SEB INTERNATIONAL SERVICE

MANUEL SAV - SERVICE MANUAL

KRUPS

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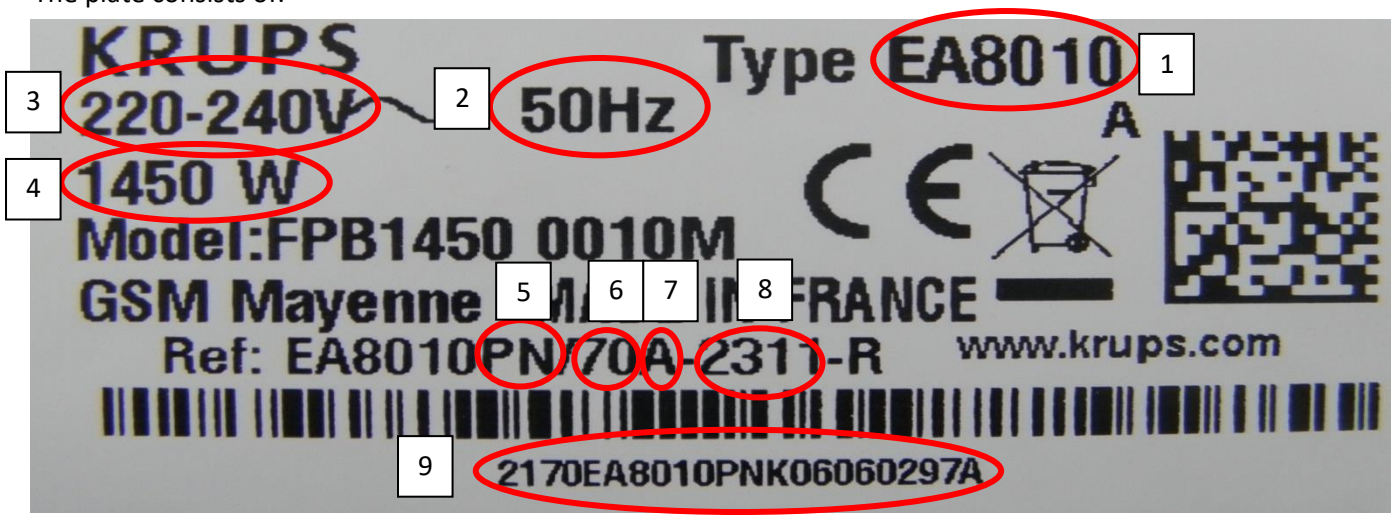
1. Reference range and technical index

Evidence Index 0 and A				
				
	EA890	EA891	EA892	EA893

1.1. Name plate:

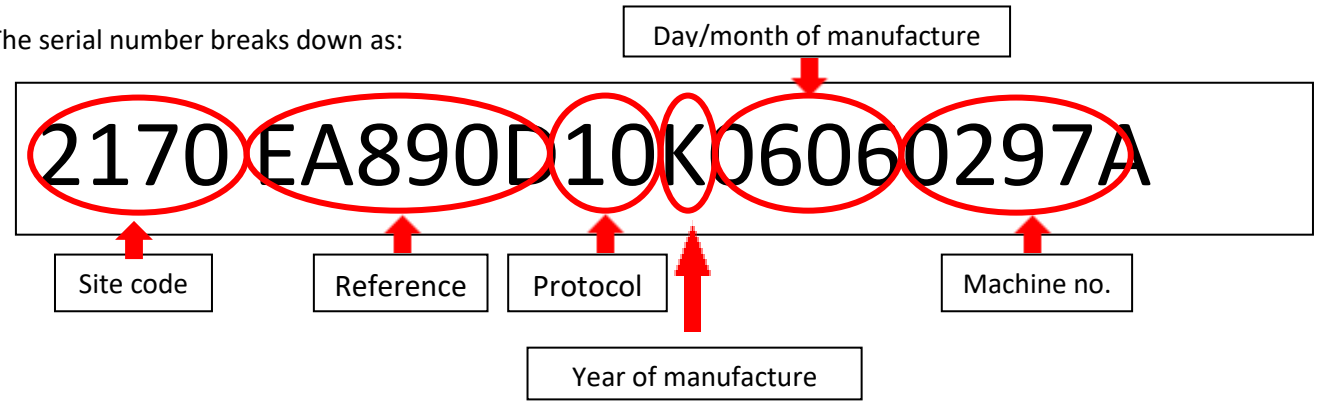
This is at the back of the machine under the water tank.

The plate consists of:



1: Machine reference
2: Frequency
3: Supply voltage
4: Power
5: Protocol
6: Manufacturing site
7: Manufacturing code
8: Date of manufacture (week/year)
9: Serial number.

The serial number breaks down as:



2. Technical data

2.1 Reference values:

First cup 50 ml dark espresso temperature: 70 $^{+/-2}$ °C minimum in T2 (T1=T2-3°C and T3=T2+3°C)

Cappuccino temperature: 60 °-70 °C (with starting milk temperature at 7 °C)

Thickness of ejected cake of coffee grounds: 10-14 mm

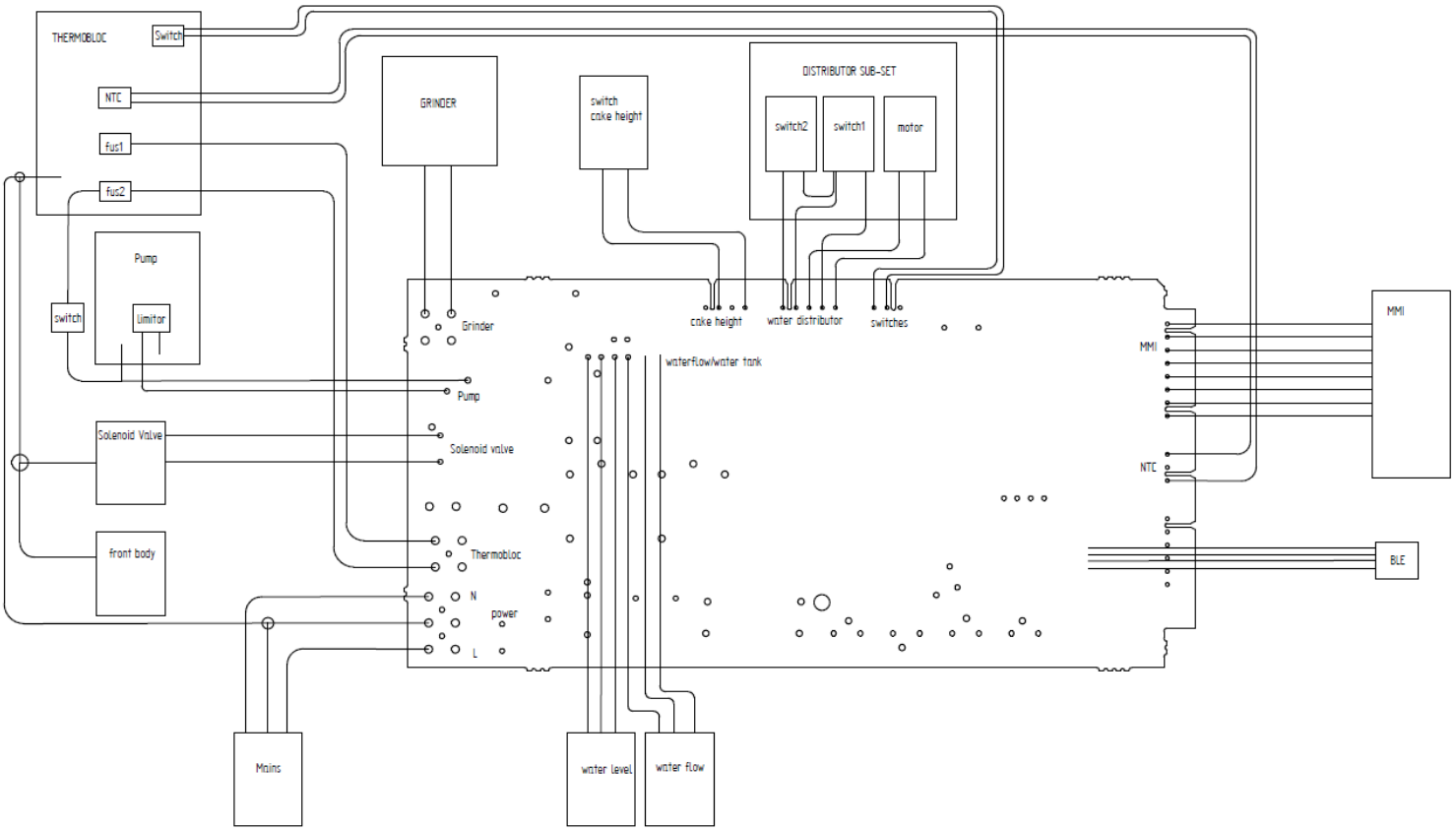
RECIPES	°C	ml			Coffee volume (ml)		Water volume (ml)		frothing time (dry)		Total volume (ml)	
	Extraction T°	Nominal volume	Select Double	Select Dark	min	max	min	max	min	max	min	max
Espresso	T1/T2/T3	50	yes	yes	40	70	-	-	-	-	40	70
Coffee	T1/T2/T3	120	yes	yes	80	180	-	-	-	-	80	180
Tea 1	T'1/T'2/T'3	200	-	-	-	-	20	300			20	300
Tea 2	T'1/T'2/T'3	200	-	-	-	-	20	300			20	300
Tea 3	T'1/T'2/T'3	200	-	-	-	-	20	300			20	300
Ristretto	T2/T3	25	no	no	20	35	-	-	-	-	20	35
Doppio	T1/T2/T3	100	no	no	60	140	-	-	-	-	60	140
Americano	T1/T2/T3	120	no	no	30	30	30	90	-	-	90	230
Cappuccino	T1/T2/T3	50	yes	yes	20	160	-	-	5	60		
Double cappuccino	T1/T2/T3	50 X2	-	yes	20 X2	160 X2	-	-	5	120		
Macchiato	T1/T2/T3	50	yes	yes	20	160	-	-	5	60		
Double macchiato	T1/T2/T3	50 X2	-	yes	20 X2	160 X2	-	-	5	120		
frothed milk	-	-	no	-	-	-	-	-	5	60		
Extra shot	T1/T2/T3	60	-	no	60	60			-	-	60	60
Dark	Max. coffee strength											
Double drink	by pressing twice (only for the main choices)											

T'1/T'2/T'3: temperature settings for tea. They can be set in the menu, Client setting/Setting/Tea temperature.

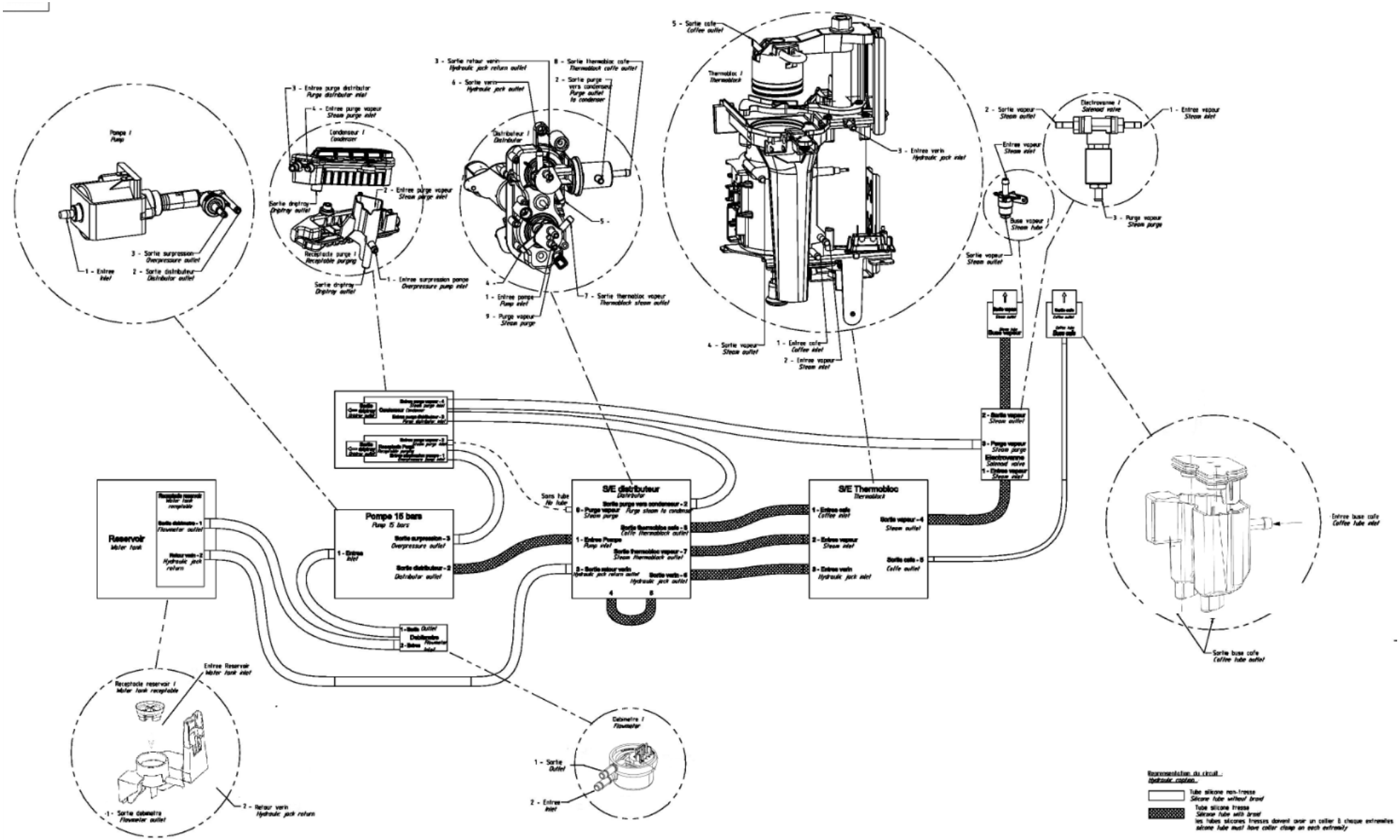
T1/T2/T3: temperature settings for coffee. The can be set in the menu, Client setting/Setting/Coffee temperature

3. Hydraulics and wiring - diagrams.

3.1 Wiring diagram



3.2 Hydraulic diagram:

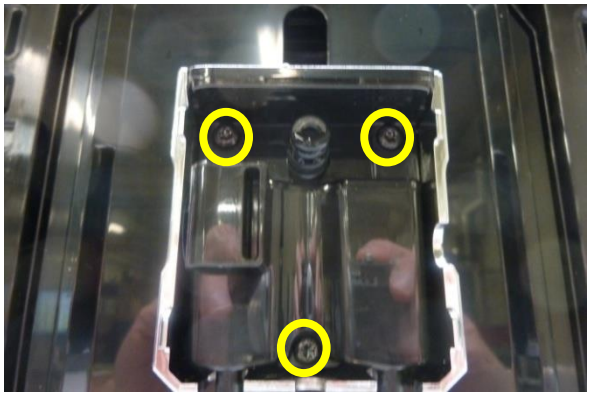


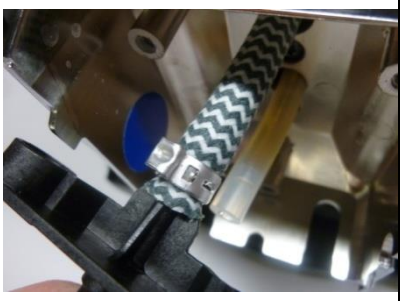
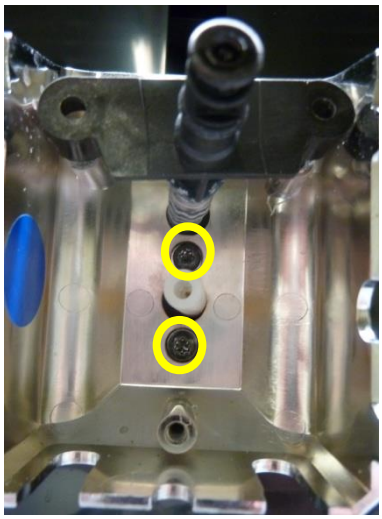
4. Specific dismantling and reassembly

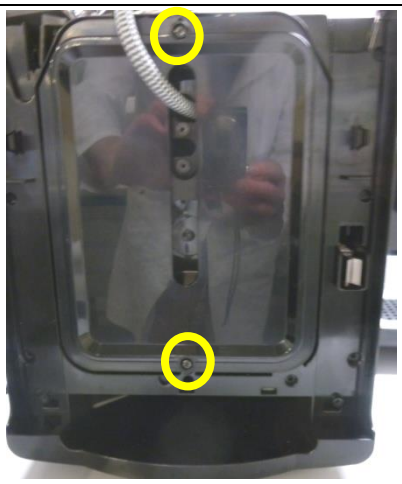
4.1 General dismantling

Tools: Torx screwdriver (T15 & T10)

<u>Removing the front panel:</u> Remove the two (2) screws on the bottom of the front panel.	
Remove the four (4) screws on the coffee bean container and remove the container.	
Disconnect the electronic interface connector to remove the front panel.	

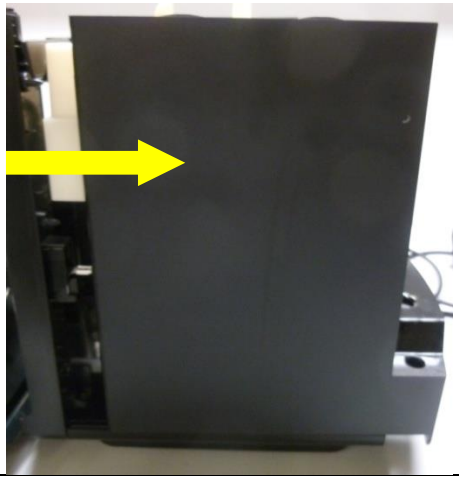
<u>Changing the electronic interface sub-unit:</u> Remove the four (4) screws. Be careful of the wires when replacing.	 
<u>Dismantling the OTC (one-touch cappuccino) nozzle:</u> Slide down to remove the cover over the nozzle. Remove the one-touch cappuccino nozzle Remove the three (3) screws securing the coffee nozzle bracket	  

Dismantle the coffee nozzles sub-unit	
Disconnect the steam and coffee lines During reassembly, be careful to make sure the lines are carefully inserted along their full length and that the flange on the steam line is positioned as close as possible, as shown in the photo	 
Remove the two screws on the bracket	
<u>Removing the top cover of the machine:</u> Remove the three (3) screws	

To unclip, press the two points at the back and lift up the part.	
<u>Removing the guard:</u> Remove the two (2) screws Unclip the two guides	 
<u>Removing the unit:</u> Remove the two (2) screws on the front panel	

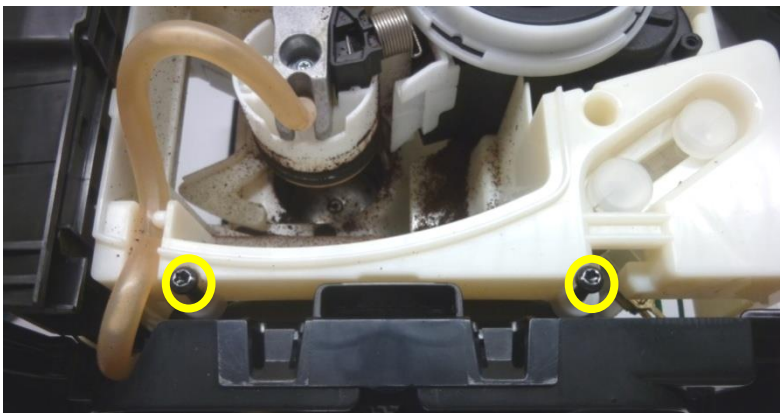
Remove the two (2) screws at the back

Slide the unit back

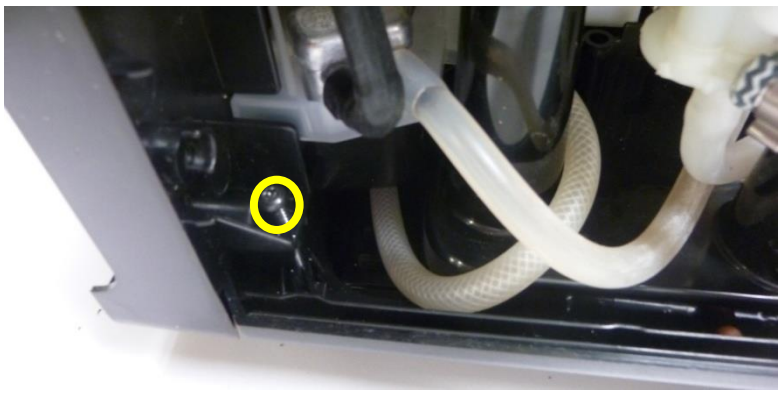


<u>Removing the front cover plate:</u>

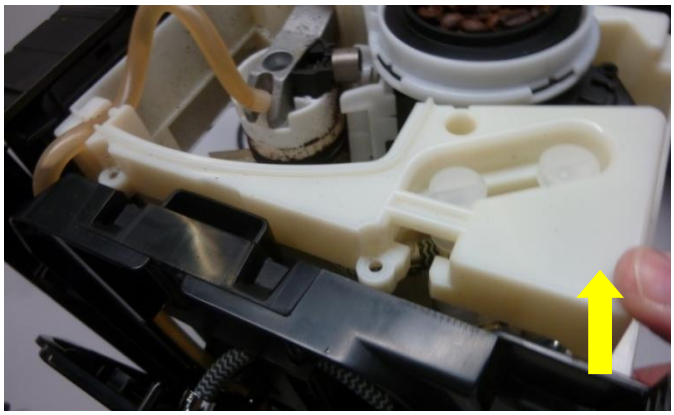
Remove the two (2) screws on the top of the product



Remove the two (2) screws at the bottom of the front panel plate

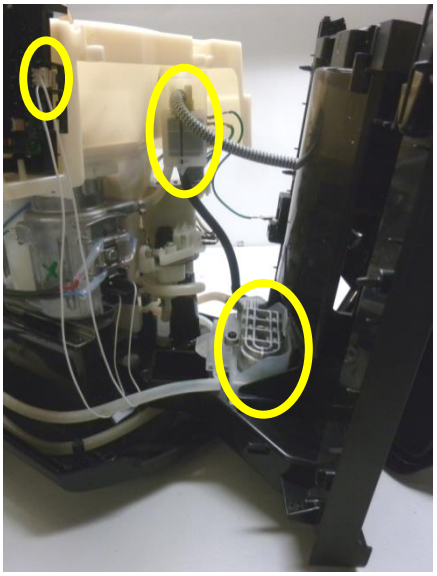


Open the front panel by lifting the grinder plate and disconnecting the coffee line.



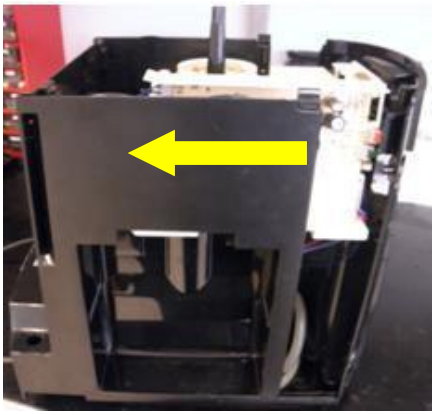
Now you have access to the various parts:

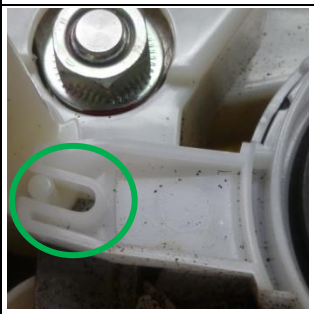
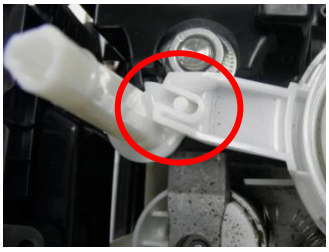
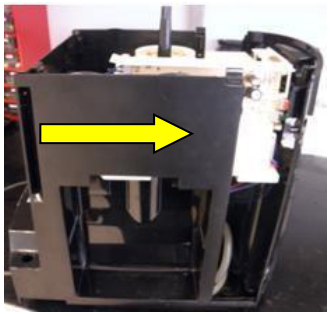
- CTN connector on the electronic board
- Condenser
- Solenoid valve



4.2 Grinder

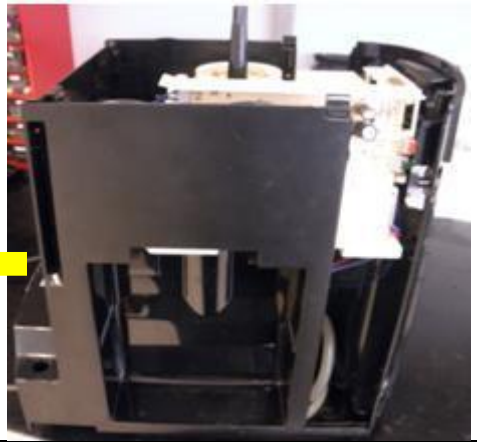
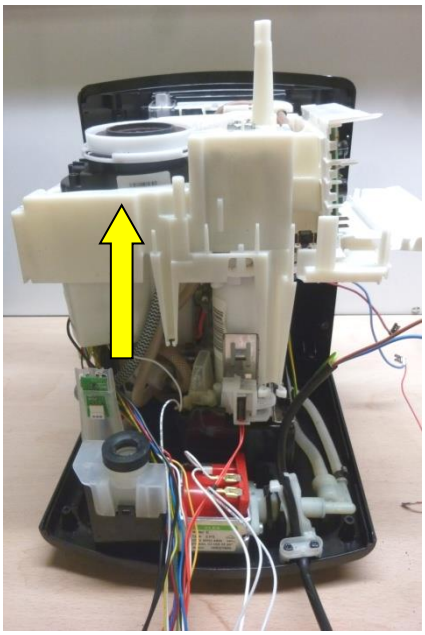
Tools: torx screwdriver (T15)

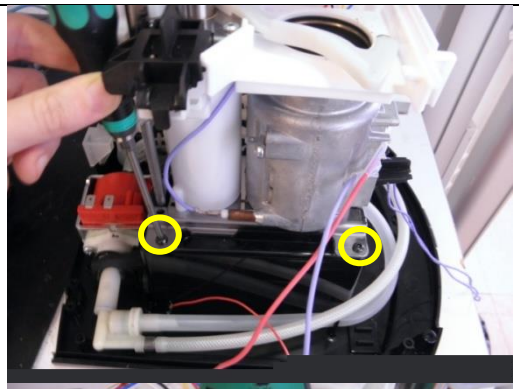
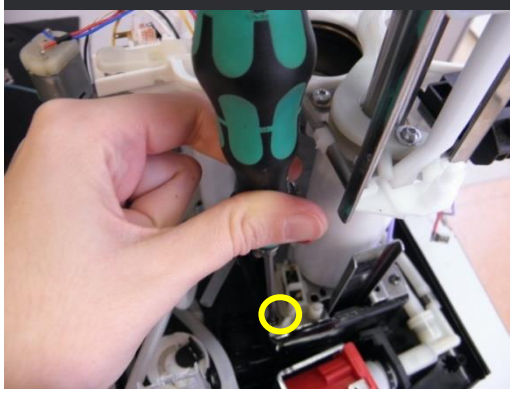
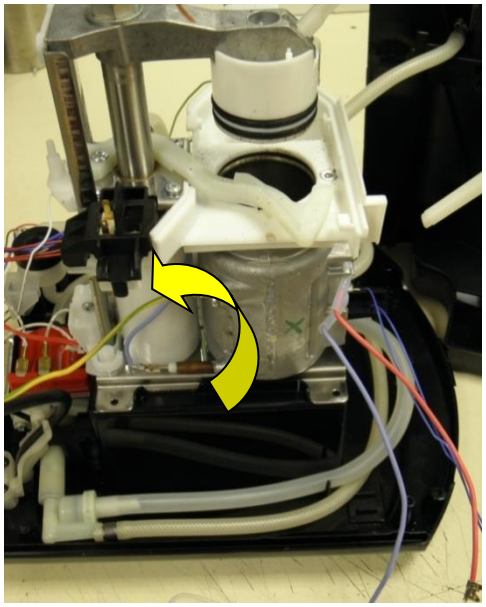
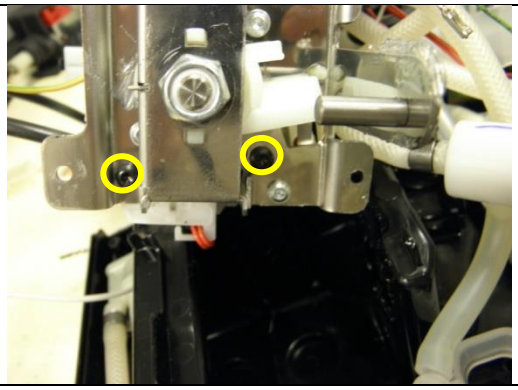
Remove the protective housing	
Use a screwdriver to remove the cap on the grinder (see photo)	
Unscrew the two (2) screws on the grinder	
Disconnect the grinder connector (black wires)	

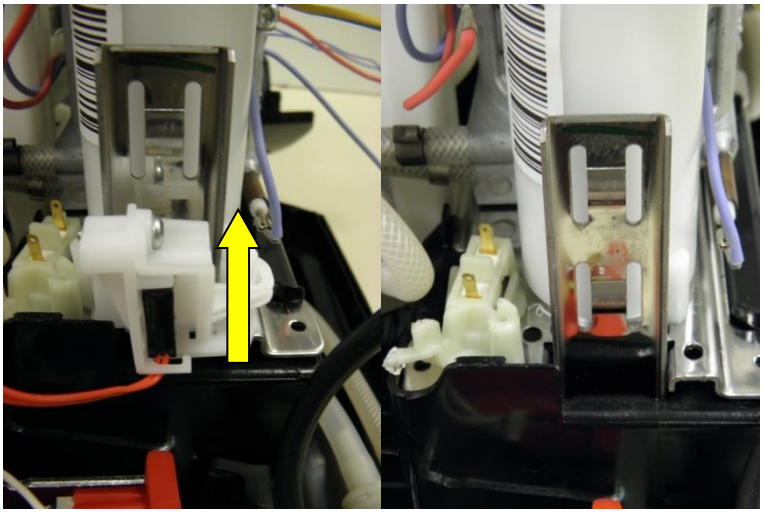
Replace the grinder **IMPORTANT NOTE**: first remove the old grinder, then the spring backing (unclip it). This will free up room to put in the new grinder. Be careful not to crease the foil on the bottom of the chute. Put back the backing and the spring. **After replacing the grinder:** **run a full calibration**	
The white tab aligned with the black rib and the grind set to coarse. Clip the cap on after checking these two points	  **OK**   **NOK**
Reconnect the new grinder. The grinder wire must be passed through	
Replace the housing	

4.3 Cake height switch sub-unit

Tools: torx screwdriver (T15)

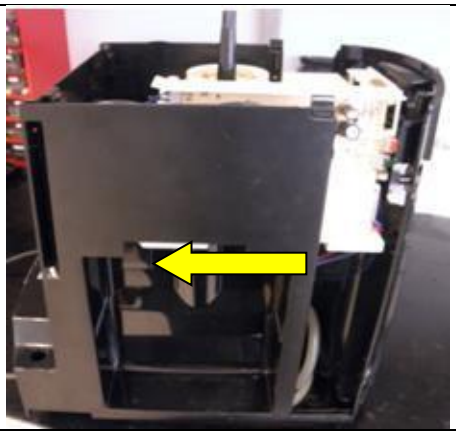
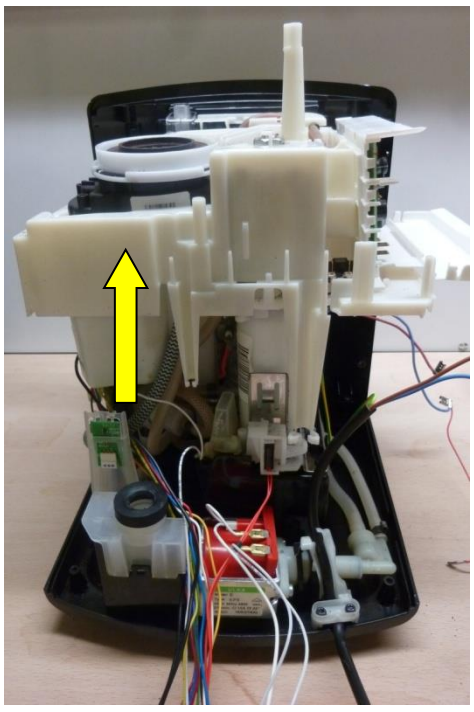
Remove the protective housing	
Disconnect all the wires from the board	
Release the wires and lift up the grinder bracket to remove it	

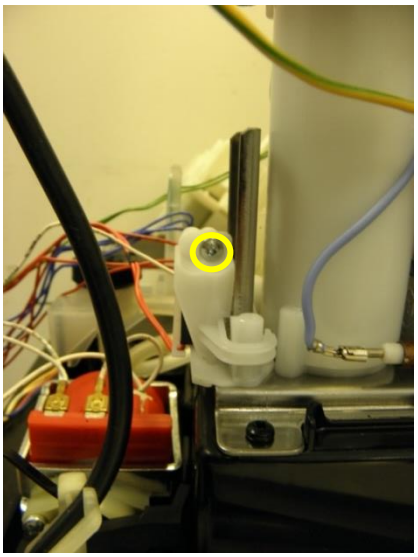
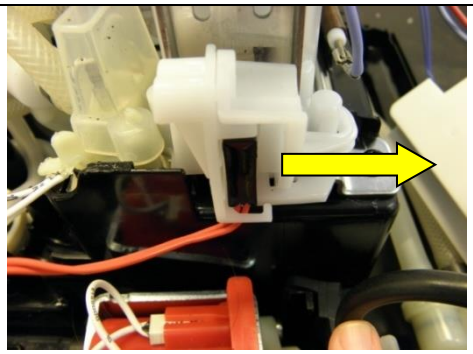
Unscrew the three (3) screws from the thermoblock and tilt it backwards	  
Unscrew the two (2) switch screws	

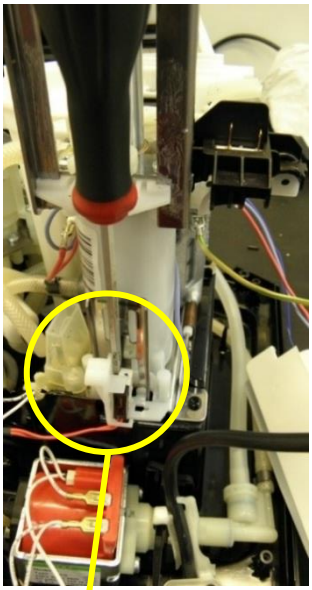
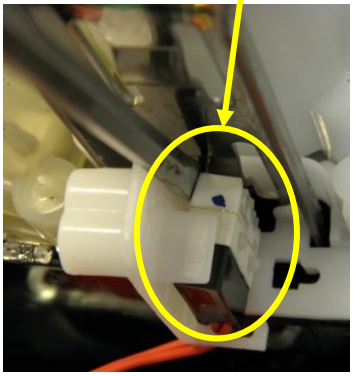
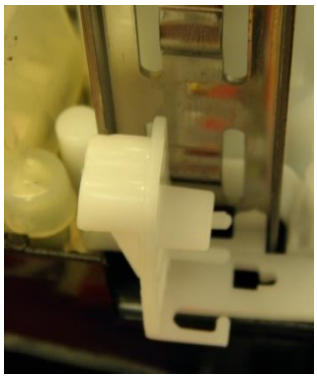
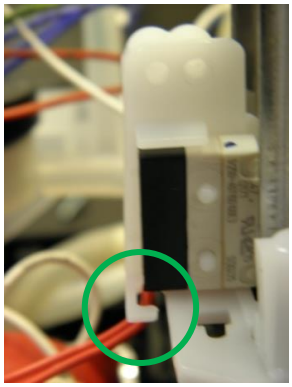
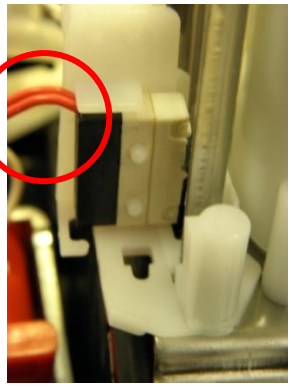
Slide the switch up	
Replace the switch and repeat the same steps in reverse order to reassemble the unit.	
Calibrate the machine (see the instructions in the DVD)	

4.4 Single cake height switch

Tools: torx screwdriver (T15 & T10)

Remove the protective housing	
Disconnect all the wires from the board	
Release the wires and lift up the grinder bracket to remove it	

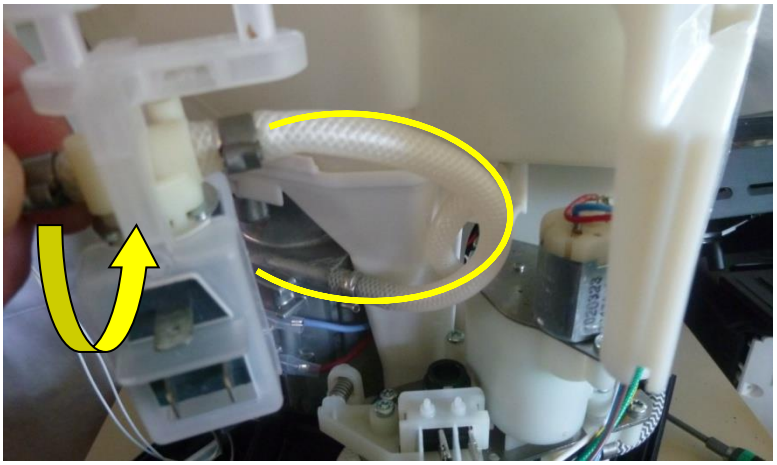
Loosen the retaining screw	
Tilt the right-hand part of the switch plate to the right	

Take out the switch (use a flat screwdriver)	  
Repeat the same step in reverse to reassemble the unit **IMPORTANT NOTE**: Be sure the switch is right side up (wires at the bottom)	 **OK**  **NOK**

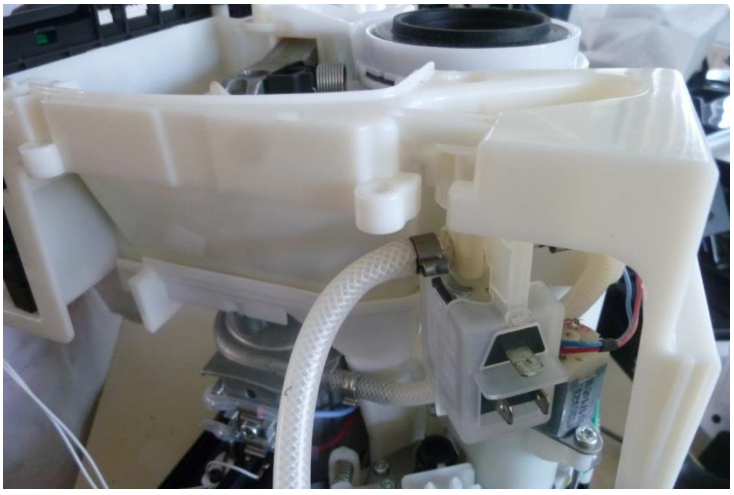
4.5 Solenoid valve:

Be careful to follow the bends and loops of the lines when replacing the solenoid valve:

Position the solenoid valve upside down and keep the line straight to connect the thermoblock line to the solenoid valve.

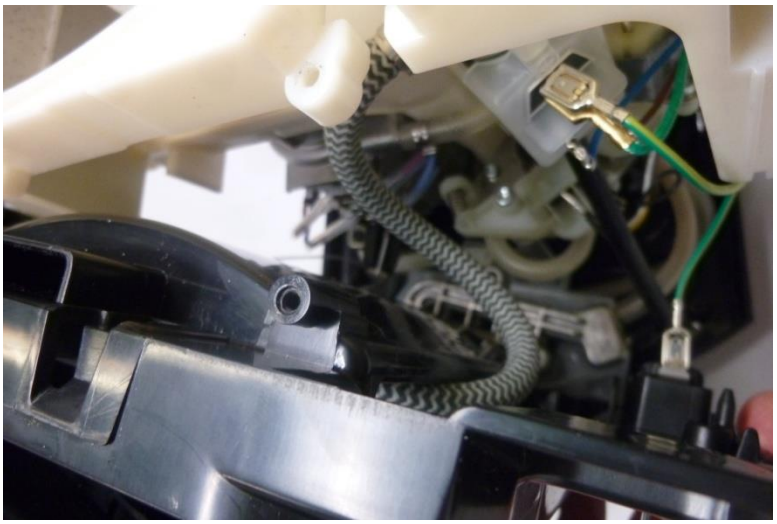


Turn the solenoid valve to position it on the base and create the loop on the line (to prevent kinks).

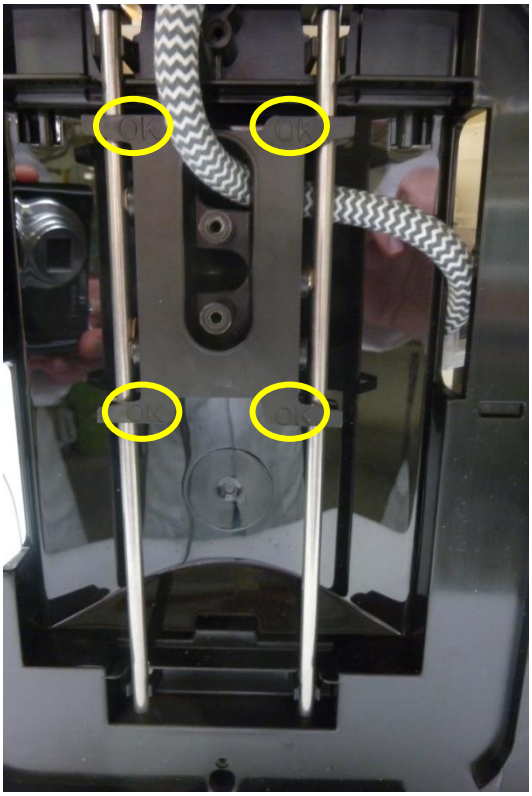


Line between the solenoid valve and the steam nozzle:

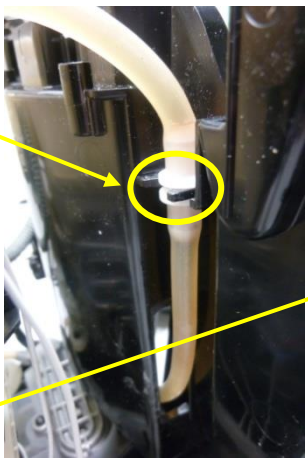
The line is connected to the solenoid valve.
It should be looped and then come out through the slot. It should point upwards.

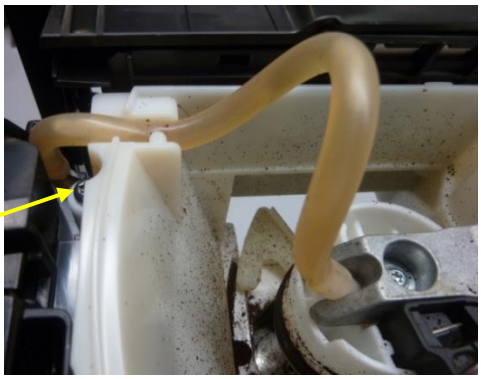


Replace the guides. Be careful they are right side up (OK mark must be legible). Then thread the steam line through the top guide.



Reconnect the coffee line.
Place the coffee line connection in the housing on the front panel plate.





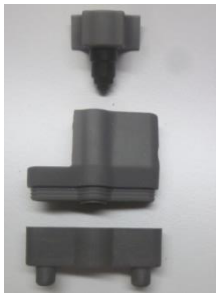
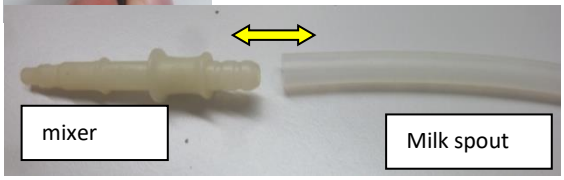
Place the line in the notch with the shortest part on the nozzle side, then form a loop on the tamp head side

Replace the guard
Replace, reconnect the lines, replace the screws on the nozzle sub-unit and tighten.

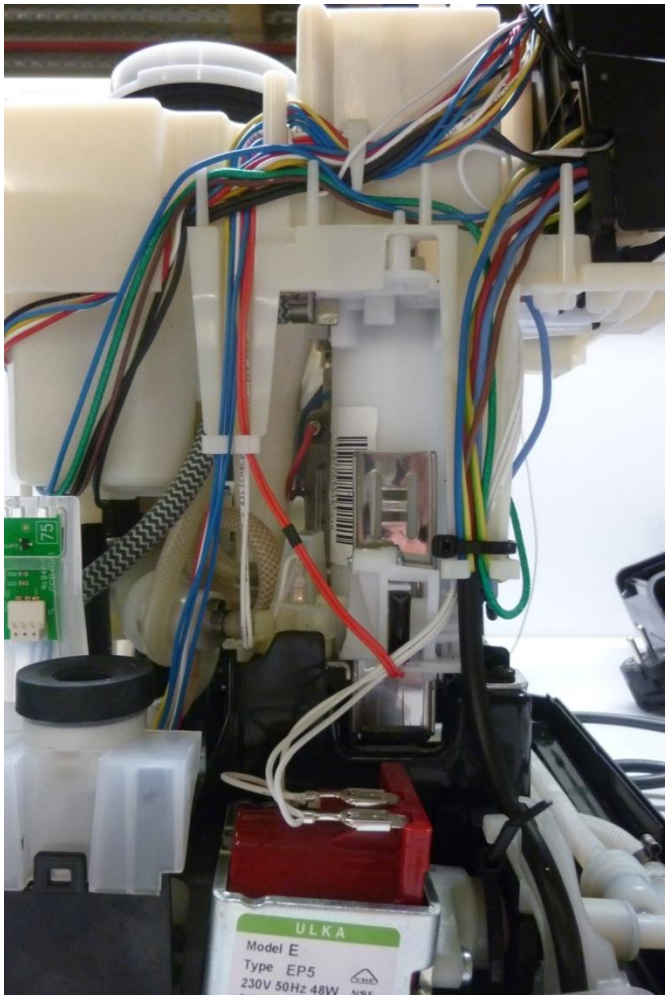
IMPORTANT NOTE: Keep the head up. Then and only then, clip the line into the notch of the front panel plate, keeping enough line length to move the head.

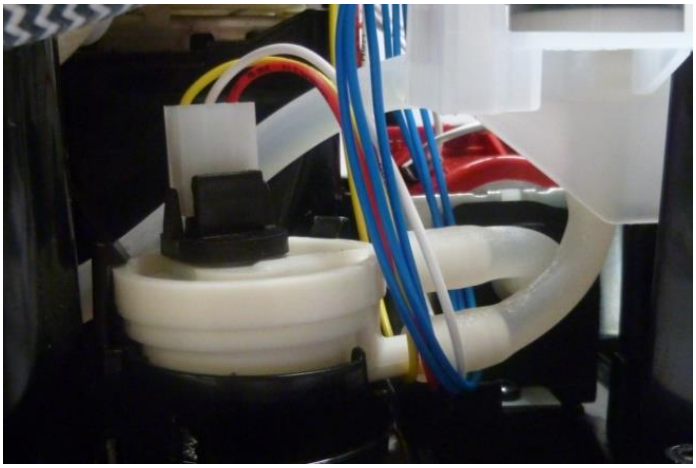
5. Cleaning the “one-touch cappuccino” sub-unit:

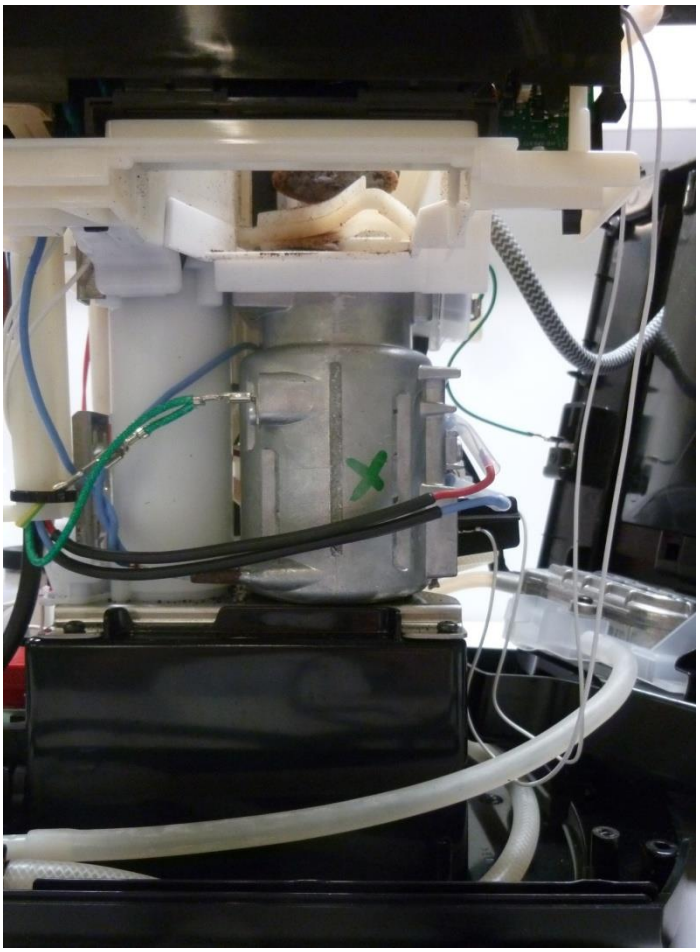
Stages:

Remove the mixer and the milk spout from the block.	
Slide down to remove the cover over the nozzle.	
Take out the one-touch cappuccino sub-unit	
Dismantle the OTC system	 
Unscrew the plastic end piece using the tool provided.	
Use the needle provided to unplug the hole in the plastic end piece.	
Make sure the seal is still in place on the plastic end piece when reassembling.	
Remove the milk spout mixer. Rinse the milk spout.	
Clean the parts with soap and water and rinse under the tap with hot water.	
Dry the parts and reassemble the block.	

6. Wiring channel/Routing the wires:







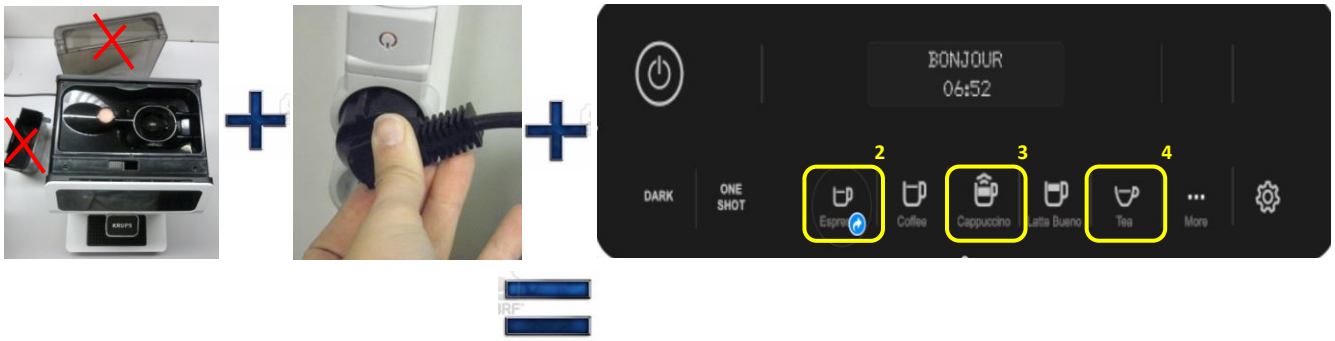
7. Replacing the distributor: see instructions for the distributor

FYI: when changing a distributor, there is a spring on the line between the distributor base and the thermoblock.
Remember to put back this spring before replacing the distributor:

8. After-sales (A/S) mode

8.1. Accessing A/S mode:

To access A/S mode, remove the cake bin and the tank and connect the plug to the power. Then press and release keys 2 - 3 - 4 (espresso, cappuccino and tea). The system displays the “Hello” message.



A dropdown menu appears with a number of options:

INFORMATION - CONNECTION - AUTOTEST - GRINDER - CALIBRATION - HEATING

8.2. Information in the “Information” sub-menu:

A/S ID		Description
1	VMMI	Man-machine interface board version
2	VPOWER	Power board version
3	LAST DEFECT	Last defect recorded / Total of coffee recipes at time of defect
4	LAST DEFECT -1	Second-last defect recorded / Total of coffee recipes at time of defect
5	LAST DEFECT -2	Third-last defect recorded / Total of coffee recipes at time of defect
6	LAST DEFECT -3	Fourth-last defect recorded / Total of coffee recipes at time of defect
7	NDDISPOS - Defect 1	Nbr distributor position defect (Defect 1)
8	NDPRIMIN - Defect 4	Nbr filling defect
9	NDFLMET - Defect 5	Nbr flowmeter defect
10	NDLEAKA - Defect 6	Nbr hydraulic leak defect
11	NDOBSTAC - Defect 7	Nbr block up of going down jack defect
12	NDCOFCIR - Defect 8	Nbr coffee circuit defect
13	NDNTC - Defect 9	Nbr. NTC defect
14	NDHEATIN - Defect 10-OA	Nbr heating function defect
15	NDEJECTB - Defect 12	Nbr ejection defect (blocking)
16	NDEJECT - Defect 13	Nbr ejection defect
17	NDWCAL - Defect 14	Defect during calibration process - wrong calibration
18	NDCAKEM - Defect 15	Defect during calibration process - wrong cake measurement
19	NDWCOFBM - Defect 16	Defect during calibration process - wrong coffee bean presence measure
20	NDPCBCOM - Defect OC-OE	Nbr electronic board communication defect
21	NDAIRJACKB - Defect 63	Nbr air defect (confirmed) in the jack
22	NDAIRJACK - Defect 64	Nbr air defect (non confirmed) in the jack → the no. is not displayed
23	NCTOTALR	Nbr recipes
24	NCESP	Nbr Espresso (NCESP +1, NCDESP + 0)
25	NCDESP	Nbr Double Espresso (NCESP +2, NCDESP +1)
26	NCCOF	Nbr long coffee (NCCOF +1 , NCDCOF +0)
27	NCDCOF	Nbr double long coffee (NCCOF +2 , NCDCOF +1)

28	NCCAPPU	Nbr cappuccino (NCCAPPU +1 , NCDCAPPU +0)
29	NCDCAPPU	Nbr double cappuccino (NCCAPPU +2, NCDCAPPU +1)
30	NCLATTE	Nbr of good lattes (NCLATTE +1, NCDLATTE +0)
31	NCDLATTE	Nbr of good double lattes (NCLATTE +2, NCDLATTE +1)
32	NCTEATEMP1	Nbr green tea (counter 1 recipe)
33	NCTEATEMP2	Nbr black tea (counter 1 recipe)
34	NCTEATEMP3	Nbr herbal tea (counter 1 recipe)
35	NCRIST	Nbr Ristretto (counter 1 recipe)
36	NCDOPPIO	Nbr doppio (counter 1 recipe for 2 grindings)
37	NCAMERI	Nbr Americano (counter 1 recipe)
38	NCLMOUSS	Nbr frothed milk (counter 1 recipe)
39	NCEXTRA	Nbr extra shot (independent counter included in the recipe)
40	NCDARK	Nbr dark
41	NCRINSEMILK	Nbr milk rinses → does it have this function?
42	NCAKE	Nbr cakes in the container
43	NCCOFLCLEAN	Nbr coffee since the last cleaning
44	NCCLEAN	Nbr cleaning
45	NCLEANMILK	Nbr full cleaning of milk container
46	NCWAVLDESCAL	Nbr cycles hot water and steam since the last descaling
47	NCDESCAL	Nbr descaling
48	NCRINSIN	Nbr rinse
49	NCCLEANA	Nbr alarms cleaning differed
50	NCDESCAA	Nbr alarms descaling differed
51	VAAUTOFF	Setting Auto Off
52	VAAUTOON	Setting Auto ON
53	VAHARDWA	Water hardness setting
54	VATCOFF	Temperature level setting
55	VACONTRAST	Contrast LCD setting

56	DFILTER	Date filter changed
57	NCCOFSWDE	Nbr of coffees until the first switch defect
58	RMEANSAV	R MEAN adjustment during calibration process
59	NDSWITCH	Nbr of switch defect
60	SCALIBRATION	CALIBRATION Hcake b
61	PULSE 1	
62	PULSE 1 (-1)	
63	PULSE 1 (-2)	
64	T1	Time for Pulse 1
65	T1 (-1)	Time for Pulse 1 (-1)
66	T1 (-2)	Time for Pulse 1 (-2)
67	PULSE 2	
68	HMINST	
69	HMINST-1	
70	HMINST-2	
71	HTINST	
72	HTINST-1	
73	HTINST-2	
74	RINST	
75	RINST-1	
76	RINST-2	
77	RMEAN	
78	RMEAN-1	
79	RMEAN-2	
80	RCALC	
81	RCALC-1	
82	RCALC-2	
83	NCCAKEEMPTY	

84	NCCAKELARGE	
85	NCDEBCUVE	
86	NCBLOCCOMP	
87	NCHCDESAC	cake height offset disable counter
88	GRAINSHORT	
89	HMHPBEAN	Height of the coffee bean presence
90	SCOFDRA	Coffee drawer version
91	SHCMV	Height of cake of 2nd coffee during manufacturing calibration
92	NCAFEON	Coffee meter to manage coffee temperature
93	DEBITCAFE	Last coffee flow rate recorded
94	DEBITCAFE-1	Second-last coffee flow rate recorded
95	DEBITCAFE-2	Third-last coffee flow rate recorded
96	REFMACHINE	Machine ref. (serial number, according to version)
97	VALCORTEMPVAPEUR	Value of steam temperature adjustment

8.3. Connection sub-menu:

Activate machine Bluetooth:
Use this sub-menu to enable or disable Bluetooth. (Bluetooth is enabled by default).
The Bluetooth LED on the front panel of the machine does not come on, either with the function enabled or disabled.
The Bluetooth LED only comes on when the machine is paired with a phone.

Check Bluetooth:
From your telephone (see instructions for compatibility information), check that the machine BLE is enabled.
If the machine appears on the list of devices on the phone, the machine's Bluetooth is working.

Pairing with the machine:
Go to the KRUPS application and start pairing (see instructions).
Follow the instructions on the phone.
When asked if you want to pair the device, the BLE indicator flashes and a message displayed on the machine asks you to confirm the pairing. → OK
Confirm pairing on your telephone screen. →Pair.
Repeat if the process fails.
If successful, the Bluetooth symbol lights up on the machine.

8.4. Autotest sub-menu:

Use this sub-menu to start Autotest (a cleaning + coffee run-off cycle) and display the codes of any faults found during the autotest.

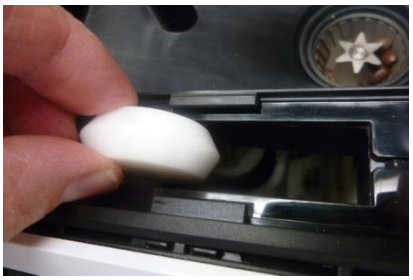
You need water in the machine and the cake container to start this cycle.

8.5. Grinder sub-menu:

Use this sub-menu to start an 8-second grinding cycle.

8.6. Calibration sub-menu:

The machine must be calibrated when the power board, grinder or thermoblock are replaced.

Place the gauge block in the percolating tank: To do this, remove the coffee bean container (unscrew the four (4) screws).	
Slide the spout of the cleaning capsule to the left	
Take out the spout of the cleaning capsule.	
Check that the tank is clean and that there are no coffee grinds. You can now put the gauge block in the percolating tank.	
All accessories (cake container and water tank) must be in place. Replace the coffee bean bin and put in coffee beans. Place a container under the nozzle before starting the calibration process.	

Start the calibration cycle: Go to the Calibration sub-menu and follow the instructions on the display When the calibration process is complete, the system displays “Calibration OK” or a fault message.	

8.7. Heating sub-menu:

Steam temperature settings:

The thermoblock is adjusted according to how efficient the steam is.
You can compensate for the thermoblock by increasing or decreasing the steam setting.
There are two increments in either direction (up or down).

Offset	Steam impact (temperature adjustments)
++	Correction Tx
+	Correction Tx
0	0
-	Correction Tx
--	Correction Tx

If replacing the thermoblock, the repair technician sets the correction value to 0.
Faulty foaming (starting, spitting): set the correction to ++.

9. Analysing the faults logged

Fault index	Description	order of priority	parts to check
1	Distribution position fault: The maximum distributor command time is reached and no notch was detected	1	Distributor
4	Starting fault: Pump operation = 5 sec and vol. < 10ml	1	Claris filter
		2	Flow meter
5	Flow meter fault: Pump on and zero flow	1	Flow meter
		2	Pump
		3	Disconnected pipes
6	Leak fault in the water circuit on the jack down stroke: Flow rate >50ml/min and measured vol. > 80ml	1	Distributor
		2	Thermobloc
		3	pump valve
		4	Leaky pipe
7	Jack blockage fault: Flow rate < 50ml/min and measured vol. < 25ml	1	Claris filter
		2	Flow meter
8	Circuit fault - coffee blocked: After pouring for 5 seconds, flow rate < 80ml/min	1	Thermobloc
		2	Leaking pipe
		3	Grinder (too fine a grind)
9	CTN fault: temperature too low or too high relative to a given heating time	1	Thermobloc
		2	tamping head seals missing and / or faulty
		3	heat fuse malfunction
12	ejection problem (4 times fault No. 13)	1	See fault 13
13	Ejection fault: no pulse from the eject switch on the jack up stroke	1	Thermobloc
		2	
14	Calibration with gauge block fault: gauge cake missing or calibration switch problem	1	No 12 mm gauge cake
		2	Cake height switch
15	Calibration fault in empty tank or during the 2nd test coffee: wrong flow meter pulse pulse or calibration switch problem	1	Flow meter
		2	Cake height switch
16	Calibration fault when measuring the height of the empty tank: the measured height of the empty tank is not between 6 mm and 9.6 mm	1	Cake height switch
0A-10	Heating resistance fault: heating was turned on, but the temperature did not rise within a given time	1	Thermobloc
		2	Red and/or blue fuse wire
0C-0D-0E	Communication error between the power card and display card	1	The electronic cards are not compatible
64	Jack air fault: fault in reading the flow meter speed during the jack down stroke, the rotation speed of the flow meter slowed down for 8 seconds.	1	Remove the Claris cartridge. Rinse
		2	Replace the flow meter
63-3F	Jack air fault confirmed (2 x fault 64)	1	See fault 64