Integrated Profi-Coffee Center

EKV 6800.0

Küppersbusch

THE HEART OF A GOOD KITCHEN

GB

Service Manual: H6-73-01

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Contents

1. Safety

Danger!

Repairs may only be carried out by a qualified electrician!

Repairs not carried out properly may put the user at risk!

⚠ **It is essential that you observe the following instructions in order to prevent electric shocks:**

- The casing and the frame may be live in the event of faults!
- Touching live components inside the appliance may cause dangerous currents to flow through your body!
- Disconnect the appliance from the mains prior to carrying out any repair work!
- When inspecting live parts, a residual current circuit breaker must always be used!
- The earthed conductor resistance must not exceed the resistance specified in the standard! It is vital for ensuring the safety of persons and the functioning of the appliance.
- On completion of repairs, an inspection must be carried out in accordance with VDE 0701 [Association of German Electrical Engineers] or in accordance with the corresponding regulations for your country!
- On completion of repairs, a functional test must be carried out.

Attention!

It is essential that you observe the following instructions:

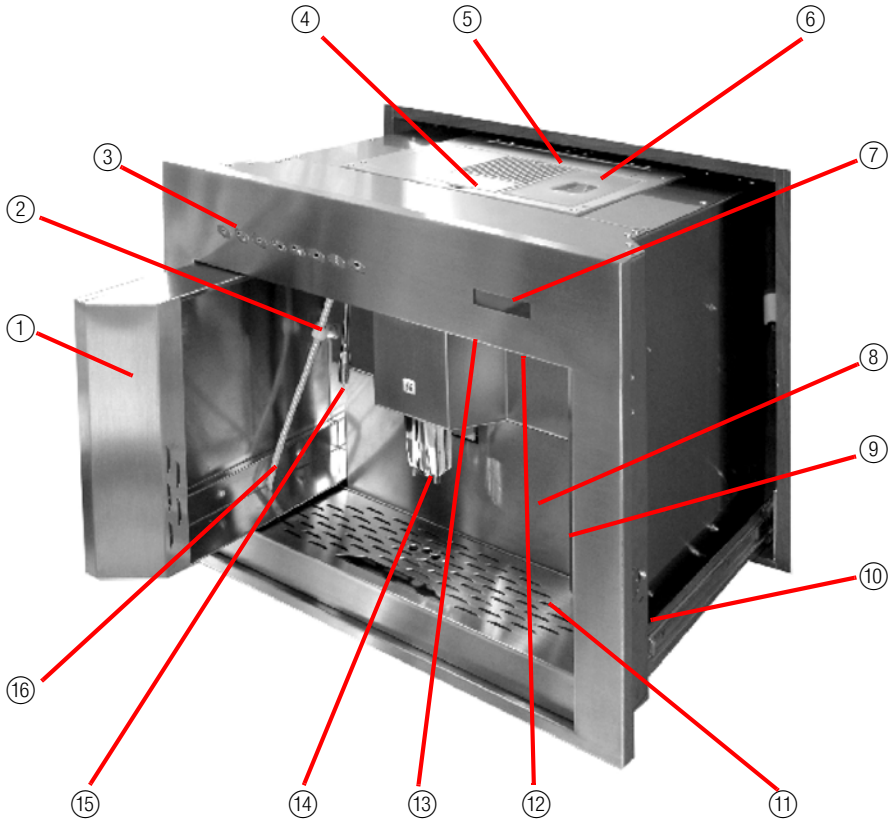
- Because of the universal cutoff device (relay and manometric switch), on measuring the connector plug in accordance with VDE 0701, the boiler must be tested for insulation faults by means of direct measurement or the differential current of the appliance must be measured!
- Beware of the sharp edges of stainless steel units when replacing components.
- The appliances must be disconnected from the mains prior to all repairs. If inspections must be carried out on live appliances, make sure you use a residual current circuit breaker.

Risk of burns!
Water which is dispensed is very hot! Do not touch the outlet pipe!
The boiler heats up to 98 °C - 128 °C during operation

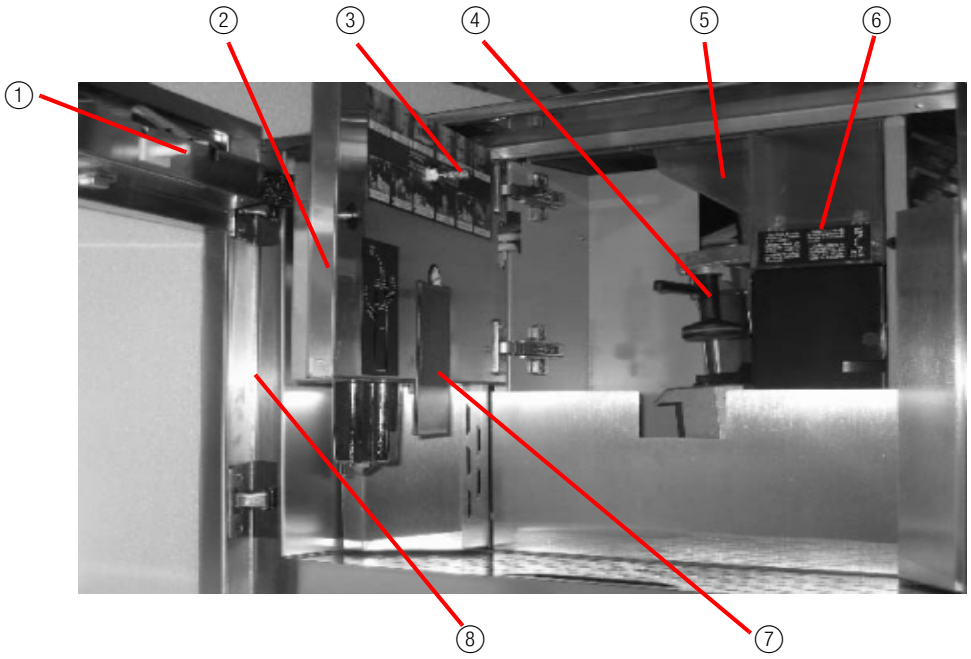
Sharp edges: use protective gloves.

Components may be electrostatic!
Observe handling regulations!

2. An overview of your appliance



① Milk container compartment
② Crimp screw
③ Control panel
④ Compartment for decaffeinated coffee powder
⑤ Water tank (not for appliances supplied with tap water)
⑥ Box for coffee beans
⑦ Clear text display
⑧ Box for coffee grounds
⑨ Removable cup holder
⑩ Unlocking the outer door
⑪ Drip tray
⑫ Light switch
⑬ ON/OFF switch
⑭ Coffee dispenser and milk frother
⑮ Hot water dispenser pipe
⑯ Milk suction hose



① Micro switch door
② Brewing unit door, open
③ Milk frother air control
④ Brewing unit
⑤ Pipe for transporting decaffeinated coffee
⑥ Model identification plate
⑦ Milk frother with hoses (air, milk, steam)
⑧ Outer door, open

Features

- Clear text display
- Electronic touch controls
- Two cup, fully automatic coffee machine with microprocessor operated product dispenser
- Adjustable milk cream consistency
- Hot water dispenser pipe with a timer
- Grinder with 50 mm grinding discs
- Box for 1/2 kg coffee
- Two separate boilers
- Built-in milk frother with adjustable foam consistency for cappuccino
- Adjustable coffee dispenser height
- Drawer for coffee grounds with a safety stop device, programmable for up to 40 portions
- Water tank with a 5-liter capacity (not for appliances supplied with tap water)
- Electronic programming of coffee compression
- Grinding the coffee when it is made (coffee always freshly made)
- Self diagnosis system
- Indication of the operating status on the display
- Automatic cleaning programs

3. Technical data

3.1 General

This service manual serves the purpose of providing customer service technicians who already have the know-how required to repair coffee machines with specific information on the operating mode of the appliances indicated on the front page.

Overall dimensions	
Height	46.2 cm
Width	59.4 cm
Depth	49.0 cm
Net weight	52 kg
Gross weight	63 kg
Niche dimensions (WxDxH)	560 x 550 x 450 mm

Connected load in kW	1.8
Voltage	230 V
Power consumption	1800 W
Connecting cable	1.20 meters
Ready to plug in	Yes

Construction components	
Fresh water tanks	2.5l and 5l
Warning signals	optical or acoustic

Capacitor	16µF 230V/50Hz
Transformer	230-18V 150VA 50/60Hz Protected with a safety fuse at 150°C
Transformer	TA50 230V
LED (lighting)	1 W
Light switches	2 poles
Resistance	D10x55 18W 230V

Micro switch	
Door open:	open
Door closed:	closed
Drip tray in place:	closed
Drip tray removed:	open

Microreed water-level sensor	
With water	closed
Without water	open

Level sensor	300KΩ
Thermostat with auto reset	250V 10A 150°C
NTC temperature sensor	220KΩ, 20°C, 14,5KΩ 90°C
Two-way solenoid valve (coil)	230V, 50Hz 4.5 W 2330Ω ±7%
Three-way solenoid valve (coil)	230 V, 50Hz 4.5 W 2330Ω ±7%
Heating element (electr. resistance)	220V 1000W 56Ω at 20°C ±3%
PTC resistor	18W 230V 90°C
Coffee grinder motor	220V 60Hz 150W
Magnetic sensor L420	microreed, normally opened
Magnetic sensor L520	microreed, normally opened
Transformer (electrical)	PTDCC/3/350 12V

3.2 Adjustments to the standard parameters

Beverage	Water quantity ml	Grinding time sec.	Milk time sec.	Compression	Pre-brewing
Ristretto	40	9		Yes	Yes
2 Ristretto	80	14		No	Yes
Espresso	50	9		Yes	Yes
2 Espresso	100	14		No	Yes
Caffe creme	60	9		Yes	Yes
2 Caffe creme	120	14		No	Yes
Coffee	160	7.5		No	
2 Coffee	320	12		No	
Cappuccino	60	8	15	Yes	
Large cappuccino	70	8	18	Yes	
Macchiato	60	8	15	Yes	
White coffee	70	7	12	Yes	
Milk			15		

⚠ **Attention!**
For new coffee machines, the grinding setting will needed to be adjusted 2-3 turns finer!

“Caffe Crema" by Lavazza was used for the grinding settings indicated above!

The water quantities indicated for the following beverages depends on the size of the cup or the glass and the type of beverage: coffee, cappuccino, macchiato, white coffee and the quantity of milk.

Types of coffee

Espresso: Depending on the producer, it is usually made of Arabica beans. Hence only suitable for espresso.

Crema e Aroma: A blend of Arabica and Robusta beans. Suitable for espresso and for all caffe milk coffees. (Cappucino – latte macchiato – caffe latte)

Caffe creme: This coffee is more lightly roasted than the coffee for espresso. Can be used for all kinds of coffees. It has a milder flavor and is therefore also suitable for a normal cup of coffee.

The best results are achieved with "caffe creme". The espresso has a beautifully thick cream and even a normal cup of coffee tastes just like you expect it to.

3.3 Adjustments to the new coffee machines

As of models:

D model (tank) as of no. 701904L 12 00 00 726

GB model (tank) as of no. 701905L 12 00 00 541

US model (tank) as of no. 701973L 12 00 00 089

US model (tap water supply) as of no. 702147L 12 00 00 017

New cappuccino unit: can be recognized by means of the two connections

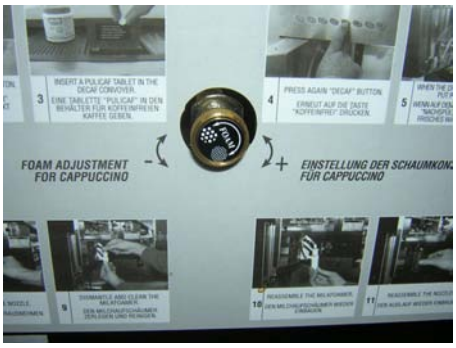
Cannot be installed at the back!

Old

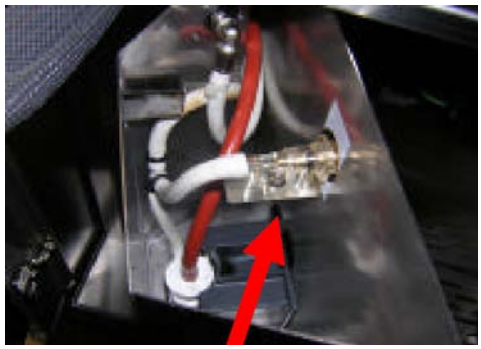
New

New air setting

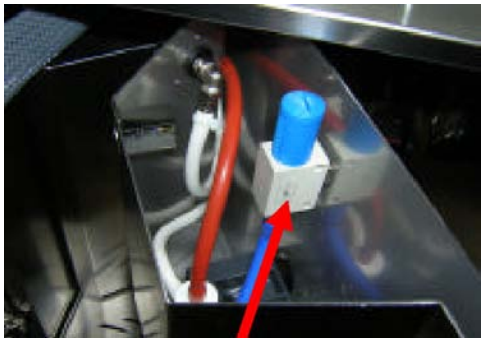
Cannot be installed at the back!!



New

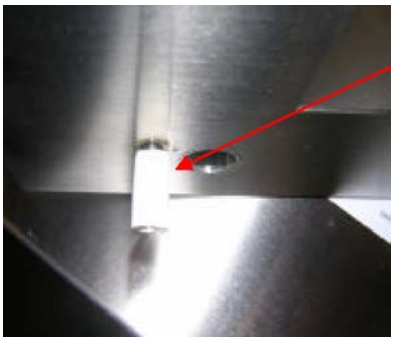


Old



Improvement to the salt container contact

A bush was adhered over the screw!



New

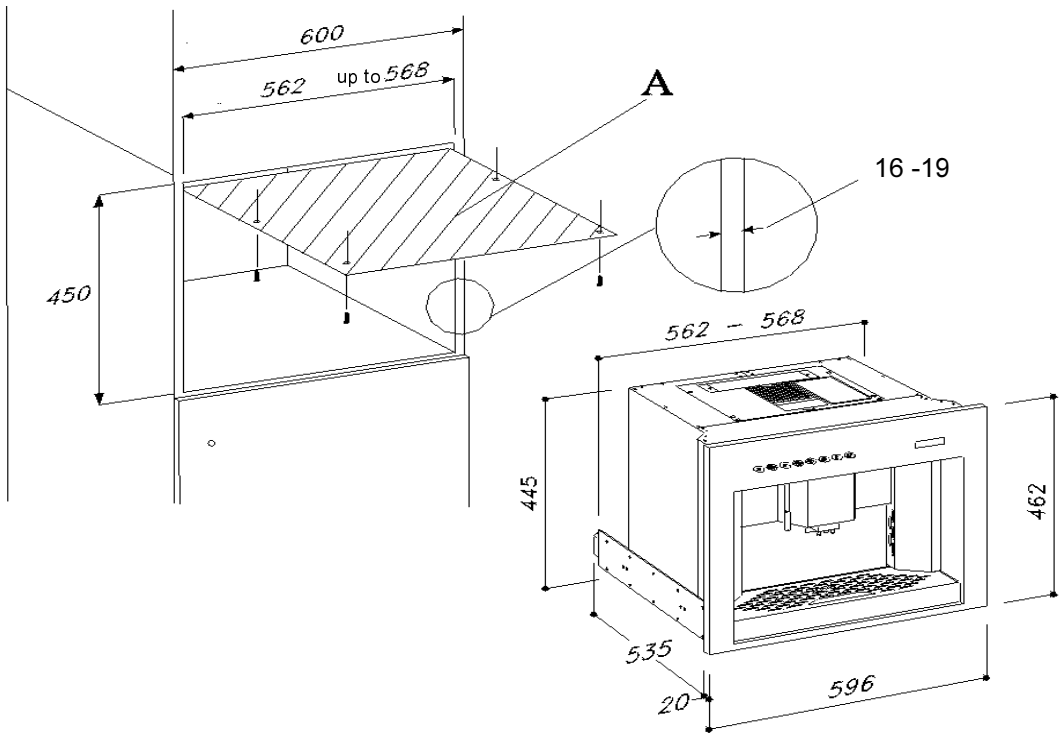
Old

4. Installation

4.1 Instructions for installation

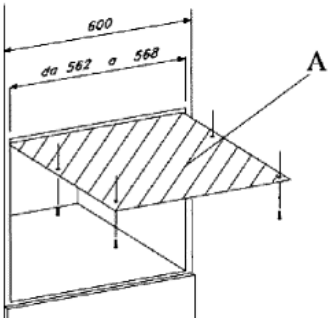
- Statutory regulations and the connection specifications issued by the local power supply company must be strictly observed.
- Prior to connecting the appliance to the mains check to ensure that the power supply complies with that for which the appliance has been designed.
- The appliance may not carry any current when it is being connected or when repairs are being carried out. Disconnect the fuse.
- Full protection against accidental contact must be ensured on installation.
- The appliance may only be connected to a properly installed wall outlet. The connection cable should only be replaced by an electrician and in observance of the relevant regulations.
- Safety regulations require that an allpole isolator with a contact opening of at least 3 mm be used on the installation side.
- **The built-in cabinet must be secured firmly to the floor and on the walls since the substantial weight of the cabinet may otherwise easily cause it to fall over.**
- The fully automatic coffee machine must be installed at a safe distance from other sources of heat, such as other home appliances, in order to ensure that the temperature does not rise excessively.

4.2 EKV 6800.0 installation dimensions

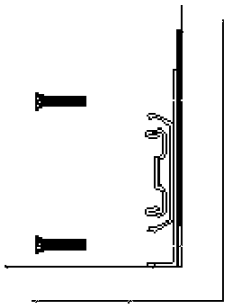


4.3 Installation

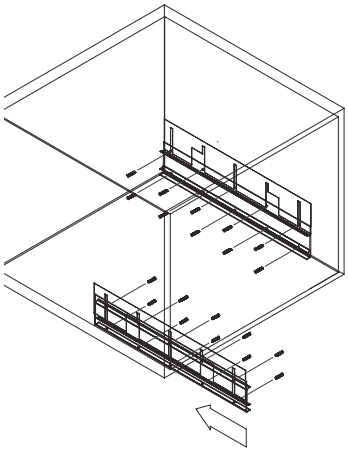
- Remove the coffee machine from the packaging and check to ensure that it is not damaged, in which case you should not install it, but contact your dealer instead.



- Install the metal plate at the top of the installation niche and push it in until it touches the rear panel of the cabinet.
- Fasten it with the 4 screws.



- Install the two angle brackets equipped with rails into the unit.
- Use the screws to fasten them to the front of the cabinet at a distance of 90 mm.



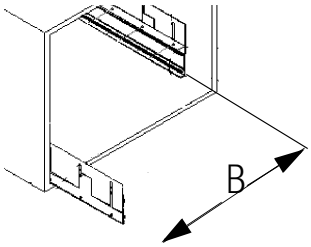
- Insert the screws into the holes of the angle brackets but do not tighten them.
- The appliance is supplied with 6 metal plates, each 1 mm thick, which are to be installed between the rail and the cabinet wall in order to even out the excess space should the compartment be more than 562 mm wide.

Number of distance plates

Installation niche		**Number of distance plates required**
Width	Unit thickness	
562	19	0
564	18	1+1
566	17	2+2
568	16	3+3

- Install the plates as indicated above if necessary.

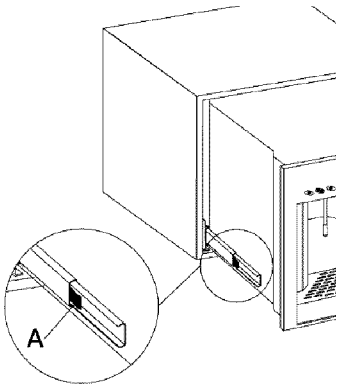
- Make sure that the distance between the angles (distance B) is 558 mm.
- Tighten all of the screws to fasten the rails to the unit compartment.



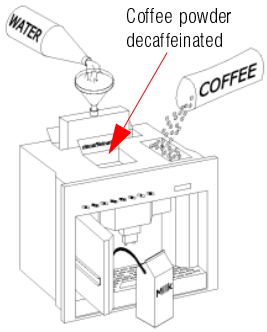
- Make sure that the electric cable can be freely lead through the rear panel.
- In order to prevent the coffee machine from becoming overheated a ventilation opening of at least 300 mm x 100 mm must be made at the back.

Installation

- Put the appliance into the unit (support it from the bottom) and on doing so put the rails on the appliance into the rails that have been attached in the unit. The appliance must slide on the rails if slight pressure is applied to the front. If it does not do so, the distance between the rails must be checked.
- While it is being pushed in, the appliance will automatically engage in the corresponding lock-in positions on the rails (A).



- Open the cover at the top, remove the water tank and fill up the appliance as indicated.

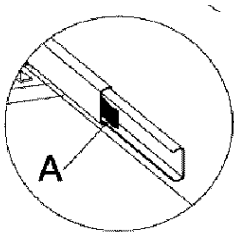


⚠ **Attention!**
Only fill coffee beans into the box. Other types of coffee, such as coffee which has already been ground, will damage the grinder.

Dismounting

If the appliance is to be removed from the installation niche it must firstly be disconnected from the mains by pulling out the plug.

- Press the corresponding lock-in points on the rails, then pull out the appliance, supporting it from the bottom.

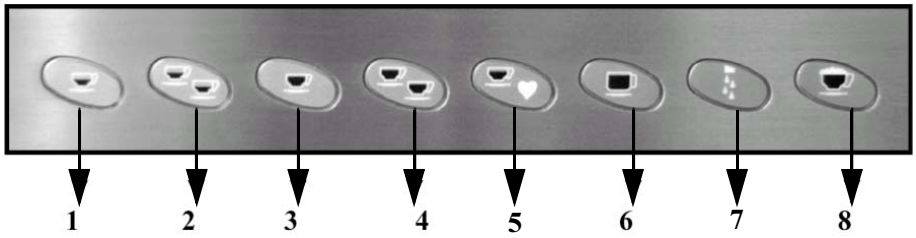


5. Button assignments

5.1 Preset button assignment

Various beverages can be selected simply by pressing electronic push buttons. The buttons have been assigned in the factory. The individual buttons can be allocated to other beverages.

Presetting at the factory



1 Dispensing 1 cup of espresso

2 Dispensing 2 cups of espresso

3 Dispensing 1 cup of caffe creme

4 Dispensing 2 cups of caffe creme

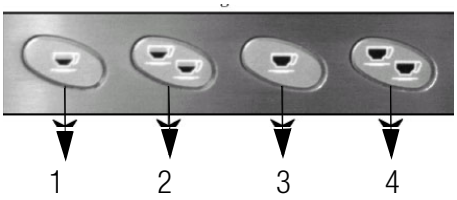
5 Dispensing 1 cup of decaffeinated coffee

6 Dispensing 1 cup of coffee

7 Dispensing hot water

8 Dispensing 1 cup of cappuccino

5.2 Button assignment in the programming mode



In the programming mode (see the section on programming) four buttons have been assigned a second function. These functions are for going through all of the menu items:

1 ENTER
Accessing the menu/submenu and data confirmation.

2+4 CURSOR (▼ and ▲)
for going through the menu and increasing/decreasing the settings.

3 STORE and
return to the previous menu item.

6. Function

6.1 Making espresso and caffe creme

Both types of coffee are made in the same manner.

One cup of espresso or caffe creme

Place one cup under both of the dispensers as illustrated.
The beverage is always poured from both of the dispensers at the same time.

Press the button  **once** for espresso **or** the button  **once** for caffe creme.

The display will show the type of coffee selected. The coffee is made. Leave the cups standing under the dispensers until the coffee display goes off and “machine ready“ is shown again.

Two cups of espresso or caffe creme

Put two cups under the dispensers as illustrated.
The beverage is always poured from both of the dispensers at the same time.

Press the button  **once** for espresso **or** the button  **once** for caffe creme.

The display will show the type of coffee selected. The beverages are made.

Leave the cups standing under the dispensers until the coffee display goes off and “machine ready“ is shown again.

6.2 Making coffee

Use larger cups than for caffe creme and put one cup under both of the dispensers. The beverage is always poured from both of the dispensers at the same time.

Press the button  **once** for coffee. The display indicates “coffee“. The coffee is made. Leave the cup standing under the dispensers until the coffee display goes off and “machine ready“ is shown again.

6.3 Making cappuccino

Cappuccino is espresso topped with milk froth. Use a larger cup than for caffe creme. Pull out the milk box on the left of the appliance at the front. Open up the milk package and insert. Now insert the milk suction hose into the opening.

Place the cappuccino cup under the dispensers and press button  **once** for cappuccino. The display will indicate “cappuccino“. The cappuccino is made.
Leave the cup standing under the dispensers until the beverage display goes off and “machine ready“ is shown again.

6.4 Making decaffeinated coffee

Partly pull the appliance out of the cabinet. Open the cover of the coffee box for decaffeinated coffee and **fill a portion of ground** decaffeinated coffee into the box.

⚠ **Attention!**
Only fill coffee powder into this box!

Put one cup under both dispensers. The beverage is always poured from both of the dispensers at the same time.

Firstly press the selection button  once for decaffeinated coffee and **then** select the coffee required. The display will either indicate “decaffeinated caffe creme“ or “decaffeinated espresso“ or “decaffeinated coffee“ etc., depending on what was selected.

The coffee is made. Leave the cup standing under the dispensers until the beverage display goes off and “machine ready“ is shown again.

6.5 Dispensing hot water

Enables hot water to be dispensed for making tea and brewed beverages.

Make sure that there is water in the tank.
Place a suitable vessel under the hot water dispenser and press the button  to dispense hot water.

The display will indicate “machine is boiling water for tea“.

Hot water will flow out of the dispenser until you **press** the button for hot water again.

⚠ **Risk of scalding!**
Water which is dispensed is very hot!
Do not touch the outlet pipe!

7. Programming

The appliance has been set in the factory to enable you to make coffee without any additional programming. Various individual settings can be programmed in order to adjust the flavor to suit your requirements.

⚠ **Attention!**
The manufacturer does not accept any responsibility for faulty or improper programming.

The following settings can be programmed:

1. Counter
2. Button assignment
3. Water quantity
4. Grinding time
5. Milk time
6. Prebrewing
7. Compression
8. Coffee grounds counter
9. Cleaning the milk frother
10. Cleaning the brewing unit
11. Unit setting
12. Grinding calibration
14. Steam temperature
15. Decalcifying

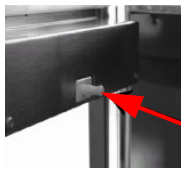
7.1 Accessing the programming mode

⚠ **The appliance must be switched on!**
Always remove the drip tray prior to opening the outer door!
First close the outer door and then push the drip tray in until it comes to a stop.
Failure to do so may damage the door and the hinge.

Proceed as follows in order to access the programming mode:

- Pull the appliance out slightly.
- Open the front flap with the help of the unlatching button on the right side of the machine.

- The display will indicate “Machine off Open door“.
- Press  button 1 (ESPRESSO).
- Pull the white microswitch on the inside of the door to the outside.
  The display will indicate “Machine cold“.



- When the emptying cycle has been completed the appliance will stop operation for a while and the display will indicate: “Counter“.

7.2 Counter

In accordance with the presetting in the factory or with your individual button allocation, the full quantity poured out by the machine will be indicated for each individual beverage.

- Press the ENTER button to access the submenu. Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Counter“ appears in the display.
- Press the ENTER button again.
- Use the CURSOR buttons 4 (▲) and 2 (▼) to go through the data for the individual beverages in the sequence of the button assignment.

Example of 16 espresso poured out:

- In order to set the number of beverages at zero, use the CURSOR buttons to select the respective beverage and press buttons 2 and 4 (▲+▼) **simultaneously** until the display indicates “Reset counter“ .
- Press the RESET button (3) after making the change in order to leave the submenu and return to the main menu. The new settings will have been stored.

7.3 Button assignment (name of beverage)

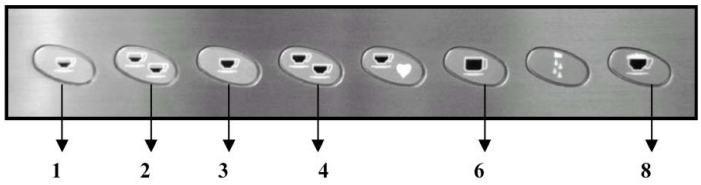
Each button has been allocated a beverage. The buttons have been assigned in the factory. You may however also assign the buttons other beverages in accordance with your own personal choice. An individually programmed button assignment will always superimpose the setting made in the factory and will affect all of the following programming steps.

Proceed as follows:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Name of product“ appears in the display.
- Press the ENTER button again in order to access the button assignment of button 1.

- You can now use the CURSOR buttons 2 (▼) and 4 (▲) to allocate the various beverages available in the list of beverages to this button.
- Once you have selected a beverage, press the ENTER button again in order to confirm this beverage for the button and to continue with the selection of a beverage for the next button 2.

The following buttons can be programmed in sequence:



- Only coffees can be assigned to buttons 1, 2 and 3, and coffees and milk drinks can be assigned to buttons 4, 6 and 8.
- Press the RESET button (3) after making the change in order to leave the submenu and return to the main menu. The new settings will have been stored.

7.4 Water quantity

The water quantity that needs to be poured out has been programmed for each individual beverage. Proceed as follows if you wish to change the quantity of water for all of the beverages or for a specific one:

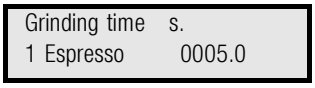
- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Water quantity“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set.
- You can now use the CURSOR buttons 2 (▼) and 4 (▲) to increase or decrease the quantity of water for each of the beverages.
- Once you have selected the quantity of water, press the ENTER button again in order to confirm this setting and to continue with entering the quantity of water for the beverage on the following button.
- Press the RESET button (3) after making the change in order to leave the submenu and return to the main menu. The new settings will have been stored.

7.5 Grinding time

A grinding time has been programmed for each beverage. The grinding time determines the quantity of coffee used for a respective beverage. Proceed as follows if you wish to change the grinding time for the individual beverages:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Grinding time“ appears in the display.
- Press the ENTER button again in order to set a grinding time in seconds for each of the beverages previously set.

Example for button assignment with espresso



- You can now use the CURSOR buttons 2 (▼) and 4 (▲) to increase or decrease the grinding time for each of the beverages.
- Once you have selected the grinding time, press the ENTER button again in order to confirm this setting and to continue with entering the grinding time for the beverage on the following button.
- Press the RESET button (3) after making the change in order to leave the submenu and return to the main menu. The new settings will have been stored.

7.6 Milk dispensing time

The duration for dispensing milk has been programmed in seconds for all of the milk drinks (button assignment 4, 6 and 8). Proceed as follows if you wish to change the dispensing time:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Milk time“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set in accordance with button assignment 4, 6 + 8.
- You can now use the CURSOR buttons 4 (▲) and 2 (▼) to increase or decrease the milk dispensing time.
- Once you have changed the time, press the ENTER button again in order to confirm this setting and to continue with entering the grinding time for the beverage on the following button.
- Press the RESET button (3) after making the change in order to leave the submenu and return to the previous menu item. The new setting will have been stored.

7.7 Prebrewing

The prebrewing time of the amount of coffee can be switched on or off for each individual beverage. Proceed as follows:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Prebrewing“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set.
- Use the CURSOR buttons 4 (▲) and 2 (▼) to switch the prebrewing function on or off for the individual beverages (YES or NO).
- Once you have selected a setting, press the ENTER button again in order to confirm this setting and to continue with entering the beverage for the following button.
- Press the RESET button (3) after making the change in order to leave the submenu and return to the main menu. The new setting will have been stored.

7.8 Compression

The compression of the coffee can be switched on or off for each individual beverage. Proceed as follows:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Compression“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set.
- Use the CURSOR buttons 4 (▲) and 2 (▼) to switch the compression function on or off for the individual beverages (YES or NO).
- Once you have selected a setting, press the ENTER button again in order to confirm this setting and to continue with entering the beverage for the following button.
- Press the RESET button (3) after making the change in order to leave the submenu and return to the main menu. The new setting will have been stored.

7.9 Coffee grounds counter

Once a preprogrammed number of portions of coffee grounds has gathered in the coffee grounds container, information will be given that it needs to be emptied. The appliance will be blocked so that the container can be emptied safely.

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Coffee grounds counter“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set.
- Use the CURSOR buttons 4 (▲) and 2 (▼) to set the number of portions of grounds after which indication is to be given that the container needs to be emptied (max. 40 portions).
- Press the RESET button (3) in order to leave the submenu and return to the main menu.
- The appliance must remain switched on when the container is being emptied so that it automatically commences with standard operation again.

7.10 Cleaning the milk frother

A certain period of use of the milk frother (number of hours) has been preset. We recommend that the milk frother be cleaned every two hours. Once this period has lapsed (max. 12 hours) a warning will indicate that the milk frother must be cleaned. Proceed as follows if you wish to change this period:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Clean milk frother“ appears in the display.
- Press the ENTER button again.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to set the number of hours after which indication is to be given that the milk frother needs to be cleaned.
- **We recommend setting a maximum of 2 hours.**
- Press the RESET button (3) in order to leave the submenu and return to the main menu. The new setting will have been stored.

7.11 Grinder calibration

This programming mode can be used to extend the grinding time by 0.1 seconds every 50-250 times product is dispensed.

The function will be deactivated if set at 0.

Use the CURSOR buttons 4 (▲) and 2 (▼) to increase or decrease the number of product portions dispensed after which the grinding time is to be extended respectively. Possible settings are 0, 50, 100, 150, 200 and 250.

The settings have been made in the factory. They may, however, be changed.

7.12 Setting the grinder

⚠ **Always remove the drip tray prior to opening the outer door!**
First close the outer door and then push the drip tray in until it comes to a stop.
Failure to do so may damage the door and the hinge.

- Firstly unlock the outer door and then open up the brewing unit flap.
  The grinding setting can be adjusted with the key provided and **this should only be carried out when the grinder is in operation.**
  - Turn clockwise for more finely ground coffee for a thicker coffee drink.
  - Turn anticlockwise for more coarsely ground coffee for coffee that is more liquid.
- Close the doors after changing the setting.

7.13 Coffee temperature

The temperature of the coffee boiler is programmed.

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Coffee temperature“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set.
- You can now use the CURSOR buttons 4 (▲) and 2 (▼) to increase or decrease the coffee boiler temperature.
- A temperature of 98°C has been preset.
- Press the RESET button (3) in order to leave the submenu and return to the main menu. The new setting will have been stored. Should you set a temperature which exceeds 100°C the temperature will automatically be reset at 90°C when the machine is switched off.

7.14 Steam temperature

The steam temperature is programmed. All of the settings have been made in the factory.

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Steam temperature“ appears in the display.
- Press the ENTER button again in order to go through each of the beverages previously set. You can now use the CURSOR buttons 4 (▲) and 2 (▼) to increase or decrease the steam temperature.
- Press the RESET button (3) in order to leave the submenu and return to the main menu. The new setting will have been stored.

7.15 Decalcifying indication

A specified volume of water in liters is programmed after which information will be provided that it is time to decalcify. Proceed as follows if you wish to change the volume:

- Press the ENTER button in order to access the submenu.
- Use the CURSOR buttons 2 (▼) and 4 (▲) to go through the various submenus until “Decalcify“ appears in the display.
- Press the ENTER button again.
- Use the CURSOR buttons 4 (▲) and 2 (▼) to set the number of liters to be dispensed after which indication is to be given that the machine needs to be decalcified.
- Press the RESET button (3) in order to leave the submenu and return to the main menu. The new setting will have been stored.

7.16 Exiting the programming mode

It is sufficient to close the door if you wish to exit the programming mode.

- The display will indicate “Please wait machine cold“.
- The machine will now cease operation for a while. Please wait until the display indicates “Machine ready“. The machine is now ready to make the required beverage with the new setting.

7.17 Special functions

7.17.1 Resetting the water liter counter

This function can be used to reset the number of liters of water used to zero.

Please proceed as follows:

- Switch off the appliance.
- Switch the appliance on again and press the  button until the display indicates “Water counter reset“.

7.17.2 Resetting the cleaning cycles

This function can be used to reset the total number of cleaning cycles carried out to zero.

Please proceed as follows:

- Switch off the appliance.
- Switch the appliance on again and press the  button until the display indicates “Cleaning counter reset“.

7.17.3 Resetting to standard parameters

This function is used to delete incorrect operation data and to restore the standard programming settings (see chart and standard settings on Page 9).

Please proceed as follows:

- Switch off the appliance.
- Switch the appliance on again and press the buttons 1 (ENTER) and 3 (RESET) simultaneously until the display indicates “Please wait, loading data“.

8. Cleaning and care

You should read this section carefully before using your appliance for the first time. If cleaned correctly and looked after regularly the appliance will retain its appearance and stay clean for many years. The following tips will help you to gently and thoroughly clean and care for the surfaces of your coffee machine.

⚠ **Do not, under any circumstances, use steam or pressure cleaners to clean the appliance!**
If you do, damage caused to your appliance may put your life at risk.

⚠ **Risk of burns! Make sure the appliance has cooled down and is only warm to the touch before cleaning it.**

Observe the instructions for use of cleaning agents!

Liquid cleaning agent 1 liter	Spare-part no. 527 288
Decalcifier (10 packets)	Spare-part no. 527 289
Detergent tabs (100 tabs)	Spare-part no. 527 287

8.1 Casing

Clean the casing inside and outside with a soft, damp cloth. Clean the hinged dispenser pipe every time it is used. Run off a little hot water every time milk has been heated up in order to clean the dispenser pipe from the inside.

Do not use any

- aggressive or bleach based cleaning agents that contain active oxygen, chlorine or other caustic substances,
- abrasive cleaning or scouring agents, such as steel wool, soap impregnated steel wool, stiff brushes, metal or plastic sponges or any similar cleaners with an abrasive surface.

8.2 Water tank

Only appliances not connected to the tap water supply have a water tank. The tank must be rinsed out and filled up with fresh water every day.

Remove any visible lime deposits in the water tank with a decalcifying agent (see See ”Decalcifying indication” on page 24.)
To do so, take the water tank out of the machine and rinse it thoroughly after it has been descaled.

The tank must be rinsed out and filled up with fresh water every day. Only fill up with fresh, cold water. Never use milk, mineral water or other fluids.

8.3 Cleaning and decalcifying programs

The appliance has a fully automatic cleaning and decalcifying program. The program has been set to clean the brewing unit with a detergent tab and the milk cycle with a liquid cleaning agent. The machine is descaled with powder. The cleaning program regulates the cyclical dispensing of hot water, which is interrupted by waiting periods. The full cycle takes approx. 4 minutes.

The decalcifying program is a special program and runs separately.

Descaling cycles

Your water hardness	Water quantity to be set
Hardness range 0 - 7 °dH	100 liters
Hardness range 7 -14 °dH	150 liters
Hardness range 14 -21 °dH	200 liters
Hardness range >21 -14 °dH	250 liters

Cleaning must be carried out at least once a day with suitable cleaning agents, since any milk which remains in the brewing unit could be a health risk. It is also recommended that the milk frother be cleaned two hours after the last milk beverage has been dispensed (see special functions).

⚠ ***Only use a decalcifying agent recommended by Küppersbusch when descaling. A commercially available decalcifying agent may destroy the machine.***

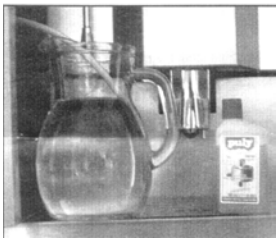
8.3.1 Preparation

- Fill the water tank up with water to the highest level prior to running the cleaning cycle (not for appliances supplied with tap water).
- Once the cleaning procedure has been commenced with detergent tabs it may not be interrupted, since residual tabs could otherwise remain in the machine.
- A decalcifying cycle which is in progress may not be interrupted, since residual cleaning agent could otherwise remain in the machine.
- The water tank and the entire brewing unit must be rinsed carefully once the descaling procedure has been completed.

8.3.2 Automatic cleaning programs

Have a cloth at hand when you wish to clean the machine and proceed as follows:

- Open the cover of the coffee powder container (decaffeinated coffee) and put in a detergent tab.
- Close the cover.
- Pull out the left compartment.



- Put approx. 0.5 liters of water and approx 20 ml of liquid cleaning agent into a suitable vessel and place this in the milk container compartment as illustrated. Then insert the milk suction hose.
- Place a suitable vessel for collecting the water with liquid detergent under the coffee dispenser. The vessel should hold approx. 1.5 -2 liters .

- Press the button  for decaffeinated coffee until the message “Decaffeinated cleaner press“ appears in the display.
- Now press the button for decaffeinated coffee again in order to start the cleaning cycle immediately. If the button for decaffeinated coffee is not pressed, the appliance will automatically commence with the cleaning program after about 20 seconds.

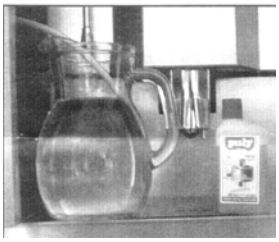
All of the beverage dispenser buttons will be locked during the entire cleaning procedure and the display will indicate “Appliance cleaning“.

As soon as the vessel with the detergent liquid has been emptied by means of the milk suction hose, remove it from the compartment, fill up 1 liter of **clean** water and place it back in the left compartment with the milk suction hose inserted. The rinsing cycle will commence automatically after the actual cleaning cycle. The clean water will be sucked into the cycle. The display will indicate “Appliance rinsing“.

It is recommended that the collection vessel under the coffee dispenser be left standing during the entire cleaning and rinsing process or that the drip tray be emptied at the end of the cleaning and rinsing cycle.

8.3.3 Automatic descaling

- Pull the appliance out far enough to enable you to open up the cover of the water tank. Fill up the water tank with 1 liter of water and a whole bag of decalcifier. Wait until the product has dissolved in the water and close the cover again.
- Pull out the left compartment.



- Put approx. 0.5 liters of water and approx 20 ml of liquid cleaningagent into a suitable vessel and place this in the milk container compartment as illustrated and then insert the milk suction hose.
- Place a suitable vessel for collecting the water with liquid detergent under the coffee dispenser. The vessel should hold approx. 1.5 -2 liters .

- If you now press the button  for decaffeinated coffee until the display indicates “Press clean decaffeinated“, the descaling program will run in the same manner as the previously described cleaning program.
- After the cleaning programs have been completed you will see the message “Machine ready“.

⚠ ***Only use a decalcifying agent recommended by Küppersbusch for descaling. A commercially available decalcifying agent may destroy the machine.***

8.3.4 Descaling appliances connected to the tap water supply

Automatic descaling of the brewing unit with the integrated descaling program and tabs can only be carried out if the appliance is not connected to the tap water supply.

For appliances connected to the tap water supply, a descaling filter must be installed at the top of the appliance before it is connected to the water supply.

8.3.5 Recommencing an interrupted cleaning process

If the cleaning or descaling process is interrupted due to a power cut or when the appliance is switched off, the brewing unit will cease operation for a while when the appliance is switched on again and the display will indicate “Press clean decaffeinated“.

- Press the  button in order repeat the cleaning or descaling program as previously described.

8.3.6 Cleaning the milk frother and the coffee dispensers

The appliance has a milk frother in order to be able to dispense cappuccino direct. The frother is installed direct in the coffee dispenser. Check to ensure that the milk suction hose is not bent or blocked. Proceed as follows to clean:

- Open the outer door and then the brewing unit flap.
- Carefully pull out the entire brewing unit towards you **(do not pull it downwards!)** and then pull it out.
- Pull the milk frother upwards and take it out of the brewing unit.
- Disconnect all of the hoses.
- Dismantle the milk frother into three parts and rinse it thoroughly under running water.
- Pull out the coffee dispenser and also rinse it under running water.

Proceed in the reverse order to reinstall; pay attention to the connections of the milk frother hoses.

Red hose – top connecting piece

White hose – bottom connecting piece

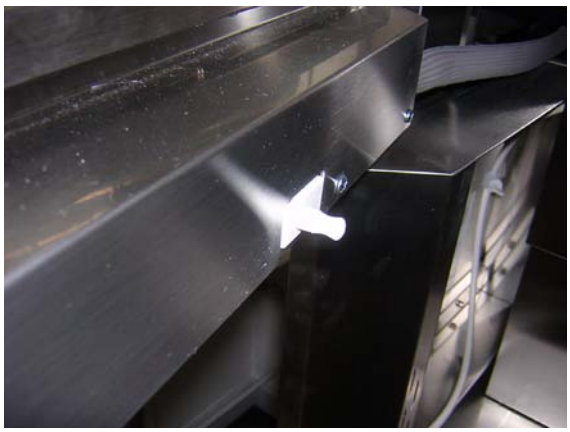
⚠ **For reasons of hygiene the milk frother must be cleaned when more than two hours have lapsed since the last milk beverage was made. In order to do so, dip the milk suction hose into hot water instead of into milk.**

9. Removing the individual components

9.1 The outer door

9.1.1 Electric components

Various electric components are accessible behind the cover.



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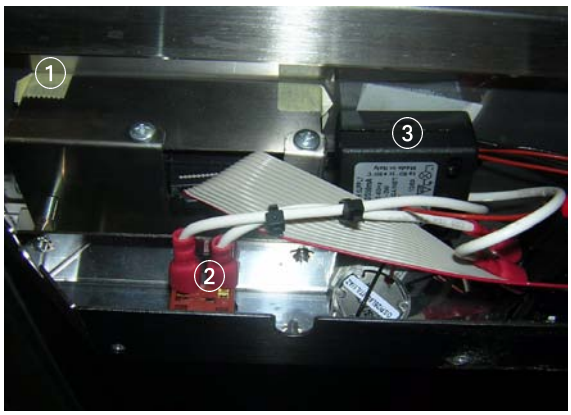
① Display

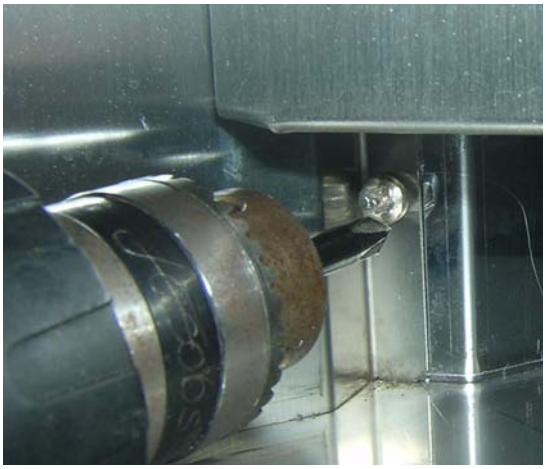
② Light switch

③ Transformer for light (12volts)



9.1.2 Adjusting the door

After the hinge covering has been removed



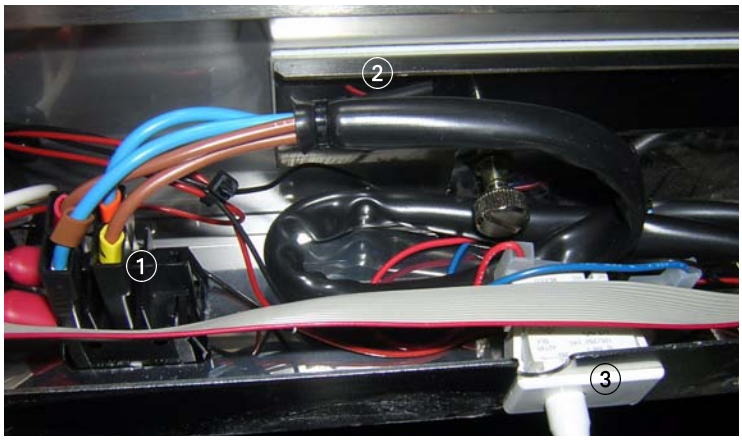
you will be able to access the hinges and adjust them.

9.1.3 Electric components

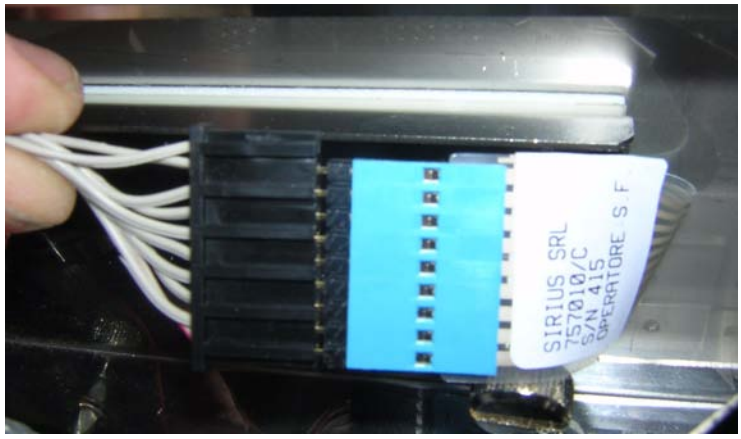
① Main switch

② Set of buttons

③ Door switch



On the right you will find the plug connection for the keys



⚠ **Caution!**
Take care not to make an incorrect connection.

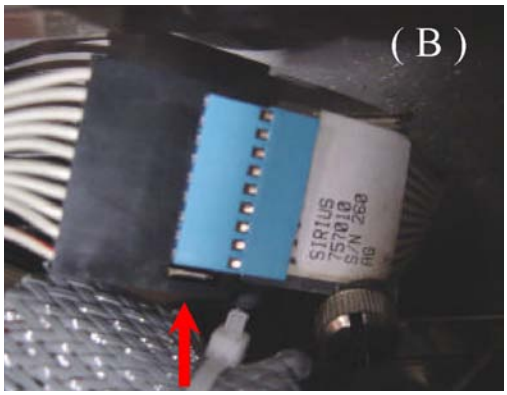
⚠ **Make sure that the plug connection between the keys and the microprocessor is carried out properly.**

An incorrect plug connection can lead to serious problems, for example when *cappuccino* is selected and *espresso* is shown on the display.

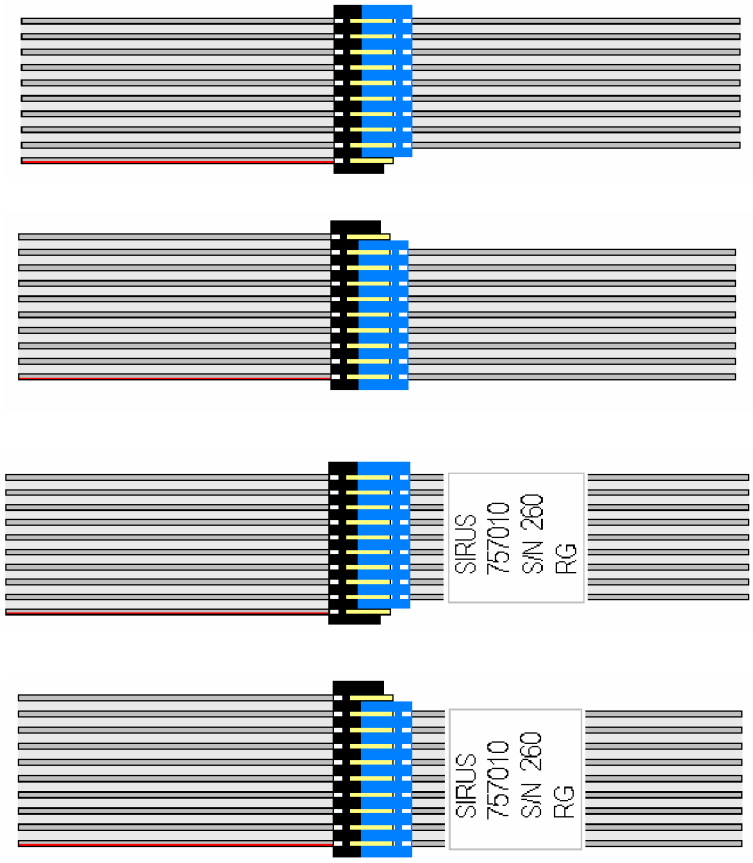
The plug-and-socket connector and the control circuit board band have nine plugs, while the plug-and-socket connector of the microprocessor has ten.

The diagram opposite shows an incorrect connection with an open plug-and-socket connector (red arrow).

The plug of the control circuit board (blue plug with SIRIUS lettering) can be inserted in two different positions, and both the band and the plugs can be turned around by 180°.



The two illustrations below show four different connection possibilities, with the last diagram showing the correct connection.



CORRECT

9.2 Components at the back

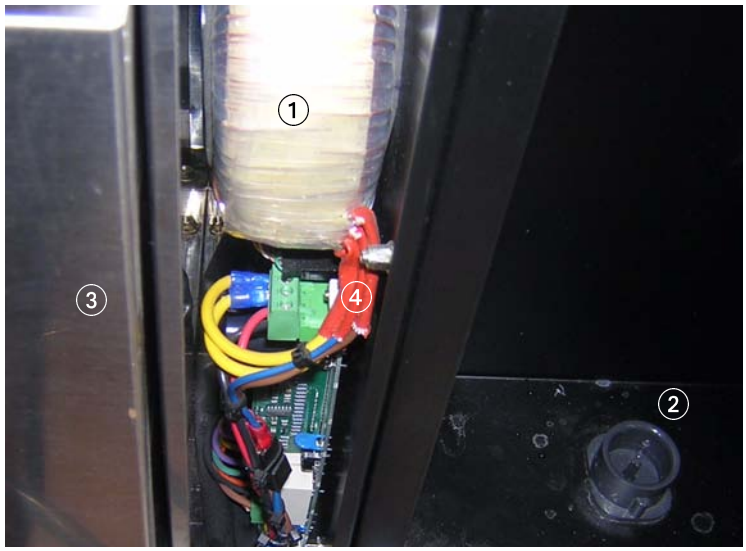
The following components will be accessible when the rear panel has been removed

① Transformer 220V-18 volts

② Water tank connection

③ Cup warmer side part

④ Electronic unit



⑤ Pump

⑥ Connection: Reed contact for the water level in the boiler

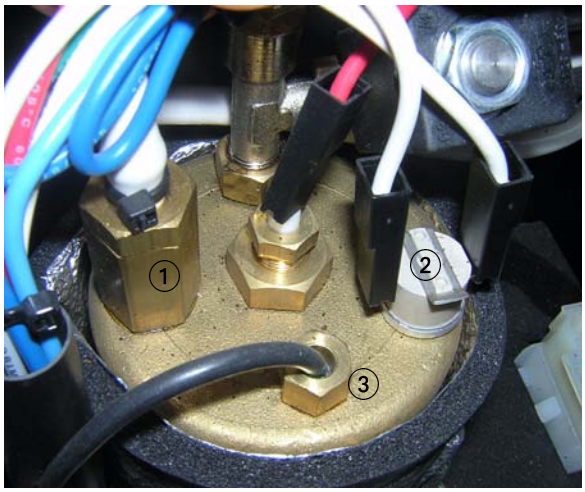
9.3 Boiler unit

The boiler unit comprises 2 boilers, a hot water boiler and a steam boiler.

The hot water boiler is always filled up with water. The steam boiler is only filled up two thirds.

Each boiler has its own heating element, its own temperature fuse and its own temperature sensor.

The water level is only measured in the steam boiler, by means of a sensor which utilizes the conductibility of the water and which is evaluated by the electronic unit by means of a change in the resistance.



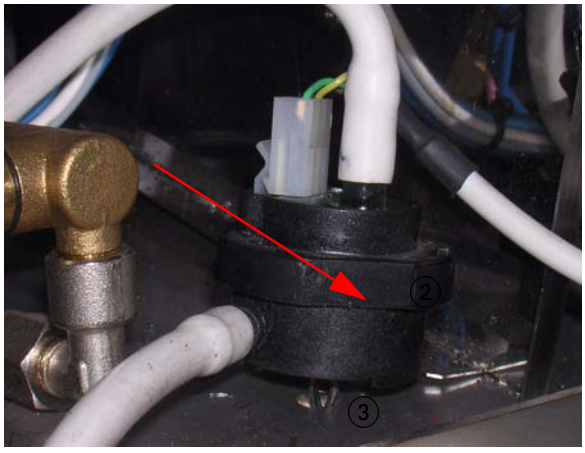
① Sensor

② Protection against an excessive rise in temperature

③ Temperature sensor

Function

The water quantity for the respective product set is metered and determined by a flow gauge (arrow).



General filling of the boiler

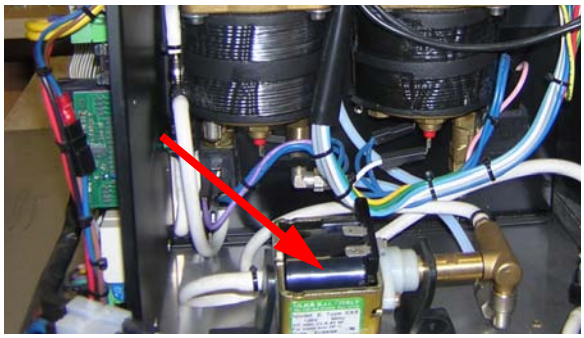
The water quantity for the boiler is determined by the sensor (hot water boiler).

The electronic unit releases the filling procedure when the charging valve at the bottom of the steam boiler opens and the pump is switched on, until the sensor has recorded the water level. The water flows through the hot water boiler to the steam boiler.

If the steam boiler has not filled up after 2 minutes the display will show “Boiler filling error“.

The causes may be:

- Charging valve defect
- Pump (arrow) defect
- Valves blocked by foreign matter
- Sensor defect
- Electrical connections cut off

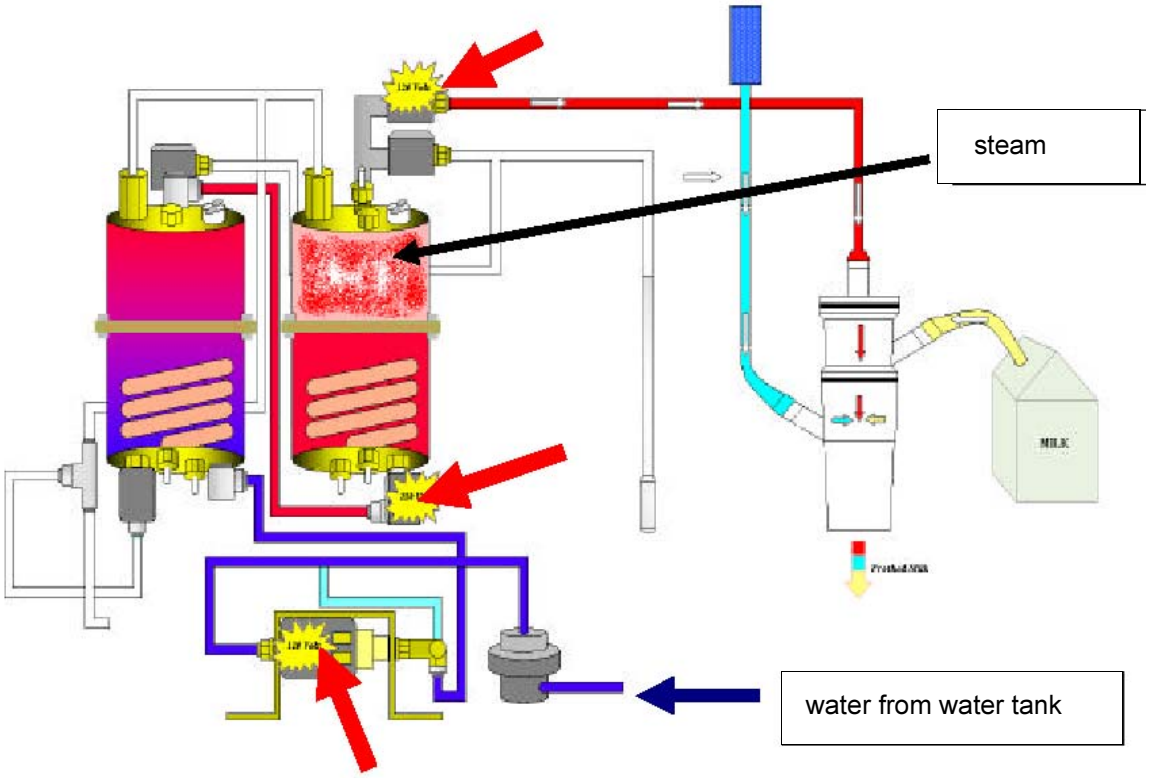


Functioning of the boiler when making cappuccino

The milk is sucked up by a suction effect (vacuum) into the cappuccino unit.

This procedure is carried out with hot steam and at the same time the milk is heated up.

The steam boiler is filled up two thirds with water in order to generate steam. The remaining space is required in order to extract steam.



All of the components marked with a red arrow are activated.

9.4 The grinder

9.4.1 Removing the grinder

1. Remove the appliance from the cabinet and put it onto an even, sturdy surface. Remove the top 24 screws (Fig. A, B and C) and then remove the top cover.

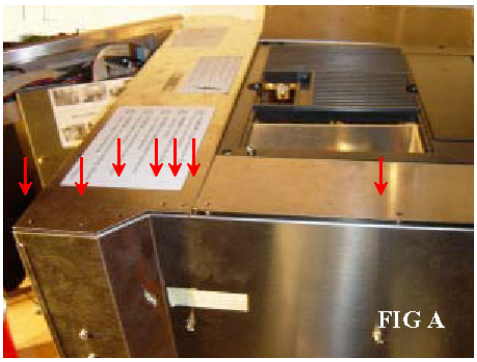


FIG A

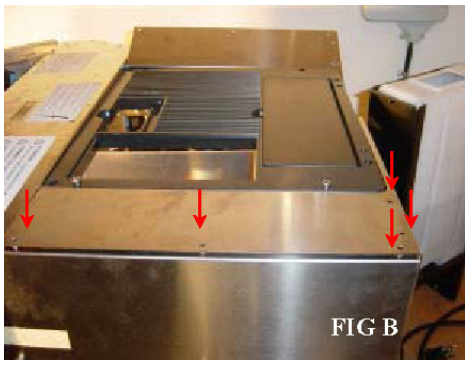


FIG B

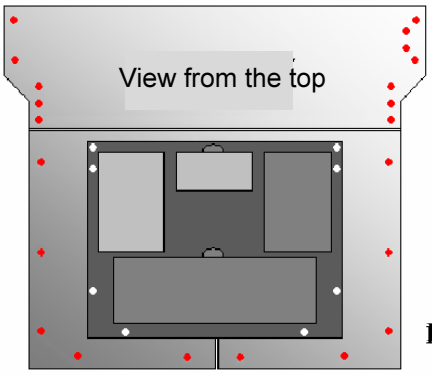


FIG C

2. Now remove the back cover which is attached to the body with 8 cap screws. The cover is connected to the mains cable with a clamp. Pull the white, the black and the earth cables out of the molex plug and then carefully take the cover away.

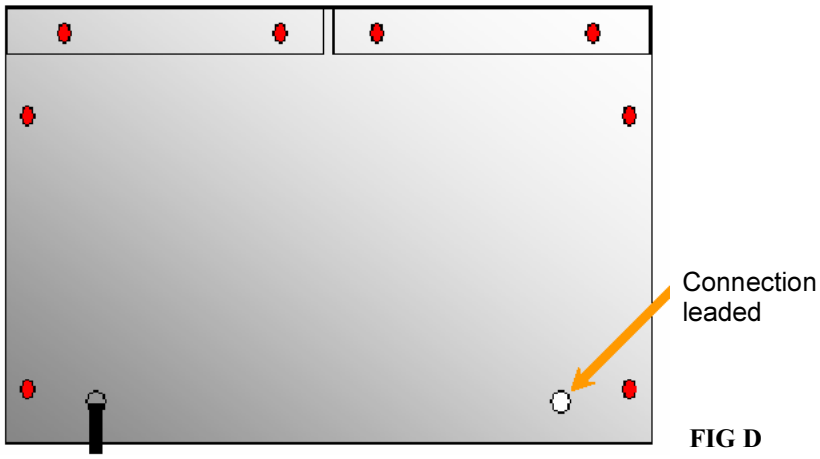


FIG D

3. Remove the 6 screws of the right cover and carefully take it away. The screws are on the bottom of the cover, see Fig. F


FIG E

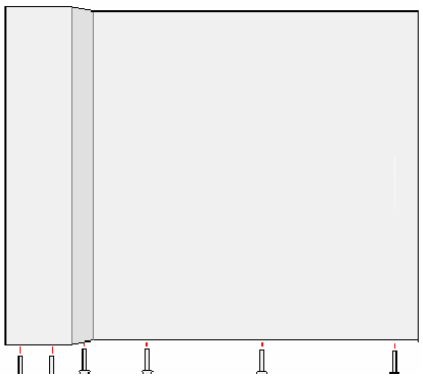


FIG F

4. Remove the eight 3 mm screws from the top supporting plate (Fig. G and H) and then carefully take the plate away.

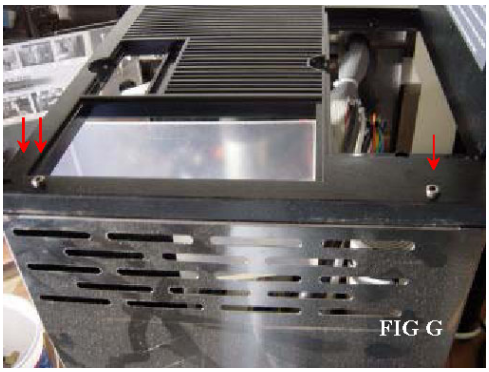


FIG G

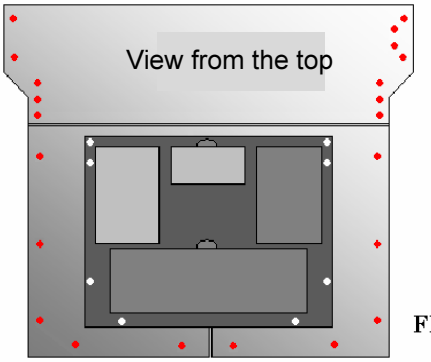


FIG H

FI

5. Now remove the inner support plate in order to access the microprocessor. In order to do so, firstly pull the plate upwards and then hook it out of the carcass.

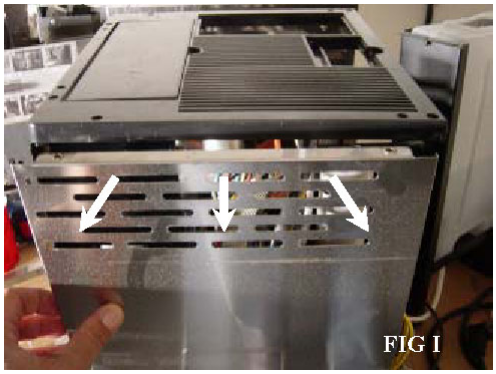


FIG I

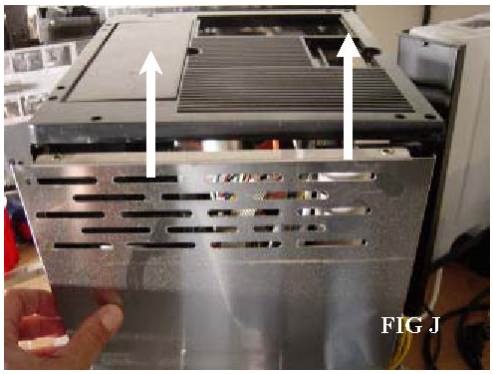


FIG J

6. If you look into the grinder from the top you will see four head screws. When you have removed them you will be able to pull the grinder towards you. The red arrow shows the plug for the grinder.

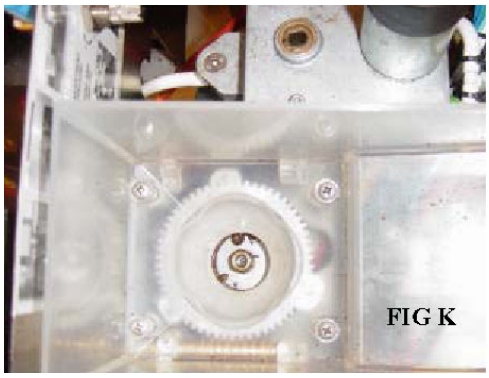


FIG K

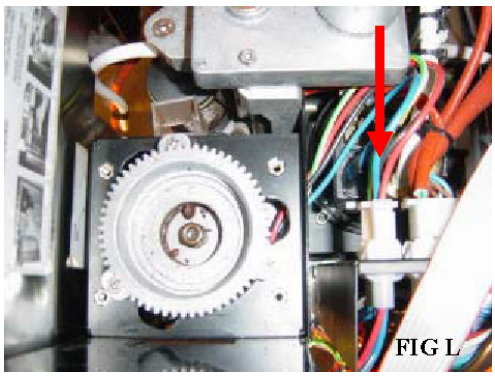


FIG L

7. Remove the four fastening screws of the grinder with an Allen key on the points marked in yellow. Do not remove the grinder until the Molex cable can be pulled through the frame as shown in FIG N.

   When you have removed the side panel you will be able to take out the microprocessor, the reducing transformer and the capacitor.

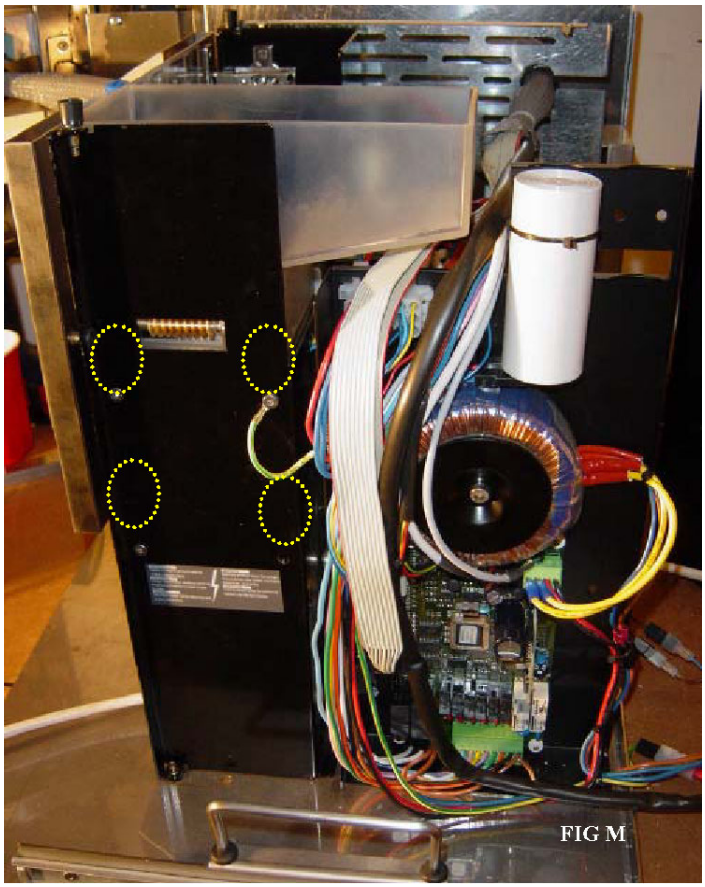


FIG M

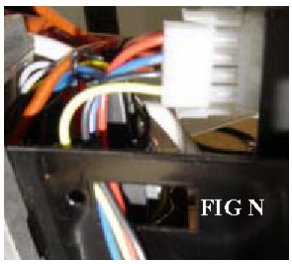


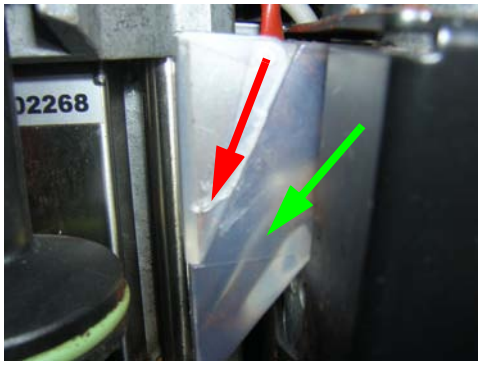
FIG N

9.5 Brewing unit

The coffee is brewed in the brewing unit after it has been ground and the coffee grounds are then ejected.

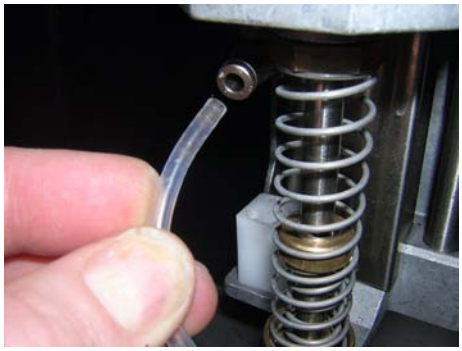
During this procedure the ground coffee firstly drops through a guiding device in the opening of the compression chamber (green arrow). The brewing unit then moves upwards and the coffee is compressed. The chamber is sealed. The closing position at the beginning is regulated by a Reed switch and the completion of the compression procedure is determined by the current consumption of the electronic unit.

⚠ **Attention!**
Please make sure that only a little silicone is used to adhere the top and the bottom parts (red arrow).

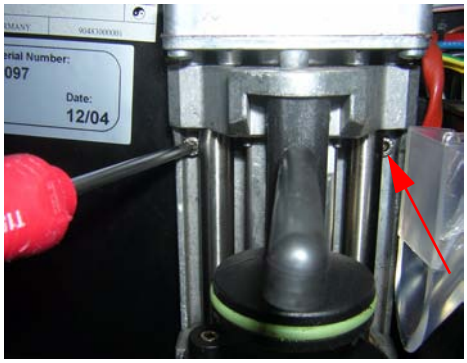


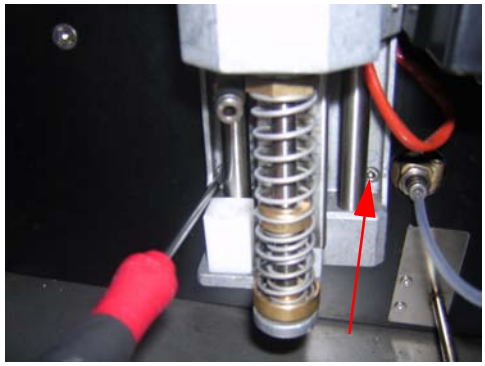
9.5.1 Removing the brewing unit

1. Remove the bean box in order to access the group connector.
2. Remove the hose.



3. Undo the four screws.

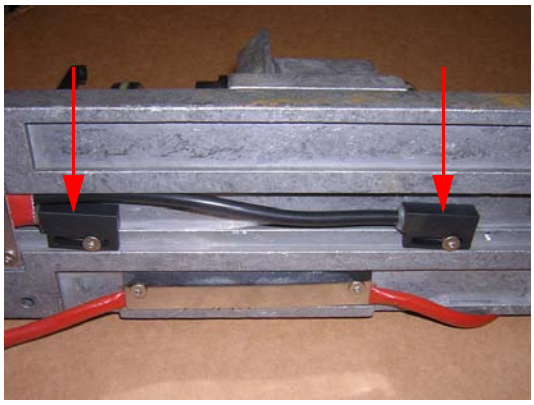


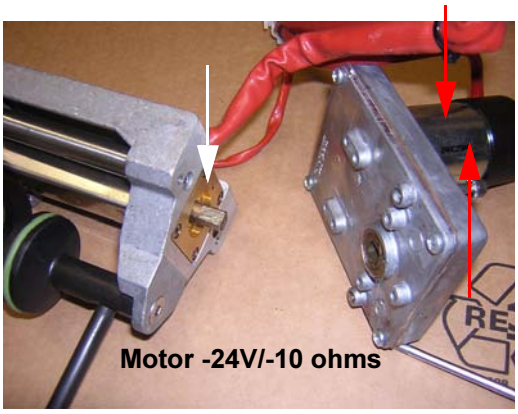


4. Now the heating element (220V/18Watt) for the brewing unit can be removed. This ensures that the coffee is hot right from the beginning.

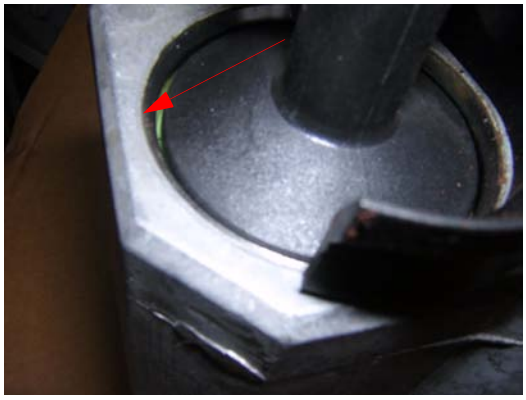
9.5.2 Brewing unit test and diagnosis

1. Check the Reed contacts for the beginning and end positions of the brewing unit. You will need a measuring instrument for testing.
2. Determine the top and the bottom end position. In order to do so, the motor must be screwed off. You can then turn the shaft with a spanner in order to determine the top and the bottom point.



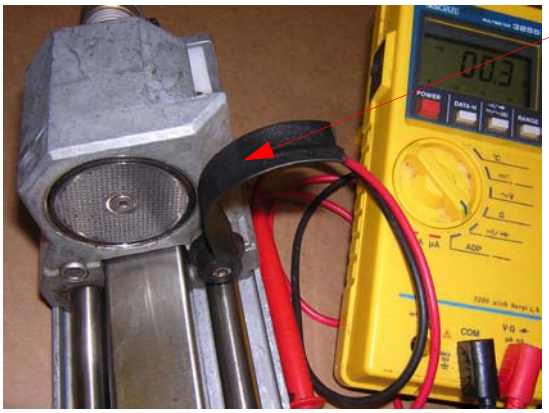


3. In order to determine the top point turn the shaft until the position (arrow) has been reached. Then adjust the reed sensor on the back if necessary and align it with a continuity tester.



Correct position

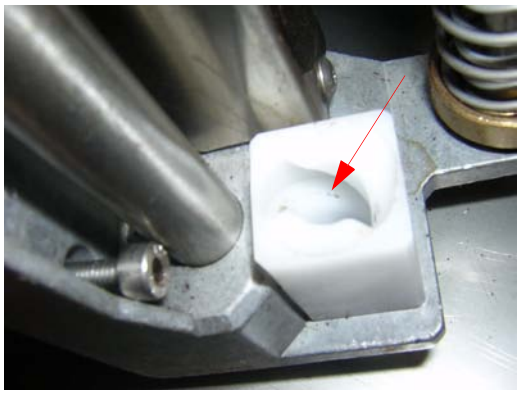
4. In order to determine the bottom point turn the shaft until the swivel arm has reached this position (arrow).

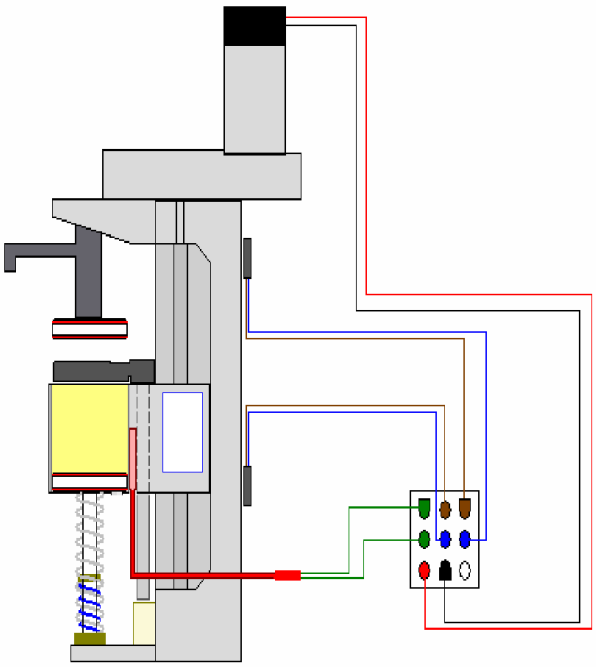


Correct position of the swivel arm

The Reed switch must have connection at this point. Adjust if necessary and align with the help of a continuity tester

⚠ **Attention!**
Please make sure that this area is always clean and that no residual coffee is present since the swivel arm could otherwise become unhooked.





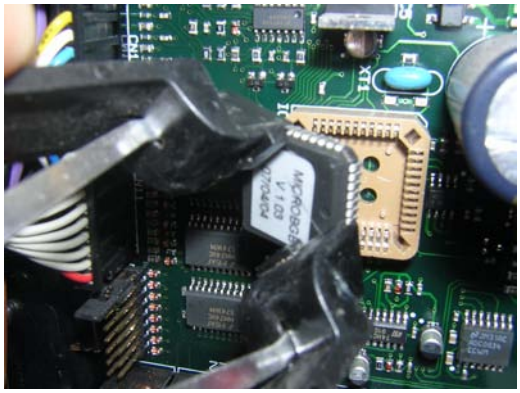
9.6 The electronic unit

The electronic unit is located at the back on the right. When the righthand side panel and the espresso cup holder have been removed the electronics unit will be accessible. Exchangeable parts:

- Language chip
- Electronic unit
- Safety fuse
- Door contact switch

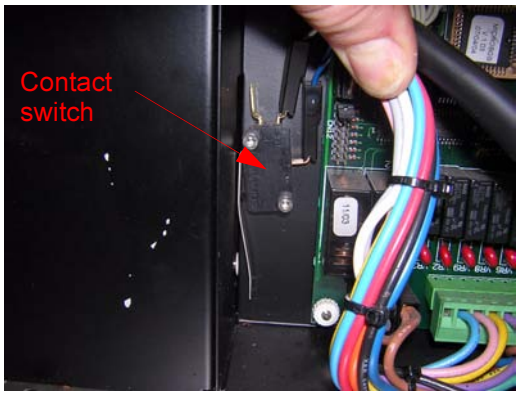
9.6.1 Replacing a language chip

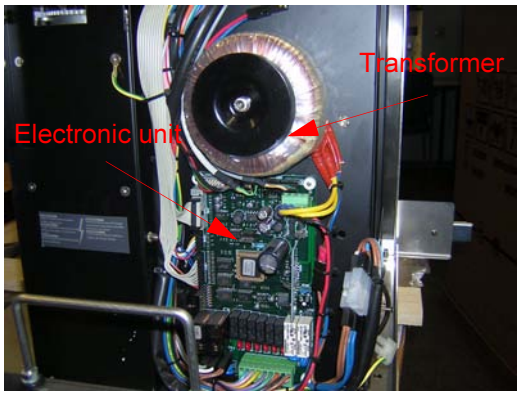
The language chip can easily be removed and installed with suitable tools.

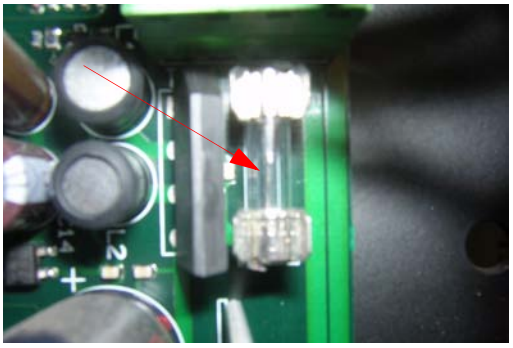


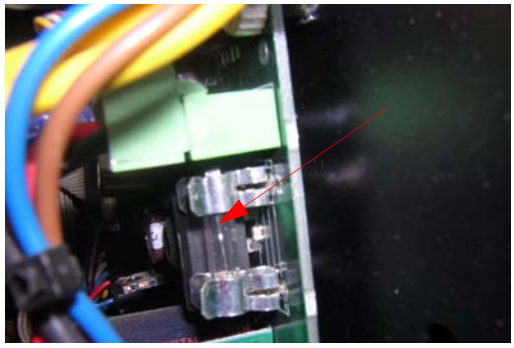
9.6.2 Replacing the electronic unit

The contact switch for the coffee grounds container is on the left of the electronic unit.

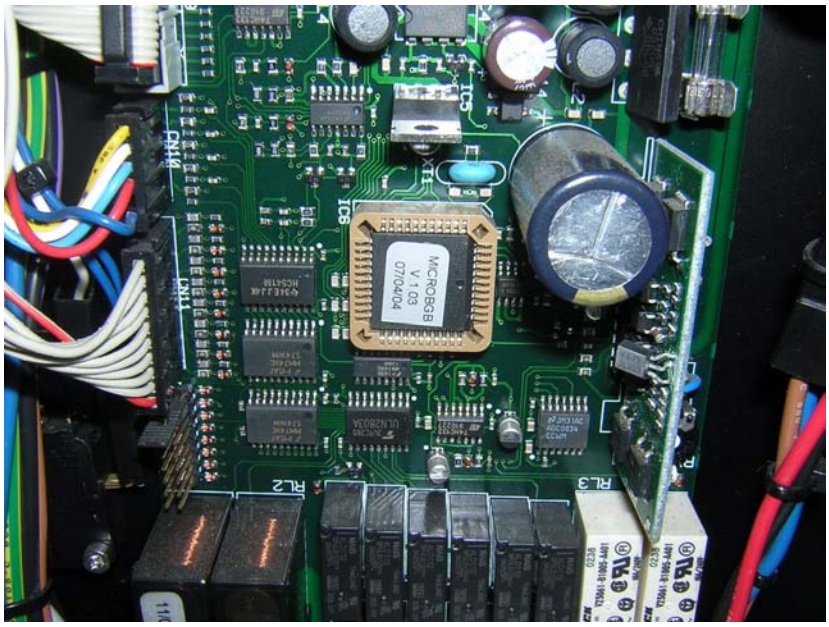


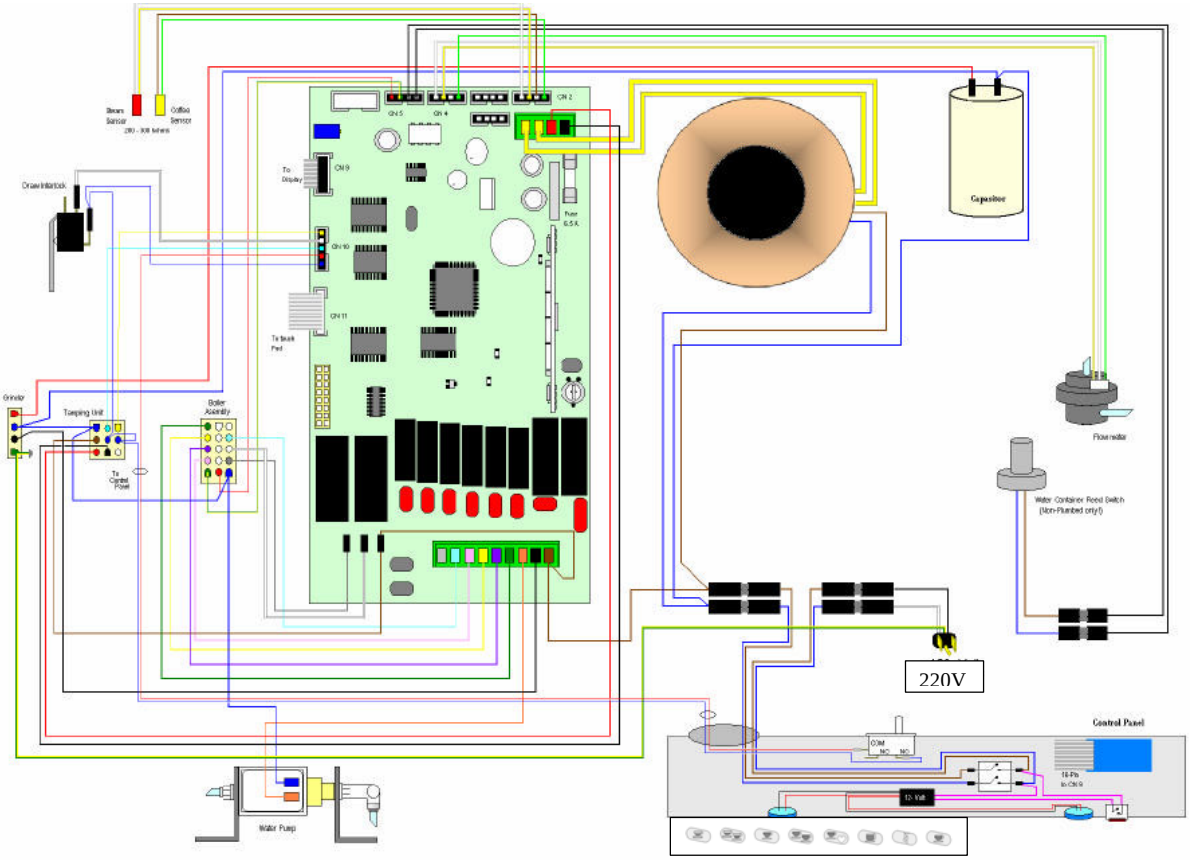






View of the electronic unit





10. Error messages

10.1 Error message – coffee grounds box incorrectly positioned

Machine off
No drip tray

Reason: Coffee grounds box not correctly positioned.

Effect: The buttons for dispensing coffee are blocked.

Solution: Insert the coffee grounds box correctly.

If this fault occurs while a beverage is being dispensed:

- Up to the infusion stage the message will appear in the display, but the beverage will still be dispensed.
- After infusion the procedure will be stopped. The coffee will be dispensed once the coffee grounds box has been properly installed.

If this fault occurs while the brewing unit is moving:

- The movement will be interrupted. The course of movement will be repeated once the coffee grounds box has been properly installed.

10.2 Error message – coffee grounds bin full

Machine ready
Empty the coffee grounds bin

Reason: Coffee grounds box not correctly positioned. Once a preprogrammed number of portions of coffee grounds has gathered in the coffee grounds container, information will be given that it needs to be emptied. The appliance will be blocked so that the container can be emptied.

Effect: The buttons for dispensing coffee are blocked.

Solution: Pull out the appliance, unlock the outer door and open it, open up the inner door and remove the coffee grounds container. A message will appear in the display. Empty the coffee grounds container and insert it again. The message will disappear and the display will indicate “Machine ready“.

⚠ **The appliance must remain switched on when the coffee grounds container is being emptied so that the settings are reset.**

10.3 Error message – door

Reason: Outer door open.

Effect: Appliance not working.

Solution: Close the outer door again.

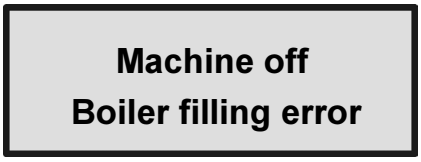
10.4 Error message – brewing unit setting

Reason: The time for resetting the brewing unit has been preset in the factory. This error occurs when a time limit of 10 seconds is exceeded during the movement phase, during which the upper piston recognizes the start of the motor.

Effect: The control unit blocks the movement process. The actuators of the movement procedures of the brewing unit and the actuators for dispensing are deactivated. All of the buttons are locked.

Solution: Pull out the appliance, unlock the outer door and open it, open up the inner door and close it again.

10.5 Error message – boiler filling



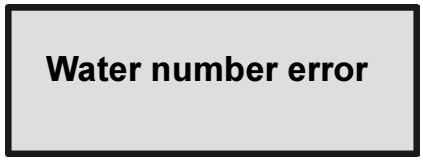
Reason: A time limit of 3 minutes is exceeded during the heating up phase of the boiler. The level sensor is not recognized.

Effect: The appliance becomes blocked.

Solution: Pull out the appliance, unlock the outer door and open it, open up the inner door and close it again. The control unit will repeat the idle-on process.

10.6 Error message – turbine

When this fault occurs the display will indicate the name of the current beverage to be dispensed and the respective error message in alternation, e.g.



Reason: The volume counter does not send any impulses to the control unit for a period of 5 minutes.

Effect: The beverage dispenser carries on for a max. of 60 seconds and stops when any of the buttons are pressed.

Note: The appliance can still be used like a manually operated appliance if this fault continues. Press a button in order to commence with making a beverage and press the same button again to end the procedure as soon as the beverage is in the cup.

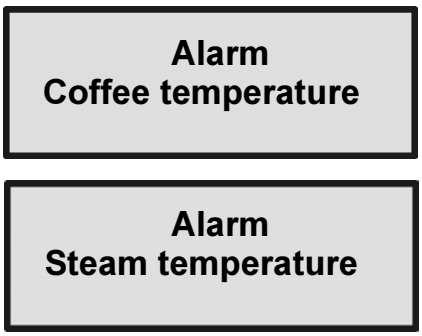
10.7 Error message – water softener

Reason: The volume counter has recognized that the preprogrammed total number of liters of water used has been reached.

Effect: No more beverages are dipensed. The current dispensing procedure is not discontinued.

Solution: Regenerate salt to soften the water. In order to reset the water liter counter to zero, please „Special functions” on page 25.

10.8 Error message – temperature sensor

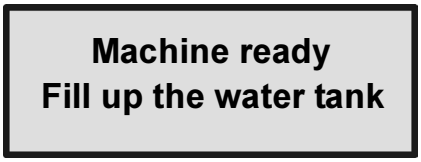


Reason: One or both of the temperature sensors are defect.

Effect: Beverages are no longer dispensed.

Solution: Replace the defect temperature sensor.

10.9 Error message – water tank



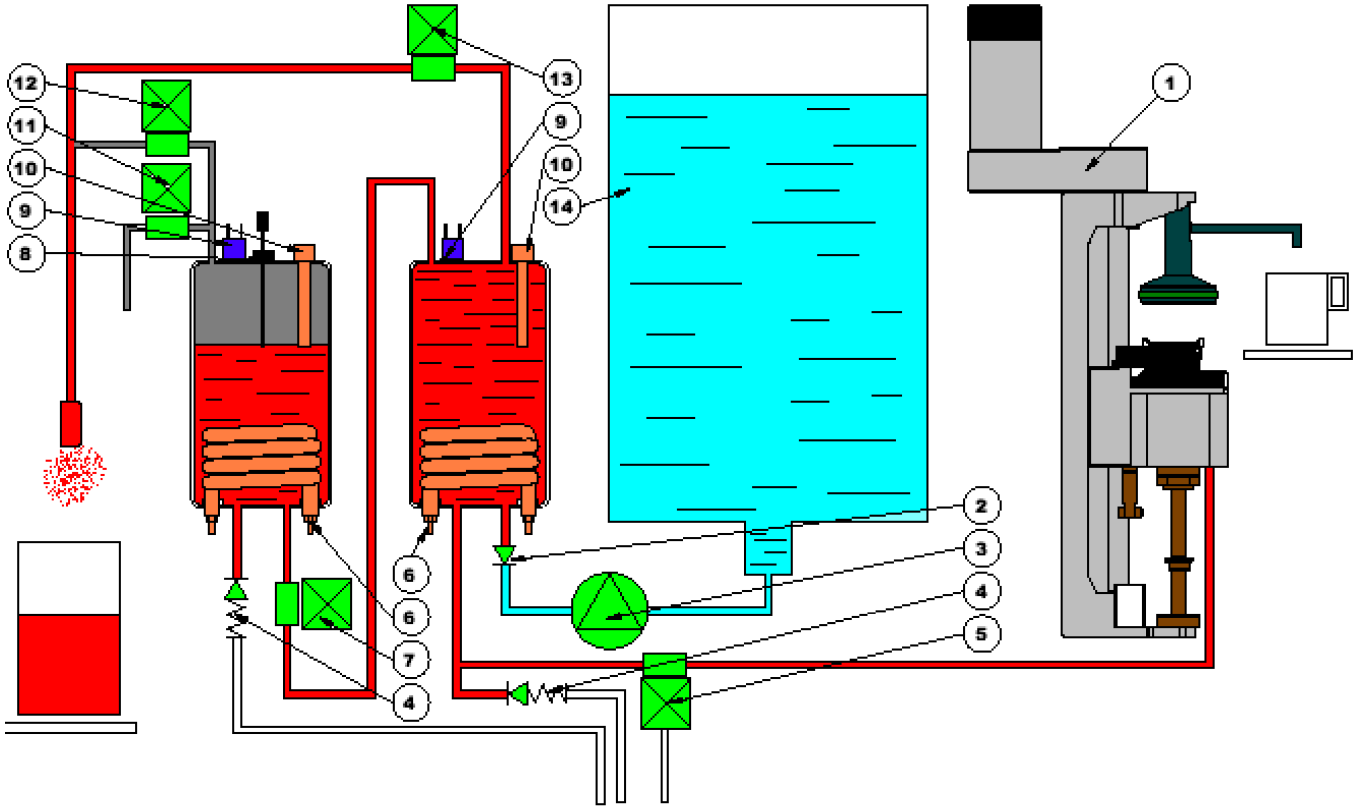
Reason: The water tank is almost empty.

Effect: No more beverages are dispensed. The current dispensing procedure is discontinued.

Solution: Fill up the water tank.

Note: Use the dispensing button for hot water to pump out any air bubbles which may be present in the appliance.

11. The water cycle



① Brewing unit
② Retainer valve
③ Pump
④ Safety valve
⑤ Coffee dispenser solenoid valve
⑥ Heating element
⑦ Water level solenoid valve
⑧ Level sensor
⑨ Safety thermostat
⑩ Temperature sensor
⑪ Milk frother solenoid valve
⑫ Steam solenoid valve
⑬ Hot water solenoid valve
⑭ Water tank

12. Wiring diagram