



TECHNICAL INFORMATION
CVA 610/CVA 615 Coffee Systems

Technical Information

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1.0 Construction and Design

1.1 Appliance Overview

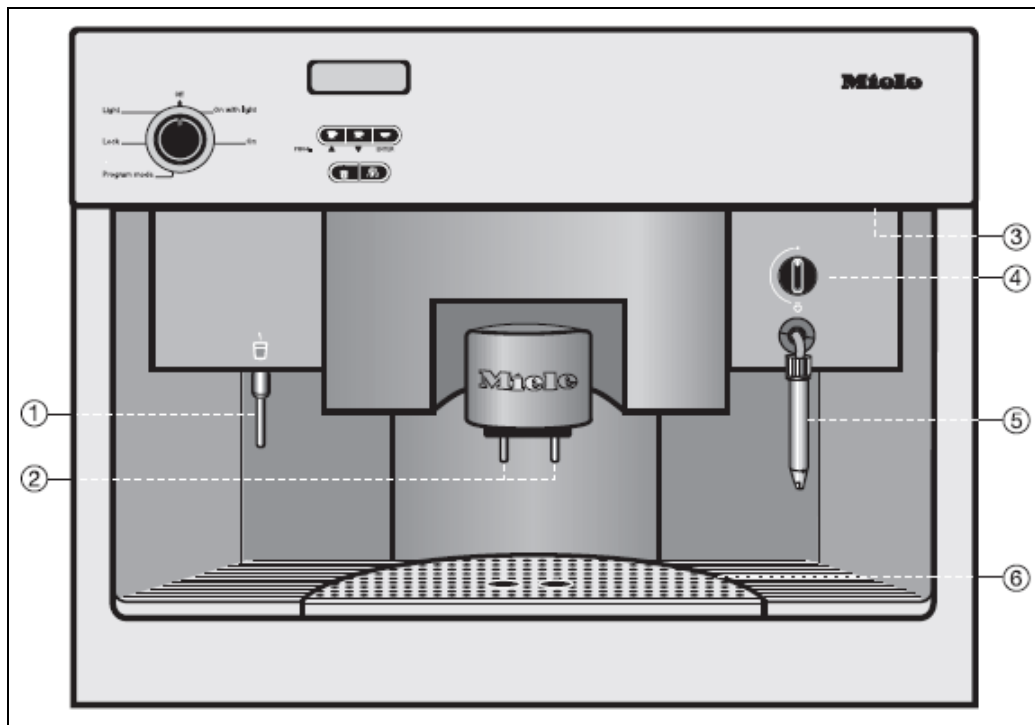
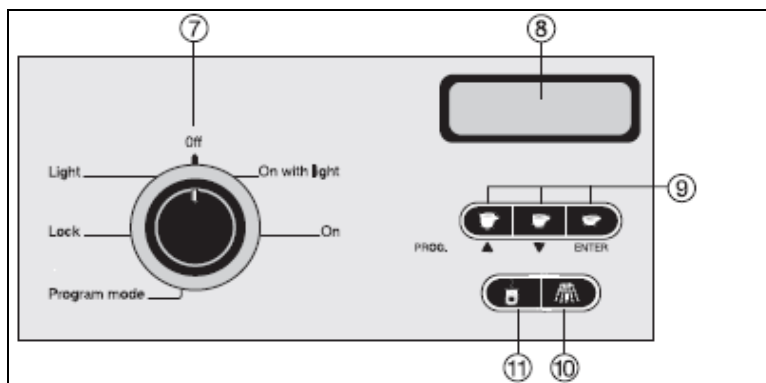


Figure 1-1: Appliance Overview (Front)

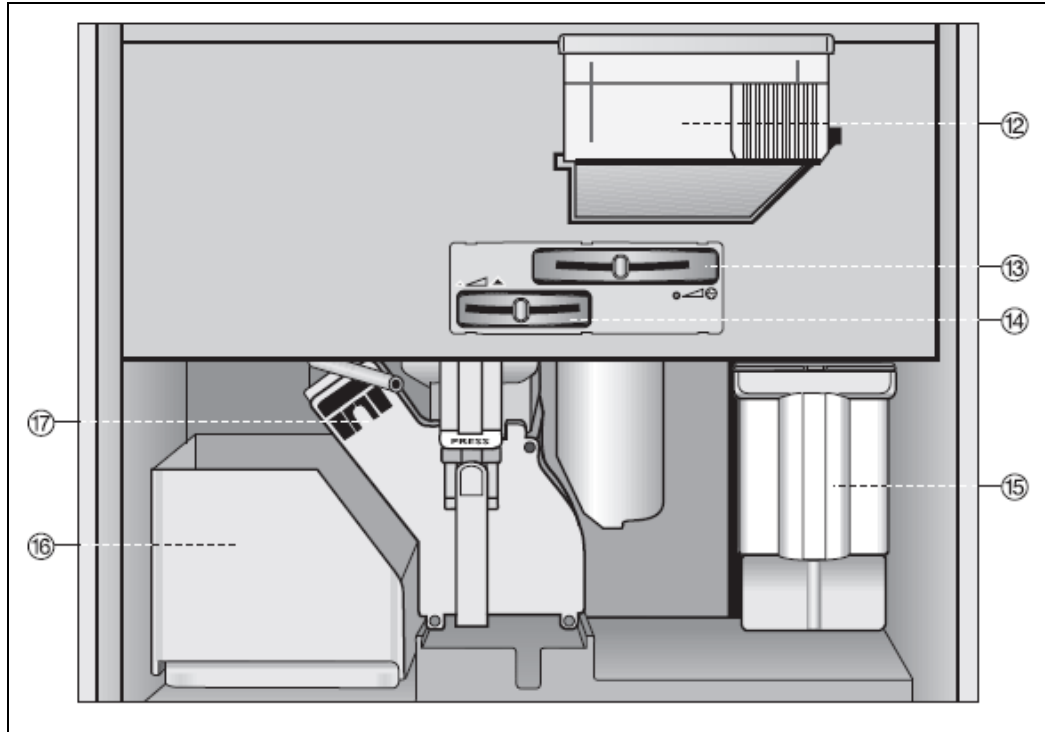
- ① Hot-water dispenser
- ② Coffee dispensers (height-adjustable)
- ③ Handle to open appliance front
- ④ Steam selector
- ⑤ Steam nozzle with milk frother
- ⑥ Drip tray



- ⑦ Program selector
- ⑧ Message window
- ⑨ Coffee serving buttons
- ⑩ Rinse/pre-warm button
- ⑪ Hot-water button

Figure 1-2: CVA Controls

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**Figure 1-3:** Appliance Overview (Interior)

- ⑫ Beans container
- ⑬ Slide control to select fineness of ground coffee
- ⑭ Slide control to select quantity of ground coffee
- ⑮ Water tank
- ⑯ Waste container
- ⑰ Brew unit

1.2 Technical Data

1.2.1 Product Dimensions

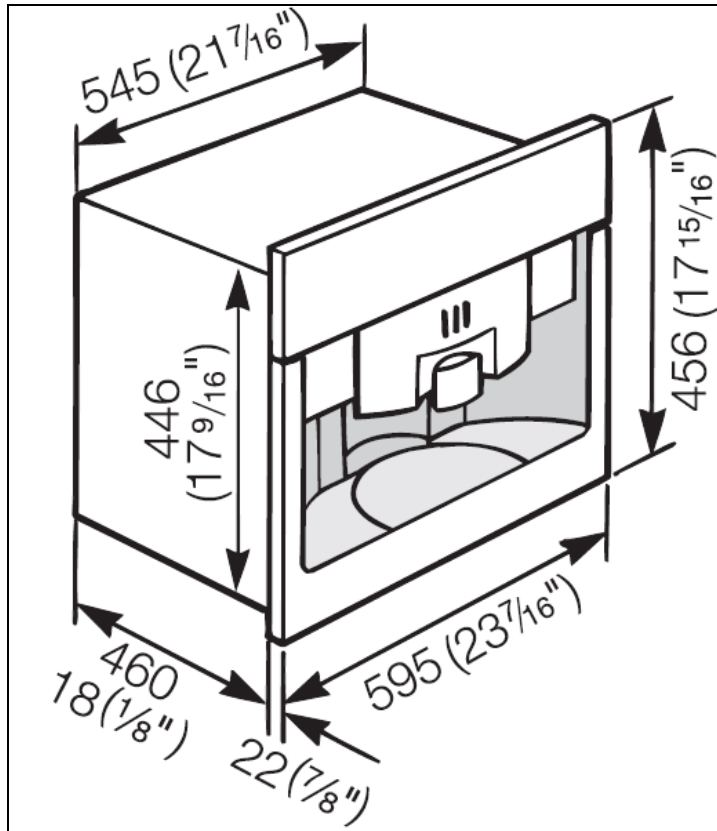


Figure 1-4: CVA 61x Dimensions

1.2.2 Electrical Information

The CVA 610 is equipped with a 6' (1.8m) power cord and a molded NEMA 6-15P plug for connection to a 240 (208) V, 15A, 60Hz power supply.

The CVA 615 is equipped with a 6' (1.8m) power cord with a NEMA 5-15P molded plug for connection to a 120V, 15A, 60Hz power supply.

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1.3 Component Layouts

1.3.1 CVA 610

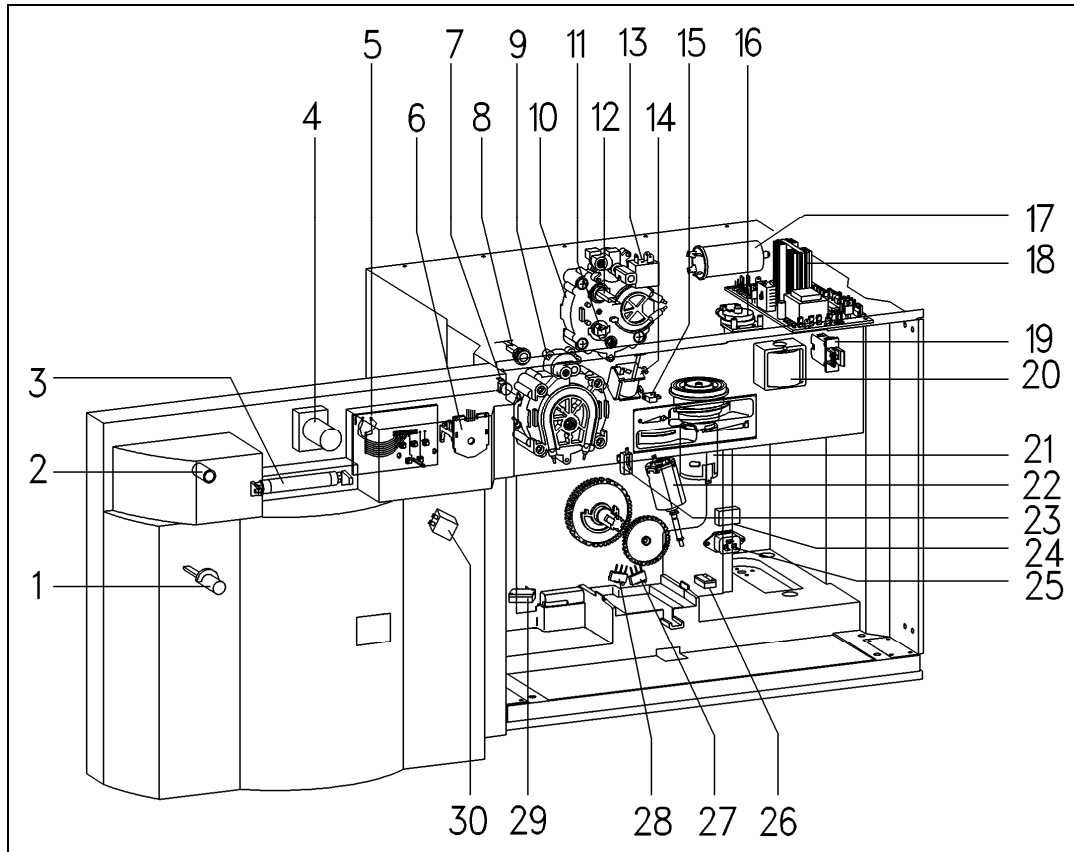


Figure 1-5: CVA 610 Component Layout

- | | |
|------------------------------------|---------------------------------------|
| 1 Steam valve switch | 16 Flow meter |
| 2 Door magnet | 17 Interference suppression capacitor |
| 3 Fluorescent bulb | 18 CPU electronic |
| 4 Starter | 19 Door interlock switch |
| 5 Control panel/display electronic | 20 Water pump |
| 6 Selector switch | 21 Grinder |
| 7 Thermostat | 22 Brew unit drive |
| 8 PTC temperature sensor | 23 Brew unit present switch |
| 9 Heater (coffee & water) | 24 Water tank level switch |
| 10 Heater (steam) | 25 Connection socket |
| 11 Thermostat | 26 Overflow float switch |
| 12 PTC temperature sensor | 27 Brew unit home switch |
| 13 Steam solenoid | 28 Brew unit brew position switch |
| 14 Dispenser solenoid | 29 Waste container present switch |
| 15 Dispenser switch | 30 Hot-water valve |

1.3.2 CVA 615

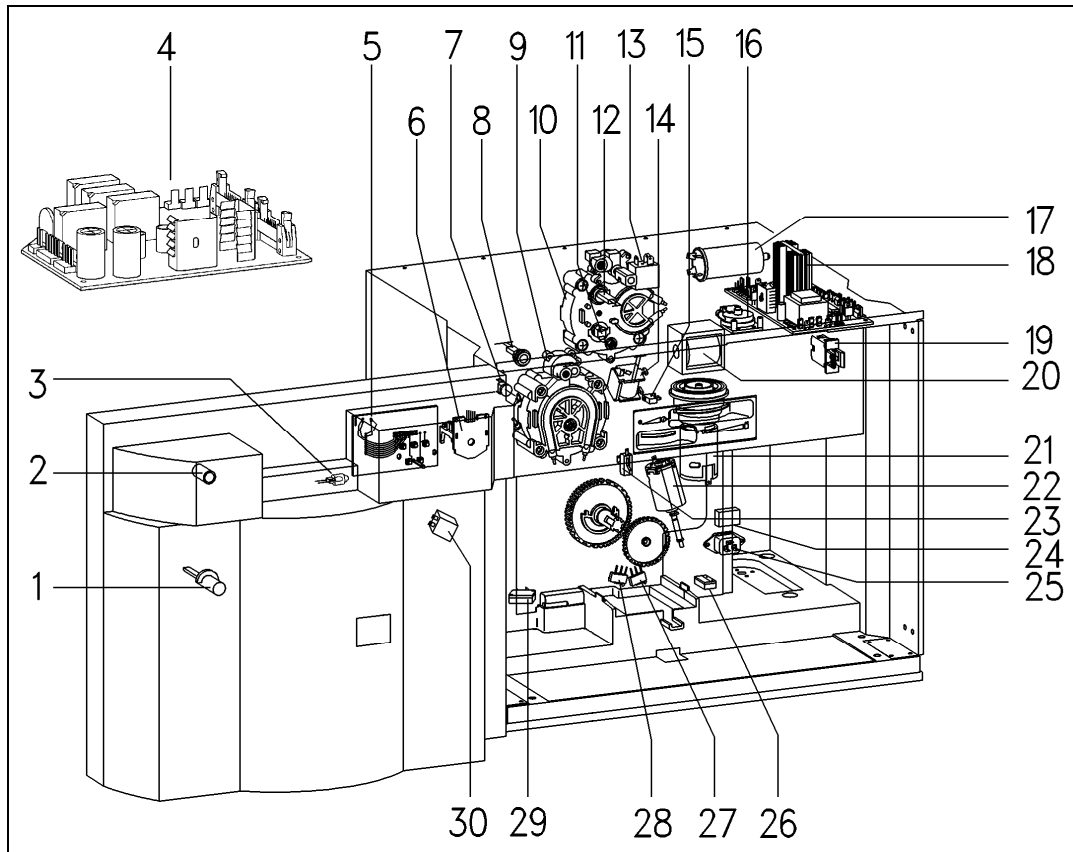


Figure 1-6: CVA 615 Component Layout

- | | |
|------------------------------------|---------------------------------------|
| 1 Steam valve switch | 16 Flow meter |
| 2 Door magnet | 17 Interference suppression capacitor |
| 3 Halogen bulb (2) | 18 Power electronic |
| 4 Control electronic | 19 Door interlock switch |
| 5 Control panel/display electronic | 20 Water pump |
| 6 Selector switch | 21 Grinder |
| 7 Thermostat | 22 Brew unit drive |
| 8 PTC temperature sensor | 23 Brew unit present switch |
| 9 Heater (coffee & water) | 24 Water tank level switch |
| 10 Heater (steam) | 25 Connection socket |
| 11 Thermostat | 26 Overflow float switch |
| 12 PTC temperature sensor | 27 Brew unit home switch |
| 13 Steam solenoid | 28 Brew unit brew position switch |
| 14 Dispenser solenoid | 29 Waste container present switch |
| 15 Dispenser switch | 30 Hot-water valve |

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2.0 Installation

Refer to the "Installation" section of the operating manual.

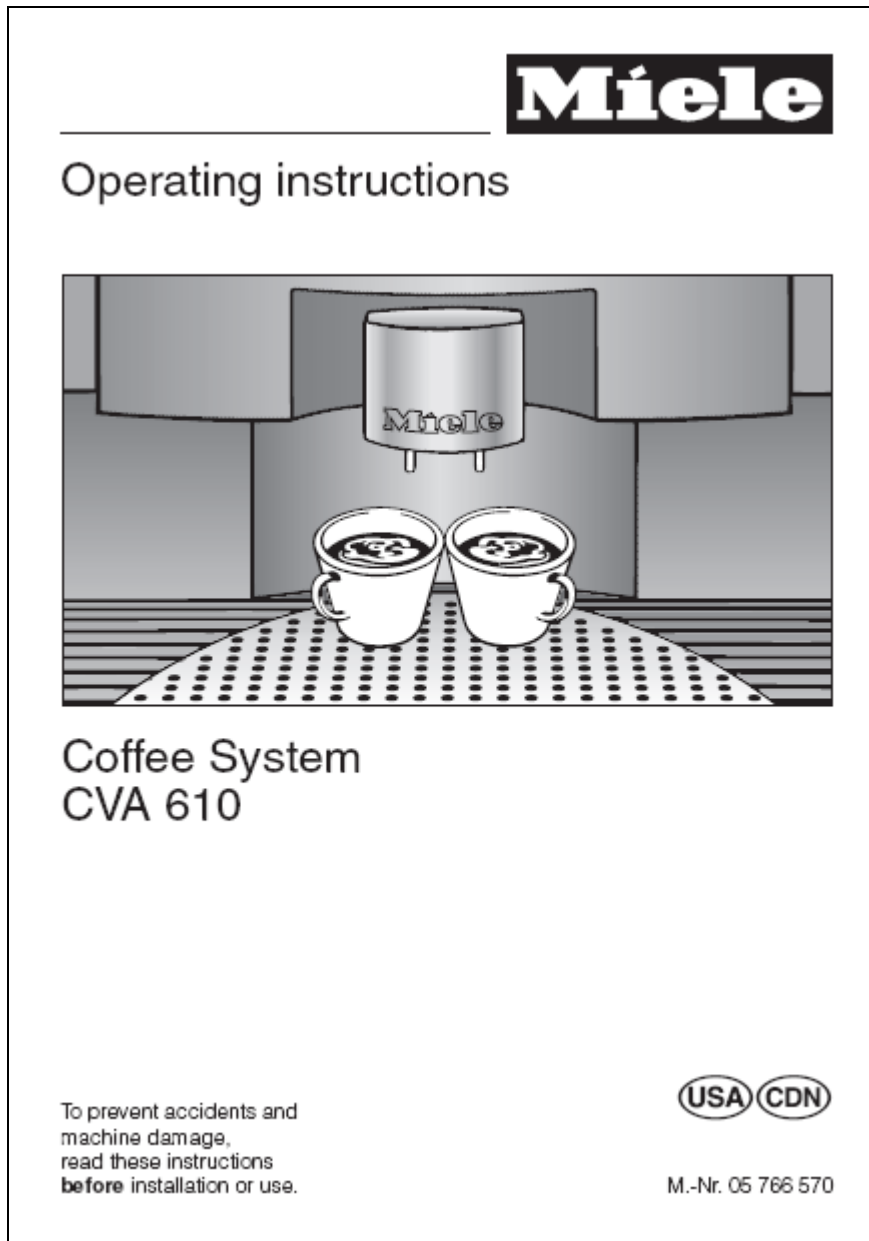


Figure 2-1: Operating Manual

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Warning!

Make sure that power is not supplied to the appliance while installation or maintenance work is performed.
Disconnect the power supply to the work area by unplugging the appliance, tripping the circuit breaker or removing the fuse.
The coffee system must be installed into cabinetry before being operated.

1. Plug the appliance into the electrical outlet.
2. Push it all the way back into the cabinet until there is resistance.
3. Open the front of the machine and partially tighten the screws.
4. Carefully turn the lower screws (Figure 2-2, Item 1) to center the machine in the cabinet.
5. To secure the appliance in the cabinet, tighten the upper screws (Figure 2-2, Item 2) carefully by hand. Do not use an electric screwdriver.

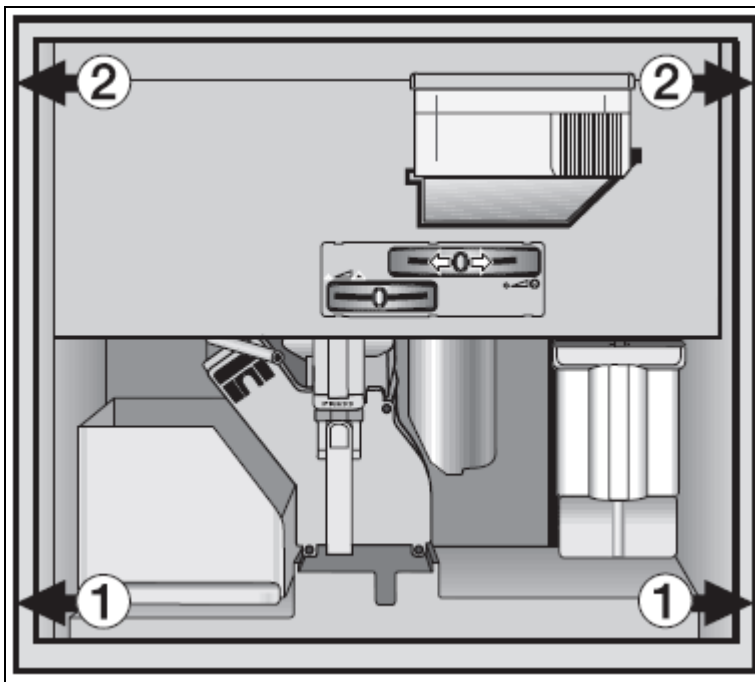


Figure 2-2: Installation Information

Note:

For further information, refer to the installation manual section of the operating manual or the Miele installation manual.

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3.0 Commission and Operation**3.1 General Operation****3.1.1 Preparing Coffee**

Place a cup under both coffee dispensers. See Figure 3-1.



Figure 3-1: Coffee Cup Placed Under Both Dispensers
Press the desired coffee button once.



Figure 3-2: Pressing the Coffee Button

The coffee will be prepared.

The following message will appear in the message window, depending on the button pressed:



Figure 3-3: Displayed Message during Dispensing

3.1.2 Cancelling Preparation

Press one of the coffee buttons to stop preparation immediately.



Figure 3-4: Canceling Preparation

3.1.3 Steam Control

Caution:

The steam from the appliance is extremely hot; use caution to prevent burns.

- Turn the steam ON by turning the steam selector counterclockwise.
- Turn the steam OFF by turning the steam selector clockwise.

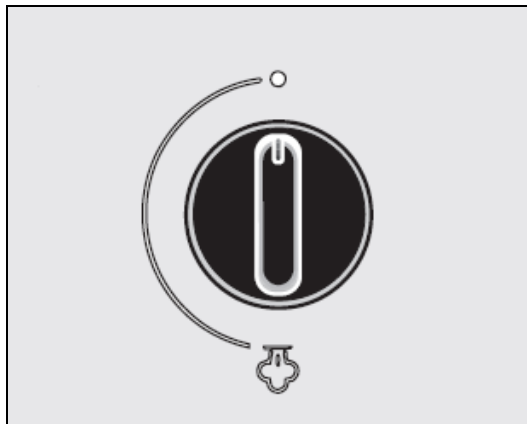


Figure 3-5: Steam Selector

3.1.4 Hot Water

1. Place a cup under the hot-water dispenser. See Figure 3-6.

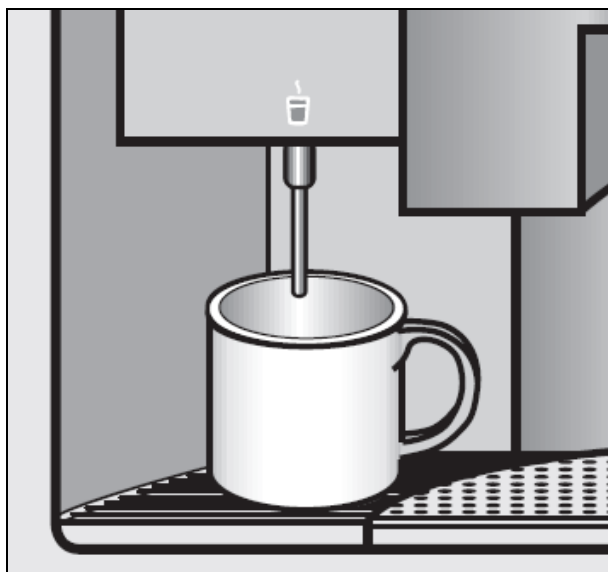


Figure 3-6: Cup Placed under Hot-Water Dispenser

2. Press the hot-water button (see Figure 3-7). Hot water will be dispensed.
3. Press the hot-water button again to stop the hot-water flow.



Figure 3-7: Hot-Water Button

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Note:

If the hot-water feature has been activated, the flow of hot water will stop automatically once a predetermined amount of hot water has passed through the system

3.1.5 Adjusting the Coffee Grinder**Controls:**

- Slide to the left for finer grinding.
- Slide to the right for coarser grinding.

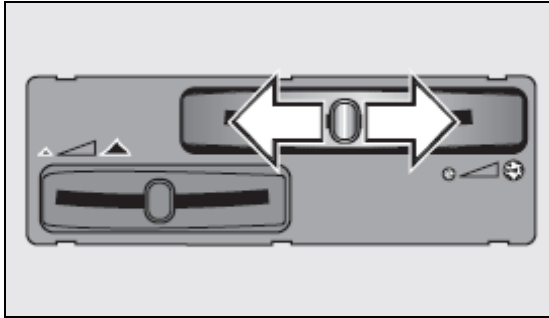


Figure 3-8: Grinder Adjustment

- If the coffee flows too quickly, the beans have been ground too coarsely. Adjust the grinder to a finer setting.
- If the coffee trickles, the beans have been ground too fine. Adjust the grinder to a coarser setting.

Note:

- You should be able to feel the notches when moving the slide control.
- If the slide control will not move: Close the machine and dispense a cup of coffee. Then try to move the slide control again.

3.1.6 Filling the Bean Container

1. Carefully pull the container outward until the lid is visible.
2. Lift the lid, as shown in Figure 3-9.
3. Fill the container with coffee beans to about 1" from the top.
4. Close the lid and push the container back into place.
5. Shut the appliance door.

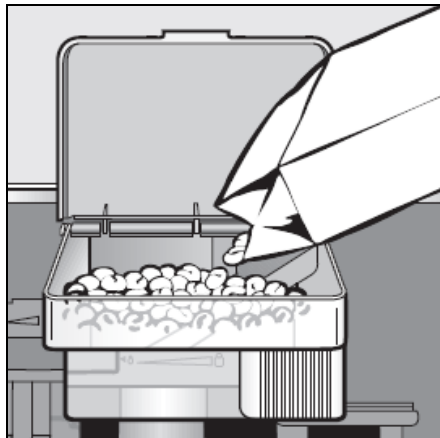


Figure 3-9: Filling the Beans Container

Important!

Only put pure espresso or coffee bean in the container. Anything else, including ground coffee, hot cocoa, instant coffee, or treated coffee beans (flavorings, caramel, or sugar) will damage the grinder.

Note:

Always remove all coffee beans before attempting to remove the bean container. Failure to do so will result in the beans spilling out! Refer to Section 5.38 for additional information.

3.1.7 Filling the Water Tank

The water tank must be washed and filled with fresh drinking water each day. A reminder will appear in the message window when the appliance is first switched on.

1. Open the front of the machine.
2. Lift the water tank up and out of the appliance.
3. Open the lid and fill the container with cold drinking water to within about 1" (2cm) of the top.

Important!

Never add hot water or any other liquid except cold water to the water tank.

4. Close the lid and place the tank in the machine, pushing it straight back. Ensure that the tank is fully seated into position.
5. Close the front of the appliance.

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4.0 Description of Function

4.1 Door Switch (S24)

The door switch (Figure 4-1, Item 1) interrupts the main power circuit when the door is opened.

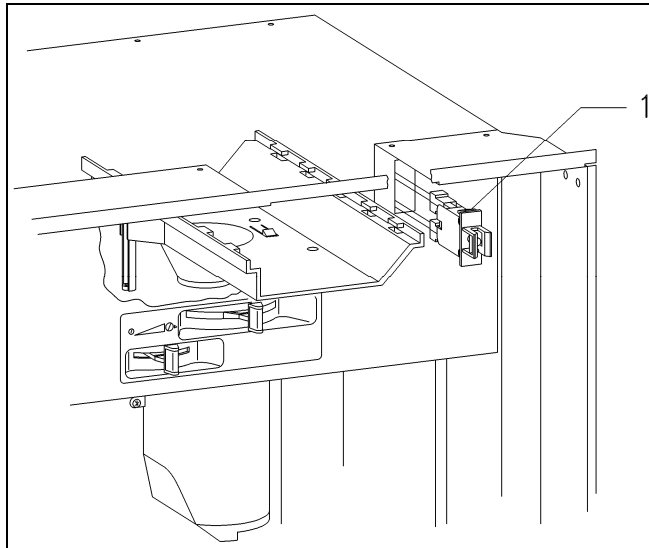


Figure 4-1: Door Contact Switch (S24)

4.2 Overflow Switch (B8/3)

The overflow switch is mounted to the bottom of the casing. The associated float (with internal magnet) is located within the drip tray. Should a leak develop, water will flow into the drip tray. The float rises and the overflow switch becomes actuated. The electronic then displays the “Water System Fault” message and switches the appliance off.

Note:

When the service mode is accessed, the top line of the display shows the switches that are activated. An “A” will be displayed if the overflow switch is actuated (i.e. water present in the bottom of the appliance). Refer to Section 6.2 for more information on the service mode.

4.3 Brew Unit

4.3.1 Cleaning and Care

The brew unit is a mechanically operated component that is subjected to high forces, and therefore may become clogged after a long period of use. To ensure correct operation of the brew unit, it is essential to clean it regularly and apply silicone grease to the moving parts. Refer to Sections 5.30, 5.31 and 5.32 for further information and procedures.

4.3.2 Removal from the Appliance

The brew unit must be in the “home” position (see Figure 4-2, Item 1) before it can be removed from the appliance.

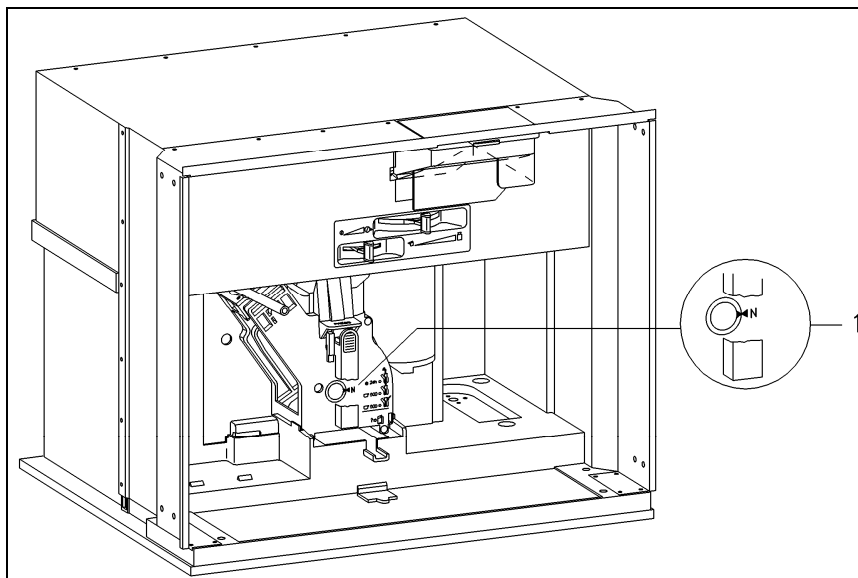


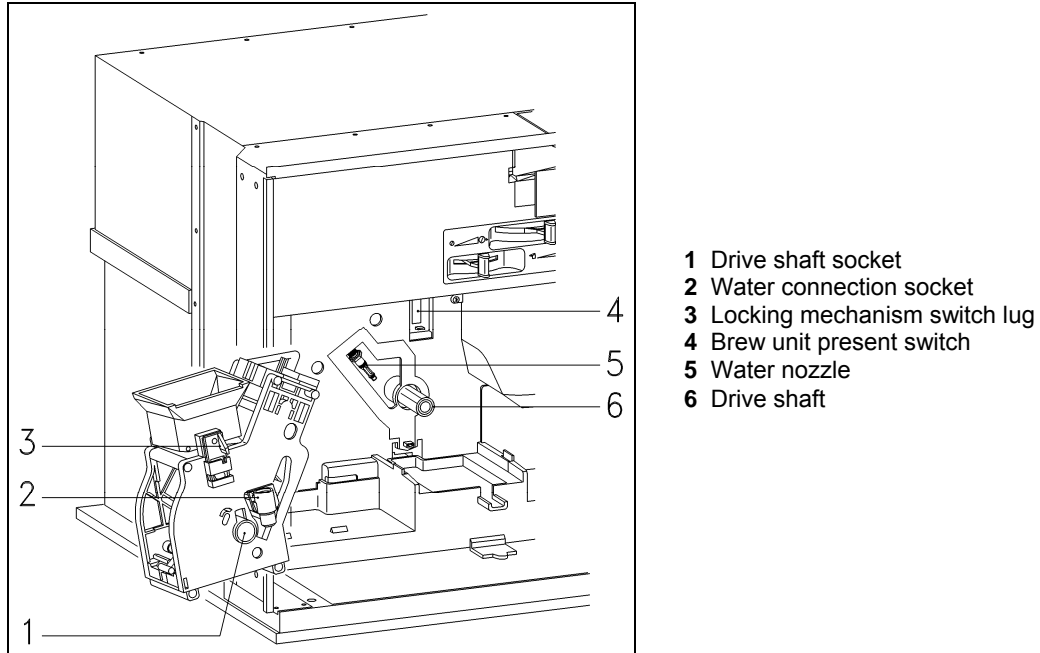
Figure 4-2: Brew Unit in the “Home” Position

4.3.3 Drive and Water Connections

When the brew unit is installed, it locks into position. The locking mechanism switch lug (Figure 4-3, Item 3) activates the brew unit present switch (Figure 4-3, Item 4). The drive shaft (Figure 4-3, Item 6) engages with the drive shaft socket (Figure 4-3, Item 1) to drive the brew unit.

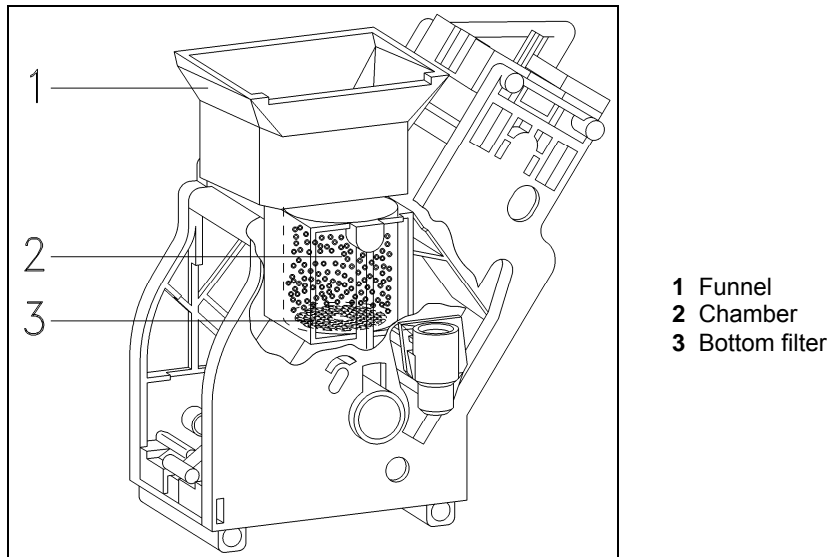
When the brew unit moves into the “brewing” position, the hot water/water connection socket (Figure 4-3, Item 2) connects to the nozzle on the hot water/coffee heater (Figure 4-3, Item 5) to let water pass through the coffee.

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**Figure 4-3:** Brew Unit Drive and Water Connections

4.4 Brewing Procedure

1. The output from the grinder provides ground coffee to the dispenser housing until it is full, as determined by the dispenser switch.
2. The grinder is then switched off by the electronic.
3. The dispenser flap opens twice (two clicks) via the dispenser solenoid.
4. The ground coffee falls via the funnel into the brew unit.

**Figure 4-4:** Brew Unit Filters

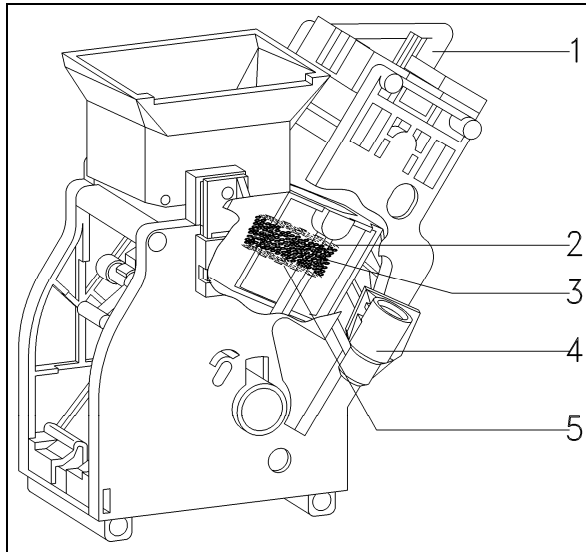
5. The brew unit drives move the brew unit into the “brewing” position (as determined by the brew position switch). The grounds are compressed between

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the top filter (Figure 4-5, Item 2) and bottom filter (Figure 4-5, Item 5).

6. The water pump is energized to pump the water through the hot water/coffee nozzle and into the brew unit via the water connection socket (Figure 4-5, Item 4). The hot water forces through the brew unit and the compressed grounds (Figure 4-5, Item 3) and exits the top of the brew unit via the drain spout (Figure 4-5, Item 1).

With the door of the appliance closed, the drain spout makes contact with the dispensing system on the front of the appliance. The user's cup is filled with coffee as the coffee flow exits.



- 1 Outlet
- 2 Top filter
- 3 Compressed coffee (puck)
- 4 Water connection socket
- 5 Bottom filter

Figure 4-5: Brew Unit Components

7. The drives are energized (in reverse) and move the brew unit toward the "home" position. As this action occurs the coffee chamber moves upward and releases the used compressed coffee grounds into a "puck" (Figure 4-6, Item 1).
8. The drives continue, returning the brew unit to the "home" position (as determined by the home position switch).

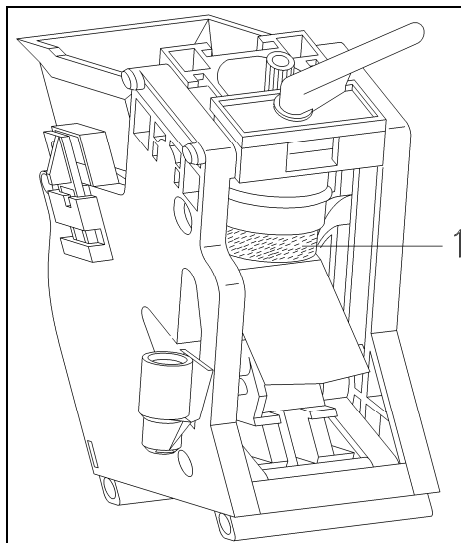


Figure 4-6: Brew Unit, Showing Compressed Coffee "Puck"

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4.5 Waste Container

After coffee has been prepared, the compressed coffee grounds “puck” falls into the waste container. The electronic monitors the number of the compressed pucks. After a specific amount is reached, the message “Empty waste container” is displayed.

4.6 Waste Container Present Switch

The waste container present switch is mounted to the bottom of the CVA housing, behind the waste container, as shown in Figure 4-7, Item 1.

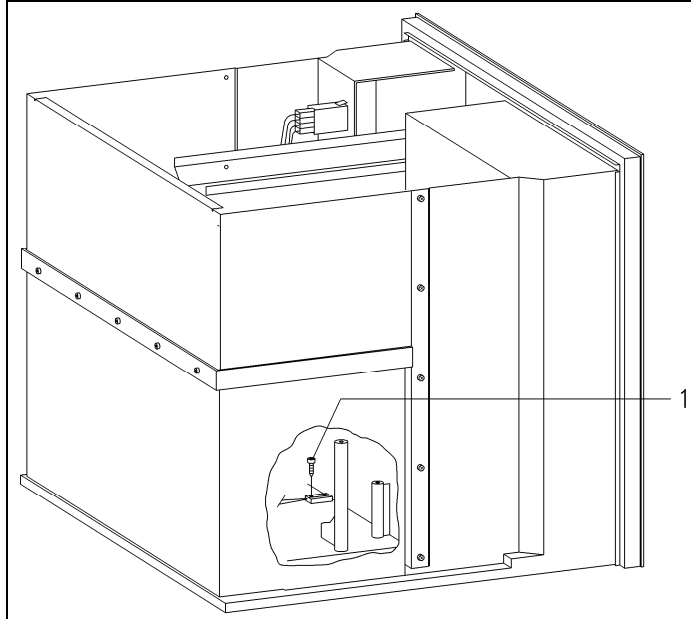


Figure 4-7: Waste Container Present Switch

The actuating magnet for the waste container present switch is located on the bottom edge of the waste container. Refer to Figure 4-8, Item 1. It helps the electronic check if the waste container is installed.

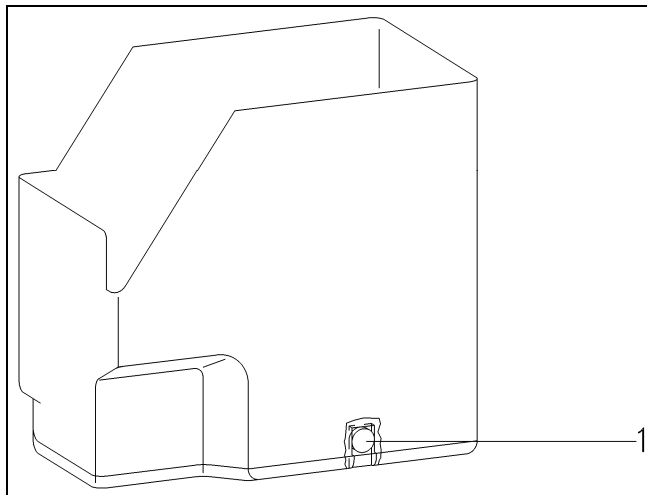


Figure 4-8: Waste Container Present Switch Magnet

Technical Information

In service mode, the top line of the display shows the switches that have been activated. A "5" is displayed when the waste container is installed and the switch is actuated. For further information, refer to Section 6.2.

Note:

On newer waste containers, an additional magnet is present to keep the waste container attached to the metal frame inside the appliance. The magnet for the waste container present switch remains in the same location.

4.7 Water Tank

The water tank holds the water for the production of coffee, hot water and steam. When the water tank is installed in position, the sealing ring presses upward, allowing water to flow out without leaking.

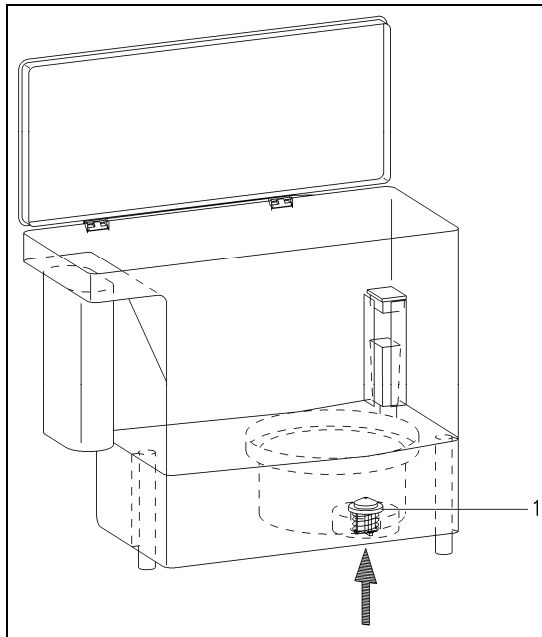


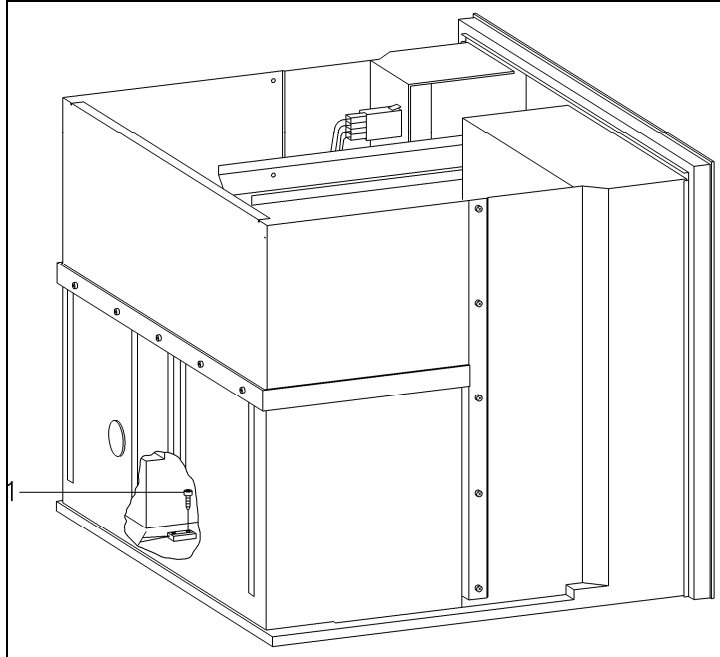
Figure 4-9: Water Tank

When the tank is removed from the appliance, the spring closes the sealing ring to ensure that water cannot flow from the tank when it is out of the appliance for filling, etc.

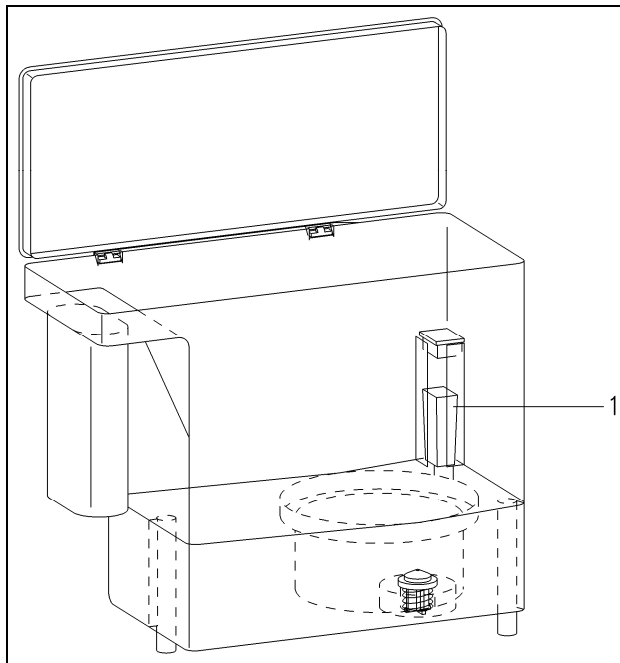
4.8 Water Level Switch

The water level switch is located within the housing, in the area behind the water tank cavity, as shown in Figure 4-10, Item 1.

Technical Information

**Figure 4-10: Water Level Switch**

The actuating magnet for the water level switch is located within the float. The float is then installed into the water tank, as shown in Figure 4-11, Item 1.

**Figure 4-11: Water Level Float Switch**

With the water tank installed and containing at least 900 to 1000 milliliters (30 to 33 ounces) of water, the water level switch activates and its contacts close.

When the water quantity drops below the minimum level (800 milliliters or 27 ounces), the water level switch contacts open. After the switch opens, the water

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passing through the water pump is registered via the flow meter and monitored by the electronic.

After most of the 800 milliliters is calculated as being used, the display shows, "Fill water tank." To prevent the water pump from running dry, approximately 90 to 200 milliliters (3 to 7 ounces) of water remains in the tank.

In service mode, the top line of the display will show the switches that have been activated. A "7" is displayed when the water tank is installed and filled with water. Refer to Section 6.2.

4.9 Grinder Assembly

The grinding grade depends on the gap between the grinding cone (Figure 4-12, Item 1) and the grinding ring (Figure 4-12, Item 2).

The gap is set via the adjustment lever (Figure 4-12, Item 5) on the adjustment ring (Figure 4-12, Item 3). The smaller the gap, the finer the grind of coffee will be.

Warning!

To avoid damage to the grinder, the grinder should only be adjusted in small steps.

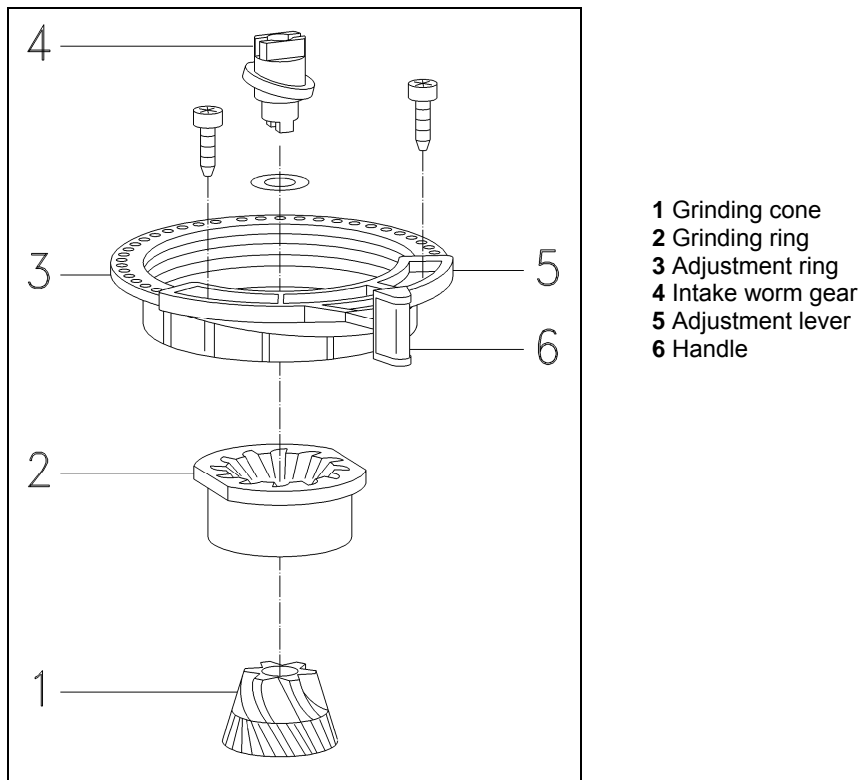


Figure 4-11: Grinder Assembly

For an exploded view of the complete grinder assembly, see Figure 5-48.

Technical Information

4.10 Grinder Overload Protection

If the grinder becomes blocked by a foreign object (e.g., stone or pebble), the slip coupling will interrupt the drive between the motor and the grinder.

The grinder motor (Figure 4-12, Item 1) drives the mounting (Figure 4-12, Item 3) via the carriers (Figure 4-12, Item 2). This rotary force transfers through the balls (Figure 4-12, Item 5) to the grinder cone (Figure 4-12, Item 6).

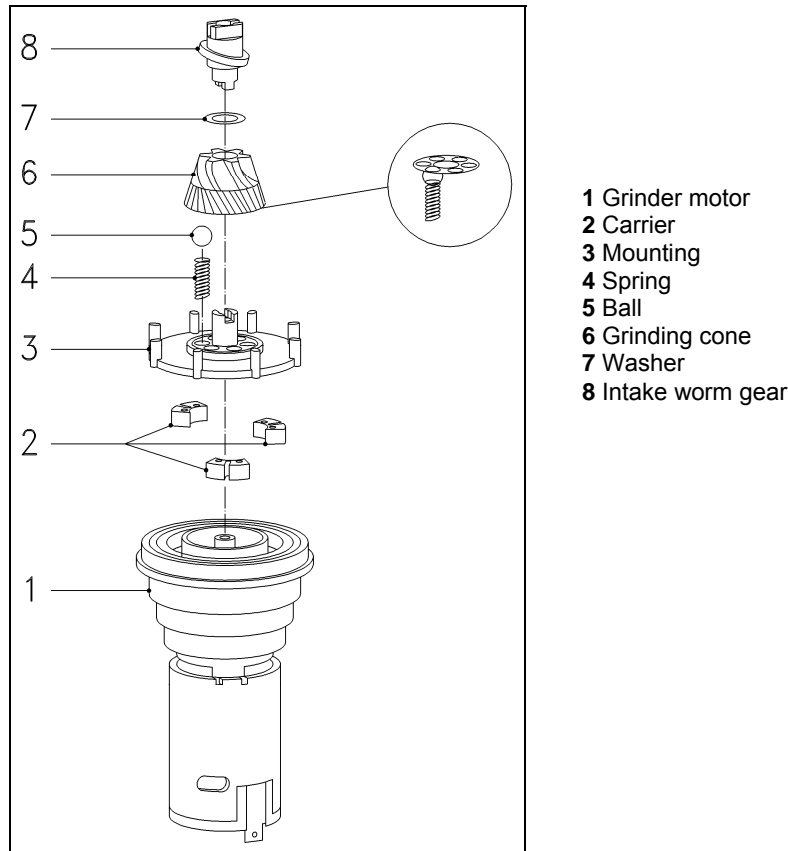


Figure 4-12: Components of the Grinder Overload Protection

If the grinder cone becomes blocked, the balls will be pressed into the mounting (see Figure 4-13, Item C). The drive force will be interrupted, and the worm gear will continue to operate via the mounting.

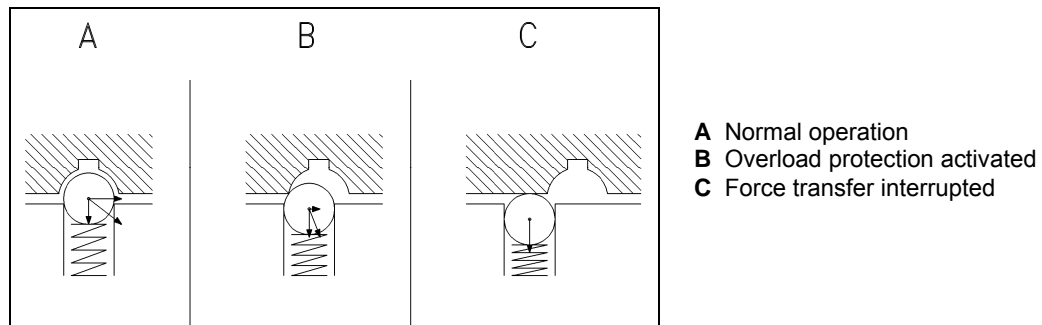


Figure 4-13: Grinder Cone Ball Positions under Various Operating Conditions

4.11 Ground Coffee Dispensing

By adjusting the dispenser lever (Figure 4-14, Item 1), the position of the dispensing switch (Figure 4-14, Item 2) is modified. The change results in a change in volume of the dispenser container, so the quantity of ground coffee changes. Each position along the setting alters the coffee quantity by about 0.5 grams.

The grinder fills the dispenser container with ground coffee. When the dispenser container is full, the dispenser switch is activated and the grinder motor is switched off.

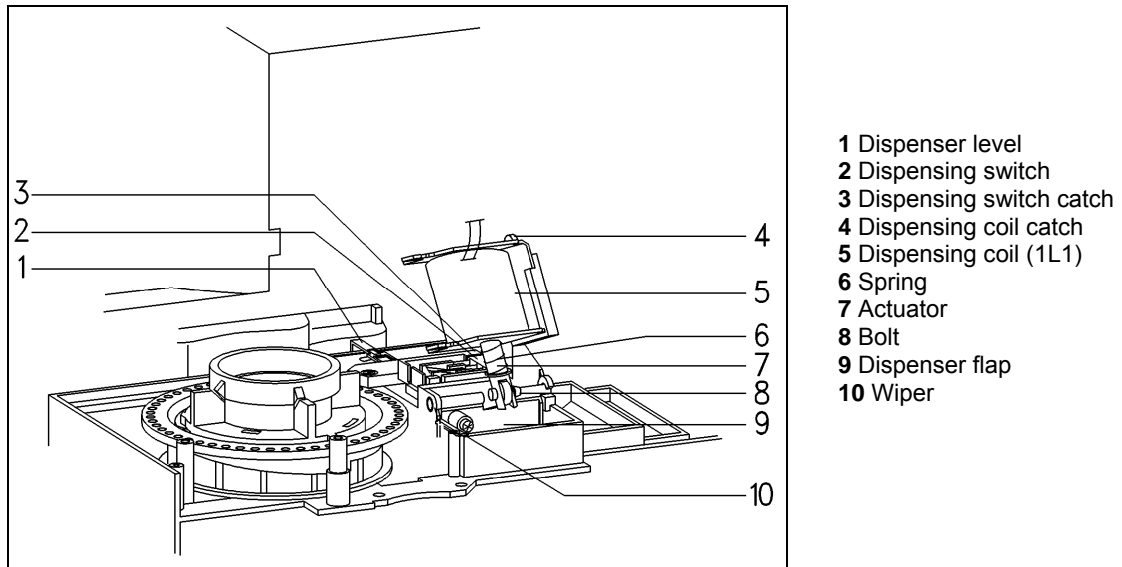


Figure 4-14: Coffee-Dispensing Components

The dispensing solenoid is activated twice by the electronic. During the initial activation the ground coffee drops into the brew unit. The second activation is to ensure that no loose grounds block the channel as the wiper passes and loosens any ground coffee residues.

If the dispenser container is not filled (i.e. no coffee beans) the dispenser switch is not activated and the “Fill coffee beans” message is displayed.

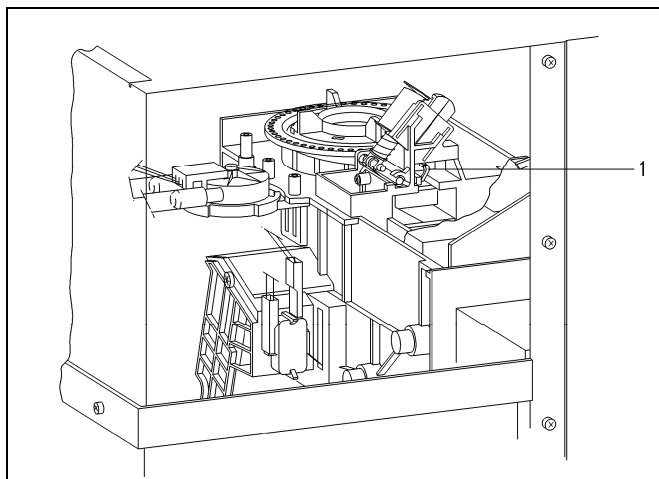


Figure 4-15: Dispensing Lever

Technical Information

To fill the brew unit, the dispensing solenoid is energized twice and the dispenser flap opens twice. The ground coffee drops from the dispenser container into the brew unit.

If the dispenser container is not filled because there are no coffee beans in the bean holder, the dispenser switch is not activated. The display then shows, "Fill coffee beans."

4.13 Dispenser Switch

The service mode can be used to check whether the dispenser switch is activated. With the appliance in the service mode, the top line of the display shows the switches that have been activated. The "3" indicates that the dispenser container is full/switch is actuated. Refer to Section 6.2.

4.14 Brew Unit Drives

The brew unit locks into position against the drives mounting plate. The locking mechanism switch lug (Figure 4-16, Item 3) activates the brew unit present switch (Figure 4-16, Item 4). The drive shaft (Figure 4-16, Item 6) engages with the brew unit drive shaft socket.

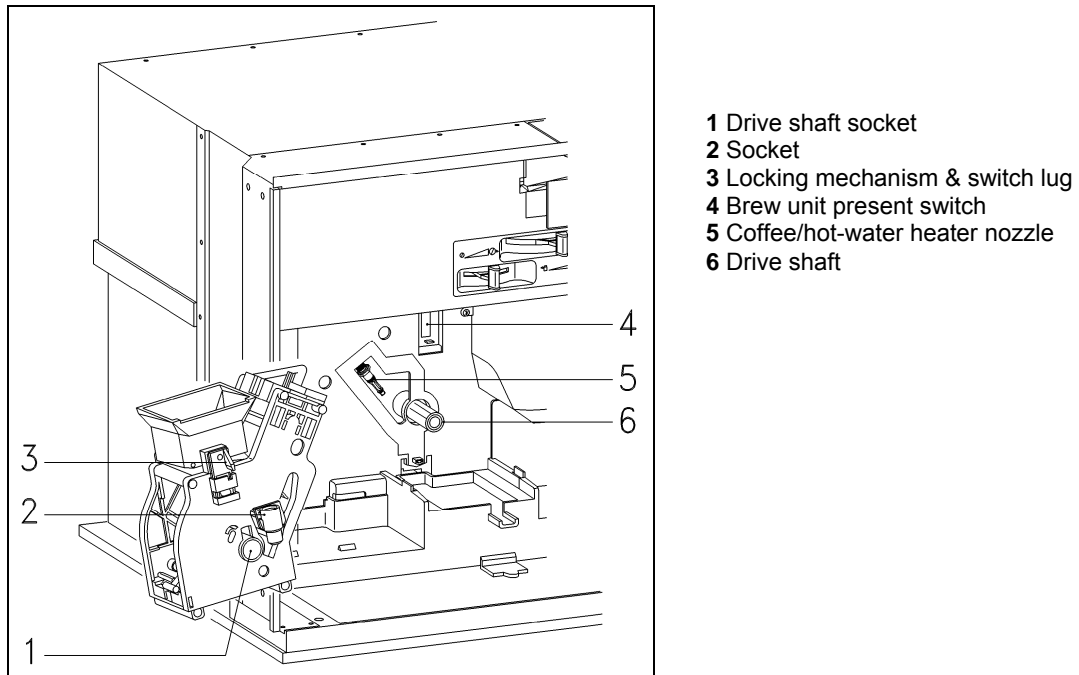
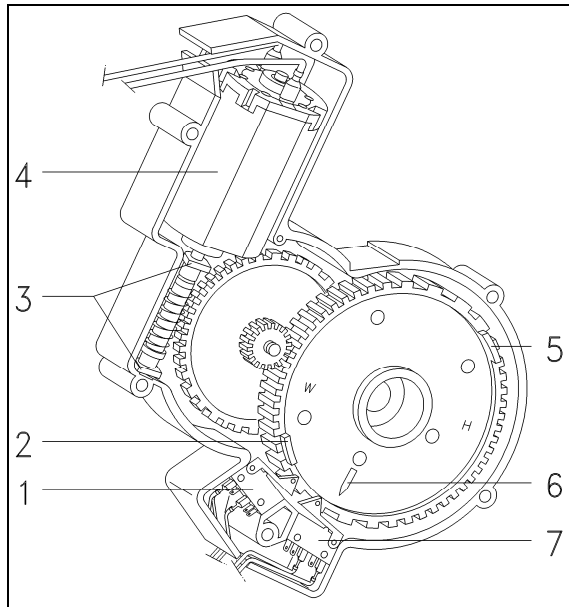


Figure 4-16: Brew Unit Drive Assembly, Water Connection and Present Switch

The drive motor (Figure 4-17, Item 4) is powered by the electronic and turns both the worm gear (Figure 4-17, Item 3) and the (smaller) step-down gear. The drive action is transferred from the step-down gear to the (larger) drive gear. The center of the drive gear contains the drive shaft, which connects to the brew unit drive shaft socket. The drive gear has two switch actuators (Figure 4-17, Items 2 and 5) for the brew position and home position switches (Figure 4-17, Items 1 and 7). Both

Technical Information

switches are monitored by the electronic to determine the position of the brew unit.



- 1 Home position switch
- 2 Home position switch actuator
- 3 Worm gear
- 4 Brew unit drive motor
- 5 Brew position switch actuator
- 6 Installation marking
- 7 Brew position switch

Figure 4-17: Brew Unit Drive Assembly

4.15 Water Pump

The pump is self-priming and can develop a pressure of up to approximately 16 bar (232 psi). For espresso preparation a pressure of approximately 8 bar (116 psi) is required so that the water can be forced through the compressed ground coffee. A further increase in pressure does not improve beverage quality.

The pump is fitted with a safety valve which opens at 16 bar (232 psi) system pressure. If pressure is too high, water is passed from the safety valve via a hose to the fitting plate and from there to the housing under the brew unit. The water is then passed through the door rear panel to the drip tray.

The pump is connected in series with a temperature limiter. The temperature limiter interrupts the power to the pump should a high temperature develop.

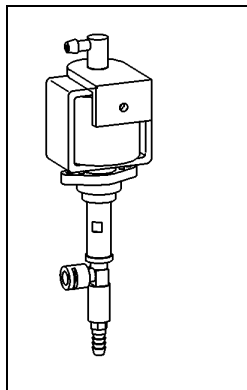


Figure 4-18: Water Pump

Technical Information

4.16 Flow Meter

All water taken from the water tank flows through the flow meter. The flow meter sends signals to the electronic proportional to the quantity of water passing through it.

The electronic then establishes the quantity of water that has flowed and stores the figure. Approx. 300 pulses from the flow meter indicate a flow of 3 ounces of water.

The electronic controls the required water quantity for beverage preparation and ensures that it remains constant. The service mode can be used to check the proper operation of the flow meter. See Section 6.2 for further information.

4.17 Heater Data

	Coffee, Hot-Water Heaters (1R1, 1R2)		Steam Heater (2R1)	
	Voltage	Power Rating	Voltage	Power Rating
CVA 610	220 (240) V	437W, 1090W	220 (240) V	1100W
CVA 615	120V	275W, 1090W	120V	1100W

Table 4-1: Heater Data

4.18 Heaters

The coffee/hot-water heater assembly consists of a large heater element (Figure 4-19, Item 1) and a smaller heater element (Figure 4-19, Item 7). The steam heater has only one heater element (see Figure 4-20, Item 3).

Each heater uses a positive thermal coefficient (PTC) temperature sensor (Figure 4-19, Item 5) to provide signals to the electronic to monitor the temperature and control the cycling (switching) of the heater element(s).

Additionally, each heater assembly is equipped with a thermostat (Figure 4-19, Item 3) connected electrically in series with the element. If the temperature becomes too high, the thermostat will interrupt power to the heater element.

The heating circuit also contains a temperature-activated safety fuse (Figure 4-19, Items 4 and 6). If the temperature exceeds a specific threshold due to an operating fault, the fuse will blow and interrupt power to the element(s).

If this fuse blows, the cause must be located and resolved before replacing the fuse.

Technical Information

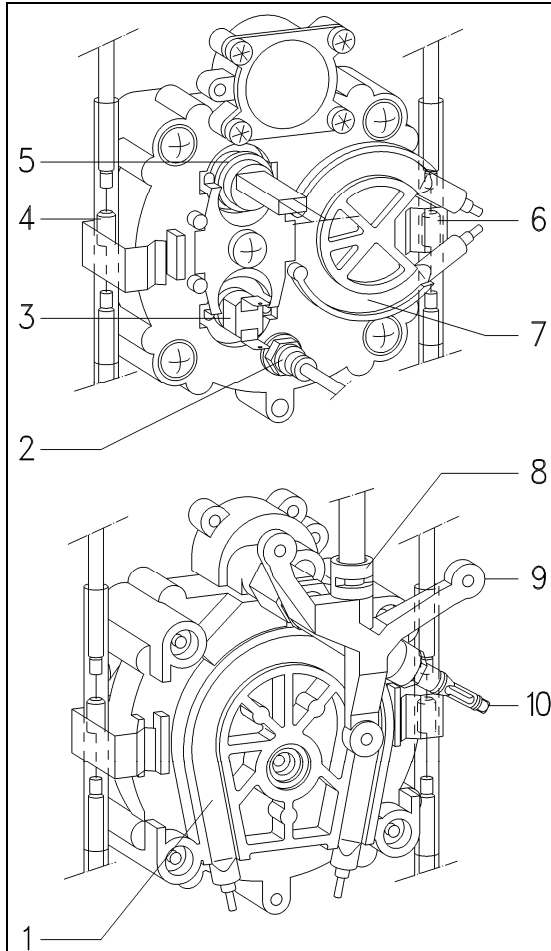


Figure 4-19: Coffee/Hot-Water Heater (1R1, 1R2)

- 1 Heater element
- 2 Connector
- 3 Temperature monitor
- 4 Temperature safety fuse
- 5 PTC temperature sensor
- 6 Temperature safety fuse
- 7 Small heater element
- 8 Connector
- 9 Mounting
- 10 Outlet

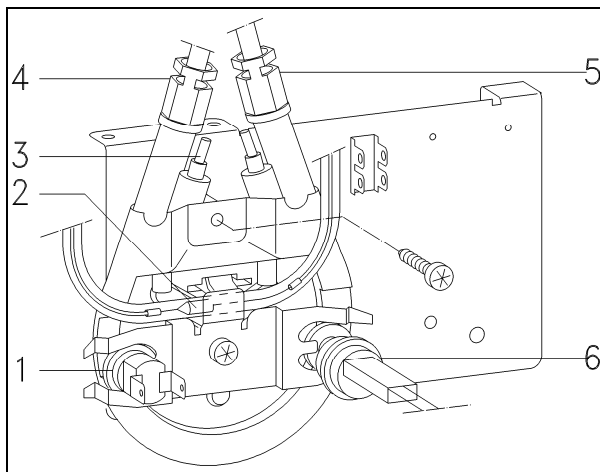


Figure 4-20: Steam Heater (2R1)

- 1 Temperature monitor (thermostat)
- 2 Temperature safety fuse
- 3 Heater element
- 4 Connector – pressure system to steam valve in door
- 5 Connector – pressure system to steam valve (solenoid valve)
- 6 PTC temperature sensor (2R30)

Technical Information

4.19 Water Path

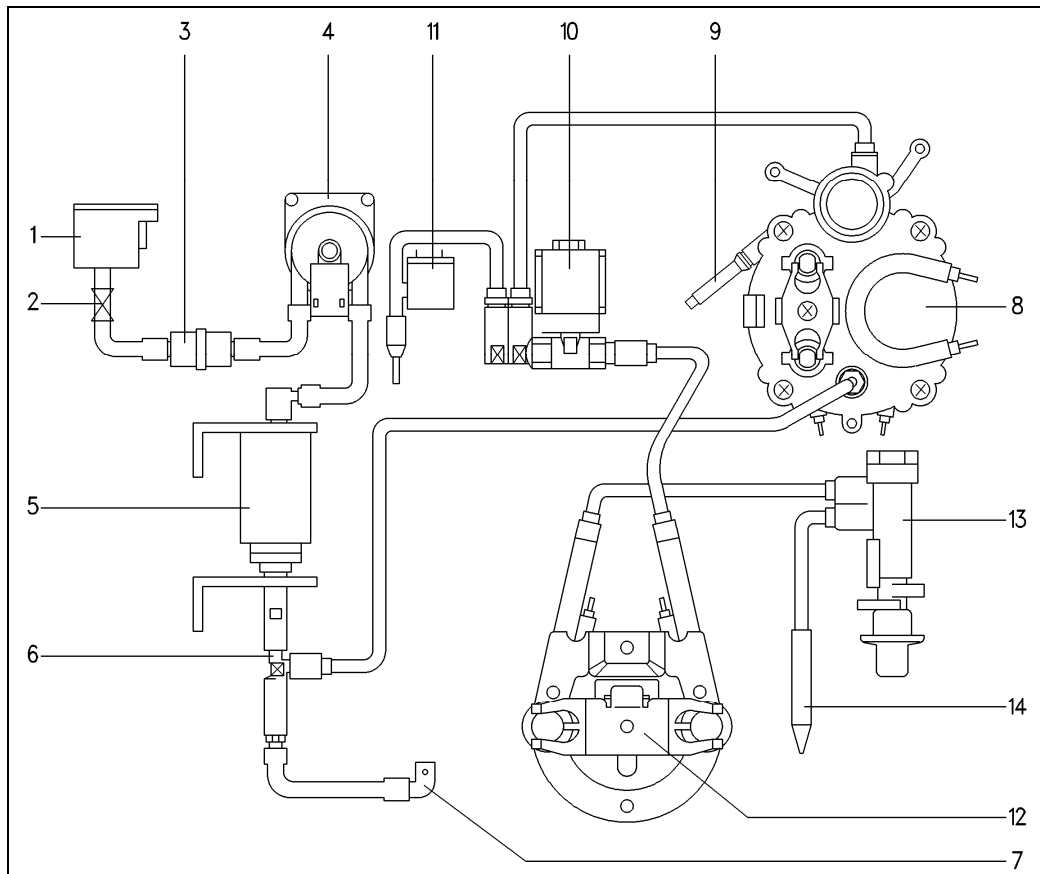


Figure 4-21: Water Path

- | | |
|--------------------------------|-------------------------------|
| 1 Water tank | 8 Coffee heater |
| 2 Sealing ring | 9 Water valve to brew unit |
| 3 Water filter | 10 Steam valve (solenoid) |
| 4 Flow meter | 11 Hot-water valve (solenoid) |
| 5 Pump | 12 Steam heater |
| 6 Safety valve | 13 Steam valve (in door) |
| 7 Drain hose – excess pressure | 14 Frothing nozzle |

4.18.1 Water Intake

The water pump takes in water from the water tank. The bottom of the pump contains a safety valve which opens at approximately 16 bar (232 psi) system pressure. If the pressure is too high and the safety valve opens, water is drained off via a hose to the drip tray.

4.18.2 Water Path - Coffee

Water exiting the water pump is pumped under pressure through the flow meter, through the coffee/hot-water heater and then through the water valve into the brew unit. Water passes through the compressed coffee grounds and exits the brew unit as coffee. The coffee then flows to the dispenser tubes on the front of the appliance into the user's cup.

4.18.3 Water Path – Hot Water

The water pump moves water under pressure through the flow meter, through the coffee heater, and then via the hot-water valve to the hot-water outlet.

4.18.4 Water Path - Steam

The pump moves water under pressure via the flow meter and through the coffee heater. Water exiting the coffee heater is routed via the steam solenoid valve into the steam heater. Steam exits the steam heater and is dispensed from the frothing nozzle.

4.18.5 Steam Valve and Steam Valve Switch

The steam valve is a mechanical valve regulated via a knob on the front of the appliance. As the knob is turned counterclockwise, the amount of steam exiting the valve increases.

The steam valve switch is mounted to the steam valve bracket. When the steam valve is opened, the steam valve switch is actuated.

The switch is monitored by the electronic and, when actuated, the electronic energizes the steam solenoid (routing the water exiting the coffee/hot water heater to the steam heater).

4.19 Water Valve

The water valve is attached to the output of the coffee/hot-water heater. The valve is in a normally closed position.

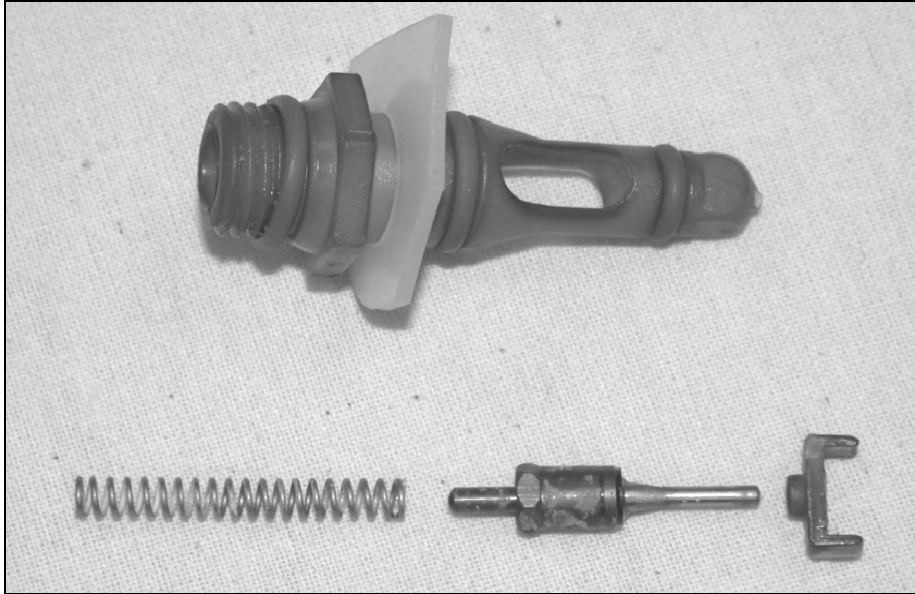
When the brew unit is driven into the brew position, the valve mechanically opens and water is supplied to the brew unit.

The water valve uses several O-rings to ensure that the connection between the valve and the brew unit remains air- and watertight. This ensures that air does not enter the water path and disrupt the proper flow and pressure, and that water does not leak from the system.

The two O-rings that form the seal to the brew unit can be accessed and replaced from the front/inside area of the appliance, once the brew unit has been removed.

To access the upper seal or for service on the valve, the heater assembly must be removed from the appliance. This permits easy disassembly of the valve for a thorough inspection. Although components of the valve are available separately, it is highly recommended that the three components are all replaced together.

Technical Information

**Figure 4-22:** Water Valve

4.20 Electronic Assemblies

4.20.1 Power Electronic (CVA 615)

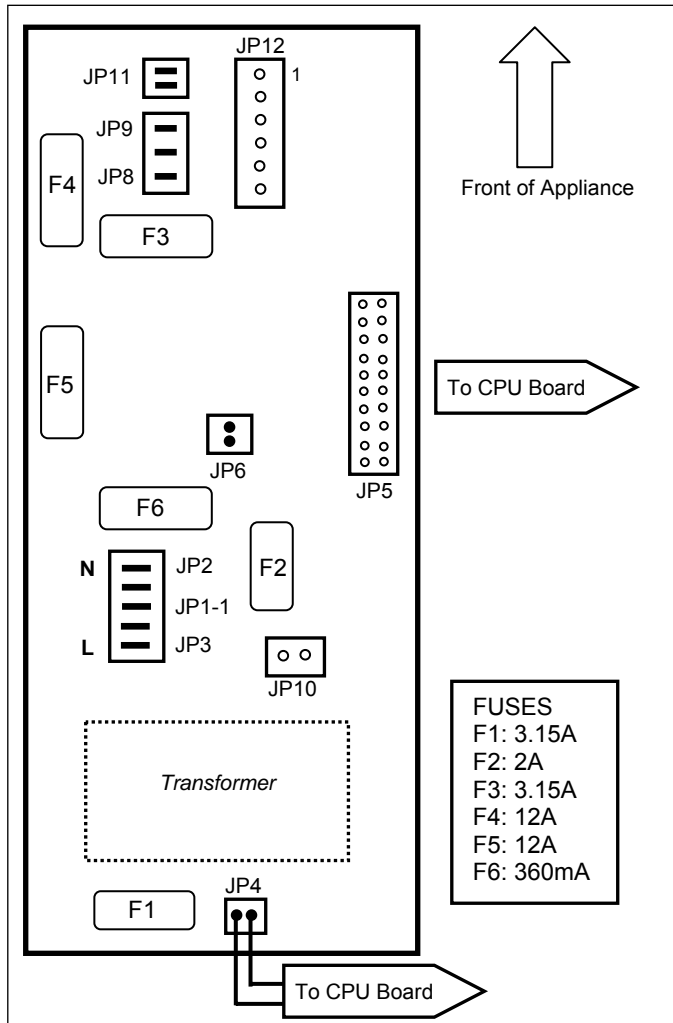


Figure 4-23: CVA 615 Power Electronic

Technical Information

4.20.2 CPU Electronic (CVA 615)

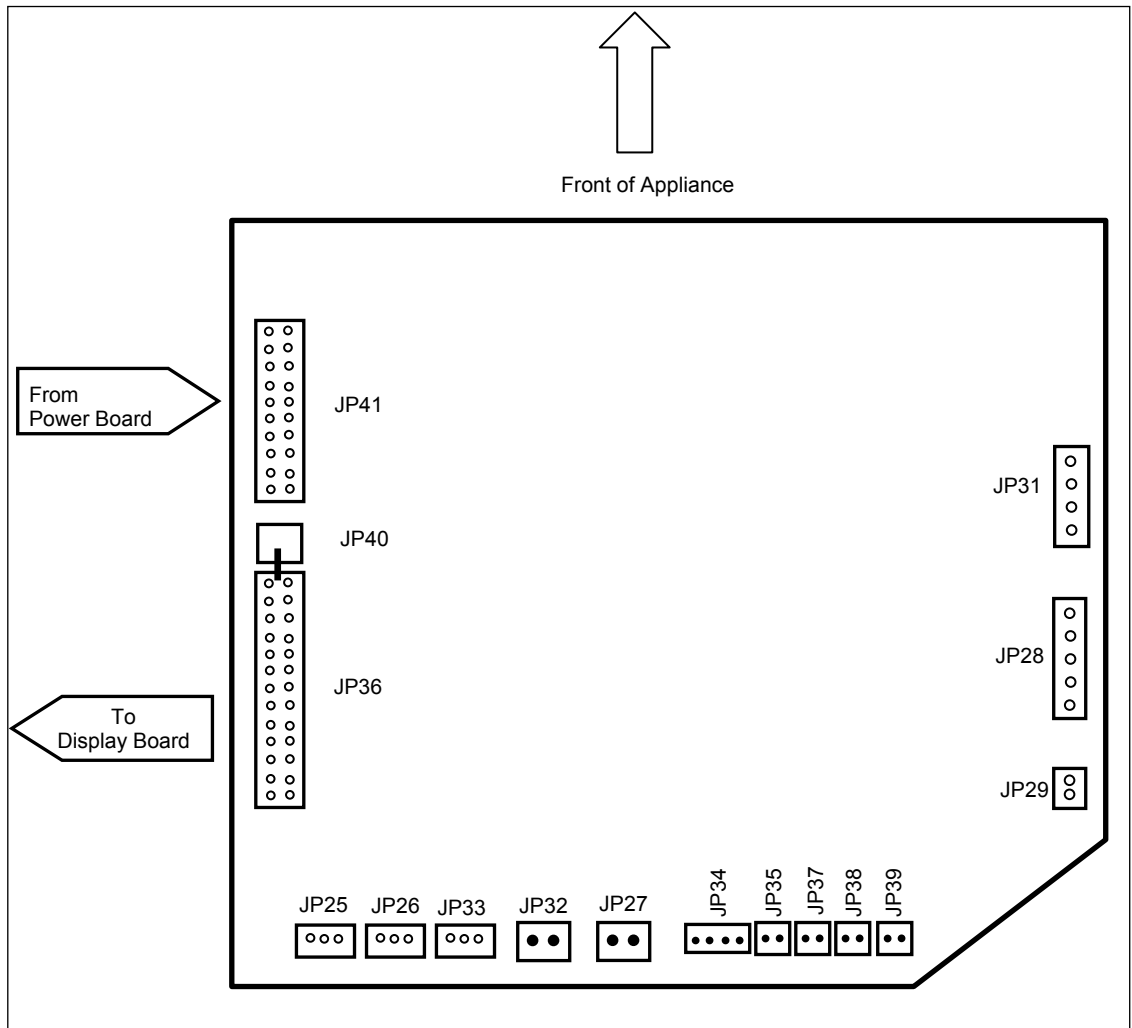


Figure 4-24: CVA 615 CPU Electronic

4.20.3 CVA 610 CPU Electronic

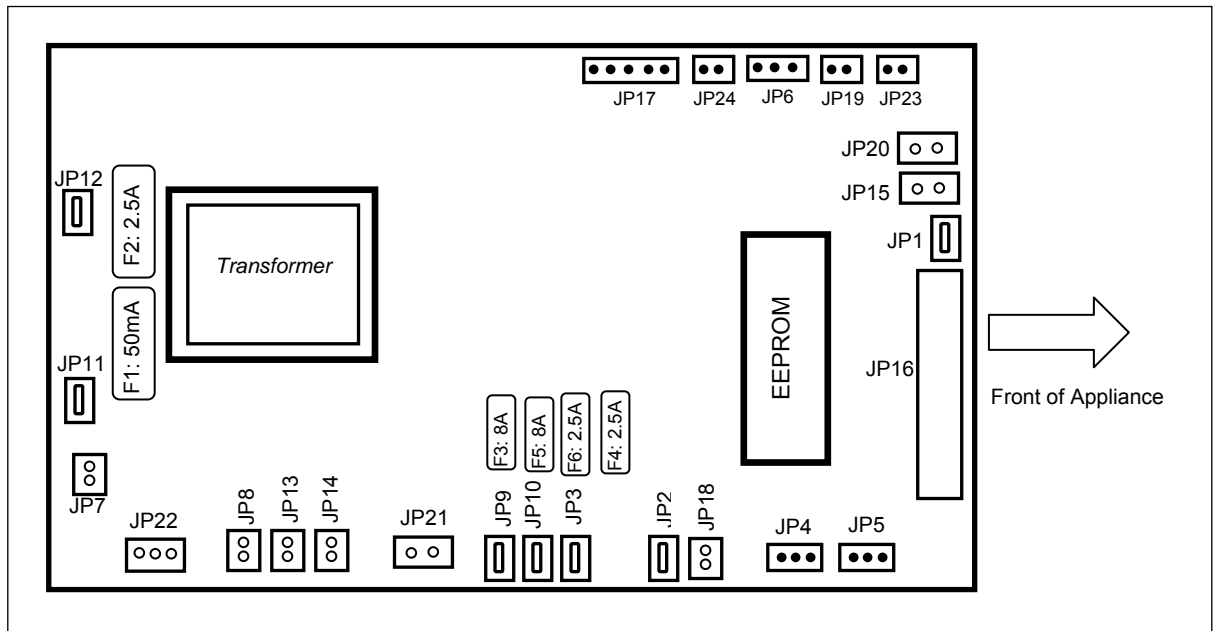


Figure 4-25: CVA 610 CPU Electronic

Technical Information

5.0 Service and Maintenance

Danger!

To avoid the risk of electrical shock, the appliance should be disconnected from the power source before any service procedures are performed.

5.1 Lid Removal

1. Remove the lid screws, as shown in Figure 5-1.
2. Remove the lid.

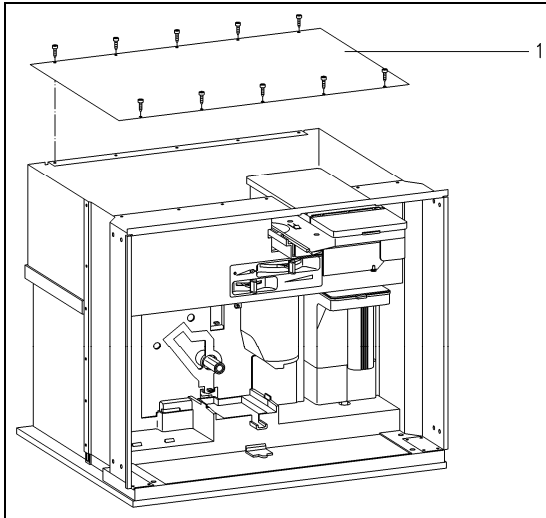


Figure 5-1: Lid with Screws

5.2 Interference Suppression Filter (Z1) Removal

1. Remove the lid; see Section 5.1.
2. Remove the nut securing the filter (Figure 5-2, Item 1).
3. Remove the filter and disconnect its electrical connection(s).

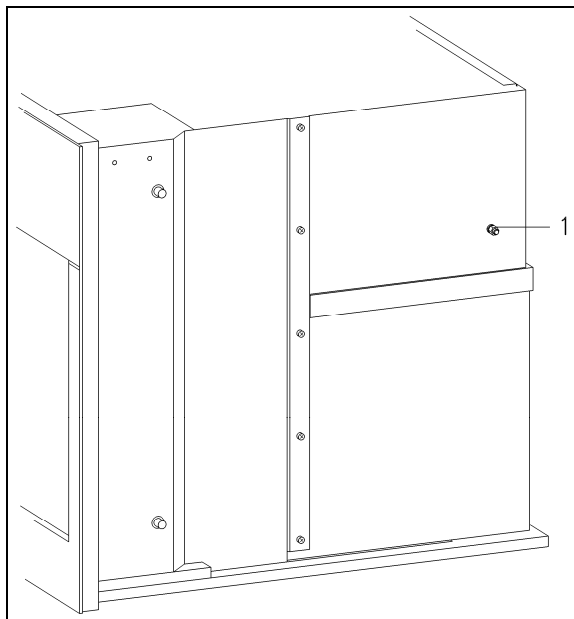


Figure 5-2: Interference Suppression Filter Mounting Location

5.3 CPU Electronic Removal (CVA 610)

1. Remove the lid; see Section 5.1.
2. Disconnect the door switch connections.
3. Disconnect all connections from the CPU electronic.
4. Remove the T10 screws securing the electronic at the corners.
5. Remove the CPU electronic from the appliance.

5.4 Power Electronic Removal (CVA 615)

1. Remove the lid; see Section 5.1.
2. Disconnect the door switch connections.
3. Disconnect all connections from the power electronic.
4. Remove the T10 screws (up to 9) securing the power electronic.
5. Remove the power electronic from the appliance.

5.5 Control Electronic Removal (CVA 615)

1. Remove the lid; see Section 5.1.
2. Disconnect all connections from the control electronic.
3. Remove the two T10 screws securing the electronic at the corners.
4. Remove the control electronic from the appliance.

5.6 Rear Panel Removal

1. Remove the lid; see Section 5.1.
2. Remove the interference suppression filter; see Section 5.2.
3. Remove the screws securing the rear panel.
4. Disconnect the ground connection from the rear panel.

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5. Remove the rear panel upwards.

Note: In some CVA 610 models, there may be an additional screw securing the rear panel to the steam heater mounting bracket.

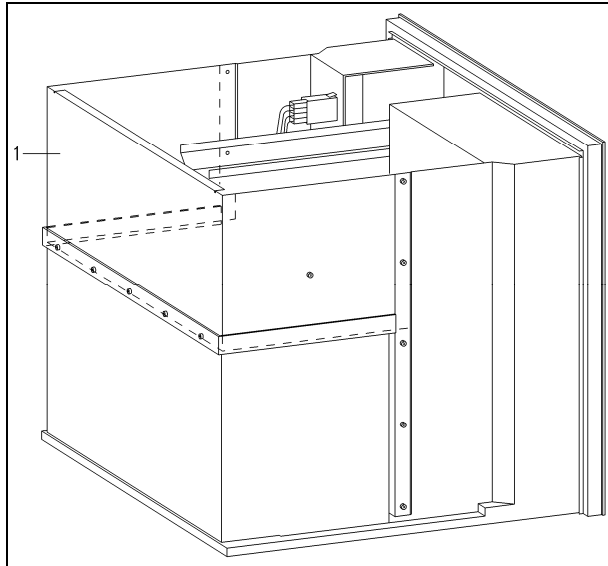


Figure 5-3: Rear Panel Removal

5.7 Adjustment Slide Switch Frame Removal

1. Open the door.
2. Pull off the slide switch controls.
3. Press the locking tabs inward with a small flathead screwdriver (Figure 5-4).
4. Remove the frame.

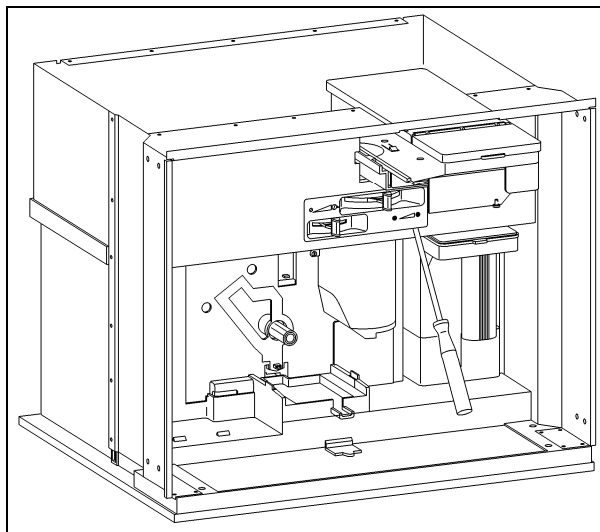


Figure 5-4: Removing the Adjustment Slide Switch Frame

5.8 Door Contact Switch (S24) Removal

1. Remove the lid; see Section 5.1.
2. Open the door.
3. Disconnect the door switch connections.
4. Press the switch's locking tabs inward with a small flathead screwdriver.
5. Remove the door switch out towards the front of the appliance.

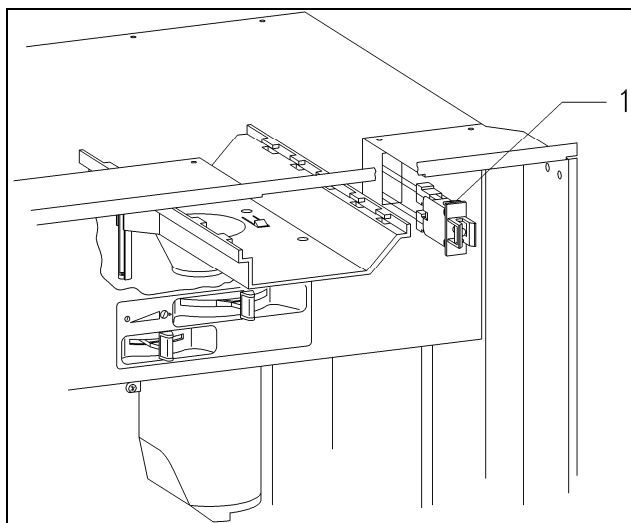
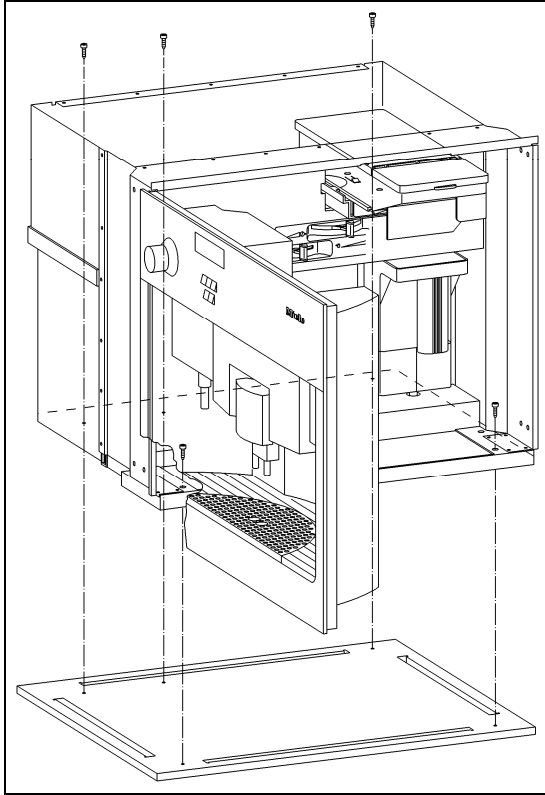


Figure 5-5: Door Switch (Shown with Appliance Door in Open Position)

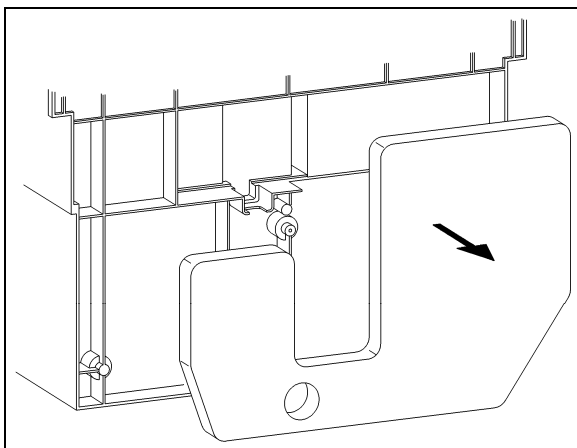
5.9 Base Plate Removal

1. Remove the lid (Section 5.1), interference suppression filter (Section 5.2) and rear panel (Section 5.6).
2. Open the door.
3. Remove the waste container.
4. Remove the water tank.
5. Check if water is present in the drip tray with a finger through the opening under the water container.
6. If water is present, remove it using a suitable device.
7. Remove the brew unit; see Section 5.25.
8. Remove the coffee beans from their container.
9. Remove the base plate retaining screws (Figure 5-6).
10. Tilt the appliance onto its back.
11. Remove the base plate and disconnect the ground wire.

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**Figure 5-6:** Base Plate Removal**5.10 Drip Tray Removal**

1. Remove the lid (Section 5.1), interference suppression filter (Section 5.2) and rear panel (Section 5.6).
2. Remove the base plate; see Section 5.9.
3. Remove the drip tray. See Figure 5-7.

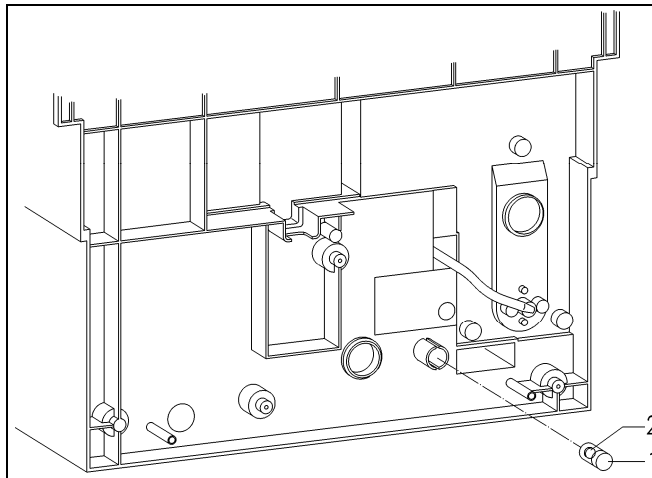
**Figure 5-7:** Drip Tray Removal

5.11 Overflow Switch Actuator Float Removal

1. Remove the lid (Section 5.1), interference suppression filter (Section 5.2) and rear panel (Section 5.6).
2. Remove the base plate; see Section 5.9.
3. Remove the float. See Figure 5-8, Item 1.

Note:

Ensure that the float is re-installed in the same direction as when it was removed.



- 1 Overflow switch float
- 2 Magnet inside float

Figure 5-8: Overflow Switch Actuator Float

5.12 Overflow Switch (B8/3) Removal

1. Remove the lid (Section 5.1), interference suppression filter (Section 5.2) and rear panel (Section 5.6).
2. Remove the screw securing the overflow switch (Figure 5-9, Item 1).
3. Remove the overflow switch, and disconnect its electrical connections.

Technical Information

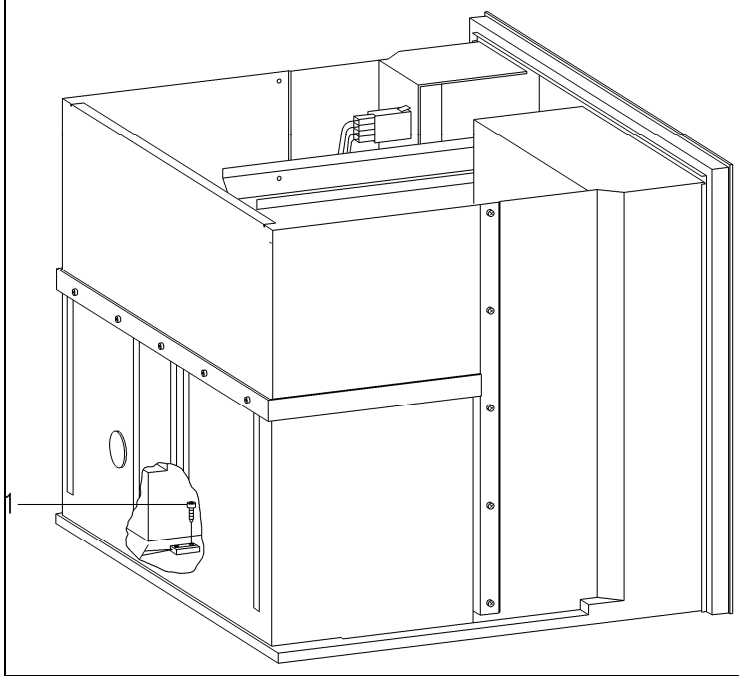


Figure 5-9: Overflow Switch

5.13 Fluorescent Light Removal (CVA 610)

1. Open the door.
2. Unclip the light cover (see Figure 5-10) and remove it.

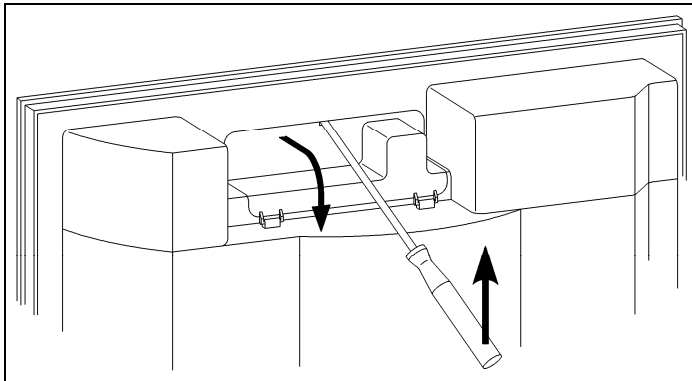


Figure 5-10: Light Cover Access and Removal (CVA 610)

3. Turn the light tube 90° towards you to remove. See Figure 5-11.

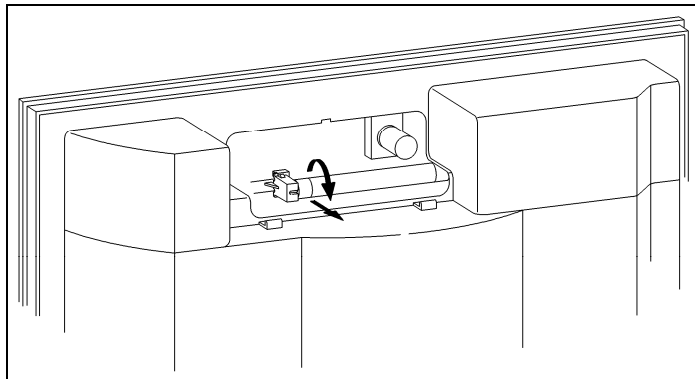


Figure 5-11: Light Tube Removal (CVA 610)

5.14 Light Starter Removal (CVA 610)

1. Open the door.
2. Unclip the light cover and remove it.
3. Turn the starter counterclockwise to remove (Figure 5-12 shows the view from the outside of the appliance door).

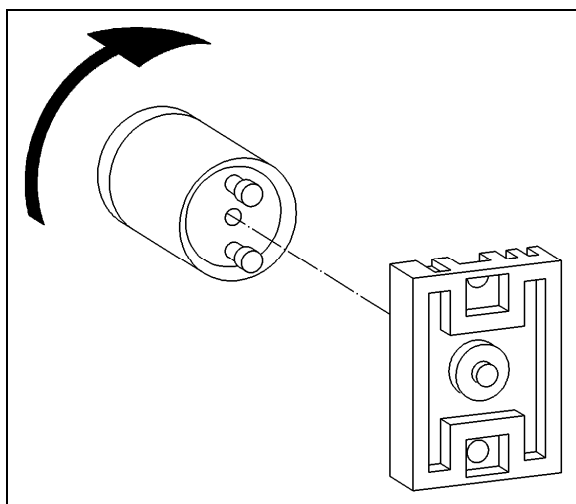


Figure 5-12: Starter Removal

5.15 Halogen Light Removal (CVA 615)

1. Open the door.
2. Unclip the light cover and remove it.
3. Grasp the defective bulb using a soft cloth and gently pull.

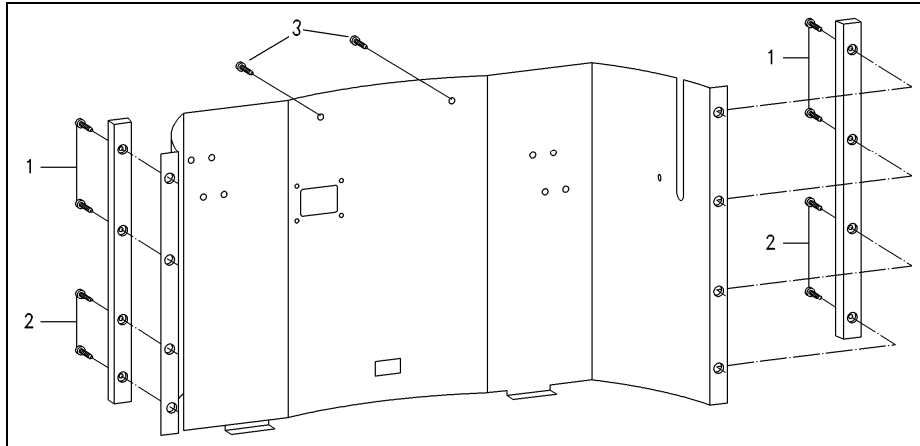
Warning:

Never touch a halogen bulb with bare fingers. When inserting a glass halogen bulb, always hold it with a soft cloth.

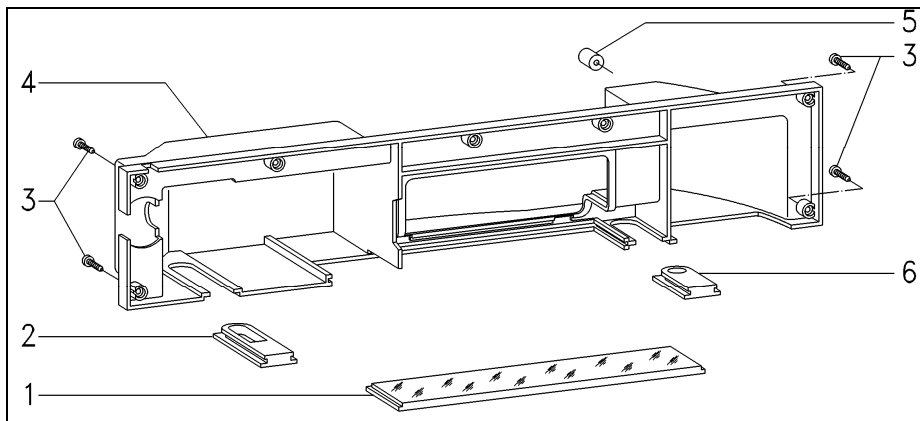
Technical Information

5.16 Rear Door Panel Removal

1. Open the door.
2. Remove the 8 screws securing the panel's trim pieces (Figure 5-13, Items 1 and 2).
3. Remove the 2 screws securing the middle of the panel (Figure 5-13, Item 3).
4. Take off the panel.

**Figure 5-13: Rear Door Panel Removal****5.17 Fascia Panel Cover Removal**

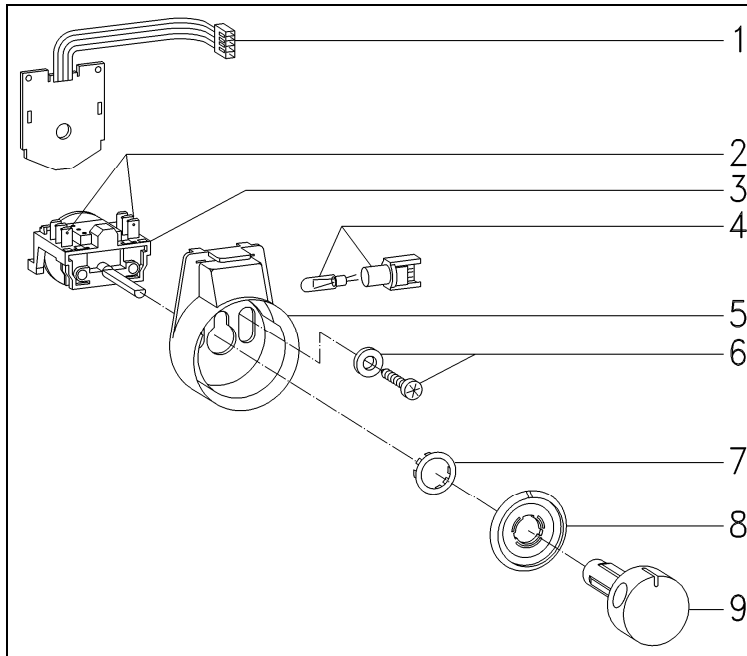
1. Open the door.
2. Remove the rear door panel; see Section 5.15.
3. Remove the screws securing the cover (see Figure 5-14, Item 3).
4. Remove the cover.

**Figure 5-14: Fascia Panel Cover Assembly**

- 1 Fascia
- 2 Cable guide
- 3 Screws
- 4 Cover
- 5 Magnet
- 6 Cable guide

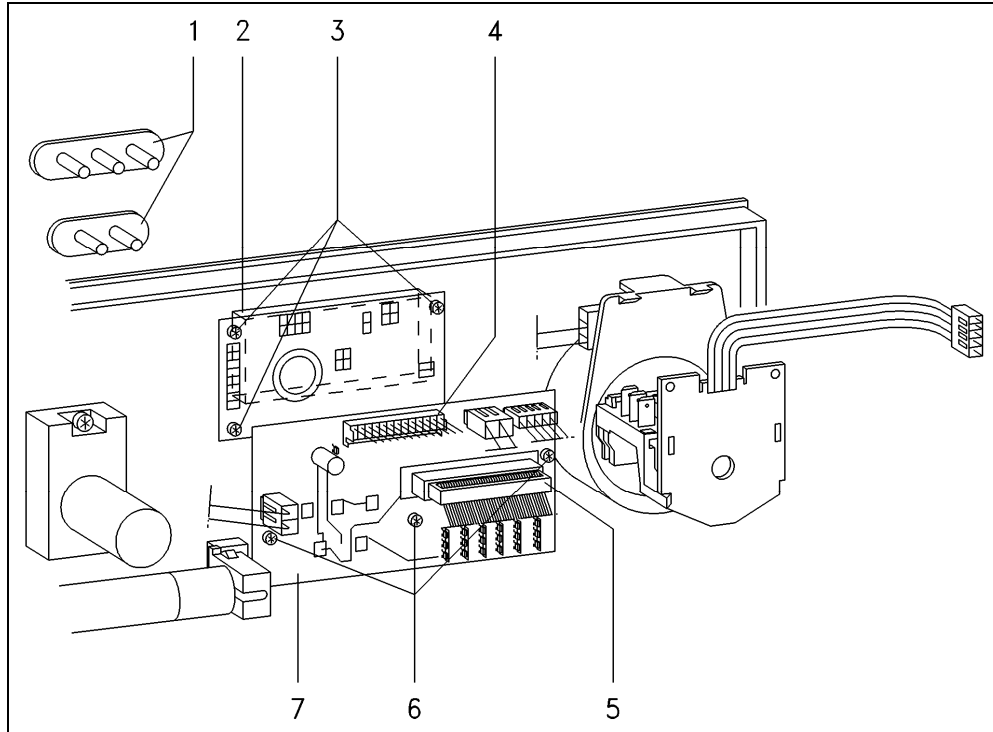
5.18 Selector Switch Removal

1. Open the door.
2. Remove the rear door panel and fascia panel cover; see Sections 5.15 and 5.16.
3. Disconnect the connections from the selector switch.
4. Remove the switch knob (Figure 5-15, Item 9).
5. Remove the selector switch with its housing from the fascia.
6. Remove the selector switch retaining screws.
7. Remove the selector switch from its housing.

**Figure 5-15:** Selector Switch**5.19 Selection/Display Electronic Removal**

1. Open the door.
2. Remove the rear door panel and fascia panel cover; see Sections 5.15 and 5.16.
3. Pull off the pushbutton knobs (Figure 5-16, Item 1).
4. Disconnect the connections from the selection electronic (Figure 5-16, Item 7).
5. Remove the screws securing the selection electronic (Figure 5-16, Item 6).
Remove the selection electronic.
6. Remove the screws securing the display electronic (Figure 5-16, Item 3).
Remove the display electronic.

Technical Information

**Figure 5-16: Selection/Display Electronic Removal**

- 1 Pushbuttons
- 2 Display electronic
- 3 Display electronic screws
- 4 Selection-display electronic interface
- 5 Control and power electronics connection
- 6 Selection electronic screws
- 7 Selection electronic

5.20 Dispenser Assembly Removal

1. Open the door.
2. Remove the grille and drip tray from the door.
3. Remove the screws securing the white panel (on the left and right of the cover).
4. Remove the white panel.

Note:

The two screws securing the dispenser assembly are on the rear of the assembly.

5. Remove the 2 screws securing the dispenser assembly to the inside of the door.
6. Pull out the hose (Figure 5-17, Item 6) from the outlet (Figure 5-17, Item 7).
7. Pull out the dispenser assembly (Figure 5-17, Item 9) partway.
8. Unclip and remove the outlet.
9. Remove the dispenser assembly from the appliance.

Technical Information

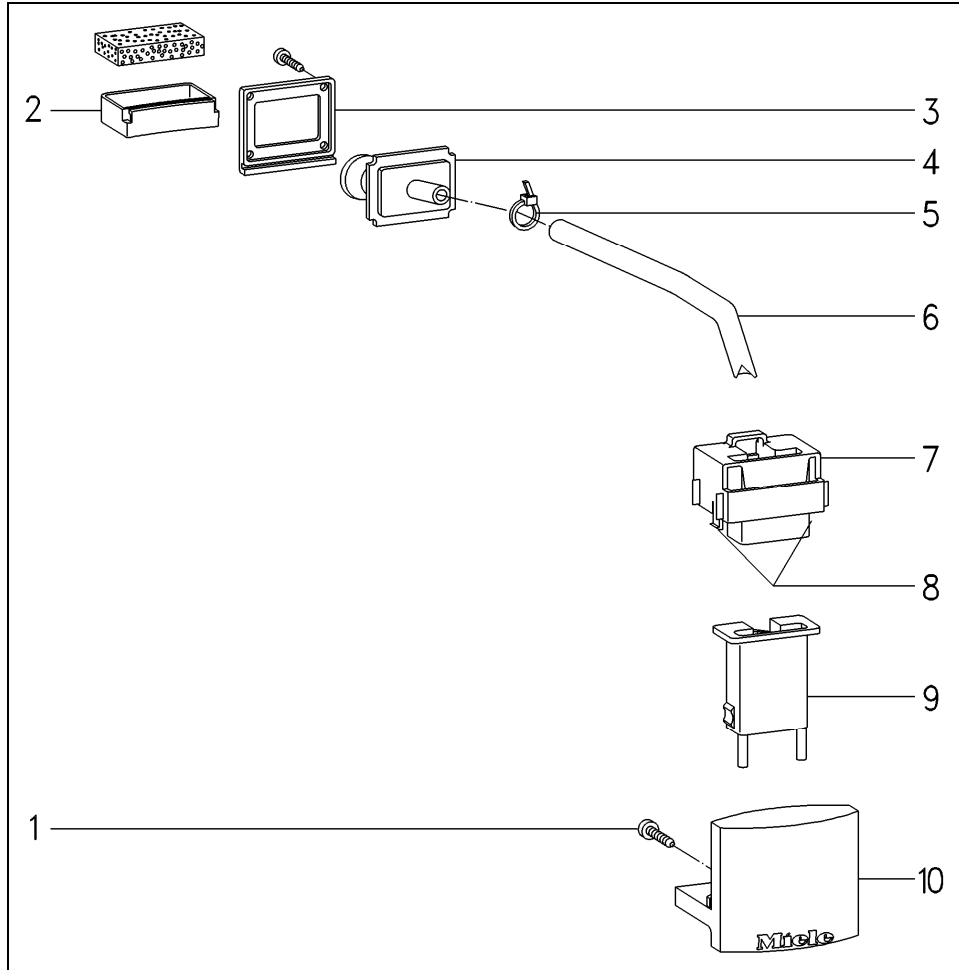


Figure 5-17: Dispenser Assembly Components

- | | |
|-----------------------------|----------------------|
| 1 Screw | 6 Connection hose |
| 2 Drip tray (select models) | 7 Outlet |
| 3 Underlay | 8 Retainers |
| 4 Outlet | 9 Dispenser assembly |
| 5 Cable holder | 10 Cover |

5.21 Dispenser Assembly Installation

- Slide the outlet (Figure 5-17, Item 7) onto the connection hose (Figure 5-17, Item 6).
- Position the dispenser assembly (Figure 5-17, Item 9) in the cover (Figure 5-17, Item 10).
- Clip the outlet (Figure 5-17, Item 7) in the cover (Figure 5-17, Item 10).

Note:

The two screws for the coffee dispensing nozzle should be tightened only by hand as they can easily be over-tightened.

- Install the coffee dispensing nozzle in the frame.
- Install the white panel and screws.

Technical Information

5.22 Steam Valve and Steam Valve Switch (S79) Removal

1. Open the door.
2. Remove the rear door panel and fascia panel cover; see Sections 5.15 and 5.16.
3. Pull off the switch knob (Figure 5-18, Item 8).
4. Remove the screws securing the mounting bracket (Figure 5-18, Item 3) to the rear door panel.
5. Remove the mounting bracket/valve assembly.
6. Remove the steam generator switch screws (Figure 5-18, Item 10).
7. Remove the steam generator switch (Figure 5-18, Item 1).
8. Disconnect the steam generator switch connections.
9. Remove the screws securing the valve housing to its mounting bracket (Figure 5-18, Item 4).
10. Separate the valve housing from its mounting bracket.
11. Release the clips securing the hoses to the valve housing.

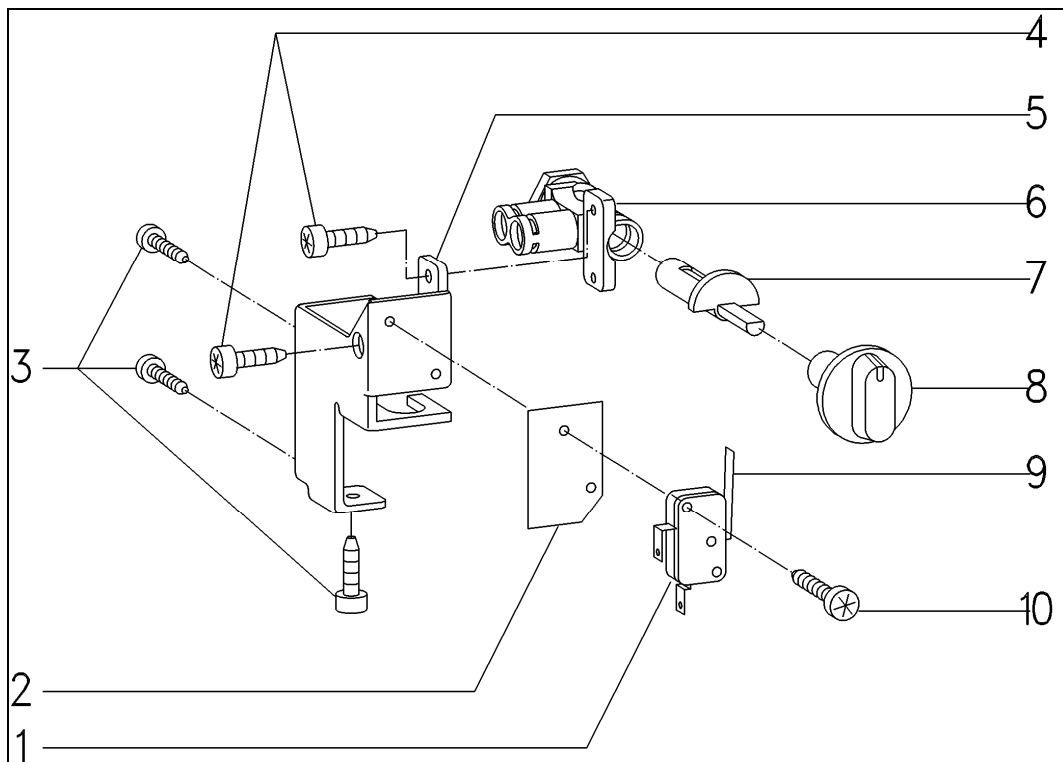


Figure 5-18: Components of Steam Valve and Steam Valve Switch

- | | |
|--------------------------------|-----------------------|
| 1 Steam generator switch (S79) | 6 Steam valve housing |
| 2 Shield | 7 Steam valve insert |
| 3 Bracket screws | 8 Switch knob |
| 4 Valve housing screws | 9 Switch feeler |
| 5 Mounting bracket | 10 Switch screw |

5.23 Hot-Water Nozzle Removal

1. Open the door.
2. Remove the rear door panel and fascia panel cover; see Sections 5.15 and 5.16.
3. Loosen the nut (Figure 5-19, Item 2).

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4. Remove the screws securing the mounting bracket to the rear door panel (Figure 5-19, Item 4).
5. Remove the mounting bracket (Figure 5-19, Item 5) and disconnect the ground wire.
6. Unscrew the sleeve (Figure 5-19, Item 1) from the connector (Figure 5-19, Item 6).
7. Pull out the hot-water nozzle (Figure 5-19, Item 3) from the connector.

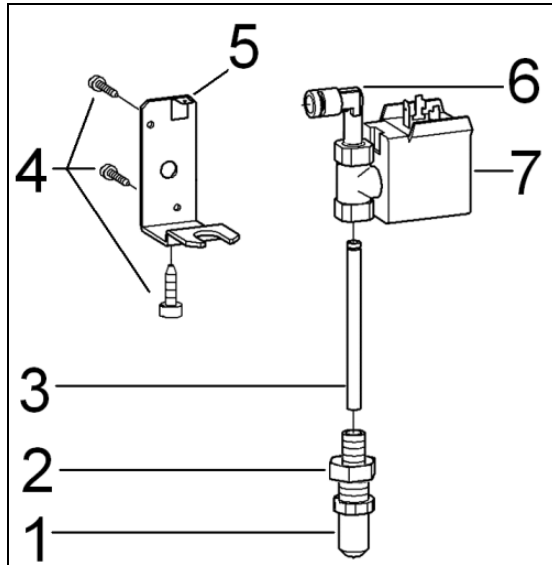


Figure 5-19: Hot-Water Valve Components

- 1 Sleeve
- 2 Nut
- 3 Hot-water nozzle
- 4 Holder screws
- 5 Holder
- 6 Connector
- 7 Hot-water valve (Y12)

5.24 Hot-Water Valve (Y12) Removal

1. Open the door.
2. Remove the rear door panel and fascia panel cover; see Sections 5.12 and 5.13.
3. Disconnect the connections from the hot-water valve (Figure 5-19, Item 7).
4. Loosen the hot-water valve nut(s).
5. Separate the hot-water valve from the connector (Figure 5-19, Item 6).

5.25 Coffee Temperature Check

1. Set the grinding grade to medium.
2. Set the coffee quantity to medium.
3. Set the medium coffee temperature to medium (standard setting).
4. Turn off the appliance.
5. Press and hold the **Small Coffee** button, **Large Coffee** button and the **Hot Water** button. Turn the selector switch to the "On with Light" position. The following is displayed:

LANGUAGE
RINSING

6. Press the **Medium Coffee** button 12 times. The following is displayed:

DIAGNOSIS
LANGUAGE

Technical Information

7. Press the **Small Coffee** button 1 time.
8. Press the **Medium Coffee** button 2 times. The following is displayed:

1 COFFEE N⁰ IMPULS. 350

9. Observe the numeric value in the lower right corner of the display. It should be approximately 350.
 - If a value of “350” is displayed, proceed to Step 14.
 - If the value is not 350, proceed to Step 10.
10. Press the **Small Coffee** button 1 time. A blinking box will appear to the right of the numeric value.
11. Set the value to “350” as follows:
 - Press the **Large Coffee** button to increase the value.
 - Press the **Medium Coffee** button to decrease the value.
12. Press the **Small Coffee** button 1 time to store the value.
13. Turn the selector switch to the “**Off**” position.
14. Turn the selector switch to the “**On**” or “**On with Light**” position.
15. Prepare 4 coffees (medium size) one after the other.
16. When the fourth coffee is being dispensed, hold the sensor probe directly in the flow of coffee. The temperature at the coffee dispenser should be between 171°F and 194°F.

5.26 Brew Unit Removal (in Start/Home Position)

1. Open the door.
2. Remove the waste container.
3. Hold the handle and press on the part marked PRESS.
4. Gently pull outward on the brew unit to remove it from the appliance.

5.27 Brew Unit Removal (NOT in Start/Home Position)

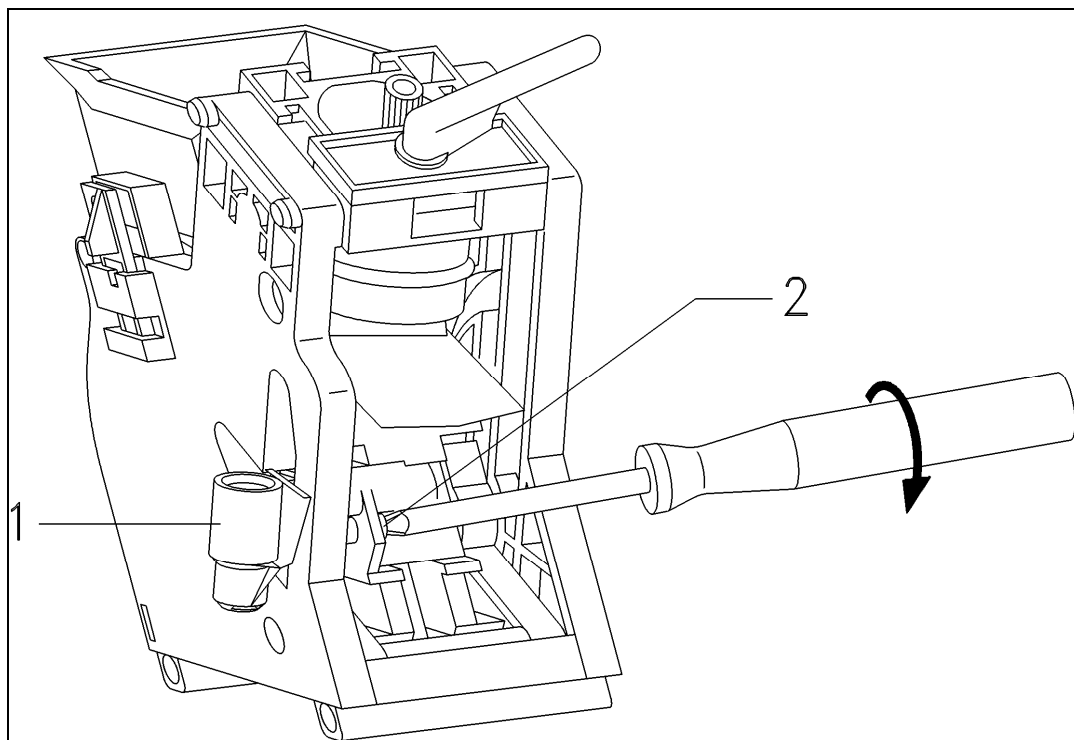
Warning!

This procedure will remove the brew unit from the appliance without damage. However, after the brew unit is removed, the drives must be carefully inspected (and repaired, if necessary), then placed into the start (home) position via service mode.

1. Before proceeding, close the appliance door, then turn the power on to initiate a drive reset during the start-up sequence.
2. Once “Ready...” is displayed, open the front door and attempt to remove the brew unit (see Section 5.26). If the brew unit cannot be easily removed, perform the following:
3. Open the door.
4. Remove the waste container.
5. Remove the Phillips screw (Figure 5-20, Item 2).
6. Use a small flathead screwdriver to lift up on the locking tab (Figure 5-21).

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7. Grasp the brew unit handle and pull the brew unit out until the connection socket on the brew unit (Figure 5-20, Item 1) unsnaps from the brew unit and remains inside the appliance attached to the water nozzle.
8. Remove the brew unit; see Section 5.26.
9. Slide the connection socket down to remove it from the appliance.
10. Re-install the connection socket on the brew unit.
11. Carefully inspect the drive for defects.
12. Test the home and brewing position switches for proper operation.

**Figure 5-20: Brew Unit**

Technical Information

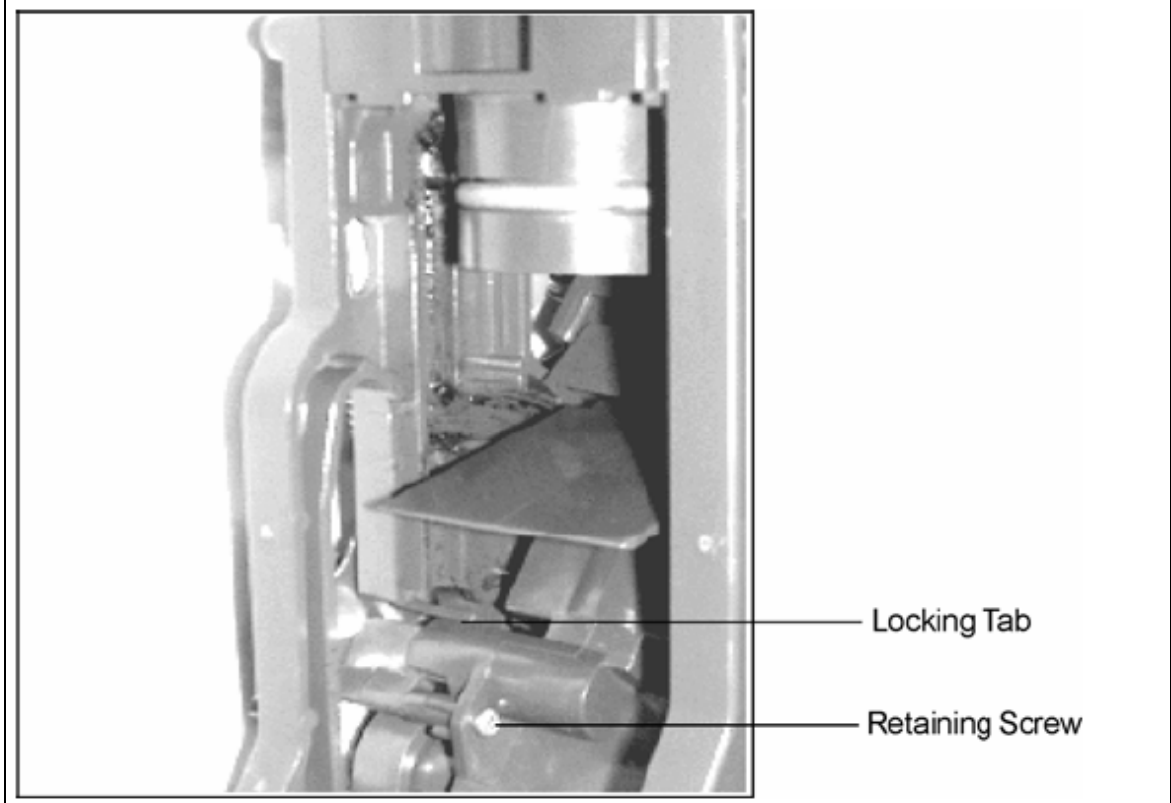


Figure 5-21: Brew Unit Connection Socket

5.28 Brew Unit Installation

Slide the brew unit into position in the appliance until the locking mechanism engages with the drive mounting plate.

Note:

Do not press the part marked PRESS during the installation of the brew unit.

5.29 Brew Unit Cleaning Procedure

Note:

- Clean the brew unit by hand only. The moving parts and the rubber gaskets SHOULD NOT be cleaned in a dishwasher.
- Lubricate the brew unit with silicone after every 500 cups (see Section 5.32).

1. Remove the waste container. The brew unit can only be removed after the waste container has been removed from the appliance.
2. Grasp the brew unit by the handle and press the area marked PRESS. (Figure 5-22, Item 1).

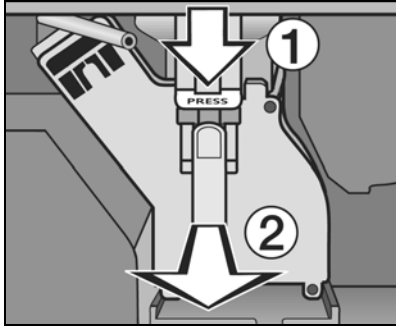


Figure 5-22: Brew Unit Removal for Cleaning

3. Pull outward to remove the brew unit (Figure 5-22, Item 2).
4. Clean the brew unit thoroughly under warm running water without detergent.
5. Rub away coffee residues from the steel filters with a sponge.
6. Dry the funnel to prevent ground coffee from sticking.
7. After cleaning, press "PRESS".
8. Remove the waste container (if it was re-installed).
9. Push the brew unit straight into the track, without pressing "PRESS", until it clicks into place. See Figure 5-23.

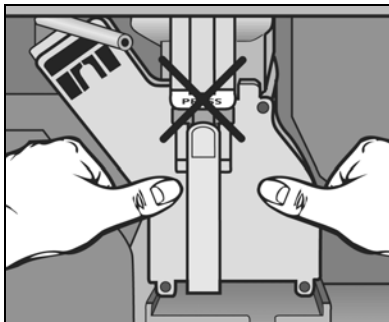


Figure 5-23: Brew Unit Installation

5.30 Brew Unit Filter Cleaning

1. Wipe away coffee residues from the steel filter in the funnel of the brew unit with a sponge.
2. The filters can be removed for thorough cleaning.
3. Remove the brew unit.
4. Insert a 5mm Allen key in the connection socket in the brew unit. Turn counterclockwise while supporting the chrome filter from underneath. Remove the filter by lifting it from the brew unit.
5. Access the second filter by placing a long Philips screwdriver through the center of the funnel and removing the screw in the center of the filter.
6. Manually move the brew unit into the "brew" position.
7. Turn the brew unit upside down; the filter will fall out.
8. Clean both sides of the filter with hot water and let it dry.
9. Re-install the second filter back into position.
10. Manually move the brew unit to the "home" position.
11. Re-install the Philips screw in the center of the filter.
12. Re-install the first filter in the brew unit and secure by turning the Allen key clockwise.

Technical Information

5.31 Brew Unit Degreasing via the Rinse Cycle**Note:**

The natural oil found in coffee can cause the brew unit to clog. The message “Rinsing Cycle” will flash in the message window after 500 cups to remind you to clean the brew unit using cleaning tablets. These specialty cleaning tablets can be purchased from Miele.

1. Remove the waste container.
2. Take out the brew unit and put the cleaning tablet in the brew unit funnel. See Figure 5-24.

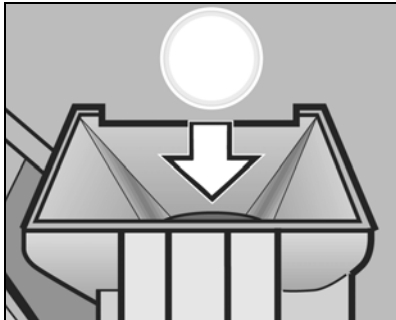


Figure 5-24: Placing Cleaning Tablet into Brew Unit Funnel

3. Return the brew unit and waste container to the appliance and close the door.
4. Place a 3-cup (25-ounce) container under the coffee dispensers.
5. Press the rinse/pre-warm button. (The appliance must be pre-heated and ready to use, or the button will not respond.)
6. The display will read:

RINSING *
RINSING CYCLE

7. Press ▼ to select “Rinsing cycle” with the asterisk.
8. Press ENTER. The display will read:

RINSING CYCLE

9. A small amount of water will flow out of the coffee dispensers. After a pause, more water will flow out. This process will run 4 times, dispensing 2 cups (17 ounces) of hot water. The whole procedure takes about 5 minutes.
10. At the end of the cleaning cycle, the display will read:

SELECT PRODUCT
READY FOR USE

11. The brew unit is now clean and ready to use.

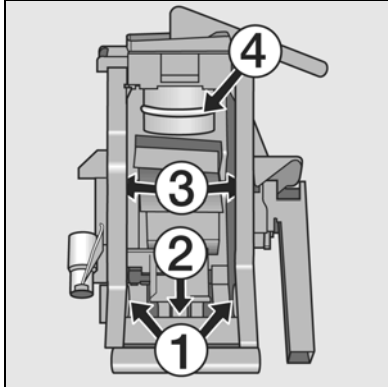
5.32 Brew Unit Lubrication

1. Remove the brew unit; see Section 5.26.

Note:

Check that the brew unit is in the basic position with the funnel slightly lifted and the socket in the vertical position.

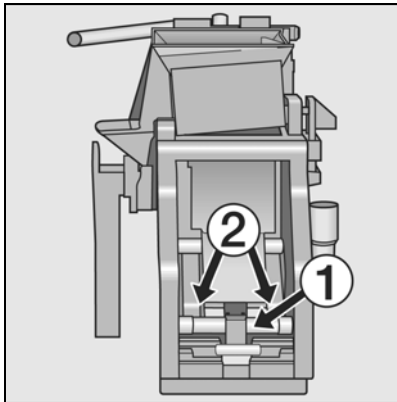
2. Refer to Figure 5-25 below; lubricate the following:



- 1 Joints
- 2 Axle
- 3 Tracks
- 4 Gasket

Figure 5-25: Brew Unit Lubrication Points (1)

3. Refer to Figure 5-26 below; lubricate the following:



- 1 Bolt assembly
- 2 Joints

Figure 5-26: Brew Unit Lubrication Points (2)

4. Re-install the brew unit into the appliance.

5.33 Brew Unit Manual Reset to “Home” Position (Brew Unit Not Installed in Appliance)

1. Press on the latch (Figure 5-27, Item 1) and press the funnel down (Figure 5-27, Item 2).
2. Push the connection piece to the far left position (Figure 5-27, Item 3).
3. Press “PRESS” once.

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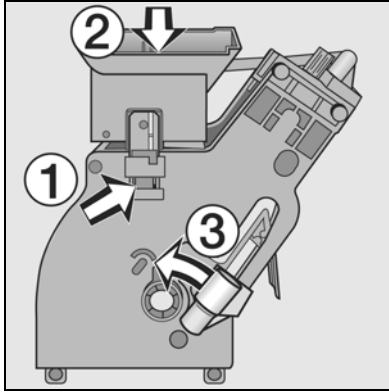


Figure 5-27: Moving the Brew Unit to the Home Position

4. Figure 5-28 shows the “home” position after resetting. The brew unit can now be re-installed into the appliance.

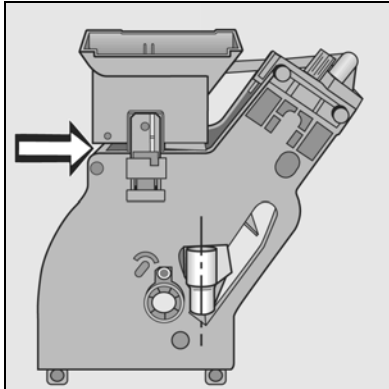


Figure 5-28: Brew Unit in Reset Position

5.34 Brew Unit Output Removal

1. Remove the brew unit; see Section 5.23.
2. Remove the 2 Phillips screws (Figure 5-29, Item 1) securing the output (Figure 5-29, Item 2) to the brew unit.
3. Remove the output with spring from the brew unit.

5.35 Brew Unit Handle Removal

1. Remove the brew unit; see Section 5.26.
2. Press the handle locking tabs inward (see Figure 5-29).
3. Remove the handle.

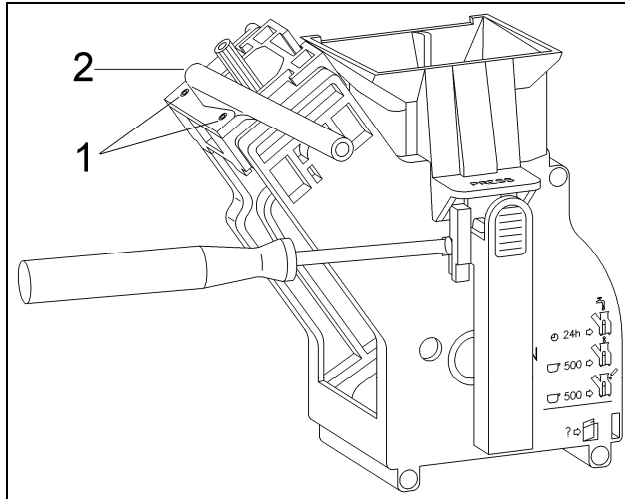


Figure 5-29: Brew Unit Output and Handle

5.36 Brew Unit Funnel Removal

1. Remove the brew unit; see Section 5.26.
2. Press the funnel locking tab (Figure 5-30, Item 1), so that the funnel is no longer raised.
3. Lever the funnel up and out of its holder (Figure 5-31).

Note:

When re-installing the funnel, ensure that the spring (Figure 5-31, Item 1) is seated correctly.

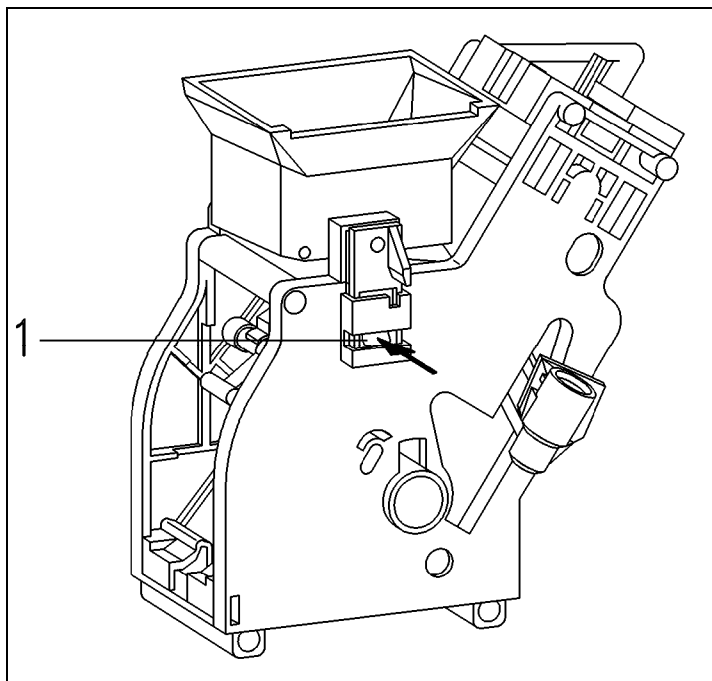


Figure 5-30: Brew Unit Funnel Lock

Technical Information

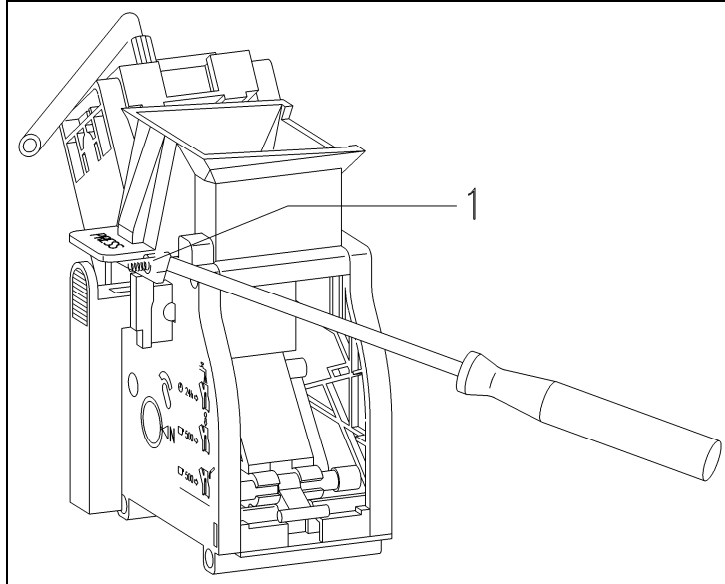


Figure 5-31: Brew Unit Spring Location and Holder

5.37 Brew Unit Ram - Service

1. Remove the brew unit from the appliance; see Section 5.26.
2. Remove the funnel; see Section 5.36.
3. Remove the bottom filter screw and filter (Figure 5-34, Items 1 and 2).
4. Turn the brew unit upside down.
5. Unclip the lever (Figure 5-32, Item 1) from the ram (Figure 5-32, Item 2).

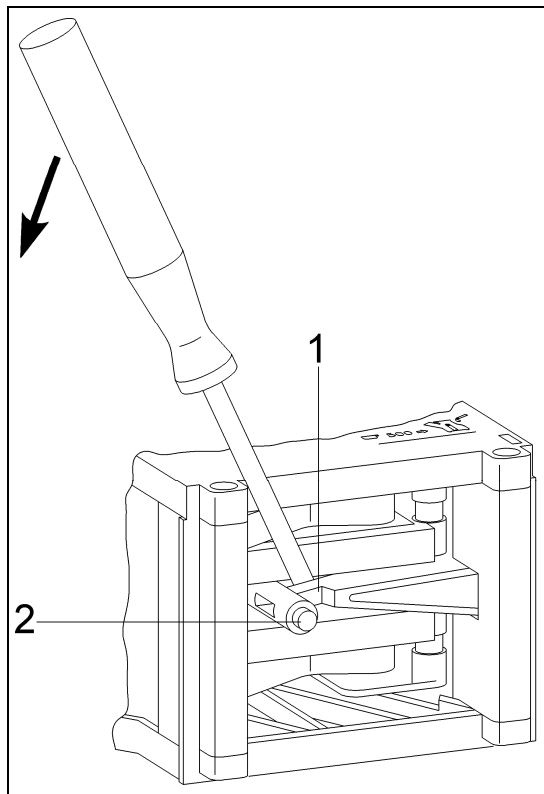


Figure 5-32: Releasing the Ram on the Underside of the Brew Unit

6. Push the ram upward, then turn the brew unit right-side up and pull the ram out of the brewing chamber.
7. Clean the brewing chamber (Figure 5-33), ram and bottom filter by hand with warm water without detergent, then dry.
8. Apply silicone grease to the ram lubrication points (Figure 5-34, Item 3).

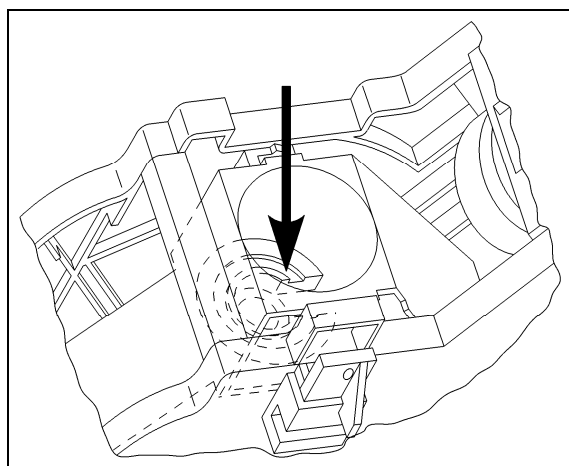
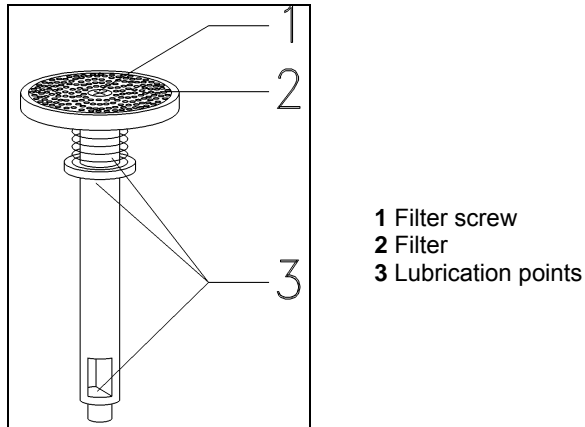


Figure 5-33: Brewing Chamber inside Brew Unit Assembly

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**Figure 5-34:** Ram Assembly

5.38 Accessing the Brew Unit Drive

5.38.1 CVA 610

1. Disconnect the power. Allow the appliance to cool.
2. Remove the brew unit from the appliance; see Section 5.26.
3. Remove the waste container from the appliance.
4. Remove the beans container and beans container guide; see Sections 5.42 and 5.43.
5. Remove the lid; see Section 5.1.
6. Remove the interference suppression capacitor; see Section 5.2.
7. Remove the rear panel; see Section 5.6.
8. Disconnect the door ribbon cable (JP16) from the CPU electronic.
9. Lift the steam heater/mounting bracket assembly out of the appliance and hang it on the outside of the appliance.
10. Move wires and hoses out of the way of the brew unit drive and tie them down as necessary.
11. Remove the 7 Phillips screws securing the brew unit drive cover to the brew unit drive assembly. See Figure 5-35.
12. Refer to Section 4.15 for information on the drive assembly.

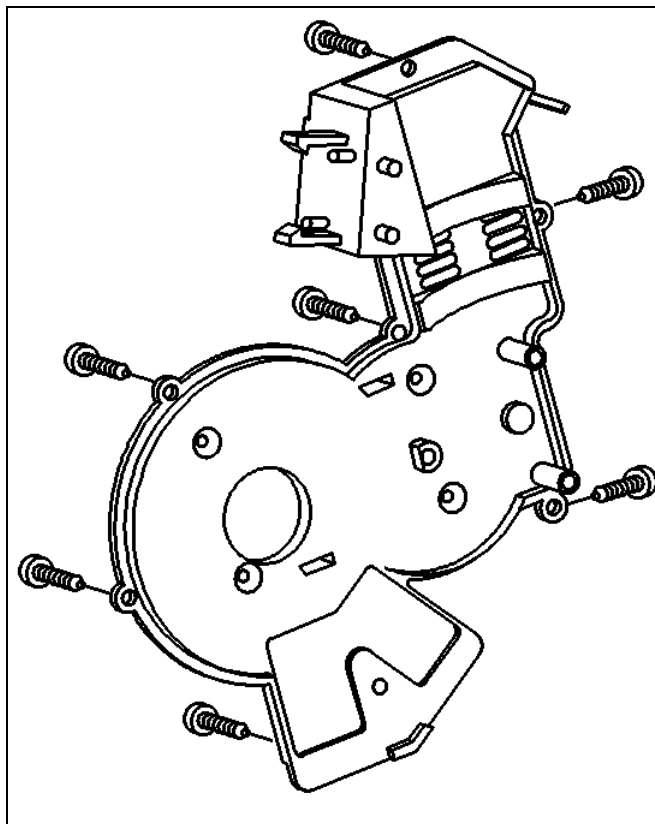


Figure 5-35: Screws Securing the Brew Unit Drive Cover (CVA 610)

5.38.2 CVA 615

1. Disconnect the power. Allow the appliance to cool.
2. Remove the brew unit from the appliance; see Section 5.26.
3. Remove the waste container from the appliance.
4. Remove the beans container and beans container guide; see Sections 5.42 and 5.43.
5. Remove the lid; see Section 5.1.
6. Remove the interference suppression capacitor; see Section 5.2.
7. Remove the rear panel; see Section 5.6.

Important!

Before unplugging any connections, label the plugs and connectors to ensure that the wiring is returned to the correct locations during reassembly.

8. Disconnect L1 and N from the door switch to the interference suppression capacitor.
9. Disconnect the green ground wires from the cord socket/terminal block.
10. Disconnect the following connections from the power electronic:
 - JP2
 - JP12
 - JP4
11. Disconnect the following connections from the CPU electronic:
 - JP34

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- JP35
 - JP25
 - JP39
 - JP41 (ribbon cable)
12. Disconnect the ground connection from the dispenser solenoid.
 13. Disconnect the ground connection from the hot-water heater.
 14. Remove the CPU electronic (with mounting bracket) and position it toward the rear outside of the appliance.
 15. Remove the steam heater from its support and position it outside the appliance.
 16. Disconnect the water intake connection to the coffee/hot-water heater.
 17. Remove the two coffee/hot-water heater screws (on the back of the front plate). See Figure 5-36. Separate the heater from its support.
 18. Remove the two screws securing the plastic hose support. Remove the plastic support from inside the appliance. See Figure 5-36.

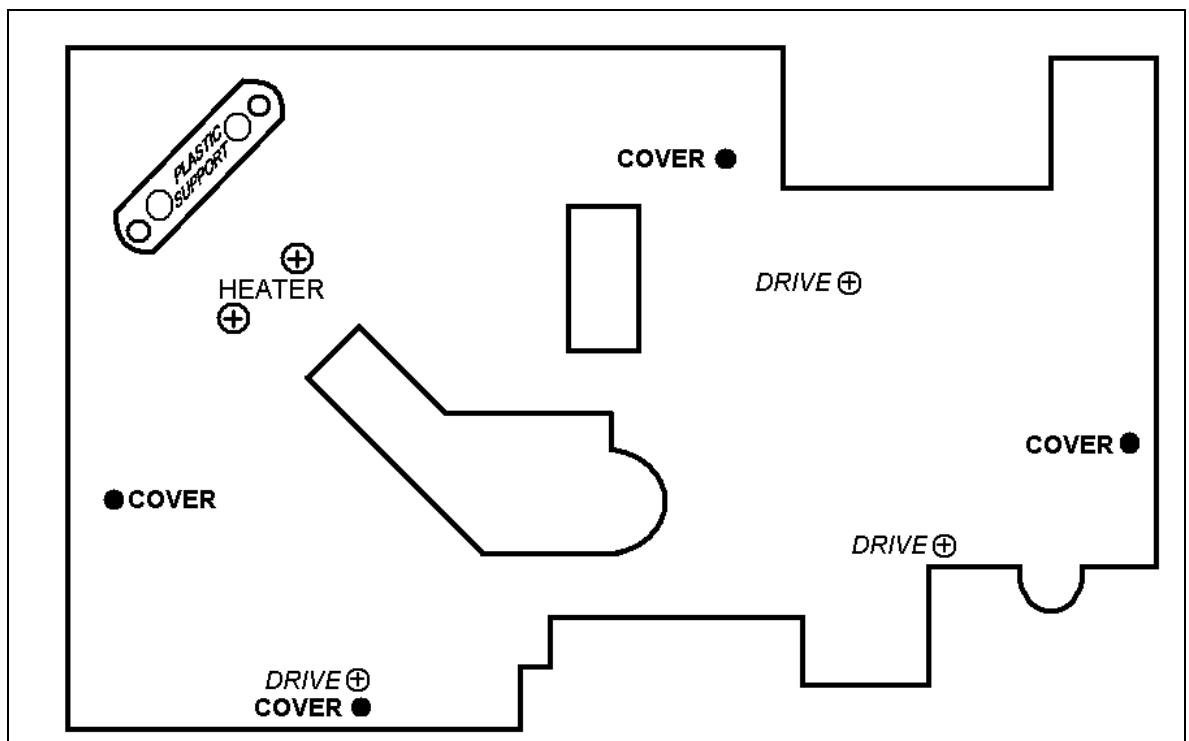


Figure 5-36: Front Plate Assembly with Retaining Screw Locations

19. Remove the two screws (Figure 5-37) and nuts (Figure 5-38) that secure the grinder plate assembly to the top of the front plate assembly.

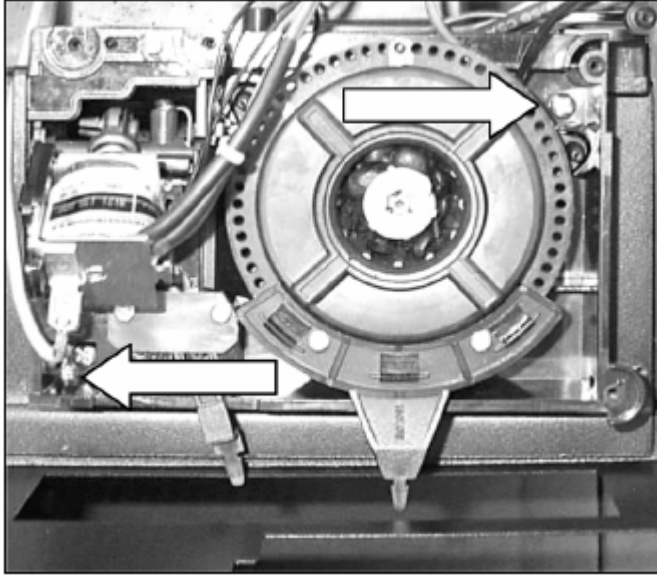


Figure 5-37: Grinder Retaining Screws

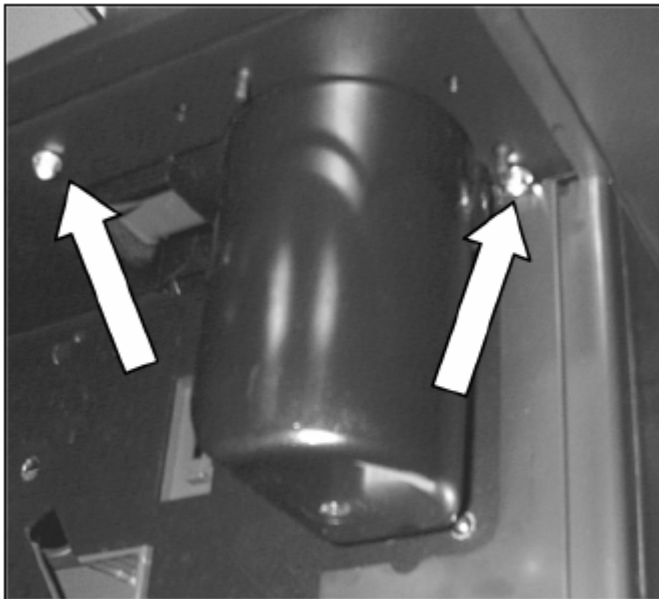


Figure 5-38: Grinder Retaining Nuts

20. Remove the knobs from the grinder slide controls.
21. Remove the adjustment slide switch frame (Section 5.7).
22. Position the grinder as necessary to access the drive cover and drive unit retaining screws. Refer to Figure 5-36 for the location of the screws.
23. Remove the two upper front plate assembly retaining screws as shown in Figure 5-39.
24. Remove all remaining screws from the front plate assembly. Lift upward on the front plate assembly to access the screws near the bottom of the plate. Use Figure 5-36 to locate all screws.

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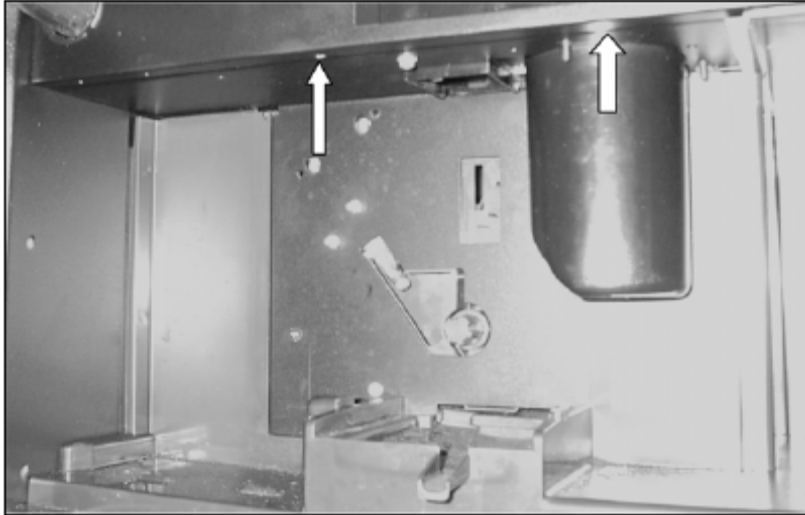


Figure 5-39: Upper Front Plate Assembly Retaining Screws

25. Move the drive assembly cover toward the rear wall of the appliance.
26. Move the drive assembly back while lifting upward to remove it from the appliance. Use caution; the wiring harness is short.

Service Tip:

Refer to Figure 5-40. To avoid having to hold the front plate assembly upward while removing the lower screws, a suitable item can be used to temporarily keep the front plate assembly in an elevated position.



Figure 5-40: Elevating Front Plate Assembly to Access Bottom Screws

27. Position the drive assembly so that access to the rear cover is possible.
28. Remove the 5 screws that secure the cover.
29. Lift the cover from the drive assembly.
30. Refer to Section 4.15 for information on the drive assembly.

5.39 Water Tank Float Removal

1. Open the door.
2. Remove the water tank.
3. Remove the cap from the water tank float. See Figure 5-41.
4. Remove the water tank float.

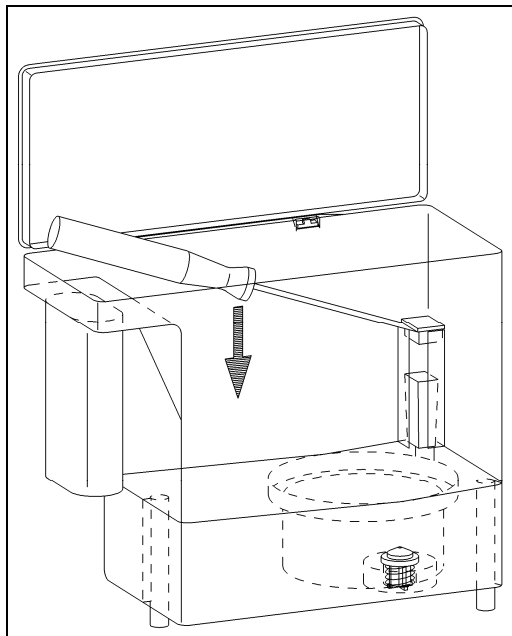


Figure 5-41: Water Tank Float Access

5.40 Water Tank Seal Removal

1. Open the door.
2. Remove the water tank.
3. Lever off the seal cap (Figure 5-42).

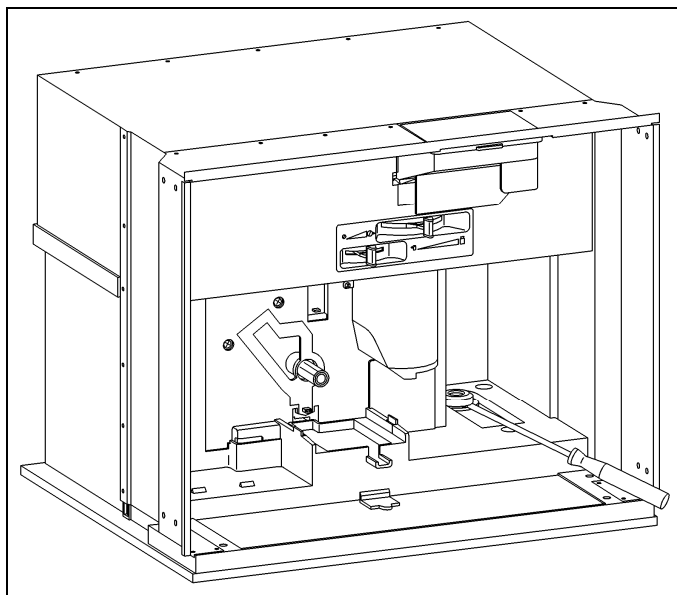


Figure 5-42: Levering Off the Seal Cap

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4. Remove the seal (Figure 5-43, Item 1).

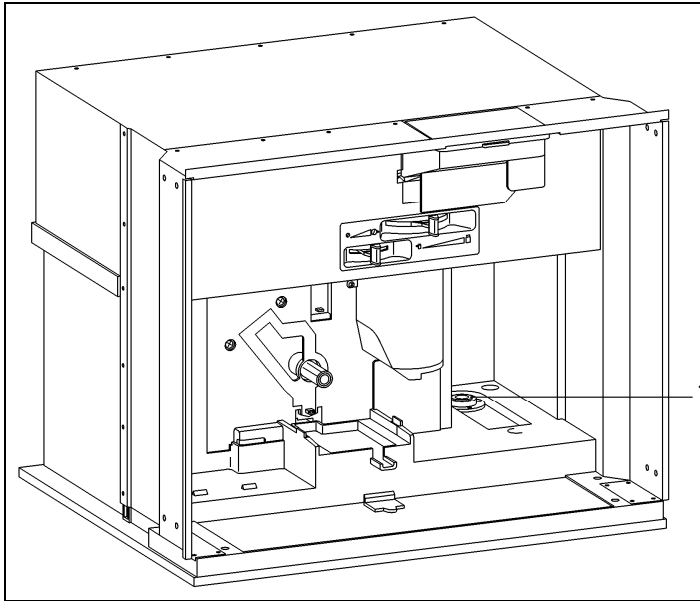


Figure 5-43: Removing the Lip Seal

5.41 Lower Section of Tank Valve - Removal

1. Open the door.
2. Remove the water tank.
3. Remove the tank seal; see Section 5.40.
4. Remove the lower part of the valve retaining screws (Figure 5-44, Item 1).

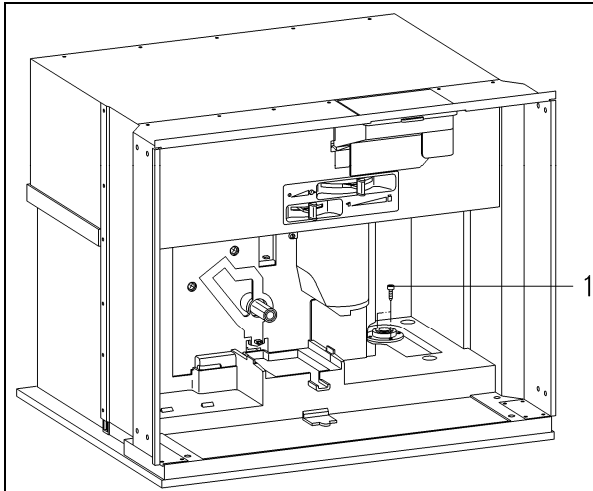


Figure 5-44: Valve Screws

5. Remove the base plate and drip tray. See Sections 5.9 and 5.10.
6. Disconnect the lower part of the valve connections. See Figure 5-45, Item 1.
7. Remove the lower part of the valve.

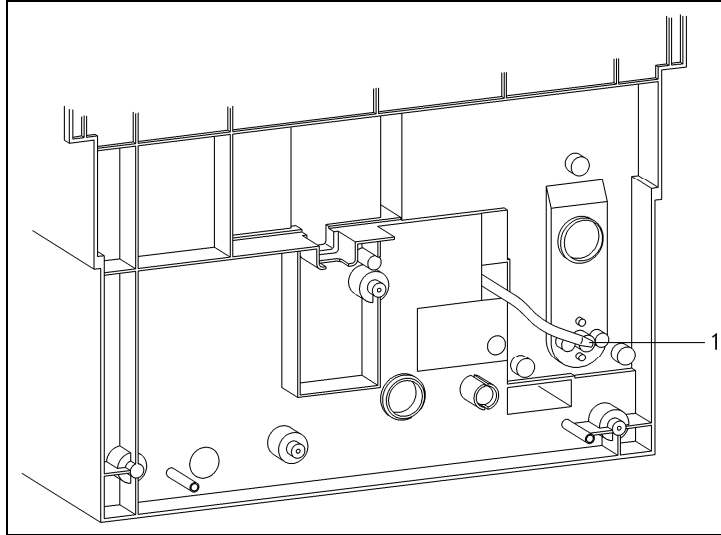


Figure 5-45: Underside View of the CVA 610 with Base Plate and Drip Tray Removed

5.42 Beans Container Removal

1. Open the door.
2. Remove the beans container end stop screw (Figure 5-46).
3. Hold a suitable container under the beans container opening to collect loose beans; remove the beans container.

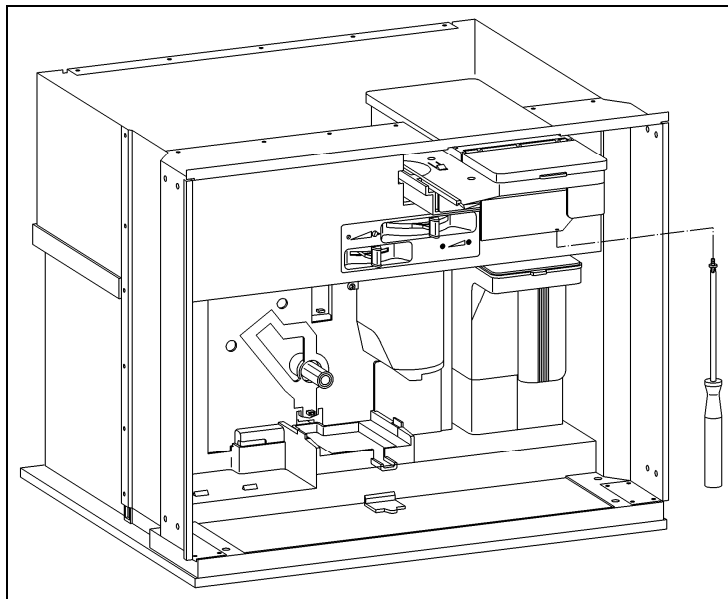


Figure 5-45: Removing the Beans Container

5.43 Beans Container Guide Removal

1. Open the door.
2. Remove the beans container; see Section 5.42.
3. Remove the waste container, brew unit and water tank.
4. Remove the lid. See Section 5.1.

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5. Remove the guide retaining screws (Figure 5-46, Item 2).
6. Remove the guide and carrier (Figure 5-46, Item 1).

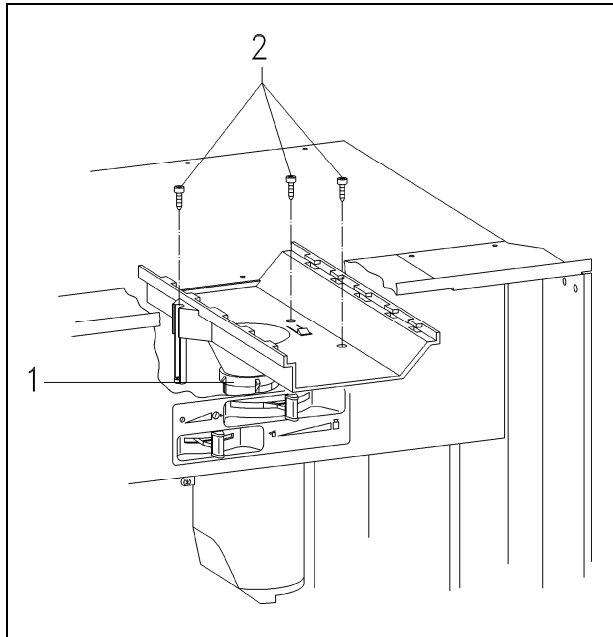


Figure 5-46: Beans Container Guide

5.44 Grinder Disassembly

Note:

The grinder ring and grinder cone must be replaced together.

1. Open the door.
2. Remove the beans container; see Section 5.42.
3. Remove the waste container, brew unit and water tank.
4. Remove the lid (see Section 5.1).
5. Remove the beans container guide; see Section 5.43.
6. Set the grinding grade adjustment lever to the middle setting.
7. Pull off the handle (Figure 5-47, Item 1).
8. Remove the adjustment lever retaining screws (Figure 5-47, Item 2) and the adjustment lever.

Technical Information

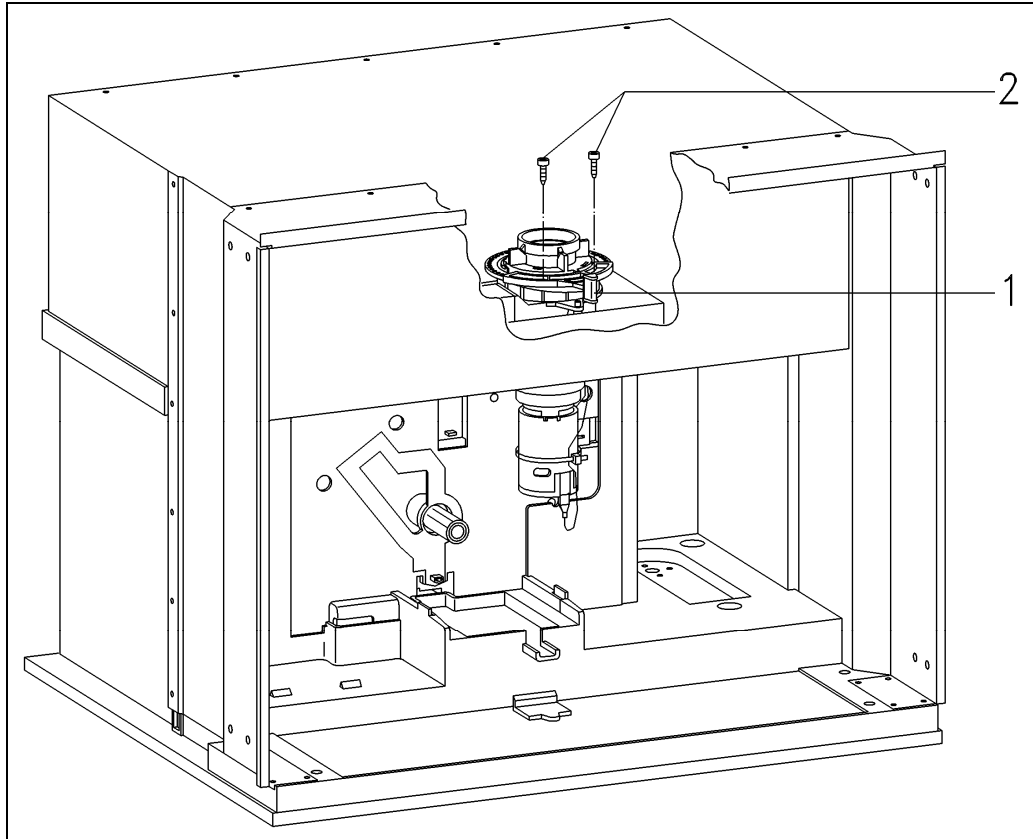
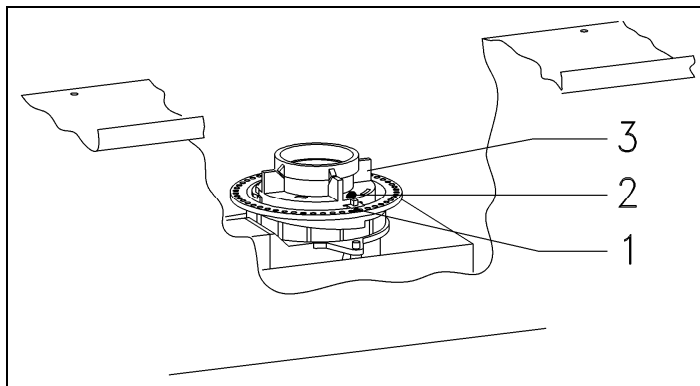


Figure 5-47: Grinder Disassembly

9. Take off the gasket.
10. Turn the adjustment ring (Figure 5-48, Item 1) counterclockwise until the blue marking aligns with the blue marking on the carrier (Figure 5-48, Item 2).
11. Remove the bracket (Figure 5-48, Item 3).
12. Remove any coffee residue, e.g., with a vacuum cleaner.



- 1 Bracket
2 Carrier
3 Adjustment ring

Figure 5-48: Grinder

13. Remove the grinding cone retaining screw (Figure 5-49, Item 1) by turning it clockwise (left-hand thread!).
14. Remove the intake worm gear (Figure 5-49, Item 2).
15. Remove the washer (Figure 5-49, Item 3).

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Note:

When the grinding cone (Figure 5-49, Item 6) is removed, the balls (Figure 5-49, Item 8) may stick to it and then fall off. Lift the cone up slowly!

16. Remove the grinding cone (Figure 5-49, Item 6).
17. Remove the balls (Figure 5-49, Item 8).
18. Remove the mounting (Figure 5-49, Item 7).
19. Remove the springs (Figure 5-49, Item 9).
20. Remove the carriers (Figure 5-49, Item 10).
21. Remove the felt ring (Figure 5-49, Item 11).

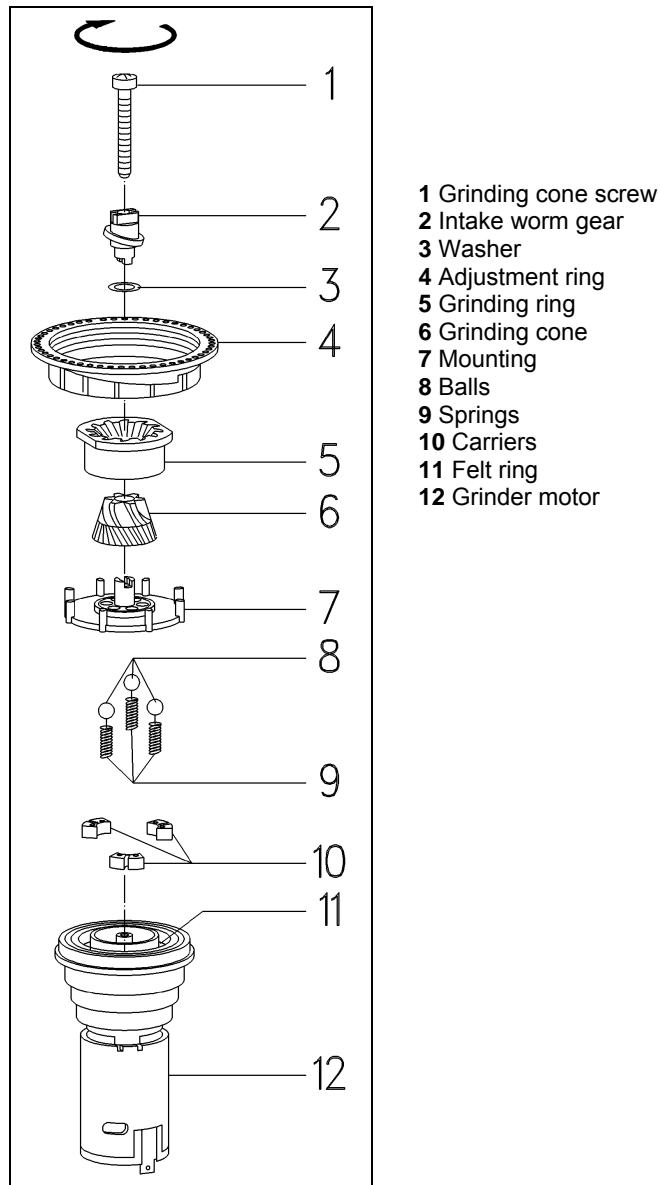


Figure 5-49: Grinder, Disassembled

5.45 Grinder Assembly and Basic Setting

Note:

The grinder ring (Figure 5-49, Item 6) and the grinder cone (Figure 5-49, Item 5) should only be replaced together.

1. Replace the felt ring (Figure 5-49, Item 11).
2. Replace the carriers (Figure 5-49, Item 10).
3. Replace the mounting (Figure 5-49, Item 7).
4. Replace the springs (Figure 5-49, Item 9).
5. Replace the balls (Figure 5-49, Item 8).
6. Replace the grinding cone (Figure 5-49, Item 6); ensure that the balls are seated in the grinding cone.
7. Replace the washer (Figure 5-49, Item 3).
8. Replace the intake worm gear (Figure 5-49, Item 2), press it down, and turn it until the coupling engages.
9. Tighten the grinding cone retaining screw (Figure 5-49, Item 1) counterclockwise (left-hand thread!). Ensure that the intake worm gear coupling has engaged properly.

Note:

Remove all coffee from the grinder before setting it.

10. Replace the bracket (Figure 5-48, Item 3).
11. The blue marking on the carrier (Figure 5-48, Item 2), has the same position as the blue marking on the adjustment ring (Figure 5-48, Item 1); both point toward the front of the appliance.
12. Turn the adjustment ring clockwise as far as possible.
13. Turn the adjustment ring counterclockwise by 6 settings so that the adjustment lever can be secured at a middle setting.
14. Replace the adjustment lever so that the grinder is set to a medium grinding grade.
15. Tighten the adjustment lever retaining screws.
16. Push on the handle.
17. Check to see that the grinder is functioning properly. If not, repeat Steps 13 to 16 (turning the adjustment ring by 2 or 3 settings at a time) until the grinder is properly adjusted. Typical setting range for the adjustment ring is between 6 and 16 settings.

Note:

It may take up to three servings of coffee to determine whether or not an adjustment is correct.

5.46 Grinder Removal

1. Open the door.
2. Remove the beans container; see Section 5.42.
3. Remove the waste container, brew unit and water tank.
4. Remove the lid; see Section 5.1.
5. Remove the beans container guide. See Section 5.43.

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6. Remove the adjustment slide switch frame. See Section 5.7.
7. Remove the adjustment lever retaining screws.
8. Remove the adjustment lever.
9. Remove the cover retaining screws (Figure 5-50, Item 4).
10. Remove the cover.

Note:

Mark the polarity of the plug (Figure 5-50, Item 1) connected to the electronic.

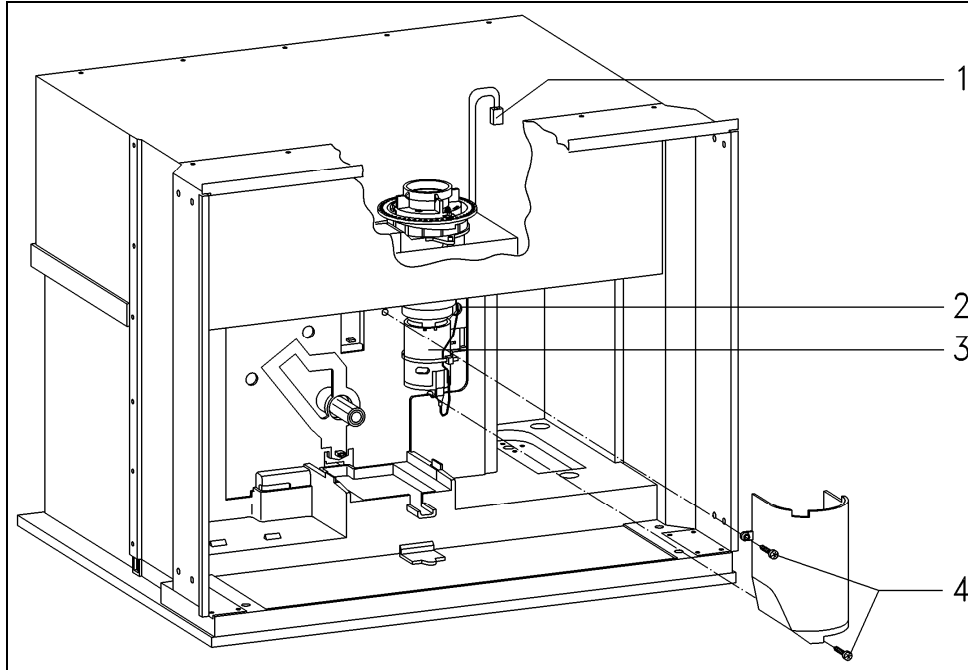


Figure 5-50: Accessing the Grinder for Complete Removal

11. Disconnect the plug from the electronic.
12. Lift the grinder upwards from the dampers (see Figure 5-51, Item 2).

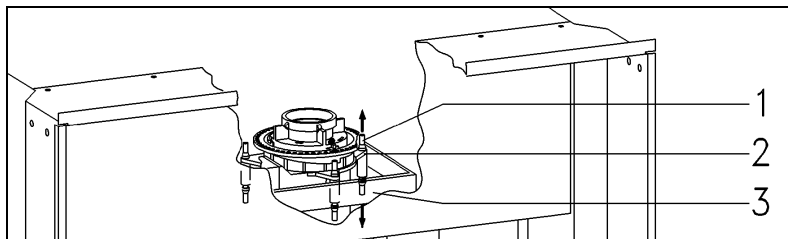


Figure 5-51: Grinder Coupling

Note:

When re-installing the grinder, the dampers should be seated in the mounting plate and motor holder to ensure that the grinder coupling is set to an optimal position and grinder noise is kept to a minimum.

5.47 Brew Unit Present Switch Removal

1. Remove the lid; see Section 5.1.
2. Remove the rear panel; see Section 5.6.
3. Disconnect the switch (Figure 5-52, Item 2).
4. Press the retainers outward to remove the switch.

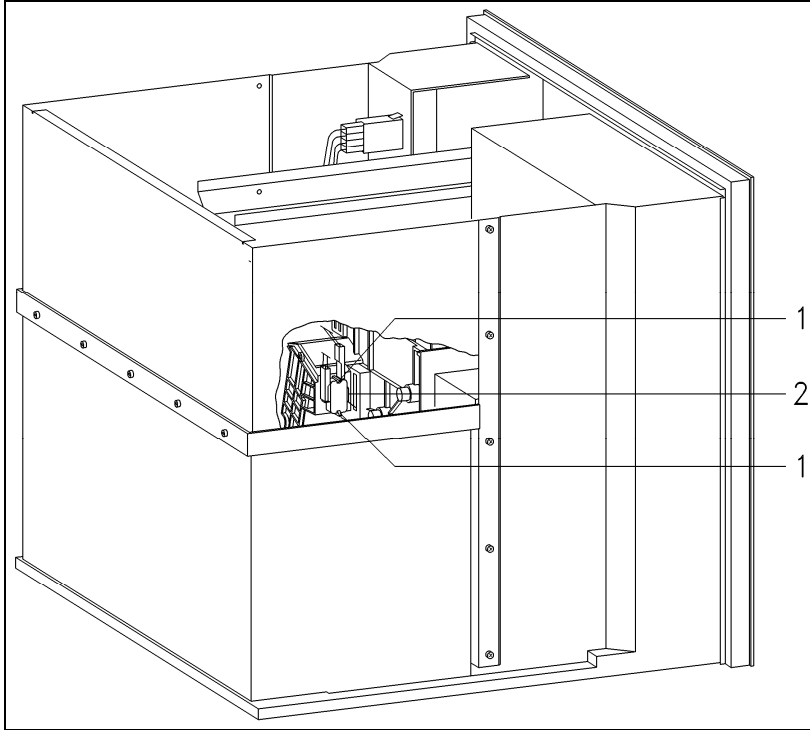


Figure 5-52: Brew Unit Present Switch Removal

5.48 Dispensing Solenoid Removal

1. Remove the lid; see Section 5.1.
2. Remove the rear panel; see Section 5.6.
3. Remove the beans container; see Section 5.42.
4. Remove the beans container guide; see Section 5.43.
5. Press the solenoid retainers outwards. Slide the solenoid upwards out of its guide.
6. Disconnect the solenoid connections.

5.49 Dispenser Switch Removal

1. Remove the lid; see Section 5.1.
2. Remove the rear panel; see Section 5.6.
3. Remove the beans container; see Section 5.42.
4. Remove the beans container guide; see Section 5.43.
5. Remove the dispensing solenoid; see Section 5.48.
6. Press the switch retainers outwards. Remove the switch.
7. Disconnect the electrical connections.

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5.50 Brew Unit Drive – Home Positioning

1. Remove the brew unit from the appliance; see Section 5.26.
2. Re-install the waste container.
3. Close the door.
4. Turn the selector switch to one of the operating settings.
5. Allow the drives to reset into the home position.

5.51 Water Path/Flow Meter Check

Caution!
Hot water will flow from the water spout during this procedure!

1. Fill the water reservoir completely.
2. Access service mode.
3. Quickly turn the selector switch left to the “Programming” position.
4. Press and hold all three coffee buttons. The display will show the following:



5. Does a pulsing/flickering "8" appear in the first line of the display?
 - a. No. Proceed to Step 6.
 - b. Yes. The flow meter and the electronic are detecting the pulses from the water moving through the water path (normal operating conditions). Proceed to Step 7.
6. Does water flow from the hot-water nozzle during the test?
 - a. **No.** Water is not flowing through the water path. Check for mechanical flow problems (obstructions) and make sure that the pump is operating.
 - b. **Yes.** Unplug the connector at JP5 on the electronic. Place a jumper at JP5 (CVA 610) or JP25 (CVA 615) between the rear and center pins on the electronic (see Figure 5-53). Access service mode. Check if a solid "8" is shown in the first line in the display. If so, replace the flow meter (Section 5.55). If not, replace the power electronic (Section 5.4).

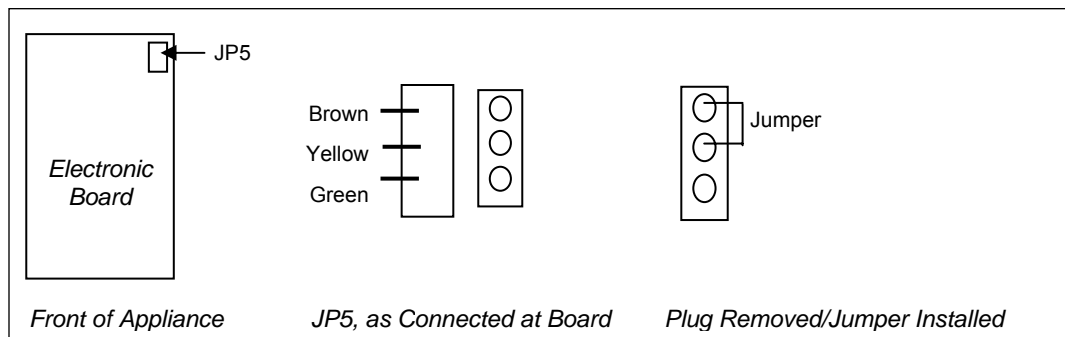


Figure 5-53: Location of JP5/JP25 and Placement of Jumper

7. Release the three coffee buttons and reconnect JP5 or JP25 if disconnected earlier. If water flowed from the hot-water nozzle in Step 6, proceed to Step 8. If water did not flow from the hot-water nozzle, correct the problem before proceeding to Step 8.
8. Press the three coffee buttons again and observe the number displayed in the

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bottom right side of the display; is it 30 or higher?

- a. **No.** Check that:
 - Sufficient water is present
 - Water path is clear of calcareous deposits
 - Water lines are clear, not crimped, etc.
 - Heaters, flow meter, filter, etc., are allowing water to flow
 - Water valves open fully
 - Water line connections are not leaking
- b. **Yes.** The water path is clear and operating correctly.

5.52 Water Path Leakage Test

If water is present in bottom of the appliance or a leak is suspected, the following procedure will help in locating the source of the leak.

Caution!

Heaters can be hot during this test and hot water may escape from the system.

1. Fill the water tank.
2. Access service mode.
3. Quickly turn the selector switch to the "Programming" position.
4. Press and hold all three coffee buttons while checking for signs of leakage (dripping, squirting, etc.); hold buttons as long as necessary.
5. Release the three coffee buttons to end the test.

If Steps 1 to 5 do not disclose any leaks, continue as follows.

6. Fill the water tank.
7. Access service mode.
8. Quickly turn the selector switch to the "Operation" position.
9. Press and hold all three coffee buttons for 30 seconds.
10. Quickly turn the selector switch to the "Programming" position.
11. Press and hold all three coffee buttons while checking for signs of leakage (dripping, squirting, etc.).
12. Release the three coffee buttons to end the test.

5.53 Opening Water Path Connections

Danger!

Risk of burning or scalding!
Components may be hot.
Pressurized steam may exist in the system.
Before any service work is performed, allow time to cool.

1. Remove the retaining clip (Figure 5-54, Item 1).
2. Pull the hose out of the connector.
3. Remove the seals (Figure 5-54, Item 2).

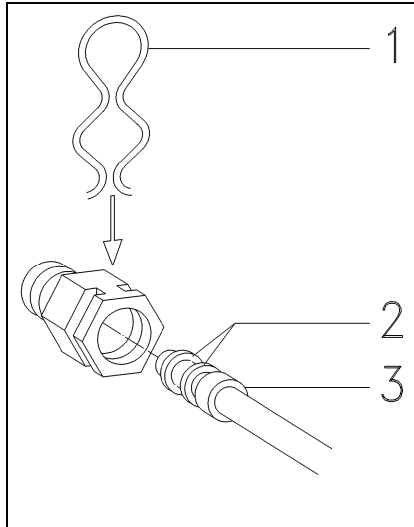
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Figure 5-54: Water System Connections with Clip

5.54 Closing Water Path Connections

1. Check the seals for damage and replace as necessary.
2. Install the seals on the hose.
3. Insert the hose in the connector.
4. Install the retaining clip behind the pressed-on ring (Figure 5-54, Item 3).
5. As a check, pull on the hose. It should not be possible to pull the hose out of the connector.

Note:

The pressed-on rings cannot be replaced as a separate component. Should replacement be necessary, the hose (as an assembly) must be replaced.

5.55 Flow Meter Removal

5.55.1 CVA 610

1. Remove the lid; see Section 5.1.
2. Disconnect the flow meter electrical connection.
3. Remove the hoses from the flow meter.
4. Release the flow meter from its plastic mounting bracket.

5.55.2 CVA 615

1. Remove the lid; see Section 5.1.
2. Disconnect the flow meter electrical connection.
3. Remove the hoses from the flow meter.
4. Release the flow meter from its plastic mounting bracket.

6.0 Fault Diagnosis

6.1 Programming Mode

The programming mode is available for access by the customer. The programming mode offers various functions and/or features to configure.

To access the programming mode, simply turn the selector knob to the “Program Mode” position.

Function	Options
Language	German, Dutch, Portuguese, Spanish, English, Italian, French
Rinsing	On, Off
Water Hardness	Hardness Levels 1 to 4
Temperature Long Coffee	Minimum, Low, Medium, High, Maximum
Temperature Coffee	Minimum, Low, Medium, High, Maximum
Temperature Short (Espresso) Coffee	Minimum, Low, Medium, High, Maximum
Pre-Brewing	On, Off
Pre-Grinding	Off, On
Program Hot Water	Off, On
Total Coffee	Number of coffee servings
Descaling	Automatic descaling program
Standby Timer	To put appliance in standby mode; selectable in 15-minute intervals

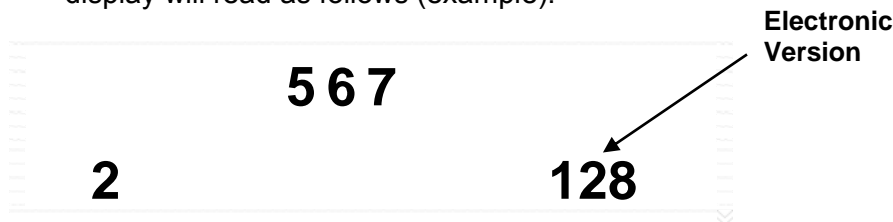
Table 6-1: Programming Mode

6.2 Service Mode

The service mode is used to check the status of various input switches and to operate components in the appliance. The service mode is designed for use by qualified service personnel.

Accessing service mode:

1. Switch off the appliance.
2. Ensure that the front door is locked.
3. Press and hold the SMALL COFFEE and HOT WATER buttons together. The display will read as follows (example):



The display indicates the switches that are currently actuated.

1. Brewing position switch (brew unit drives)
2. Home position switch (brew unit drives)
3. Dispenser switch
4. Steam valve switch
5. Waste container present switch

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- 6. Brew unit present switch
- 7. Water tank level switch
- 8. Flow meter pulse (not always displayed)
- A. Drip tray filled (water system fault)
- 4. Turn the selector switch to the desired function (see Table 6-2).
- 5. Release the SMALL COFFEE and HOT WATER buttons.
- 6. Press the applicable button to activate the function.


























Selector Switch Position	Button	Function
Lock	Large Coffee 	Displays water temperature (in °C) for water heater and steam heater.
	Med Coffee 	Displays firmware version.
	Small Coffee 	(not used)
	Hot Water 	(not used)
	Rinse 	(not used)
Program Mode		Water pump on.
		Steam solenoid on.
		Hot-water valve on.
		Displays, "5."
		Displays, "4."
Light		Button test "1" displayed.
		Button test "2" displayed.
		Button test "3" displayed.
		Button test "5" displayed.
		Button test "4" displayed.
On w/ Light		Drive motor on until brew position switch is contacted.
		Drive motor on (reverse direction) until home switch is contacted.
		Grinder on.
		(not used)
		Dispenser solenoid on.
ON		Hot water/coffee side heater element on.
		Hot water/coffee upper heater element on.
		Steam heater element on.
		Front lights (CVA 615 only)
		(not used)

Table 6-2: Service Mode Functions

6.3 Displayed Messages

Displayed Message	Information
BREW UNIT BLOCKED	The brew unit is dirty. The brew unit is blocked. The brew unit is jammed. • Clean/inspect brew unit and check drives.
EXPEL AIR	Air is present in the water system. • Perform "Expel Air" procedure. See operating manual.
FILL COFFEE BEANS	Beans container is empty OR grinder may be jammed. • Add coffee beans to beans container. • Clean conical grinder (top of grinder).
BREW UNIT MISSING	Brew unit is not installed OR not installed correctly. • Reinstall the brew unit. • Check brew unit present switch.
DESCALING	Descale the appliance. See the operating manual.
WASTE CONTAINER MISSING	Waste container is not installed OR is not installed correctly. • Re-install the waste container. • Check magnet on rear of waste container. • Check brew unit present switch.
STANDBY...	The appliance is in energy-saving mode. Press ENTER.
WATER SYSTEM FAULT	The level switch has been actuated by water in the base of the appliance. Clear water from lower pan and locate/repair source of leak. Check level switch for proper operation.
FILL WATER TANK	The water tank level switch is not actuated – water tank float is below the switch level. Refill the water tank. Check that float and switch operate.
EMPTY WATER TANK	Check that flow meter is plugged into the correct position on the electronic.
WARMING UP...	Appliance is warming up; as it is warming up the ". . ." in the display disappears.

Table 6-3: Displayed Messages

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6.4 Fault Diagnosis

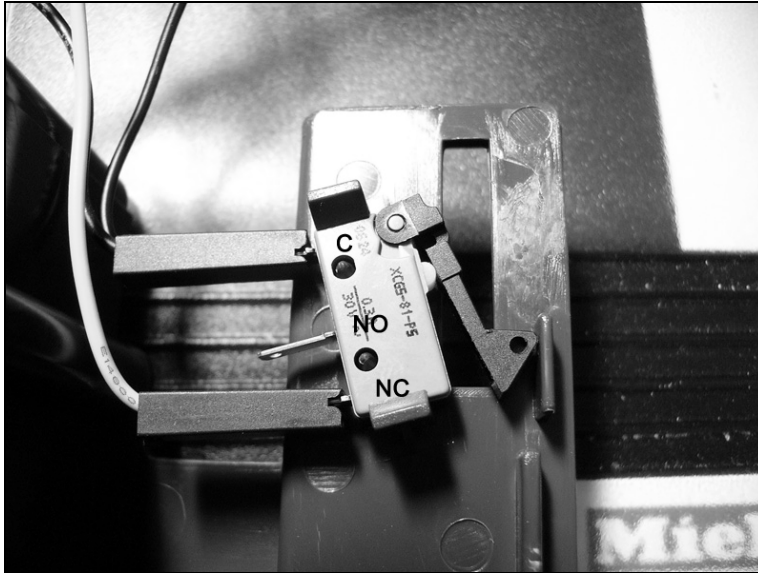
Fault	Cause	Remedy
When two cups of coffee/ espresso are being prepared at the same time, the cups are filled unevenly.	Appliance is not level.	Level the appliance.
	Coffee nozzle is dirty.	Clean the coffee nozzle.
Brew unit cannot be removed from the appliance.	The brew unit is not in the starting (home) position.	Reset the brew unit to the starting (home) position via service mode. See Section 6.2.
	The brew unit is jammed and cannot be removed by resetting the appliance (i.e. shutting the door and turning on the power).	Perform the manual removal procedure. See Section 5.23.
		Inspect the brew unit and/or drives to locate fault.
Brew unit cannot be installed.	The part marked PRESS was pressed during installation of brew unit.	Do not press the part marked PRESS when installing brew unit; this only applies during brew unit removal.
	Brew unit is not in starting (home position).	Manually reset brew unit. See Section 5.29.
	The drive shaft is not in the starting (home) position.	Reset brew unit to the starting (home) position via service mode. See Section 6.2.
		Carefully inspect brew unit and/or drives to locate fault (defective switch, etc.).
Grinding grade cannot be set finer (adjustment lever appears jammed).	Ground coffee is between the grinding ring and grinding cone, and is preventing the gap between the grinding ring and grinding cone from being reduced.	<ol style="list-style-type: none"> 1. Set the adjustment lever to the finest setting possible. 2. Prepare a coffee. 3. Set the adjustment lever to a finer setting. <p>Warning! To avoid damage to the grinder, the grinding grade should only be adjusted in small steps.</p>

Table 6-4: Fault Diagnosis

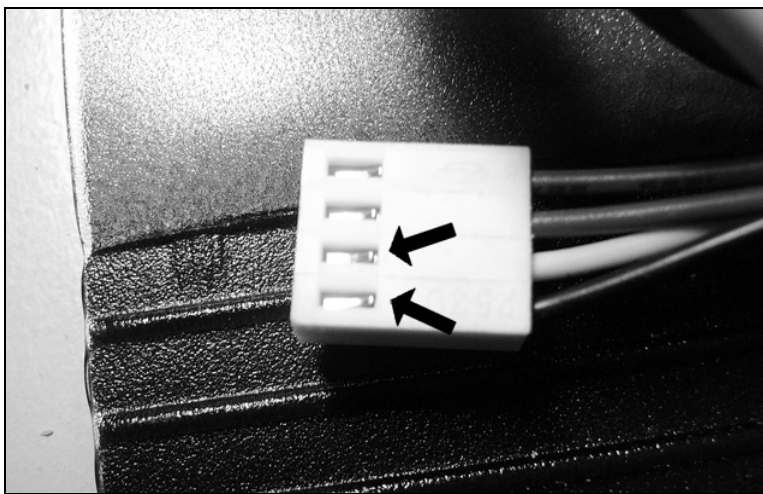
Technical Service Bulletins

1 CVA 615 Gearbox Replacement; Brew Unit Presence Switch, Check for Proper Wiring

When replacing the gearbox in a CVA 615, you should confirm that the brew unit presence switch is wired correctly. Some reports from the field indicate that this switch may be miswired. The switch is 'normally closed', meaning there is continuity when the brew unit is absent. Inserting the brew unit actuates the switch and opens the circuit. The photo below shows the correct physical wiring.



Alternatively, you can check for continuity at the JP34 connector; you should read zero ohms (continuity) with the switch at rest (no brew unit installed) between the black and yellow wires.



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2 CVA & French Roast Coffee

In many cases, customers who use Starbucks or Costco French Roast coffee are experiencing frequent episodes of brew unit blockages. We do not recommend using this style of coffee at this time. The preferred method for brewing French Roast is to use a 'French Press'. Our manufacturing engineers are looking into this situation and if there are any changes, we will announce it here. In the meantime, you can quote this passage from the Starbucks UK Website:

http://starbucks.co.uk/en-GB/Worlds+Best+Coffee/_Coffee+Detail+Pages/French+Roast.htm

Brewing French Roast

The best brewing method for French Roast is the coffee press (cafetiere).

3 CVA Replacement Coffee Grinders

Should the need arise to replace a grinder assembly in any whole-bean CVA system, be advised that you (or the servicer) may find some coffee residue in the new grinder. This is normal. These grinders are calibrated at the factory using real coffee beans. There is no need to question the fact that this is a new part.