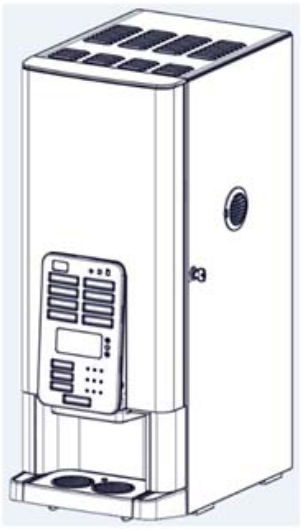
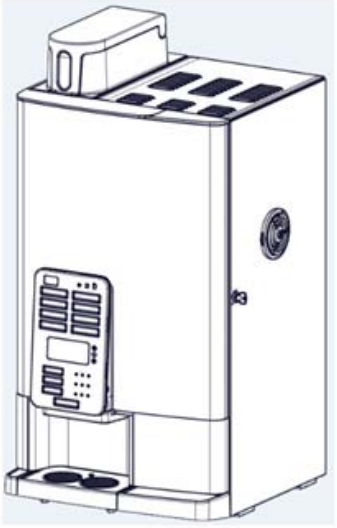
BRAVILOR BONAMAT



OPERATING PRINCIPLE

FRESHONE (G)

FRESHMORE (XL)

FRESHGROUND (XL)

1. OPERATING PRINCIPLE

1.1 General operation

The machine works according to a pump system developed by Bravilor Bonamat. This system has the following advantages:

- The components that ensure that the water is dosed properly are in the cold water circuit.
  This reduces the main cause of failures, namely the formation of limescale on the dosing valves, to a minimum.
- The float that regulates the water level is also in the cold water circuit.
  This also reduces scaling to a minimum.

1.2 Water dosing system

Pressing a selection button triggers the pump motor, which has a controlled time and speed. The pump rotor moves a certain amount of cold water from the cold water reservoir to the bottom of the boiler. This pushes the hot water in the boiler upwards towards the water selector. This selector selects its position by means of a rotating movement (drink–dependent). Depending on the selected drink, an ingredient is dosed and mixed in the mixing chamber with the dosed water before flowing into the cup.

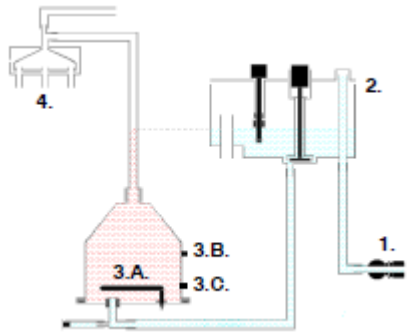


Fig. 1 Water dosing system

The water dosing system consists of the following main components:

1. Solenoid valve
2. Float tank complete
   - A. Float
   - B. Pump motor
   - C. Pump rotor
   - D. Pump housing
   - E. Encoder
3. Element complete (boiler)
   - A. Element
   - B. Temperature sensor (NTC)
   - C. Temperature sensor (NTC)
4. Water selector, complete
   - A. Water selector motor
   - B. Top cover of water selector
   - C. Light sensor
   - D. Water rotation disc
   - E. Water distributor

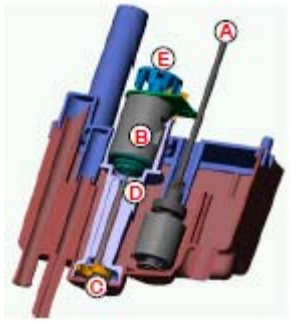


Fig. 2 Float tank complete

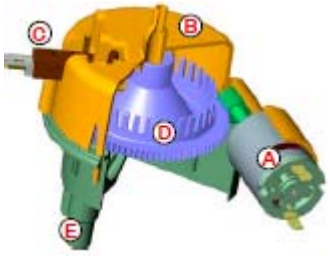


Fig. 3 Water selector complete

1.3 Starting up the machine

1.3.1 Boiling point determination program

Hot water may come out of the hot water outlet while this program is running.
The machine automatically runs through the boiling point determination program the first time the machine is used. The boiling point of the water is now determined. This is necessary because the boiling point depends on the local atmospheric pressure. The boiling point at sea level will be about 100_C, while the boiling point at 2,000 m is somewhat lower at 97°C. The water in the boiler is heated at full power to about 80°C when the machine is switched on (Fig.4,A).

The water is then heated in the boiler at reduced power until the temperature sensor on the outside of theboiler stops registering a change in temperature for a few minutes (Fig.4,B). The boiling point has been reached and the measured value is saved in the software. The operational temperature in the boiler will be 4°C below this point. Because the boiling point of water depends on the atmospheric pressure, this program must run at the location where the machine will be used. During the boiling program, the LCD displays 100°C and a flashing thermometer. After 10 to 15 minutes, the thermometer stops flashing, which indicates that the boiling point has been determined.

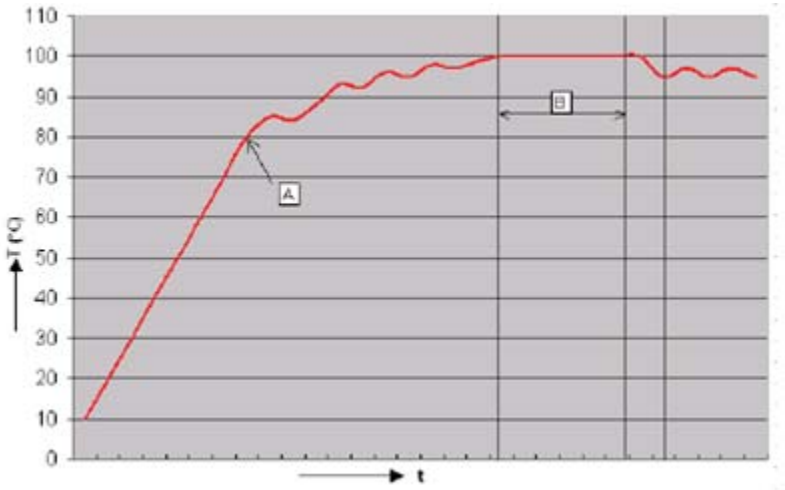


Fig. 4 Boiling point determination program

1.3.2 Initialization

Switch on the machine (the button is on the inside of the door).
Close the door or insert the service key.
The LCD displays all of the pictograms that can be displayed on the LCD.
The pictograms display on the LCD until the brewing unit has gone through a whole cycle.
The following information is then displayed:

- The version number of the software installed by the manufacturer (microprocessor).
- The version of the software table (Eeprom) that was installed by the manufacturer.

This process takes about 20 seconds and finishes with a steaming cup on the LCD to show that this phase has been successfully completed.

1.3.3 Filling the machine

The float tank and the boiler are connected by a siphon hose. Together they create a communication entity. When the machine is switched on for the first time the float tank (Fig.2) is empty and the float (Fig.2,A) in a lowered position.

- The magnetic valve (Fig.1) opens and fills the float tank with water at a pressure–independent speed of 2 litres/minute.
- The water in the float tank runs through the hose under the float tank to the boiler.
- When the water has reached a level that pushes the float upward, the water level in the float tank is equal to that in the boiler.

The magnetic valve is switched off.

Please note:

– Because the float tank fills faster than the water 'drops' into the boiler, the filling process will take place with short intervals.

1.3.4 Heating

Now that the system has been filled with water (Fig.1,3A), the heating element is switched on by a separate mechanical relay. The temperature sensor (Fig.1,3C), which is on the outside of the boiler, measures the actual temperature of the water. The temperature sensor ensures that the water in the boiler is heated to the desired temperature. A thermometer flashes on the LCD display during the heating phase. This indicates that the machine is not yet ready for use.

The temperature sensor is an NTC (Negative Temperature Coefficient) thermistor. The higher the measured temperature, the lower the sensor's resistance. Hot water has a lower specific weight than cold water. As a result, the hot water in the boiler will not flow back to the float tank through the siphon hose at the bottom. That part of the system will therefore remain cold. This is very important because the parts in the float tank are sensitive to limescale. The temperature sensor is on the outside of the boiler. As a result, there is no feed–through in the wall meaning that the system will not leak over time. This measurement is less direct. That is why the temperature is regulated proportionally.

The heating switches on for a specific amount of time and then off for a specific amount of time. A measurement is made after the period that the heating has been off. The value measured determines the length of the next heating period. The higher the temperature in the boiler, the shorter the moments that the element is on, and the longer the intermediate time becomes. This enables an accurate temperature to be obtained in the boiler.

There is a second temperature sensor on the boiler (Fig.1,3B). This sensor monitors the dispensing temperature of the dosed water. If this sensor measures a too low temperature, the machine is blocked.

No more water is dosed.

1.3.5 Dosing

Dosing takes place when:

- The float is in the highest position.
- The second temperature sensor measures a temperature that is higher than the blocking temperature.
- Pressing a selection button starts the pump motor (Fig.5) at a certain speed (rpm) for a given amount of time based on the programmed amount.

Fig. 5 Pump motor + rotor

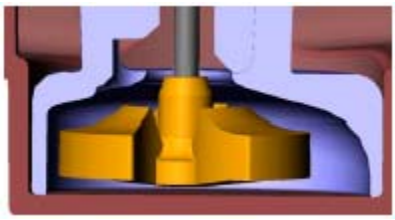


Fig. 6 Pump housing

- The pump rotor rotates in the water–filled pump chamber.

It is shaped by the bottom of the float tank and the bottom of the pump housing (Fig.6).

- The pump rotor pumps the water from the pump chamber through the siphon hose at the bottom of the boiler.
- This presses the hot water out of the boiler.
- The float and the magnetic valve ensure that the correct level of water is maintained in the float tank and pump chamber.

The volume of moved liquid (yield) is mainly determined by the time and speed of the pump motor. The time that the motor is on is controlled by the software and is very accurate. The number of revolutions a motor rotates is measured by an active revolution counter. Fig. 7 shows that a disc is mounted on the shaft of the pump motor (A = Encoder). This disc rotates at the same speed as the pump rotor. The encoder rotates between a light sensor (B) interrupting the light beam each time. The interruption of the light beam is converted into pulses that can be read by the electronics.

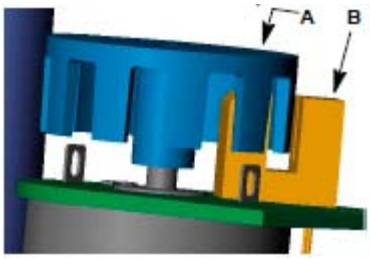


Fig. 7 Encoder

Fig. 8 Water selector

This active control of the rotational speed guarantees that the number of revolutions per minute and therefore the water yield remain constant while the pump motor is on.

Selecting the dosed hot water:

- This machine has a hot water selector.
- This component (Fig.8) enables the dosed water in the boiler to be dosed in at least three directions and at most six directions (depends on the type of machine).

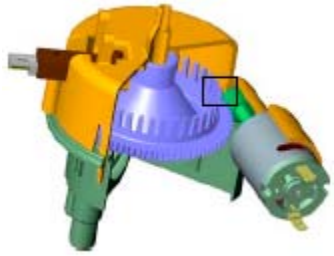


Fig. 9 Water selector internal

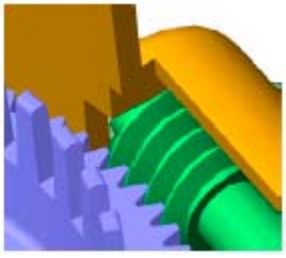


Fig. 10 Water rotation disc

After the machine has been switched on, the water selector goes into stand–by according to the following procedure:

- The water selector motor is triggered.
- This motor drives the water rotation disc with a plastic worm (Fig.9/10).
- The shafts on the rotation disc interrupt the light beam emitted by the light sensor and transmit the pulses to the controls (Fig.11).
- The start position is determined when the light sensor detects the wide shaft on the rotation disc (Fig.11/12).

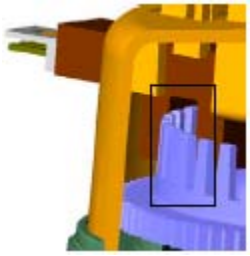


Fig. 11 Water rotation disc

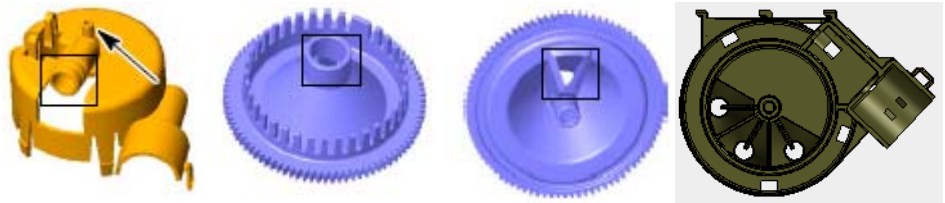
Fig. 12 Water rotation disc with wide shaft

Operation of the water selector after a selection button has been pressed:

- The water selector determines its position based on the selected drink.
- Once the position has been determined, the pump motor is triggered.
- The dosed hot water is pumped into the top of the water selector (Fig.13A).
- The water flows through the centre hole in the rotation disc (Fig.13B).
- The water exits through the oblique hole at the bottom (Fig.13C).
- The water then drops into one of the chambers at the bottom of the water selector (Fig.13D).
- The water flows through the connected hoses to the appropriate component.
- The water selector returns to the start position.

Please note:

- The arrow (Fig.13A) shows a small hole on the top of the water selector cover. This is a ventilation hole that prevents siphonage. A hose that goes to the top of the float tank is connected to the tulle.
- Based on the selected drink, the water selector can rotate during pumping. This is done when water is needed in several mixing systems.



A B C D

Fig. 13 Water selector components

1.4 Powder dosing system

The powder dosing system consists of an ingredient canister that is driven by the canister motor.

Pressing the start button starts the canister motor after a certain delay. This motor drives a worm, which transports the ingredient to the canister's outlet. The controls for the canister motor enable the timing and the dosing speed to be controlled independently. This enables ingredients to enter the mixing chamber while the water is flowing.

The canister motor will stop a little sooner than the water in order to rinse the mixing beaker. The canister will use springs based on the type of ingredient. These springs reduce the amount of tunnel formation, meaning the sticking of ingredients to the walls.

1.5 Mixing system

The mixing unit (Fig.15) mixes the hot water and the ingredient.

When a selection button is pressed, the water is dosed in the mixing chamber after a slight delay. The product falls into the mixing chamber. Depending on the selected drink, the mixer starts rotating at a certain number of revolutions per minute.

There is a exhaust hood on top of the mixing chamber (Fig.14). This cover has an opening at the back that the plates press into an exhaust outlet. This exhaust system ensures that steam from the mixing chamber does not reach the ingredient canister outlet.

Fig. 16 shows an example of an exhaust system that can be used for three mixing systems

Fig. 14 Mixing unit

Fig. 15 Exhaust hood

Fig. 16 Steam exhaust system for three mixing systems

1.6 Ventilation system

The ventilation system (Fig. 17/18) ensures that the hot steam that is produced during dosing can escape. This prevents the hot steam from settling and condensation from forming in the mixing chamber. This substantially decreases the amount of filth that can settle in the mixing chamber.

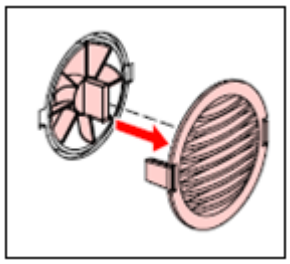


Fig. 17 Ventilation system – FreshOne, FreshMore, FreshGround

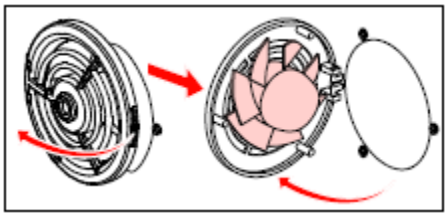


Fig. 18 Ventilation system – FreshMore XL, FreshGround XL

1.7 Brewer

The brewer works according to the vacuum principle, whereby ground coffee and hot water are drawn through a micro fine filter and filter paper into a cylinder by a housing.

Pressing a selection button that uses FreshBrew coffee starts the following process:

- Ground coffee and hot water are dosed in the top of the brewer through the water selector. The brewer housing is in its idle position in the cylinder just above the opening of the outlet (Fig.19A).
- The housing rises pressing air upward and out of the cylinder. This air movement ensures that the coffee is thoroughly mixed with the hot water.
- To prevent the mixture of coffee and hot water from flowing over the mixing chamber (when the coffee dose is high) a brew stop [Stop 0] between 0 and 10 seconds can be programmed to take place halfway through this process (Fig.19B).
- The housing stops for a few seconds at the very top to stimulate the extraction. The stop can be programmed from 0 to 10 seconds = [Stop 1] (Fig.19C).
- The housing then lowers so the coffee extract can be sucked through the filter paper.
- Before the coffee extract leaves the brewer, the housing stops again [Stop 2] for anywhere between 0 to 10 seconds to extract as much fresh coffee as possible from the coffee residue (Fig.19D).
- The housing then lowers further, releasing the opening of the outlet so the coffee extract can flow through the coffee outlet into a cup, mug or jug.
- When the brewer is dosing empty, an additional (3rd) non–settable stop takes place so the dosed coffee can flow out slower (Fig.19E).
- After dosing, the housing moves downward and automatically transports the filter paper and the coffee residue to the waste bin (Fig.19F).
- The housing then moves upward into its idle position just above the opening of the outlet.

The brewer is ready for the next cycle (Fig.19G).

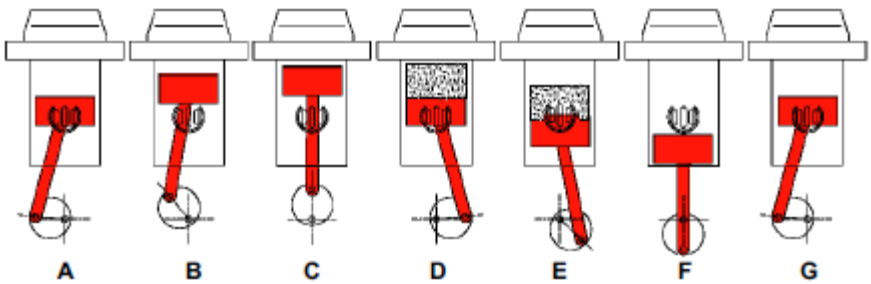


Fig. 19 Brewer

1.7.1 Adjusting the brewer

1.7.1.1 Clamping force

The clamping force of the brewer chamber must be set in order to prevent too much water from leaking through the filter paper. You can see if water is leaking by checking the filter paper. If the filter paper is wet for more than one centimetre all round after a cup of coffee has been made, too much water is leaking. The clamping force may not be set too high because doing so will cause excessive wear or the brewer motor to get jammed.

1.7.1.2 Adjusting the clamping force

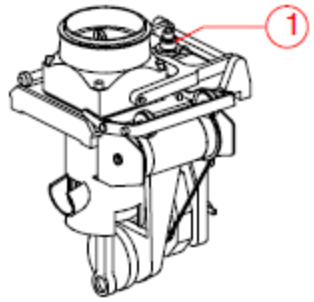


Fig. 20 Adjusting the brewer chamber

- Place a piece of filter paper between the brewer and the brewer chamber.
- Rotate the brewer housing upward to the highest position.
  The brewer chamber is all the way down and pressing on the filter paper.
- Turn the adjustment bolt (1) behind the brewer chamber such that the filter paper cannot be pulled out from between the brewer chamber and the brewer.
- Tighten the adjustment bolt by turning it half a turn or a full turn.
- Put the brewer back in the machine.
- Insert the filter paper as described in the instructions.
- Make sure it works by making a cup of coffee (use the service key).
- Fasten the adjustment bolt by turning it a quarter of a turn if too much water leaks along the filter paper.
- Loosen the adjustment bolt by turning it a quarter of a turn if the brewer housing does not move evenly in the lowest position (when the brewer chamber rises).

1.7.1.3 Paper transport

The filter paper transport should be set in such a way that the distance between the cakes of coffee residue is large enough for the next cycle to take place on a piece of filter paper that is completely clean.

To prevent excessive paper use and replacing the roll too often, make sure the distance between the cakes of coffee residue is not too large.

The distance between the cakes of coffee residue should be between 5 and 10 mm.

1.7.1.4 Adjusting the paper transport

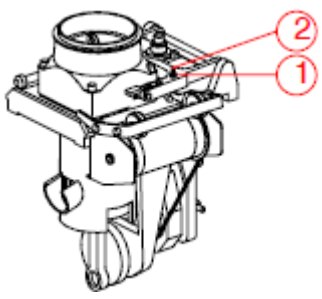


Fig. 21 Adjusting the paper transport

TIP

– Always check the clamp in the brewer chamber before adjusting the paper transport. Changing the clamping force of the brewer chamber will affect the paper transport!

WARNING

– Turn the adjustment bolt in a closed position so it cannot be turned too far.

- Hold on to the adjustment bolt (2.) and loosen the locknut (1.).
- Turn the adjustment bolt upward if coffee residue is left in the brewer chamber. This increases the distance between the cakes of coffee residue.
- Turn the adjustment bolt downward to decrease the distance between the cakes of coffee residue.
- Fasten the locknut after you have finished adjusting the paper transport.
- Make sure the paper transport works.
- Check the distance between the cakes of coffee residue.

TIP

– The adjustment bolt is easiest reached when the brewer chamber is up (the housing is completely down).

1.8 Bypass

A bypass is always connected to the brewer.

The bypass fulfils the following function:

The maximum amount of water that fits in the brewer (cylinder) is 170 ml. By using the bypass, an additional 130 ml of hot water can be dosed for the coffee extract through the special outlet (Fig. 22) so that 300 ml of coffee can be made in 1 brew cycle. The bypass must first be activated in the program. If the bypass is activated, the software will automatically dose stronger coffee. Because stronger coffee creates more foam in the mixing chamber when the housing rises, the brewer stop 0 must be adjusted and set to a longer time.

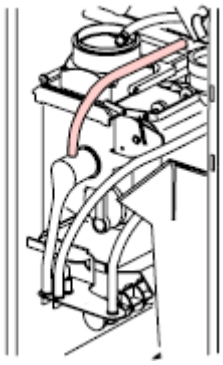


Fig. 22 Bypass

1.9 Coffee grinder

We recommend checking the coffee grinder and the coarseness of the ground coffee periodically and to maintain the grinder according to the below table:

Coffee beans	Action:
After the first 30–50 kg:	Check the coarseness of the ground coffee
	Clean the coffee grinder
After every 300 kg:	Calibrate the coffee grinder if necessary
After every 1000 kg:	Replace the grinding discs

1.9.1 Replacing the grinding discs

1. Pull the plug from the socket.
2. Remove the drip tray.
3. Open the door with the provided key.
4. Open the cover.
5. Tear off the filter paper to just in front of the brewer.
6. Remove the roll of filter paper.
7. Close the bean supply, push the drawer back.
8. Remove the ingredient canister from the machine.
9. Loosen the two fastening screws on the cover plate and remove the cover plate.
10. Remove the coffee grinder by loosening the bolts (3x).
11. Mark the position of the lockpin [1].
12. Remove all coffee beans (hoover).
13. Remove the lockpin [1].
14. Loosen the flange [2] by turning it anticlockwise.
15. Remove the grinding disc by loosening the three screws [3] (on the moving and the static flange). The moving flange [3a] must be held in place with a plastic tool.
16. Clean all parts thoroughly.

The grinding unit has now been removed and can be replaced. The new grinding disc must be installed in reverse order.

Please note:

- The surfaces of the different components must be thoroughly cleaned before putting them back in the machine. This is the only way to guarantee that the grinder will work properly.
- The grinding discs must not touch each other during installation.
- Calibrate (see § 1.9.2) after installation.

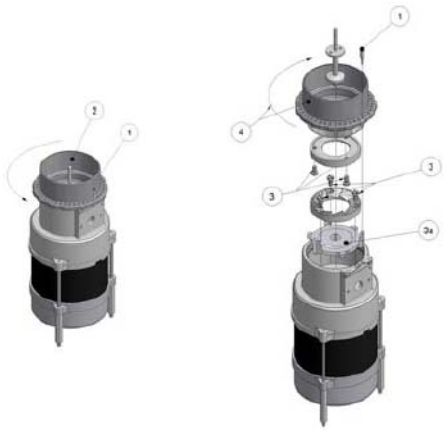


Fig. 23 Coffee grinder

1.9.2 Calibration

1. Switch off the machine.
2. Slowly turn the flange [4] clockwise until the grinding discs just touch each other (you will hear a grinding like sound).
3. Turn the flange [4] back 21 holes (= 42 clicks) (1 hole is equivalent to about 0.022 mm in height).
4. Lock the flange [4] with the lockpin [1].
5. Insert the service key.
6. Switch on the machine.
7. Place the hose (the brewer's hot water supply) above the waste bin.
8. Fill the ingredient canister with coffee beans.
9. Place a cup under the outlet of the coffee grinder.
10. Run the grinder once (select the button for coffee and press the start button (C)).
11. Check the coarseness of the ground coffee.

Please note:

– The first two grinds will reflect the old setting. Throw this coffee away. The third grind will reflect the new setting.

12. Change the setting if necessary.
13. Adjust the amount of ground coffee in the program menu (operator manual).

Use about 7.5 g of ground coffee for each cup of 120 ml.

Please note:

– If you hear a metallic sound, the flange [4] will have to be adjusted. See step 5.

– The coarseness of the ground coffee can vary depending on the type of coffee bean and roast.

1.10 Operating system

The operating system consists of a:

- Keyboard
- Control board

1.10.1 Keyboard

The keyboard is the circuit board with LCD and press buttons.
Settings that can be changed in the program menu are also saved in the Eeprom of this circuit board.
Replacing the keyboard returns the machine to its factory settings.

1.10.2 Control board

The control board is in the machine and contains the electronics that drive the machine.
This board controls the power for the low−voltage components and the temperature.
The board also contains one or more relays and semiconductors that switch the electrical components on and off.
It also has a microprocessor that controls the boiler routine.

1.11 Hardware protection

The machine has a number of hardware protections. These protections prevent dangerous situations from occurring such as overheating and/or water in the machine.

1.11.1 Overflow protection

This protection is in the float tank and ensures that excess water caused by a too high water level flows to the bottom of the machine through the overflow and hose.

1.11.2 Return flow protection

A pipe in the float tank sprays the water from the magnetic valve against the cover of the float tank. The water then flows into the float tank. This prevents water from flowing back into the system and entering the water supply if the water pressure in the magnetic valve drops.

1.11.3 High temperature safety switch

The high temperature safety switch is fastened to the outside of the boiler with two Klixons. If, for whatever reason, the controls do not switch off the boiler, the Klixons will ensure that the voltage on the element is mechanically switched off. Steam escapes from the boiler during the boil−dry process. This steam enters the water selector and exits between the cover and the distributor. To prevent droplets from entering the machine, the water selector is equipped with a drip tray (Fig.24).

Fig. 24 Drip tray for the water selector

1.12 Software protection

Depending on the type of machine, it will have a number of software protections. The software monitors all of the machine's inputs and outputs during the whole process. The software intervenes when a situation occurs that shouldn't. This intervention usually results in the machine being switched off and an error message displaying on the LCD. For possible solutions to this error message, see the below list of errors.

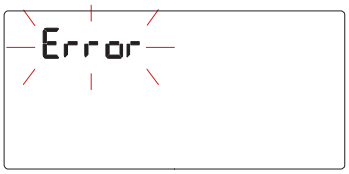


Fig. 25 LCD with error message

ERROR LIST

Error 1 *Brewer is not running:*

- The brewer motor starts after a drink is selected that uses FreshBrew coffee. If the microswitch does not switch although the motor should be running, 'Error 1' displays on the LCD.

Error 2 *Boiler temperature has been exceeded:*

- If the temperature sensor (NTC) displays a value that is out of range (0 Ohm or infinite), the machine will switch off and 'Error 2' will display on the LCD.

Error 3 *Magnetic valve is open without selection:*

- Pressing the start button switches on the solenoid valve. A timer is activated if the valve switches on without pressing the start button. If the magnetic valve switches on again within the set time without pressing the start button, there is either a leak in the water system or the water is boiling. The machine switches off and 'Error 3' displays on the LCD.

Error 4 *Calibration is taking too long:*

- The time that the machine is on is recorded during calibration. If this time is too long, the machine switches off and 'Error 4' displays on the LCD.

Error 5 *Water selector in wrong position:*

- The selector returns to the start position during start up and after each dosing. If the selector cannot find its position during this routine, it switches off and 'Error 5' displays on the LCD.

Error 6 *Magnetic valve is open too long:*

- If the float tank takes too long to fill, whatever the reason, the machine will switch off and 'Error 6' will display on the LCD.

Error 7 *Wrong chip card:*

- In a number of cases, a chip card can be inserted in a chip card reader in the keyboard. Data on the chip can be downloaded or uploaded. If the software on this chip card does match the software on the machine, Error 7 will display on the LCD.

Error 8 *Communication error between both circuit boards:*

- Communication takes place when the machine is starting up and when it is used. Communication takes place through a flat cable between the keyboard and the control board. If communication fails, Error 8 will display on the LCD.

1.13 Programming

The program in the FreshBrew machines consists of a simple program carousel.

Refer to the user manual while reading this text.

Pressing the program button activates the program and enables you to activate or change settings.

Pressing the program button again saves the settings and returns the machine to stand–by mode.

1. Open the door with the key.

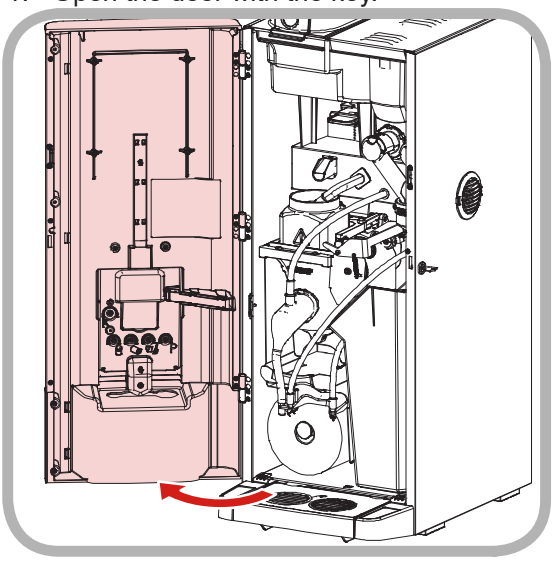


Fig. 26 Open door

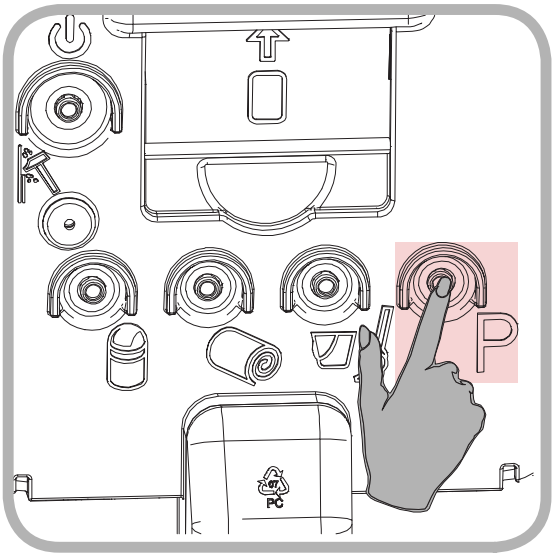


Fig. 27 Program button

2. Press the program button (4) to start the programming sequence.
3. Reading all drink counters at the same time. The LCD displays an alternating 3– and 6–digit number:
   - The 3–digit number indicates the total number of cups, mugs or jugs that have been dispensed since the counters were last reset to zero (day counter).
   - The 6–digit number indicates the total number of cups, mugs or jugs that have been dispensed since the machine has been in use (total counter).

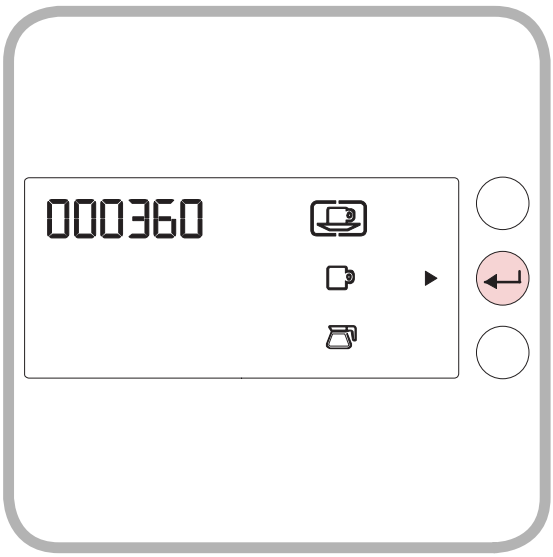


Fig. 28 Total counter

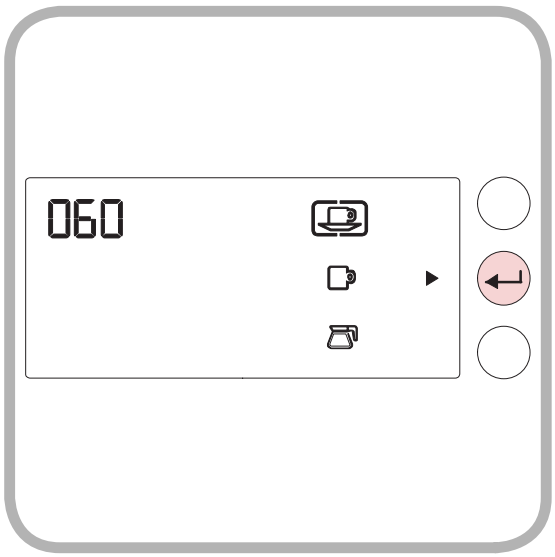


Fig. 29 Individual counter readings

3.1 Individual readings for dispensed drinks:
   - Select the desired drink by pressing one of the selection buttons and select the size by pressing cup, mug or jug.

The corresponding counter reading is displayed on the LCD.
After a few seconds, the reading returns to that for all drinks.

3.2 Setting the day counter to zero:

- Press one of the selection buttons to select a drink.
- Keep pressing the selection button until the day counter displays 0.

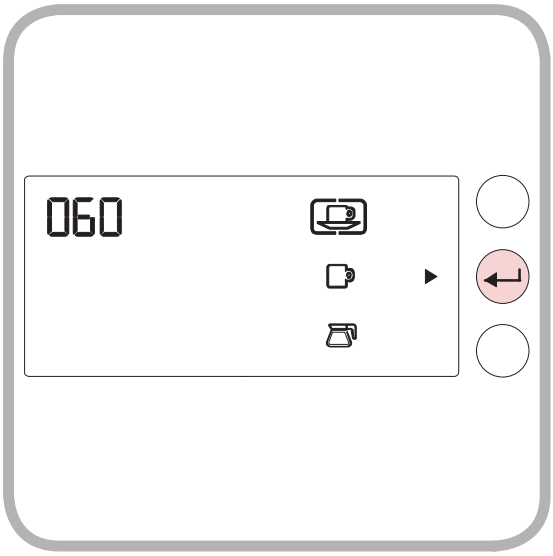


Fig. 30 Day counter

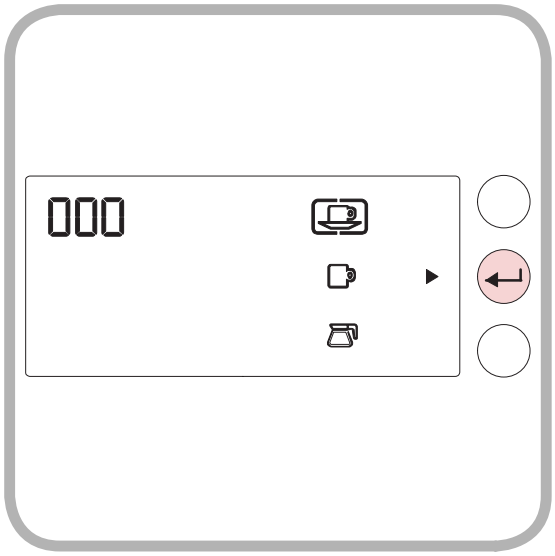


Fig. 31 Day counter at zero

- Press Enter to return to the general selection screen (Fig 32).

4. General selection screen:
   - General programming: Press Enter and proceed with point 5.
   - Drink–dependent settings: Press the selection button and proceed with point 18.

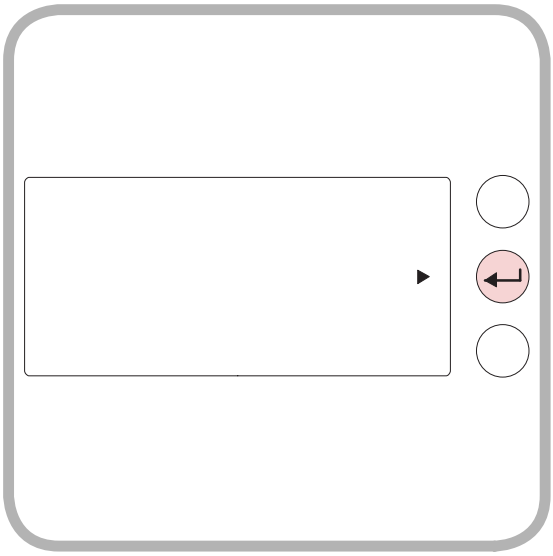


Fig. 32 General selection screen

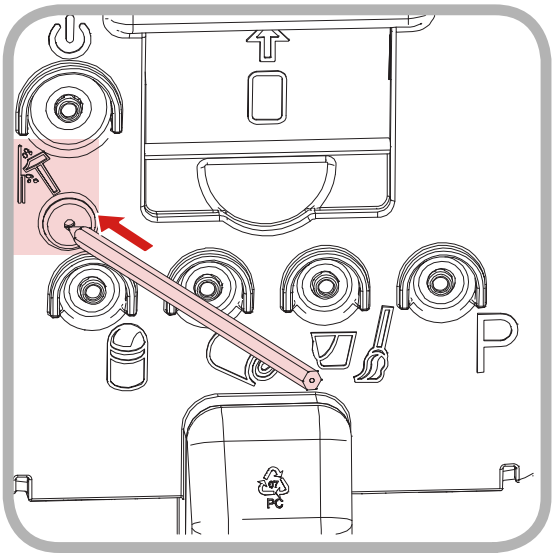


Fig. 33 Button for descaling program

5. Descaling program:
   - This machine has a descaling program.
     Press (Fig.33) to start the descaling program. (Read the corresponding chapter in the user manual.)
   - Press CANCEL within 5 seconds to cancel a descaling program that is about to start.

6. Boiler temperature:
   - Set the maximum temperature for the water in the boiler.

   6.1 Rerun the boil program:
   - Set the water temperature to 0°C.
   - Press the right button. This starts the calibration program again. The working temperature is automatically set to 4°C below the boiling point.

7. Descaling signal:
   - ontact your local water company to find out how hard your water is.
     Always select the right setting. The machine's default setting is 3 (1000L). The machine continuously records the time the intake valve is open and therefore the amount of water (in litres) that flows through the system. When the amount of water recorded by the machine is higher than or equal to the amount of water set in the software, the descaling pictogram will start blinking on the LCD.

Fig. 34 Descaling pictogram

8. Energy–saving mode:
   - Minutes/hours after which the machine switches to ECO mode. All functions such as the boiler, ventilation and display lighting switch off and the LCD displays [ECO]. The machine switches on again when a selection button is pressed. Depending on the switch–off time, it can take a few minutes before the machine is ready for use.

9. Waste bin full indicator:
   - The FreshGround has an electronic counter that keeps track of the number of cycles the brewer has completed and transported a cake of coffee to the waste bin. The waste bin is full when the programmed number has been reached. The waste bin pictogram displays on the LCD and the machine blocks. The machine is released when the waste bin has been emptied and the counter reset. Press the button with the waste bin pictogram to reset the counter.

10. Coin mechanism:
    - Activate this setting only if the machine has a coin system (optional) and you would like to use it.

Please note:

– Settings 11 to 16 are only available if the coin system has been activated (10).

– The price is set in the program menu (for coffee, see point 28; for drink–dependent, see point 36; for hot water, see point 42).

11. Coin rejection/acceptance (0.05):
    - Indicate whether the coin should be rejected (left button) or accepted (enter button).

12. Coin rejection/acceptance (0.10):
    - See point 11.

13. Coin rejection/acceptance (0.20):
    - See point 11.

14. Coin rejection/acceptance (0.50):
    - See point 11.
15. Coin rejection/acceptance (1.00):
    - See point 11.
16. Coin rejection/acceptance (2.00):
    - See point 11.
17. General selection screen (all of the illuminated buttons can be selected).
18. Programming (coffee).
19. Dose for a cup of coffee:
    - Set the amount of water in ml. The software translates a larger amount of water to a longer pump time. If the amount of water is changed, the basic strength is automatically adapted so that the strength increases or decreases proportionally.
20. Dose for a mug of coffee:
    - See 'Dose for a cup of coffee'.

    20.1 Blocking mugs:
    - Set the value for mugs to the minimum. The LCD displays 'OFF'. If the machine is set for paid dispensing, mugs will not be dispensed.
21. Dose for a jug of coffee:
    - See 'Dose for a cup of coffee'.

    21.1 Blocking jugs:
    - Set the value for jugs to the minimum. The LCD displays 'OFF'. If the machine is set for paid dispensing, jugs will not be dispensed.
22. Default coffee strength:
    - Amount of ingredient (in %) dosed from the canister that displays on the LCD. The software translates the programmed percentage to the speed of the canister motor and therefore the strength of the ingredient.
23. Step size for strength of coffee:
    - This indicates the step (in percent of the default strength) (e.g. default strength 60%, step size 10%, the strengths to be set are 54%, 60%, 66%).
24. Foam stop (S0):
    - When the brewer housing rises, it stops the set time. This enables foam to settle. This is recommended for high coffee doses and/or if the bypass function is used.
25. Extraction time (S1):
    - When the brewer housing rises, it presses air through the filter paper to the coffee and the hot water and mixes them thoroughly. The housing then stops for a few seconds to stimulate the extraction [S1] (i.e. extend contact time).
26. Vacuum time (S2) for cups:
    - The housing lowers so the coffee extract can be sucked through the filter paper. Before the coffee extract exits the brewer, the housing stops again [S2] to extract as much liquid from the coffee residue as possible and produce a dry cake of coffee.
    - This time does not affect the taste.

    26.1 Vacuum time (S2) for mugs:
    - The housing lowers so the coffee extract can be sucked through the filter paper. Before the coffee extract exits the brewer, the housing stops again [S2] to extract as much liquid from the coffee residue as possible and produce a dry cake of coffee. This time does not affect the taste.

    26.2 Vacuum time (S2) for jugs:
    - The housing lowers so the coffee extract can be sucked through the filter paper. Before the coffee extract exits the brewer, the housing stops again [S2] to extract as much liquid from the coffee residue as possible and produce a dry cake of coffee. This time does not affect the taste.

27. Maximum extra mixing (bypass).
    - If the cup holds more than 170 ml, the drink will be mixed in several cycles because of the capacity of the brewer (cylinder). (For example, for a cup that holds 220 ml, the first cycle is dosed at 170 ml and the second at 50 ml.) If the setting for maximum extra mixing is changed (e.g. from 170 ml to 200 ml), 170 ml of water will be dosed first in the brewer together with lots of ingredient. Once the strong FreshBrew coffee has been dosed, 30 ml of water are added through the bypass. The result is 200 ml of coffee (170 ml of strong coffee + 30 ml of hot water).
28. Pricing:
    - Set the desired price.
29. General selection screen:
30. Programming (drink–dependent).
31. Dose for cups (drink–dependent).
    - Set the amount of water in ml. The software translates a larger amount of water to a longer pump time. If the amount of water is changed, the default strength is changed so that the coffee is proportionally stronger to weaker.
32. Dose for mugs (drink–dependent):
    - See 'Dose for cups (drink–dependent)'.

    32.1 Blocking mugs:
    - Set the value for mugs to the minimum. The LCD displays 'OFF'.
    - If the machine is set for paid dispensing, mugs will not be dispensed.
33. Dose for jugs (drank–dependent):
    - See 'Dose for cups (drink–dependent)'.
    - For a number of drinks, the jug function is blocked by the manufacturer.

    33.1 Blocking jugs:
    - Set the value for jugs to the minimum. The LCD displays 'OFF'.
    - If the machine is set for paid dispensing, jugs will not be dispensed.
34. Default strength (drink–dependent):
    - The amount of ingredient that is dosed (in %).
    - The number of ingredient containers to be set depends on the selected drink.

(See ingredient sheet).
35. Step size for strength (drink–dependent):
    - This indicates the step (in percent of the default strength) (e.g. default strength 60%, step size 10%, the strengths to be set are 54%, 60%, 66%).
36. Pricing (drink–dependent) (optional):
    - Set the desired price.
37. General selection screen:
38. Programming (hot water)
39. Dose for cups (hot water):
    - Set the amount of water in ml. The software translates a larger amount of water to a longer pump time.
40. Dose for mugs (hot water):
    - See 'Dose for cups (hot water).

    40.1 Block mugs manually:
    - Set the value to the minimum. The LCD displays 'OFF'.
    - If the machine is set for paid dispensing, mugs will not be dispensed.
41. Dose for jugs (hot water):
    - See 'Dose for cups (hot water).

    41.1 Block jugs manually:
    - Set the value for jugs to the minimum. The LCD displays 'OFF'.
    - If the machine is set for paid dispensing, jugs will not be dispensed.
42. Pricing (hot water) (optional):
    - Set the desired price.

43. General selection screen:
44. Programming (sugar/milk).
45. Default strength (sugar/milk):
    - The amount of milk or sugar that is dosed (in %).
46. Step size of strength (sugar/milk):
    - This indicates the step (in percent of the default strength) (e.g. default strength 60%, step size 10%, the strengths to be set are 54%, 60%, 66%).
47. General selection screen:

Pressing the program button (4) again saves the settings and returns the machine to stand–by mode.

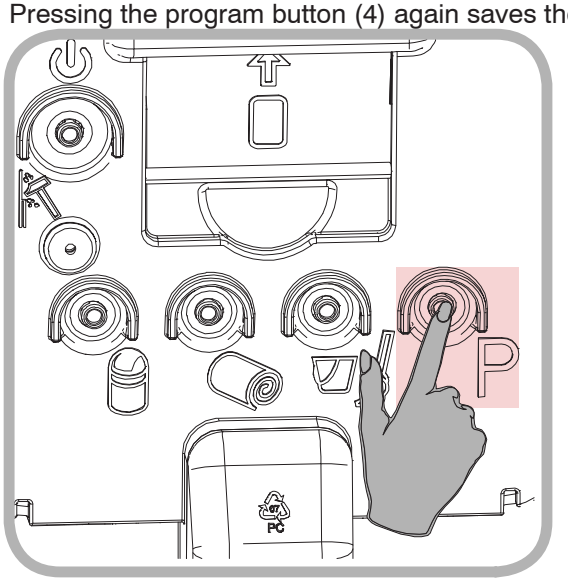


Fig. 35 Program button/Closed door

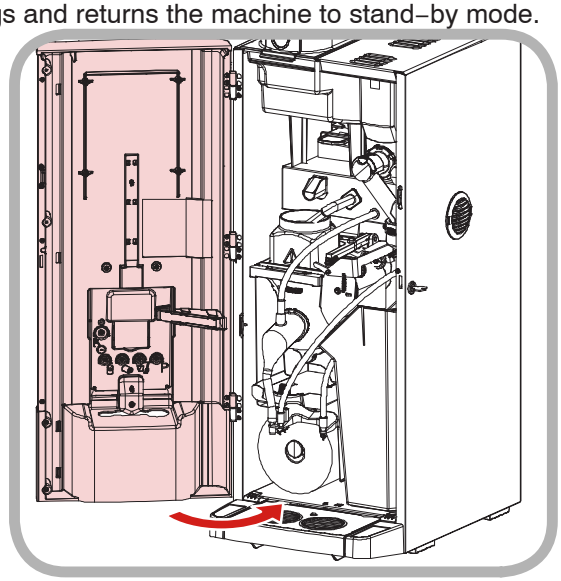


Fig. 36 Open door

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