



Electrolux

ELECTROLUX HOME PRODUCTS PTY LTD

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ELECTROLUX / AEG

***BUILT IN
COFFEE MACHINE***

DIAGNOSTIC MANUAL

MODELS:

EBA63810X

PNC: 942492409

PE3820-M

PNC: 942492415

PE4521-M

PNC: 942492451

PE4551-M

PNC: 942401210

PE4571-M

PNC: 942401217

Index:

Description	Page N°
Electrical Safety Work Practices	3
Positive Lock Terminals	3
Technical Specifications	4
Taking too long to heat - Coffee temperature not hot enough	5 & 6
Insufficient or no milk frothing	7 & 8
Milk Frothing Valve Replacement	9 to 13
Ground too fine, adjust mill/grinder	14 to 17
No hot water delivery	18 & 19
General Alarm	20 to 25
Drive Motor Not Working	26 & 27
Access to lower limit switch	28 to 30
Water flow Diagram	31
Circuit Diagram	32 to 34

Safe Electrical Working Practices:

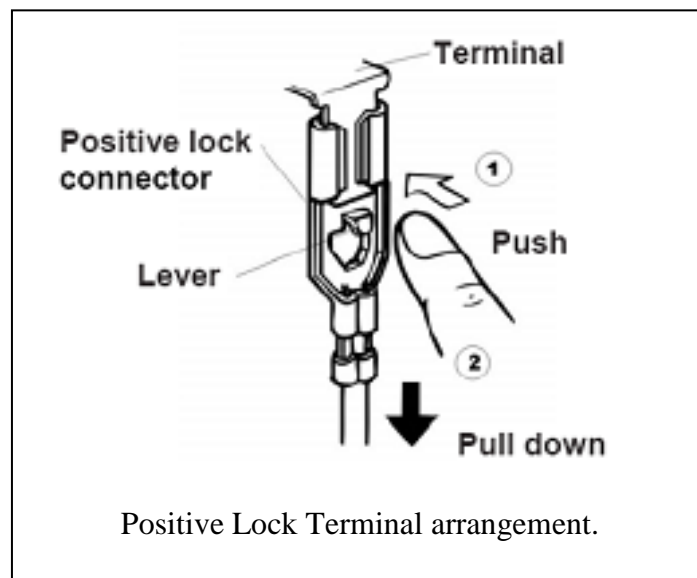
- Remove **Power cord, Fuse or Switch** off the **circuit breaker**.
- Always check appliance with multimeter to ensure the **supply power** is disconnected.
- Use only insulated tools & equipment.
- Wear insulated shoes.
- No water on the floor or working space.
- Reduce the amount of exposed skin, by covering your arms and legs.
- Remove jewellery (Rings, Watches etc).
- It is essential that you conform to all “Working Live” and “Risk Management” statutory requirements.

Positive Lock Terminals:

The indoor & outdoor PCB's are fitted with “Positive Lock Terminals”.

To remove Positive Lock Terminals: Push the lever forward & lightly pull down on the terminal.

Note: When reconnecting the Positive Lock Terminal, connect it so that the lever faces towards the front of the unit.



Technical Specifications:

Voltage	220 - 240 V 50 Hz
Mx. input power	1350 W

COFFEE SECTION

Coffee temperature probe	98 °C	
Hot water temperature probe	98 °C	
Thermal fuse TCO	192 °C	
Heating element	600 + 600 W	
Pump	Type Power	ULKA EP5 48 W

STEAM SECTION

Steam temperature probe	145 °C
Thermal fuse TCO	318 °C
Heating element	1000 W

Fault:

Taking too long to heat.
Coffee temperature not hot
enough.

Measure the temperature of the water/coffee coming out of the spout.

Note: water temperature should be 78°C +/- 3°C.

If the water/coffee temperature is below the above range, conduct the following:

- Perform Descalc function.

Note: Deposits (calcium etc) can build up within the water circuit, affecting the efficiency of the heating components.

- Check the boiler for correct operation.

Disconnect the **supply power** to the coffee machine & remove the two spade terminals from the top boiler. Then measure the **resistance value** of the top internal element.

Note: This boiler has two separate 600 watt elements fitted to it.

To gain access the secondary or bottom element.

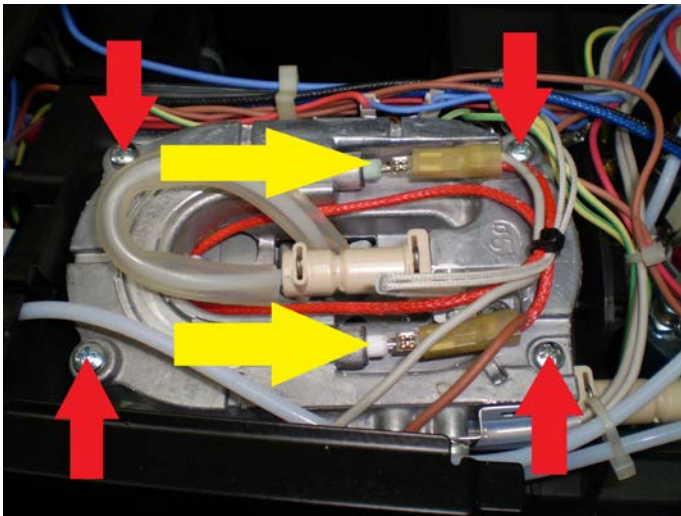
Remove the two terminals from the boiler to the main PCB & the two connected to the top boiler element. This will allow you to isolate the secondary element.

Then check for **continuity** across the two female spade terminals which would normally connect to the top boiler element.

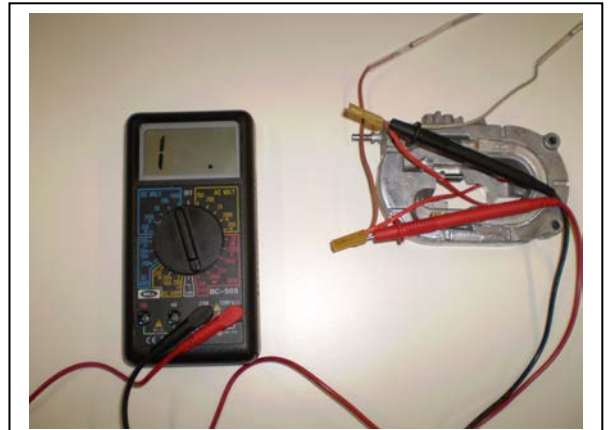
Note: Both bottom & top boiler element should be a “closed circuit”.

If the top or bottom elements are open circuit, replace the boiler assembly.

Refer page **25** for boiler element removal method.



Boiler top element terminal points & bolt locations.



Secondary element test points

Fault:
Insufficient, or no milk frothing.

Turn the coffee machine on & insert the milk jug into position.
Press the clean button, while allowing the “cleaning” process to complete.

If this has not rectified the issue, perform a descale procedure to clear and clean the relevant internal milk frothing components.

If this has not rectified the issue, please conduct the following:

- Replace the complete milk frothing lid assembly.
- Replace the two O-ring seals located on the milk jug coupling.

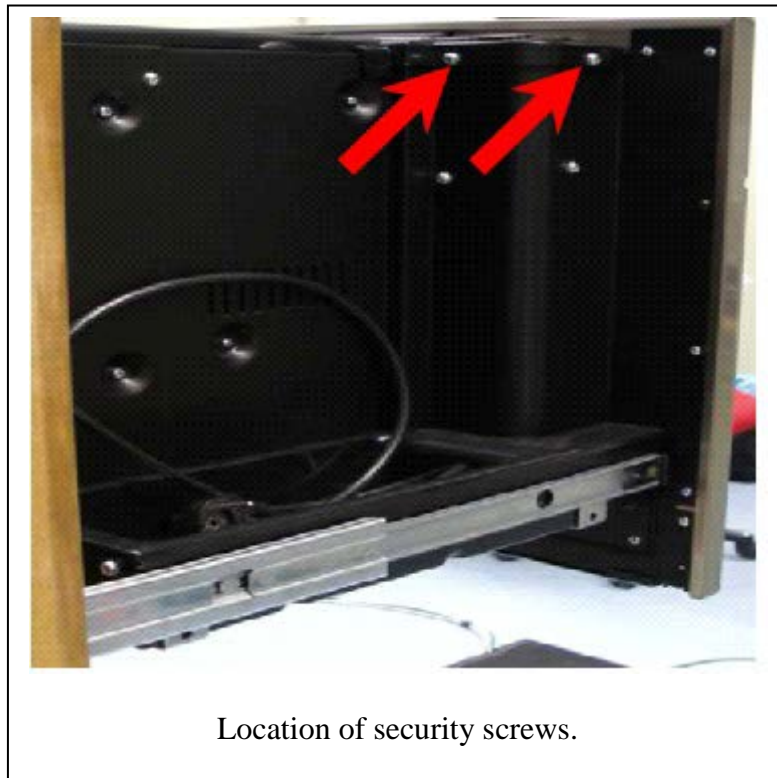
If this has not rectified the issue:

- Replace the milk frothing valve as illustrated on the following pages.

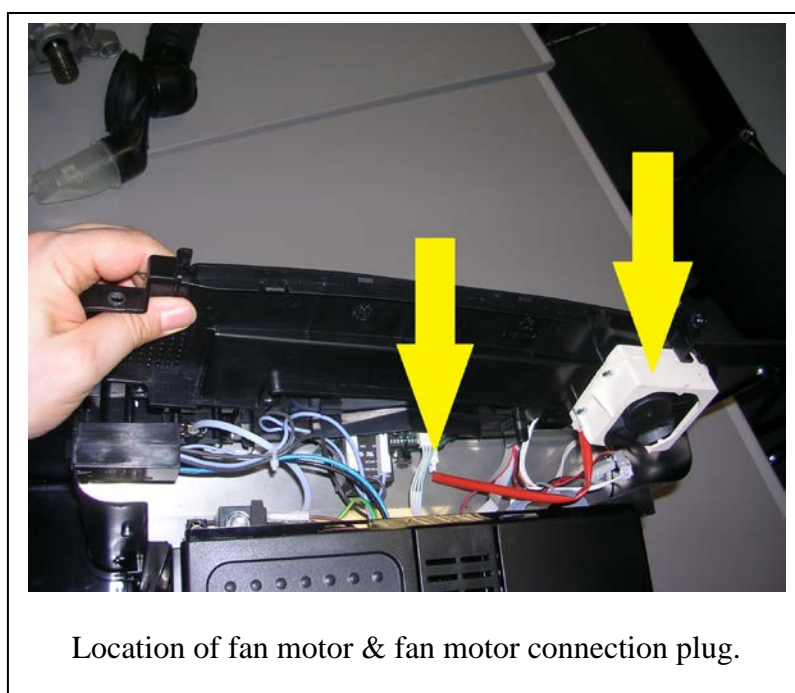


Milk Frothing Valve Replacement.

- # Disconnect the supply power & slide the complete assembly forward on its side runners.
- # Remove the four security screws, (two on each side) on the top edge of the control panel cover.



- # Lift the control panel cover away from the machine ensuring the connecting harness from the fan motor is disconnected from the control PCB.



Milk Frothing Valve Replacement continues:

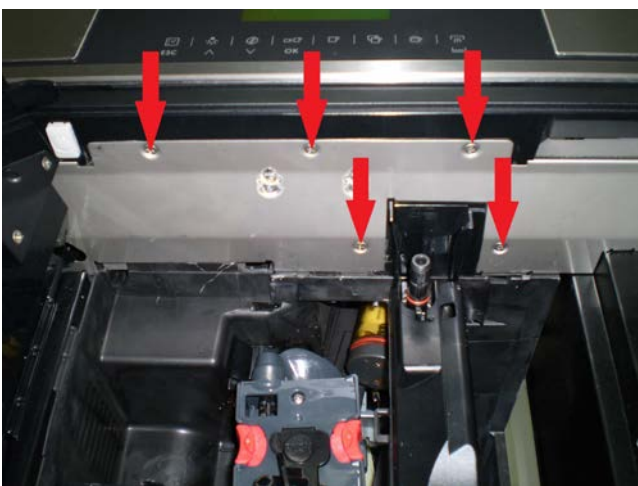
Remove the five underside screws supporting the stainless panel into position.

Remove the four security screws (two on each side) supporting each side of the stainless panel into position.

Remove the two right angled screws, which are located in behind the control panel (one on each side).

As illustrated by the yellow arrow.

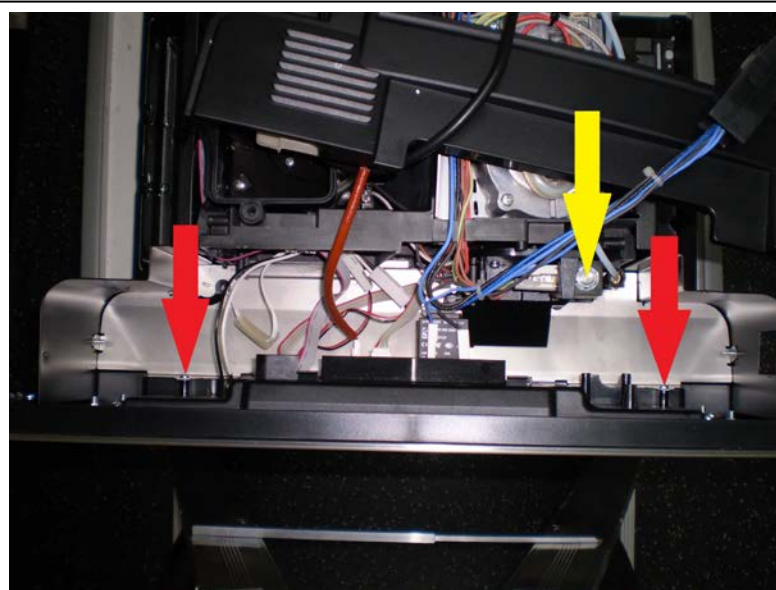
Note location of milk frothing valve.



Location of underside supporting screws.



Location of security screws.



Location of right angled screws & milk frothing valve.

Milk Frothing Valve Replacement continues:

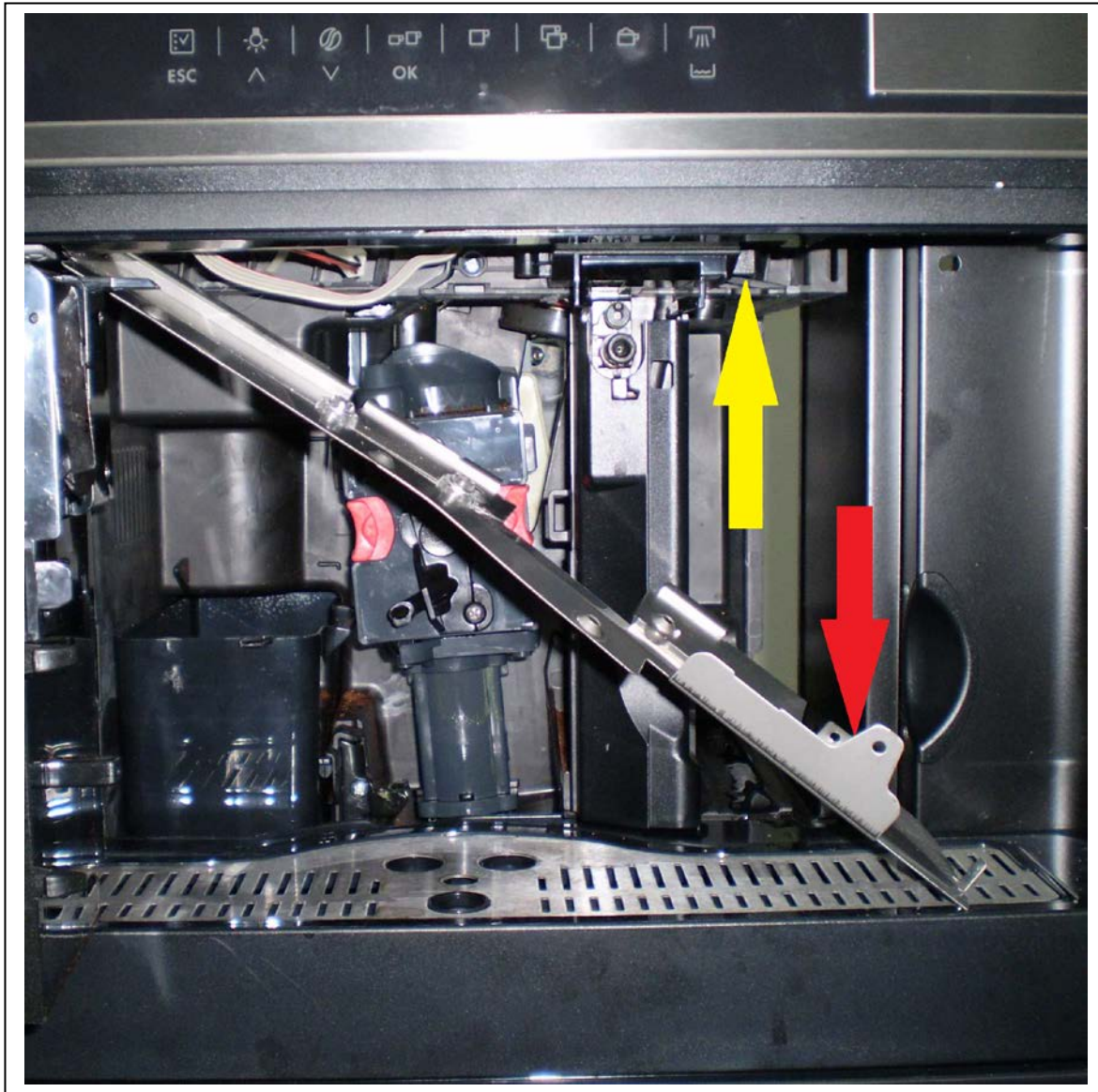
As illustrated by the red arrow.

Reposition the right side of the internal panel down towards the spill tray.

Note: The repositioning of the internal panel is required to gain access to both valve supporting screws.

As illustrated by the yellow arrow.

Remove the two screws supporting the milk frothing valve into position.



Milk Frothing Valve Replacement continues:

As illustrated by the red arrows.

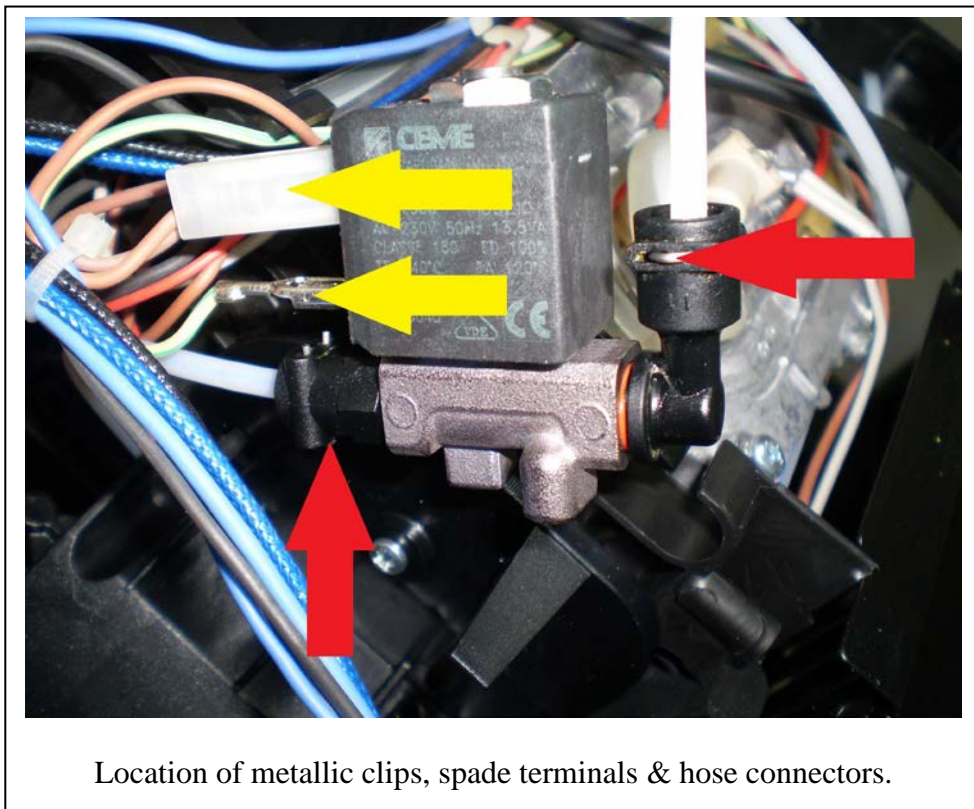
Remove the two metallic clips anchoring the water hoses into position.

As illustrated by the yellow arrows.

Remove the three spade terminals attached to the solenoid body.

Note: When replacing the solenoid valve.

Both black plastic hose connectors will need to be transferred from the original solenoid to the replacement one.



Fault:
Ground too fine, adjust
mill/grinder.

Fault Description	Page
Grinder coarseness	15
Water flow check	15 & 16
Pump check	17

Reset the coarseness of the grinder. By turning the knob toward a higher number (ONLY WHILE GRINDER MOTOR IS RUNNING)

If fault has not cleared.

Check for water in tank & confirm tank is fully pushed into its location.

Select "Hot Water" function to clear any potential air locks from water tank to pump.

If fault has not cleared.

Disconnect **supply power** to the unit.

Remove the complete unit from its slide out rails.

Remove the rear cover from the back of the unit.

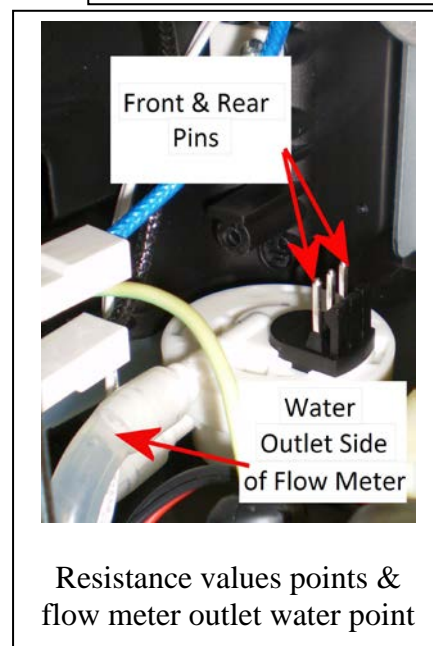
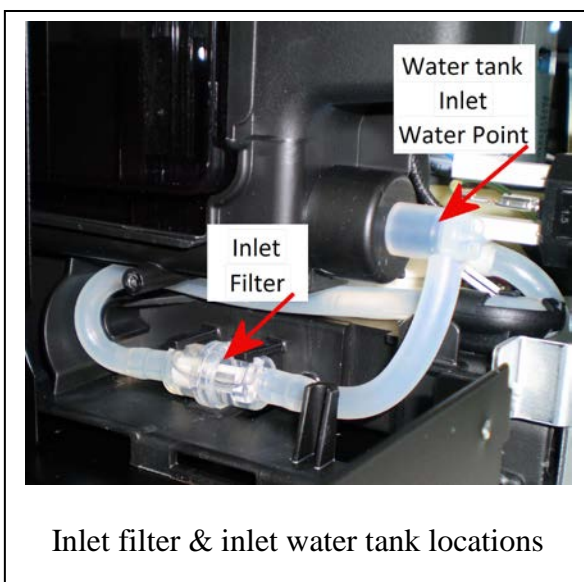
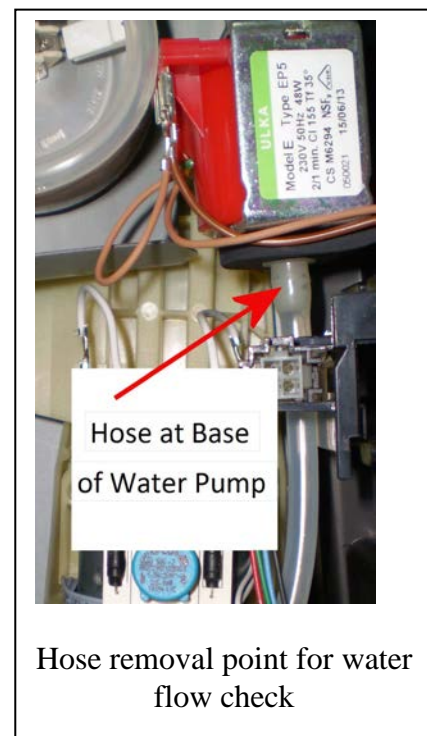
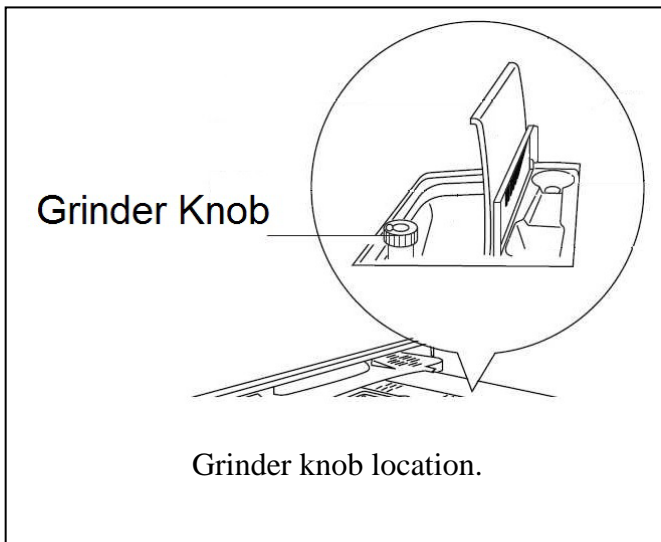
Check water flow from tank to pump.

- Remove the water tube from the base of the pump & lay flat to check water flow.
- **Note: if there is** water flow, remove the three pin plug from the flow meter & check the **resistance value** between the front & rear pins. *Refer photo.*

Note: Resistance value should be around 1.2K Ohms.

- **If there is no** water flow, check the inlet filter located below the water tank inlet. *Refer photo.*
- If water flow is okay from the inlet filter, check for water flow from the outlet side of the water flow meter. *Refer photo.*

If the fault has not cleared. Continue to the following page.



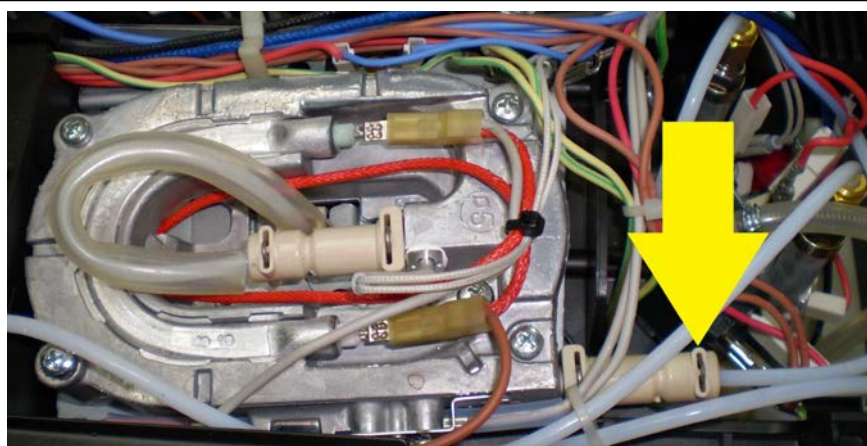
Ground too fine, adjust mill/grinder continues:

Remove the metallic clip located on the outlet side of the boiler. Then remove the outlet hose & place it in a supportive insulated container.

Note: the container needs to support the hose safely. As the outlet temperature & pressure can be high.

Select “Hot Water” function.


Note: Press “ESC” icon to cancel the Hot Water function.



Outlet location of boiler.

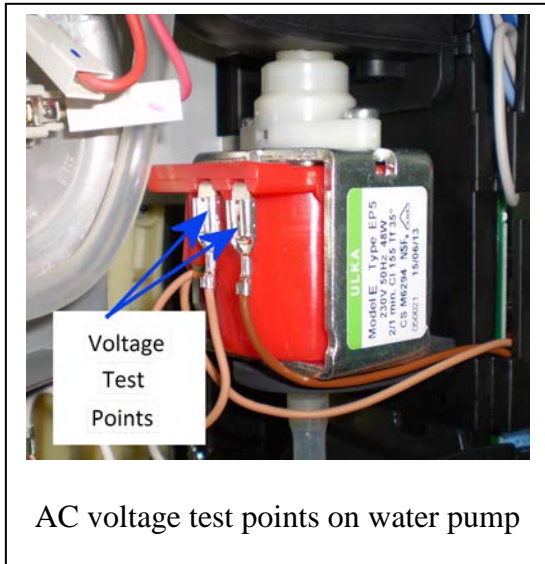
Ground too fine, adjust mill/grinder continues:

Check the pump for correct operation.

Via the  icon. Scroll through the various functions & select “Rinsing” then press OK twice. This will activate the pump. While the pump is in operation, check for **AC voltage** between the two spade terminals (120V to 140V-AC).

If the applied voltage to the pump is within range. Replace the pump.

If there is no applied voltage. Replace the main PCB assembly.



Fault:
No hot water delivery.


Check the two TCO Over Temp Switches located on the boiler element.

Press the Hot Water Delivery  icon located on the right hand side of the control panel.

If hot water cannot be delivered, turn off the unit & check the **continuity** of the two over temp switches located on the steam element. *Refer photo.*

Note: Both switches are (Normally Closed)

Check the Steam Element.

Press the Hot Water Delivery  icon located on the right hand side of the control panel.

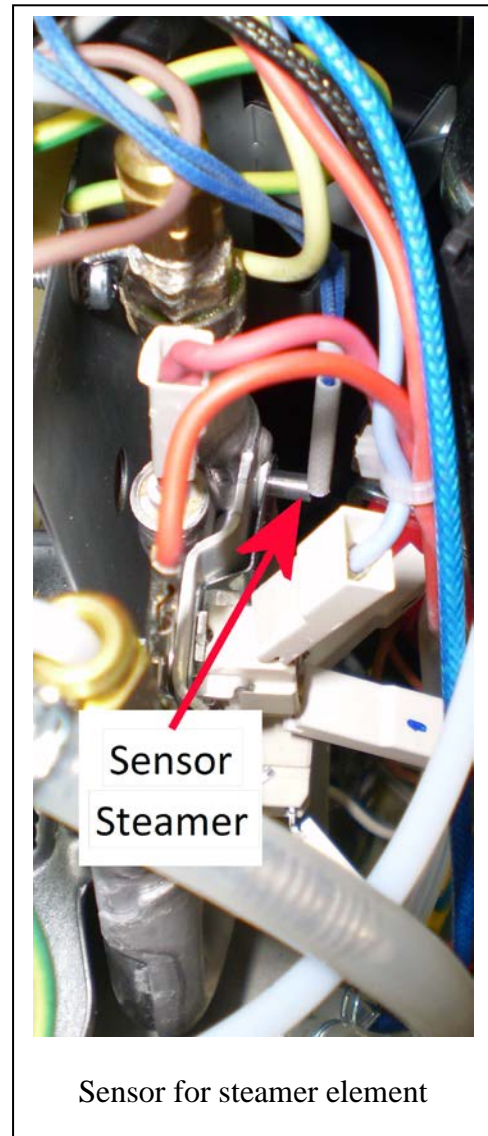
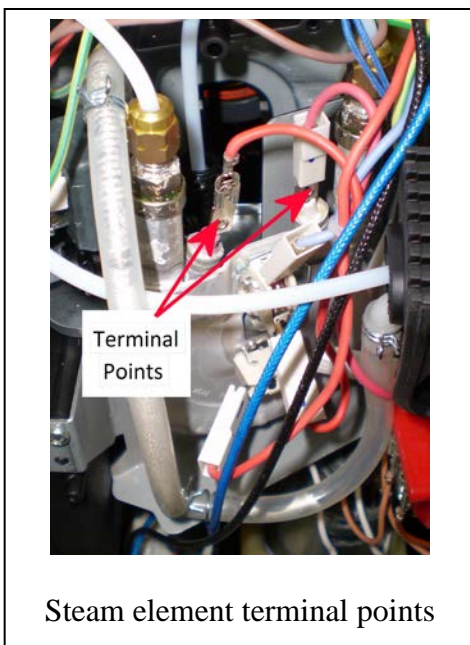
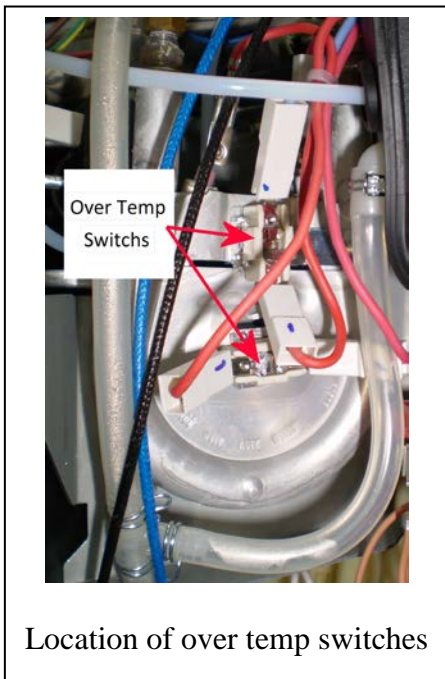
If hot water cannot be delivered, turn off the unit & remove the two spade terminals on the element & check the **continuity**. If it's open circuit, replace it.

If the element **continuity** checks out okay, reconnect the two spade terminals, reconnect the unit to the mains power supply, switch it on & measure the **supply voltage** (240 volts AC) from these two terminal points. *Refer photo.*

Note: Supply voltage will only be provided to the steam element for a relatively short amount of time, until it reaches its specific operating temperature.

If there is no **supply voltage** at these two terminal points, replace the main PCB.

Note: Check & make sure the steam element sensor is making direct contact to the steam element itself.



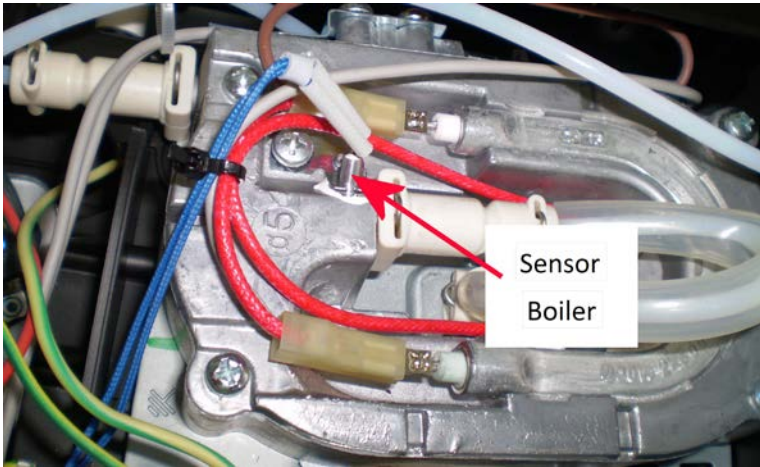
Fault:

General Alarm.

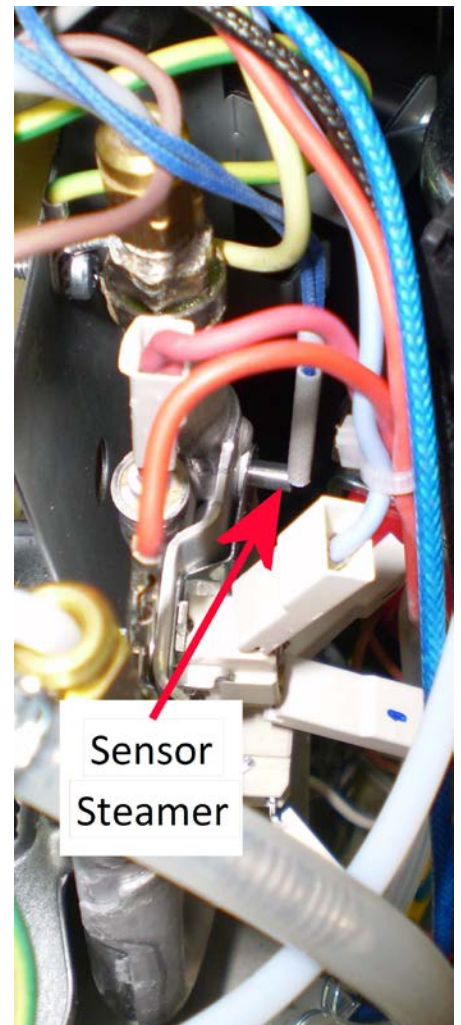
Fault Description	Page
NTC sensor check	21
Lower limit switch	22
TCO fuse check	23 & 24

Check the two NTC sensors on both the boiler & steamer elements for loose connections & Ohm resistance.

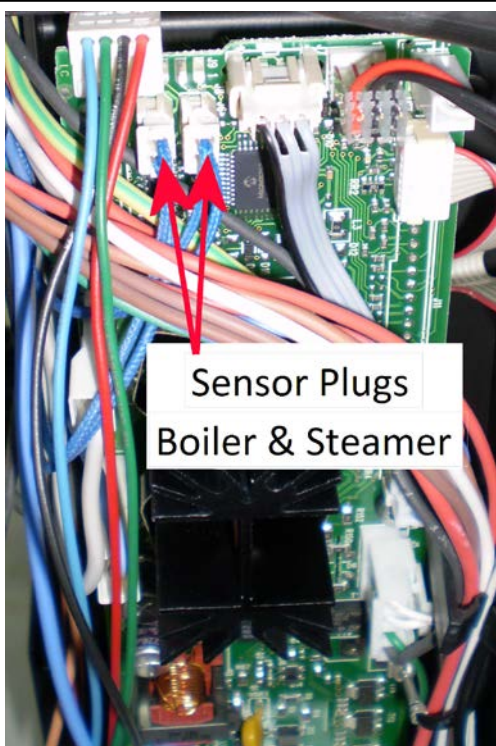
- Remove the boiler NTC sensor from its plug connection point located on the main PCB & check for **continuity**.
Note: If it's open circuit, change it.
- Remove the steamer NTC sensor from its plug connection point located on the main PCB & check for **continuity**.
Note: If it's open circuit, change it.



Sensor for boiler element



Sensor for steamer element



Sensor plugs for both Steamer & Boiler

General Alarm continues:

Check the two TCO Over Temp Switches located on the boiler element.

Press the Hot Water Delivery  icon located on the right hand side of the control panel.

If hot water cannot be delivered, turn off the unit & check the **continuity** of the two over temp switches located on the steam element. *Refer photo.*

Note: Both switches are (Normally Closed)

Check the Steam Element.

Press the Hot Water Delivery  icon located on the right hand side of the control panel.

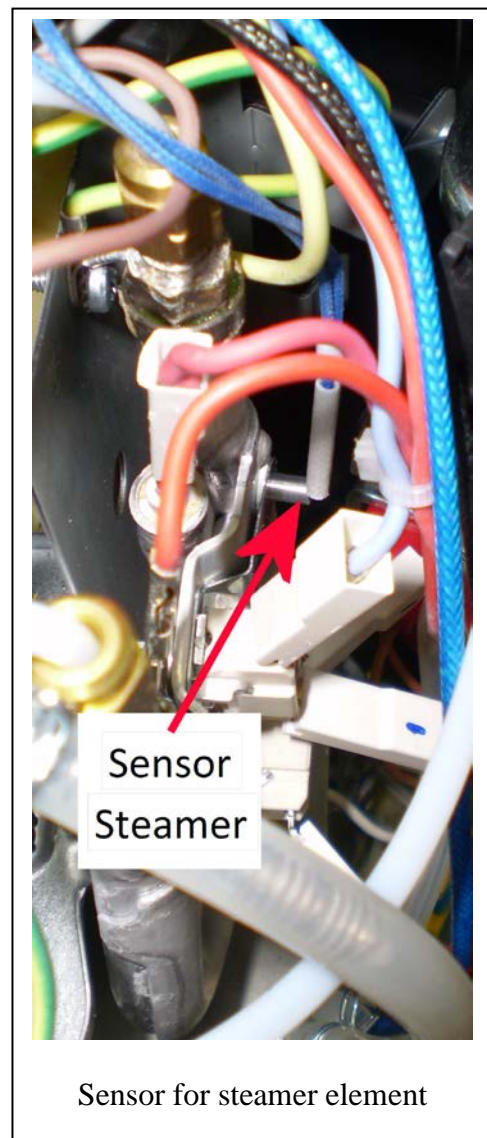
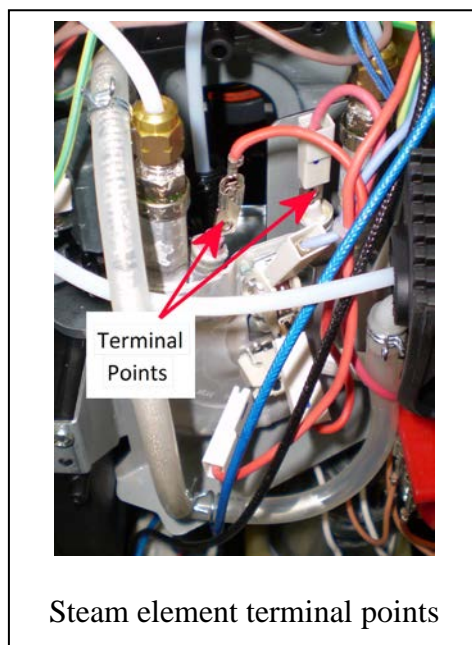
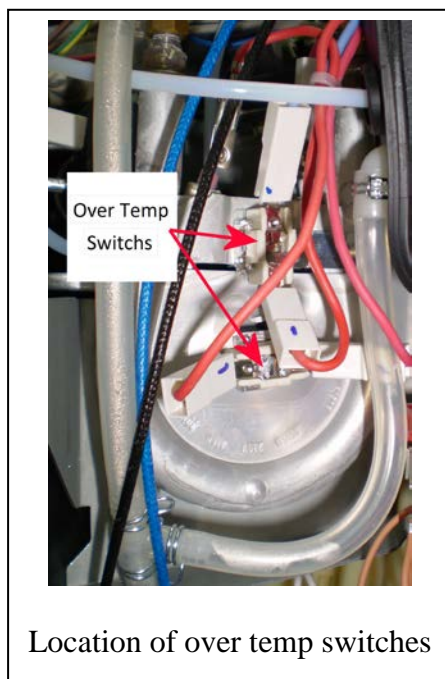
If hot water cannot be delivered, turn off the unit & remove the two spade terminals on the element & check the **continuity**. If it's open circuit, replace it.

If the element continuity checks out okay, reconnect the two spade terminals, reconnect the unit to the mains power supply, switch it on & measure the **supply voltage** (240 volts AC) from these two terminal points. *Refer photo.*

Note: Supply voltage will only be provided to the steam element for a relatively short amount of time, until it reaches its specific operating temperature.

If there is no supply voltage at these two terminal points, replace the main PCB.

Note: Check & make sure the steam element sensor is making direct contact to the steam element itself.



General Alarm continues:

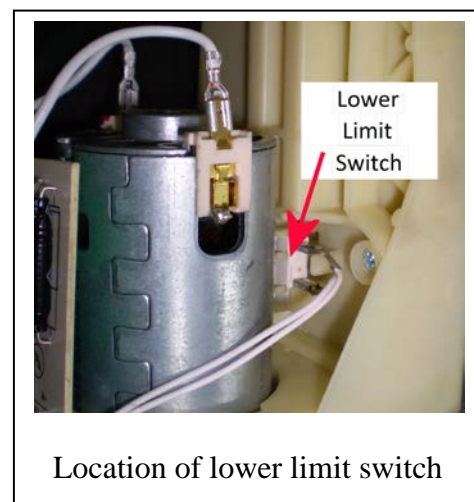
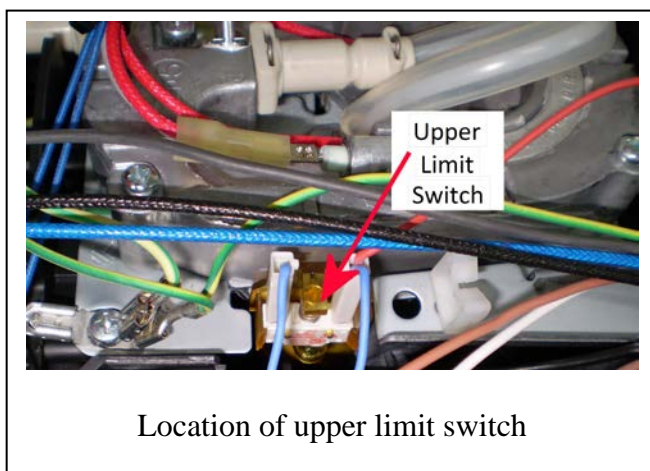
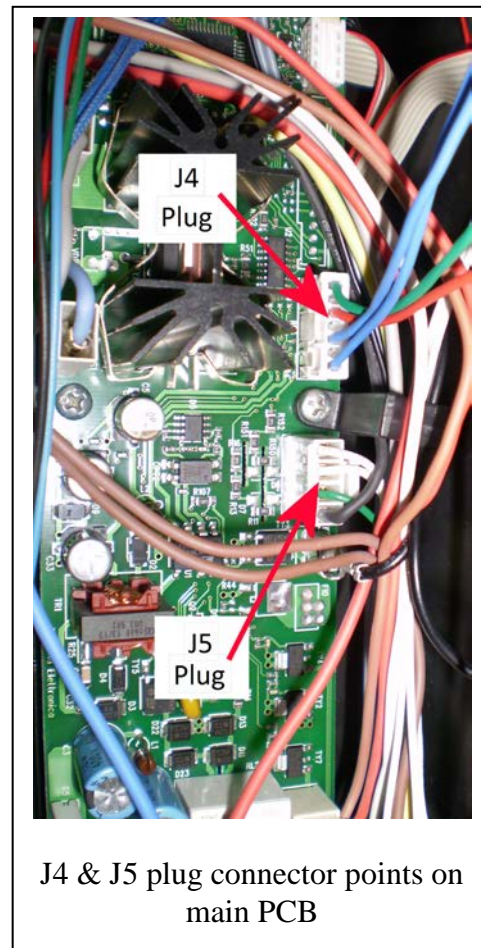
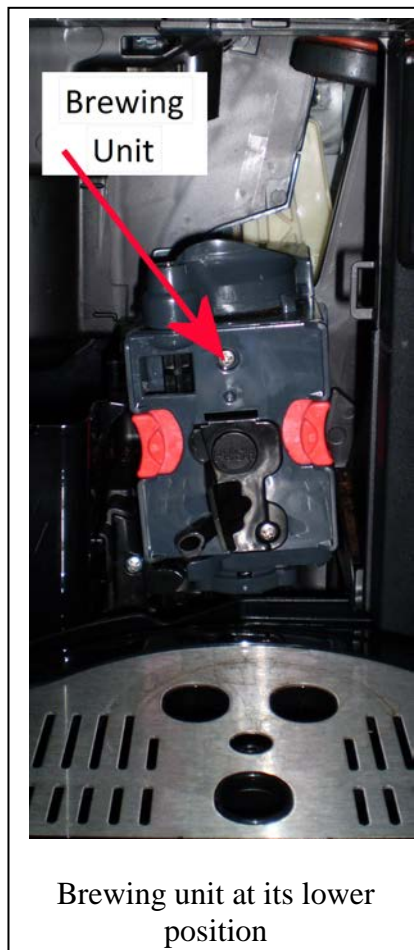
If the General Alarm appears after a short movement of the drive motor, check the following:

- Turn power on at supply power point & open the brewing unit door.

Note: The brewing unit should be at its lower position. *Refer photo.*

- Turn power off & remove the **J4** plug (Upper limit switch) located on the main PCB & check for **continuity** across the two Blue wires. **Note:** This should read “Closed Circuit”
- Remove the **J5** plug (Lower limit switch) located on the main PCB & check for **continuity** across the two White wires. **Note:** This should read “Open Circuit”

Note: To gain access to lower limit switch, refer to pages 28 to 30.



General Alarm continues:

By the use of the On/Off Switch located under the control panel. Turn the machine off & on again. If Heating Please Wait remains on the display for more than 5 minutes, followed by General Alarm. Conduct the following tests:

Turn the supply power off & remove the two spade terminals connected to the top boiler element & check for continuity.

If it's a closed circuit, (with the two boiler element spade terminals still disconnected) remove the two spade terminals from the main PCB to the boiler & check for **continuity**.

If the reading is "open circuit". Continue to check for **continuity** at the following points:

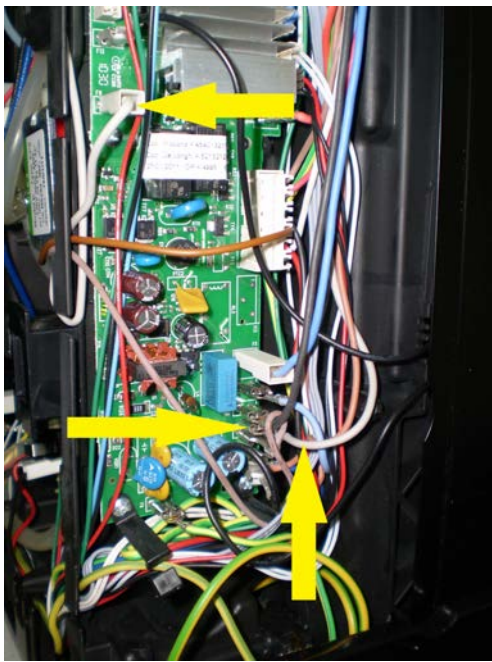
- Between one boiler spade terminal (from main PCB) & the corresponding spade terminal normally connected to the top boiler element.
- Between the second boiler spade terminal (from main PCB) & the corresponding spade terminal normally connected to the other top boiler element connection point.
- **Note:** These two checks will test each of the two individual fusible links. Reading should be "closed circuit"
- Check the secondary element located underneath the boiler assembly.

Before conducting this test, remove the two terminals from the boiler to the main PCB & the two connected to the top boiler element. This will allow you to isolate the secondary element.

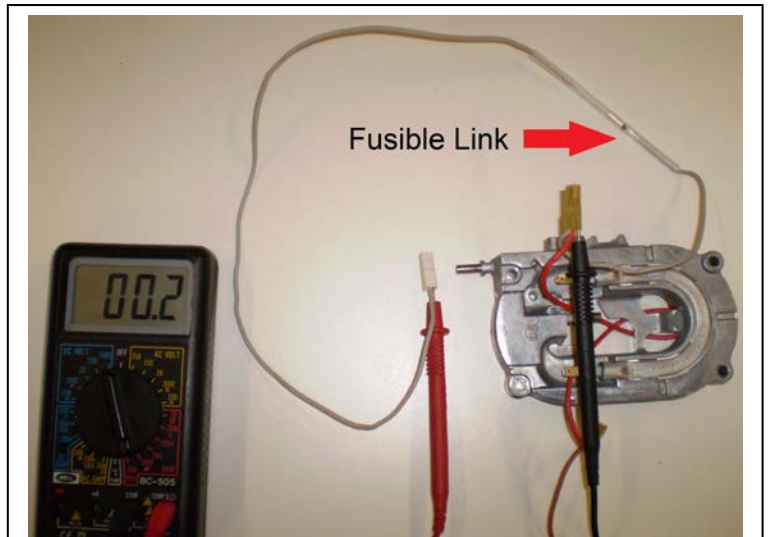
Then check for **continuity** across the two female spade terminals which would normally connect to the top boiler element.

Note: Both bottom & top boiler element should be a "closed circuit".

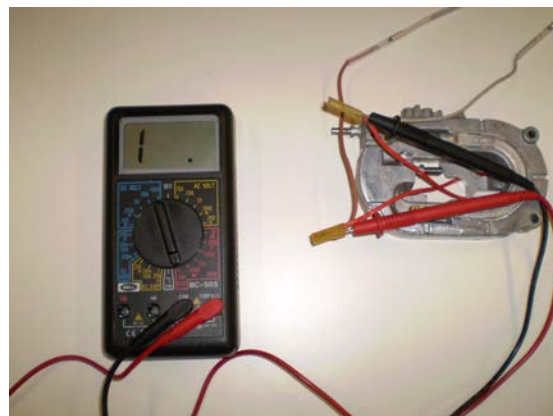
If the boiler element needs to be removed, continue to the following page.



Boiler connection points on main PCB.



Fusible link test points.



Secondary element test points

Boiler element removal:

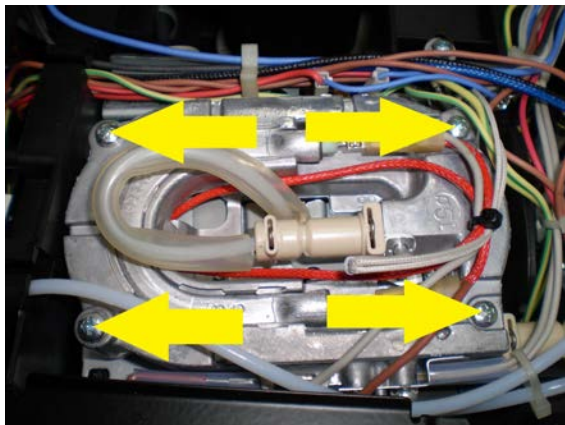
Remove the four “nut & bolts” supporting the boiler in place.

Note: To gain access to the front supporting boiler bolts. Open the brewing unit door & remove the water tank.

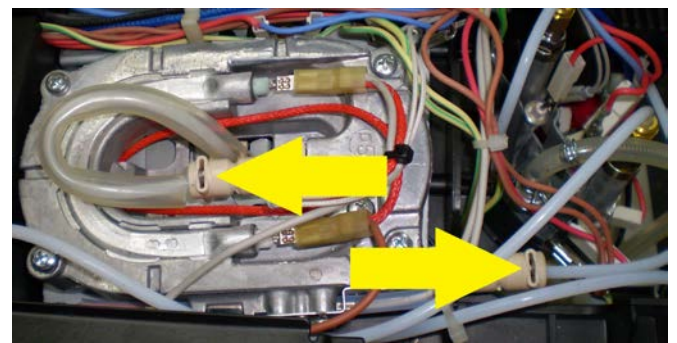
Note: To gain access to the rear supporting boiler bolts. Remove the two steam element bracket supporting screws. Then reposition the steam element to allow access to the rear boiler bolts.

Disconnect the two inlet & outlet water tubes.

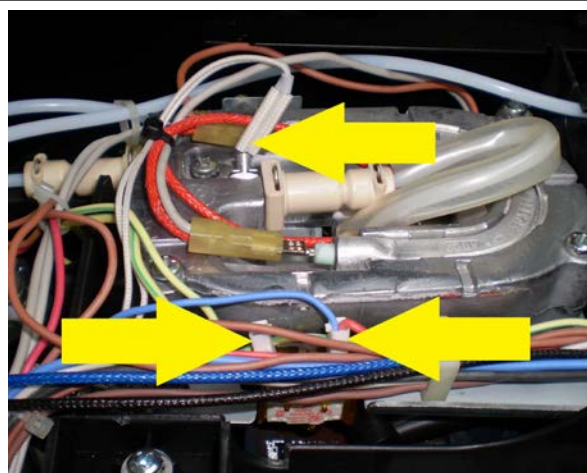
Disconnect the wiring on the upper limit switch & boiler sensor. Then remove the boiler assembly away from the machine.



Boiler screws location.



Inlet & outlet water tube mounting points.



Limit switch & boiler sensor.

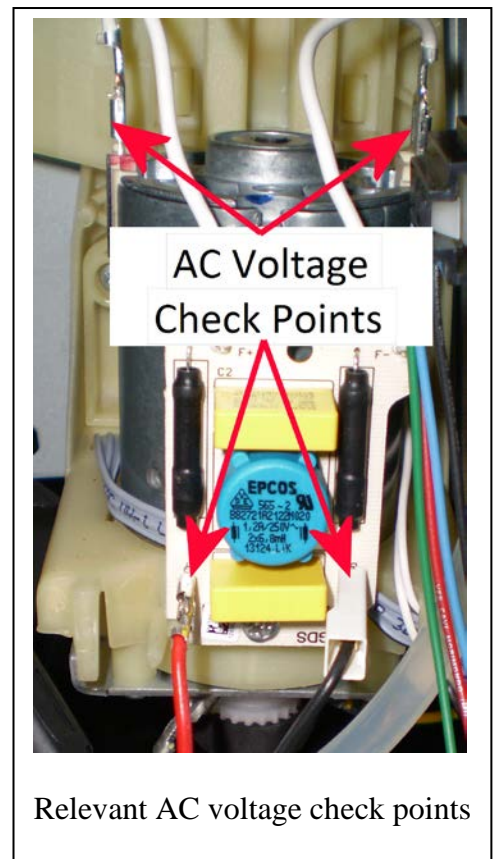
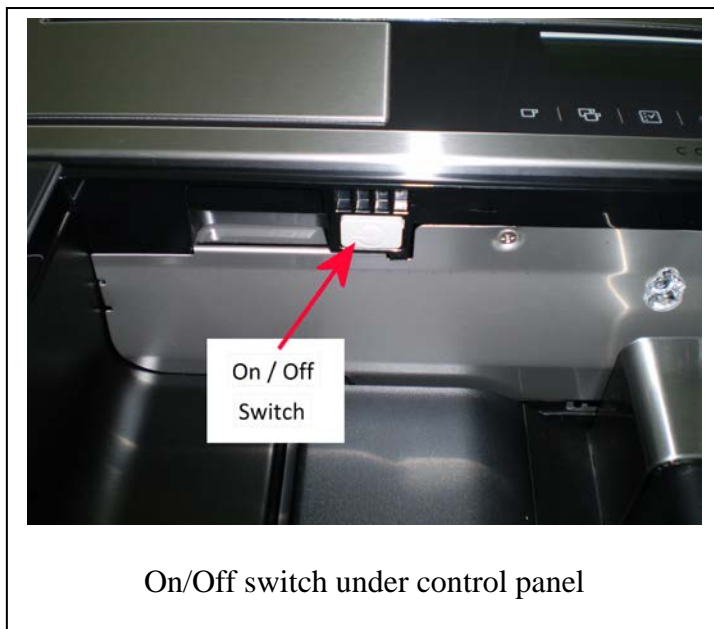
Fault:
Drive Motor Not Working.

If the drive motor will not operate in anyway and (Please wait) will not disappear from the control panel display, conduct the following tests:

- Via the switch located at the bottom left hand side of the control panel. Turn the unit off and back on again. Then check for **AC voltage** between the two spade terminals on the drive motor PC board & the two spade terminals connecting directly to the motor (30V to 40V-AC). *Refer photos.*

Note: If AC voltage is available, replace the complete motor & transmission assembly. If voltage is not available, replace the main PCB.

Note: To gain access to motor & transmission assembly. Refer to the following pages.



Access to transmission & lower limit switch.

Turn the supply power off.

Remove the Water Tank, Water Tray & Brewing unit.

Remove the three screws (2x Allen key & 1x Phillip head) from the brewing units bracket. Then unclip & remove the brewing unit.

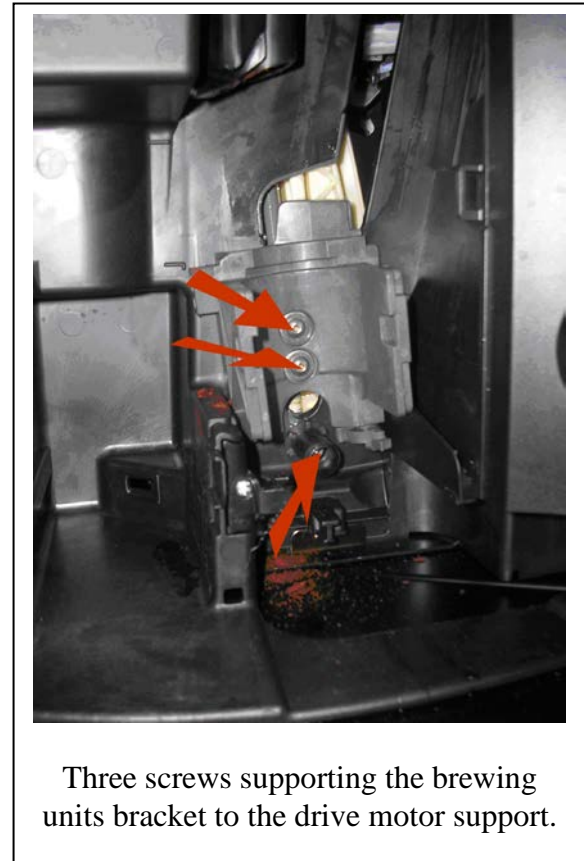
Note: If the brewing unit cannot be removed. Turn the drive motor belt clock wise to allow the brewing unit to rise above its locked position. Then remove the brewing unit.

Remove the two screws supporting the steam element into position.

Continue to the following page.



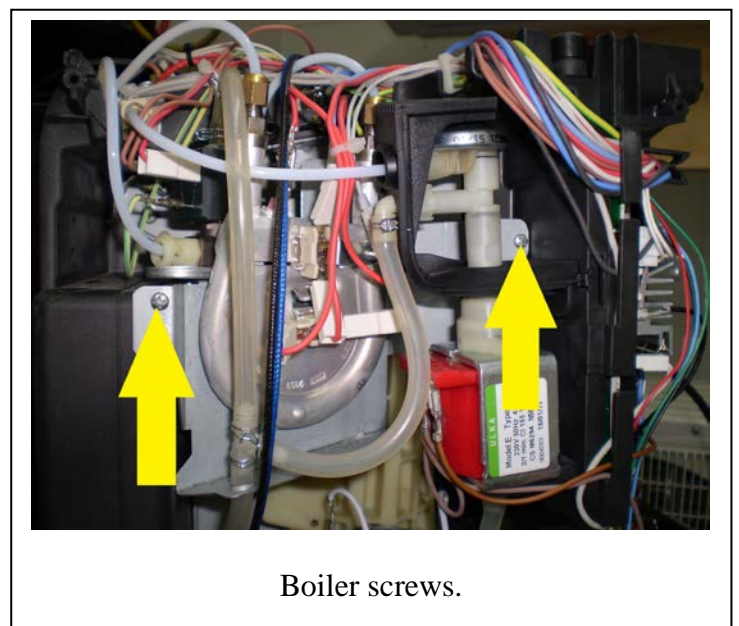
Location of Water Tank, Water Tray & Brewing unit.



Three screws supporting the brewing units bracket to the drive motor support.



Bracket & drive motor support removed.



Boiler screws.

Access to transmission lower limit switch continues:

Squeeze the steam hose clamp to release the bottom hose from the tee piece connector. Then feed it out & away from the supporting bracket.

Remove the pump feeder hose by gently pulling downwards.

Unclip & release the various wires from their supporting clamps.

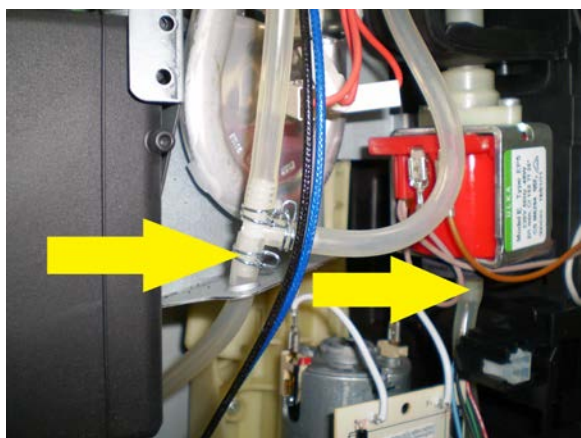
Remove the two supply power spade terminals connected directly to the drive motor PCB.

Remove the two earth spade terminals mounted directly below the drive motor.

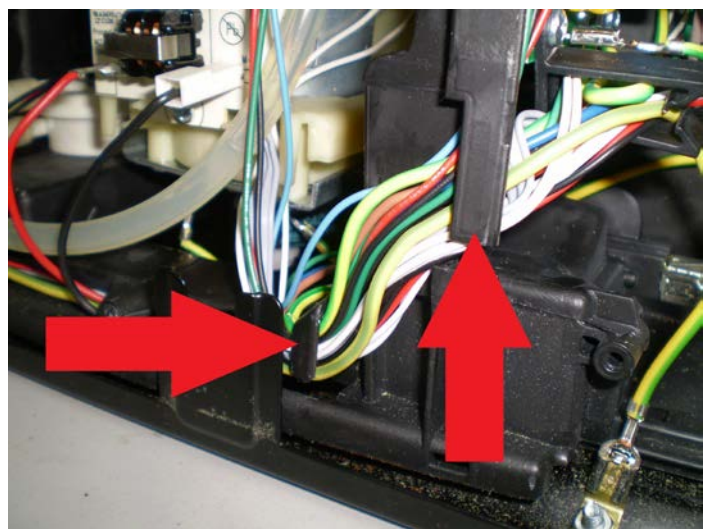
Carefully lift & remove the drive motor assembly away from the back of the coffee machine.

Note: Connecting wiring from the drive motor & limit switch can remain connected.

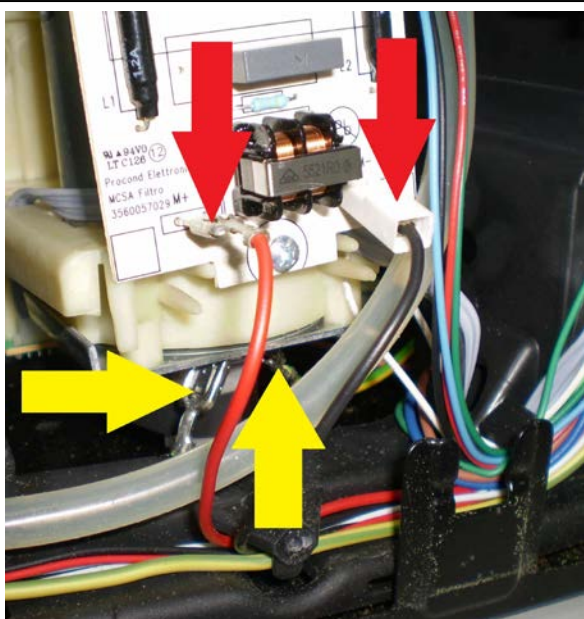
Lay the drive motor assembly on its back to gain easy access to the lower limit switch.



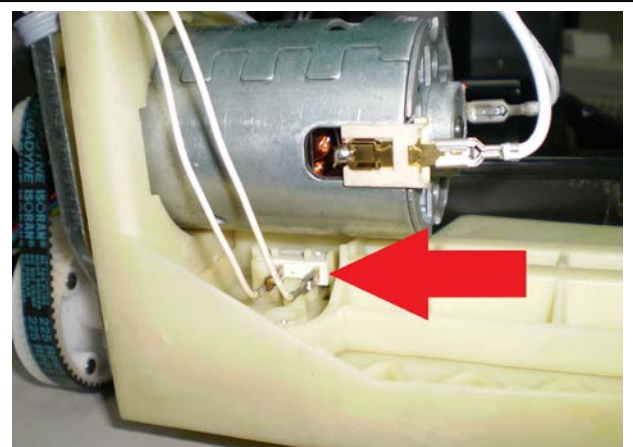
Bottom hose clamp & pump feeder hose.



Wiring clamps.

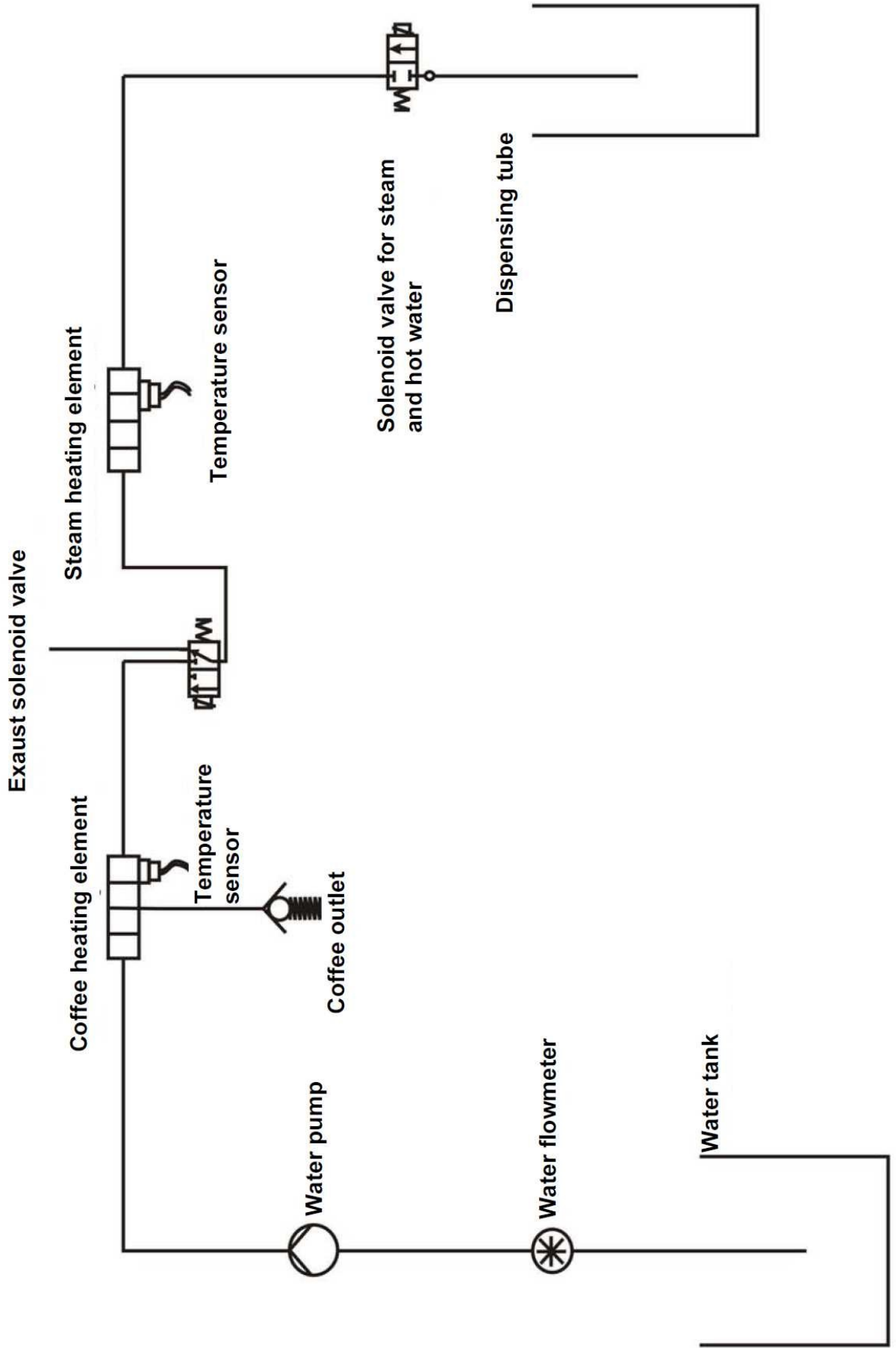


Earth & supply power terminal points.

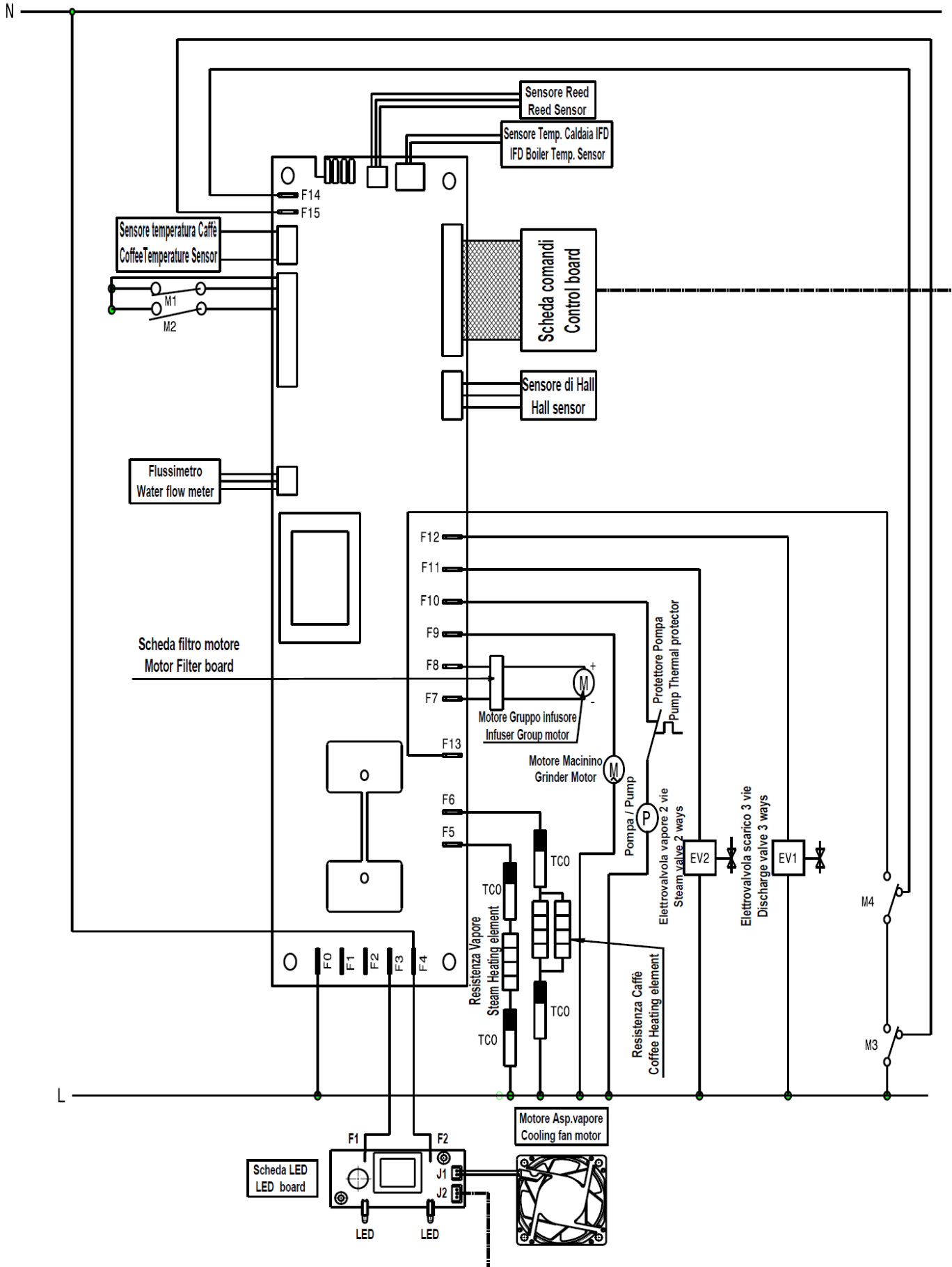


Lower limit switch location.

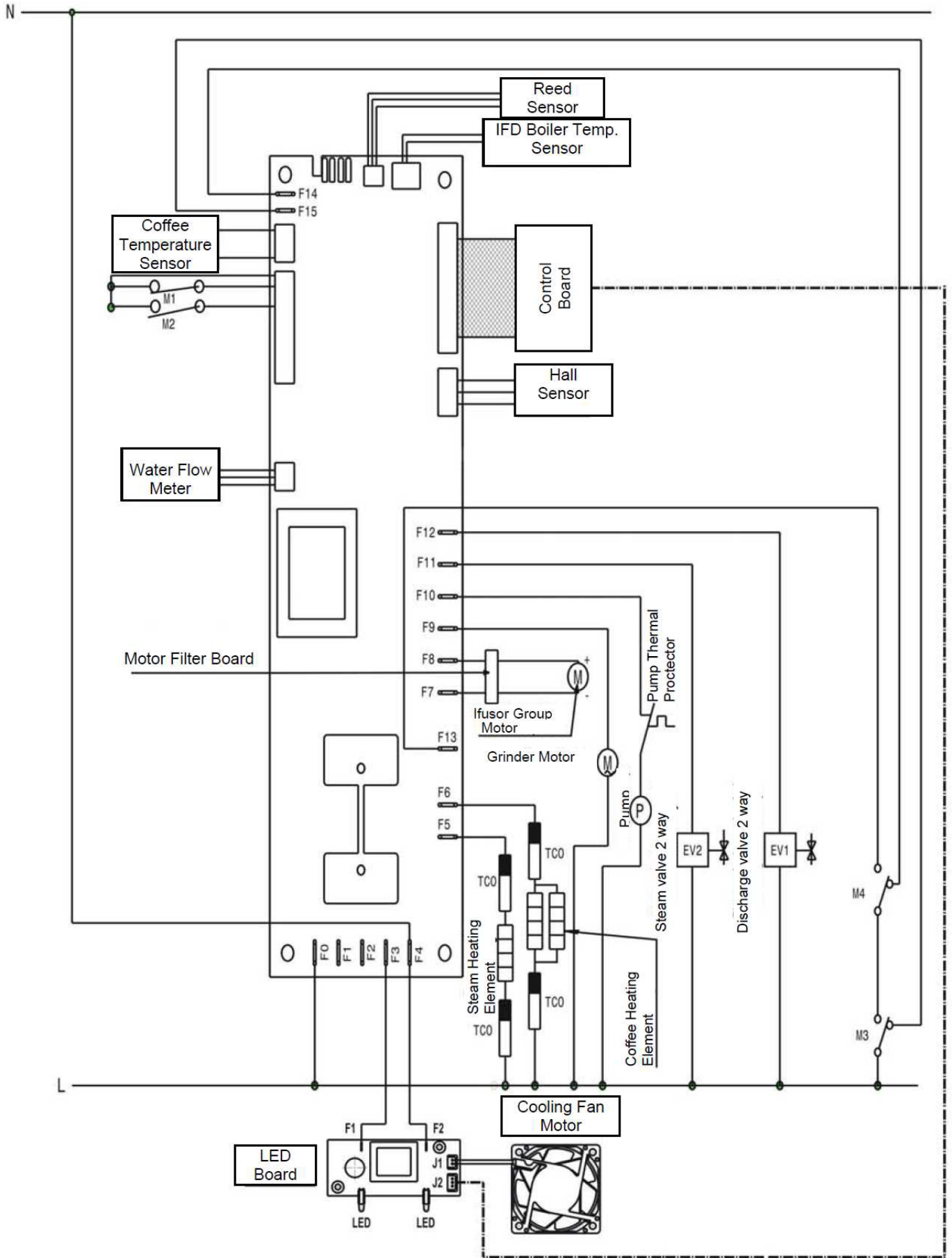
Water flow Diagram:



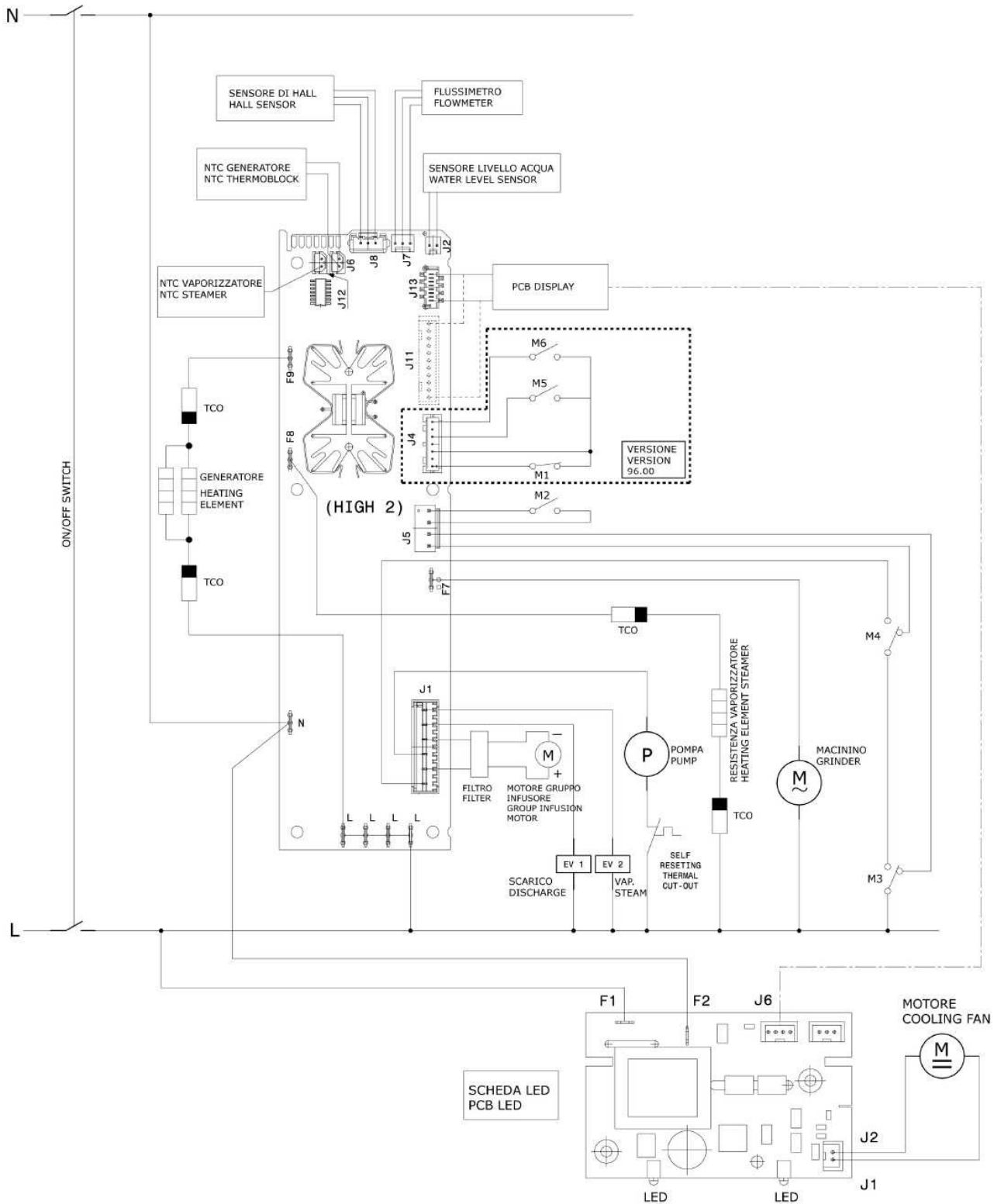
Circuit Diagram: EBA63810X



Circuit Diagram: PE4521-M



Circuit Diagram: PE4551-M



LEGENDA / LEGEND:

- M1 = UPPER MICROSWITCH (INFUSION GROUP MOTOR)
- M2 = LOWER MICROSWITCH (INFUSION GROUP MOTOR)
- M3 = DRAWER MICROSWITCH
- M4 = DOOR MICROSWITCH
- M5 = IFD PRESENCE
- M6 = H2O SUPPL. PRESENCE
- EV1 = 3 WAYS SOLENOIDE VALVE (WAY OUT)
- EV2 = 2 WAYS SOLENOIDE VALVE (STEAM)
- L = PHASE - LIVE
- N = NEUTRAL
- TCO = THERMAL CUT OFF
- H.E. = HEATING ELEMENT