OFF	OFF	OFF	OFF	OFF	TEA Flash, Others OFF
HEATER	PUSH MY	OFF	OFF	OFF	OFF	ON 110 °C	OFF	OFF	MY Flash, Others OFF
HOT WATER ELECTROV.	PUSH X2	OFF	ON	OFF	OFF	OFF	OFF	OFF	X2 Flash, Others OFF
STEAM ELECTROV.	PUSH X2+MY	OFF	OFF	OFF	ON	OFF	OFF	OFF	X2 + MY Flash, Others OFF
WATER ELECTROV.	PUSH X2+MY	OFF	OFF	ON	OFF	OFF	OFF	OFF	Rinse Flash, Others OFF
GRINDER	PUSH ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	About 18 seconds	

2.5. INPUT TEST

INPUT TEST	LIGHTS TURNING ON	LOGIC
TAMPER	TAMPER	Lights ON when tamper is pressed
FILTER HOLDER (GRINDER SIDE)	ECO	Lights ON when filter holder is placed under grinder side
COFFEE BEANS CONTAINER NOT IN POSITION	GENERAL ALARM	Lights ON when coffee beans container is NOT in correct position
COFFEE BEANS EMPTY	COFFEE BEANS CONTAINER	Lights ON when coffee beans container is empty
STEAM KNOB	STEAM	Lights ON when steam knob is activate (position 1)
DRIP TRAY	OVER HEATING	Lights ON when drip tray is removed
REED (NOT WATER PRESENCE)	TANK	Lights ON when there is NO water

2.6. STATISTICS

- Turn the Knob to select the correct statistics you would like to show, so press OK to show it
- The “x2” LED will flash to separate units, tens, hundreds, thousands and tens of thousands of every statistic.
- Every time “x2” flash, the number of other LEDs ON correspond to the value of that digit
- Therefore x2 will flash 5 times and together the other LEDs represent the values

INPUT STATE FOR SELECTION	STATISTIC
BEVERAGES KNOB ON ESPRESSO  STEAM KNOB OFF	Total amount of beverages (Espresso + Americano + Coffee)
BEVERAGES KNOB ON AMERICANO  STEAM KNOB OFF	Litres for all coffee beverages
BEVERAGES KNOB ON COFFEE  STEAM KNOB OFF	Litres for Hot Water
BEVERAGES KNOB ON DESCALING  STEAM KNOB OFF	NUMBER OF DESCALINGS PERFORMED
STEAM KNOB ON	Water for Steam production (counted in Decilitres)

Example how to read statistics: here below an example of flashing sequence when reading statistics for Number of beverages delivered

First flashing: x2 + 7 LEDs are ON



⇨ UNITS = 7

Second flashing: x2 + 2 LEDs are ON



⇨ TENS = 2

Third flashing: x2 and no other LEDs are ON



⇨ HUNDREDS = 0

Fourth flashing: x2 and no other LEDs are ON



⇨ THOUSANDS = 0

Fifth flashing: x2 and no other LEDs are ON

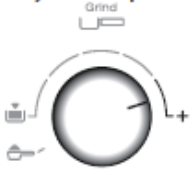


⇨ TENS OF THOUSANDS = 0

⇨ NUMBER OF BEVERAGES DELIVERED = 00027

3. TROUBLESHOOTING

LIGHTS	EXPLANATION OF LIGHTS	OPERATION
All the lights flash briefly	Turning the machine on	Self-diagnosis
 on	Insufficient water in tank or water tank not inserted correctly	Fill the tank or extract the tank and put it back correctly
	Energy saving is enabled	See section "12.5 Energy saving" if you want to disable the function
 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 (A4)
 flashing	The appliance is on and energy saving is enabled. The steam dial (A4) 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
 on	Presser lever (A23) 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 filter holder has been detached from the coffee mill without pressing	Detach the filter holder and press the coffee as described in section "7. Using pre-ground coffee"
	The filter holder has been detached before grinding has ended or pressing has been performed too quickly	Repeat grinding
	The slide of coffee grinder is clogged	Clean as described in section "13.10 Cleaning the "Smart tamping station"" and section "18. Troubleshooting" in correspondence to fig. 50.
	The burrs are blocked by foreign matter	Remove the foreign matter and clean the burrs as described in section "13.8 Cleaning the burrs".
 on	The beans container is empty	Fill the beans container
 flashing	The beans container is not inserted or is not correctly screwed in place, or the selector on the bottom of the container is not in a position from 1 to 6.	Put the beans container in the appliance correctly

LIGHTS	EXPLANATION OF LIGHTS	OPERATION
+ flash briefly at regular intervals	The dial (B2) 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 "12.6 Extra grinding adjustment".
OK flashing	The appliance is too hot to make coffee	Wait for it to cool
on	Descaling must be performed	Descale the appliance as described in section "14. Descaling"
flashing	Descaling is underway	Complete the operation as described in section "14. Descaling"
	Descaling has ended and the dial (B8) is in the "descaling" position	Turn the mode selector dial to one of the "coffee positions"
flashing quickly	The dial (B8) is in the descaling position	Turn the dial to one of the beverage positions
on	The appliance is being turned on for the first time and the water circuit must be filled	Proceed as described in section "3. Setting up the appliance".
+ flashing	If the water softener filter (C6) is present, an air bubble may have been released inside the circuit, obstructing delivery	Press the button (B6) corresponding to the light (fig. 9). Delivery begins and stops automatically.
	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 in section "4.5 Adjusting the quantity of ground coffee in the filter" and table "16. How to make perfect coffee".
flashing	The drip tray (A13) is missing or has not been inserted correctly	Extract the drip tray then put back correctly in the appliance
on	General alarm	Contact Customer Services

LIGHTS	EXPLANATION OF LIGHTS	OPERATION
+ flashing	If the water softener filter (C6) is present, an air bubble may have been released inside the circuit, obstructing delivery	Press the button (B6) corresponding to the light (fig. 9). Delivery begins and stops automatically.
	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 in section "4.5 Adjusting the quantity of ground coffee in the filter" and table "16. How to make perfect coffee".
	The filter is blocked, or the perforated filter is missing	Clean as described in section "13.4 Coffee filter cleaning and maintenance" and make sure the perforated filter is put back correctly
	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 as described in section "14. Descaling"