ANIMO

OptiFresh NG OptiFresh Bean NG
Model 2012

Machine with taste

service book

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FOREWORD

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

- By **authorised trained service personnel** is meant: persons who can install, program, maintain and carry our 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 accessing the service menu.
It is recommended not to 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 at 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 bodily harm

WARNING
Warning of electricity and / or current danger

WARNING
Warning of electrostatic discharge (ESD) to electronics.

WARNING
Warning for serious crushing injury

1. INTRODUCTION OPTIFRESH NG

Explanation OptiFresh NG type designation:

Designation	Meaning	Description	Cup volume	Dispensing Hight cup	Thermos jug
1e digit	Number canisters	1 - 4			
Bean	with grinder	whole beans			
-	Cups / mugs		50-240ml	60-155mm	167mm
NG	Next Generation	model year 2012 - 2015			
H&C	Hot&Cold	prepared for cabinet with cool unit			

OptiFresh NG
1
2
3
4

OptiFresh NG
Hot & Cold

Base cabinet with cooling unit

OptiFresh Bean NG

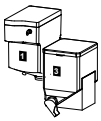
1
2
3
4

OptiFresh NG

Base cabinet with access to litter bin

1.1 Model code

The OptiFresh (Bean) NG models are standard executed according below canister configuration.

OptiFresh (Bean) NG		Model code	Canister configurations				
			1	2	3	4	5
1		**2F 1B**	**Coffee (beans)**				
2		**2F 2B**	**Coffee (beans)**		**Topping**		
		2F 5B			Cocoa		
		2F 6B			Instant coffee		
		2F 7B			Tea		
3		**2F 3B**	**Coffee (beans)**		**Topping**	**Cocoa**	
		2F 8B			Topping	Instant coffee	
		2F 9B			Cocoa	Instant coffee	
		2F AB			Sugar	Topping	
		2F BB			Sugar	Tea	
		2F CB			Topping	Tea	
4		**2F 4B**	**Coffee (beans)**		**Topping**	**Cocoa**	**Suiker**
		2F DB			Topping	Cocoa	Instant coffee
		2F EB			Topping	Cocoa	Tea
		2F FB			Sugar	Tea	Topping
		2F GB			Sugar	Tea	Cocoa
		2F HB			Topping	Cocoa	Soup

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Button settings

Download here an overview of the standard-and optional recipes: http://www.animo.eu/en/sd

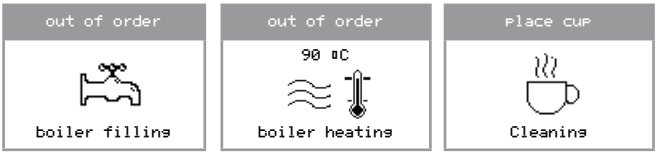
Enter the web site address in your web browser and your can download the relevant technical documentation without requiring a login code.

2. FIRST MENU SETTINGS AFTER INSTALLATION

The following data must be set in the operator and service menus immediately after the machine's first use. The language factory setting is English.

Switch ON the machine

- *Follow the instructions on the display*



Operatormenu (Page 47-49)

- *1.1 Clock* — *Time* *(set)*; *Date* *(set)*
- *1.7 PIN-code* — *2 - 2 - 2 - 2 - 2* *(PIN-Code)*

Service menu (Page 50-62)

- *2.4 Settings* — *Language* *(set)*
- *2.6 Service boiler* — *Service moment* *Cups* *(set)*

Cups
The message indicates that the device must be descaled. If a water filter is fitted (recommended), this is also an indication that the filter must be replaced.

We strongly recommend to use a water filter. Calculate your filter capacity by using the capacity information provided with the filter. Set the amount of cups into the menu so the signal [Service Boiler] appears on the display.

Water quality	Hardness				Service moment after (cups)
	°D	°F	mmol/l	mgCaCo3/l	
Very hard	18-30	32-55	3,2-5,3	321- 536	5,000
Hard	12-18	22-32	2,2-3,2	214-321	12,500
Average	8-12	15-22	1,4-2,2	268-214	20,000*
Soft	4-8	7-15	0,7-1,4	72-268	40,000
Very soft	0-4	0-7	0- 0,7	0-72	0 = off

Table: Water hardness

(continued…)

- *2.2 Button settings <Recipe name> (set)*

  Every machine contains pre-programmed basic recipes. Each key can be changed, if required.

  Which recipes are factory-set can be found in recipes settings document which can be downloaded. See http://www.animo.eu/nl/sd.

  The same table also indicates which additional recipes in the software are available.

  See chapter **2.1 How to program a recipe**

- *2.1 Quick recipe Pro <Recipe name> Cup volume (ml) (set)*
  Coffee (sec.)
  Topping (sec.)
  Chocolate (sec.)
  Sugar (sec.)

  When the cup volume (menu parameter) is increased, the coffee, Topping, Chocolate and Sugar will be automatically proportional increased.

  The Coffee, Topping and Cocoa setting is a dispensing time in seconds for a 100ml drink. When increasing the cup volume the Topping and/or Cocoa dispensing will be automatically proportional increased (not visible in the display).

  To measure is to know! It is strongly recommended to check the coffee measurement using a set of mini scales. These are simple to order via the Internet.

  ATTENTION: the default brewer settings are based on a cup volume of 120ml. Depending on the cup volume the brewer pause 2, 3 and 4, settings must be adjusted in the Menu 2.3 Recipe setting.

  See chapter **2.2 How do you correct a recipe?**

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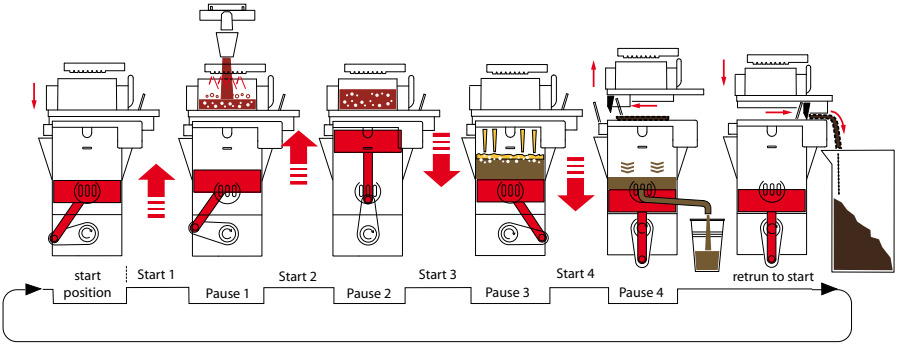
(continued…)

- *2.3 Recipe setting <Recipe name> Unit 1*

  Start Brewer
  Pause 1
  Start 2
  Pause 2 (set) (extraction)
  Start 3
  Pause 3 (set) (drying)
  Start 4
  Pause 4 (set) (emptying)

  See the below table, which brewer setting in relation to the cup volume is recommended.



Cup volume	Start 1	Pause 1	Start 2	Pause 2	Start 3	Pause 3	Start 4	Pause 4		Waste bin
120 ml	1,0	6,0	2,4	2,5	3,0	1,5	1,9	3,5		130
140 ml		7,0		3,5		2,5		5,0		110
160 ml		8,0		4,0		4,0		6,0		95
180 ml		9,0		5,0		5,5		7,0		85
200 ml		10,0		6,0		7,0		8,5		75
220 ml		11,0		6,5		8,0		9,5		70
240 ml		12,0		7,5		9,0		10,5		65

Table: Brewer Pause settings in relation to Cup volume

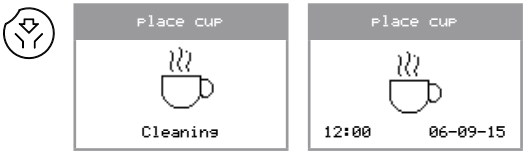
- *2.13 Additional Settings Waste management Cup amount (set)*

  See the table (above), which cup amount setting fitt in the waste bin in relation to the cup volume is recommended.

(continued…)

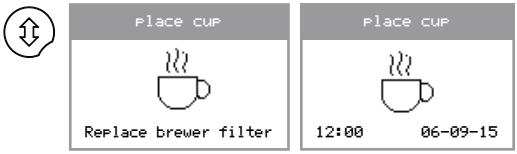
Reset display messages

- *Run the cleaning program (without cleaner) to reset the* **cleaning** *message*



- *Open the brewer chamber to reset the* **Replace brewer filter** *message*

Wait at least 30 seconds before closing the brewer chamber again.
Confirm with yes (v) to close the brewer chamber.

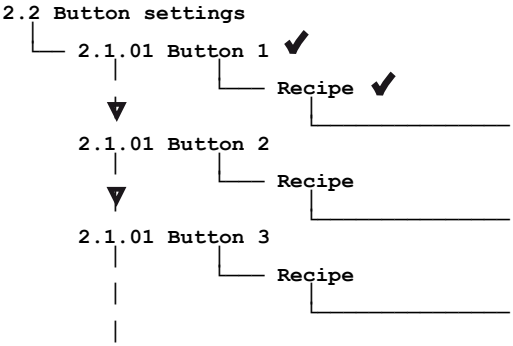


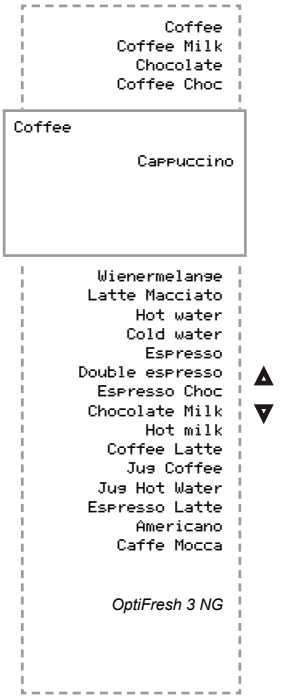
Shut down

Please follow chapter **7 Transport / Shut down** to empty the boiler system before transporting or putting the machine in storage.

2.1 How to program a recipe?

Every machine contains pre-programmed basic recipes. Each key can be changed, if required. In below example button 1 will be change from **coffee** into **cappuccino**.





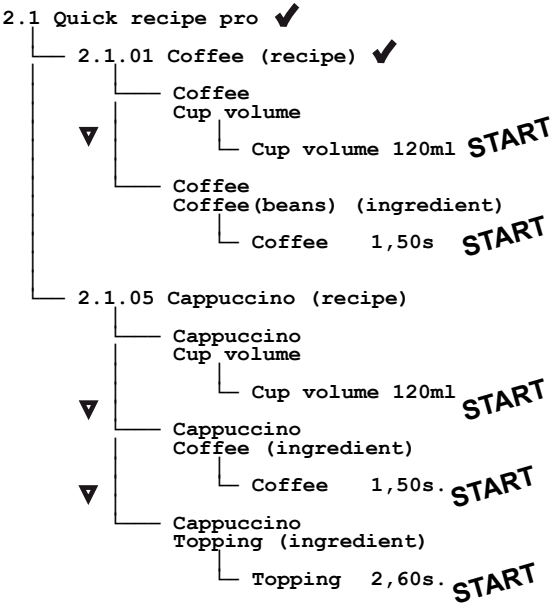
1. Navigate to above mentioned service menu item.
2. Go to Button 1 - Recipe and confirm (v).
   The 1st line in de display shows the programmed recipe.

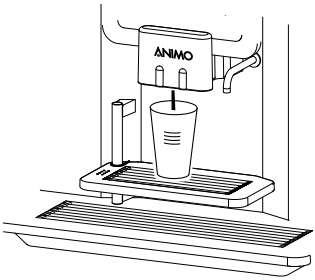
   The 2nd line in the display shows the first recipe from a hole range (see dotted frame) of pre-programmed and extra recipes.
3. Scrol with the navigation buttons though the range until the desirable recipe and confirm 2x (v)

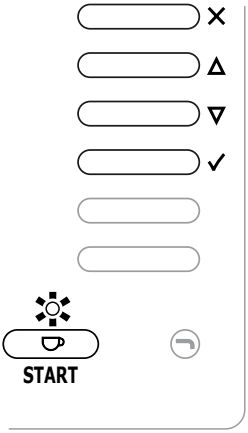
Which recipes are factory-set can be found in recipes settings document which can be downloaded. See http://www.animo.eu/en/sd

2.2 How do you correct a recipe?

Easy way to check the dispensed drink- volume and taste without leaving the menu!







1. Navigate to above service menu item
2. Change one or more settings and confirm (v), (START led blinks).
3. Place a empty cup under the outlet and press the START button. You drink is made.

When the Cup volume (menu parameter) is increased, coffee and instant products Topping and Chocolate will be automatically proportional increased.

4. If the strength of the drink is not perfect the instant ingredient can be adjusted separately. Scroll to the desired ingredient to be adjusted, and change the dispensing time ▲ ▼ and confirm (v) it. The START led flashes. Repeat this procedure until the drink is perfect.
5. See the following chapter if it is desirable to measure the weight for each dispensed ingredient.

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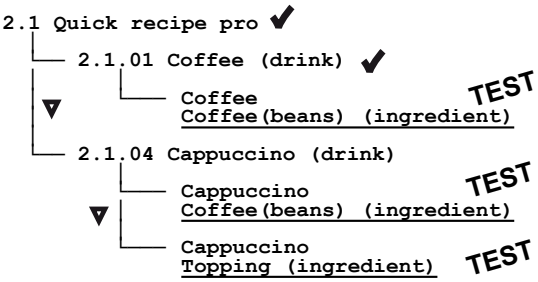
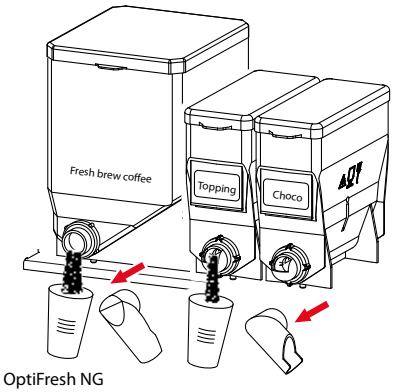
2.3 How do you measure the weight of an ingredient only?

Only the grinder (OF Bean) / ingredient motor will be driven (no water is dispensed).

It is strongly recommended to check the coffee measurement using a set of mini scales. These are simple to order via the Internet.



1. Navigate to above service menu item.
2. Hold a empty cup under the outlet.
3. Press the TEST button, only the chosen ingredient will be dispensed.
4. Measure the weight of the ingredient.



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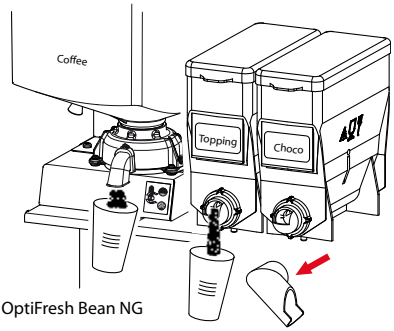


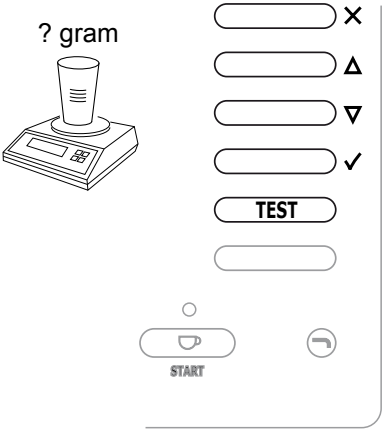
OptiFresh Bean NG

2.4 Adjustment rules

2.4.1 Brewer

The OptiFresh NG is executed with a fresh brew brewer

- A excellent black filter coffee can be made with 7,5 -15 grams (0,26 - 0,53 ounce) of coffee.
- When using pre-grinded coffee (OptiFresh NG) its preferable to use fresh brew quality which are especially developed to this type of Fresh brew machines.
- When using fresh beans (OptiFresh Bean NG) you must pay attention to the grinder settings.



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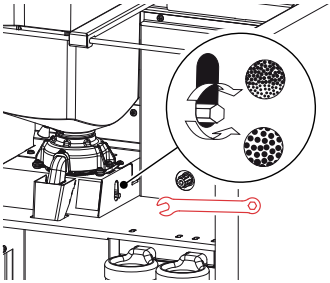
2.4.2 Grinder (OptiFresh Bean)



- There are two factors that affect the output of the coffee grinder. The set grinder duration (**2.1 Quick recipe pro / Coffee)** and the **grinding fineness** of the coffee grinder.
- When the coffee grinder is set coarser, the volume of the grind increases.
- When the coffee grinder is set finer, the volume of the grind decreases.
- Only increase the coffee grinder fineness when the grinder is running! Adjustment from fine to coarse can be done when the grinder is stationary.
- Only adjust the grind setting in steps of 1/4 turn. Note: only the 3rd cup of coffee is 100% made with the changed grind fineness! (do not taste or measure the first 2 cups).

Grinding Ideal

If the brewer piston runs down in the **start 3** position a beige foam layer is (briefly) creates on the coffee.

The grinding adjustment is ok, the brewing process runs perfectly.

Grinding to coarse

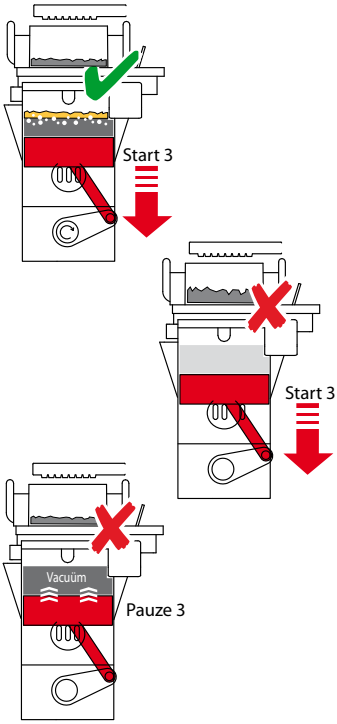
Weak coffee, High coffee dose. The grain size is too large to get a good extraction. The coffee will be under extracted. To get a good cup of coffee the coffee dosage must be extreme high (too much) There is the danger of overdose.

Adjust the coffee grinder finer (turn adjustment shaft clockwise). Reduce the coffee dosage in de recipe menu.

Grinding to fine

The brewer piston is pulled up the **pause 3** due to a high vacuum in the brewer cylinder. The coffee is grinded too fine, the flavour extraction is too extreme (too many bitter substances). The brewer is overloaded, and can brake down!

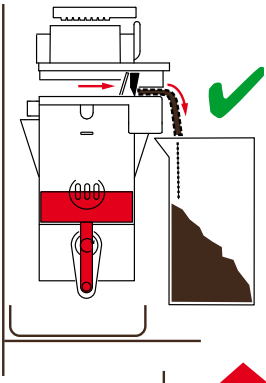
Adjust the coffee grinder coarser (turn adjustment shaft counterclockwise).



2.4.3 Coffee Waste

Hand dry (ideal)

When the coffee waste is wiped from the filter it must be hand dry. The wiper wipes the coffee residue easy from the filter into the waste bin.

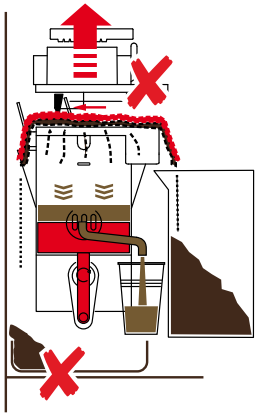


Too wet

When the coffee residue is too wet the brewer must use high force to wipe the wet residue from the filter.

If the residue is to wet, increase brewer pause 3 (vacuum time)

```
2.3 Recipe setting
    └── 2.3.01 Coffee (drink)
            └── Unit 1
                    └── Pause 3
```

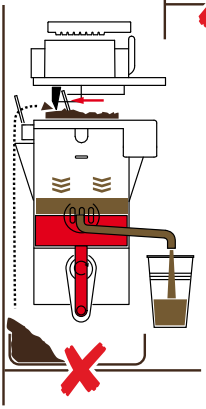


Waste falls from the left side

Only when the coffee residue bed is flat and even the wiper can move freely (to the left) without touching any coffee bumps. Coffee will be pushed from the left of brewer if the coffee residue bed is not flat.

If the residue is not flat increase brewer pause 2 (extraction time) or reduce the dispensed coffee (grams)

```
2.3 Recipe setting
    └── 2.3.01 Coffee (drink)
            └── Unit 1
                    └── Pause 2
```



2.4.4 Troubleshooting

Problem	Probable cause	Action
Coffee does not taste strong enough.	The used coffee is too course.	OptiFresh: Prevent overdosing, use a 'fresh brew' coffee quality. This quality has coffee particles which are much smaller to shorten the extraction time.
		OptiFresh Bean: adjust the coffee grinder finer.
	The contact time of the coffee/water mixture is too short.	Extend pause 2 time, this increase the coffee/ water mixture contact time.
Coffee taste too strong and/or too bitter.	The used coffee is too fine.	OptiFresh Bean: adjust the coffee grinder courser.
	The contact time of the coffee/water mixture is too long.	Shorten pause 2 time, this decrease the coffee/water mixture contact time.
The in cup coffee volume is suddenly too less.	The boilers overflow is obstructed so the boiler is vacuumed.	Check if the overflow outlet, located just above the waste bin, is not being obstructed by a plastic bag.
Coffee stay behind in the brewer cylinder.	The coffee outlet does not stay in position long enough.	Extend pause 4 time, the coffee outlet stays open longer.
The coffee flows out too slowly from the brewer.	The piston does not drops far enough and close the spout partially.	Extend start brewer 4 so the piston drops further.
1st cup of coffee overflows	Brewer dispensing valve (DV1) does not close. During the night the brewer fills with water	Check Brewer dispensing valve (DV1), descale or replace the valve.
During the preparation of Cappuccino and Latte macchiato, the milk layers were disrupted.	The coffee flows out too quickly from the brewers sprout.	Shorten start brewer 4 so the brewers spout does not opens completely and the coffee slowly runs out. Its possible that pause 4 need to be extended too.
The wiper pushes against the coffee residue when moving to the left. The brewer unit does not rise far enough.	The brewer unit is hindered during the upward movement.	Check if the brewer unit is able to move upwards freely.

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Problem	Probable cause	Action
The coffee residue remains too wet. Coffee residue drops from both sides when the brewer chamber lifts.	The permanent filter is dirty or worn.	Clean or replace the permanent filter.
	The coffee residue is not being vacuumed long enough.	Execute brewer motor calibration program, only available from software version V5.17.1884 (dec. 2015).
		Extend pause 3 time, this increases the vacuum process time. See table on page 10 for advice settings in relation to cup volume.
		Check if vacuum is lost because the piston moves down to far down. Shorten start 3 time if coffee still remains to wet.
If the above-mentioned problem is not resolved:	Check the brewer chamber and cylinder for fractures.	Replace the defective parts.
	Check the cylinder for wear and tear or scratches.	Replace the defective parts.
	Check the Teflon seal for wear and tear.	Replace the defective parts.

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2.5 Detailed recipe settings

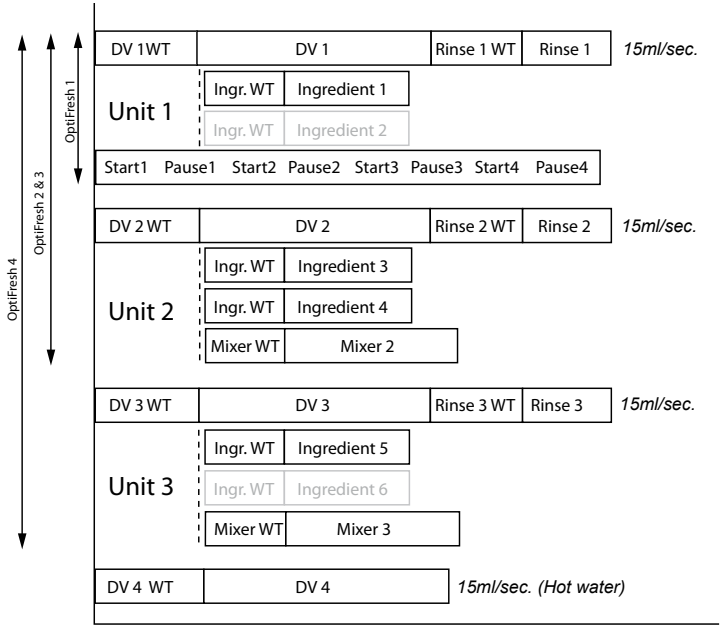
To change detailed recipe settings (service menu 2.3) you first need to be aware of the various parts such as valves, brewer motor, ingredients motor and mixers that work together. See section 2.6 Time bar recipe settings.

The following rules should be taken into consideration:

- Water (valves) are easily set in millilitres.
- Motor running times (Ingredients/Mixers/Brewer) are set in seconds (0.01 second steps)
- All parameters (Water and Ingredients) are based on a 100 ml drink and the programme automatically converts them to the cup volume as set in 1.4 / 2.1 Quick recipe and 2.2 Button settings.
- If a drink contains DV1 and DV2, the total amount of water should always be 100 ml when combined. For DV1, DV2 and DV3, this amount = > 100 ml.
- A Rinse parameter is used to ensure that the brewer unit and mixers are properly rinsed after making a drink. After the mixers are almost empty a small amount of hot water is dispensed to the mixer so that it is as clean as possible on completion.

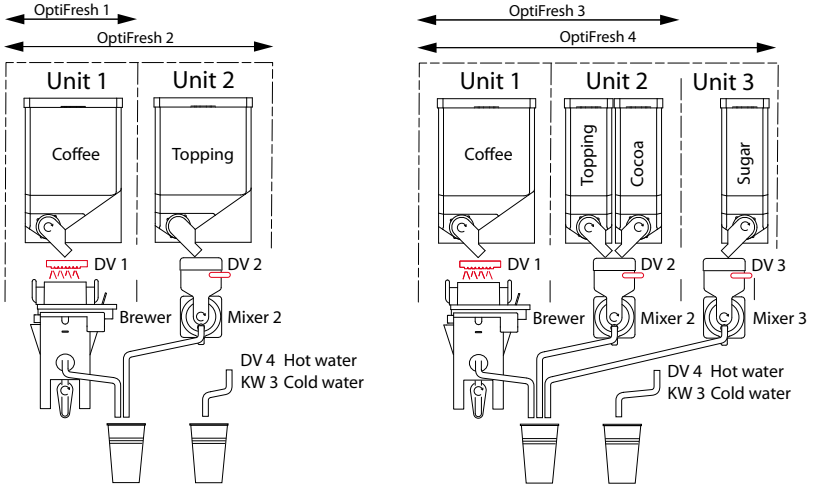
A realistic rinse value is 7.5 ml. Caution: this does not need to be deducted from the amount of water as the programme does this automatically!
Example: Set parameter for DV2 = 100 ml, Rinse 2 = 8 ml -->
Programme carries out the following action: DV2 = 92 ml, Rinse 2 = 8ml

2.6 Time bar recipe settings

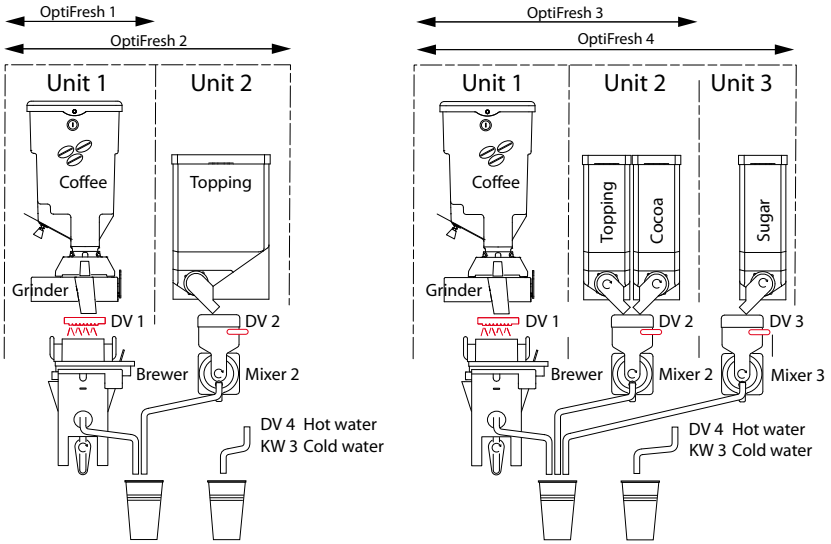


2.7 Principles of operation

OptiFresh NG



OptiFresh Bean NG



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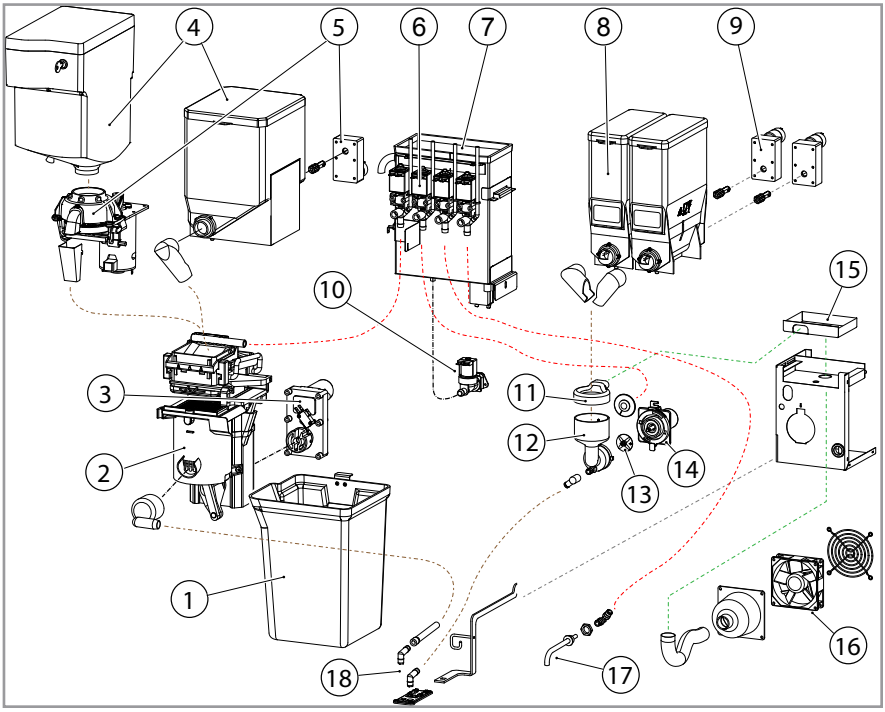
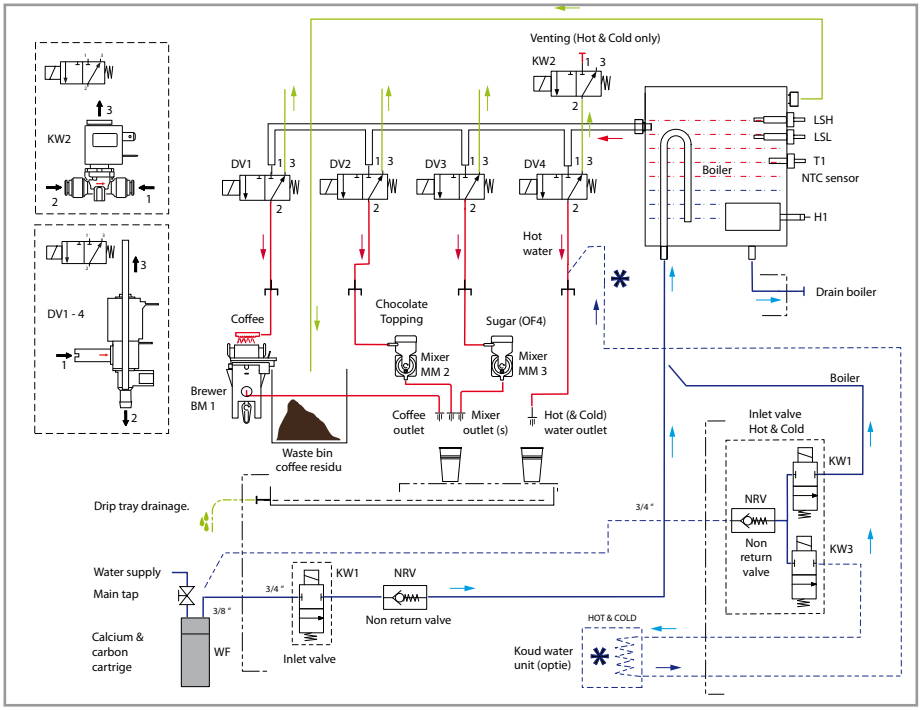
3. PRINCIPLES OF OPERATION



Item	Description
1.	Coffee waste bin
2.	Freshbrew group
3.	Gear motor brewer
4.	Coffee bean canister (OF Bean)
	Fresh brew canister (OF)
5.	Coffee grinder (OF Bean)
	Gear motor fresh brew canister (OF)
6.	Dispensing valve
7.	Boiler
8.	Instant canisters

Item	Description
9.	Gear motor instant canister
10.	Inlet valve
11.	Evaporation extractor ring
12.	Mixer housing
13.	Mixer motor
14.	Mixer impellor
15.	Extraction tray
16.	Ventilator
17.	Hot water outlet
18.	Coffee outlet / Drink outlet (instant)

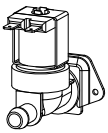
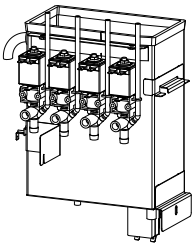
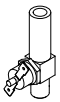
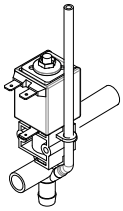
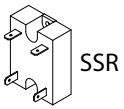
3.1 Water management



Code	Description
WF	Water filter
KW1	Inlet valve
NRV	Non-return valve
H1	Boiler
T1	NTC sensor
LSL	Minimum level sensor
LSH	Maximum level sensor
DV1	Brewer dispensing valve

Code	Description
DV2	Mixer 2 dispensing valve
DV3	Mixer 3 dispensing valve
DV4	Hot water dispensing valve
KW3	Cold water inlet valve (H&C optional)
BM1	Fresh brew group
MM2	Mixer system Choco/Topping
MM3	Mixer system sugar
KW2	Venting valve (H&C optional)

3.2 Components

Component	Image
Inlet valve KW1 [02801] Opens and closes the water supply, 24 Vdc coil closure. Water flow abt. 2,5 Litre/min.	
Boiler Open 3L boiler manufactured entirely from material AISI 316L , insulated. **Temperature sensor [1000740]** Screw thread M12x1 / material AISI 316L / 100 kΩ/25°C **Heating element H1 [03216]** 230V 2200W **Boil-dry protection [03093]** Activation temperature 135°C / 1 pole / manual reset See chapter **3.7 Water boiler** for operation.	
Steam thermostat [03484] The steam thermostat contact is in series with the solid state. This thermostat prevents the boiler from boiling empty when the solid state breaks down in a operating condition. The thermostat switches the heating element OFF when steam escapes from the boiler. The thermostat must be manually reset.	
Dispensing valve [03250] Supplies water to the fresh brew unit and mixers . See chapter **3.7.1 Dispensing valves** for operation.	
Solid State Relais (SSR) [02799] The heating element is controlled by a solid state relay, which supersedes the magnetic switch that was formerly used for this purpose.	

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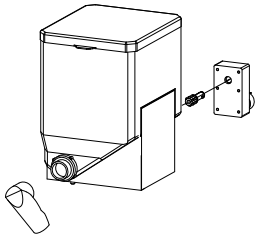
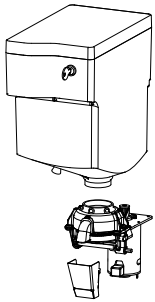
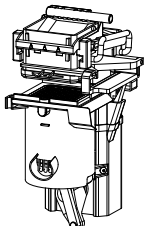
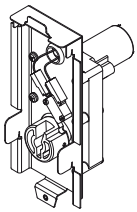
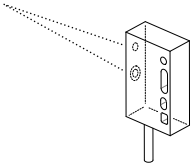
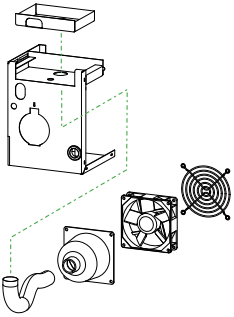
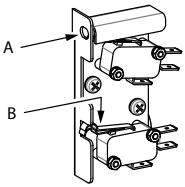
Component	Image
Model OptiFresh NG is executed with a fresh brew canister (pre-grinded coffee) **Fresh brew canister [03400]** The coffee canisters is powered by a 130RPM motor. The coffee is forced out of the canister by a coil and drops through the dispensing bent pipes into the fresh brew unit **Ingredient motor [02906] + Drive shaft [03330]**	
Model OptiFresh Bean NG is executed with a bean canister and a coffee grinder **Bean canister [1001671]** The bean canister supplies coffee to the coffee grinder and is easy to remove. **Coffee grinder [1000665]** The coffee grinder grinds the beans and fills the brewer with a precisely measured quantity of coffee. See Section **3.6 Coffee grinder** for the operation.	
Fresh brew group [13622] (Pre)grinded coffee and hot water are dispensed onto the permanent filter and are drawn trough the filter by a piston (vacuum). After the coffee is dispensed to the cup the coffee residue is wiped away by the filter wiper and drops into the waste bin. See Section **3.4 Fresh brew group** for the operation.	
Gear motor unit [1001149] The fresh brew group is been driven by a 24Vdc 5 RPM gear motor. On the outgoing shaft is a plastic connector which drives the fresh brew unit. See Section **3.5 Gear motor unit** for the operation.	

Component	Image
Cup detection sensor [1003231] Reflection infrared sensor. This sensor can optionally build in the machine door. This sensor checks whether there is a cup / mug positioned under the (correct) spout. See chapter 3**.3 Cup detection** for operation.	
Ingredient and mixer system Each of the ingredient canisters is driven by a motor running at 130 rpm. The instant product (ingredient) is pushed out of the canister by a worm screw and falls via the dispensing nozzle into the mixer unit. At the same time, hot water is measured into the mixer unit. The instant product and the water are mixed together by the mixer impeller driven by the mixer motor running at 10,700 rpm. The drink flows via the drink outlet into the cup. See chapter See chapter 3**.7 Instant group**	
Water vapour drain system Most of the water vapour given off during the mixing is collected by the vapour drain ring and extracted via the extraction tray by the fan. The instant residue is collected by the extraction tray. The extraction tray can be easily removed (for cleaning) by dismantling the mixer unit. This largely prevents water vapour getting into the canister outlet and the ingredient becoming moist. See chapter 3**.7.1 Ventilation mixer group**	
Door switches There are two door switches on the inside of the right side wall. Switch A is activated when the door is closed, and switches the machine off when the door is opened. Switch B is operated when the door lock is locked and switches the hot water valve DV4 when the lock is opened.	

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3.3 Cup detection (optional)

The sensors detect the presence of a cup below the coffee outlet of the beverage dispenser. Coffee is only prepared when a cup has been placed. Also the outlet for hot water is equipped with a cup sensor. The sensitive sensors will detect paper cups, as well as porcelain or glass cups.

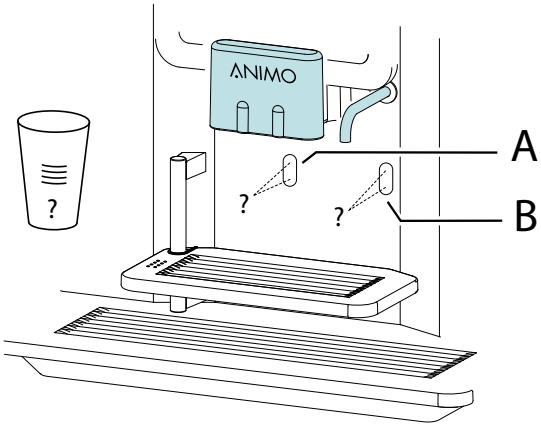
The new cup detection is extremely safe in use and will prevent you from wasting freshly brewed coffee or tea.

WARNING

- Keep the sensor windows free of dirt.
- Don't reach below the drink spouts when a drink is prepared.

Caution

- the cup detection sensors are standard activated.
- run the rinsing program with a closed door.
- when placing a cup the machine awakes itself from the energy safe mode



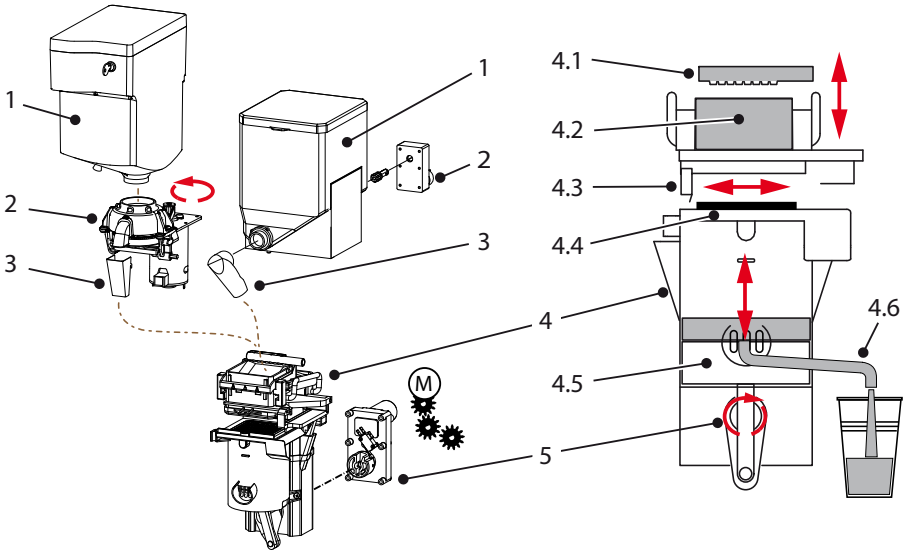
A: Cup detection for coffee, cappuccino, chocolate spout.

B: Cup detection for tea water spout

3.4 Fresh brew group

The fresh brew group consists of a fresh brew unit [4] and an drive unit [5]. The drive unit carries a DC gear motor with drives the fresh brew unit (Pre)grinded coffee [3] and hot water [4.1] are dispensed onto the permanent filter [4.4] and are drawn trough the filter by a piston [4.5] (vacuum). After the coffee is dispensed to the cup [4.6] the coffee residue is wiped away by the wiper [4.3] and drops into the waste bin. Next sections explain how the unit operates.

Major components		Technical data	Material
1. Bean canister / Fresh brew canister		Content 2,2 kg / 1,8 kg	PC / PE
2. Coffee grinder / canister gear motor		See 3.6 Coffee grinder	
3. Coffee guide			st.st. / PE
4. Fresh brew unit		max. 240 ml with 16-20 gram coffee	
	4.1 Water supply		PSU
	4.2 Brewer chamber		PSU
	4.3 Wiper		
	4.4 Permanent filter	37 µm (art.no. 03488)	st.st.
	4.5 Piston		Teflon
	4.6 Coffee outlet		
5. Drive unit		See 3.5 Drive unit	

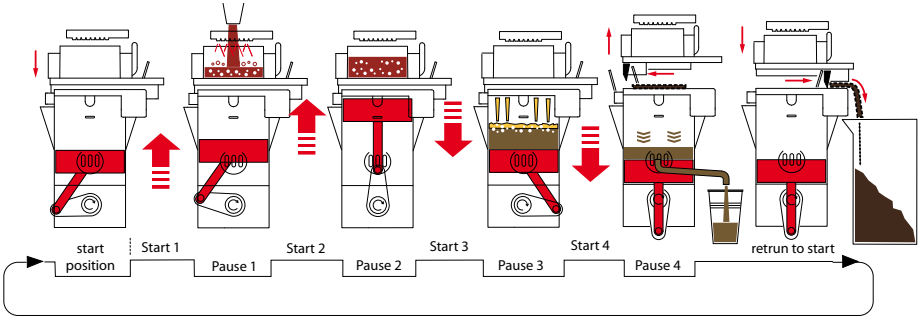


3.4.1 Operation

After making a fresh brew drink selection the following process starts:

Position	Action
Start	When the cycle is started, the piston starts moving upwards, while the brew chamber moves down (closing) to create a seal between the bottom of the chamber and the top of the cylinder.
Start 1	The piston leaves the start (home) position. Ground coffee and hot water is dispensed to the brewer chamber.
Pause 1	The piston stops just above the outlet. Coffee and hot water is still dispensed.
Start 2	The piston continues moving upwards, forcing air through the coffee grounds and water. The agitation created by the forced air mixes the coffee and water together, starting the extraction process.
Pause 2	Once the piston reaches its highest position, it pauses to allow more contact time between the coffee grounds and water. This contact time increases the extraction from the coffee grounds.
Start 3	The piston then starts moving downwards, creating a vacuum in the brewer cylinder.
Pause 3	When it is just above the pour spout area of the cylinder, the piston then pauses. This pause allows the vacuum created in the cylinder to pull the liquid (brewed coffee) through the coffee grounds and through the filter screen at the top of the cylinder, and leaves the residue 'dry' behind on the filter.
Start 4	The piston then moves down just below the pour spout area, dispensing brewed coffee into the user's cup. At the same time, the brew chamber lifts and a rubber wiper moves from the right side of the chamber, to the left side.
Pause 4	The coffee is now dispensed to the cup or jug.
Return to start	The brew chamber lowers slightly to bring the wiper onto the top surface of the cylinder and filter screen. The wiper then moves across the top of the cylinder (and filter screen) wiping the used coffee grounds off the right edge on the cylinder and into a waste container. The brewer then moves back to the home (starting) position and is ready to repeat the process for the next user.

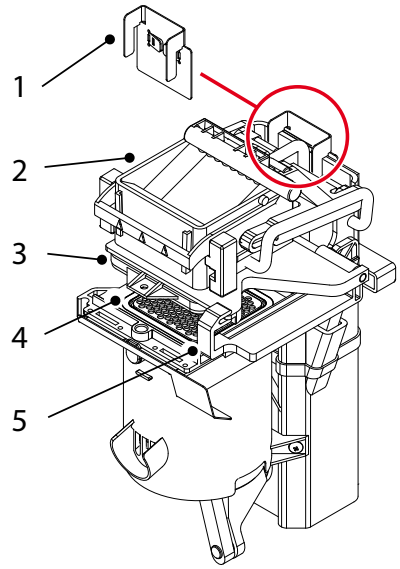
The maximum capacity of this brewer is approximately 240 ml (8 oz.). Do not attempt to exceed this value as doing so may create flooding/overflow problems with the brewer.

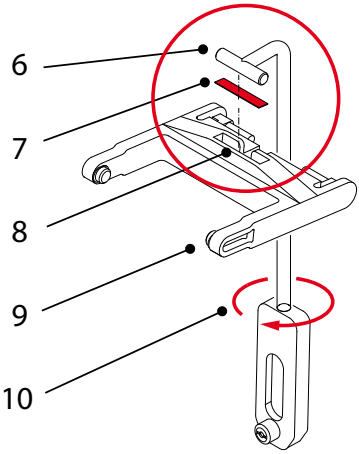


3.4.2 Wiper tension adjustment

If a leak occurs between the brewer chamber [2] and the permanent filter [4] the tensile force of the brewer needs to be increased. The tensile force of the brewer should be set so that no water is able to leak between the brewer chamber [2] and the permanent filter [4]. The tensile force also ensures that the wiper [5] completely pushes the coffee residue off of the permanent filter.

1.	Fixation bracked	
2.	Brewer chamber	
3.	Rubber seal	(art.no. 03375)
4.	Permanent filter	(art.no. 03488)
5.	Wiper	(art.no. 03380)
6.	T-bar	
7.	Adjustment shim	(art.no. 03384)
8.	Recession	
9.	H-frame	
10.	T-bar housing	





1. First remove the brewer from the device (see section 3.4.5 for instructions).
2. The tension can be set by adding adjustment shims [7] between the T-bar [6] and the H-frame [9]. Extra shims are located behind the stainless steel panel on the inside of the door.
3. Press the H-frame downwards and take the T-bar out of the recession. Place an adjustment shim* in the recession and replace the T-bar.

Adding multiple shims at the same time can cause excess tensile force and damage the brewer!

4. In most cases this procedure is sufficient for repairing leaks. If the brewer unit still leaks fit another adjustment shim.
5. If the brewer unit still leaks remove the two adjustment shims and then turn in the T-bar one rotation (clockwise). First remove the fixation bracked [1].

Turning in the T-bar should only be done as a last resort.

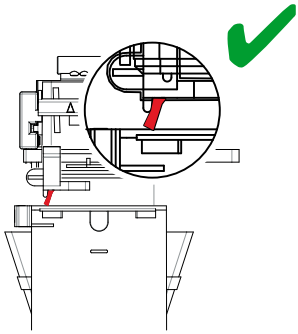
6. If the tensile force is correct but the brewer still leaks do not increase the tensile force anymore!
   For further help see chapter 3.4.4 Troubleshooting.

EN

3.4.3 Wiper adjustment tips

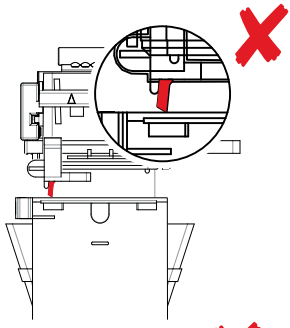
Wiper tension correct (ideal)

If the brewer is adjusted correctly, the wiper moves carefully over the upper side of the cylinder and pushes the coffee residue off of the permanent filter. The wiper bends slightly. When the wiper moves to the right the coffee residue is transported to the waste bin. The coffee residue drops from the right side of the brewer straight into the waste bin.



Wiper tension too low

If the wiper moves over the upper side of the cylinder it makes no contact with the permanent filter, so that coffee residue is left on the filter. The wiper does not bend at all. If the brewer unit is adjusted in this way it can leak. If leakage is severe this can even result in a vacuum loss, which means that the coffee residue remains too wet (particularly for larger dispensing volumes).

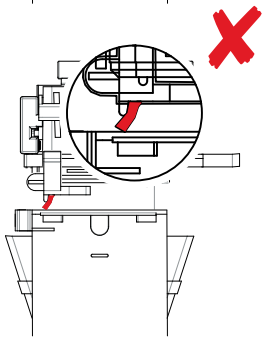


Wiper tension too high

If the brewer is adjusted too high, the wiper will stretch and become clearly warped. Glancing along the long side of the wiper will show a warped effect in the rubber.

The brewer is under extreme pressure and the sound of the brewer motor audibly changes as a sign of the severe load. This may even damage the wiper and permanent filter!

During the complete brewer cycle, ball bearings from the wiper arms and the tension member are under severe pressure, resulting in bending. The ball bearings may then break away, cracking the plastic brewer housing.



Signs that the tension is too high:

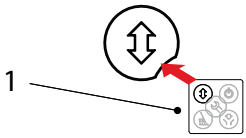
- The wiper is severely bent when it slides across the upper side of the brewer cylinder and permanent filter.
- It appears as if the wiper arm is flattened between the brewer unit and the upper side of the brewer cylinder.
- The brewer motor sounds as though it is running under extreme pressure.
- The wiper pushes against the coffee residue when moving to the left.
- Accumulation of coffee residue round the waste bin.

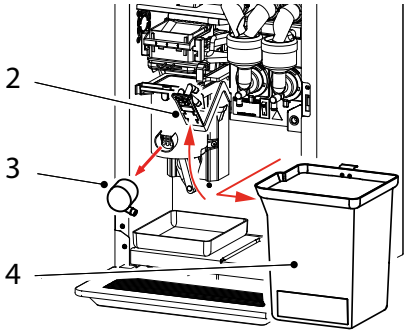
3.4.4 Removing the brewer group

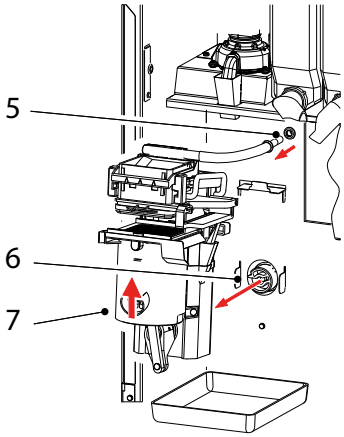
The brewer can be entirely removed for thorough cleaning and service.

Removing the brewer:

1. Open the door of the machine and press the open/ close brewer button [1]. The brewer will turn into the ‘open’ position.
2. Remove the coffee sprout [3] outlet from the brewer.
3. Flip up the hot water machine arm [2].
4. Remove the waste bin [4].
5. Remove the water connection [5].
6. First pull the bottom section [6] of the brewer towards you to release it from the drive mechanism.
7. Lift the brewer [7] from the suspension bracket.
8. The brewer can now be thoroughly cleaned.
9. Position the parts back into the machine in reverse order. Caution: first secure the brewer into the suspension bracket and then press the bottom section back into the drive mechanism. **Do not forget to reconnect the water supply [5]!**
10. Press the open/close brewer button [1].
    Confirm / answer the display tekst
    [*is filter replaced?*] Yes: v / No: x.
    The brewer will return to its initial position.
    The machine is ready for use again.







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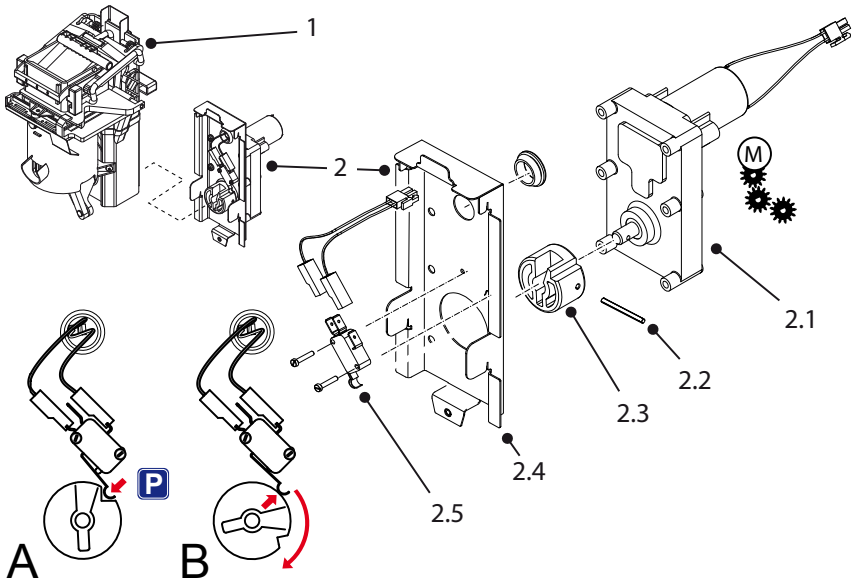
3.5 Drive unit

The fresh brew unit [1] is driven by drive unit [2] with a 24Vdc motor 5 RPM [2.1]. On the output shaft is a plastic connector [2.3] which drives the fresh brew unit [1]. A micro switch [2.5] controls the position of the fresh brew unit.

The micro switch [2.5] detects if the fresh brew unit has started to turn after a coffee has been selected or afterwards returned to its home position (home) position. An error E4 or E5 will occur when something wrong is with one of the two detection positions.

Major parts			Technical data	Material
1. Brewer unit			See chapter 3.4	
2. Drive unit			art.no. 1002149	
	2.1 Motor + gear		24Vdc / 5 RPM	alu
	2.2 Shear pin		art.no. 03341	steel
	2.3 Drive connector		art.no. 03340	nylon
	2.4 Motor bracket			st.st.
	2.5 Microswitch		art.no. 03321	
		Position A	brewer in start position	
		Position B	brewer is 'running'	



3.5.1 Operation

After making a fresh brew drink selection the following process starts:

Position		Brewer unit	Switch contact
Start	The software always checks if the fresh brew unit is in its initial (start) position when the machine is switched ON. If the plastic connector is in position B, the drive unit will be powered until the micro switch falls into the plastic connectors ressesion (position A).		
A	Brewer is in its initial (start) position.	home	closed
B	Brewer is 'on the go'.	on the go	opened

3.5.2 Shear pin

The shear pin [2.2] is special constructed to break ones the fresh brew unit runs too heavy.

The shear pin can breaks because of:

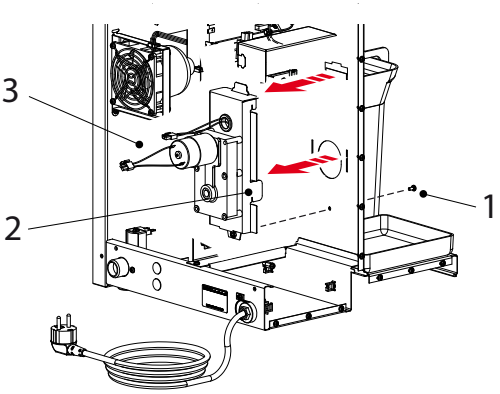
- mechanical defect in the brew unit.
- brewer unit and/or permanent filter is clogged up by coffee residue and oils.

Always use the original (solid) shear pin, its specially designed for this job.
Don't use retaining pin or a hollow pin they are to weak.

3.5.3 Removing the drive unit

The drive unit can easily be removed from the rear.

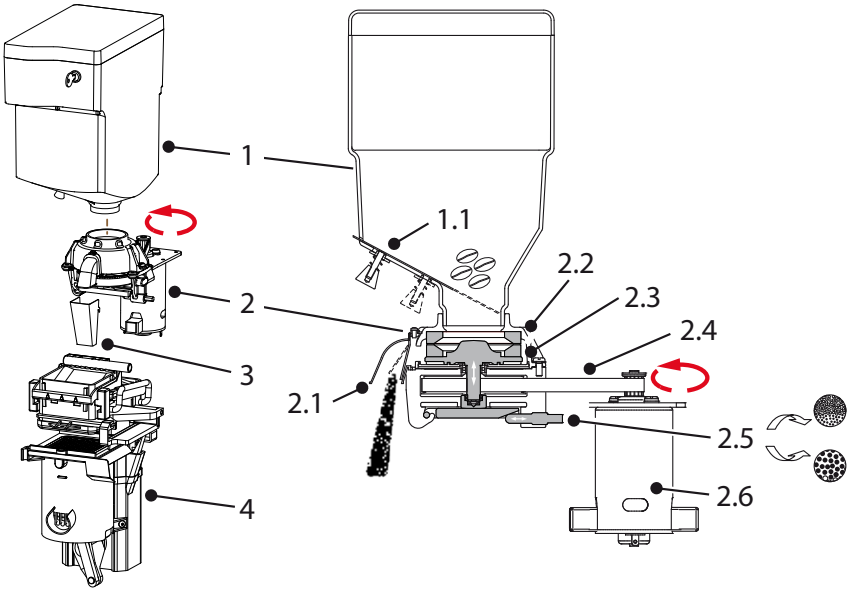
1. Remove the brewer, see section 3.4.5
2. Remove the fixing screw [1] from the underside of the motor plate [2].
3. Disconnect the connectors [3] from the drive unit.
4. Lift the motor plate [2] and remove it from the partition wall.



3.6 Grinder (OptiFresh Bean)

The grinder is driven by a powerful DC motor [2.6].
The upper grinding disk [2.2] is fixed. The lower grinding disk [2.3] is driven by a drive belt [2.4]. The grind fineness can be set with an adjustment screw [2.5]. When the screw is turned clockwise, the distance from the upper grinding disk reduces; anti-clockwise it increases.
The ground coffee leaves the grinder via the coffee outlet [2.1]. A rubber flap prevents the entry of moisture.

Major parts		Technical data	Material
1. Bean canister		Content 2.5 kg	PC
2. Coffee grinder		Sound level < 70 dB(A)	
	2.1 Coffee outlet		ABS
	2.2 Upper grinding disk	Ø 65mm	Ceramic
	2.3 Lower grinding disk	Ø 65mm	Ceramic
	2.4 Drive belt		Rubber
	2.5 Fine adjustment	hexagonal + 	
	2.6 DC motor	230Vdc	
3. Coffee guide			st.st.
4. Fresh brew group		See Section 3.4	



3.6.1 Basic adjustment

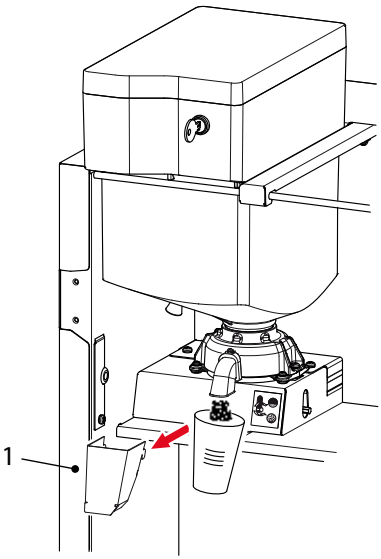
The coffee grinder is factory set for an average grind fineness.

WARNING

- Keep your fingers away from the grinding mechanism when the machine is in operation.

WARNING

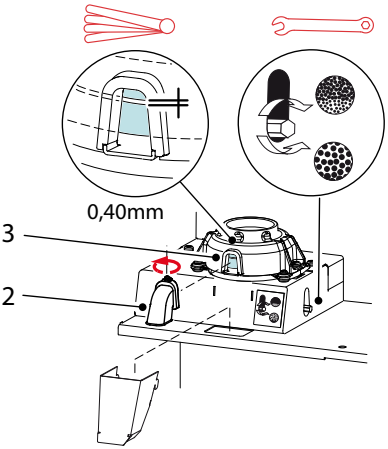
- If there is a sound of two stones rubbing against each other, make the grind coarser.
- The grinding disks must never come into contact with one another.
- The grind fineness and grind capacity depends on the type of coffee beans and the roasting.
- Always adjust the coffee grinder from coarse to fine with the grinder running or empty. Adjusting from fine to coarse can be done when the grinder is stationary.



1. Close the bean canister plug.
2. Remove the stainless steel coffee guide [1].
3. Hold a beaker under the coffee grinder outlet and run the grinder until it is empty.

Tip; go to the service menu: **2.7 Hardware test / Outputs / IM1** Press recipe key 11 until the coffee grinder is empty (the speed increases).

5. Unscrew the black plastic coffee outlet [2] on the grinder.
6. Set the distance between the grinding disks [3] so that a 0.40 mm feeler gauge fits between them.
7. After adjusting the grind fineness, carefully check the operation of the brewer, see Section 2.4.2 Adjust the grind fineness as necessary!



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3.6.2 Service life

The service life of the ceramic grinding disks is approximately 3x longer than steel grinding disks. The service life depends on the type of coffee beans* and is approx. 3,000 kg of coffee beans. With an average measure of 7.5 g/sec. that makes approx. 400,000 shots.

When you reach these grind quantities, we advise you to replace the complete grinder. Not only do the grinding disks need replacing, but the bearings, carbon brushes and drive belt have also reached their maximum service life. In case of a damaged grinding disk (due to stones or other foreign objects) they can be ordered and replaced as a separate set.

** light to dark roast, dry or oily, caramelized*

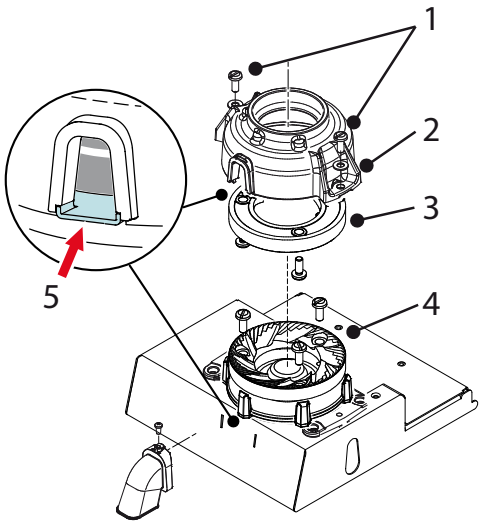
3.6.3 Run in period grinding discs

Tests have shown that new ceramic grinding discs have a run in period of 10 kg of coffee beans (about 1350 cups at 7.5 g / 1000 cup at 9.5 g.).

We recommend to re-adjust (finer) the grinder after this period.

3.6.4 Grinding disk replacement

1. Follow chapter 3.6.1 Basic adjustment till point 5.
2. Switch the machine OFF.
3. Loosen the screws [1] and dismantle the grinder head [2].
4. Remove the grinding disks [3&4] by loosening the three screws [4].
5. Thoroughly clean all parts.
6. Fit the new grinding disks in reverse order.
7. Position the lower plastic sealing disc [5] so it shuts the bottom of the grinder spout.
8. Set the distance between the grinding disks so that a 0.40 mm feeler gauge fits between them.
9. After adjusting the grind fineness, carefully check the operation of the brewer. Adjust the grind fineness as necessary!



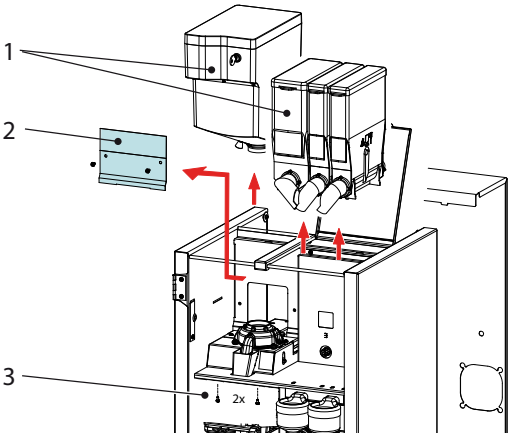
WARNING

- Do not drop the ceramic grinding disks.
- The grinding disks must never come into contact with one another.
- After assembly, adjust the grind fineness.

3.6.5 Drive belt replacement

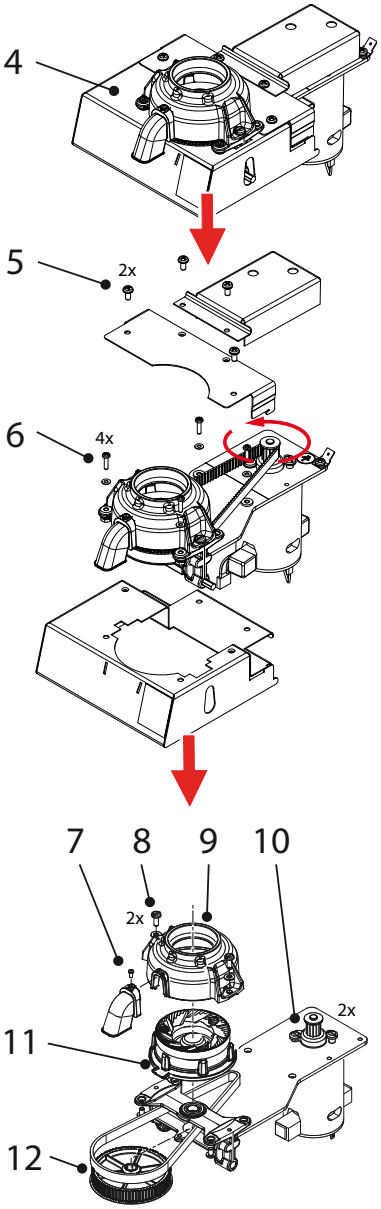
Coffee grinder housing disassembly

1. Remove the bean- and instant canister [1] and remove the cover plate [2] behind it.
2. Disconnect the electrical connections to the small coffee grinder circuit board (via the rear wall).
3. Remove the two screws [3] on the underside of the housing.



Drive belt removal

4. The whole assembly [4] can now be removed from the machine.
5. Remove the three screws [5] and remove the belt cover plate.
6. Remove the four screws [6] from the mounting rubbers and remove the coffee grinder with motor plate.
7. Loosen the screen [7] on the coffee outlet and remove it.
8. Remove the two screws [8] from the grinder housing [9].
9. Remove the grinder housing [9].
10. Slightly loosen the motor screws [10] so that the drive belt tension is released.
11. Pull the grinding disk [11] carrier vertically upwards.
12. Remove the belt disk and belt [12] and replace these parts.
13. Fit the new belt disk and drive belt [12] in reverse order.
14. Tension the belt disk and re-tighten the motor screw [10].



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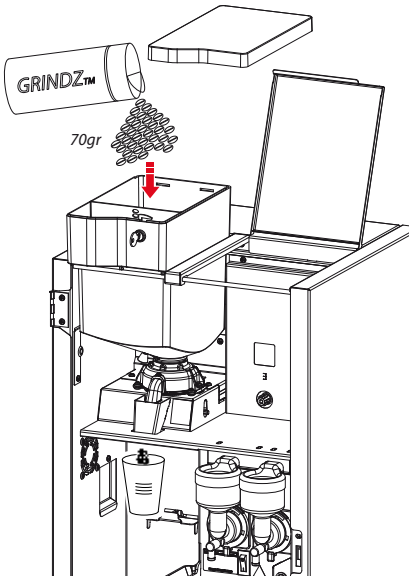
3.6.5 Cleaning

Depending on the fineness of the grind and the intensity of use, coffee residue collects in the grinder housing and on the grinding disks (fine particles, coffee oil, coffee residue), which can affect the grinding capacity, the measuring accuracy and also the taste.



Cleaning frequency
To guarantee a constant grind quality, it is recommended to clean the coffee grinder at least every 6 months.

Recommended cleaning agent

- Coffee grinder cleaner 430 g. GRINDZ ™
- Art.no. 1000151
- Shelf life 18-24 months
- Gluten free

What is GRINDZ ™? Is it harmful?

GRINDZ ™ consists of 100% biological, natural materials (including grain, starch) and is absolutely harmless for the health. It binds the coffee oil and cleans the grinder housing and grinding disks by friction. If small residual particles mix into the follow-up shots, this does not affect the extraction or the taste.

Cleaning with GRINDZ ™

1. Close the bean canister plug.
2. Hold a beaker under the coffee grinder outlet.
3. Run the grinder until it is empty.

Tip; go to the service menu: **2.7 Hardware test / Outputs / IM1.** Press recipe key 11 until the coffee grinder is empty (the speed increases).

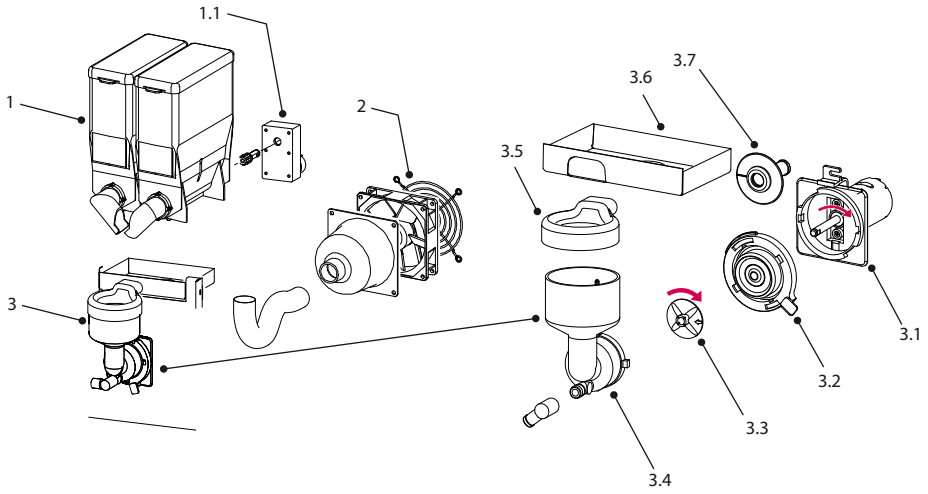
4. Lift the bean canister off the coffee grinder and remove the coffee beans.
5. Place 70 g GRINDZ™ (2x content of the cover) in the bean canister.
6. Grind the GRINDZ™ with the grinder and collect the ground product.
7. Grind approx. 6 shots of coffee to ‘flush’ the GRINDZ™ residue out of the grinder housing.

3.7 Instant group

The instant product (ingredient) is pushed out of the canister [1] by a worm screw and falls via the dispensing nozzle into the mixer unit [3.4]. At the same time, hot water is dispensed into the mixer unit. The instant product and the water are mixed together by the mixer impeller [3.3] driven by the mixer motor [3.1] running at 10.700 rpm . The drink flows via the drink outlet into the cup.

Most of the water vapour given off during the mixing is collected by the vapour drain ring [3.5] and extracted via the extraction tray [3.6] by the fan [2]. The instant residue is collected by the extraction tray. The extraction tray can be easily removed (for cleaning) by dismantling the mixer unit. This largely prevents water vapour getting into the canister outlet and the ingredient becoming moist.

Major components		Art. no.	Technical data
1. Instant canister			
	1.1 Ingredient motor	02906	24Vdc / 130 RPM
2. Extraction System			
3. Mixer group serie 247			
	3.1 Mixer motor	03252	24Vdc / 10.700 RPM
	3.2 Mounting ring cpl	03253	
	3.3 Mixer rotor	03254	
	3.4 Mixer bowl	03255	
	3.5 Extraction ring	03257	
	3.6 Extraction drawer	1001052	
	3.7 Water inlet adapter	02247	



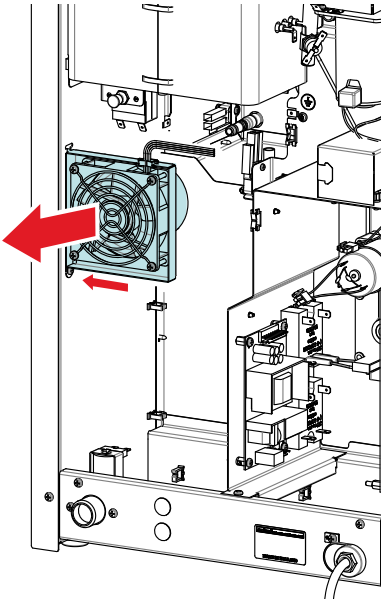
3.7.1 Ventilation mixer group

The fan on the rear side of the machine ventilates the mixer group.

The fan is easy to remove by turning the screw underneath.

The fan speed can be adjusted in the service menu:

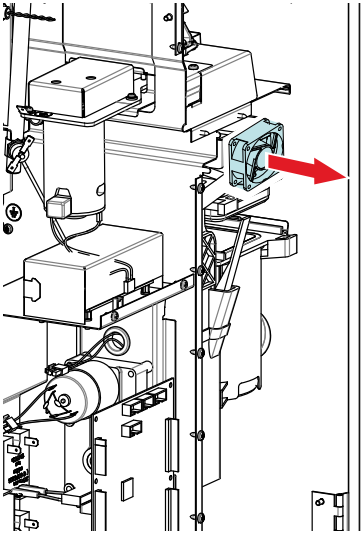
```
2.4 Settings
    └── 2.4.05 Ventilator
            ├── Fan time
            ├── Fan speed 1
            └── Fan speed 2
```



3.7.2 Ventilation waste bin

The fan on the side of the machine ventilates the waste bin.

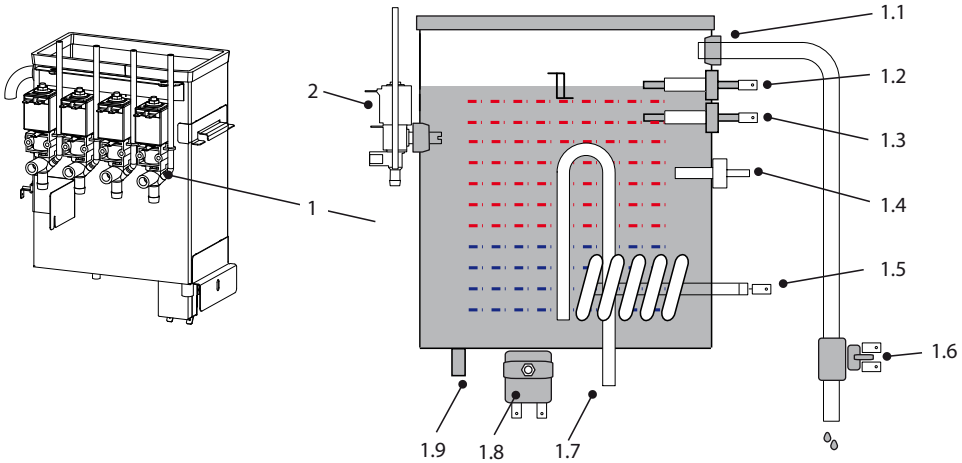
The fan runs as long as the machine is switched on.



3.8 Boiler system

Turn on the device using the ON/OFF switch. The display will light up. The magnetic valve [1.7] will open and the hot water reservoir [1] will be filled to the maximum level electrode [1.2]. The heating element will be switched on when the minimum level electrode [1.3] is in the water. As soon as the NTC sensor [1.4] measures the set temperature, the heating element [1.6] will be switched off.

Major parts	Technical data	Material
1. Boiler system	3 Litre	st.st.
1.1 Overflow tube		
1.2 Maximum level electrode		st.st.
1.3 Minimum level electrode		st.st.
1.4 Temperature sensor NTC		st.st.
1.5 Heating element	230V 2200W	st.st.
1.6 Steam thermostat	230V 16A	
1.7 Boiler inlet		st.st.
1.8 Dry boil protection	230V 16A	
1.9 Boiler drain		
2. Dispensing valve	See 3.8.1 Dispensing valve	



Level regulation

When a drink is being dispensed the water level drops and the maximum level electrode [1.2] is released; the inlet valve [1.7] (2.5 litres/min.) opens and immediately refills the reservoir until the maximum level [1.2] is reached again. If the water level falls under the minimum level electrode [1.3] during operation, the operating panel display will show [*boiler filling*]. If the supply of water is not restored within 90 seconds, the display will show the error message [E3 level error] and shut off the inlet valve [1.7].

Temperature regulation

The heating element [1.5] is turned on when the water temperature falls below the temperature setting and the minimum level electrode [1.3] registers water. The temperature in the water reservoir is measured using an NTC precision sensor [1.4] mounted on the outside wall of the reservoir.

The water temperature also drops when drinks are dispensed. To avoid the temperature regulator from responding too late, the heating element is switched on as soon as the inlet valve [1.7] opens and cold water is added. The heating element [1.5] switches off again as soon as the inlet valve shuts off. The heating element always switches off when the maximum boiler temperature of 99˚C is reached.

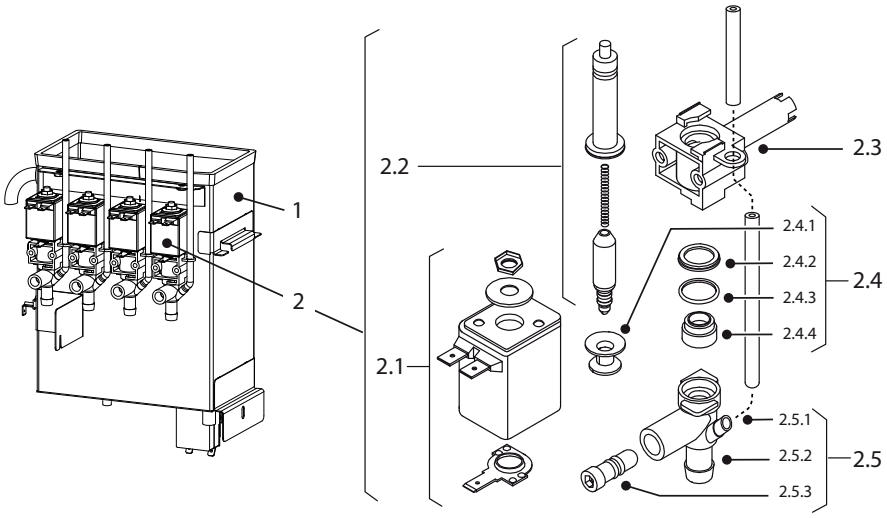
Steam thermostat

The solid state relay (SSR) is secured by a steam thermostat [1.6] which is build in line with the overflow tube [1.1] from the boiler. The steam thermostat contact is in series with the solid state. This thermostat prevents the boiler from boiling empty when the solid state breaks down in a operating condition. The thermostat switches the heating element OFF when steam escapes from the boiler, after 8 minutes Error E21 will occur. The thermostat must be manually reset.

3.8.1 Dispensing valves

After a drink has been selected one of the dispensing valves [DV] opens and lead the hot water to the brewer or mixer system. The flow rate of each valve is adjusted by means of the adjusting screw [2.5.3] on the valve. The outflow quantity is determined by the time that the valve is opened. If the valve closes, the output [2.5.2] aerated [2.5.1] so that the supply hose to the brewer and mixer are always completely emptied.

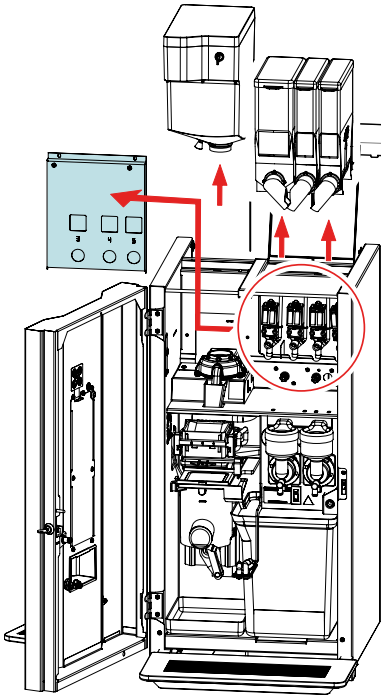
Major parts			Technical data	Materiaal
1. Water boiler			3 Liter	AISI 316
2. Dispensing valves			art.no. 03250	
	2.1 Coil		24Vdc	
	2.2 Core			
	2.3 Valve housing (inlet)			PSU
	2.4 Seal set		art.no. 99673	
		2.4.1 Cup seal		VMQ
		2.4.2 Plastic ring		PVDF
		2.4.3 O-ring		VMQ
		2.4.4 Plastic seat		PVDF
	2.5 Outlet piece		bayonet connection	PSU
		2.5.1 Aeration	tube	VMQ
		2.5.2 Outlet	to brewer /mixer(s)	PSU
		2.5.3 Adjusting screw	see 3.8.3 Calibrating	PSU



3.8.2 Removing / replacing

The hot water dispensing valves are accessible by dismantling the cover behind the ingredients canisters.

1. Switch off the machine.
2. Drain the water heater with the drain hose. Attention: hot water.
3. Take the coffee- and instant canisters from the machine and remove the back cover.
4. Gently loosen off the wiring and hoses and gently pull the valves out of the silicone grommets.



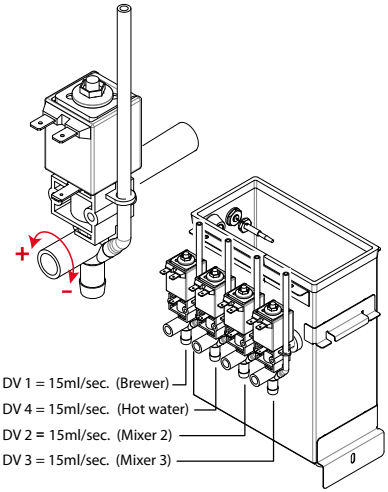
3.8.3 Calibrating

In the unlikely event that one of the valves needs replacing, it should be calibrated to one of the dispensing speeds given the figure on the right after it has been fitted.

When calibrating valves, use the special **Valve Calibration** menu by opening the **Service Menu** and navigate to **2.7 Hardware Test / 2.7.2 Calibrating Valves**.

1. Place a empty measuring cup with a minimum volume of 250ml under de drink outlet.
2. Select the valve (DV) which need to be calibrate and press recipe button 11 (for 1 sec.) to open the relevant valve for 10 seconds.

   Before calibrate the Brewer valve DV1 extent the hot water connection so the water can flow directly info the measuring cup.
3. Set on the basis of the measured quantity the adjusting screw on to 150 ml.



4. MENU STRUCTURE

4.1 The operator / service menu

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

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

This chapter describes the various settings that can be changed by **trained, authorised service personnel**. How you gain access to the **service menu** is described below. Once in the service menu, the control panel has the following functions:

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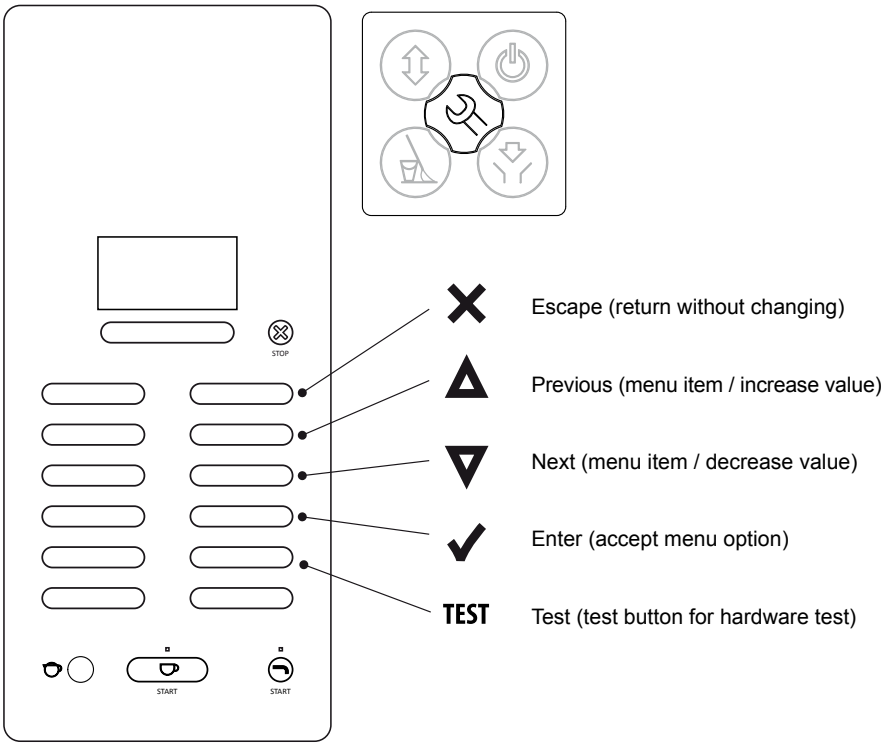
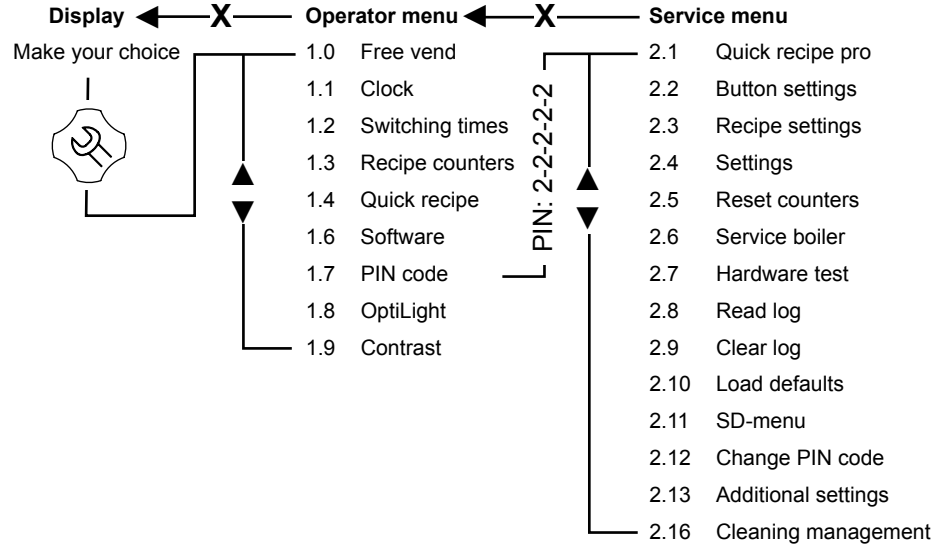


- Menu items are connected to each other in a ‘loop’.
- Exit the Operator menu; press the X key 1x.
- Exit the Service menu; press the X key 2x.
- After exiting the service menu, a long peep signal follows as a sign that changed settings are being stored in the memory.
- If the service menu has to be opened again within 5 minutes, the machine will not ask for a PIN code again.

Menu overview:



4.2 The operator menu

Operator menu					
Main item	Sub-item		Range	Set	Description
1.0 Free vend			yes-no	yes	Set the machine for free or paid vending.
1.1 Clock	Time		HH:MM		Set the clock to the correct local time.
	Date		DD-MM-YYYY		Set the clock to the correct local date.
1.2 Switching times	Mo-Fri	Mo-Fri1	Machine stand-by	On time Off time	**Stand-by**: blocks keys and switches off. Set the time (max. 3 timers) when the machine must be in operation. When the timer switches the machine off it automatically goes into **stand-by** and/ or **energy mode** (if activated).
		Mo-Fri 2			
		Mo-Fri 3			
	sat	sat 1	Stand-by	On time Off time	
		sat 2			
		sat 3			
	sun	sun 1	Stand-by	On time Off time	
		sun 2			
		sun 3			
	Energy save mode	Active	yes-no	yes	**Energy save mode active**: after the set time the machine goes to power save (sleep mode) and uses less energy. The product keys remain active but the boiler cools down in steps of 5°C. When a product is chosen, the machine 'wakes up' and after a short warm-up period is ready for operation again.
		Time	15-240 min.	30 min.	
		LCD	yes-no	yes	Backlight LCD display during energy save mode.
		OptiLight	0-100%	15%	OptiLight during energy save mode. 0=off
		Boiler temp.	off / 60-80°C	off	Boiler temperature during power save.

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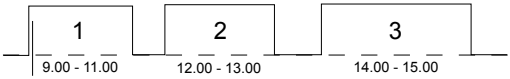
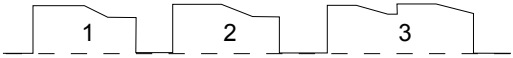
Example:

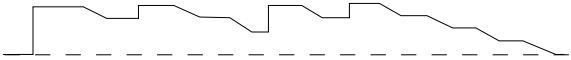
Three switching times set
Machine automatically switches from Stand-by to ON at 9 am. At 11am back to Stand-by, etc., etc.
During stand-by the key panel is switched off and the boiler temperature drops to the set stand-by temperature (menu 2.4 Settings / Stand-by temp / off - 60-80°C (by default the stand-by temp is set to 'off')



Three switching times set & Energy save mode activated.
When the machine is ON and it is not in use, it switches to power save after 30 min.
The boiler temperature decreases by 5°C every 30 minutes. If a product is chosen after 2 hours, the machine springs back into life. In this way, less energy is used if the machine is switched on but is used little or if someone forgot to switch it off.



Energy save mode activated (no switching times set)
If there is no dispensing, the machine switches to power save after 30 min. The boiler temperature decreases by 5°C every 30 minutes. If a product is chosen after 2 hours, the machine springs back into life. In this way, less energy is used if the machine is switched on but is used little or if someone forgot to switch it off.



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Operator menu continued...					
Main item	Sub-item		Range	Set	Description
	Recipe 1	Total	cups		Total count per recipe (from free till jugs).
		Free	cups		Number of drinks free
	Recipe 12	Paid price	cups		Number of drinks paid price
		Jug	cups		Number of drinks dispensed in jug
1.3 Recipe counters	Recipes total	See above	cups		Total count for all recipes with the same subdivision as above
	service counters	Rinse			Rinse programme counter
		Clean			Cleaning programme counter
	Reset counters				Reset all counters if activated
	Save counters 				Copy your counter readings to an SD card - Place an SD memory card in the slot - Press enter; save as: file.CNT - Press Enter → please wait → saved - Remove the SD card - Place the SD card in your computer and open the file.CNT with notepad or Word pad. Error messages: SD card error: lock function on SD card ON No SD card present: no SD card inserted
1.4 Quick recipe	Recipe name 1	Cup volume	50-200 ml	120 ml	Here you can easily set the volume and strength of coffee, milk, sugar, cocoa yourself for each recipe (drink key). Only the ingredients for the recipe concerned are visible.
		Coffee (1)	-20 / +20%	0%	
		Topping (3)	-20 / +20%	0%	
	Recipe name 12	Cocoa (4)	-20 / +20%	0%	
		Sugar (5)	-20 / +20%	0%	
1.6 Software	Software				Software version Vx.xx.xxx Model file *.MDD Recipe file *.RCD Laguage file *TLF Software version ANILCD Vx.xx.xxx
	Hardware				Main board Rev 1 Interface board Rev 0
1.7 PIN-code			2-2-2-2-2		Pin code is press the 2 key 5x
1.8 OptiLight	Red		0-100%	0%	Set your LED lighting colour yourself by setting the colours red, green and blue. When Random is set, the LED mood lighting cycles through the whole colour spectrum at the set time. 0= off
	Green		0-100%	0%	
	Blue		0-100%	100%	
	Random		0-60 min.	10 min.	
1.9 Contrast			0-100%	25%	Set the contrast of the LCD display
1.10 Cup sensors	Cup sensor left		yes-no		yes; cup sensor active no; cup sensor not active
	Cup sensor middle		yes-no		
	Cup sensor right		yes-no		

4.3 The service menu

Service menu					
Main item	Sub-item		Range	Set	Description
2.1 Quick recipe Pro	Recipe name 1	Cup volume	50-200 ml	120ml	Use this for setting the volume and strength of coffee, milk, sugar and cocoa easily per recipe (drink key). Only the ingredients applicable to the recipe are shown.
		Coffee (1)	0 - 10,00 s		
		None (2)	0 - 10,00 s		
		Topping (3)	0 - 10,00 s		
		Chocolate (4)	0 - 10,00 s		
	Recipe name 12	Sugar (5)	0 - 10,00 s		
2.2 Button settings	Button 1	Recipe	Coffee ↓ list ↓		Change any recipe buttons here that standard factory settings. All settings that correspond to selected recipes are automatically loaded.
		Recipe active	Yes/no	Yes	Use this to place the product concerned out of service.
		Price	0,05-2,00	0,10	For paid dispensing a price can be set here for each product button.
		Cup volume	50-240ml	120ml	Set the desired cup volume here. All other parameters (e.g. coffee dosage) can be adjusted automatically. This parameter is coupled to the quick recipe cup volume!
	Button 12	Attention; change brewer parameters when cup volumes are greater than >120ml See table in chapter 2 menu 2.3			
		Multicup	0-10	0	Set the number of cups that should be dispensed when the key switch is in the jug setting.
		Key switch	0-1-2-3-4		Set the required operation of the key switch. See table 2
		Push & Hold	Yes-No	No	If set to yes: pressing this button starts the hot- /cold* water dispensing and releasing it stops the hot water dispensing. *Cold water is optional
		Drip time	0-10 sec.	2 sec.	The length of time that the product continues to run from the brewer or mixer. After this time has elapsed a new drink selection can be made.

OptiLight colour recipes

OptiLight	red	green	blue		OptiLight	red	green	blue
Red	100%	0%	0%		Light blue	0%	100%	100%
Green	0%	100%	0%		White	100%	100%	100%
Blue	0%	0%	100%		Pink	100%	0%	10%
Yellow	100%	50%	0%		Orange	100%	15%	0%
Purple	100%	0%	100%					

Table 1

Key switch

Software menu parameter				Key switch	
Key switch	Multicup	Free vend	Payment system G13 / MDB	(off)	(on)
0	0	Yes	n.a.	free cup	free cup
		No	Yes	paid cup	free cup
			No	free cup	free cup
	>1	Yes	n.a.	free jug	free jug
		No	Yes	paid jug	free jug
			No	free jug	free jug
1	0	Yes	n.a.	free cup	free cup
		No	Yes	paid cup	free cup
			No	free cup	free cup
	>1	Yes	n.a.	free cup	free jug
		No	Yes	paid cup	paid jug
			No	free cup	free jug
2	0	Yes	n.a.	not possible	free cup
		No	Yes	not possible	free cup
			No	not possible	free cup
	>1	Yes	n.a.	not possible	free jug
		No	Yes	not possible	paid jug
			No	not possible	free jug
3	0	Yes	n.a.	free cup	free cup
		No	Yes	paid cup	free cup
			No	free cup	free cup
	>1	Yes	n.a.	free cup	free jug
		No	Yes	paid cup	free jug
			No	free cup	free jug
4	0	Yes	n.a.	free cup	free cup
		No	Yes	paid cup	free cup
			No	free cup	free cup
	">1 (2)"	Yes	n.a.	free jug	free jug
		No	Yes	paid jug	free jug
			No	free jug	free jug

Table 2

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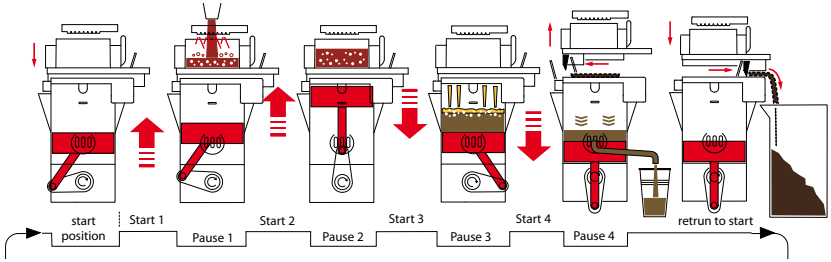
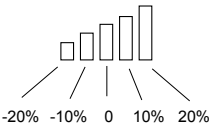
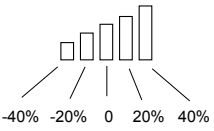
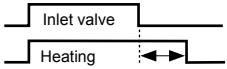
Service menu continued ….					
Main item	Sub item	Sub	Item	Range	Description
2.3 Recipe setting	<Recipe name > 1	Unit 1	DV 1 WT	0,0-30,0 s	Delay time Water 1
			DV 1	0-100 ml	Dispensing amount Water 1 (Brewer)
			Rinse 1 WT	0,0-20,0 s	Delay time Rinsing Water 1
			Rinse 1	0-15 ml	Dispensing amount Rinsing Water 1 Automatically deducted from Water 1
			Ingredient 1 WT	0,0-30,0 s	Delay time coffee beans 1
			Ingredient 1	0,0-50,0 s	Product dispensing time coffee beans 1
			Ingredient 2 WT	0,0-30,0 s	Delay time Ingredient 2
			Ingredient 2	0,0-50,0 s	Product dispensing time Ingredient 2
			Start brewer	0,0-30,0 s	1st start time brewer
			Pause 1 brewer	0,0-30,0 s	1st pause time brewer
			Start 2 brewer	0,0-30,0 s	2nd start time brewer
			Pause 2 brewer	0,0-30,0 s	2nd pause time brewer
			Start 3 brewer	0,0-30,0 s	3rd start time brewer
	<Recipe name>12		Pause 3 brewer	0,0-30,0 s	3rd pause time brewer
			Start 4 brewer	0,0-30,0 s	4th start time brewer
			Pause 4 brewer	0,0-30,0 s	4th pause time brewer
		Unit 2	DV 2 WT	0,0-30,0 s	Delay time Water 2
			DV 2	0-100 ml	Dispensing amount Water 2
			Rinse 2 WT	0,0-20,0 s	Delay time Rinsing Water 2
			Rinse 2	0-15 ml	Dispensing amount Rinsing Water 2 Automatically deducted from Water 2
			Ingredient 3 WT	0,0-30,0 s	Delay time Ingredient 3
			Ingredient 3	0,0-50,0 s	Product dispensing time Ingredient 3
			Ingredient 4 WT	0,0-30,0 s	Delay time Ingredient 4
			Ingredient 4	0,0-50,0 s	Product dispensing time Ingredient 4
			Mixer 2 WT	0,0-30,0 s	Delay time Mixer 2
			Mixer 2	0,0-50,0 s	Mixing time Mixer 2



EN

Service menu continued…					
Main item	Sub item	Sub	Item	Range	Description
2.3 Recipe setting (continued…)	<Recipe name> 1 … <Recipe name>12	Unit 3	DV 3 WT	0,0-30,0 s	Delay time Water 3
			DV 3	0-100 ml	Dispensing amount Water 3
			Rinse 3 WT	0,0-20,0 s	Delay time Rinsing Water 3
			Rinse 3	0-15 ml	Dispensing time Rinsing Water 3 Automatically deducted from Water 3
			Ingredient 5 WT	0,0-30,0 s	Delay time Ingredient 5
			Ingredient 5	0,0-50,0 s	Product dispensing time Ingredient 5
			Ingredient 6 WT	0,0-30,0 s	Delay time Ingredient 6 (optional)
			Ingredient 6	0,0-50,0 s	Product dispensing time Ingredient 6 (optional)
			Mixer 3 WT	0,0-30,0 s	Delay time Mixer 3
			Mixer 3	0,0-50,0 s	Mixing time Mixer 3
		DV 4 WT		0,0-30,0 s	Delay time Water 4
		DV 4		0-100 ml	Dispensing amount Water 4 (Hot water dispensed)
		DV 5 WT		0,0-30,0 s	not used
		DV 5		0-100 ml	
		DV 6 WT		0,0-30,0 s	
		DV 6		0-100 ml	
		Range ingredient	Strength Coffee	0-50%	Use the strength setting item to add an ingredient to the strength adjustment. Ingredient strength adjustment: 0= off / > 1 = on Example: [coffee] 20%  Example: [cocoa] 40% 
			Strength decaf	0-50%	
			Strength Topping	0-50%	
			Strength Chocolate	0-50%	
			Strength Sugar	0-50%	
			Strength Ingrediënt 6 Option	0-50%	
		KW3 WT		0,0-30,0 s	Delay time Water KW3
		KW3		0-100 ml	Dispensing amount from an extra inlet valve Water KW3 (Cold Water option)

Service menu continued…

Main item	Sub item	Item	Range	Set-ting	Description
2.4 Settings	Language	English			Language choice display. Ex factory setting English.
		Nederlands (Dutch)			
		Deutsch (German)			
		Français (French)			
		Svenska (Swedish)			
		Norsk (Norwegian)			
		Suomi (Finnish)			
		Dansk (Danisch)			
	Temperature	Temp. boiler	70-97°C	95°C	Boiler temperature
		Hysteresis	2-10°C	2°C	Temperature drop, after which boiler must reheat
		Output block	70-90°C	78°C	Boiler temperature disables dispensing. Display: [Out of order, boiler heating]
		Output release	70-90°C	85°C	Boiler temperature allows dispensing again
		Stand-by	60-80°C	60°C	Boiler temperature during stand-by
		Extended Heating	0-5 sec	1 sec	To maintain the optimum boiler temperature the heating element and inlet valve switch on simultaneously. Set the delay of the element here after the inlet valve is closed. 
	Display	Show clock	Yes/no	No	Show clock in display
		Show date	Yes/no	No	Show date in display
	Use beeper		Yes/no	Yes	Sound signal on or off
	Ventilator	Fan time	0-300 sec.	60 s.	Duration of Fan speed 2 after dispensing
		Fan speed 1	40-100%	40%	Fan speed when resting
		Fan speed 2	40-100%	70%	Fan speed during dispensing

Service menu continued ...						
Main item	Sub-item	Item		Range	Set	Description
2.4 Settings (continued...)	Coin system	None				No payment system connected
		G13	Coin channel 1 ... Coin channel 6	0-100.00 + Token	€ 0.05 € 0.10 € 0.20 € 0.50 € 1.00 € 2.00	Coin value per channel setting. Resp. € 0.05 to € 2.00. 0.00 = free TOKEN = coffee coin.
			Single vend	yes-no	yes	Yes: any excess money inserted is not kept for the following drink. No: is kept for the following drink.
			Max coin acception	€ 0.05-100.00	€ 2.00	Insertions higher than, for example, € 2.00 will be refused and returned via the coin groove of the coin mechanism. Set to the highest recipe product price.
			Point position	0-2	2	The position of the decimal point in the amount.
			Show credit	yes-no	yes	Display credit (Cr.) on the display
		MDB	Single vend	yes-no	yes	Yes: any excess money inserted is not kept for the following drink. No: is kept for the following drink.
			Max coin acception	€ 0,05-100,00	€ 2,00	Insertions higher than, for example, € 2.00 will be refused and returned via the coin groove of the coin mechanism. Set to the highest recipe product price.
			Point position	0-2	2	The position of the decimal point in the amount.
			Show credit	yes-no	yes	Show credit (Cr.) on the display.
			Purchase obligation	yes-no	yes	Whether money is returned or not when the return handle is pressed.
			Pre pay	yes-no	no	Whether or not a drink selected can be made after sufficient money has been inserted.
			Cash and Card	yes/no	no	yes: when Y-cable is used for coin- and card system on one MDB connection
			External release?	yes/no	no	yes: the machine can be released by using a potential-free contact (pulse).
			External release time	0-255 sec.	20 s.	Set the time that the machine may be released

# Coin channel settings foreign currencies		Danish Krone	Swedish Krone	Norwegian Krone	South African Rand	Jordanian Dinar
		DK	SKR	NOK	ZAR	JOD
	CH 1	0,50	0,50	1,00	0,50	0,50
	CH 2	1,00	1,00	5,00	1,00	1,00
	CH 3	2,00	5,00	10,00	2,00	25,00
	CH 4	5,00	10,00	20,00	5,00	50,00
	CH 5	10,00	1,00	10,00	5,00	1,00
	CH 6	20,00	0,00	20,00	0,00	0,00
	Max coin accep.	10,00	10,00	10,00	2,00	50,00

Service menu continued ...					
Main item	Sub-item	Item	Range	Set	Description
2.4 Settings (continued...)	I/0 reset counters		yes-no	no	Add menu item Reset counters to the operator menu.
	I/0 Quick recipe		yes-no	no	Menu item SnelRecept aan het operatormenu toevoegen
	Drip tray signal		yes-no	yes	Deactivate the drip tray sensor warning in the software.
	Demo modus		yes-no	yes	This function can be used when the machine is in a showroom or at a trade fair. The machine does not then need to be connected to a water supply. In the display, DEMO is shown on the bottom line. Keys, LEDs and the Display operate normally.
	Stop button		yes-no	yes	If this function is standard set to yes. To deactivate the stop button, set no
	Direct choice		yes-no	no	If this function is set to Yes, the chosen product will be started immediately, without the start key being pressed. Strength setting is possible.
	Free vend		yes-no	yes	Set the machine for free or paid vending.
	I/0 Free vend		yes-no	yes	Add/remove menu item 1.0 Free vend to the operator menu.
	Cup sensors	Cup sensor left	yes - no	yes	yes; cup sensor active no; cup sensor inactive
		Cup sensor middle	yes - no	yes	
		Cup sensor right	yes - no	yes	
		I/0 Cup sensors	yes - no	yes	Add/remove menu item 1.10 Cup sensors to the operator menu.
	Optilight brewing process	blink during process	yes - no	no	Blinking OptiLight during dispensing a drink
		blink rate	0,1 - 10,0	0,3	blinking rate setting
		Optilight	R G B	red	coulour setting during blinking

Service menu vervolg ...					
Hoofd item	Sub item	Item	Bereik	Set	Beschrijving
2.5 Reset counters	Service counters	Rinse counter?			Reset rinse counter.
		Clean counter?			Reset cleaning counter.
	Recipe counters	Recipe counter 1 - 12			Reset recipe counters for each recipe.
		Reset total counter			Reset total counters.
	Reset all counters				Reset all counters at once.
2.6 Service boiler	Service moment	Cups	0-50.000	20.000	After reaching the set service moment (cups), the message Service boiler appears in the display on switching on. See also Chapter 6 Service.
	Service counter	Cups		20.000 ↓ 0 ↓ -20.000	The total number of vended cups is counted down here. It can be checked here at any time how far away the machine is from periodic maintenance (boiler descaling or water filter replacement). When the counter reaches 0 it continues with a negative count.
	Reset service counter				After periodic maintenance has been carried out (boiler descaled or filter replaced) the service counter must be set to zero.

EN

Water hardness table

Water quality	Hardness					Scale indicator cups
	°D	°F	°K	mmol/l	mgCaCo3/l	
Very hard	18-30	32-55	11-18	3,2-5,3	321- 536	5000
Hard	12-18	22-32	7-18	2,2-3,2	214-321	12.500
Average	8-12	15-22	5-7	1,4-2,2	268-214	20.000*
Soft	4-8	7-15	2-5	0,7-1,4	72-268	40.000
Very soft	0-4	0-7	0-2	0- 0,7	0-72	0 = uit

Service menu continued ...				
Main item	Sub-item	Sub	Range	Description
2.7 Hardware test	Inputs	Temperature	Boiler temp	Shows the status of the sensors/switches concerned.
		Level sensors	High Yes/no Low Yes/no	
		Drip tray sensor	Yes/no	
		Waste bin	Yes/no	
		Door switch 1	Yes/no	
		Brewer switch	Yes/no	
		Key switch	Yes/no	
		Door switch 2	Yes/no	
		Key panel		
		Service panel		
	Outputs **Test by holding in recipe button 11.** # During test the display shows the Nominal current (mA). When the Nominal current of a output rises above the set current * mentioned output will be shut off.	KW1	600mA	Inlet valve (Boiler)
		DV1		Dispenser valve 1 (Brewer)
		DV2		Dispenser valve 2 (Mixer 2)
		DV3		Dispenser valve 3 (Mixer 3)
		DV4		Dispenser valve 4 (Hot water)
		DV5		Dispenser valve 5 (n/a)
		DV6		Inlet valve 6 (n/a)
		IM1 #	600mA	Grinder motor 1 (Canister 1)
		IM2 #		Ingredients motor 2 (Canister 2)
		IM3 #		Ingredients motor 3 (Canister 3)
		IM4 #		Ingredients motor 4 (Canister 4)
		IM5 #		Ingredients motor 5 (Canister 5)
		IM6 #		Ingredients motor 6 (Canister 6)
		BM #	1500mA	Brewer motor
		MM2 #	2000mA	Mixer motor 2
		MM3 #		Mixer motor 3
		Ventilator	200mA	Ventilator
		LED's		LED's
		KW3		Inlet valve (Optional Cold water)
		OptiLight	red	
			green	
			blue	

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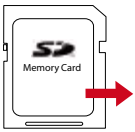
Service menu continued….				
Main item	Sub item	Sub	Range	Description
2.7 Hardware test (continued...)	Calib. valves **Test by holding in recipe button 11 (for 1 sec.).** **The relevant valve wil be opend for 10 seconds.**	DV1	15 ml / sec	Calibrate to 150 ml (10 sec x 15 ml)
		DV2	15 ml / sec	
		DV3	15 ml / sec	
		DV4	15 ml / sec	
		KW3	35 ml / sec	Cold water inlet valve cannot be calibrated (fixed flow)
		Brewer Calibration		From software V5.17.1884 (dec. 2015) the machine determines every 100 cups an automatic correction factor to correct deviations in the motor brewer speed. With this correction factor the brewer stop positions are automatically adjusted. To activate this function manually press the TEST button.
	Operating hours	Brewer/Mixer(s)	Brewer	Day - Hour : Min. 0 - 00 : 00 Number x activated _ _ _ _ x
			Mixer 2	
			Mixer 3	
		Ingredient motor(s)	IM 1 (coffee)*	
			IM 2 (decaf)	
			IM 3 (Topping)	
			IM 4 (Cocoa)	
			IM 5 (Sugar)	
			IM 6 (option)	
			KW1 (inlet valve)	
			KW3 (cold water)	
		Valves	DV1 (brewer)	
			DV2 (mixer 2)	
			DV3 (mixer 3)	
			DV4 (hot water)	
			DV5 (option)	
			DV6 (option)	
		Element	Element 1	
			Element 2	

**OptiFresh = ingredient motor 1*
**OptiFresh Bean = grinder*

Service menu continued ...			
Main item	Sub-item	Item	Description
2.8 read log			Last 20 error messages including time and date will be saved
2.9 Erase log	Are you sure?		Log will be erased
2.10 Load defaults # See Section 1.1 Model codes	Model # OF1 OF4	Type code 2F1B 2BAB	The defaults must be loaded when a new circuit board is installed. When loading the defaults, the OptiFresh NG model stated on the type plate must be set. Only after confirming the question No? push X / Yes? push V' will the right model settings be loaded. **Note:** ● When you confirm this setting, all factory settings are loaded into the control and all changed programmed values are lost. ● After loading the defaults, the PIN code is 2-2-2-2-2-2 again and the language is set to English again. Change as necessary.
2.11 SD menu Before loading or saving data, place an empty SD memory card in the card reader. This is located behind the stainless steel panel on the inside of the door.	Load data 	Personal settings	With this menu item **Personal settings** can be loaded into the machine using an SD memory card (uploaded). This file contains the (changed) personal settings for the menus; **2.4 Settings / 2.6 Service boiler / 2.13 Additional settings / 2.16 Clening management**. The data file (2Fxxxx00.MDU) must be on the SD card.
		Language	With this menu item, a **non-standard language** set can be loaded into the machine. The data file (xxxxxx.TLF) must be on the SD card.
		Recipe	With this menu item **Personal recipes** can be loaded into the machine using an SD memory card (uploaded). This file contains the (changed) personal recipes for the menus; **2.1 Quick recipe / 2.2 Button settings / 2.3 Recipe settings**. The data file (2Fxxxx00.RCU) must be on the SD card.
		Counters	With this menu item **Recipe counters** can be loaded into the machine using an SD memory card (uploaded). There must be a data file (2Bxxxx00.CNT) on the SD card. This file contains all recipe counters from the **1.3 Recipe counters** Use this function only when, for example, a new control must be installed in the machine and the counters must be 'moved' from the old control to the new one. Do not misuse this function!
		Operating hours	With this menu item **Operating hours** can be loaded into the machine using an SD memory card (uploaded). There must be a data file (2Bxxxx00.TMR) on the SD card. This files contains all the operating hours from the menu **2.7 Hardware test / operating hours**. Use this function only when, for example, a new control must be installed in the machine and the counters must be 'moved' from the old control to the new one. Do not misuse this function!

EN

Service menu continued ...

Main item	Sub-item	Item	Description
2.11 SD menu (continued....)	Save data 	Personal settings	With this menu item **Personal settings** can be saved on an SD memory card and/or copied to another machine. All changed settings made in the menus; **2.4 Settings / 2.6 Service boiler / 2.13 Additional settings / 2.16 Cleaning management** are saved in a data file (2Fxxxx00.MDU) on the card.
		Recipes	With this menu item **Personal recipes** can be saved on an SD memory card and/or copied to another machine. All changed settings made in the menus; **2.1 Quick recipe pro / 2.2 Button settings) / 2.3 Recipe settings** are saved in a data file (2Fxxxx00.RCU) on the SD card.
		Counters	With this menu item **Recipe counters** (personal recipes) can be saved on an SD memory card. All counter readings from the menu; **1.3 Recipe counters** are saved in a data file (2Fxxxx00.CNT) on the SD card. **Note;** after the counters have been saved you will be asked if the counters in the machine must be reset. Press Esc. (X) for NO, press Enter (V) for YES.
		Log	With this menu item the **Log** (error messages overview) can be saved on an SD memory card. All error messages from the menu; **2.8 Read log** are saved in a data file (2Fxxxx00.LOG) on the SD card. **Note;** Depending on your settings, Windows can see this file as a TXT file.
		Operating hours	With this menu item the **Operating hours** can be saved on an SD memory card. All operating hours from the menu; **2.7 Hardware test / Operating hours** are saved in a data file (2Fxxxx00.TMR) on the SD card. **Note;** after the operating hours have been saved you will be asked if the counters in the machine must be reset. Press Esc. (X) for NO, press Enter (V) for YES.
	Remove SD-card	yes > no	When confirmed with yes the SD card can safely removed
2.12 Change PIN code	New PIN code	Repeat PIN code	With this menu item the PIN code can be changed. Use only the keys 1 to 4. The complete service menu is secured behind this PIN code. This PIN code prevents unintentional changes to the machine settings by untrained personnel. • The factory PIN code is **2-2-2-2-2** PIN code forgotten? In the PIN code input display (operator menu item 1.7) a number is displayed on the right. Enter the associated PIN code (see the list below) to access the service menu.
			

Pin code Tabel

Nr.	Pin ode				
1	3	4	2	4	2
2	3	1	4	3	4
3	4	1	3	4	3
4	4	3	2	3	2
5	2	3	3	4	1
6	4	2	1	3	1
7	2	4	2	4	4

Nr.	Pin code				
8	2	3	2	4	1
9	2	4	3	2	3
10	3	1	3	3	2
11	1	3	3	3	2
12	1	2	4	1	3
13	4	3	1	2	1
14	1	1	1	4	2

Nr.	Pin code				
15	2	1	2	1	1
16	1	2	2	3	3
17	3	4	1	4	4
18	4	1	4	3	3
19	3	1	2	4	1
20	2	2	3	2	4

Service menu continued ...					
Main item	Sub-item	Item	Range	Set	Description
2.13 Additional settings	Waste management	Cup amount	0-1000	130	**After reaching the set total of brewer movements, dispensing is disabled and the display reads: Out of order – Waste bin full**
		Hysteresis	0-100	20	After reaching the set total of brewer movements minus the hysteresis is, the display shows: **Waste bin almost full**
		Time-out reset	0-50 sec.	15 s	The length of time that the waste bin is allowed to be removed (for emptying). When replacing it the (internal) waste bin counter is reset. Any display messages disappear.
		Waste bin sign..	Yes/no	Yes	Turns off waste bin sensor software (bypass).
	Cycle counter	xxxxx	0-99999		This Cycle counter records the number of vends the brewer has made. Tip: This counter can be reset after maintenance if the brewer has been checked.
	Reset c. counter	Reset counter?			Reset Cycle counter (Brewer)
	Service brewer		0-50.000	40.000	When the set number of (Brewer) vends is reached the display shows '**Service brewer**'.
	Reset service brewer	Reset counter?			Reset the Service brewer signal after servicing on the brewer is performed.
	Brewer open position		6,5- 10.5 s	7,5 s	To calibrate the exact brewer open position (piston complete down) after activatiing *brewer open/close* button.
2.16 Cleaning management	Rinsing	rinse mandatory	yes - no	nee	If rinsing mandatory is set to YES, the machine is locked if it is NOT rinsed after the set number of cups or days. **Out of order / rinse** After the rinse programme has been completed, the machine is released again.
		cups	0 - 5.000	0	
		days	0 - 31	1	
		Rinse via front	yes - no	ja	When rinsing via the front is set to YES, the rinse programme can be activated using the stop key on the front of the machine. Press and hold the Stop key for 10 seconds and then follow the instructions.
	Cleaning	Cleaning mandatory	yes - no	nee	If cleaning mandatory is set to YES, the machine is locked if it is NOT cleaned after the set number of cups or days. '**Out of order / clean** After the cleaning programme has been completed, the machine is released again.
		cups	0 - 5.000	0	
		days	0 - 31	7	
	Change brewer filter	change mandatory	yes - no	nee	If change mandatory is set to YES, the machine is locked if the brewer filter was NOT e changed after the set number of cups or days. After the change brewer filter programme has been completed, the machine is released again.
		cups	0 - 5.000	4000	
		days	0-31	31	

5. SOFTWARE

5.1 Memory card specs

Type: SD (Secure Digital card)
Size: 16 Mb or bigger

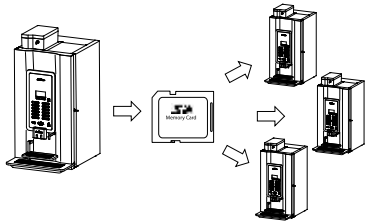
5.2 Machine setting management

The following changed settings can be saved on an SD memory card and/or copied to another machine:

- Personal settings
- Recipes

The following data maintained by the machine can be saved on an SD memory card and reloaded (e.g. when fitting a new circuit board):

- Counters
- Log
- Operating hours



See Page. 58 & 59 menu item 2.11 SD menu of this service book for further explanation.

Reading files on a computer

The following files can simply be opened on a computer.

Counter file	*.CNT
Log file	*.LOG
Operating hours file	*.TMR

Place the SD card in your computer and open the required file with notepad or wordpad. See the example

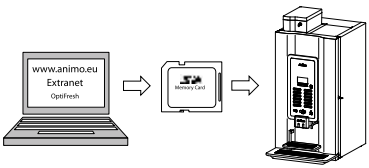
Note: Depending on your settings, Windows can see the LOG file as a TXT file.

```
Generated on 2011-01-05,
15:17:02

Button 1 (coffee)
Total:    62
Free:     62
Payed:    0
Pot:      10

Button 2 (coffee milk)
Total:    0
Free:     0
Payed:    0
Pot:      0

Button 3 (espresso)

Button 4
Button 5
Button 6
Button 7
Button 8
Button 9
Button 10

Button 11 (>none<)
Total:    0
Free:     0
Payed:    0
Pot:      0

Button 12 (hot water)
Total:    6
Free:     6
Payed:    0
Pot:      0

Totals
Total:    84
Free:     84
Payed:    0
Pot:      10

Other counters
Rinse:    75
Clean:    19
Brewer filter: 1300
Brewer total: 1299
Service:       12211
```

5.3 Software installation

New software can easily be installed on the machine. New software can be made available in the following ways:

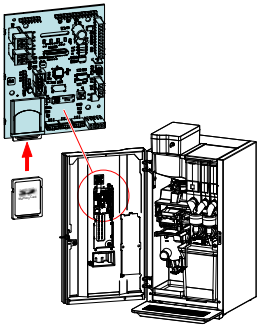
- www.animo.eu / dealer login: Extranet
- by e-mail



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

- Changed recipes
- Changed personal settings
- A non-standard language file will be overwritten by the standard language file NL/GB/DU/FR

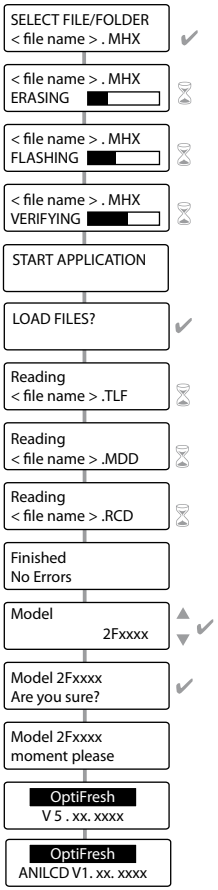
Counts, Log and operating hours will be preserved!



1. Download the OptiFresh software from the Animo extranet site.
2. Unpack the ZIP file and copy all files to an SD card.
3. Remove the cover plate on the inside of the door.
4. Insert the SD card in the card holder.
   Tip: Save any changed settings first on an SD card. This can be the same SD card as the one containing the new software. Go to service menu item 2.10 SD menu / Save data and save the required settings.
5. Switch the machine off (0).
6. Switch the machine on again (I).
7. Press the Enter key (key 10). The new software will now be installed automatically. The following procedure takes about 5 minutes.
8 Choose the appropriate model and confirm your selection with Enter.
9. The display now shows ‘Make your choice’.
10. The new software has now been installed.
11. Now reload the Personal recipes and settings saved in step 4 into the machine. Go to service menu item 2.10 SD menu / Load data and reload the saved settings back into the machine.
12. Remove the SD card from the card holder.

After installation, check the display contrast in the **Operator menu / 1.9 Contrast**

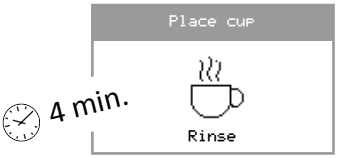
During the software installation the display can show some contrast fluctuations. This is a normal symptom because the contrast parameter is first active after the whole software is installed.



6. MAINTENANCE

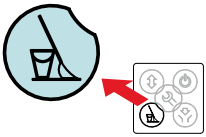
6.1 Daily rinsing program

After 1 day the display shows RINSE.
This message will disappear again after the rinsing program is executed.

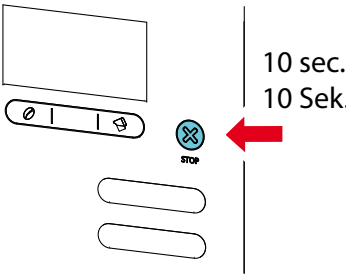


1. Activate the rinsing program [1a] and follow the instructions in the display.
2. The rinsing program can also be activated by pressing the STOP button for 10 sec. [1b].
3. Confirm with the V-key [2] to start the rinsing. The brewer and mixer unit are rinsed with clean water.

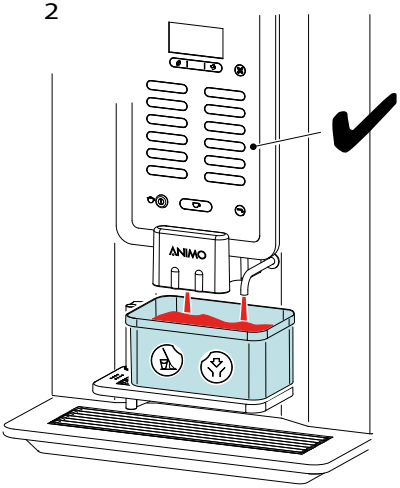
1a



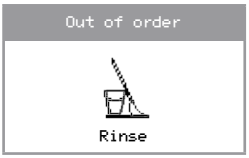
1b



2



In the **Service menu / 2.16 Cleaning management / Rinsing mandatory** (yes / no), the user can even be obliged to carry out the rinsing program. If the rinsing program is not activated the machine blocks.



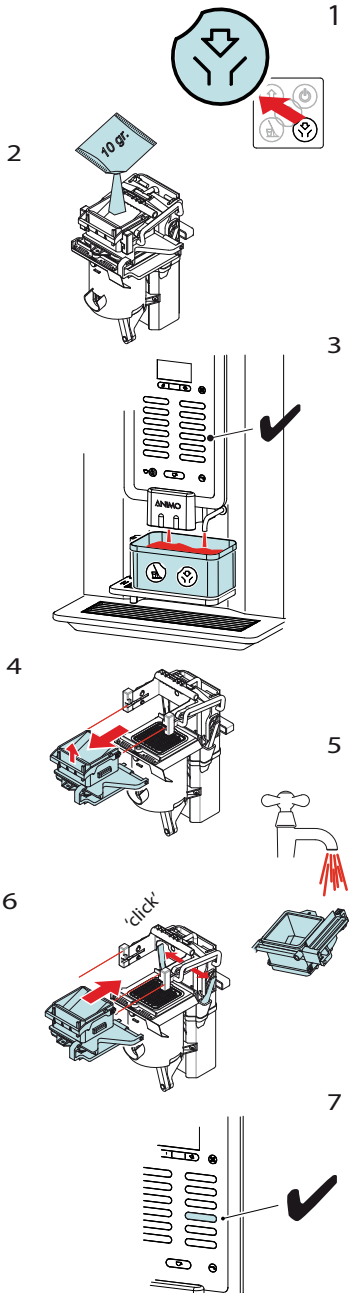
EN

6.2 Weekly cleaning program

After 7 days appears the display shows CLEANING. This message will disappear again after the cleaning program is executed.

1. Activate the cleaning program [1] and follow the instructions in the display.
2. The cleaning program for the fresh brew unit is started. By adding the coffee cleaner powder [2] the permanent filter, cylinder and piston cleaned from coffee oils.
3. Confirm with the V-key [3] when the coffee cleaner powder is added in the brewer chamber.
4. After the cleaning cycle and the rinsing program start automatically and rinses the brewer (and mixers) with clean water.
5. After the rinsing cycle the brewer chamber opens, so it can be taken out [4] and rinsed [5].
6. Place the brewer chamber [6] back in the right way (wiper in the middle).
7. Confirm with the V-key if the brewer chamber is replaced. The brewer closes.

In the **Service menu / 2.16 Cleaning management / Cleaning mandatory** (yes / no), the user can even be obliged to carry out the cleaning program. If the cleaning program is not activated the machine blocks.



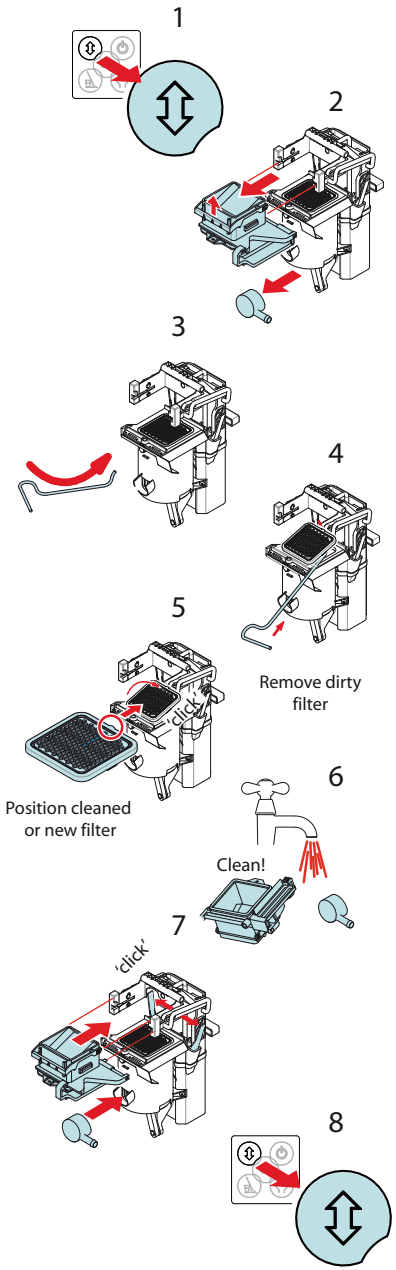
6.3 Change brewer filter

Monthly (or 4000 cups of coffee) the display shows CHANGE FILTER BREWER. This message will disappear again until the entire program is executed.

1. Activate the brewer open / close “button [1] and follow the instructions in the display. The brewer is opened so that the permanent filter can be replaced for a clean one.
2. Remove the brewer chamber and outlet [2].
3. Insert the filter removal tool [3] in the coffee spout and press the dirty filter is upwards [4] to remove.
4. Replace the permanent filter [5] for a clean one. Clean the dirty filter in the prescribed powerful liquid coffee cleaner
5. Clean [6] brewer chamber and coffee spout.
6. Place the brewer chamber [7] back in the right way (wiper in the middle).
7. Activate the “open / close” button [8] again to close the brewer.
8. The display shows the text FILTER CHANGED? No? press X / Yes? press V.

Only if ‘Yes’ is confirmed the internal counter is reset and the CHANGE BREWER FILTER instruction disappears from the display

In the **Service menu / 2.16 Cleaning management / Change Filter mandatory** (yes / no), the user can even be obliged to carry out the change brewer filter program. If the program is not activated the machine blocks.



EN

6.4 Periodic maintenance

6.4.1 Service boiler

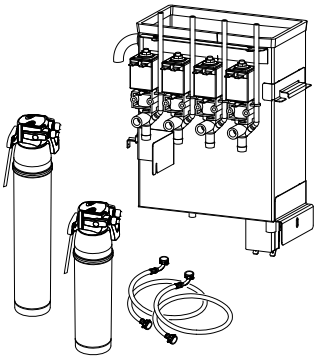
During installation of the machine the boilers service moment has been set. See service menu item **2.6 Service boiler / 2.6.1 Service moment**

During use, the drinks are counted. When the boiler service moment is reached the text [*Service Boiler*] will appear in the display.

1 / Descale Boiler
Reaching the service boiler time is an indication that the boiler need descaled. Follow the instructions in section 5.3 Descaling.

Delete after descaling the service boiler signal in the service menu: **2.6 Service boiler / 2.6.2 Reset service counter.**

2 / Replaced water filter
If a water filter is used (advice), this is the signal to replace the filter.



Always inspect the boiler on scale after replacing the water filter. If necessary carried out a descaling procedure using a small amount of descaler.

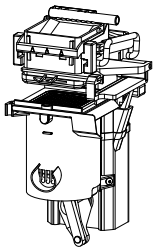
6.4.2 Service brewer

The service moment brewer is factory set. See service menu item **2.13 Other Settings / Service brewer**

During use the brewer movements are counted. When the service brewer moment is reached the text [*Service brewer*] will appear in the display.

Achieving the service brewer moment indicates that the brewer needs servicing.

- After 40,000 cycles, the permanent filter(s), wiper and brewer chamber seal must be replaced. See chapter 5.4.4
- After 80,000 cycles, a complete inspection of the fresh brew group is recommended and any worn parts must be replaced.



After the brewer maintenance reset the service brewer signal in the service menu: **2.13 Other settings / 2.13.4 Reset service brewer**

6.4.3 Service contracts

Preface

Preventative maintenance will lengthen the life cycle of the device and reduce the chance of malfunction. Before carrying out maintenance, read the safety instructions in the user manual, service manual, and recommended cleaning agents.

User manuals, service manuals and software updates can be found on the Extranet section of www.animo.eu. If you do not have access, please request your personal login code on our website.

Water filter

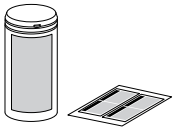
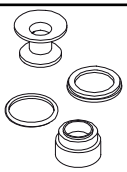
We strongly advise you to use a water softener and/or water filter if the mains water is heavily chlorinated or is too hard. This increases the quality of the drink and will ensure that you do not have to descale the device too often.

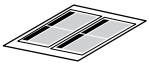
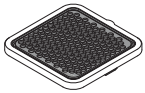
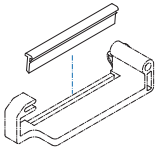
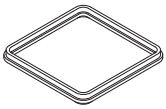
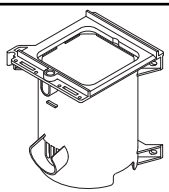
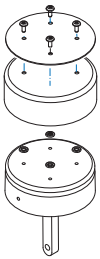
Brewer unit

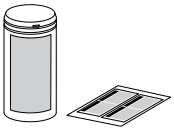
We advise to use a substitute brewer for maintenance. The removed brewer can then be repaired in the workshop before being used again during the next service.

6.4.4 Servicing

For an estimated total of < 20,000 cups a year we recommend one service a year.
For an estimated total of > 20,000 cups a year we recommend two services a year.

Service activity	Time	Product	Art.No.	OptiFresh (Bean)			
				1	2	3	4
Descale	45 min.						
Descale boiler system and dispensing valves (see service manual).			00009 (can) / 49007 (sachet)				
Use valve seal set if necessary.			99673	2x	3x	3x	4x
Grinder (OptiFresh Bean)	10 min.						
Empty the grinder. Fill with two caps of coffee grinder cleaner, hold a drip try under the outlet and run the grinder until it is empty.			1000151				

Service activity	Time	Product	Art.No.	OptiFresh (Bean)			
				1	2	3	4
Brewer 20,000	20 min.						
Perform maintenance at each of 20,000 brew cycles the brewer cleaning program with sachet coffee cleaner.			49009				
			03488	1x	1x	1x	1x
Brewer 40,000	20 min.						
Replace at least after 40,000 brew cycles [Service brewer] parts shown here. Clean brewer and check it for proper operation. Perform major maintenance if the cylinder shows internal scratches and /or exhibit leakage and if the Teflon piston does not moves easy. Check brewer tension settings.			03380	1x	1x	1x	1x
			03375	1x	1x	1x	1x
Brewer 80,000	30 min.						
Replace at least after **80,000** (major maintenance) brewer cylinder, Teflon piston and O-rings.			03372	1x	1x	1x	1x
			03370 03368	1x 4x	1x 4x	1x 4x	1x 4x

Service activity	Time	Product	Art.No.	OptiFresh (Bean)			
				1	2	3	4
Mixer(s)	10 min.						
Check the motor shaft for dirt and wear. Apply silicone grease to the water connection.							
Replace mixer blade.			03254	-	1x	1x	2x
Replace the seals in the green mixer mounting ring.			1000742	-	1x	1x	2x
			1000741	-	1x	1x	2x
or replace green mounting ring complete.			03253	-	1x	1x	2x
Clean the mixer components with Animo cleaning agent			00008 (can) / 49009 (sachet)				
Checking (general)							
Check the complete machine operation. Check parts for damage/wear and/or leaks.							
Cleaning (general)							
Brewer and mixer unit as for weekly cleaning. The entire interior and exterior of the machine.							

EN

WARNING

- The machine has to be opened to descale the water reservoir. This will expose parts under voltage that can easily be touched. This can lead to life threatening situations!

WARNING

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

6.5 Descaling instructions

Animo supplies Descaler in the following quantities:

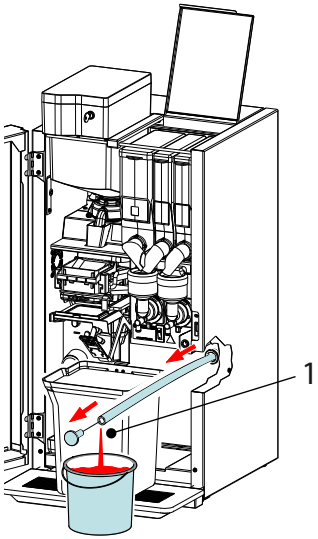
- Descaler 48 x 50g sachets (Art. No. : 49007)
- Descaler 1kg tube (Art. No. 00009)

Time required, products and tools:

- Time: approximately 45 minutes
- 2 sachets Animo Descaler or 8-10 dessert spoons
- Drip tray of approximately 1.5 litres
- Crosshead screwdriver
- Bucket or basin at hand

Descale preparations

1. Switch off the device and pull the plug out of the socket.
2. Drain the boiler completely (3 litre) empty using the drain hose [1] at the from of the machine.



WARNING

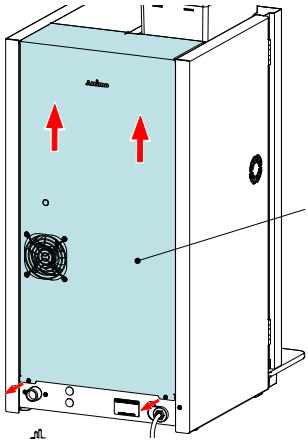
- HOT WATER !

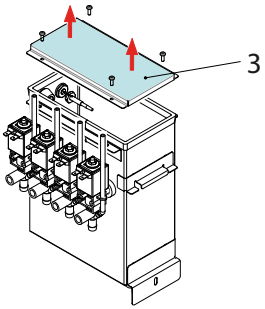
3. Remove the rear plate [2] and unscrew the reservoir lid [3].

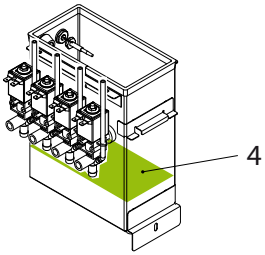
WARNING

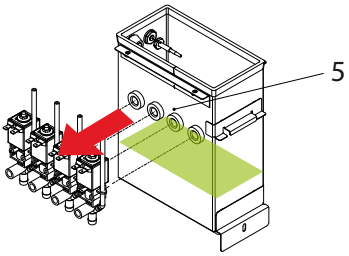
- HOT !

4. Read the warnings and instructions for use on the Animo Descaler sachets before dissolving two 50g sachets (8-10 dessert spoons) into 2 litres warm water.
5. Slowly pour the 1 litre acid solution into the reservoir [4]. The acid solution will now react with the lime scale.
6. Leave the solution to soak for a minimum of 10 minutes, until the foaming has stopped.



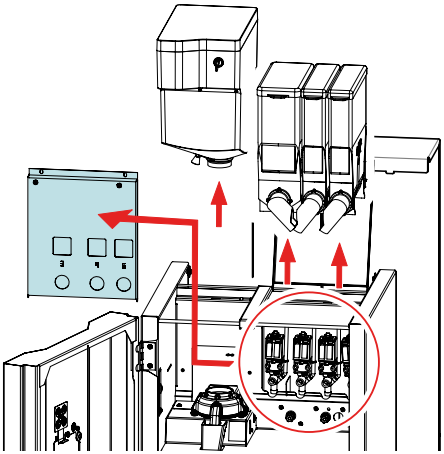






Disassemble the dispensing valves

7. Remove the dispensing valves. They are accessible through the cover plate behind the ingredient canisters



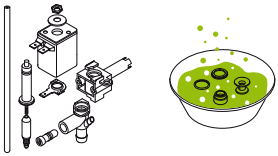
8. Disconnect the wiring and hoses and carefully pull the valves from the silicone seals [5].

EN

9. Disassemble the valves. There are three possibilities:

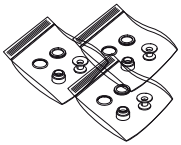
   A Cleaning / descaling

   Remove the seals and place them in a descaler solution. After the parts are cleaned build the valves back together. See Section 3.5.1 Dispensing valves



   B Fit a replacement set

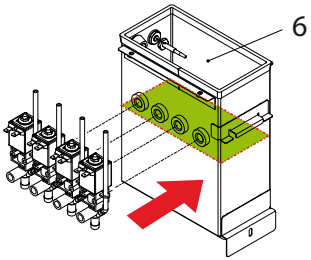
   After the parts are replaced entirely by the seal replacement set build the valves back together. See Section 3.5.1 Dispensing valves.

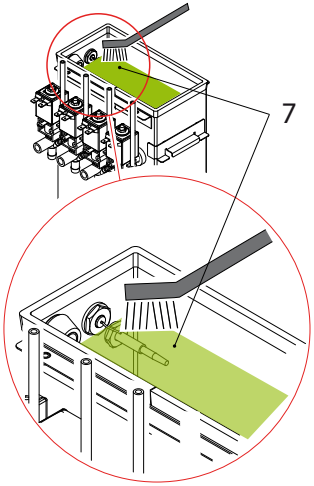


   C Fit new valves

   Attention: new dispensing valves must be set on the correct dosing!
   See Section 3.8.3 Calibration

10. Replace the valves into the boiler [6] and install the wiring and hoses again.





continuation boiler descaling....

11. Fill the boiler with the rest of the solution, and fill if necessary with extra hot water.

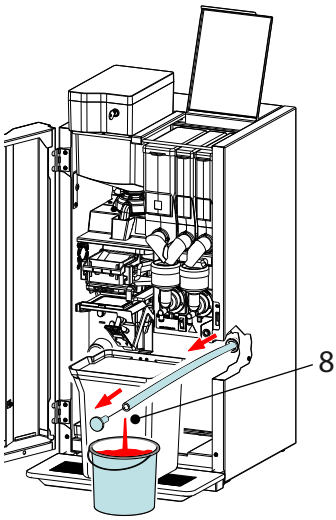
    Use a brush to spread the descaler over the level electrodes [7] during the soaking time.

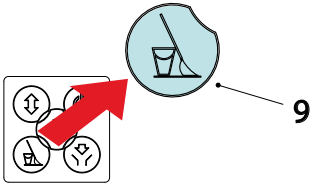
EN

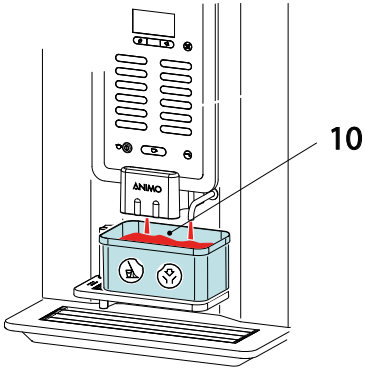
Rince!

12. Drain the boiler completely empty using the drain hose [8] and inspect if the boiler is clean. Repeat the above scaling procedure if there is still scale in the boiler.
13. Turn on the machine, the boiler refills with fresh water and heats up.
14. Turn off the machine and drain the boiler completely empty using the drain hose [8].
15. Turn on the machine again, the boiler refills with clean water and heats up. Repeat instruction 12-15 ones again to remove the boiler from descaler.
16. Place reservoir under both outlets [10] and activate the rinsing programme [9], to rinse clean the dispensing valve so the valves. Follow the instructions on the display.
17. Screw the lid back onto the reservoir and replace the cover plate [2].
18. Clear the service parameter counter in the Service Menu **2.6 Service boiler / 2.6.2 Reset service counter.**
19. The machine is now ready for use again.

Always check if no descaler solution stayed behind in the heating system. Draw some tea water and mix some coffee milk through it. If the milk curdle, additional flushing of the heating system is required.







6.6 Maintenance freshbrew group

6.6.1 Replacing the Brewer Cylinder and Teflon Seal

The Zuma brewer creates a vacuum that pulls hot water through the coffee grounds and the filter screen, and into the brewer cylinder. The brewer pauses prior to dispensing the brewed coffee to allow this vacuum to pull all of the liquid into the cylinder.

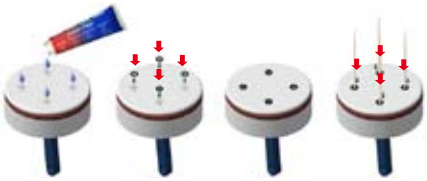
After several thousand cycles, the brewer cylinder and/or the Teflon seal will become worn and scored. When this scoring gets severe, air will enter the brewer cylinder from between the Teflon seal and the cylinder wall, resulting in a loss of vacuum. In many cases, you will actually be able to see these air bubbles during the brew cycle. When a vacuum loss occurs, the brewer cylinder and Teflon seal will both need to be replaced.

Required parts:

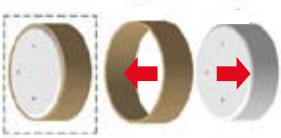
-	4x	O-ring	art.no. 03368
-	1x	Teflon seal	art.no. 03370
-	1x	Brewer cylinder	art.no. 03372
-	4x	toothpicks	

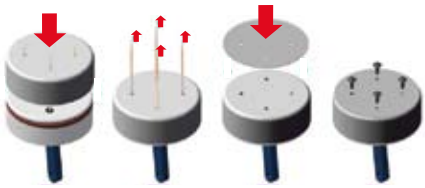
Preparations:

1. Remove the brewer from the machine, and then remove the filter screen and the brew chamber from the brewer.
2. Remove the c-clip at the rear of the crank arm, and then remove the crank arm pin.
3. Remove the four screws that secure the brewer cylinder to the brewer mainframe.
4. Pull down the piston to remove this assembly from the brewer cylinder. At this point, the old brewer cylinder can be discarded (but not the piston assembly).
5. Remove the four screws at the top of the piston assembly. Remove the stainless steel top plate from the assembly.
6. Remove the old Teflon seal. It may be necessary to twist the seal or rock it back and forth until it clears the large rubber piston ring. Once removed, discard the old Teflon seal.



7. Remove the four old O-rings. These O-rings cannot be re-used and must be discarded.
8. Add a drop of Lubri-film around the perimeter of each of the holes to temporarily hold these o-rings in place.
9. Insert a toothpick through the centre of the o-ring and into each of the screw holes on top of the piston. The toothpicks will hold the o-rings in place and act as a guide for the Teflon seal.
10. Replacement Teflon seals are shipped inside a thick cardboard sleeve. Do not remove them from this protective sleeve until they are needed.
11. Place the new Teflon seal over the toothpicks Remove the toothpicks replace the stainless steel top plate with the four screws.
12. Slide the piston assembly into the bottom of the cylinder. Make sure the hole at the bottom of the piston rod is pointing perfectly forward in the same direction as the brewer pour spout.
13. Secure the piston and cylinder assembly to the mainframe of the brewer using four screws. Do not forget to install the two washers that are used with each of the four screws.
14. Insert the crank arm pin through the front of the piston rod and through the crank arm. Secure it in place by inserting a c-clip on the pin at the rear of the crank arm.
15. Install a filter screen onto the top of the new brewer cylinder and install the brew chamber.
16. Install the brewer into a machine and brew several cups of coffee through it. The coffee oils will lubricate the new cylinder's walls and the new Teflon seal.





Maintanance freshbrew group (continuation)

6.6.2 Replacing the T-Bar & Housing, Crank Arm, Triple Cam, and the Brewer Arms

The following procedure will guide you through the steps required to remove the T-bar (and its housing), the crank arm, the triple cam, and the two wiper arms.

As these components are all mechanically linked together, they will all be removed in this procedure.

Should you need to replace only one of these components, follow this procedure until the point where that particular component can be removed and replaced.

1. Press down on the H-Frame and turn the T-bar counter-clockwise until it can be removed from its housing. This may require 20-30 full turns.

   At this point in the procedure, the T-bar can be completely removed and replaced.

2. Remove the coupling pin at the back of the brewer. This pin is tapered and press-fit into the shaft - tap the longer end of the pin with a hammer until it pops out of the shaft. Once the pin is out, remove the c-clip securing the crank arm shaft to the mainframe.
3. Remove the c-clip at the rear of the crank arm, and then remove the crank arm pin.
4. Move the piston rod away from the front of the crank arm. Place the brewer on the table with the cylinder down and gently tap the crank arm shaft with a hammer to unlock it from the triple cam - these two components are press-fit together
5. Flip the brewer over (cylinder up) and pull the T-bar housing until the housing and the triple cam can be removed. It may be necessary to rock the components back and forth to release them.

   At this point in the procedure, the T-bar housing, crank arm and triple cam can be completely removed.

6. To remove the two brewer arms (the ‘wipe’ and ‘unwipe’ arms), remove the two c-clips securing the arm pins to the mainframe, and then remove the two pins at the rear of the brewer. It may be necessary to push them from the front of the brewer through to the rear.






7. Pull the two arms and the large spring connected to the arms out through the bottom of the mainframe.

   At this point in the procedure, the two arms can be completely removed.

8. Install the spring onto both of the brewer arms. Note that the each end of the spring must be hooked to each arm, as illustrated.

   With the spring in place, slide the spring and arm assembly into the mainframe through the bottom of the brewer (the spring must be facing towards the front of the brewer).

9. Move the spring and arm assembly up against the front inner wall of the mainframe and insert the two arm pins through the rear of the mainframe and through the holes in each arm. At this point, the spring should now be sandwiched in between the arms and the wall of the mainframe. At the front of the mainframe, insert a c-clip into each of the arm pins to secure the pins (and arms) in place.

   At this point in the procedure, the brewer arm replacement is complete.

10. The next part of the procedure is to replace the triple cam and T-bar housing.
    Even if you were only replacing one of the two, both of these components need to be removed.

    Partially insert the bottom of the triple cam into the opening in the T-bar housing. While keeping the triple cam angled towards the top of the brewer, slide the triple cam and housing into the brewer mainframe. You need to get the top of the triple cam resting inside the opening for the crank arm on the mainframe, while the bottom is inside the opening in the T-bar housing.

11. Insert the crank arm shaft through the opening in the front of the brewer, and through the triple cam and T-bar housing. Please note that the crank arm needs to properly couple with the triple cam.

12. Once you are certain that the crank arm and triple cam are properly aligned, place a center punch in the centre of the crank arm shaft (on the side with the plastic crank arm), and give it one or two taps. If the two are properly aligned, the crank arm will easily couple with the triple cam.
13. On the other side of the brewer, secure the crank arm to the brewer mainframe using the c-clip that was removed earlier in this procedure.
14. Insert the crank arm pin through the front of the piston rod and through the crank arm. It may be necessary to raise or lower the piston in the cylinder to properly align the two. Secure it in place by inserting a c-clip on the pin at the rear of the crank arm.
15. Insert the drive pin into the crank arm shaft at the rear of the brewer. Note that the pin is tapered (one end is thicker than the other due to three splits added along the pin's sides).

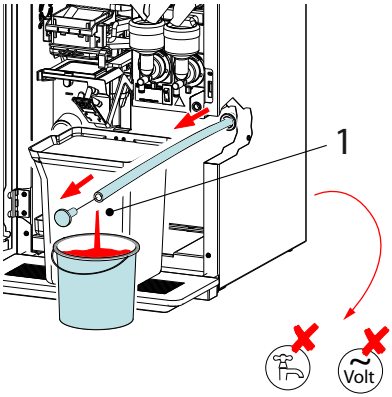
    Insert the thinner end (without the splits) into the crank arm shaft, and then tap it a couple of times with a hammer to wedge (press-fit) the pin in place.
16. While pressing down on the H-frame, insert the T-bar from the top of the brewer down into the threaded section of the T-bar housing, and turn the T-bar approximately 20 turns clockwise. Once done, install the T-bar into its recession on top of the H-frame.

    NOTE: You have now successfully re-assembled the Zuma brewer, You must now re-adjust the brewer chamber's tension. For the procedure for adjusting the brewer tension see chapter **1.3.2 Adjustment brewer chamber tension.**

7. TRANSPORT / STORAGE

Please do the following before transporting or putting the device in storage.

1. Carry out the brewer and mixer unit cleaning programme.
2. Clean the ingredient canister(s), mixer system, leaking tray and casing.
3. Switch off the device and remove the plug from the wall socket.
4. Close the water supply tap and disconnect the water connection tube.
5. Drain the water reservoir (approx. 3 litres) by using the draining tube [1].



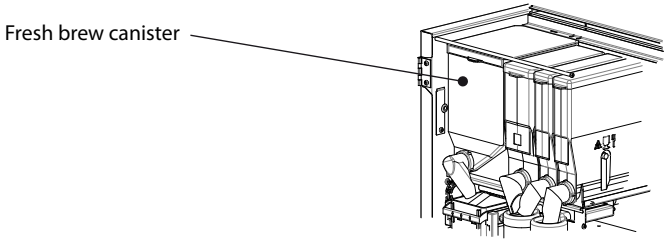
WARNING

- HOT WATER !

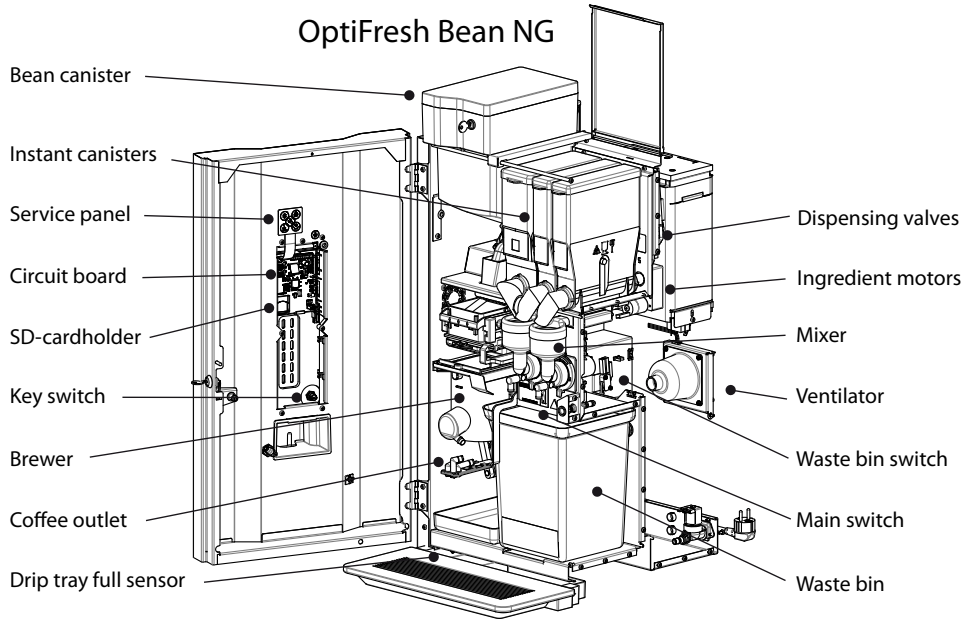
6. The device is now ready for transport.

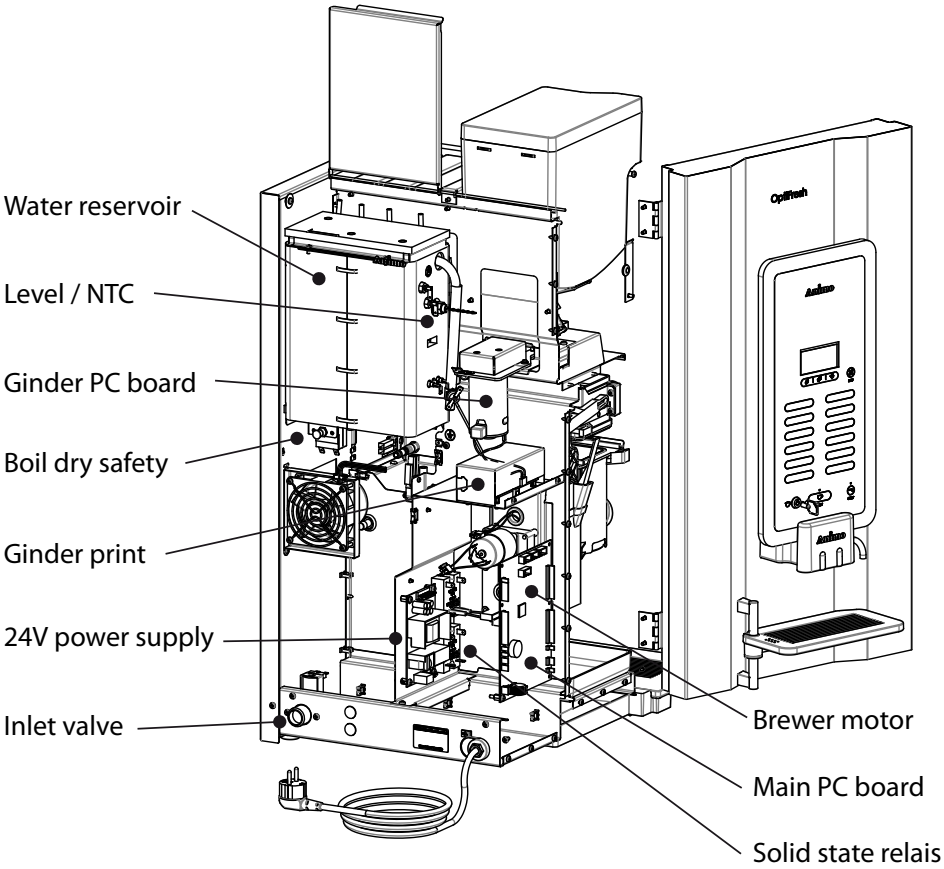
8. COMPONENT ACCESSIBILITY

OptiFresh NG



OptiFresh Bean NG




Water reservoir
Level / NTC
Ginder PC board
Boil dry safety
Ginder print
24V power supply
Inlet valve
Brewer motor
Main PC board
Solid state relais

9. ELECTRONICS SUMMARY

WARNING

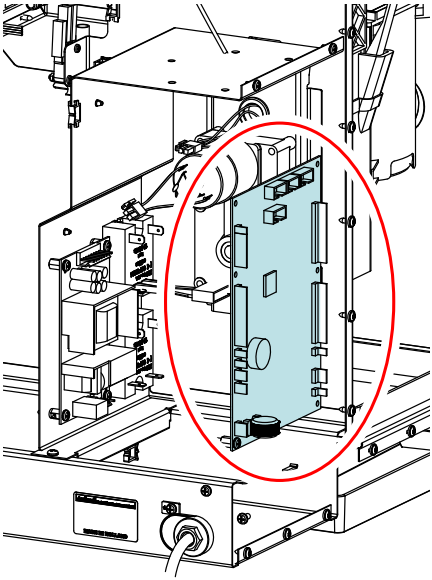
During repairs or maintenance work, avoid electrostatic discharge (ESD) on the control unit.

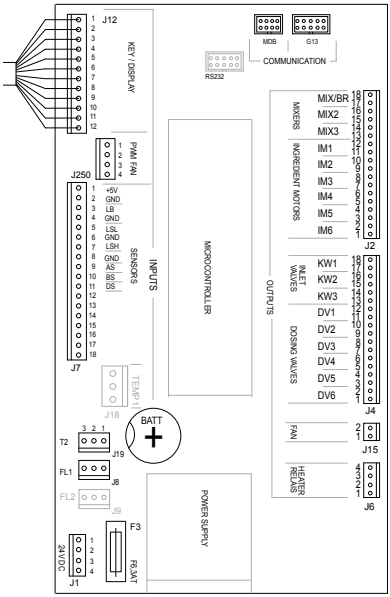
- Main PC board 9.1
- Interface / display 9.2
- Power supply 100-240Vac / 24Vdc 65W 9.3
- Grinder board 230Vac / 230Vdc 9.4

9.1 Main PC board

This control unit is the device's main control unit and 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.





9.1.1 Main circuit board entrances

Connector J12
Connector cable between the main circuit and door circuit

Connector J250 (PWM fan)			
Pin	**Fan**	**Colour**	**Notes**
1	PWM signal	black	
2		-	
3	pos	red	
4	neg	blue	

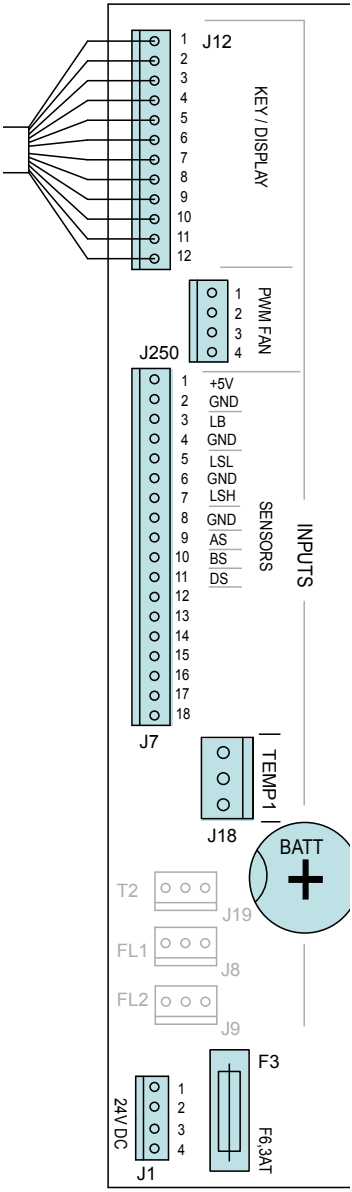
Connector J7 (Inputs)			
Pin	**Sensor**	**Colour**	**Notes**
1-2	-	-	
3	LB Drip tray	Yellow	
4	GND Drip tray	Black	
5	LSL level low	Brown	
6	GND level mass	Green	
7	LSH level high	White	
8	-	-	
9	AS waste bin	Pink	Waste bin in position; contact closed
10	Brewer witch	Grey	Brewer in home position; contact closed
11	DS Door 1	Orange	Door closed; contact closed
12-15	-	-	
16	IN3 Door 2	Pink	Door lock locked; contact closed
17-18	-	-	

Connector J18 / T1 (NTC sensor)			
Pin	**Sensor**	**Colour**	**Notes**
1	NTC sensor	Violet	
2	-	-	
3	NTC sensor	Violet	

Battery B1	**Lithium 3V Type CR2025**	**art.no. 02816**

Fuse F3	**6.3 A slow**	**art.no. 03391**

Connector J1 (Supply)			
Pin		**Colour**	**Notes**
1-2	Ground (GND)	black	
3-4	+24 Vdc	red	



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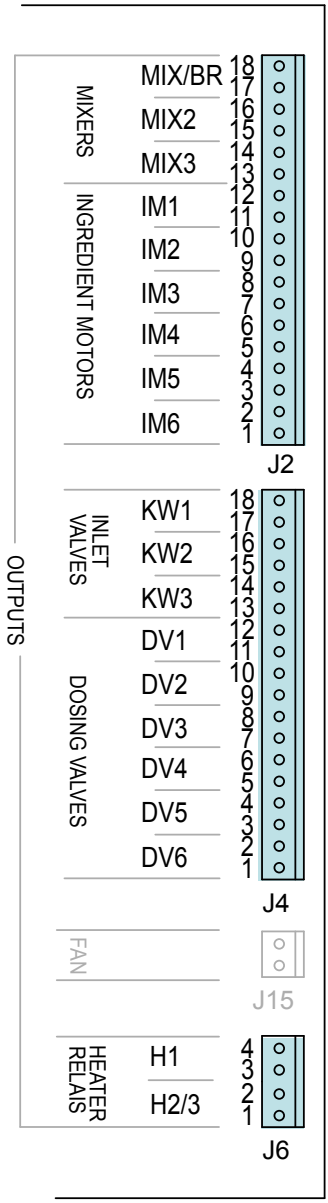
9.1.2 Main circuit board exits

Connector J2			
Pin	**Motor**	**Colour**	**Notes**
17-18	Brewer	Black	**Pay attention to the right direction!** Common +24 Vdc (red wire) to red point on Brewer, Mixer and Ingredient motor.
15-16	Mixer 2	Violet	
13-14	Mixer 3	Pink	
11-12	Grinder signal 1	Brown	
9-10	Ingredient Motor 2	Green	
7-8	Ingredient Motor 3	White	
5-6	Ingredient Motor 4	Yellow	
3-4	Ingredient Motor 5	Grey	
1-2	Ingredient Motor 6		

Connector J4			
Pin	**Valve**	**Colour**	**Notes**
17-18	KW 1 (inlet valve)	Violet	* Hot & Cold optiion Rode draad is gemeenschappelijke +24Vdc aansluiting
15-16	KW 2 (venting valve)*	Rose	
13-14	KW 3 (Cold water)*	Orange	
11-12	DV 1 (brewer valve)	Brown	
9-10	DV 2 (mixer 2 valve)	White	
7-8	DV 3 (mixer 3 valve)	Yellow	
5-6	DV 4 (hot water tap)	Green	
1-4	-	-	

Connector J6			
Pin	**Relais**	**Colour**	**Notes**
4	H1 Element via solid state relay	Red	
3		White	
2	-	-	-
1		-	

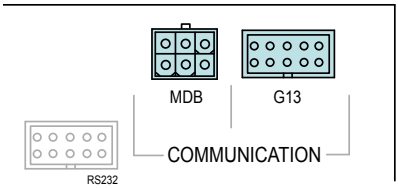


9.1.3 Main circuit board communication

The machine has standardized vending machine connections for connecting coin mechanism, coin changer or cashless payment systems.

These connectors meet the MDB protocol for vending machines.

For further information or advice please contact our support department.



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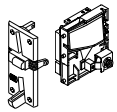
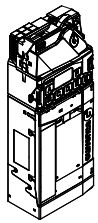
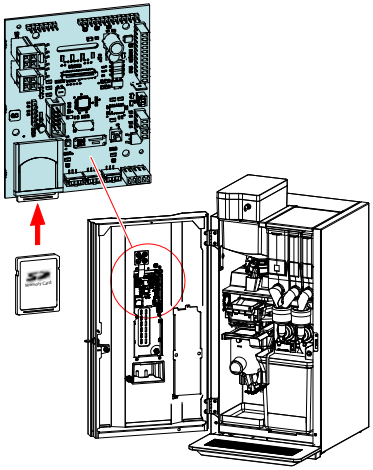
Communication		
Conn	**Protocol**	**Notes**
G13	Parallel interface  art. no. 04025 03267	- Coin acceptor NRI G13 - External release contact* **the machine can be released by using a potential-free contact (pulse).* - G13 Kabel 1 meter art. no. 03392 - Extern vrijgave contact; kabel 1004237
MDB	Serial interface MDB (Multi Drop Bus)  art. no. 03433	- Coin changer NRI C^2 - Cashless payment system - MDB cable 1 meter art. no. 03479 - MDB cable 1 meter art. no. 1004564 (2x male connector) - MDB Y-kabel art.no. 1002008

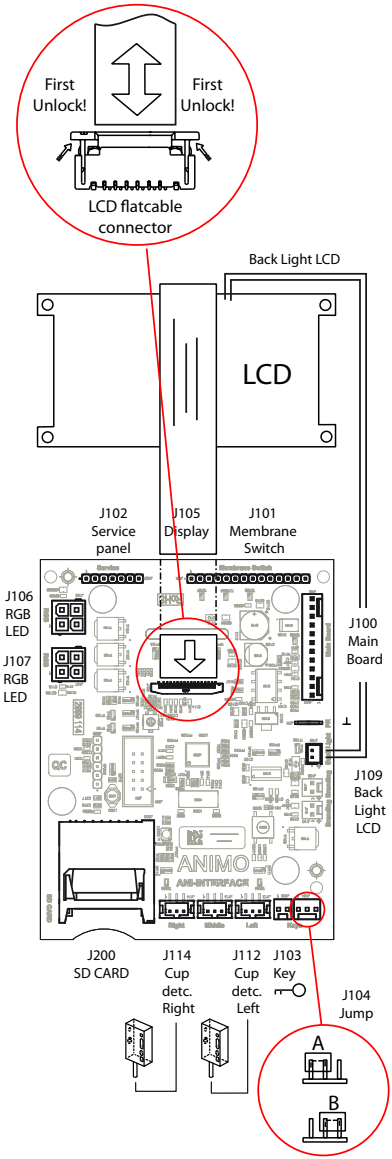
9.2 Interface / Display

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

9.2.1 Connections

Interface & Display		
Conn		**Notes**
J100	Main control	
J101	Front membrane panel	
J102	Service membrane panel	
J103	Key switch	
J104	Jumper position A-B	A = cup sensor; no B = cup sensor; yes
J105	Display connection	See dismantling instructions
J106	RGB LED	
J107	RGB LED	
J108	-	not used
J109	Backlight display	
J110	-	not used
J112	cup sensor left	coffee spout position
J113	cup sensor middle	
J114	cup sensor right	hot water spout position
J200	SD card holder	





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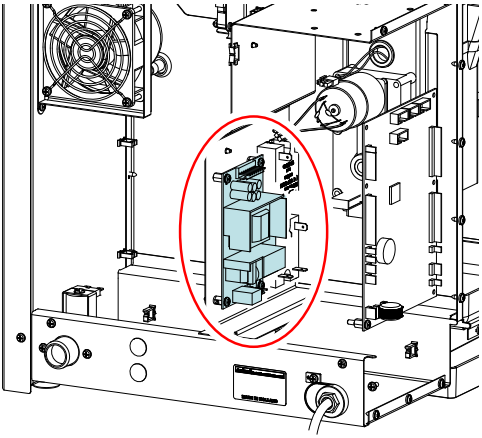
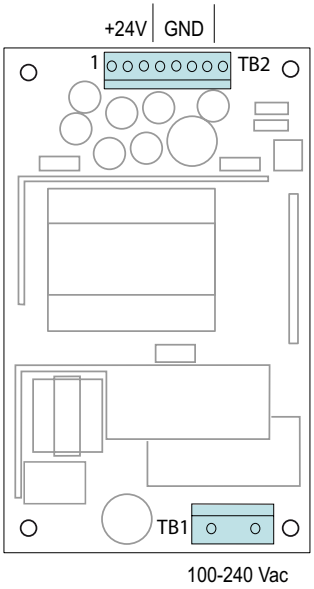
9.3 Power supply

The 24 Vdc supply consists of a 24 Vdc – 65 W switched power supply and can be accessed by removing the rear wall.

- On an overload, the power supply switches itself off automatically. Reset the power supply by turning the main switch off and on again.





9.3.1 Connections

Connector TB2	24Vdc		
Pin		**Colour**	**Comments**
1-3	24 Vdc +	red	
4-7	24 Vdc -	black	
8	-	-	

Connector TB1	100-240Vac		
Pin		**Colour**	**Comments**
1	230 Vac Neutral	blue	
3	230 Vac Phase	yellow	

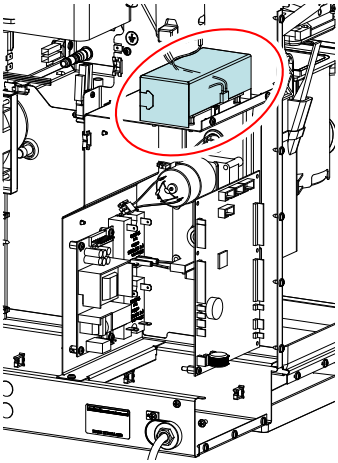
9.4 Grinder circuit board

This grinder circuit board converts 230 Vac (alternating current) into 230 Vdc (direct current) with a rectifier to drive the grinder motor. (OptiFresh Bean)

The IM1 signal (24 Vdc) from the main control is connected to connection J5-J6 (the red LED lights). This signal controls the grinder motor with a triac.

This control can be accessed by removing the rear wall.

- Fuse 3.15 A S art.no. 02580; to protect the grinder motor.



9.4.1 Connections

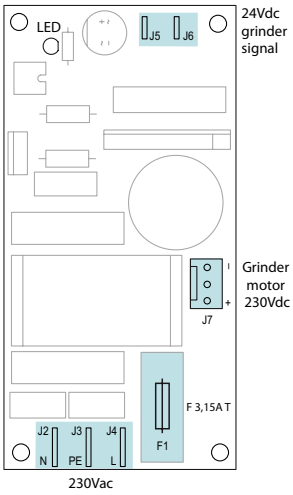
24 Vdc ingredient 1 signal			
Pin		**Colour**	**Notes**
J5	24Vdc +	red	polarity not important
J6	24Vdc -	brown	

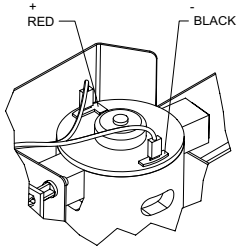
230Vdc			
Pin		**Colour**	**Notes**
1	230Vdc +	red	polarity is important!
3	230Vdc -	black	

230Vac			
Pin		**Colour**	**Notes**
J2	230 Vac Zero	blue	
J3	PE (ground)	y/gr/	
J4	230 Vac Phase	brown	

Fuse F1	
3.15 A slow	**art.no. 02580**

Grinder motor 230Vdc			
Pin		**Colour**	**Comments**
	230Vdc +	red	**Please pay attention, for right direction.** +24dc (red wire) according drawing
	230Vdc -	black	





10. 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 that all parts are in their correct position. To do this, remove the device's rear plate and check that all printed circuit boards, connectors, wire beams and pipes are mounted correctly.

After carrying out a general parts inspection, use section 8.3 Troubleshooting analysis to verify the probable cause of the problem.

#) If the column solution advises replacement of the part concerned, there is always the possibility that the defect may be caused by another problem. The functioning of the device should therefore be thoroughly tested to make sure that the defect does not reappear.

EN

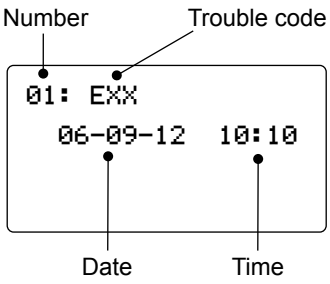
10.1 Read log

During use, the last 20 error messages displayed

are registered and saved.

To read these error messages, activate the menu item Read log (menu 2.8) in the service menu. The first error displayed is the most recent error message.

- In the 1st line the same error codes are displayed as used in the fault analysis table (see Section 10.3).
- In the 2nd line are the date and time at which the error code occurred.



10.2 Clear log

Use the Clear log function (service menu 2.9) to clear the log.

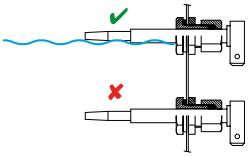
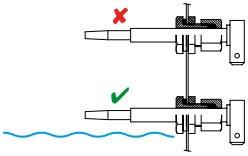
10.3 Display messages during use

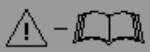
Display	Possible cause	Action	
Make your choice  Rinsing	Rinse program not activated in time.		Run the rinse program and follow the instructions in the display. See chapter **5. Maintenance / 5.1 daily rinsing program**
Make your choice  Cleaning	Cleaning program is not activated in time.		Run the cleaning program and follow the instructions in the display. See chapter **5. Maintenance / 5.2 Weekly rinsing program**
Make your choice  Replace brewer filter	Brewer filter should be replaced with a clean one.		Replace brewer filter. See chapter **5. Maintenance / 5.3 Monthly program.**
Make your choice  Service boiler	Boiler needs maintenance.	Inspect boiler for scale and descale if necessary descaling / Replace water filter, see chapter **5.4 Periodic maintenance / 5.4.1 Service boiler.**	
Make your choice  Service brewer	Brewer needs maintenance.	Some brewer parts needs replacement. see chapter **5.4 Periodic maintenance / 5.4.2 Service brewer and 5.4.4 Servicing**	
Out of order	When used for the first time: boiler is still empty and is being filled.	No action required. When boiler reaches the appropriate level, the display will show 'Boiler heating'.	
 Boilers filling	During use: boiler is not filling up or is filling up too slowly. After 60 sec. the display will show 'E3 Level error'.	Check the water pressure, turn the water supply tap completely open and check the connection tube for any kinks.	
Out of order  Boiler heating	The boiler temperature is (temporarily) too low because too much water has been used.	Once the temperature is restored, the message automatically disappears and the drink selection buttons are reactivated.	
Out of order  Drip tray full	Drip tray full.	Once the drip tray is emptied, the message automatically disappears and the drink selection buttons are reactivated.	
Out of order  Waste bin full	The maximum number of coffee cups that the waste bin can hold has been reached.	Empty waste bin. The cup counter is automatically reset when the waste bin is replaced.	

EN

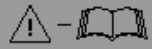
Display	Possible cause	Action	
Out of order  Waste bin missing	Waste bin is not detected.	Check the waste bin.	
Out of order  Door open	For safety reasons, the machine automatically switches off if the door is opened.	The machine can be operated with the door open by using the door pin (User manual: section 8.1).	
Out of order  Stand-by	The machine is on standby.	This function can be set manually or automatically.	
 Close door	Door lock not closed properly. Hot water dispensing not possible.	Close door lock.	
Out of order  Rinsing	Rinse program not activated in time. The machine locks up.		Run the rinse program and follow the instructions in the display. See chapter **5. Maintenance / 5.1 daily rinsing program**
Out of order  Cleaning	Cleaning program is not activated in time. The machine locks up.		Run the cleaning program and follow the instructions in the display. **5. Maintenance / 5.2 Weekl rinsing program**
Out of order  Replace brewer filter	Brewer filter should be replaced with a clean one. The machine locks up.		Replace brewer filter. See chapter **5. Maintenance / 5.3 Monthly program.**

10.4 TROUBLESHOOTING

Display	Possible cause	Action
Out of order E1 Level error	Minimum electrode error: minimum electrode detects no water but maximum electrode does. Inlet valve shuts.	Check that the level sensors are functioning. See service menu **2.7 Hardware test**. Switch the device off and on again.
		Water level up to max. level sensor? Check min. Level sensor calcification. Switch the device off and on again.
		Water under the min. Level sensor? Check max. level sensor for cracks in the insulation and check if capillar tube of the boil-dry protection. This should not touch the electrode tip. Switch the device off and on again.
E2 Level error	Maximum electrode error: maximum electrode not reached within 30 sec. Inlet valve shuts. Boiler fills up too slowly. Water pressure has dropped or the water tank (stand-alone) is empty.	Check the water pressure, turn the water supply tap completely open and check the connection tube for any kinks. Switch the device off and on again.
E3 Fill error	Electrode error: minimum electrode not reached within 90 sec. Boiler fills up too slowly Water pressure has dropped or the water tank (stand-alone) is empty.	Check the water pressure, turn the water supply tap completely open and check the connection tube for any kinks. Switch the device off and on again.
E4 Brewer error	Brewer was not started from its initial position. Brewer motor not turning.	Check the brewer motor function in the service menu **2.7 Hardware test**. Switch the device off and on again.
		Check break pin of Brewer motor. Replace if broken.
		Check the brewer switch. When brewer motor is in its home position, switch lever must fall into driving wheel notch. Contact must be closed. When brewer motor rotates, switch lever must be pressed IN. Contact must be open.

Display	Possible cause	Action
Out of order  E5 Brewer error	Brewer was not returned to its initial position.	Check the brewer switch and brewer motor function in the service menu **2.7 Hardware test**. Switch the device off and on again.
		Check break pin of Brewer motor. Replace if broken.
E6 High temperature	Temperatuur sensor measures a temperature over 99°C	Check the temperature sensor function in the service menu **2.7 Hardware test.**
		Check if the steam thermostat in the overflow pipe has been triggert. Reset if necessary.
E7 BM error	Brewer motor has stalled. Brewer motor output overloaded (current too high). The control has disabled the output.	Check that the brewer unit is secured properly in the holder. Remove the brewer and repair the obstruction. Switch the device off and on again.
		Check that the wiper is placed between the wiper arms. Remove the brewer and repair the obstruction. Switch the device off and on again.
		Coffee Filter is clogged up with coffee stains. Piston must pull (vacuum) too hard. Clean or replace the filter. Turn machine off and on again.
E8 Mixer 2 error	Mixer 2 motor stalled. Mixer 2 motor output(s) overloaded (current too high). The control has disabled the output.	Check whether mixer 2 is contaminated or incorrectly mounted. Clean and/or check whether the rotor turns freely. Switch the machine off and on again.
E9 Mixer 3 error	Mixer 3 motor stalled. Mixer 3 motor output(s) overloaded (current too high). The control has disabled the output.	Check whether mixer 3 is contaminated or incorrectly mounted. Clean and/or check whether the rotor turns freely. Switch the machine off and on again.
E10 Valve error	Valve or Fan output(s) overloaded (current too high). The control has disabled the output.	Check the valves and wiring for short circuits. Switch the machine off and on again.
E11 Ingr. m error	Ingredient motor(s) stalled. Ingredient motor output(s) overloaded (current too high). The control has disabled the output.	Check the operation of the drive motors in the service menu **2.7 Hardware test**. Empty the canister(s) and clean thoroughly. Switch the machine off and on again.

EN

Display	Possible cause	Action
Out of order  E13 Mixer error	Brewer and Mixer output group overloaded (current too high). The control has disabled the output.	Carry out the checks as specified for E7 and E8. Switch the machine off and on again.
E14 Output err.	Ingredient motor output group overloaded (current too high). The control has disabled the output.	Carry out the checks as specified for E11. Switch the machine off and on again.
	Valve output group overloaded (current too high). The control has disabled the outputs.	Carry out the checks as specified for E10. Switch the machine off and on again.
Out of service E16 Level error	Electrode error; Max. and Min. Electrode both suddenly detect no water level. Inlet valve shuts.	Make sure if the boiler does not leaks. Check the water pressure, turn the water supply tap completely open and check the connection tube for any kinks. Switch the device off and on again.
E17 MDB error	There is no communication between the machine and the MDB payment system.	Check the connection between the machine and the MDB payment system.
E18 Mixer group FET error	Brewer or mixer motor output remains activated.	Brewer or mixer motor output (FET) defective. Replace control.
E19 output FET error	Ingredient motor / valve / fan output remains activated.	Ingredient motor / valve / fan output (FET) defective. Replace control.
E20 Software error	Software error	Reset the machine. Load the defaults. Install new software.
E21 boiler timeout	Heating element active for 8 minutes. If the boiler has still not come up to temperature, this error results. Steam- and /or dry boil protection activated.	Reset the steam thermostat, see CHAPTER 3.8. Check the logmenu. If a E6 boiler temp. the boiler has boiled to long. Check the NTC sensor and wiring / connection.
E26 Low temperature	Temperatuur sensor measures a boiler temperature below 0°C	Boiler and/or NTC sensor is below 0°C. Let the machine warm up to room temperature.
E27 NTC short circuit	Temperatuur sensor has a short circuit	Check the NTC sensor and wiring / connection.
E28 NTC not detected	Temperatuur sensor is not detected.	Check the NTC sensor and wiring / connection.

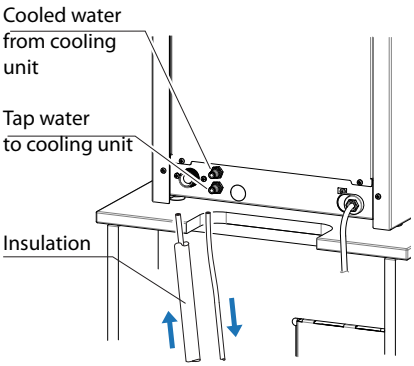
11. SPECIAL OPTIONS

11.1 Installation OptiFesh NG Hot&Cold

Required equipment:

- OptiFresh NG H&C
- Base cabinet with cooling unit [1001569].

1. Build the cooling unit in the cabinet according the instructions supplied.
2. Connect the machine to the water (incl. water filter) and electricity. Connect the cooling system to the electricity.
3. Connect the tube which come from the cooling unit to the push fit connectors at the back of the machine.
4. Program the cold water recipe onto one of the empty buttons.
5. Flush and venting the cold water system by dispensing a number of litres of water.



11.2 Installation OptiBean with waste to litter bin

Required equipment:

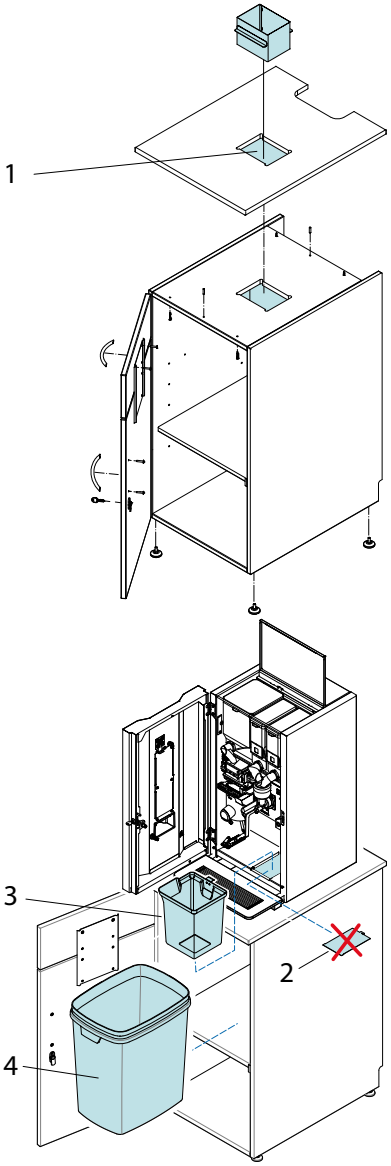
- OptiFresh NG
- Base cabinet with access to litter bin [1001559]
- Top board with access to litter bin, [65031] small or [65032] large.

1. Build up the cabinet [1] according the instructions supplied.
2. Remove the stainless steel hatch [2] in the bottom of the OptiFresh, and centre the machine over the opening { 1] .
3. Replace the standard coffee waste bin for the special waste bin [3] and place it into the machine.
4. Connect the machine to the water (incl. water filter) and electricity.
5. Change the cup amount counter: **Service menu / 2.13 Other settings / Waste bin management / cup amount** between 300 to 500 cups.

```
2.13 Other settings
        |
        └── 2.13.0 Waste bin management
                └── 2.13.00 Cup amount
```

We don't recommend to switch off the waste bin signal. By taking out the waste bin regularly when cleaning it the counter will be reset automatically.

6. Place the big litter bin [4] directly under de transit case.



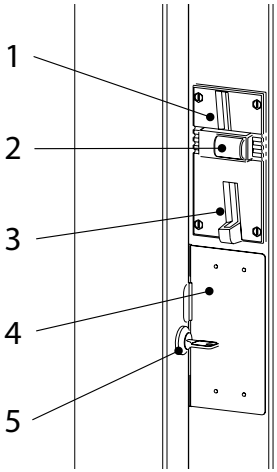
12. PAYMENT SYSTEMS

12.1 Coin mechanism (optional)

The OptiFresh is available with an optional coin mechanism suitable for euros (€0.05 - €2.00). Other currencies are available on request.

The coin mechanism can also easily be programmed to accept tokens.

It is also possible to have an existing device fitted with the coin mechanism. The right-hand side panel is replaced by a wider side panel, which houses the coin mechanism and slot.

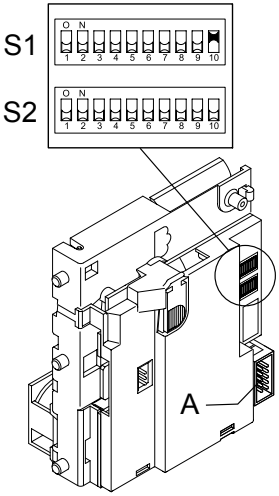


1. Coin insert
2. Return button
3. Return slot
4. Money drawer
5. Door lock (also locks the money drawer)

12.1.1 Standard configuration

Right picture shows the standard configuration of the DIL switches, S1-10 ON

The coin mechanism is connected to the device with a connector A.

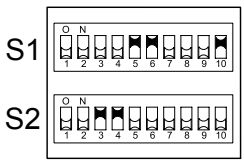


12.1.2 Rejecting coins

If desired, certain types of euro coins can be rejected by using DIL-Switch block S1 + S2.

Coin €	S1	S2
€ 0.05	S1-1	S1-7
€ 0.10	S1-2	S1-8
€ 0.20	S1-3	S2-1
€ 0.50	S1-4	S2-2
€ 1.00	S1-5	S2-3
€ 2.00	S1-6	S2-4
Token 607	-	S2-5
Token Eagle	-	S2-6
Token new	-	S2-7
Token new	-	S2-8
ON = locked / OFF = free		

Coin £	S1	S2
£ 0.05	S1-1	-
£ 0.10	S1-2	-
£ 0.20	S1-3	-
£ 0.50	S1-4	S2-1
£ 1.00	S1-5	S1-7
£ 2.00	S1-6	S1-8
£ 0.05 new	S1-4	-
£ 0.10 new	S1-5	-
Token 607	-	S2-6
Token Eagle	-	S2-7
Token new	-	S2-8



Example on the right : Reject €1 and €2 euro coins

- S1-5, S2-3 -> ON (€ 1,00 rejected)
- S1-6, S2-4 -> ON (€ 2,00 rejected)

12.1.3 Activating existing tokens

The token shown here is programmed in the coin mechanism as standard.

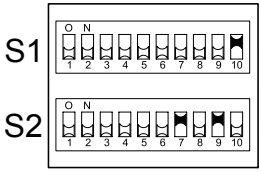
Configure the service menu as described in the following section from point 4.

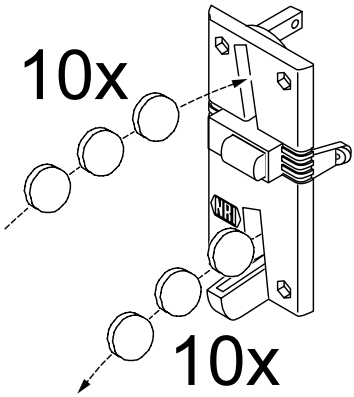
Token Art. No. : 03344

12.1.4 Programming a new token

- Required: 10 tokens
- Attention: remember the DIL switch positions for any rejected coins. Leave S1.10 ON!

1. The following DIL switches on Switch Block S2 should be facing upwards and switch to ON.
   a) First switch S2-9 Teach Mode to ON
   b) Then, switch S2-7 coin channel 6 (TM) to ON
2. Insert a minimum of ten tokens (Fig. 40). These ten tokens should not be the same. After the ten tokens have been inserted the (internal) reject coil will be automatically drawn.
3. End programming by switching the DIL switch S2-9 downwards to OFF. If saved successfully, the reject coil will be drawn once again. After this, switch S2-7 OFF again. (To halt programming, first switch S2-7 and then S2-9 to OFF).
4. Service menu: change coin channel 6 (menu item 2.5 Payment system) from €2,00 to TOKEN.
5. The device now accepts the token as a method of payment.





12.1.5 Accepting Euros and Tokens

Carry out section 12.1.3 and 12.1.4 beforehand.

- Open the service menu
- Set a price using menu 2.2 Button settings / Button 1-12 / Price (e.g. € 0.50)
- The recipe buttons are activated after sufficient euros or tokens have been inserted!

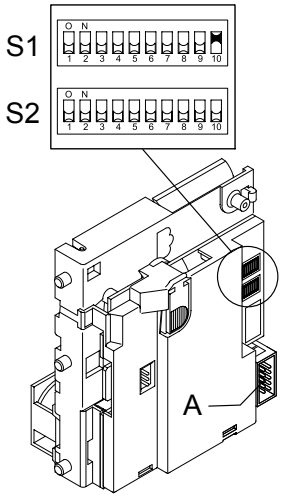
12.1.6 Accepting Tokens only (no Euro's)

Carry out sections 12.1.3 and 12.1.4 beforehand.

1. Open the service menu
2. Set to TOKEN using menu 2.2 Button settings / Button 1-12 / Price.
3. Block the €0.05 - €2.00 coins using the coin mechanism DIL switches and the table below.
4. The recipe buttons are only activated after a token is inserted!

Coin €	S1	S2
€ 0.05	S1-1	S1-7
€ 0.10	S1-2	S1-8
€ 0.20	S1-3	S2-1
€ 0.50	S1-4	S2-2
€ 1.00	S1-5	S2-3
€ 2.00	S1-6	S2-4
ON = locked / OFF = free		

Coin £	S1	S2
£ 0.05	S1-1	-
£ 0.10	S1-2	-
£ 0.20	S1-3	-
£ 0.50	S1-4	S2-1
£ 1.00	S1-5	S1-7
£ 2.00	S1-6	S1-8
£ 0.05 new	S1-4	-
£ 0.10 new	S1-5	-



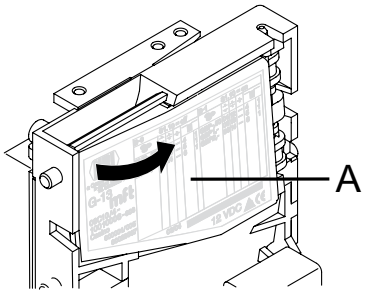
EN

12.1.7 Cleaning the coin holder

From time to time, the coin mechanism should be cleaned with a light, damp cloth (lukewarm water containing a mild cleaning agent).
No further maintenance is necessary.

ATTENTION

- The cloth must not be so wet that liquid enters the system or the circuit board could be damaged.
- Do not use any solvents and/or abrasive cleaning agents that could attack the plastic.
- We advice to use a water free Surface cleaner (e.g. Surface 95) to remove the coin channel from grease, and dirt.



1. Turn off the device.
2. Take the coin mechanism out of the side panel.
3. Carefully open the coin holder valve (A) and hold it open.
4. Clean the coin holder with a cloth and close the valve again.
5. Turn on the device again.

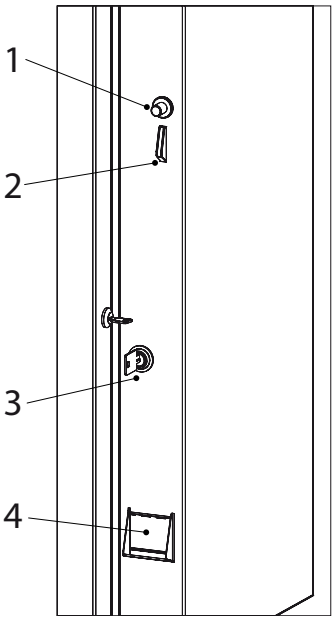
12.2 Coin changer (optional)

The OptiFresh is available with an optional coin changer suitable for euros (€ 0.05 to 2.00).

Other currencies are available on request.

The changer has 6 change tubes (€ 0.05 / 2x 0.10 / 0.20 / 0.50 / 1.00).

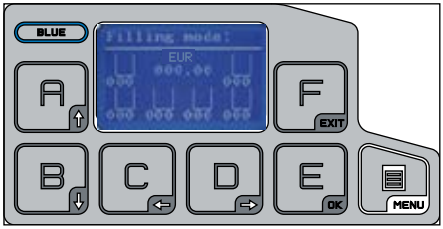
1. Return button
2. Coin slot
3. Door lock
4. Change
5. Return lever
6. Coin insert funnel
7. Display
8. Key panel
9. Cassette removal Lever
10. Tube cassette



12.2.1 Tube filling

We advice to fill the coin tubes by inserting coins via the coin insert /slot.

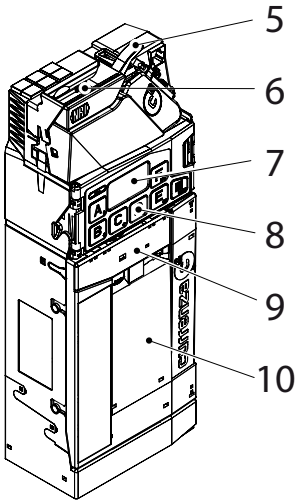
1. Activate filling mode:
   `Main menu > F = Filling mode`



2. Insert coins individually in opening [2] or [6].
3. The tubes are full if the machines displays [*insert* money]. If display shows [*insert <u>exact</u> money*] the coin tubes does not contain enough coins (change).
4. Go back to operator mode by pressing MENU key 2x

12.2.2 Tube emptying

Remove the complete tube cassette [10] by pulling it out by the cassette removal lever [9].



12.2.3 Programme a new token

The token shown opposite is already programmed in the coin changer [Token A].

For programming a new token {[B] see detailed token teach instructions in the NRI technical documentation.

Attention; switch the machine OFF/ON twice after a new token has been programmed.

12.2.4 Coin channel cleaning

Only the changer's coin path, flight deck and sorter cover must be cleaned from time to time.

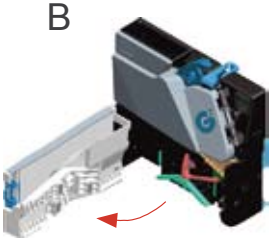
ATTENTION

- The cloth must not be so wet that liquid enters the system or the circuit board could be damaged.
- Do not use any solvents and/or abrasive cleaning agents that could attack the plastic.
- We advice to use a water free Surface cleaner (e.g. Surface 95) to remove the coin channel from grease, and dirt.

1. Turn power OFF.
2. Unlatch sorter cover (blue latch on the right of the display) and swing it open [A & B].
3. Open flight deck at the insert funnel and hold it open [C].
4. Remove any debris. Dust off any accumulation with a small brush or compressed air.
5. Clean the complete coin path, front and back, with a slightly wet cloth.
6. Allow to dry.
7. Close flight deck and latch sorter cover.
8. Turn power ON.

A

B

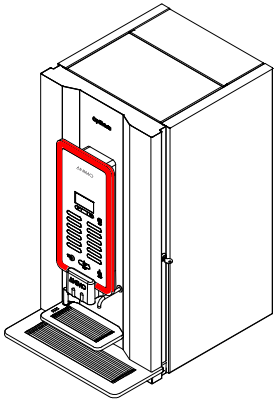


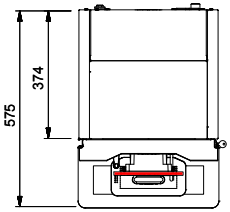
C

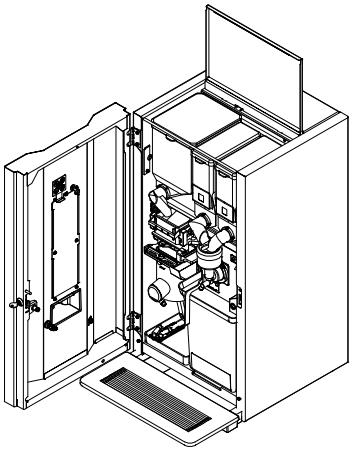
12.2.5 Fault analysis

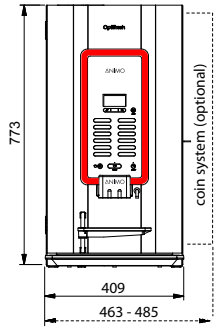
For a detailed diagnosis of the fault, see the NRI technical documentation.

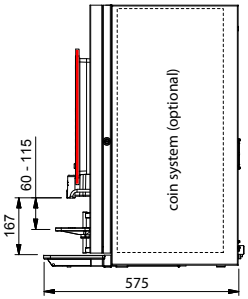
OptiFresh NG

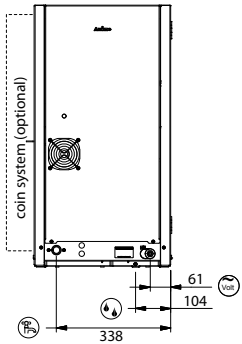


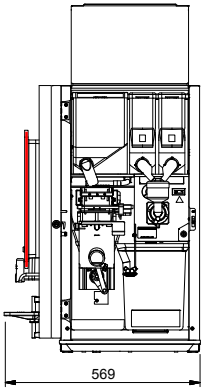


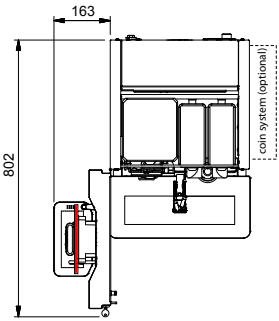


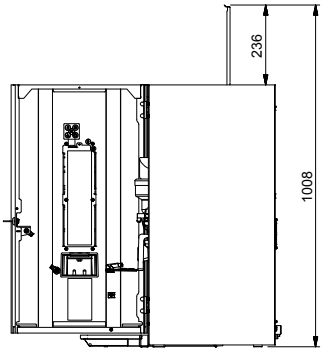












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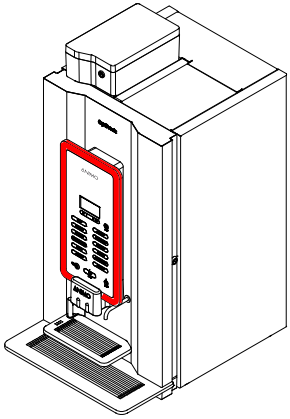
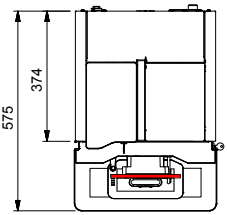
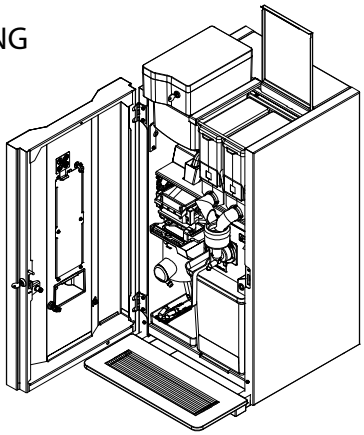
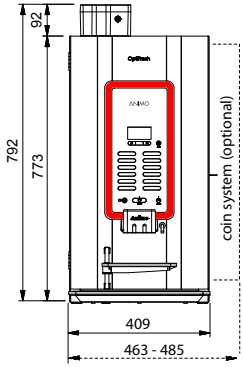
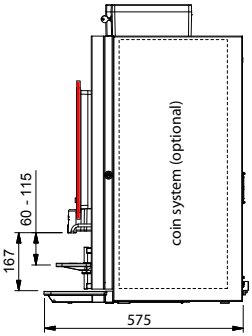
OptiFresh Bean NG

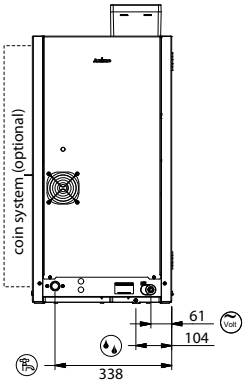


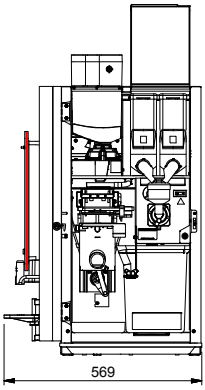


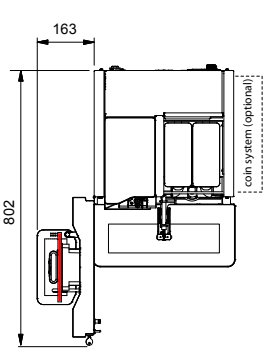


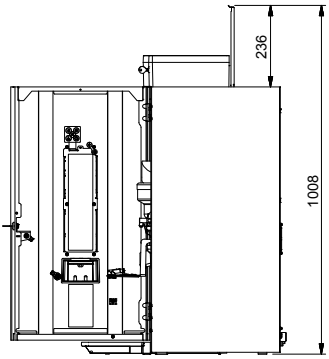












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