ANIMO

ComBi-Line
Model 2017

Machine with taste
Real filter coffee

servicebook

TABLE OF CONTENTS

EN

FOREWORD

Purpose of this document

This document is intended to be used as a service appendix in addition to the user manual with which **authorised trained service personnel** can install, program and maintain this machine.

- **Authorised trained service personnel** *refers to persons who can install, program, maintain and carry out repairs on the machine.*

Most of the settings, including the product settings, are secured by a PIN code. This PIN code is intended to prevent the user from accessing the service menu.

It is recommended to not leave this document with the user after installation and to change the standard factory PIN code.

All chapters and sections are numbered. The various figures referred to in the text can be found in the illustrations in the front of this booklet or with the subjects concerned.

Pictograms and symbols

NOTE
General instructions for: WARNING, CAUTION or NOTE.

CAUTION !
Warning of possible serious damage to the device or injury.

WARNING
Warning of electricity and/or electrical danger.

WARNING
Warning of electrostatic discharge (ESD) to electronics.

WARNING
Warning of serious crushing injury.

1. FIRST-TIME INSTALLATION

After connecting the machine to the water mains and electricity, the built-in ‘First-time installation’ menu helps you to start up the machine. Firstly, all the important menu settings appear. Secondly, the brew system and the hot water system (optional) are commissioned step by step.

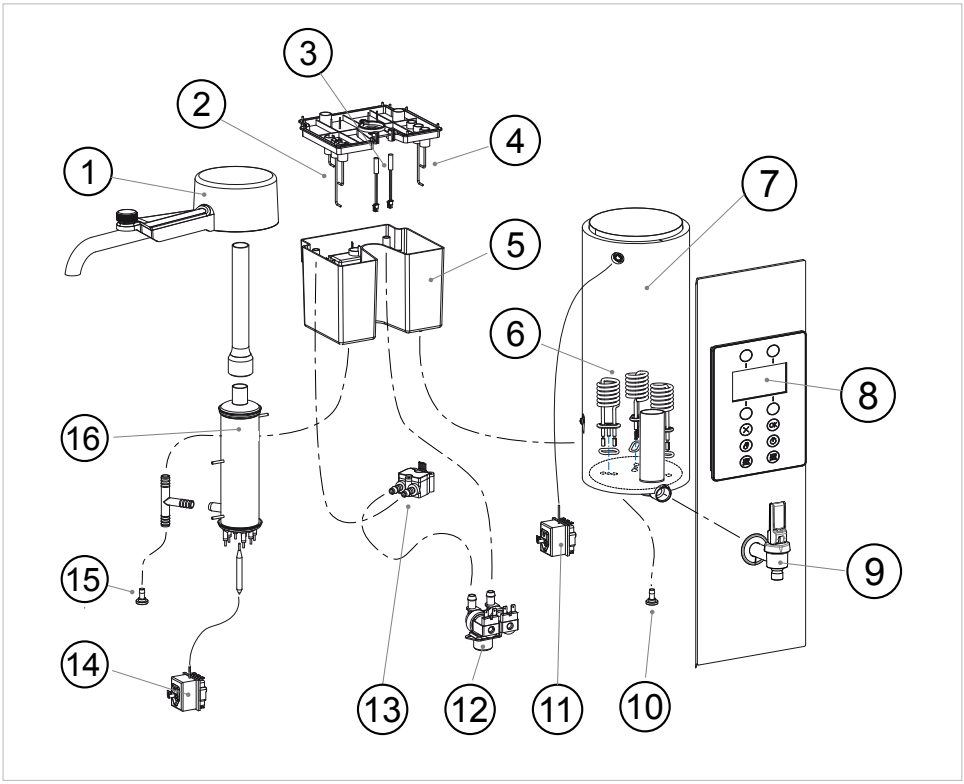
This installation menu can also be manually activated in the service menu: 2.10 START INSTALLATION MENU

Before switching on the machine, make sure that the containers are empty, the stainless steel blenders are in place and the basket filters are empty and positioned on top of the containers.

<table>
<tr><th>Display</th><th>Menu item explanation</th></tr>
<tr><td>WOULD YOU START STEP 1 FROM THE FIRST TIME INSTALLATION</td><td>In this first step, the most important menu items can be easily set.</td></tr>
<tr><td>LANGUAGE</td><td>Set the language.</td></tr>
<tr><td>TIME</td><td>Set the time.</td></tr>
<tr><td>DATE</td><td>Set the date.</td></tr>
<tr><td>SOUND SIGNAL</td><td>Select ‘Yes’ or ‘No’.</td></tr>
<tr><td>DESCALE BREW SYSTEM</td><td>Set the amount (in litres) at which the descaling signal must be activated.
If a descaler filter is used, increase the amount according to the filter manufacturer capacity information, taking into account the water hardness. Set the amount to zero (0) when no signal is desired.
<table>
<tr><td rowspan="2">Water quality</td><td colspan="5">Hardness</td><td rowspan="2">Scale indicator litres</td></tr>
<tr><td>°D</td><td>°F</td><td>°K</td><td>mmol/l</td><td>mgCaCo3/l</td></tr>
<tr><td>Very hard</td><td>18-30</td><td>32-55</td><td>11-18</td><td>3.2-5.3</td><td>321- 536</td><td>250</td></tr>
<tr><td>Hard</td><td>12-18</td><td>22-32</td><td>7-18</td><td>2.2-3.2</td><td>214-321</td><td>500</td></tr>
<tr><td>Average</td><td>8-12</td><td>15-22</td><td>5-7</td><td>1.4-2.2</td><td>268-214</td><td>1000*</td></tr>
<tr><td>Soft</td><td>4-8</td><td>7-15</td><td>2-5</td><td>0.7-1.4</td><td>72-268</td><td>1500</td></tr>
<tr><td>Very soft</td><td>0-4</td><td>0-7</td><td>0-2</td><td>0-0.7</td><td>0-72</td><td>2000</td></tr>
</table></td></tr>
<tr><td>UNIT</td><td>Select the measurement units: litres / cups / jugs / gallons.</td></tr>
<tr><td>COFFEE / COFFEE TEA / TEA</td><td>Set according to the accessories with which the machine is equipped.</td></tr>
</table>

Display	Menu item explanation
COFFEE DOSING G/L	Set the unit of the ground coffee dosing to ‘grams/litre’. This is necessary for the coffee calculator, which advises you about the amount (in grams) to be dispensed into the basket filter. - very coarse lightly roasted coffee: approximately 55-60 grams/litre - coarse coffee: approximately 45-50 grams/litre - quick filter coffee: approximately 40-45 grams/litre
TEA DOSING G/L	This item only appears when a tea function is selected. Set the unit of the tea dosing to ‘grams/litre’. This is necessary for the tea calculator, which advises you about the amount (in grams) to be dispensed into the tea filter.
TEMPERATURE	Set the boiler temperature (optional).
ENERGY SAFE MODE	Set the boiler to energy safe mode. In this mode, the temperature lowers down to 60 °C when the boiler is not used for 15 minutes (can be changed in the service menu). The OK button starts to blink. After pressing the OK button or when the boiler water is removed from the boiler, the boiler heats up again.
WOULD YOU START STEP 2 FROM THE FIRST TIME INSTALLATION	The second step helps you to easily start up the brew system and the boiler system (optional).
PUT SWIVEL ARM AND CONTAINER INTO POSITION	Press the OK button to confirm and continue.
BREW PROCESS STARTS	A full container of hot water will be brewed.
EMPTY THE CONTENT WITH THE DRAINAGE TAP	Press the OK button to confirm and continue.
BOILER IS FILLING	When the boiler option is built in.
BOILER HEATING ..... °C	During the heating process, the boiler temperature is displayed.
DRAIN OFF 2 LITRES OF WATER	Press the OK button to confirm and continue.
FIRST TIME INSTALLATION FINISHED	Press the OK button to confirm and continue.

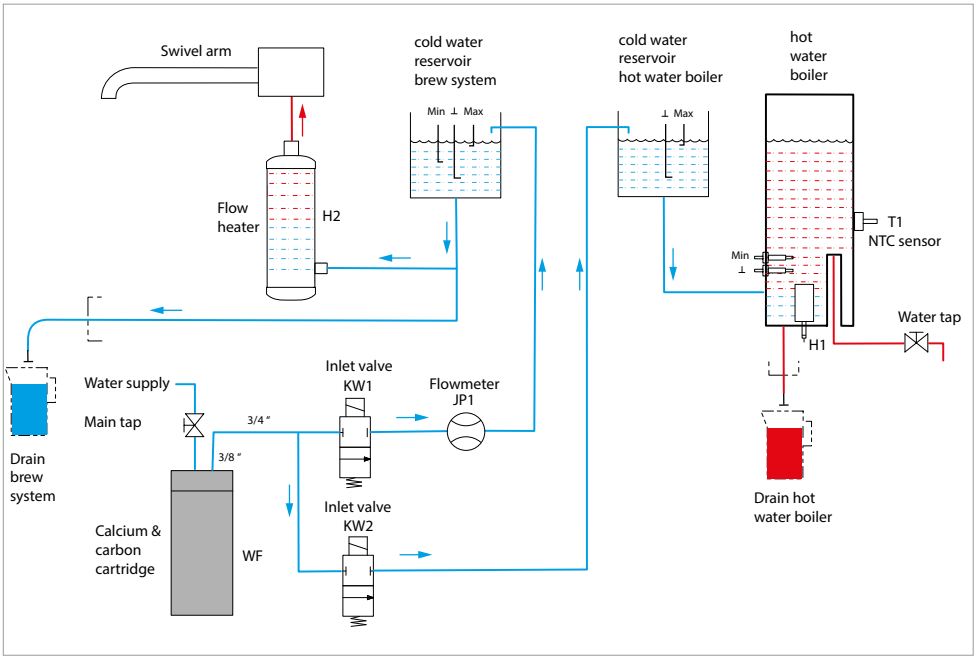
2. PRINCIPLE OF OPERATION



Item	Description
1.	Swivel arm
2.	Level sensors brew system
3.	Cold water reservoir lid
4.	Level sensors hot water system
5.	Cold water reservoir brew & H.W. system
6.	Heating elements hot water system
7.	Hot water reservoir
8.	Control panel

Item	Description
9.	Hot water tap
10.	Drain hot water system
11.	Boil-dry protection hot water system
12.	Inlet valve (cold water only)
13.	Flow meter brew system
14.	Boil-dry sytem brew system
15.	Drain brew system
16.	Flow heater brew system

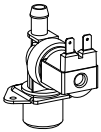
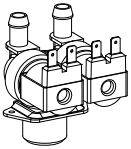
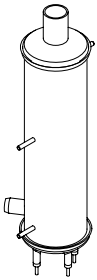
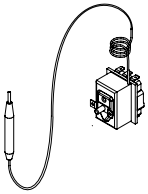
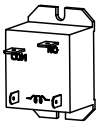
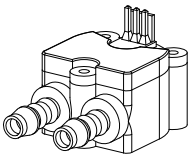
3. WATER MANAGEMENT



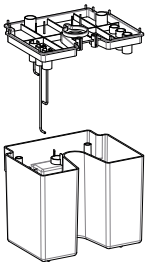
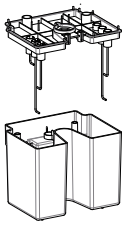
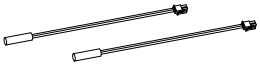
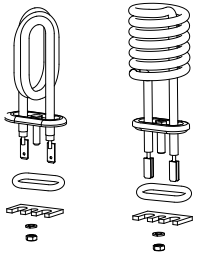
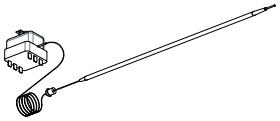
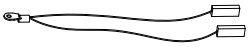
Code	Description
WF	Water filter
KW1	Inlet valve brew system
KW2	Inlet valve boiler system
H1	Boiler heater
H2	Flow heater

Code	Description
T1	NTC sensor
MIN	Minimum level sensor
MAX	Maximum level sensor
⊥	Mass level sensor
JP1	Flow meter

4. COMPONENTS

Component	Image
Inlet valve [1006106] Opens and closes the water supply, 24 Vdc coil closure. Water flow is approximately 3 litres/min.	
Double inlet valve [1006107] Opens and closes the water supply, 24 Vdc coil closure. Boiler: left / water flow is approximately 1.5 litres/min. Coffee: right / water flow is approximately 3 litres/min.	
Flow heater Manufactured entirely from the material AISI 304. (excluding the boil-dry protection) **Heating element CB5 H1 [03221]** 3x230/400 V 3000 W **Heating element CB10 H1 [03222]** 3x230/400 V 6000 W **Heating element CB20 H1 [03223]** 3x230/400 V 9000 W See chapters 5 and 7 for operation.	
Boil-dry protection coffee system [03089] Activation temperature: 90 °C / 3 pole / manual reset. This 3-pole thermal thermostat cuts off all heating elements when the lower part of the flow heater gets overheated. See chapter 7.1 for operation.	
Power relay [1004596] 24 Vdc / 23 A 250 Vac Each heating element and both wall socket (coffee containers) are controlled by this power relay.	
Flowmeter [02088] / inlet Ø 3 mm Measurement of the supplied quantity of water using rotating magnets and a bipolar Hall sensor. Pay attention to the flow direction!	

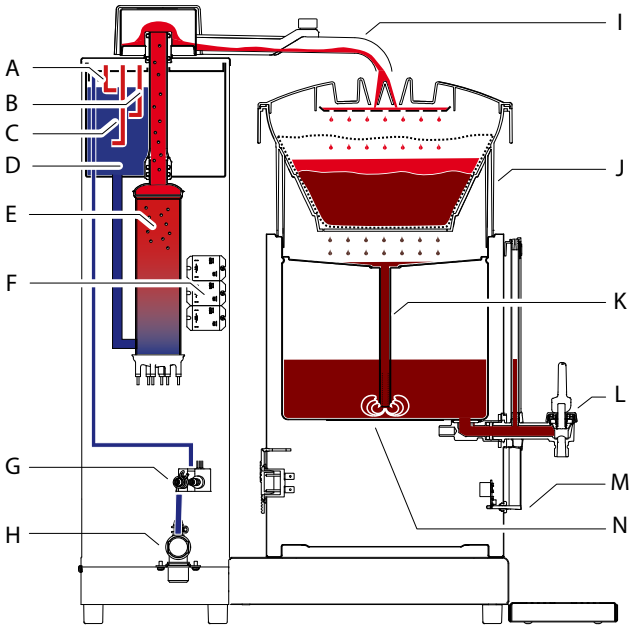
EN

Component	Image
Cold water reservoir [07971] + lid [12349] with level sensors for the brew system only (models CB) The left side is used for the cold water inlet for the coffee system.	
Cold water reservoir [07971] + lid [12348] with level sensors for the brew system and the hot water system (models CB W) The left side is used for the cold water inlet for the coffee system. The right side is used for the cold water inlet for the hot water boiler. Both sides share one overflow outlet.	
Reed contact [03063] Controls the position of the swivel arm and the coffee containers.	
Boiler heating element Manufactured entirely from the material AISI 304. **Heating element CB5W [03220]** 230 V 1100 W **Heating element CB10W/20W [1006294]** 230 V 2000 W See chapter 5.2 for operation.	
Boil-dry protection boiler system [03106] Activation temperature: 130 °C / 3 pole / manual reset. This 3-pole thermal thermostat cuts off all heating elements when the boiler heating elements run dry.	
NTC sensor [80063] Measures the boiler water temperature. Fixed onto the outer side of the tank.	

5. WORKING PRINCIPLE

5.1 Brew system

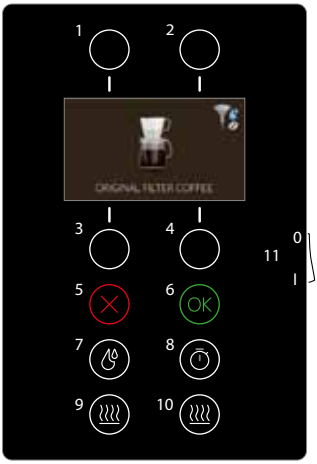
A. Maximum level sensor
B. Minimum level sensor
C. Mass sensor
D. Cold water reservoir
E. Flow heater
F. Power relays
G. Flow meter
H. Inlet valve
I. Swivel arm
J. Basket filter unit
K. Coffee blender
L. Coffee tap
M. LED light
N. Foil heating element



EN

ON/OFF

Switch on the machine with the on/off switch [11]. The display shows the Animo logo, shortly followed by the start screen: Press OK [6] to begin. The Animo Logo can be replaced by your own logo. See chapter 9.1 for detailed instructions.



Select the brew volume

After selecting a brew volume [1-4], the process is started by pressing the OK button [6]. The inlet valve [H] opens and the cold water reservoir [D] is filled upto the maximum level sensor [A]. The solenoid valve closes and two of the three heating elements in the flow heater [E] are switched on by the power relays [F].

Flow heater

After the flow heater starts to boil up water towards the swivel arm [I], the maximum water level sensor [A] in the cold water reservoir is detached. The inlet valve [H] opens until the water reaches the maximum level sensor [A] again. After the inlet valve [H] starts refilling again, the third heating element is switched on. This slow way of starting is called SOFT START and is used to start the flow process more gently.

Coffee volume control

The amount of water that has flowed in is continuously measured by the flowmeter [G]. If the set amount of water is reached, the solenoid valve [G] stops refilling and the water level drops. After the minimum level sensor [B] is detached, the flow heater [E] is switched off and the drip-out time becomes active.

Filter coffee process

The coffee runs from the basket filter unit [J] through the coffee blender into the container, where it is kept hot by the heating element [N]. The amount of coffee can be measured using the gauge glass. The coffee can be poured into cups or jugs using the coffee tap [L].

Container heating [9 and 10]

When a brew process is started, the correct wall socket will be switched on automatically. When the container power supply is plugged into the wall socket, both the LED light [M] and the container heating [N] are activated. The containers heating buttons [9 and/or 10] light up.

Priority circuit

When the ComBi-Line is equipped with a boiler system (see next chapter), the software makes sure that the brew system and the hot water system do not heat at the same time because this would cause an electrical overload of the fuse box.

The brew system always has priority over the hot water system. As long as a brew cycle runs, the hot water system does not heat. After the brew system has stopped, the hot water system starts or continues heating again.

Stop button

Use the stop button [5] to stop a running brew process.

Timer function

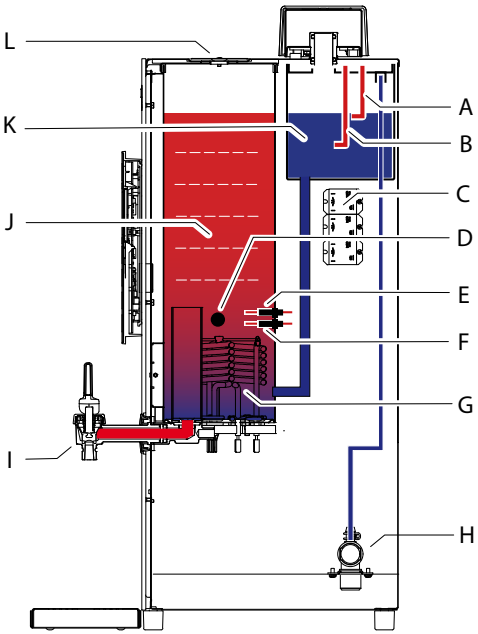
Use the timer button [8] to start the brew system at a preprogrammed time and day.
The timer function will be saved during a voltage failure.

Detailed instructions of the flow heater: See chapter 7.
Detailed instructions of the temperature protection: See chapter 7.1.

5.2 Hot water system

Applies to CB5 W, CB10 W and CB20 W

A. Maximum level sensor
B. Mass level sensor
C. Power relays (3x)
D. Temperature sensor
E. Minimum level sensor
F. Mass level sensor
G. Heaters (3x)
H. Inlet valve
I. Hot water tap
J. Hot water reservoir
K. Cold water reservoir
L. Steam escape



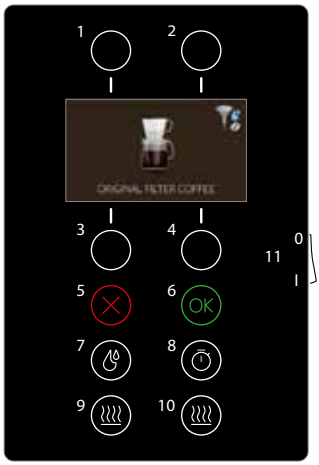
EN

ON/OFF

Switch on the machine with the on/off switch [11]. The display shows the Animo logo, followed by the screen: Press OK [6] to begin.

First-time fill-up

Press the on/off button [7] of the hot water system. The inlet valve [H] opens and the water flows into the cold water reservoir [K]. The cold water reservoir and the hot water reservoir [J] are two communicating vessels. Because the hot water boiler is empty, the filling process is continued until the minimum level sensor [E] is passed for 30 seconds. From this moment onwards, the heating elements (3x) are switched on alternately by the power relays [C].



Heating and refilling in charges

The heating elements heat the first intake of water to the set temperature (95 °C). After reaching this temperature, the inlet valve [H] opens for 30 seconds. Approximately 0.75 litres of water is taken into the cold water reservoir [K], which is immediately transported to the hot water reservoir [J]. This water is heated the same way until the set temperature has been reached. Before the set temperature is reached, the heaters are switched off alternately. This process is repeated until the maximum level sensor [A] is reached.

Draining hot water

The hot water can be drained using the hot water drainage tap [I]. The water reservoir is automatically refilled (in charges) and kept at the set temperature. The heating system works according to the so-called charge filling-and-heating system. This means that after drawing a large quantity of hot water, the boiler is not refilled with cold water in one go, but in smaller charges. The boiler fills for a maximum of 30 seconds with fresh water (approximately 0.75 litres). This water is first heated to the set temperature. The boiler repeats this 30-second filling-and-heating cycle until the boiler is completely full. This system enables the user to have some hot water again in a short time.

Switching on the continuous heating function

The temperature of the hot water can be changed in the settings menu. The maximum temperature that can be set is 97 °C. An extra feature is the 97+ setting. This heats the boiler for an extra period of time in order to prepare water for tea. If the 97+ heating function is continuously set, two of the heating elements [G] stop when 96 °C is reached. After the boiler water has reached 97 °C, the third heating element [G] keeps on heating for an extra time period* and then switches off.

* Continued heating for CB5W = 50 seconds

* Continued heating for CB10W and CB20W = 80 seconds

The continuous heating function starts:

- after the last charge filling has occurred.
- if the hot water has been drawn out and the inlet valve has been activated for more than 10 seconds.

Priority circuit

The software makes sure that the brew system and the hot water system do not heat at the same time because this would cause an electrical overload of the fuse box.

The brew system (see last chapter) always has priority over the hot water system. As long as a brew cycle runs, the hot water system does not heat. After the brew system has finished, the hot water system starts or continues heating again.

Energy safe mode

The boiler system features an energy safe mode. To activate this mode, go to:

SERVICE MENU 2.2 SYSTEM SETTINGS / ENERGY SAFE MODE

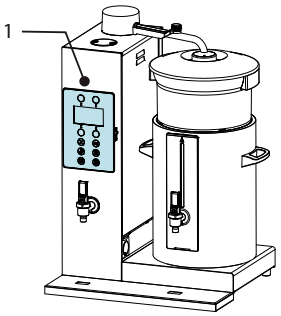
ACTIVE	Change NO (default setting) to YES.	
TIME	Set the time at which the energy safe mode must be activated	Becomes active after the last time the boilers are used.

The energy safe mode switches off the boiler after the hot water boiler is not used for 15 minutes (or longer, if set that way). The boiler button deactivates, the temperature is lowered and the OK button begins to blink. By pressing the OK button or by taking water from the boiler, the boiler starts heating again.

6. CONTROL PANEL

The buttons have different functions during normal operation and during an activated operator menu or service menu.

Button	During normal operation	During menu operation
1	Brew volume selection	Walk up / increase value
2	Brew volume selection	Walk down / decrease value
3	Brew volume selection	-
4	Brew volume selection	-
5	Stop button	Go back
6	OK button	Confirm
7	ON/OFF hot water system (optional)	-
8	Timer	-
9	ON/OFF container heating left	-
10	ON/OFF container heating right	-
11	Main ON/OFF switch ComBi-Line	-



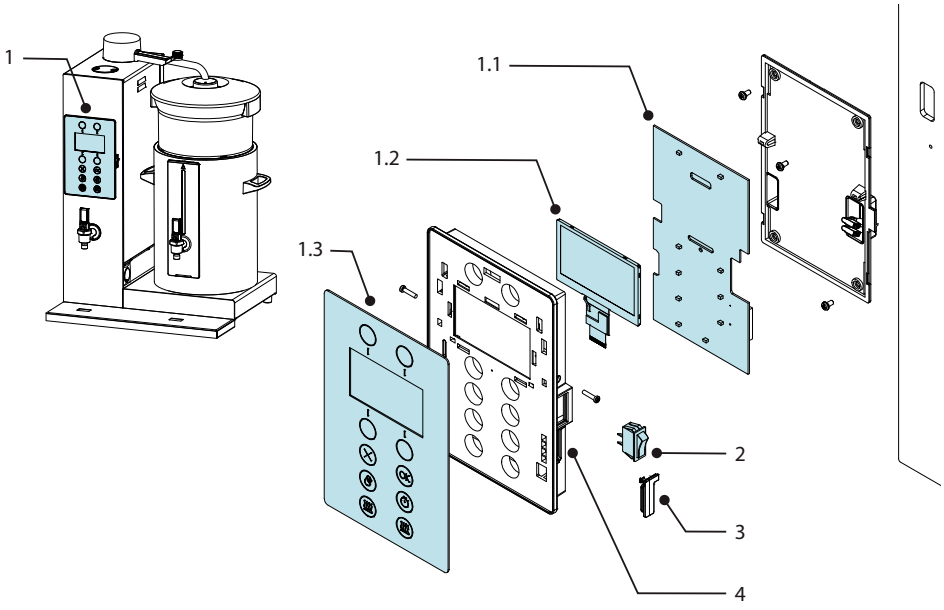
6.1 Construction of the control panel

The control panel [1.3] is equipped with capacitive buttons. A mere touch of your finger on the button areas of the control panel leads to an action. This is called ‘capacitive sensing technology’ and is based upon the constant monitoring of the electrical capacity of the touch area, which can be changed by a human finger.

A clear 4.3” colour display [1.2], in combination with the highlighted buttons, informs the user about the actions that are running or that must be started (interactive).

The on/off switch is located on the right side of the panel together with an SD card slot for software updates and uploading a logo, dealer information or contact details for when an error is displayed.

Major components		Art. no.	Technical data
1. User interface		1006371	
	1.1 Interface board	1006574	
	1.2 Colour display	1006576	4.3 INCH 480x272
	1.3 Capacitive keyboard	1005672	
2. ON/OFF switch		1005974	250 V 16 A
3. Rubber cap		1005949	
4. SD card slot			SD slot, push IN / pull out



6.2 Removing the control panel

The control panel can be easily removed from the front part of the machine.

If the interface board [1.1] (see previous page) must be replaced, the new board is already equipped with the latest software by the factory. After restarting the machine, the automatic 'Installation menu' starts. This installation menu can also be manually activated in the service menu: 2.10 START INSTALLATION MENU.

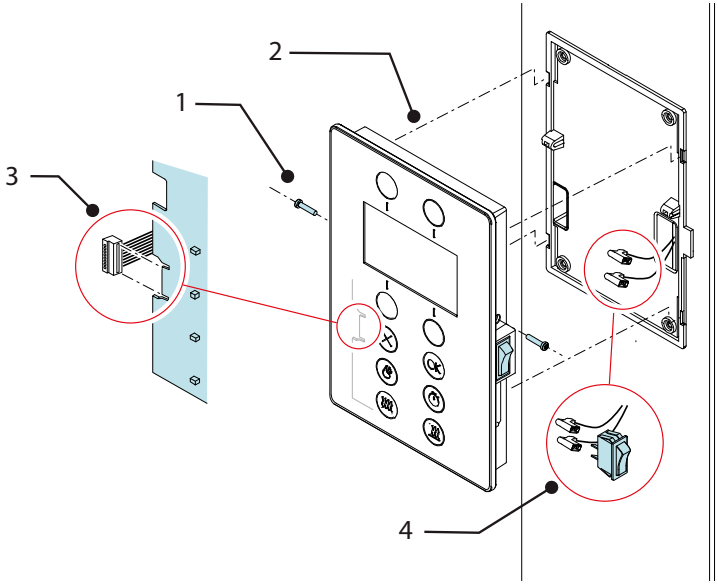
Special settings, uploaded logos and dealer information on the previous interface board are lost and must be uploaded again on the new interface board.

1. Firstly, unplug the machine from the mains.
2. Unscrew both screws [1] on the side.

WARNING

- The front part of the machine is still connected to the wiring.

3. Lift the panel a little [2] and move it a few centimetres away from the column.
4. Pull the connector from the interface board [3].
5. Pull the fastons from the ON/OFF switch [4].



7. FLOW HEATER SYSTEM

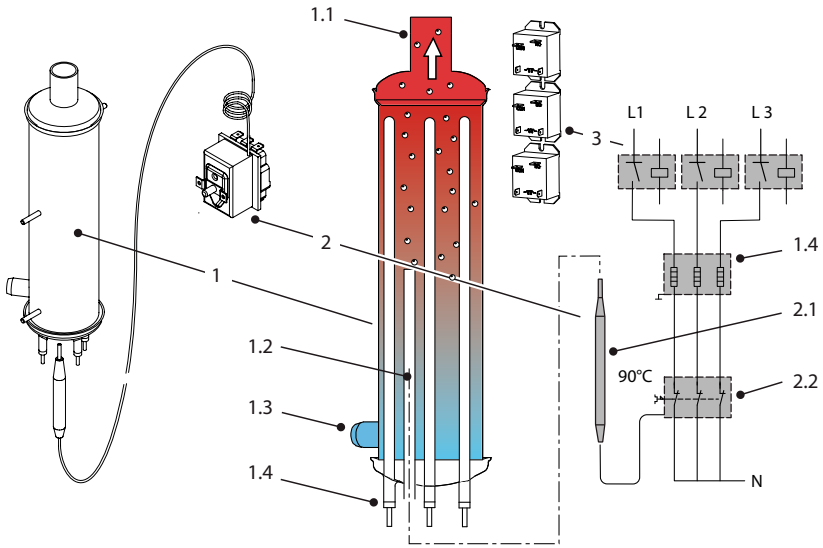
When a flow heater [1] is switched on, the water is heated until it has reached the boiling point (100 °C).

The hot water automatically goes up into the swivel arm and makes way for fresh cold water from the cold water reservoir, which is connected to the inlet.

The continuous flow water heater is activated. No temperature regulation is necessary.

The water from the boiled water output (top) [1.1] is always at the boiling point.

Major components	Art. no.	Technical data	Material
1. Flow heater CB5	03221	3x230 V / 400 V - 3 kW	st.st.
Flow heater CB10	03222	3x230 V / 400 V - 6 kW	st.st.
Flow heater CB20	03223	3x230 V / 400 V - 9 kW	st.st.
Flow heater CB40	2x 03223	3x230 V / 400 V - 9 kW	st.st.
1.1 Boiled water output (top)			st.st.
1.2 Bulb pocket			st.st.
1.3 Cold water inlet (bottom)			st.st.
1.4 Heating elements			st.st.
2. Boil-dry protection with reset	03089	3x16 A / 90° -7K	
2.1 Temperature bulb			st.st.
2.2 Electrical cut off			
3. Power relays (3x)	1004596	1x25 A - 250 Vac / 24 Vdc	



7.1 How does the boil-dry protection work

The flow heater is protected against overheating and dry-boiling. The dry-boil protection bulb [2.1] is pushed in the pocked tube [1.2], which is located in the lower part of the flow heater (see previous page).

Always connect the machine to a cold water supply only!

The dry boil protection activates (switches off):
- when the sensor (bulb) registers a very low temperature (-10 °C). Reset the system.
- when the capillary tube is damaged (leaking).

Normal operation [A]

Visual signs on the swivel arm outlet:
- smooth and continuous water flow
- low steam generation

During normal operation, the lower part of the flow heater (and the pocket with the dry-boil bulb inside) is surrounded with approximately 60 °C lukewarm water.

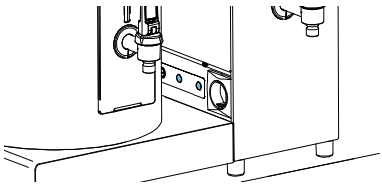
The set temperature for dry-boiling is 90 °C and it cannot be activated during a normal operation.

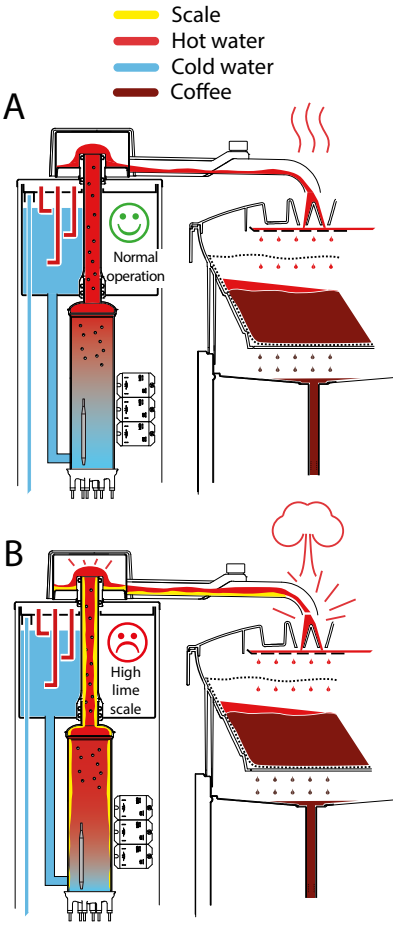
The effects of high lime scale [B]

Visual signs on the swivel arm outlet:
- restless and irregular water flow
- high steam generation
- dry boil protection is activated

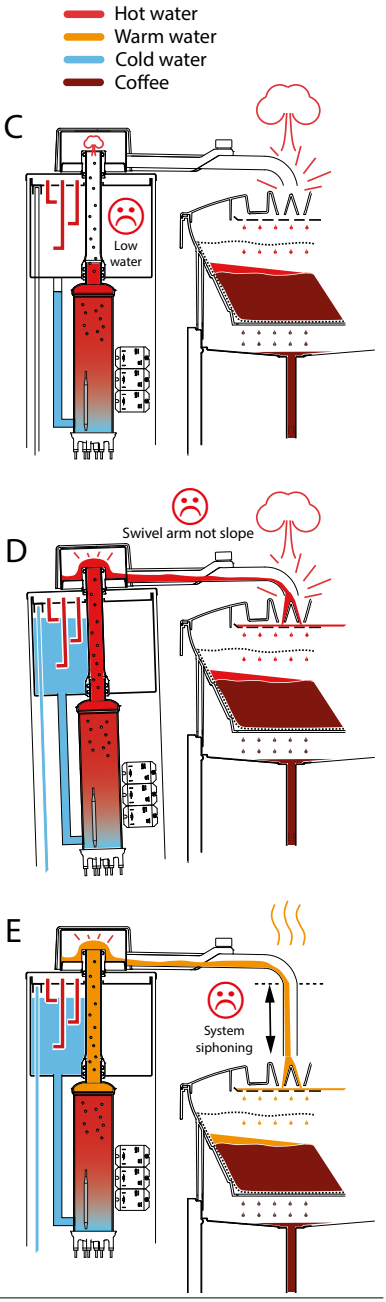
Once an obstruction builds up in the form of lime scale in the top of the flow heater, not only the top of the flow heater reaches the 100 °C, but also the lower part of the flow heater heats up.

When the bulb from the dry boil protection measures 90 °C (abnormally high for the lower part), it switches off each heater neutrally. It can only be reset by hand. The reset button is located and marked on the left outer side of the column.





EN



The effects of low water level [C]

Visual signs on the swivel arm outlet:

- no water flow
- high steam generation
- dry boil protection is activated

A low water level may occur when the flow heater does not receive water anymore because the cold water reservoir is not refilled or there is an obstruction in the inlet.

The effects if the swivel arm is not slope [D]

Visual signs on the swivel arm outlet:

- restless and irregular water flow
- high steam generation
- dry boil protection is activated

When a buffet machine is not placed horizontally or a wall-mounted machine is not mounted vertically on the wall, the warning 'Swivel arm not slope' may appear.

The boiled water from the flow heater will have difficulties to flow smoothly through the swivel arm.

Place the buffet machine vertically (wall-mounted vertically) and check if the swivel arm runs downwards a few degrees.

The effects of an outlet extension of a swivel arm [E]

Visual signs on the swivel arm outlet:

- water flow is too fast.

It is not allowed to extend the swivel arm outlet.
The heated water will start to siphon, which results in an increased water flow.

The original flow is not created anymore by the power (wattage) of the heating element and the water does not reach its boiling point anymore.

The result is a poor and underdeveloped brewing process and coffee that is too cold.

7.2 How to determine the flow speed

Flow speed

Each flow heater operates at its own flow speed (litres/min.).

Model	Art. no.	Watt	Flow speed	Volume*	Dispensing time
CB5	03221	3 kW	appoximately 0.5 litres/min	5.3 litres	appoximately 11 mins
CB10	03222	6 kW	appoximately 1.0 litres/min	10.8 litres	appoximately 11 mins
CB20	03223	9 kW	appoximately 1.5 litres/min	22 litres	appoximately 15 mins
CB40	03223	2x 9 kW	appoximately 3.0 litres/min	44 litres	appoximately 15 mins

*5 litres of coffee + 0.3 litres of water in the basket filter = 5.3 litres.

If the brew process lasts longer than normal, you can easily check the flow from the swivel arm outlet. Take a 2-litre measuring cup and hold it under the outlet for exactly 1 minute.

If the volume is much less than mentioned in the above table:

- check if all three heating phases are live.
- check if all the power relays are activated.
- check if the resistance of all three heaters is ok.

Model	Art. no.	Total power	Each heater	Heater resistance
CB5	03221	3 kW	1 kW	53 Ω
CB10	03222	6 kW	2 kW	26.5 Ω
CB20	03223	9 kW	3 kW	17.7 Ω
CB40	03223	2x 9 kW	3 kW	17.7 Ω

8. MENU STRUCTURE

This chapter describes the various settings that can be changed by:

- The operator (the machine user/owner)
- The trained and *authorised service engineer (supplier and maintenance party of the machine)*

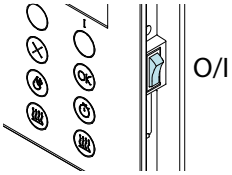
The **Operator menu** is fully accessible and explained in the user manual.
The **Service menu** can only be accessed with a PIN code.

8.1 How to get access?

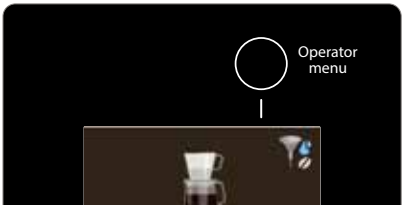
1. If the machine is switched on: Switch off the machine.

2. Switch on the machine.

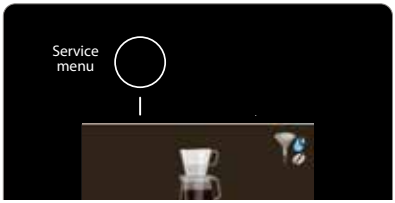
When you see the 'opening' screen...



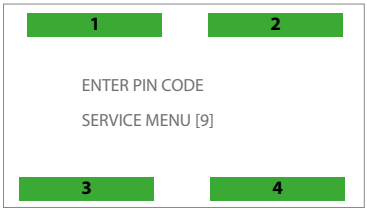
3a. Immediately tap the top selection button on the right to access the operator menu



3b. Immediately tap the top selection button on the left to access the service menu.



4.



5. PIN: 4-3-2-3-3

4.

OPERATOR MENU	
1.0	COUNTERS
1.1	DESCALE
1.2	SYSTEM SETTINGS
1.3	BREW SETTINGS
1.4	HOT WATER SETTINGS
1.5	LOADING FACTORY DEFAULTS
1.6	SERVICE MENU
1.7	HARDWARE AND SOFTWARE INFO

6

SERVICE MENU	
2.0	COUNTERS
2.1	DESCALE
2.2	SYSTEM SETTINGS
2.3	BREW SETTINGS
2.4	HOT WATER SETTINGS
2.5	READ SENSOR VALUES
2.6	READ OUT LOG
2.7	DELETE LOG
2.8	LOADING FACTORY DEFAULTS
2.9	TEST MENU
2.10	START INSTALLATION MENU
2.11	HARDWARE AND SOFTWARE INFO

8.2 The operator menu and the service menu

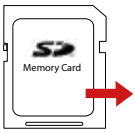
Operator menu and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.0 COUNTERS + SERVICE MENU 2.0 COUNTERS	DAY COUNTER BREW SYSTEM		xxxxx		Daily coffee counter: Counts the amount (in litres) of coffee made.
	RESET DAY COUNTER BREW SYSTEM		YES		Reset the daily coffee counter.
	TOTAL COUNTER BREW SYSTEM		xxxxx		Total counter of coffee made (in litres).
	RESET TOTAL COUNTER BREW SYST.		YES		Reset the total coffee counter To deactivate this reset function: Go to the service menu 2.0.4.
	DAY COUNTER HOT WATER		xxxxx		Daily counter of hot water (in litres).
	RESET DAY COUNTER HOT WATER		YES		Reset the daily hot water counter.
	TOTAL COUNTER HOT WATER		xxxxx		Total counter of hot water (in litres).
	RESET TOTAL COUNTER HOT WATER		YES		Reset the total hot water counter. To deactivate this reset function: Go to the service menu 2.0.8.

EN

Operator menu and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.1 DESCALE + SERVICE MENU 2.1 DESCALE	COUNTER BREW SYSTEM		xxxxx		Check how many litres of coffee can be made before the descaling signal is activated.
	RESET COUNTER BREW SYSTEM				Reset the descaling counter signal without running the descaling program. The descaling pictogram will disapear and the counter starts all over again.
	START DESCALING BREW SYSTEM				Start the descaling program of the brewing system. See chapter 10.1 Descaling the brew system.
	COUNTER HOT WATER		xxxxx		Check how many litres of hot water can be made before the descaling signal is activated.
	RESET COUNTER HOT WATER				Reset the descaling counter signal without running the descaling program. The descaling pictogram will disappear and the counter starts all over again.
	START DESCALING H.W. BOILER				Start the descaling program of the hot water system. See chapter 10.2 Descaling the hot water system.

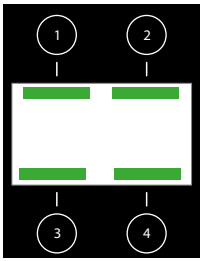
EN

Operator menu and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.2 SYSTEM SETTINGS + SERVICE MENU 2.2 SYSTEM SETTINGS	LANGUAGE	NEDERLANDS			Select the language. English is the factory language.
		ENGLISH		*	
		DEUTSCH			
		FRANCAIS			
		SUOMI			
		SVENSKA			
		NORSK			
		ITALIANO			
		ESPAÑOL			
		PORTUGUESE			
	TIME		HH:MM		Set the clock to the correct local time and date. Use the selection buttons.
	DATE		DD-MM-YYYY		
	SOUND SIGNAL		YES/NO	YES	Enable/disable the sound signal.
	RESET DAY COUNTER IN OPERATOR MENU		YES/NO	YES	Add or remove the reset day counter option in the operator menu.
	COFFEE AND/ OR TEA	COFFEE			Select the tea function to use the machine with tea accessories.
		COFFEE + TEA		*	
		TEA			
	TEA DOSAGE [G/L]		0 - 100 g/L	6 g/L	Set the amount of ground tea (in grams/litre) that is needed. Tip: When no tea dosage advice is desired, set this value to 0.

Operator and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.2 SYSTEM SETTINGS + SERVICE MENU 2.2 SYSTEM SETTINGS	OWN IMAGE	BACKLIGHT DISPLAY	20% - 100%	20	Set the brightness of the display backlight when it is in the dim mode.
		DISPLAY DIM TIME	10 - 360 s	120	Set the time when the display must dim.
		REMOVE LOGO	YES/NO		Remove the active logo.
		CHOOSE LOGO			Select a logo from the SD memory card. Go to chapter 9.1 for detailed instructions. When no logos are found in the SD card, the display shows: *No logo files found.*
	ENERGY SAFE MODE	ACTIVE	YES/NO	NO	Activate/deactivate the energy safe mode. The energy safe mode switches off the boiler if the hot water boiler is not used for 15 minutes. The boiler button deactivates, the temperature is lowered and the OK button begins to blink. By pressing the OK button or by starting to take water from the boiler, the boiler starts heating again.
		TIME	15 - 240 min	15 min	Set the duration of time after which the energy safe mode must be activated after the last time the boilers are used.
	MODEL TYPE	CONTAINER LEFT + RIGHT			Set the model type of the machine.
		CONTAINER RIGHT ONLY			
		CONTAINER LEFT ONLY			
		WITHOUT CONTAINER			

EN

Operator and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.2 SYSTEM SETTINGS + SERVICE MENU 2.2 SYSTEM SETTINGS	DEMO MODE				This function can be used when the machine is in a showroom or at a trade fair. In these cases, the machine does not have to be connected to a water supply. In the display, DEMO is shown on the bottom line. The keys, LEDs and display operate normally.
	DAYLIGHT SAVING TIME	TIME ZONE	EU ZONE US ZONE	EU ZONE	Summer time zone
		AUTOMATIC DAYLIGHT SAVING TIME	YES/NO	YES	Automatic summer time

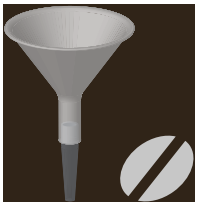
Operator and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.3 BREW SETTINGS + SERVICE MENU 2.3 BREW SETTINGS	WATER VOLUME [ML]	CB5 CB10 CB20 CB40	4800 - 5800 ml 9800 - 11800 ml 20000 - 24000 ml 40000 - 48000 ml	5300 ml 10800 ml 22000 ml 45200 ml	The flow heater dispenses extra water (depending on the model, 6-10% extra) to compensate for the water that stays behind in the ground coffee. The amount of brewed coffee can be changed with this setting. Note: If the tea function is selected, the flow heater dispenses exactly 5, 10 or 20 litres of tea water.
	UNIT	LITRE		*	Select the unit of the brew volume.
		CUPS			
		JUGS			
		GALLON			
	CUP VOLUME [ML]		100 - 500 ml	125 ml	Set the volume of the cup that is used if the unit you selected is CUPS.
	JUG VOLUME [ML]		200 - 2000 ml	250 ml	Set the volume of the jug that is used if the unit you selected is JUGS.
	BUTTON 1				Personalise the buttons 1, 2, 3 and 4. For range an default button settings other units, see below table.
	BUTTON 2				
	BUTTON 3				
	BUTTON 4				

Model	Litres *		Cups (125 ml)		Jugs (250 ml)		Gallon (3785 ml)	
	Default settings	Range	Default settings	Range	Default settings	Range	Default settings	Range
CB5	1-3-4-5	1-5	8-24-32-40	8-40	4-12-16-20	4-20	0.26-0.79-1.05-1.32	0.26-1.32
CB10	2.5-5-7.5-10	2-10	20-40-60-80	16-80	10-20-30-40	8-40	0.66-1.32-1.98-2.64	0.66-2.64
CB20	5-10-15-20	4-20	40-80-120-160	32-160	20-40-60-80	16-80	1.32-2.64-3.96-5.28	1.32-5.28
CB40	10-20-30-40	10-40	80-160-240-320	80-320	40-80-120-160	40-160	2.64-5.28-7.92-10.56	2.64-10.56

EN

Operator and service menu

Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.3 BREW SETTINGS + SERVICE MENU 2.3 BREW SETTINGS	AUTOMATIC CONTAINER HEATING		YES/NO	YES	When a brewing process starts, the container heating is automatically switched on. The container heating can be switched off manually only.
	DESCALE BREW SYSTEM [L]		0 - 9999	1000	Set the amount of litres at which the descale indicator must inform you to run the descaling process. 0 = OFF
	COFFEE DOSING [G/L]		0 - 100 G/L	50 G/L	Set the amount of ground coffee (grams/litre) that is needed. Tip: When no coffee dosage advice is desired, set this value to 0.
	INTERVAL [%]		50 - 100%	100%	Use this function only when the coffee filter is overfilled. When 100% is set, the brewing process runs continuously (no pauses). When 50% is set, the brewing process runs for 45 seconds and pauses for 45 seconds.
	FIRST CHARGE VOLUME [ML]	CB5 CB10 CB20 CB40	2500-4500 ml 5000-9000 ml 8000-18000 ml 16000 - 36000 ml	2500 ml 5000 ml 10000 ml 20000 ml	A selected interval only starts after half of the container is filled. The first charge volume can be increased, which delays the interval process.



Water quality	Hardness					Scale indicator litres
	°D	°F	°K	mmol/l	mgCaCo3/l	
Very hard	18-30	32-55	11-18	3.2-5.3	321- 536	250
Hard	12-18	22-32	7-18	2.2-3.2	214-321	500
Average	8-12	15-22	5-7	1.4-2.2	268-214	1000*
Soft	4-8	7-15	2-5	0.7-1.4	72-268	1500
Very soft	0-4	0-7	0-2	0- 0.7	0-72	2000

Operator and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.3 BREW SETTINGS + SERVICE MENU 2.3 BREW SETTINGS	FILTER DRIPPING TIME [S]	CB5 CB10 CB20 CB40	0-900 S	240 S 300 S 360 S 360 S	Set the filter dripping time: The time after which the flow heater has stopped and the filter has stopped dripping.
	PRE-WETTING	ACTIVATION	YES/NO	NO	Activate this option to improve the taste and aroma extraction during the filter brewing process.
		VOLUME	50-500 ml 50-750 ml 50-1000 ml 50-1250 ml	100 ml 200 ml 300 ml 400 ml	Select the first quantity of water which must pre-wet the filter coffee bed.
		PAUSE	5-600 S	30 S 60 S 90 S 90 S	Select the duration of time for the moistened filter coffee wells so that the taste and aroma can macerate.
	SWIVEL SENSORS		YES/NO	YES	Use this function to temporarily deactivate the swivel arm sensor and/or the container sensor during maintenance work.
	CONTAINER SENSORS		YES/NO	YES	
	AUTO CONTINUE (AC)		YES/NO	NO	The coffee brewing process stops and is saved in the event of a power failure or if the swivel arm and/or the container is moved out of position. For safety reasons, the brewing process only continues when the OK button is pressed. When NO is selected, the brewing process is restarted automatically after restoring the power, swivel arm and/or container.
	AUTO CONTINUE TIME OUT [MIN]		0-30 MIN	10 MIN	The time needed to enable the machine to restart the brew process. After the set time is exceeded, the brew process is cancelled.
	GALLON VOLUME [ML]		3785 ML		Set the amount (in millilitres) that fit into a gallon.

Operator and service menu					
Main item	Subitem		Range	Default setting	Description
OPERATOR MENU 1.4 HOT WATER SETTINGS + SERVICE MENU 2.4 HOT WATER SETTINGS	TEMPERATURE-UNIT		°F / °C	°C	Set the boiler unit to Fahrenheit or Celsius.
	TEMPERATURE		60.0-97.0+	96	Set the boiler temperature. When 97.0+ °C is set, the boiler heats for an extra 50-80 seconds, depending on the model.
	DESCALE BOILER [L]		0 - 9999	1000	Set the amount of litres at which the descale indicator must inform you to run the descaling process. 0 = OFF

Water quality	Hardness					Scale indicator litres
	°D	°F	°K	mmol/l	mgCaCo3/l	
Very hard	18-30	32-55	11-18	3.2-5.3	321-536	250
Hard	12-18	22-32	7-18	2.2-3.2	214-321	500
Average	8-12	15-22	5-7	1.4-2.2	268-214	1000*
Soft	4-8	7-15	2-5	0.7-1.4	72-268	1500
Very soft	0-4	0-7	0-2	0-0.7	0-72	2000

EN

Pin code table

No.	Service pin code				
1	4	1	2	1	4
2	2	1	4	1	1
3	4	4	4	1	3
4	1	4	1	3	4
5	2	4	3	3	3
6	3	4	4	4	1
7	4	1	1	1	4

No.	Service pin code				
8	4	3	2	2	4
9	2	3	2	2	4
10	1	1	4	3	4
11	4	2	1	1	1
12	3	4	4	1	1
13	1	2	1	3	3
14	4	2	2	2	3

No.	Service pin code				
15	2	4	2	4	3
16	3	4	3	1	2
17	3	3	1	3	1
18	2	3	2	2	2
19	2	1	2	2	4
20	2	3	1	4	3

Operator and service menu				
Main item	Subitem		Range	Description
OPERATOR MENU 1.5 LOADING FACTORY DEFAULTS	MODEL TYPE	CONTAINER LEFT + RIGHT		Select the model type of the machine.
		CONTAINER RIGHT ONLY		
		CONTAINER LEFT ONLY		
		WITHOUT CONTAINER		
OPERATOR MENU 1.6 SERVICE MENU				Use the PIN CODE 4 3 2 3 3 to enter the service menu.
OPERATOR MENU 1.7 HARDWARE AND SOFTWARE INFO				Read the hardware and software information.
SERVICE MENU 2.5 READ SENSOR VALUES	TEMPERATURE			The actual temperature measured by the NTC sensor on the hot water boiler
	LEVEL SENSORS	MAXIMUM LEVEL BREW SYSTEM		The level sensor signal is a live signal. Use this function to find out if the level signals are responding.
		MINIMUM LEVEL BREW SYSTEM		
		MAXIMUM LEVEL HOT WATER		
		MINIMUM LEVEL HOT WATER		
	SWIVEL ARM/ CONTAINER	SWIVEL ARM LEFT		The read sensors signal is a live signal. Use this function to find out if the read signals are responding.
		SWIVEL ARM RIGHT		
		CONTAINER LEFT		
		CONTAINER RIGHT		
SERVICE MENU 2.6 READ OUT LOG		2.6 READ OUT LOG 20-04-2017 10:03 = 211 17-04-2017 09:45 = 201 01-02-2017 17:25 = 203 19-02-2017 14.10 = 206		Read here the most recent 20 errors with the time and date. For error descriptions, see chapter 13.4 Troubleshooting.
SERVICE MENU 2.7 DELETE LOG				Delete the log.

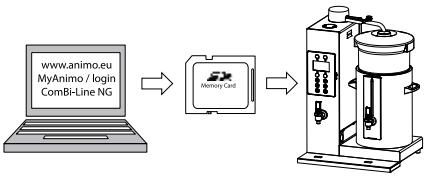
Operator and service menu						
Main item	Subitem		Model		Model type	Description
SERVICE MENU 2.8 LOADING FACTORY DEFAULTS	***YES/NO***	***OK***	MODEL CB5 MODEL CB10 MODEL CB20 MODEL CB40	OK	CONTAINER LEFT + RIGHT CONTAINER RIGHT ONLY CONTAINER LEFT ONLY WITHOUT CONTAINER	Use this menu item to select the exact model of the machine. The software starts up again in English.
SERVICE MENU 2.9 TEST MENU	COMPLETE SYSTEM					Use this menu to check the control panel and all the sensors and to run a test cycle as described below.
	HOT WATER BOILER					Use this menu to check all sensors, boiler fills, heating (displays actual ascending temperature) and to run a complete boiler heating test cycle. Attention: The boiler is filling/ heating in several steps!
	BREW SYSTEM					Use this menu to check all sensors and run a complete brew cycle without coffee.
SERVICE MENU 2.10 START INSTALLATION MENU						After installing the machine, the installation menu guides you through several important settings in the menu.
SERVICE MENU 2.11 HARDWARE AND SOFTWARE INFO						This item shows hardware and software information.

EN

9. SOFTWARE

With the SD memory card, the following uploads can be made:

- 9.1 upload of your own logo.
- 9.2 upload of the dealer information.
- 9.3 upload of the new machine software.



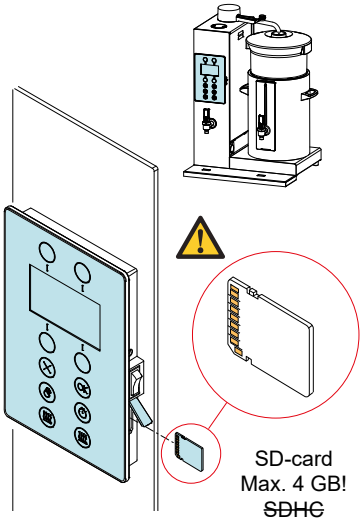
9.1 Upload private label logo

Upload an image of your choice, which will be displayed after the screen save time is passed.

The image must meet the following specifications:

Dimensions:	480x272
Resolution:	72 dpi
File:	JPEG
File size:	64 Kb

The uploaded image will overwrite the Animo logo. When the uploaded image is removed, the Animo logo becomes active again.



1. Prepare an image which complies with the specifications. Prepare a folder named LOGOS (in capital letters) and place your image in this folder. SD: / LOGOS / [YOUR IMAGE].JPG
2. Open the rubber cover located below the on/off switch.
3. Insert the SD card into the SD card slot. ATTENTION: Copper contacts must point towards you.
4. Enter the operator menu and navigate to 1.2 SYSTEM SETTINGS / OWN IMAGE / CHOOSE LOGO/
5. Select the image file [YOUR IMAGE].JPG from the SD card. The image appears on the display. Press OK to upload the image.

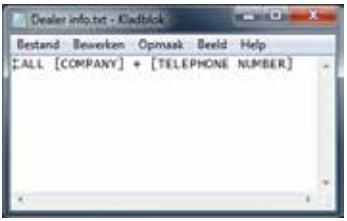
When no logos are found on the SD card, the display shows: no logo files found.

6. Set the BACKLIGHT DISPLAY [%] for the intensity of the image, and the DISPLAY DIM TIME [min] for the time after which you want the image to appear.
7. Remove (pull out) the SD card from the SD card slot.
8. Exit the operator menu.

9.2 Upload dealer information

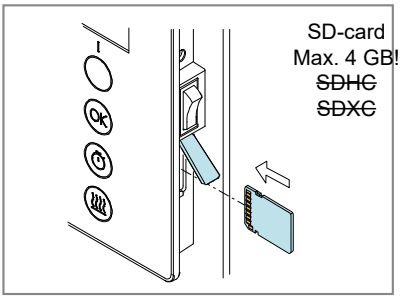
It is possible to upload your dealer information with an SD card. This information appears when the machine shows an error.

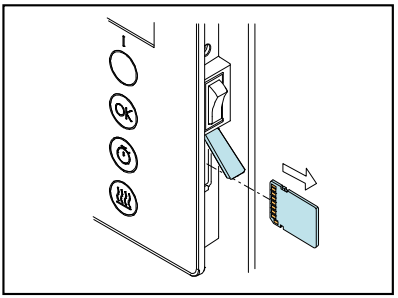
1. Use Wordpad or Editor to write a sentence: *Call [company] + [telephone number].*
2. Save the file as DEALER INFO.TXT.



3. Switch off the machine.
4. Open the rubber cover located below the on/off switch.
5. Insert the SD card into the SD card slot. ATTENTION: Copper contacts must point towards you.
6. Switch on the machine.
7. The message UPDATE IN PROGRESS is displayed immediately. The file is uploaded.
8. The machine starts up.
9. Remove (pull out) the SD card from the SD card slot.
10. If an error occurs, the screen shows the error by a red information screen. The screen shows the error signal and whom to call for help with solving the problem.

11. If you want to check if the information was successfully uploaded, go to the operator menu and navigate to 1.7 HARDWARE AND SOFTWARE INFO. The first line shows your upload.



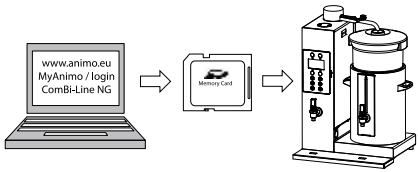


EN

9.3 Software installation

A new software can be easily installed in the machine.
A new software can be made available in the following ways:

- www.animo.eu / MyAnimo (dealer login)
- by e-mail request; support@animo.nl
- press this link; Software ComBi-Line NG



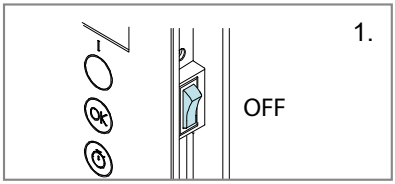
Download the ComBi-Line software from the Animo extranet site and unpack the ZIP file and copy all files into an empty SD card.

SD card size max. 4 GB
Don't use SDHC or SDXC

When loading a new software, the following changed settings (data) are lost:

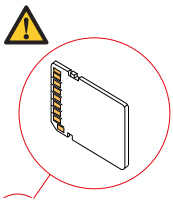
- *Error log*
- *Changed personal settings*
- *Counters.*

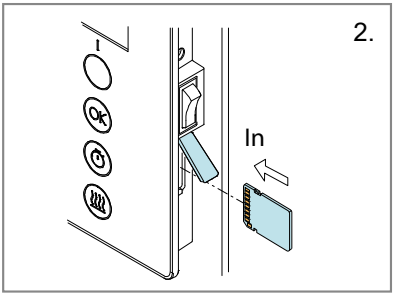
1. Switch OFF the machine.



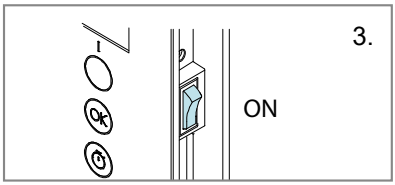
2. Open the rubber cover located below the on/off switch and insert the SD card into the SD card slot.

ATTENTION: Gold contacts must point towards you.



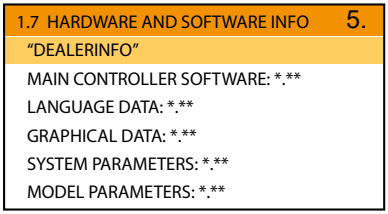


3. Switch ON the machine.

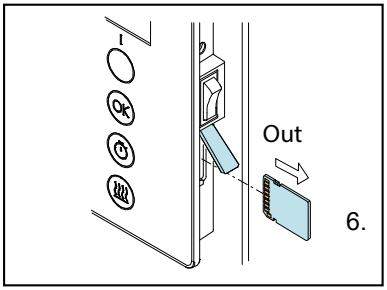


4. The display shows ‘UPDATE IN PROGRESS’

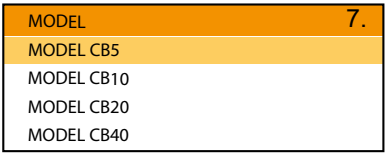
5. This overview screen is displayed very short.



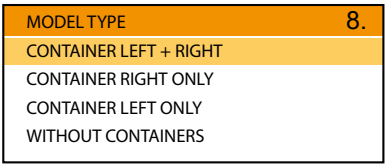
6. Before proceeding, FIRST remove the SD card from the SD card slot after the update screen [4] has disappeared.



7. Select the appropriate model and press **OK** to confirm your selection.
Model CB40 is not displayed when there is a hot water boiler included.



8. Select the coffee container positions and press **OK** to confirm your selection..



9. The machine starts up and is ready for use.

EN

10. MAINTENANCE

The maintenance of the ComBi-line mainly consists of making the heating circuits lime-free.

The descaling interval must be set when installing the machine. This interval setting depends on the local hardness of the drinking water. The more lime there is in the drinking water, the more often it needs to be descaled.

The machine informs the user with below displayed pictogram. After the relevant heating system has been descaled the pictogram disappear again.


The coffee heating circuit needs descaling.


The water boiler heating circuit needs descaling.

The descale signal in the right upper corner shows you that both heating system needs descaling

Descale interval settings

If a descaling filter (of sufficient capacity) is used between the water supply and the machine, the descaling interval signal can be deactivated by setting it to zero (0).Menu settings descaling interval

Service menu

- 2.3 Convert settings
  2.3.10 Descaling the brewing system [L]
- 2.4 Hot water settings *
  2.4.4 Descaling boiler [L]

* only if there the machine is executed with an hot water boiler.

Instruction videos

There are two online descale instruction videos available.

These instructions be reached by scanning the QR code with a mobile phone when the user starts the descaling process.

- Descaling brew system
- Descaling hot water system
- Link to all instruction video's


QR code to reach all available ComBi-Line instructions

WARNING

- Do not leave the device during maintenance work.
- When descaling, always follow the instructions for the descaler that you use.
- It is advisable to wear safety goggles and protective gloves while descaling.
- After descaling, allow the device to run a minimum of three times.
- Wash your hands thoroughly after descaling.
- The device must not be submerged or hosed down.

Animo supplies descaler in the following quantities:

- Descaler 48 x 50 g sachets (Art. No. 49007)
- Descaler 1 kg can (Art. No. 00009)

Required time, products and tools:

- Time for the brew system: Approximately 30 minutes.
- Time for the hot water system: Approximately 45 minutes
- Descaler funnel (Art. No. 99740)
- 2 sachets of Animo descaler for each system.
- 2 measuring cups of approximately 2 litres each.

Example of one of the step-by-step pictures during the descaling program

Preparation

- Carefully read the caution notice and the directions for use on the sachet of Animo descaler.
- Dissolve 2 sachets of 50-gram Animo descaler into 2 litres of warm water (max. 60 °C). Stir the solution thoroughly so that the powder is completely dissolved.
- Remove the basket filter and place a plastic container under the outlet of the swivel arm to collect the descaler.
- Follow the instructions shown on the display and confirm each action by selecting OK.

Cancelling the descaling program?

If you start the descaling program in the **Service menu,** the program can be cancelled at any time.

If you start the descaling program in the **Operator menu,** the program can be cancelled at any time until the solution is poured in. Once the solution has been poured in, the program must always be completed. In case of an emergency stop, the STOP button can be used. The program will then pause, but not be cancelled.

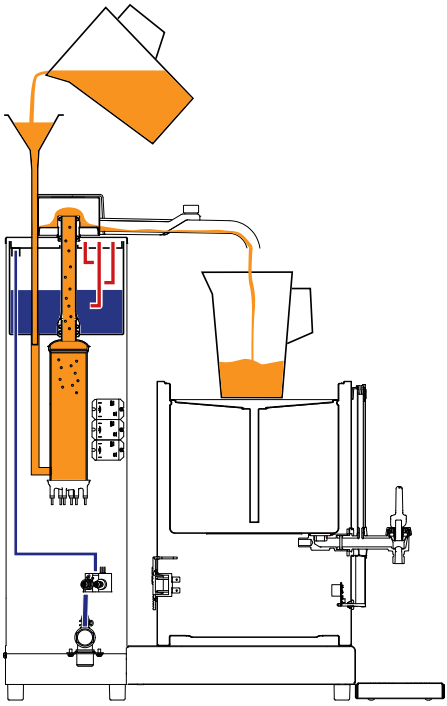
10.1 Descaling the brew system

Enter the descaling menu via the service menu.

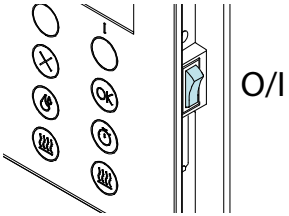
An overview of all descaling instructions appears in the display.

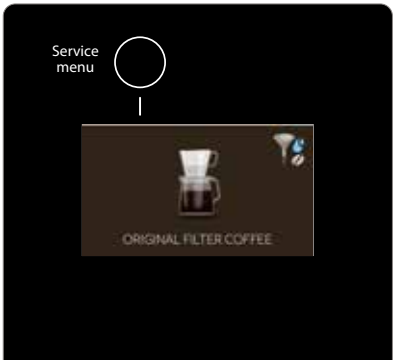
The descaling signal will automatically reset after the descaling program has ended.

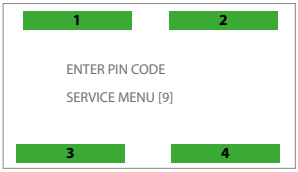
The water circuit below shows what happens inside the machine during the intake of the descaler liquid.



After the brew system program has finished and the machine is equipped with a hot water system, the software informs you if this is close to a descaling signal. The software will give you the opportunity to immediately start the boiler descaler program.



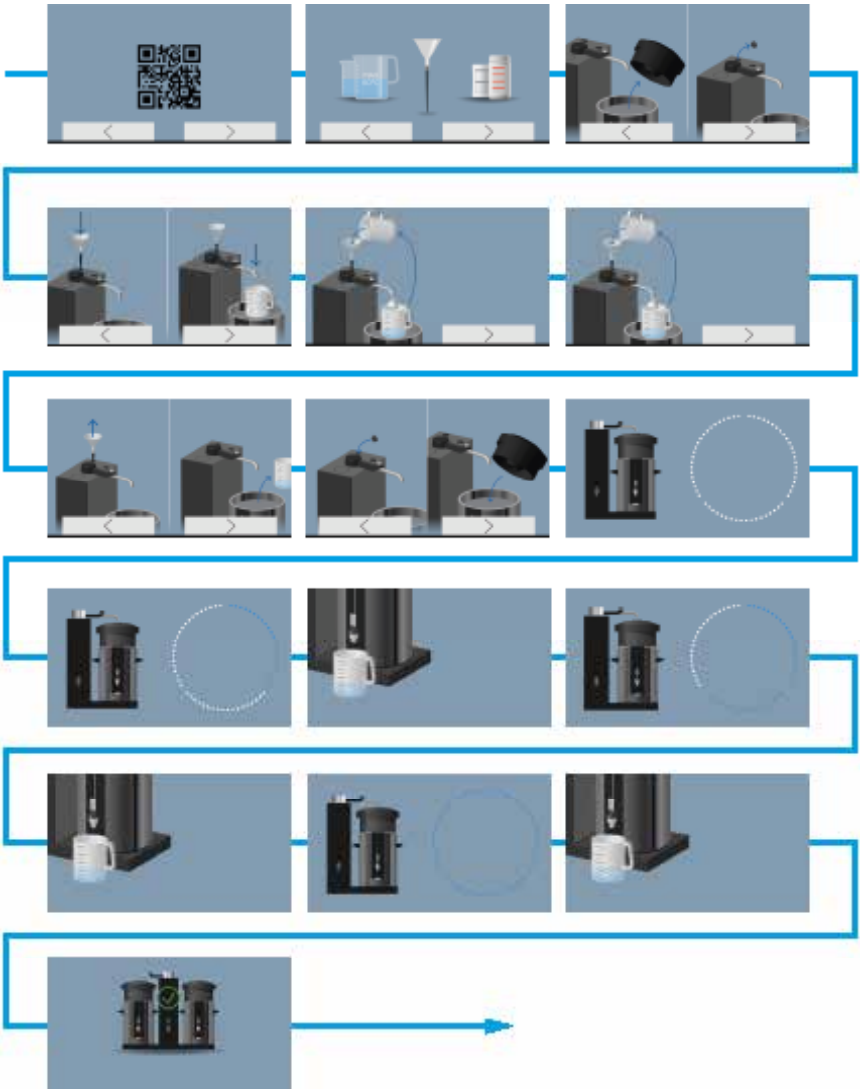




PIN: 4-3-2-3-3

SERVICE MENU	
2.0	COUNTERS
2.1	DESCALE
2.2	SYSTEM SETTINGS
2.3	BREW SETTINGS

SERVICE MENU	
2.1.0	COUNTER BREW SYSTEM
2.1.1	RESET COUNTER BREW SYSTEM
2.1.3	START DESCALING BREW SYSTEM
2.1.4	COUNTER HOT WATER
2.1.5	RESET COUNTER HOT WATER
2.1.6	START DESCALING HOT WATER



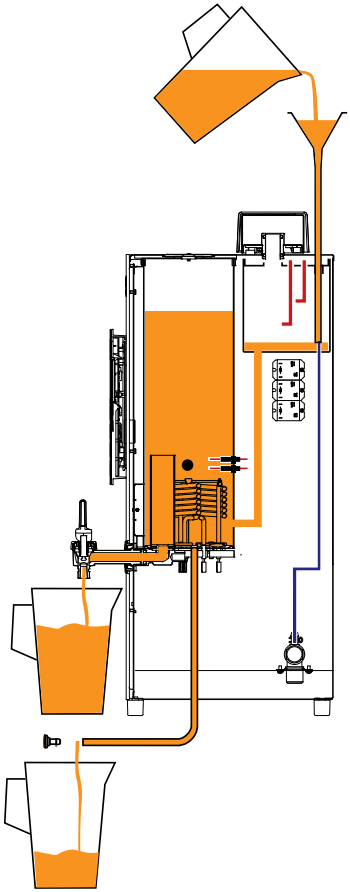
10.2 Descaling the hot water system

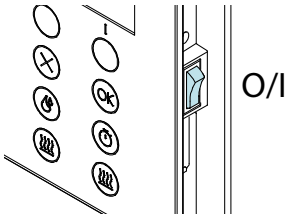
Enter the descaling menu via the service menu.

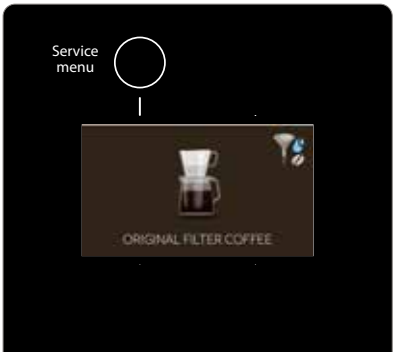
An overview of all descaling instructions appears in the display.

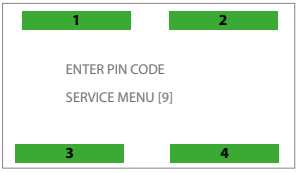
The descaling signal will automatically reset after the descaling program has ended.

The water circuit below shows what happens inside the machine during the intake of the descaler liquid.





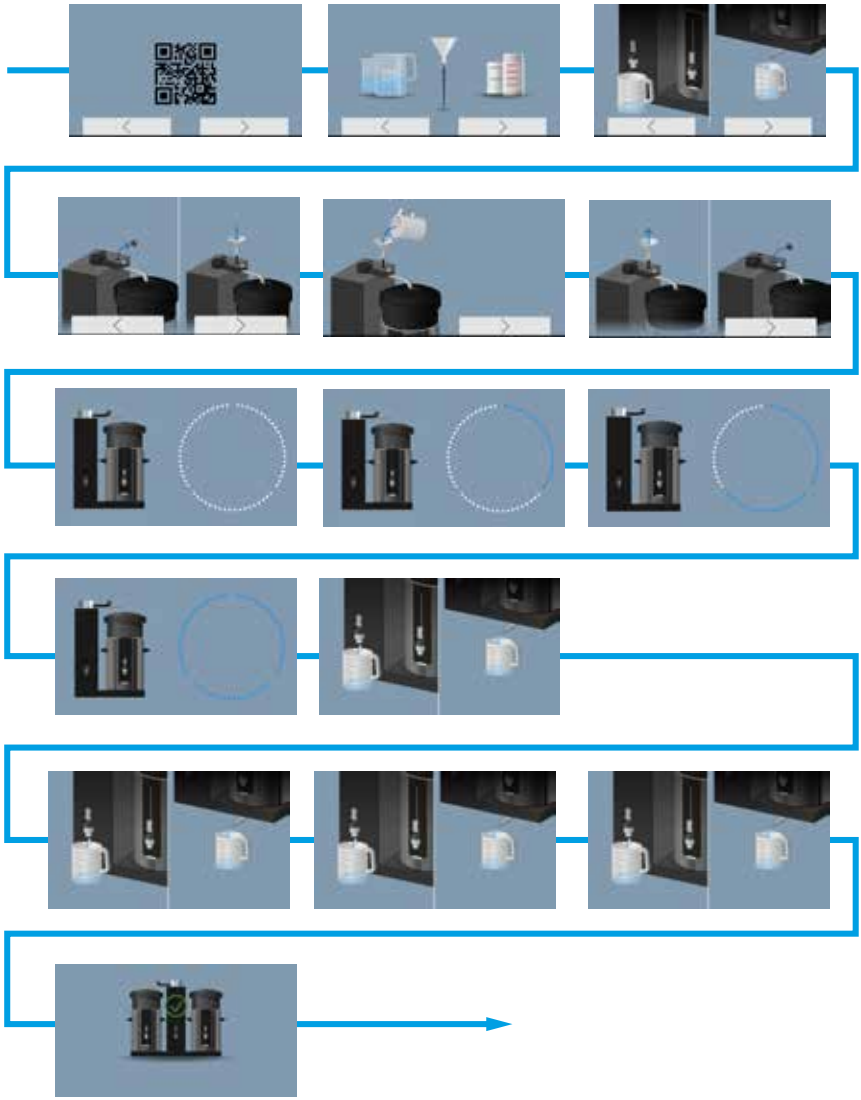




PIN: 4-3-2-3-3

SERVICE MENU	
2.0	COUNTERS
2.1	DESCALE
2.2	SYSTEM SETTINGS
2.3	BREW SETTINGS

SERVICE MENU	
2.1.0	COUNTER BREW SYSTEM
2.1.1	RESET COUNTER BREW SYSTEM
2.1.3	START DESCALING BREW SYSTEM
2.1.4	COUNTER HOT WATER
2.1.5	RESET COUNTER HOT WATER
2.1.6	START DESCALING HOT WATER



11. TRANSPORT AND STORAGE

Please do the following before transporting and/or storing the machine.

WARNING

- The drain water can be HOT!

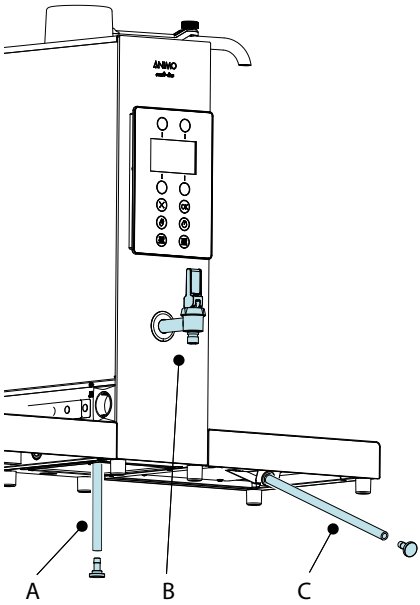
1. Switch off the device and remove the plug from the wall socket.
2. Close the water supply tap and disconnect the water connection tube.
3. Take away the basket filter, blender, coffee containers drip tray and clean them.

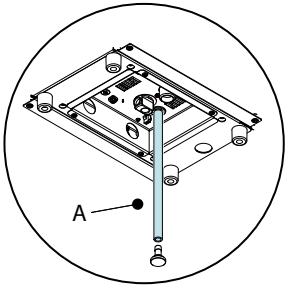
If the machine is equipped with a hot water system:

4. Drain the tap [B] until no water comes out anymore.
5. Pull out the drain tube [C], squeeze it and remove the tube plug. Drain the rest of the boiler.

To empty the coffee system:

6. Tilt the machine slightly to the rear and pull out the drain tube [A], squeeze it, remove the tube plug and drain the flow water heater.
7. Plug all the tubes close again and push them back.
8. The machine is now ready for transport and/or storage.

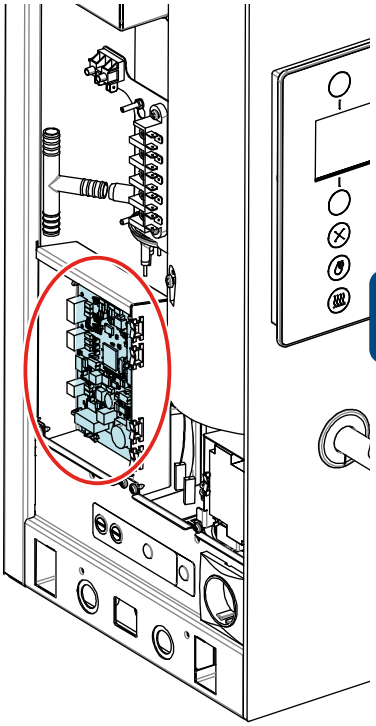




12. ELECTRONICS SUMMARY

WARNING

During repairs or maintenance work, avoid electrostatic discharge (ESD) on the control unit.

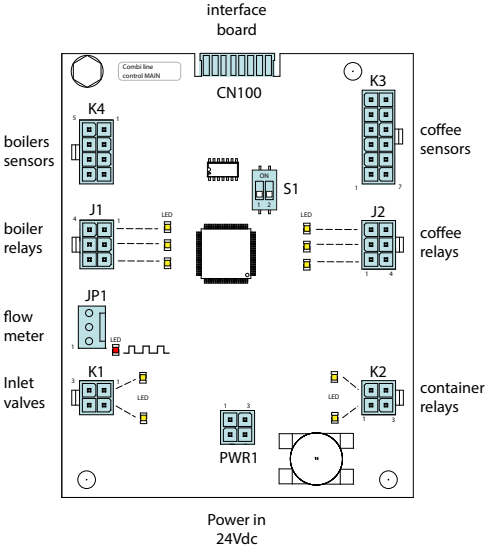


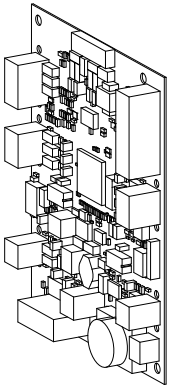
EN

12.1 Main PC board

This main PC board is the main control unit of the device and it is accessible by removing the left side panel.
The following important parts can be found in the main control unit:

- Fuse 6, 3A T (Art. No. 03391)): To safeguard the power supply to the main PC bard.
- Battery 3V Li CR2032 (Art. No. 02816): To maintain the clock function when there is no power supply to the device.





12.1.1 Main circuit board inputs

Connector CN100			
Pin	**Sensor**	**Colour**	**Notes**
1 - 8	signal	Black	all signals from front to main board

Connector K4 boiler sensors (level & temp.)			
Pin	**Sensor**	**Colour**	**Notes**
1	min. level	Brown	
2	mass	Green	
3	NTC sensor	Violet	
4	Boiler detection	Black	detection pin 4-8 boiler is present
5	Ground (GND)	Green	
6	-	-	
7	NTC sensor	Violet	
8	Boiler detection	Black	detection pin 4-8 boiler is present

Connector J1 boiler relays			
Pin	**power relay**	**Colour**	**Notes**
1	**heater 1**	Red	
2	heater **2**	Green	
3	heater **3**	Orange	
4	Ground 1	Black	
5	Ground 2	Black	
6	Ground 3	Black	

Connector JP1 flowmeter			
Pin		**Colour**	**Notes**
1	impulse	White	red LED blinks during impulses
2	Ground (GND)	Black	
3	+24 Vdc	Brown	

Connector K1 inlet valves			
Pin		**Colour**	**Notes**
1	coffee inlet valve	Brown	
2	boiler inlet valve	Red	
3	Ground (GND)	Black	

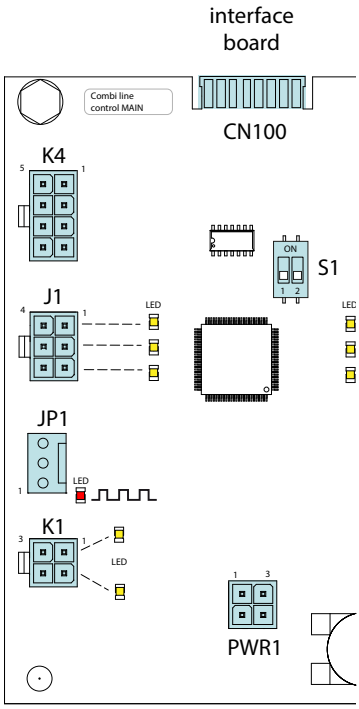
DIP switch S1			
DIP	**3N~400/440V**	**3~400/440V (no NEUTAL)**	**Notes**
1	OFF	ON	
2	OFF	OFF	

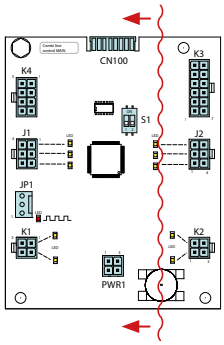
boilers sensors

boiler relays

flow meter

Inlet valves





12.1.2 Main circuit board outputs

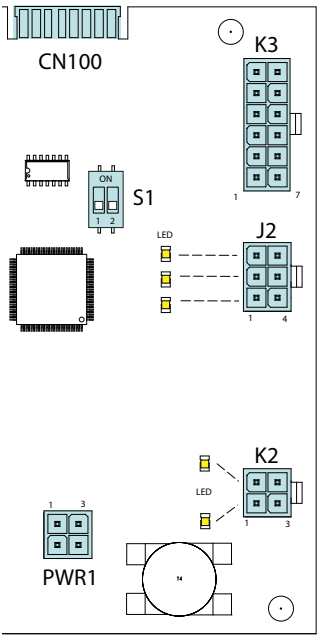
Connector K3 coffee sensors			
Pin	**Motor**	**Colour**	**Notes**
1	min coffee level	Brown	
2	min coffee level	White	
3	container sensor left	Blue	
4	container sensor right	Orange	
5	swivel arm sensor left	White	
6	swivel arm sensor right	Yellow	
7	Ground	Green	
8		-	
9	GND container sensors	Black	
10		-	
11	GND swivel arm sensor	Black	
12		-	

Connector J2 coffee relays			
Pin	**Valve**	**Colour**	**Notes**
1	**heater 1**	Red	
2	heater **2**	Green	
3	heater **3**	Orange	
4	Ground 1	Black	
5	Ground 2	Black	
6	Ground 3	Black	

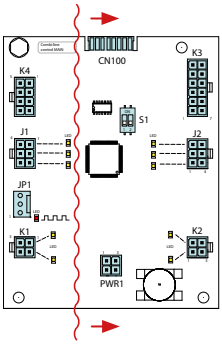
Connector PWR1 power supply			
Pin		**Colour**	**Notes**
1-2	+24 Vdc	Red	
3-4	Ground (GND)	Black	

Connector K2 container relays			
Pin	**Power relay**	**Colour**	**Notes**
1	Wall note left	Yellow	
2	Wall note right	White	
3	Ground	Black	
4	-	-	

interface board



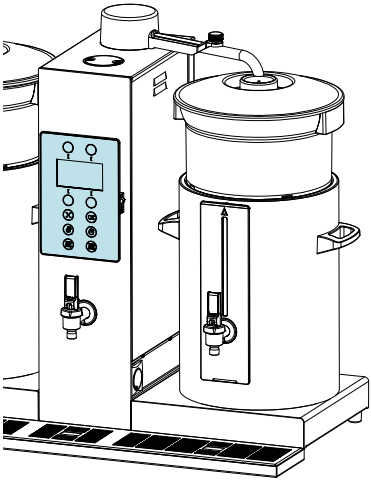
Power in 24Vdc



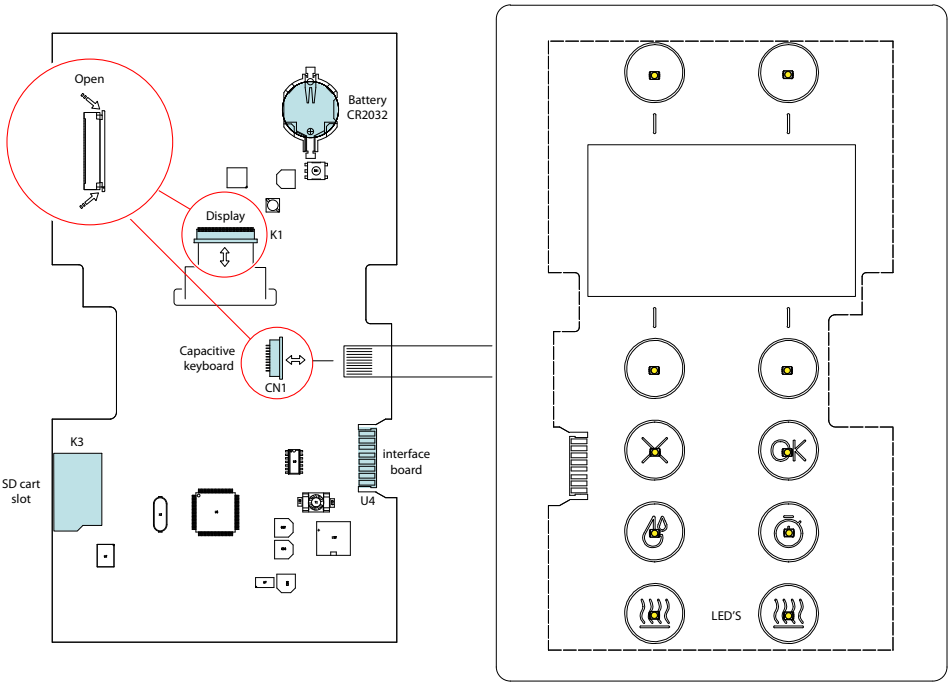
EN

12.2 Interface and display

The interface connects all the components located in and on the door and is connected to the main control by a cable.



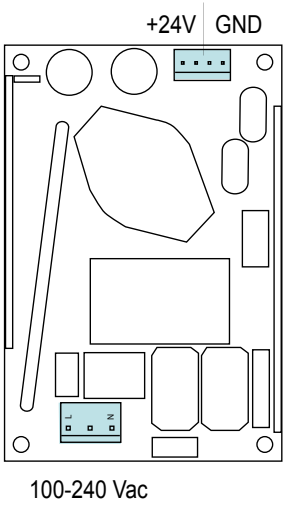
Interface and display		
Conn		**Notes**
K1	Display connection	
CN1	Front key panel	
U4	Main control	
Batt	Back-up battery	
K3	SD card slot	

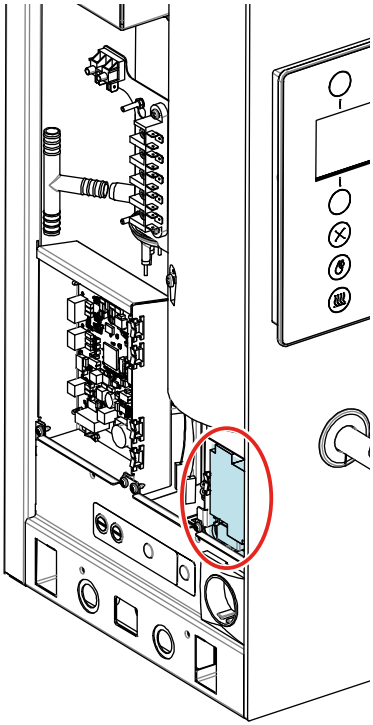


12.3 Power supply

The 24-Vdc supply consists of a switched power supply of 24 Vdc – 60 W and can be accessed by removing the back part of the machine.

- During an overload, the power supply is switched off automatically. Reset the power supply by turning the main switch off and on again.





EN

Connections

Connector 24Vdc			
Pin		**Colour**	**Comments**
1-2	24 Vdc +	red	
3-4	24 Vdc -	black	

Connector 100-240Vac			
Pin		**Colour**	**Comments**
1	230 Vac Neutral	yellow	
3	230 Vac Phase	blue	

13. FAULT ANALYSIS

WARNING

- When carrying out repairs and cleaning the device, the plug should always be removed from the wall socket before the device is opened.

Preface

Before searching for the defect, check if all parts are in their correct positions. To do this, remove the backplate of the device and make sure that all printed circuit boards, connectors, wire beams and pipes are mounted correctly.

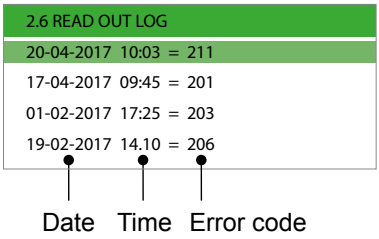
After carrying out a general parts inspection, use section 13.4 Troubleshooting analysis to verify the probable cause of the problem.

If the solution column advises replacement of the part concerned, it is possible that the defect is caused by another problem. The operation of the device should therefore be thoroughly tested to make sure that the defect does not reappear.

13.1 Read log

During use, the most recent 20 error messages displayed are registered and saved.

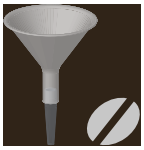
To read these error messages, activate the menu item. Read out the log (menu 2.6) in the service menu. The first error displayed is the most recent error message.



13.2 Clear log

Use the delete log function (service menu 2.7) to clear the log.

13.3 Display and button signals during use

Signal	Possible cause	Solution
	The OK button blinks. The energy safe mode of the boiler is activated.	Select OK to activate the boiler again.
	The boiler button blinks. The boiler is heating	Wait until the boiler has been refilled and heated.
	Coffee system needs descaling.	Start the descaling program in the operator menu.
	Boiler system needs descaling.	Start the descaling program in the operator menu.
	Someone pressed the STOP [X] button: - during an brewing process. - after an Error notification	Press START [OK] to continue the brewing process. Press STOP [X] to stop the brewing process permanently.
	Software update in progress	Wait until the update is ready. Remove the SD card Select the model settings

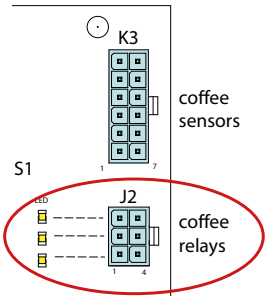
EN

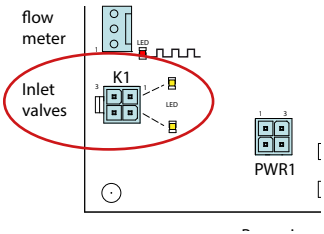
13.4 Troubleshooting

Errors marked with ⓘ can hold extra dealer information about who to call if an error pops up.

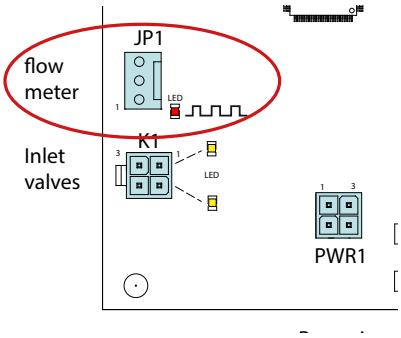
See chapter 9.2 to see how to upload dealer information.

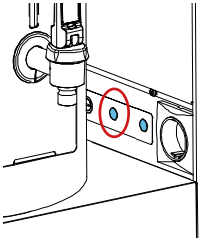
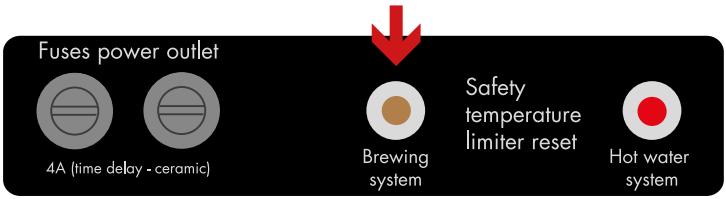
Brew system errors

Display	Possible cause	Solution
206 BREW SYSTEM HEAT-UP TOO LONG	The system detects that the brew process is not working at full force. It notices that the flow heater element is activated for more than twenty minutes.	Check if the brew system produces enough hot water from the swivel arm. CB5 / 3 kW = 0.5 litres/min. CB10 / 6 kW = 1.0 litres/min. CB20 / 9 kW = 1.5 litres/min. CB40 / 18 kW = 3.0 litres/min.
	One of the three heaters does not heat.	Check if all 3 phases are live. Restore the power supply if necessary.
		Check each flow heater with an ampere clamp or check the resistance of each heating element of the flow heater. Replace the flow heater if necessary.
		Check all three LEDs (main PC board conector J2). They must light up and all three power relays must be activated to start the flow heater power relays. **Attention:** If the flow heater starts heating, only two heaters heat. When the machine refills for the first time, the third heater will be switched on.
	The temperature protection does not conduct all of the three contacts controlling the neutral of each heater element.	Check all three contacts for continuity.

Display	Possible cause	Solution
207 BREW SYSTEM FILLING TOO LONG	There is a problem with the mains water supply.	Press the X button to restart the machine. Check the mains water pressure and supply hose connection. Open the tap completely.
	During the first installation, the minimum level sensor was not reached within 40 seconds. If the inlet valve stays open for 10 minutes, error 210 [C8] will take over and finally close the valve to prevent it from overheating.	Check the inlet valve on operation. Check the lower LED (main PC board connector K1). It must light up when the inlet valve is activated. 
208 ⓘ FALSE WATER FLOW DETECTED	There is a fault with the water inlet valve coffee maker.	Replace the inlet valve. Press the X button to restart the machine
209 ⓘ BREW SYSTEM MIN. ELECTRODE FAULT	The maximum level sensor detects enough water, but the minimum level sensor does not detect any water.	Press the X button to restart the machine. Check if the minimum electrode is working. Tip: Check if the level sensor signal reaches the electronic board by using the SERVICE MENU / 2.5 READ SENSOR VALUES / LEVEL SENSORS.
	The maximum level sensor falsely informs the electronic board that it detects a water level.	Check if the cold water reservoir lid is contaminated with descaler solution. The solution conducts extremely and causes false level information. Clean the complete lid under water or replace it.
210 BREW SYSTEM INLET VALVE CLOSED	After 10 minutes of trying to fill during error 207, the inlet valve is finally closed to prevent it from overheating.	Press the X button to restart the machine. Check the inlet valve during operation.

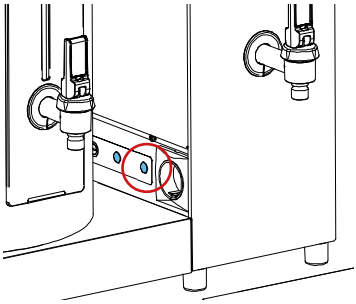
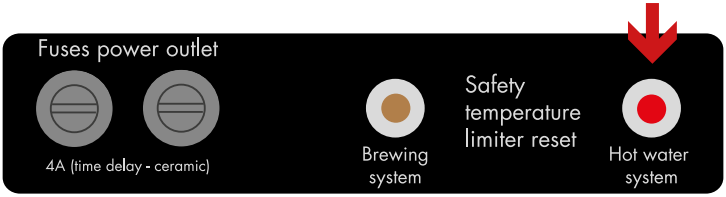
EN

Display	Possible cause	Solution
211 NO WATER FLOW DETECTED	There is a fault in the water flow meter signal. The flow meter impulses do not arrive on the main board. When the inlet valve is activated, the flow meter must send impulses to the main board.	Check if the red LED blinks when the water inlet valve (lower LED K1) is activated. If no impulses arrive, check/replace the flow meter and the connection cable. 
212 ⓘ TEMP. SENSOR NOT DETECTED	The temperature sensor is not detected	Check the sensor and the wiring for bad connections. Press the X button to restart the machine.
213 ⓘ TEMP. SENSOR SHORT CIRCUIT	The temperature sensor is internally faulty.	Replace the temperature sensor Press the X button to restart the machine.
214 LOW TEMPERATURE	?	
215 PARAMETER FILE CORRUPTED	Bug in software	Update the software. Follow the instructions in chapter 9.3 This chapter also includes a direct link to the software.

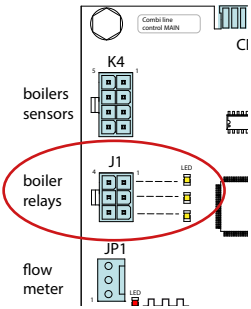
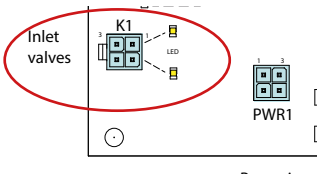
Display	Possible cause	Solution
216 TEMP. PROTECTION DISABLED	The safety temperature limiter brewing system is activated.	Reset the **Safety temperature limiter brewing system**, see below. Refer to 10.1. Descale the machine. Press the X button to restart the machine.
		

EN

Boiler system errors

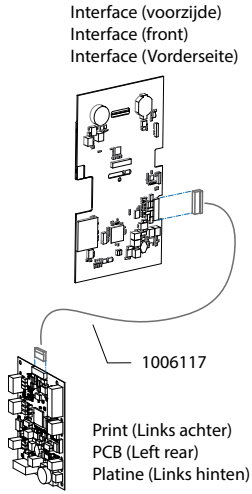
Display	Possible cause	Solution
200 ⓘ BOILER TEMPERATURE TOO HIGH	There is a fault in the boiler temperature sensor.	Replace the temperature sensor. Press the X button to restart the machine.
201 ⓘ BOILER TEMPERATURE TOO LOW	There is a fault in the boiler temperature sensor.	Replace the temperature sensor. Press the X button to restart the machine.
202 BOILER HEAT-UP TOO LONG	Temperature protection is activated. Boiler signal tries to heat the boiler for more than 30 minutes.	Reset the **Safety temperature limiter hot water system**, see below. Refer to 10.2. Descale the boiler system. Press the X button to restart the machine. 
		
	One of the three heaters does not heat.	Check if all 3 phases are live. Restore the power supply if necessary.
		Check each flow heater with an ampere clamp or check the resistance of each heating element of the flow heater. Replace the flow heater if necessary.

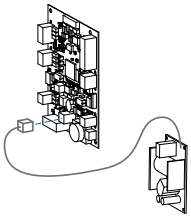
EN

Display	Possible cause	Solution
202 BOILER HEAT-UP TOO SLOW	The temperature protection does not conduct all of the three contacts controlling the neutral of each heater element.	Check all three contacts for continuity.
	Attention: The boiler heaters start alternately during start-up and when reaching the set temperature. 	Check all three LEDs (main PC board connector J1). They must light up and all three power relays must be activated to start each heating element.
203 BOILER FILLING TIME TOO LONG	There is a problem with the mains water supply.	Press the X button to restart the machine. Check the mains water pressure and supply hose connection. Open the tap completely.
	During the first installation of the hot water boiler, the minimum level sensor is not reached within 120 seconds. If the inlet valve stays open for 10 minutes, error 205 [B8] will take over and will close the valve to prevent it from overheating.	Check the inlet valve during operation. Check the upper LED (main PC board connector K1). It must light up when the inlet valve is activated. 

Display	Possible cause	Solution
204 ⓘ BOILER MINIMUM ELECTRODE FAULT	The maximum level sensor detects a sufficient quantity of water, but the minimum level sensor does not detect any water.	Press the X button to restart the machine. Check if the minimum electrode is working. Tip: Check if the level sensor signal reaches the electronic board by using the SERVICE MENU / 2.5 READ SENSOR VALUES / LEVEL SENSORS.
		Check the silicon tube connection between the cold water reservoir and the hot water reservoir for air bubbles or other obstructions.
205 BOILER INLET VALVE CLOSED	After 10 minutes of trying to fill during error 203, the inlet valve is finally closed to prevent it from overheating.	Press the X button to restart the machine. Check if the inlet valve is operating.

System warnings

Display	Possible cause	Solution
110 INTERNAL COMMUNICATION ERROR	No communication between main and interface. 	Restart the machine by switching it OFF and ON again. Check connections of cable or replace the cable [1006117]. Load factory settings, see service menu 2.8 Replace both control boards

Display	Possible cause	Solution
111 INTERNAL ERROR	24 volts lost on I/O board. Print (Links achter) PCB (Left rear) Platine (Links hinten)  24V voeding (Links voor) 24V Power supply (front left) 24V Spannungs versorgung (Links vorne)	Restart the machine by switching it OFF and ON again. 24V power supply deviates more than 2 volts, replace power supply .
114 TIMER ERROR	No more software timers available.	Restart the machine.
115 WATCHDOG RESET	The system has crashed and will be restarted as a result.	May appear in the log after a software update, but should not normally appear. Replace both control boards

EN

Animo B.V.
Dr. A.F. Philipsweg 47
9403 AD Assen
The Netherlands

Tel.: +31 (0) 592 376376
Fax: +31 (0) 592 341751
E-mail: info@animo.nl

www.animo.eu

Rev. 2.0 01/2022 Art.nr 1006856