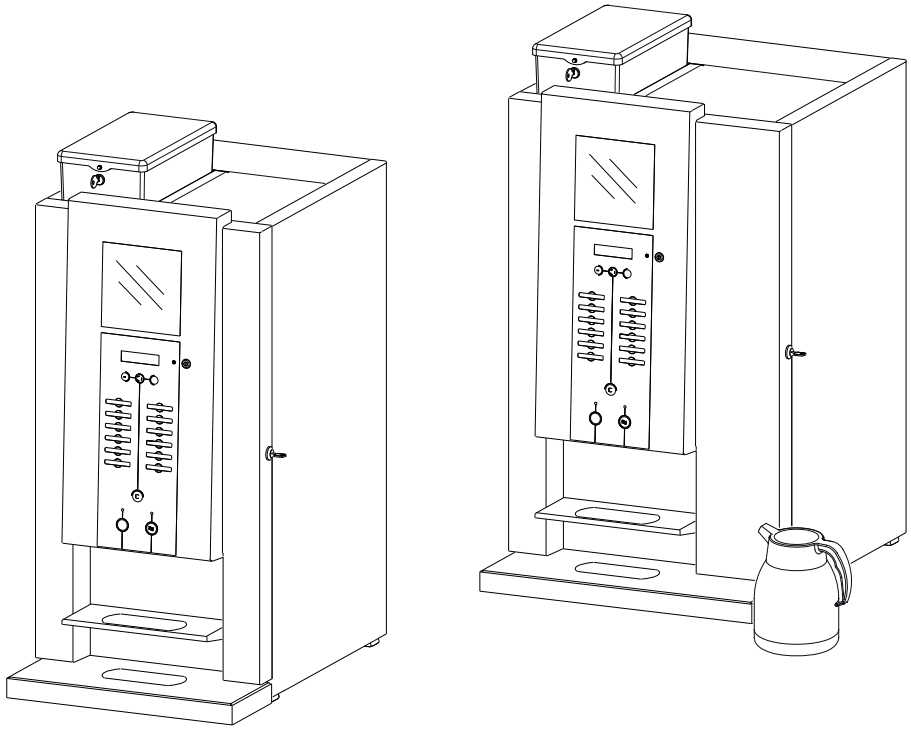
Animo®

OPTIFRESH bean



(NL) Service boek

(GB) Service book

(D) Servicehandbuch

(F) Manuel de service / maintenance

CONTENT

PREFACE

Purpose of this document
This document provides directions for use and serves as a service document for **trained, authorised service staff** to safety install, programme and maintain this device.

- Trained, authorised service staff are considered to be those who install, programme and maintain the device, and are able to carry out repairs.

The majority of settings, including product settings, are protected by a PIN code. This PIN code ensures that users do not gain access to 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 sections and paragraphs are numbered. The various figures referred to in the text can be found in the figures section at the beginning of the manual or with the corresponding subjects.

Pictograms and symbols.

CAUTION
General indication for: IMPORTANT, CAUTION or REMARK.

WARNING
Warning for possible damage to the device, surroundings or environment.

DANGER
Danger of possible severe damage to the device or physical injury.

DANGER
Danger of electricity and voltage.

DANGER
Danger of electrostatic discharge (ESD) in electronics.

1. BASIC FUNCTIONING

1. Waste bin
2. Hot water outlet
3. Coffee outlet / Drink outlet (instant)
4. Brewer
5. Brewer motor
6. Grinder
7. Bean canister
8. Dispensing valves
9. Water reservoir
10. Inlet valve

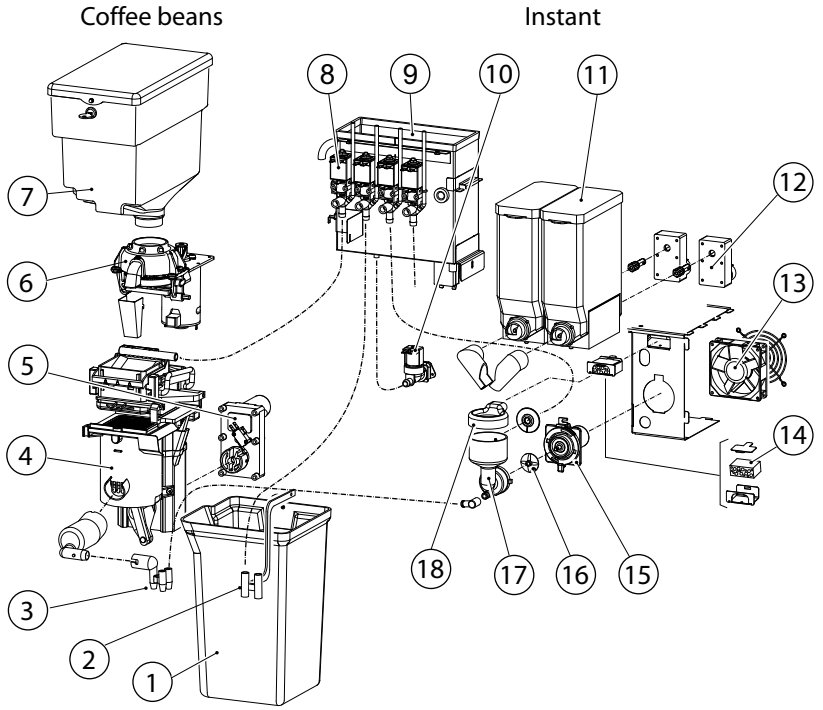


Fig. 1

Instant (OptiFresh 2 model and upwards)

11. Instant ingredient canisters
12. Canister motor
13. Ventilator
14. Evaporation extractor filter cassette
15. Mixer motor
16. Mixer impellor
17. Mixer housing
18. Evaporation extractor ring

1.1 Boiler System

Turn on the device using the ON/OFF switch. The display will light up.

The magnetic valve (fig. 1-10) will open and the hot water reservoir (fig. 1-9) will be filled to the maximum electrode. The heating element will be switched on. The display shows [boiler filling] and [boiler heating]. As soon as the NTC sensor measures the set temperature, the heating element will be switched off.

When a drink is being dispensed the water level drops and the maximum electrode is released; the inlet valve (2.5 litres/min.) opens and immediately refills the reservoir until the maximum level is reached again. If the water level falls under the minimum electrode level during operation, the operating panel display will show [refilling boiler]. 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.

1.2 Temperature regulation

The heating element is turned on when the water temperature falls below the temperature setting and the minimum electrode registers water. The temperature in the water reservoir is measured using an NTC precision sensor 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 (fig. 1-10) opens and cold water is added. The heating element switches off again as soon as the inlet valve shuts off. The software can also be used to delay when the heating element switches off. See menu item 2.4 Settings / Temperature in the service menu. The heating element always switches off when the maximum boiler temperature of 99˚C is reached.

1.3 Hot water dispensing

When dispensing drinks one of the dispensing valve (fig. 1-8) opens and hot water flows to the brewer or mixer system. The flow velocity for each valve is set using the adjustment screw on the valve. The amount of outflow is determined by the length of time that the valve stays open. In order to rinse the brewer unit and mixer system, a small amount of rinsing water is released shortly after dispensing to rinse away any ingredient residue.

1.4 Ingredients and mixer system

The ingredients canisters (fig. 1-11) are powered by a 130RPM motor (fig. 1-12). The instant product (ingredient) is forced out of the canister by a coil and drops through the dispensing bent pipes into the mixer unit (fig. 1-17). At the same time, the dispensing valves (fig. 1-18) dispense hot water into the mixer unit. The mixer motor (fig. 1-15) blends the instant product with water at a speed of 10,700 RPM using the mixer rotor (fig. 1-16). The drink flows into the cup via the drink outlet (fig. 1-3). All individual parts mentioned in this section can be sequentially coordinated using adjustable parameters (timers) in the control unit.

1.5 Evaporation extractor system

Evaporation released during mixing is largely absorbed by the evaporation extractor ring (fig. 1-18) and sucked into the machine via the filter cassette (fig. 1-14). The evaporation and ingredient residue are absorbed by the filter. The filter (fig. 1-14) can be easily reached (for cleaning purposes) by dismantling the mixer unit (fig. 1-17). To a large extent, this prevents evaporation from entering the canister outlet and making ingredients damp.

1.6 Solid State Relay (SSR)

The heating element is controlled by a solid state relay, which supersedes the magnetic switch that was formerly used for this purpose.

1.7 Steam thermostat

The solid state relay (SSR) is secured by a steam thermostat which is build in line with the overflow tube.
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.

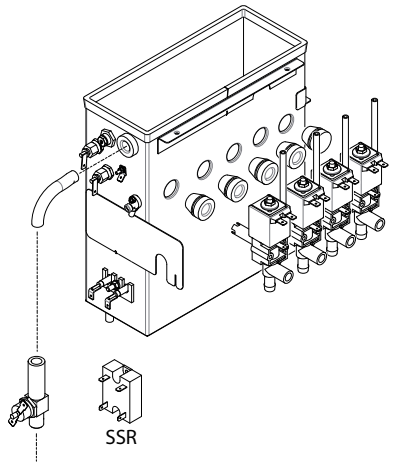


Fig. 2

1.8 Brewer unit

Ground coffee and hot water are dispensed to the permanent filter and are drawn into the filter by vacuum. After making a fresh brew drink selection the following process (fig. 3) starts:

Start position	Brewer in resting position.	Start brewer 3	The piston moves down and sucks the coffee extract through the permanent filter.
Start brewer 1	The piston leaves the resting position. Ground coffee and hot water is dispensed to the brewer unit.	Pause 3	Just before the coffee extract leaves the brewer the piston either pauses or stops again to make sure the coffee residue is sufficiently dry.
Pause 1	The piston stops just above the outlet. Coffee and hot water is still dispensed.	Start brewer 4	The piston moves down further so that the outlet opening opens.
Start brewer 2	The piston rises and forces air upwards out of the cylinder, ensuring that coffee and water are mixed thoroughly. Water dispensing stops during this cycle.	Pause 4	The coffee is now dispensed to the cup, goblet or jug.
Pause 2	Piston stops at the highest setting to enable the coffee to be extracted.	Return to start	The piston returns to the start position again. At the same time the coffee residue is wiped away by the filter wiper, before it drops into the waste bin.

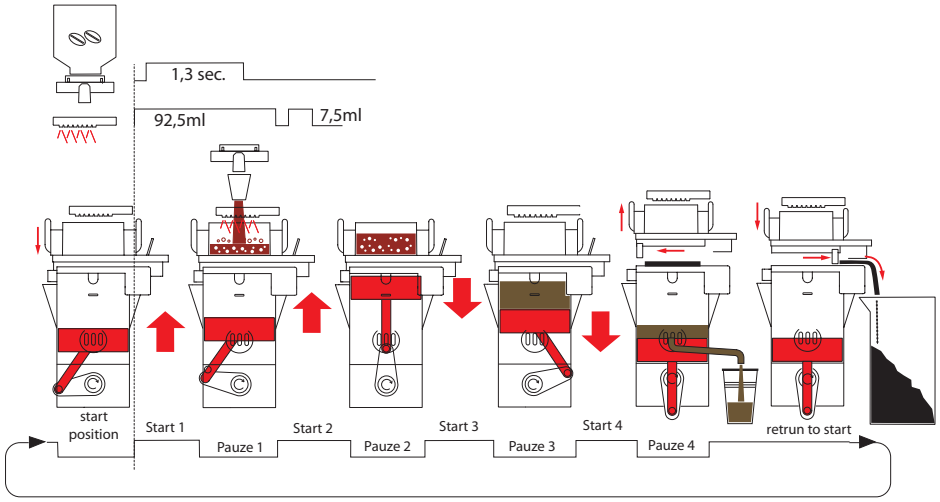


Fig. 3

1.8.1 Adjustment

If a leak occurs between the brewer unit and the permanent filter 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 unit (fig. 4-1) and the permanent filter (fig. 4-3).

The tensile force also ensures that the wiper (fig. 4-4) completely pushes the coffee residue off of the permanent filter.

See figure 4 for the most important brewer parts:

1. Brewer unit
2. Rubber seal (Art. No. 03375)
3. Permanent filter (Art. No. 03488)
4. Wiper (Art. No. 03380)
5. Tension member
6. Adjustment shim* (Art. No. 03384)
7. Rubber
8. H-frame
9. Tension member adjustment

1. First remove the brewer from the device (see section 8.7.2 in the user manual for instructions).
2. The tensile force can be set by adding adjustment shims (fig. 4-6) between the tension member (fig. 4-5) and the H-frame (fig. 4-8).
3. Press the H-frame downwards and take the tension member out of the recess. Place an adjustment shim* in the recess and replace the tension member.

   CAUTION: 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 tension member once (clockwise). CAUTION: turning in the tension member 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 any more! For further help see chapter 1.8.3 Troubleshooting.

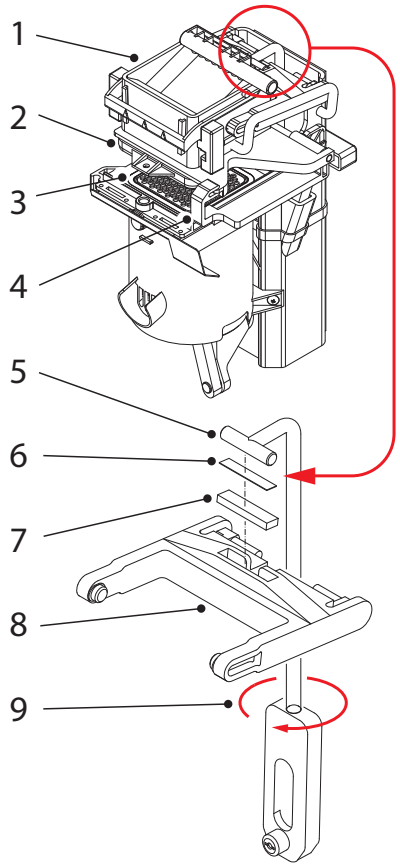
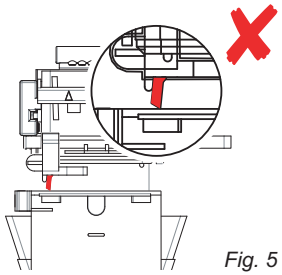
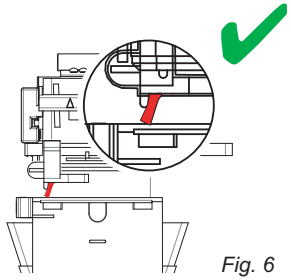
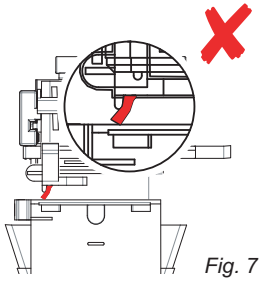


Fig. 4

* a extra shim is located behind the stainless steel panel on the inside of the door.

1.8.2 Setting tips

Tensile force too low (fig. 5)	Tensile force correct (fig. 6)	Tensile force too high (fig. 7)
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).  *Fig. 5*	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.  *Fig. 6*	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!  *Fig. 7* 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 tensile force is too high (fig. 7):

- 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.

1.8.3 Troubleshooting

Problem	Probable cause	Action
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.
	The brewer unit tensile force is too high.	Remove one adjustment shim to reduce the tensile force.
The coffee residue remains too wet. Never increase the tensile force under if the brewer unit tensile force is set correctly.	There is inadequate suction in the coffee residue.	Increase the pause 3 time (see section 1.6)
	The water temperature is too high.	Lower the water temperature.
	The permanent filter is dirty or worn.	Clean or replace the permanent filter.
If the above-mentioned problem is not resolved:	Check the brewer unit and cylinders for fractures.	Replace the defective parts.
	Check the cylinder for wear and tear or scratches.	Replace the defective parts.
	Check the Teflon coating for wear and tear.	Replace the defective parts.

1.9 Grinder

The coffee grinder (Fig. 8) is driven by a strong direct current (DC) motor [2.6]. The top grinding disc [2.2] is fixed. The lower grinding disc [2.3] is driven trough a belt. The fineness of the coffee is set with a adjustment screw [2.5]. If the adjustment shaft is turned clockwise, the distance to the top drive reduces, increases counterclockwise. The ground coffee leaves the mill through the coffee spout [2.1]. A rubber flap prevents moisture comes in.

Major parts	Technical data	Material
1. Bean canister	Capacity 2.5 kg / 6.4 liter	PC
1.1 Bean stopper		Stainless steel
2. Coffee grinder	Sound 70 dB (A)	
2.1 Coffee spout		ABS
2.2 Grinding disc up	Ø 65mm	Ceramics
2.3 Grinding disc lower	Ø 65mm	Ceramics
2.4 Belt		Rubber
2.5 Adjustment shaft	hexagon +	
2.6 DC motor	230Vdc	
3. Coffee outlet		Stainless steel
4. Brewer unit	See 1.8 brewer unit	

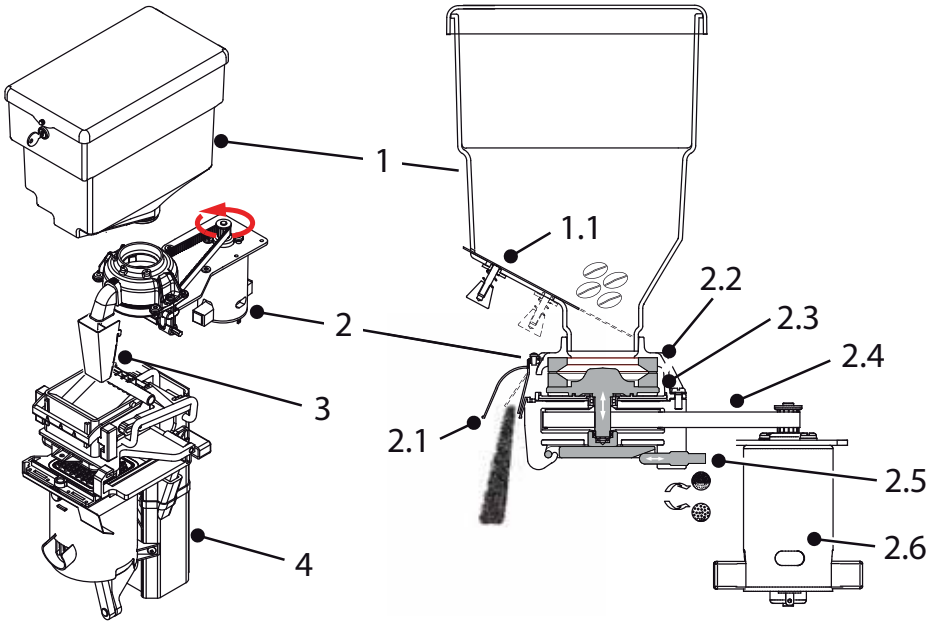


Fig. 8

1.9.1 Livetime

The life cycle of the ceramic grinding discs are about 3x times as long as steel grinding discs. This life cycle is depending of the type of coffee* and is approximately 3000 kg of coffee beans. At an average dose of 7.5 gr. / sec. these are around 400,000 shots.

We advise you to replace coffee grinder entirely when this grinding volumes are reached. Not only the grinding discs need to be replaced, but also the bearings, motor brushes and the driving belt has reached its maximum life cycle. In case of a damaged grinding disk (by stones or other foreign objects) they can be ordered separately as a set and can be replaced.

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

1.9.2 Fineness adjustment

The coffee grinder is factory-set to the ideal grinding fines which perfectly fits the brewer unit.

1. Close the bean stopper from the bean canister.
2. Hold a cup under the spout of the coffee grinder.
3. Grind the coffee grinder empty.

   Tip: go to the service menu: **2.7 Hardware test / Outputs / IM1.** Keep recipe key 11 pressed to empty the coffee grinder is emptied (motor speed increases).
4. Turn the adjustment shaft clockwise until the grinding disks slightly touch each other.
5. Turn adjusting shaft 360 to 450 ° counterclockwise, or 1 to 1 ¼ rotation! The dosing speed will be around 4.4 to 4.6 gr. / sec.
6. Please monitor the brewer functioning properly after the adjustment of the grinding fineness. See chapter 1.9.3! If necessary, re-adjust fineness times!

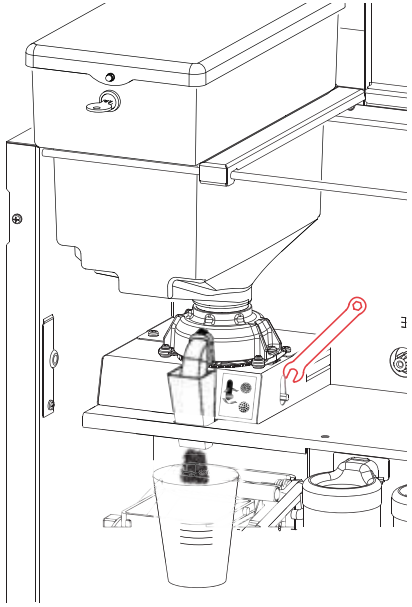


Fig. 9

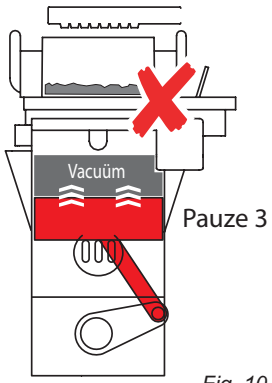
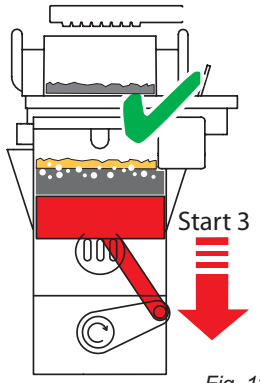
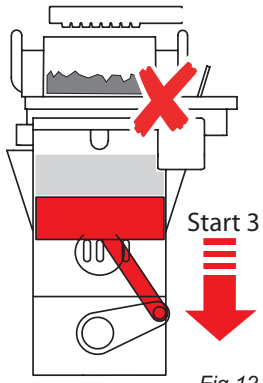
WARNING

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

WARNING

- I If there is a sound of sharpening stones on each other can be heard, adjust the grinding coarser.
- De grinding discs shall never touch each other.
- The grinding adjustment and delivery can vary according to coffee beans and roasting degree.
- Adjust the coffee grinder from coarse to fine always a rotating- or empty mill. Adjusting from fine to coarse is possible at standstill.

1.9.3 Grinder ajustment tips

To fine (Fig.10)	Ideal (Fig. 11)	To coarse (Fig. 12)
Grain <650µm; Recognizable; The brewer piston is pulled up the pause mode 3 (Fig. 10) due to a high vacuum in the brewer cylinder.  *Fig. 10* The coffee is grinded too fine, the flavour extraction is too extreme (too many bitter substances). The brewer is overloaded, and can brake down! Advice, adjust the coffee grinder coarser (turn adjustment shaft counterclockwise).	Grain 650-800µm; Recognizable; If the brewer piston runs down in the start 3 position (Fig. 11) a beige foam layer is (briefly) creates on the coffee.  *Fig. 11* The grinding adjustment is ok, the brewing process runs perfectly.	Grain >800µm; Recognizable; Weak coffee, High coffee dose.  *Fig.12* The grain size is too large to get 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. Advice, adjust the coffee grinder finer (turn adjustment shaft clockwise). Reduce the coffee dosage in de recipe menu.

1.9.4 Replace grinding discs

1. Close the bean stopper from the bean canister.
2. Hold a cup under the spout of the coffee grinder.
3. Grind the coffee grinder empty.

Tip: go to the service menu: **2.7 Hardware test / Outputs / IM1.** Keep recipe key 11 pressed to empty the coffee grinder is emptied (motor speed increases).

4. Lift the bean canister from the grinder.
4. Switch the machine off.
6. Unscrew the two screws [1] and remove the grinding top [2].
7. Remove the grinding discs [4] by loosening the three screws [3].
8. Clean all parts thoroughly.
9. Install the new grinding discs in the exact reversed order.

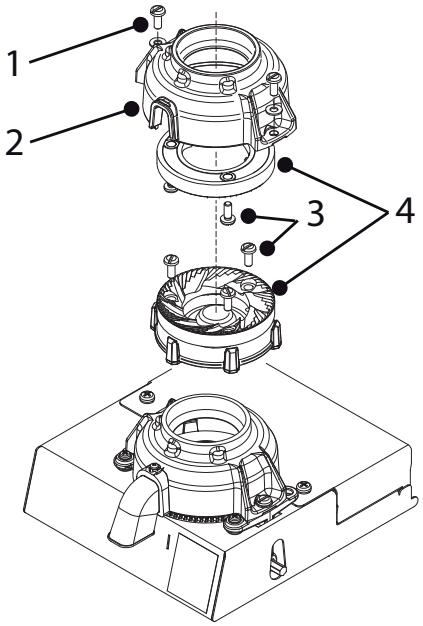


Fig. 13

⚠ WARNING

- Don't drop the ceramic discs.
- De grinding discs shall never touch each other.
- Adjust the grinding after replacing the discs.

1.9.5 Replace driving belt

Disassembly coffee grinder housing (Fig. 14a)

1. Remove all the canisters [1] and disassemble the cover [2] behind it.
2. Remove the electrical connections of the small coffee grinder board (accessible from the rear).
3. Remove the two screws [3] at the bottom of the enclosure.

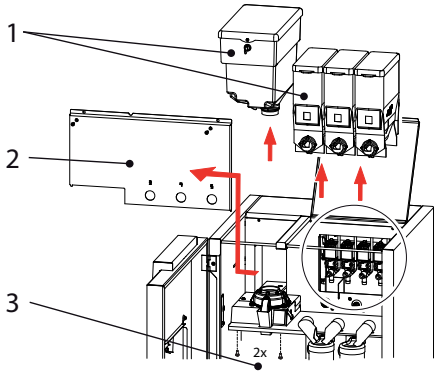


Fig. 14a

Disassembly driving belt (Fig. 14)

4. The grinder housing [4] can now be taken from the machine.
5. Remove the three screws [5] and remove the belt cover.
6. Remove the four screws [6] from the suspension rubbers and remove the grinder and motor frame.
7. Tighten screw [7] from the coffee outlet and remove it.
8. Remove the two screws [8] of the grinder top [9].
9. Remove the grinder top [9].
10. Unscrew the motor screws [10] slightly, so the driving belt looses tension.
11. Pull out the complete burr carrier [11].
12. Remove pulley and belt [12] and replace the parts.
13. Install the new burr carrier back [11] into place.
14. Tighten belt and fix the motor with screw [10].

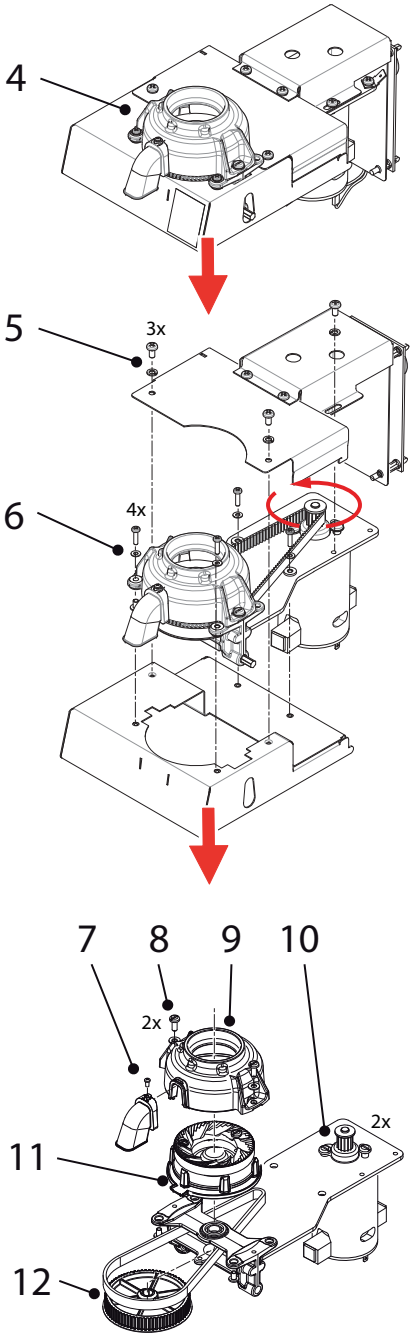


Fig. 14

1.9.6 Cleaning the grinder

Depending on the fineness of grinding and the intensity of use coffee deposits will arises in the grinding house and grinding disks (fine particles, coffee oil, coffee residue). This can effect the grinding capacity the dosing accuracy and also can affect the taste.

Cleaning Frequency
To ensuring a constant grinding quality its recommended to clean the grinder at least every 6 months.

Recommended cleaner

Grinder cleaner 430gr. GRINDZ ™
Art. no. 1000151
Shelf life 18-24 months
Gluten free

What is GRINDZ ™? Is it harmfull?

GRINDZ ™ consists of 100% organic, natural materials (including cereals, starch) and is absolutely not harmful to health. It binds the coffee oil and cleans by friction, the housing and grinding discs. If there are small particles remaining in the follow-up shots, it will not affected the extraction or taste.

Cleaning with GRINDZ ™

1. Close the bean stopper from the bean canister.
2. Hold a cup under the spout of the coffee grinder.
3. Grind the coffee grinder empty.

Tip: go to the service menu: **2.7 Hardware test / Outputs / IM1.** Keep recipe key 11 pressed to empty the coffee grinder is emptied (motor speed increases).

4. Lift the bean canister from the grinder and remove the coffee beans.
5. Fill 70g GRINDZ ™ (2x contents bus cover) in the bean canister.
6. Grind ™ GRINDZ trough the grinder and collect the product.
7. Grind about 6 shots of coffee to “wash” out the GRINDZ ™ remains from the grinder house.

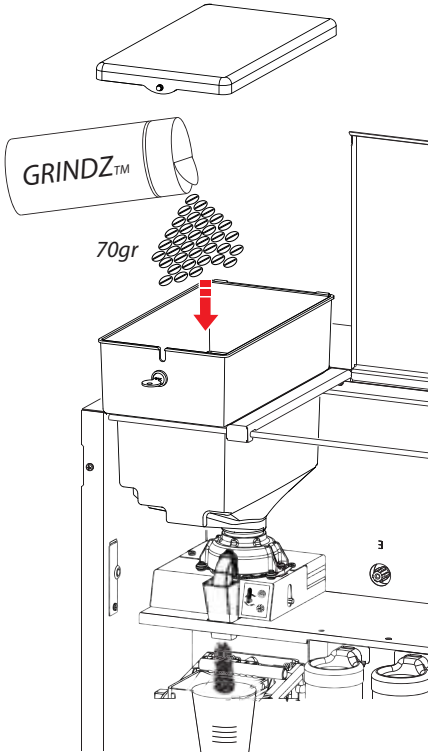


Fig. 15

2. MENU STRUCTURE

2.1 The operator/service menu

The majority of settings, including product settings, are protected by a PIN code. This PIN code ensures that users do not gain access to 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 section describes how the various settings can be changed by **trained, authorized service staff.** You can read about how to gain access to the service menu below. On access to the **service menu** the control panel has the following functions:

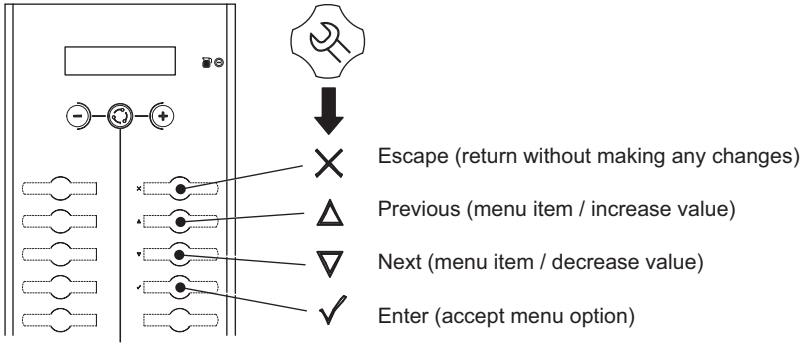


Fig. 16

Summary:

Operator menu

1.0 Free dispensing
1.1 Clock
1.2 Timer settings
1.3 Recipe counters
1.4 Quick recipe
1.5 Permanent filter
1.6 Software
1.7 PIN-code

Service menu

2.1 Quick recipe
2.2 Button settings
2.3 Recipe settings
2.4 Settings
2.5 Reset counters
2.6 Descale / filter
2.7 Hardware test
2.8 Read log
2.9 Clear log
2.10 Load defaults
2.11 SD menu
2.12 Change PIN code
2.13 Additional settings

2.2 The operator menu

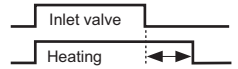
Operator menu					
Main item	Sub item	Item	Range	Set	Description
1.0 Free dispensing			Yes/no	Yes	Set the device to free or paid dispensing here.
1.1 Clock	Time		HH:MM		Set the clock to the correct local time here.
	Date		DD-MM-JJJJ		Set the clock to the correct local time here.
1.2 Timer	Mon-Fri		On 00:00 Off 00:00		Set the time when the device should operate here. If the timer switches off the device it will automatically revert to standby mode.
	Sat		On 00:00 Off 00:00		
	Sun		On 00:00 Off 00:00		
1.3 Recipe counters	Recipe 1 Recipe 12	Total	Off 00:00		Total counter for recipe 1 (free-paid-jugs)
		Free	Cups		Number of free dispensed drinks (recipe 1)
		Paid	Cups		Number of paid dispensed drinks (recipe 1)
		Jug	Cups		Number of dispensed jugs (recipe 1)
	Recipes total	Total	Cups		Total counter for all dispensed recipes
		Free	Cups		Total counter for all free dispensed recipes
		Paid	Cups		Total counter for all paid dispensed recipes
		Jug	Cups		Total counter for all dispensed jugs
	Rinse counters	Brewer			Number of brewer rinses
		Mixer(s)			Number of mixer rinses
	Reset counters				Total rest of all counters
1.4 Quick recipe	Recipe name 1 Recipe name 12	Cup volume	50-200 ml	120ml	Use this for setting the volume and strength of coffee, milk, sugar and cocoa easily per recipe (drink button). Only the ingredients applicable to the recipe are shown.
		Coffee (1)	-20 / +20%	0%	
		none (2)	-20 / +20%	0%	
		Chocolate (3)	-20 / +20%	0%	
		Topping (4)	-20 / +20%	0%	
		Coffee inst. (5)	-20 / +20%	0%	
1.5 Permanent filter	Reset teller				After the permanent filter of the vending unit (brewer) has reached the maximum number of brews the filter must be replaced. After replacing the permanent filter, reset the 'replace brewer filter' indicator.
1.6 Software					Software version is readable here.
1.7 PIN-code			2-2-2-2-2		PIN code = press the number 2 key five times.

2.3 The service menu

Service menu					
Main item	Sub item	Item	Range	Set	Description
2.1 Quick recipe	Recipe name 1 … Recipe name 12	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)	-20 / +20%	0%	
		None (2)	-20 / +20%	0%	
		Chocolate (3)	-20 / +20%	0%	
		Topping (4)	-20 / +20%	0%	
		Sugar (5)	-20 / +20%	0%	
2.2 Button setting	Button 1 … Button 12	<Recipe name>	Recipe list See section 3.3		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	50-230ml	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!
		Attention; for cup volumes bigger than **>180ml** change the brewer parameters (2.3 Recipe setting / Unit 1) **Advice:** deactivate Quick recipe in the Operator menu; 2.4 Settings / I/O Quick recipe.			Brewer parameter / 180ml / 200ml / 220ml Pause 2 (2,5) 3,0 3,5 4,5 Start 3 (4,0) 4,0 4,0 4,0 Pause 3 (4,0) 4,0 4,5 6,5 Start 4 (3,0) 3,0 3,0 3,0 Pause 4 (2,0) 3,5 4,0 4,5
		Multicup	0-20	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	0 / 1	Recipe button concerned works as follows: 0= key switch setting n/a CUP (paid) or JUG* (paid) 1= key switch |: CUP (paid) key switch –: JUG* (paid) 2= key switch |: no dispensing key switch –: JUG* (paid) 3= key switch |: CUP (paid) key switch –: JUG* (free) (*when multicup is set to >1)
		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. Only use this option for Water 4 and Water 6 in combination with a hot/cold water recipe button.
		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.

Service menu continued ….					
Main item	Sub item	Sub	Item	Range	Description
2.3 Recipe setting	Recipe name 1 … Recipe name 12	Unit 1	DV 1 WT	0,0-30,0 s	Waiting time Water 1
			DV 1	0,0-100,0 ml	Dispensing amount Water 1 (Brewer)
			Rinse 1 WT	0,0-20,0 s	Waiting time Rinsing Water 1
			Rinse 1	0,0-15,0 ml	Dispensing amount Rinsing Water 1 Automatically deducted from Water 1
			Ingredient 1 WT	0,0-30,0 s	Waiting 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	Waiting 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
			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	Waiting time Water 2
			DV 2	0,0-100,0 ml	Dispensing amount Water 2
			Rinse 2 WT	0,0-20,0 s	Waiting time Rinsing Water 2
			Rinse 2	0,0-15,0 ml	Dispensing amount Rinsing Water 2 Automatically deducted from Water 2
			Ingredient 3 WT	0,0-30,0 s	Waiting time Ingredient 3
			Ingredient 3	0,0-50,0 s	Product dispensing time Ingredient 3
			Ingredient 4 WT	0,0-30,0 s	Waiting time Ingredient 4
			Ingredient 4	0,0-50,0 s	Product dispensing time Ingredient 4
			Mixer 2 WT	0,0-30,0 s	Waiting time Mixer 2
			Mixer 2	0,0-50,0 s	Mixing time Mixer 2
		Unit 3	DV 3 WT	0,0-30,0 s	Waiting time Water 3
			DV 3	0-100 ml	Dispensing amount Water 3
			Rinse 3 WT	0,0-20,0 s	Waiting time Rinsing Water 3
			Rinse 3	0,0-15,0 ml	Dispensing time Rinsing Water 3 Automatically deducted from Water 3
			Ingredient 5 WT	0,0-30,0 s	Waiting time Ingredient 5
			Ingredient 5	0,0-50,0 s	Product dispensing time Ingredient 5
			Ingredient 6 WT	0,0-30,0 s	Waiting 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	Waiting time Mixer 3
			Mixer 3	0,0-50,0 s	Mixing time Mixer 3

Service menu continued ….					
Main item	Sub item	Sub	Item	Range	Description
2.3 Recipe setting (continued…)	Recipe name 1	DV 4 WT		0,0-30,0 s	Waiting time Water 4
		DV 4		0,0-100,0 ml	Dispensing amount Water 4 (Hot water dispensed)
		DV 5 WT		0,0-30,0 s	Waiting time Water 5
		DV 5		0,0-100,0 ml	Dispensing amount from an extra hot water valve Water 5 (reserved for a Brewer By-Pass option).
		DV 6 WT		0,0-30,0 s	Waiting time Water 6
		DV 6		0,0-100,0 ml	Dispensing amount from an extra inlet valve Water 6 (Cold Water option)
		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% Strength -- - 0 + ++ -20% -10% 0 10% 20% Example: [cocoa] 40% Strength -- - 0 + ++ -40% -20% 0 20% 40%
		None		0-50%	
		Strength Chocolate		0-50%	
		Strength Topping		0-50%	
		Strength Sugar		0-50%	
		Strength Ingrediënt 6 Option		0-50%	
	Recipe name 12				

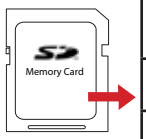
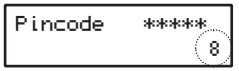
Service menu continued…					
Main item	Sub item	Item	Range	Set-ting	Description
2.4 Settings	Language	English			Language choice display. Ex factory setting English.
		Dutch			
		German			
		French			
	Temperature	Temp. boiler	70-97°C *	95°C *	Boiler temperature standard model 1K - 5K + AK
				90°C *	Boiler temperature FreshBrew + instant model 6A t/m 9A
		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 waste delay of the element here after the inlet valve is closed. Inlet valve Heating 
	Display	Show clock	Yes/no	No	Show clock in display
		Show date	Yes/no	No	Show date in display
		Message text	Yes/no	No	Show message text (running text) in display. Only shown if Display Date, Clock or both are set to no. Message text only programmable by using the Optimizer programme and SD card.
	Use bleeper		Yes/no	Yes	Sound signal on or off
	Fan time		0-300 sec.	60 s.	Duration of Fan speed 2 after dispensing
	Fan speed 1		40-100%	50%	Fan speed when resting
	Fan speed 2		40-100%	100%	Fan speed during dispensing

Service menu continued …..						
Main item	Sub item	Item		Range	Set-ting	Description
2.4 Settings (continued…)	Coin system	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 setting for each channel. €0.05-€2 respectively. 0.00=free TOKEN=coffee token Foreign currencies; see list #
			Single vend	ja-nee	ja	Yes: any excess credit is not retained for next drink. No: credit retained for next drink.
			Max coin accep.	€ 0,05-100,00	€ 2,00	Coins larger than € 2.00 are rejected and ejected through the return slot of the coin mechanism. Adjust to the highest recipe product price.
			Point position	0-2	2	Decimal position in amount
			Show credit	Yes/no	Yes	Show credit on the display
		MDB	Single vend	ja-nee	ja	Yes: any excess credit is not retained for next drink. No: credit retained for next drink.
			Max coin accep.	€ 0,05-100,00	€ 2,00	Coins larger than € 2.00 are rejected and ejected through the return slot of the coin mechanism. Adjust to the highest recipe product price.
			Point position	0-2	2	Decimal position in amount
			Show credit	Yes/no	Yes	Show credit on the display
	I/0 Reset counter			Yes/no	No	Add Reset counters menu item to the operator menu
	I/0 Quick recipe			Yes/no	Yes	Add Quick recipe menu item to the operator menu
	Drip tray sign.			Yes/no	Yes	Turns off drip tray sensor software.

# 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-ting	Description
2.5 Reset counters	Rinse counters	Brewer counter?			Reset brewer spoelteller
		Mixer counter?			Reset mixer spoelteller
	Recipe counters	Recipe counter 1 … Recipe counter 12			Reset recepttellers per recept.
		Reset counter total			Reset totaal tellers
	Reset all counters				Reset alle tellers ineens
2.6 Descale/filter	Service moment		0-50.000	12500	After the Service Due setting has been reached the Descale/filter indicator will be displayed. See section 5. Service
	Service counter			12500 ↓ 0 ↓ -12500	The number of beverages dispensed is counted here. Check here to see how far the machine is from periodic maintenance (descaling boiler or replacing water filter). When the counter reached 0 (zero) the count becomes negative.
	Reset serv. coun				After periodic maintenance has been carried out (boiler descaled or filter replaced) the service counter should be set to nil.

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 indicated
		Level sensors	High Yes/no Low Yes/no	
		Drip tray sensor	Yes/no	
		Waste bin	Yes/no	
		Door switch	Yes/no	
		Brewer switch	Yes/no	
		Key switch	Yes/no	
	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. **Caution: BM goes through a complete drinks cycle.**	KW1	400 mA	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 (Cold water) optional!
		IM1 #	400 mA [1]	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 #	800 mA	Brewer motor
		MM2 #	1000 mA [1]	Mixer motor 2
		MM3 #		Mixer motor 3
		Ventilator	200 mA	Ventilator
		LED's		LED's
	Calib. valves **Test by holding in recipe button 11 (for 1 sec.) to open the relevant valve for 10 seconds.**	DV1	15 ml / sec	Calibrate to 150 ml (10 sec x 15 ml)
		DV2	15 ml / sec	Calibrate to 150 ml (10 sec x 15 ml)
		DV3	15 ml / sec	Calibrate to 150 ml (10 sec x 15 ml)
		DV4	20 ml / sec	Calibrate to 200 ml (10 sec x 20 ml)
		DV5	20ml / sec.	Calibrate to 200ml (10sec. x 20ml) (Optional valve for Brewer By-pass)
		DV6	42 ml / sec	Inlet valve cannot be calibrated (fixed flow)

Service menu continued….			
Main item	Sub item	Item	Description
2.8 Read log			Saves last 20 error messages, including date and time
2.9 Clear log	Are you sure?		Clears log
2.10 Load defaults # See chapter 3.2 Model code system	Model # OF1K xx00 OF2K xx00 OF3K xx00 OF4K xx00 OF5K xx00 OF6K xx00 OF7K xx00 OF8K xx00 OF9K xx00 OFAK xx00	Are you sure?	When a new circuit board is introduced it is necessary to load defaults. When loading defaults it must be stated on the OptiFresh model plate. The correct model settings are not loaded until the question 'Are you sure?' has been confirmed. **Attention**: • Before you start changing the button- and/or receipt- settings, first close the service menu, only after re-entering the service menu the new model settings will be activated. • When you confirm this setting all loaded factory settings and changed programmed values will be lost. • After loading defaults the PIN code reverts to 2-2-2-2-2 and the language reverts to English. Change if necessary.
2.11 SD menu Before saving or loading data, insert an empty SD memory card into the card reader . This is located behind the stainless steel panel on the inside of the door. SD card specifications: - 16MB or greater - FAT16 format	Load data 	Pers. settings	This menu item is for loading **personal settings** to the device using an SD memory card. This file contains the (amended) personal settings for menus: **2.4 Settings / 2/6 Descale-filter / 2.13 Additional settings.** The data file (Ofxxxx00.mdu) should be on the SD card.
		Language	This menu item is for loading a **different language set** to the device. The data file (xxxxxx.tlf) should be on the SD card.
		Recipe	This menu item is for loading **personal recipes** to the device using an SD memory card. This file contains the (amended) personal recipes for menus: **2.1 Quick recipe / 2.2 Button settings / 2.3 Recipe settings.** The data file (OFxxxx00.rcu) should be on the SD card.
	Save data 	Pers. settings	This menu item is for saving **personal settings** to an SD memory card and copying them to another device. All settings amended in menus: **2.4 Settings / 2.6 Descale-filter / 2.13 Additional settings** are loaded to the SD card in one data file (OFxxxx00.mdu).
		Recipes	This menu item is for saving **personal recipes** to an SD memory card and copying them to another device. All settings amended in menus: **2.1 Quick recipe / 2.2 Button settings/ 2.3 Recipe settings** are loaded to the SD card in one data file (OFxxxx00.rcu).
2.12 Change PIN	New PIN code	Repeat PIN code	This menu item is for changing the PIN code using buttons 1-4 only. The entire service menu is accessed with this PIN code, which prevents unintentional changes from being made to the machine settings by untrained staff. • The ex-factory PIN code is 2-2-2-2-2 PIN code forgotten or needs to be deactivated? The PIN code input display (operator menu item 1.7) shows a number on the right. Enter the corresponding PIN code (see list on p.80 to access the service menu. 

Service menu continued…					
Main item	Sub item	Item	Range	Set	Description
2.13 Addit. settings	Waste manag.	Cup amount	0-1000	250	**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)
	Perm.filter coun	xxxxx	0-30.000	20.000	When the set number of (Brewer) vends is reached the display reads 'Replace permanent filter' when switching on.
	Reset p. filter	Reset counter?			Reset the permanent filter counter after (preventative) replacement

PIN Code Table

No.	Pincode				
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
8	2	3	2	4	1
9	2	4	3	2	3
10	3	1	3	3	2

No.	Pincode				
11	1	3	3	3	2
12	1	2	4	1	3
13	4	3	1	2	1
14	1	1	1	4	2
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

Table 1

Water Hardness Table

Water Quality	Hardness					Limescale Indicator ...cups
	°D	°F	°C	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	8500
Average	8-12	15-22	5-7	1,4-2,2	268-214	12.500*
Soft	4-8	7-15	2-5	0,7-1,4	72-268	20.500
Very soft	0-4	0-7	0-2	0- 0,7	0-72	0 = off

Table 2

3. RECIPE SETTINGS

3.1 Quick recipe

First of all we would like to remind you that the **cup volume** (ml) and **strength** (%) can easily be set in the service menu **2.1 Quick recipe** (page 72 of this document).

The operator of the device (end user) also has access to this quick recipe, which is found under section 1.4 Quick recipe (see user manual). As supplier of the device, you can remove the quick recipe from the operator menu if desired. Go to **2.4 Settings / 2.4.9 I/0 Quick recipe** via the service menu and change **Yes** into **No**.

3.2 Model code system

The OptiFresh models have the following standard canister configurations (table 3a & 3b):

If the device is delivered with a different canister configuration this can be given a new number using the model code system below.

Table 3a	Model code	Standard canister configuration				
		1	2	3	4	5
OptiFresh 1	1K	Coffee beans				
OptiFresh 2	2K	Coffee beans		Chocolate		
OptiFresh 3	3K	Coffee beans		Chocolate	Topping	
OptiFresh 4	9K	Coffee beans		Chocolate	Topping	Instant Coffee

The OptiFresh models can be altered to one of below mentioned different canister configurations. These models (table 4a & 4b) are implemented in the standard software.

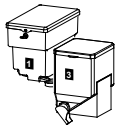
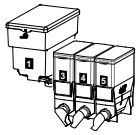
Table 4a	Model code	Different canister configuration				
		1	2	3	4	5
OptiFresh 2	5K	Coffee beans		Topping		
OptiFresh 2	6K	Coffee beans		Instant Coffee		
OptiFresh 3	7K	Coffee beans		Instant Coffee	Topping	
OptiFresh 3	8K	Coffee beans		Chocolate	Instant Coffee	
OptiFresh 3	AK	Coffee beans		Sugar	Topping	
OptiFresh 4	4A	Coffee beans		Chocolate	Topping	Suiker

3.3 Button settings

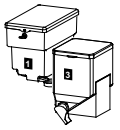
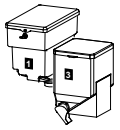
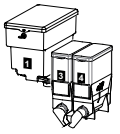
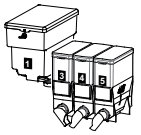
The standard of programmed recipes (table 3a) can easily be transferred over the 12 recipe buttons. See service menu **2.2 Button settings** (page 72).

The optional recipes (table 4a) are already contained in the software and can easily be programmed under one recipe button. See service menu **2.2 Button settings** (page 72).

3.3.1 Standard canister configuration

Table 3b		OptiFresh BEAN 1	OptiFresh BEAN 2	OptiFresh BEAN 3	OptiFresh BEAN 4
		Model 1 K	**Model 2 K**	**Model 3 K**	**Model 9 K**
Canisters	1	**Coffee beans**	**Coffee beans**	**Coffee beans**	**Coffee beans**
	2	**-**	**-**	**-**	**-**
	3	**-**	**Chocolate**	**Chocolate**	**Chocolate**
	4	**-**	**-**	**Topping**	**Topping**
	5	**-**	**-**	**-**	**Instant Coffee**
	Button				
Standard recipes	1	# Coffee	# Coffee	# Coffee	# Coffee
	2	-	Hot Chocolate	Coffee Milk	Coffee Milk
	3	-	Coffee Choc	Hot Chocolate	Hot Chocolate
	4	-	-	Coffee Choc	Coffee Choc
	5	-	-	Cappuccino	Latte Macchiato
	6	-	-	Wiener Melange	-
	7	-	-	Latte Macchiato	*Café au Lait inst.*
	8	-	-	-	*Chocolate Milk*
	9	-	-	-	Espresso inst.
	10	-	-	-	Wiener Melange inst.
	11	-	-	-	Cappuccino inst.
	12	# Hot water	# Hot water	# Hot water	# Hot water
Optional recipes		*Espresso*	*Espresso*	*Espresso*	*Espresso*
		Double Espresso	*Double Espresso*	*Double Espresso*	*Espresso Choc*
		Jug of Coffee	*Espresso Choc*	*Espresso Choc*	*Café au Lait*
		Jug of Hot Water	*Jug of Coffee*	*Chocolate Milk*	*Coffee inst. Milk*
			Jug of Hot Water	*Warm Milk*	*Warm Milk*
				Café au Lait	*Coffee inst.*
				Jug of Coffee	*Wiener Melange*
				Jug of Hot Water	*Latte Macchiato inst*
					Cappuccino
		# = jug filled using key switch			*Jug of Coffee*
					Jug of Coffee inst.
					Jug of Hot Water

3.3.2 Different canister configuration

Table 4b		OptiFresh BEAN 2		OptiFresh BEAN 3			OptiFresh BEAN 4
		Model 5 K	**Model 6 K**	**Model 7 K**	**Model 8 K**	**Model A K**	**Model 4 K**
Canisters	1	**Coffee beans**	**Coffee beans**	**Coffee beans**	**Coffee beans**	**Coffee beans**	**Coffee beans**
	2	**-**	**-**	**-**	**-**	**-**	**-**
	3	**Topping**	**Instant Coffee**	**Instant Coffee**	**Chocolate**	**Sugar**	**Chocolate**
	4	**-**	**-**	**Topping**	**Instant Coffee**	**Topping**	**Topping**
	5	**-**	**-**	**-**	**-**	**-**	**Sugar**
	Button						
Standard recipes	1	# Coffee	# Coffee	# Coffee	# Coffee	# Coffee	# Coffee
	2	Coffee Milk	-	Coffee Milk	Hot Chocolate	Coffee Milk	Coffee Milk
	3	Cappuccino	-	Cappuccino	Coffee Choc	Coffee Sugar	Coffee Sugar
	4	Café au Lait	-	Café au Lait	-	Coffee Milk & Sugar	Coffee Milk & Sugar
	5	Latte Macchiato	-	-	-	Cappuccino	Hot Chocolate
	6	-	-	-	-	-	Coffee Choc
	7	-	Coffee inst.	Coffee inst.	Coffee inst.	-	Cappuccino
	8	-	Espresso inst.	Coffee inst. Mlk	Espresso inst.	-	Wiener Melange
	9	-	Dub. Espresso inst.	Espresso inst.	Dub. Espresso inst.	-	Latte Macchiato
	10	-	-	Dub. Espresso inst.	-	-	-
	11	-	-	Cappuccino inst.	-	-	-
	12	# Hot water	# Hot water	# Hot water	# Hot water	# Hot water	# Hot water
Optional recipes		*Espresso*	*Espresso*	*Espresso*	*Espresso*	*Espresso*	*Espresso*
		Double Espresso	*Double Espresso*	*Double Espresso*	*Double Espresso*	*Double Espresso*	*Double Espresso*
		Warm Milk	*Jug of Coffee*	*Latte Macchiato*	*Espresso Choc*	*Espresso Sugar*	*Espresso Choc*
		Jug of Coffee	*Jug of Coffee inst.*	*Warm Milk*	*Jug of Coffee*	*Latte Macchiato*	*Chocolate Milk*
		Jug of Hot Water	*Jug of Hot Water*	*Café au Lait inst.*	*Jug of Coffee inst.*	*Warm Milk*	*Warm Milk*
				Jug of Coffee	*Jug of Hot Water*	*Café au Lait*	*Café au Lait*
				Jug of Coffee inst.		*Cappuccino Sugar*	*Cappuccino Sugar*
				Jug of Hot Water		*Jug of Coffee*	*Espresso Sugar*
						Jug of Hot Water	*Jug of Coffee*
		# = jug filled using key switch					*Jug of Hot Water*
		inst. = Recipe made with instant coffee					

3.4 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 3.5 Timebar 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 (0.1 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 DV1 = 100 ml, Rinse 1 = 7.5 ml -->
Programme carries out the following action: DV1 = 92.5 ml, Rinse 1 = 7.5

3.5 Timebar recipe settings

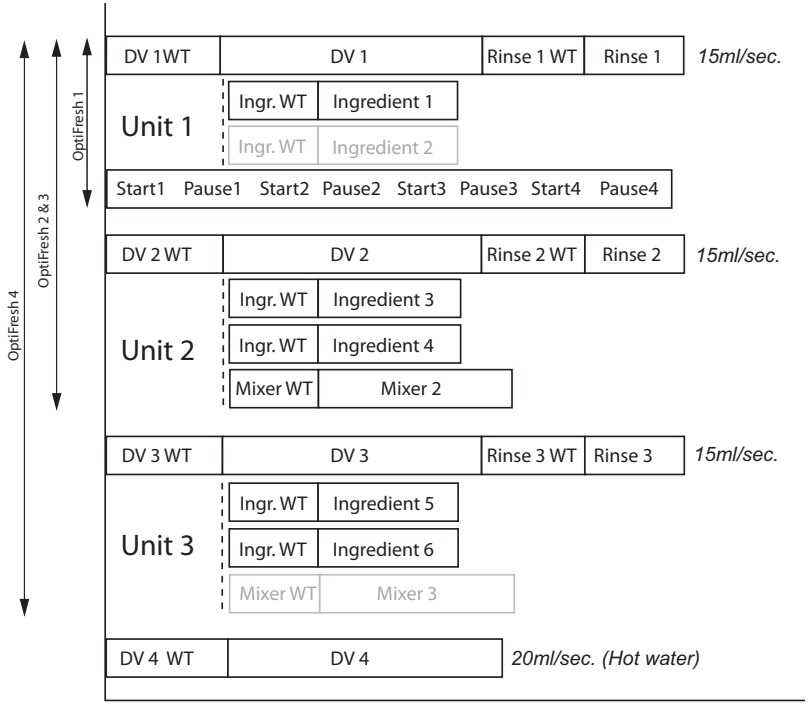


Fig. 17

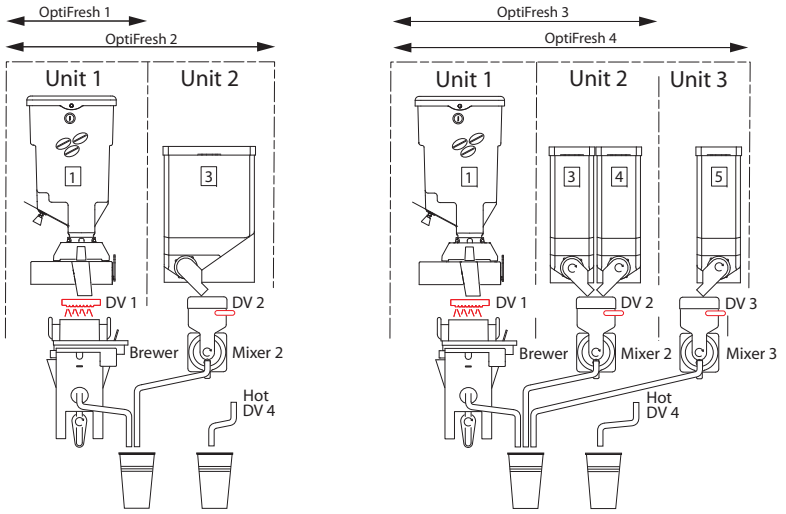


Fig. 18

3.6 Calibrating the hot water valves

The Brewer and Mixers are supplied with water by the Dispensing Valves (DV).

In the unlikely event that one of the valves needs replacing, it should be calibrated to one of the dispensing speeds given in figure 19 after it has been fitted.

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

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

Test by holding in recipe button 11 (for 1 sec.) to open the relevant valve for 10 seconds.

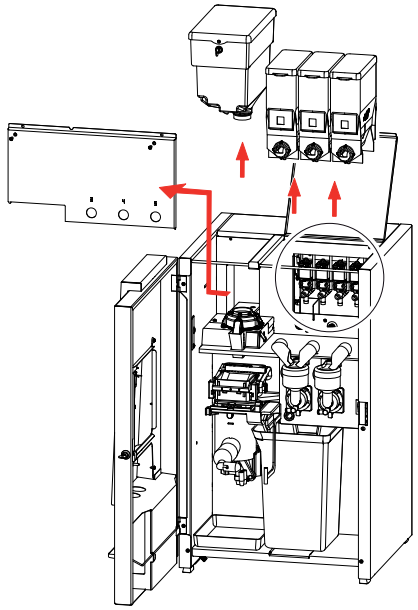


Fig. 19

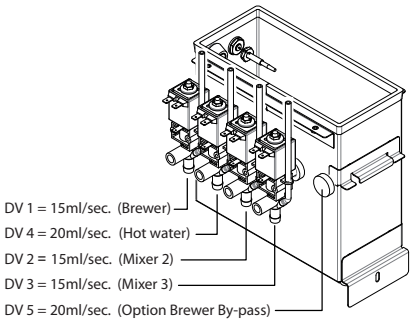


Fig. 19a

4. SOFTWARE

4.1 Memory card

Type: SD
Capacity: 16Mb or bigger
Format: FAT (no FAT32 or NTFS)

4.2 Installing software

The device can easily be installed with new software, which is made available as follows:

- www.Animo.eu / dealer log in: Extranet *
- By Email

4.3 Installing a language

The device has four standard languages (NL/GB/D/F). The device can easily be installed with another language set (if available). A new language file can be made available as follows:

- www.Animo.eu / dealer log in: Extranet *
- By Email

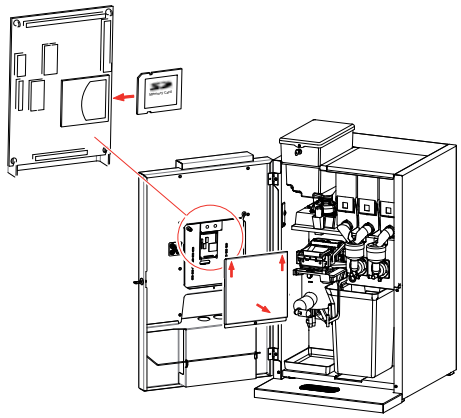


Fig. 20

* 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.

5.0 SERVICE

⚠ WARNING

- In order to descale the water reservoir, the device must be opened. This will expose live parts of the machine, which can be touched easily. This may lead to highly dangerous situations!

⚠ WARNING

- The device must not be submerged or hosed down.
- Always stay with the device during maintenance work.

5.1 Setting a service parameter

During installation, set a parameter for the device to be serviced. See Service Menu item 2.8 Descale / filter.
Use the table below to set the correct service parameter.

Service parameter reached?
The dispensed drinks are counted during use. If the service parameter is reached the display shows the following message: *Descale / filter* (fig. 21).

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.

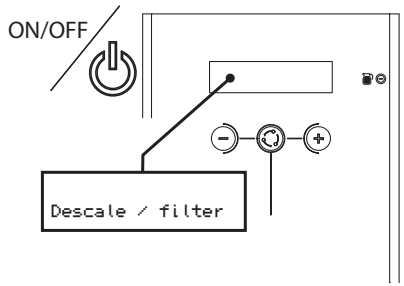


Fig. 21

Water hardness table

Water Quality	Hardness				Service Indicator (cups)
	°D	°F	mmol/l	mgCaCo3/l	
Very hard	18-30	32-55	3,2-5,3	321- 536	5000
Hard	12-18	22-32	2,2-3,2	214-321	8500
Average	8-12	15-22	1,4-2,2	268-214	12.500*
Soft	4-8	7-15	0,7-1,4	72-268	20.500
Very soft	0-4	0-7	0- 0,7	0-72	0 = off

Table 5

5.2 Preventative maintenance

5.2.1 Service contracts

Precface

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

In some cases, a substitute brewer is used during maintenance. The brewer removed can then be repaired in the workshop before being used again during the next service.

5.2.2 Servicing

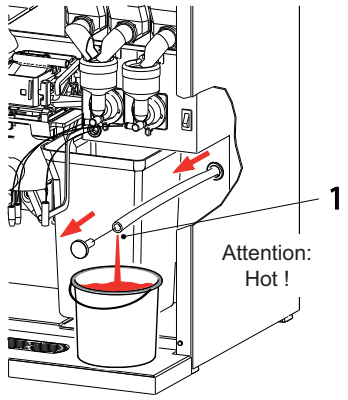
For an estimated total of < 25000 cups a year we recommend one service a year.
For an estimated total of > 25000 cups a year we recommend two services a year.

Service activity	Time	Product	Art.No.	OptiFresh			
				1	2	3	4
Descale	45 min.						
Descale boiler system (see service manual). Use valve seal set if necessary.		Animo descaler	49007				
		Valve seal set	99673	2x	3x	3x	4x
Grinder	10 min.						
Empty the grinder. Fill the bean reaservoir with two caps of cleaner. Hold a emty cup under the sprout and grind the grinder empty		Grinder cleaner	1000151				
Brewer	15 min.						
Replace a number of parts. Clean the brewer. Check that it is working correctly. Adjust brewer unit tensile strength if necessary.		Permanent filter	03488	1x	1x	1x	1x
		Wiper	03380	1x	1x	1x	1x
		Seals	03375	1x	1x	1x	1x
		Animo cleaner	49009				
Mixer(s)	10 min.						
Check Motor axis for dirt and wear and tear. Grease water connection using silicone grease).							
Replace mixer rotor.			03254	-	1x	1x	2x
Replace green mounting ring.			03253	-	1x	1x	2x
Clean mixer parts.		Animo cleaner	49009				
Inspection (general)							
Check that the entire machine is working. Check parts for damage/wear and tear and/or leaks.							
Cleaning (general)							
Brewer and mixer unit as for weekly cleaning. The entire interior and exterior of the machine.							

Table 6

⚠ 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.



5.3 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
- Animo Descaler x 2 sachets or 8-10 dessert spoons
- Drip tray of approximately 1.5 litres
- Bucket or basin at hand

1. Switch on the device and let it warm up. The advantage of this is that the reservoir is properly warmed in advance, which achieves a better result during descaling.
2. Switch off the device and pull the plug out of the socket.
3. Dispense one litre of hot water from the water reservoir using the tap at the front of the device (fig. 22-1).
4. Remove the rear plate (fig. 22-2) and unscrew the reserve lid (fig. 22-3). Take care: HOT!
5. Before going any further, read the warnings and instructions for use on the Animo Descaler sachets before dissolving two 50g sachets in the measuring jug (8-10 dessert spoons).

.

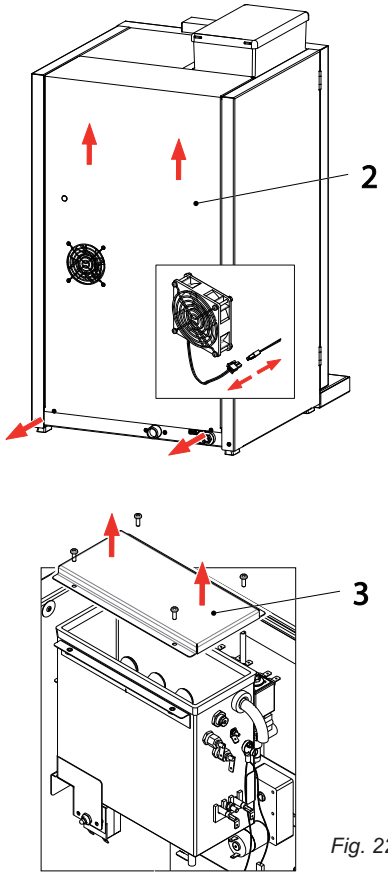


Fig. 22

6. Pour the acid solution into the reservoir (fig. 23-1). The acid solution will now react with the lime scale.
7. Leave the solution to soak for a minimum of 10 minutes, until the foaming has stopped.
8. Use a brush to spread the acid over the level electrodes during the soaking time (fig. 23-2).
9. Put the plug in the socket again and turn on the device so that the reservoir warms up.
10. Activate the BREWER cleaning programme (fig. 23-3), so that the acid solution leaves the water reservoir via the BREWER VALVES. Place a drip tray under both outlets (fig. 23-4) and follow the instructions on the display.
11. Activate the MIXER cleaning programme (fig. 23-5), so that the acid solution leaves the water reservoir via the MIXER VALVES. Place a drip tray under both outlets (fig. 14-4) and follow the instructions on the display.
12. Turn off the device and allow the reservoir to empty completely using the tap (fig. 23-1).
13. Turn on the device again; the reservoir will refill with clean water. Repeat instruction 10 one more time to rinse the reservoir completely free of acid.
14. Turn on the device again; the reservoir will refill with clean water. Allow the water reservoir to heat up.
15. Activate the BREWER cleaning programme (fig. 23-3), so that valves and pipe systems are rinsed clean. Place a drip tray under both outlets (fig. 23-4).
16. Activate the MIXER programme (fig. 23-5), so that valves and pipe systems are rinsed clean. Place the measuring jug under the outlet (fig. 23-6).
17. Repeat the above descaling procedure if lime scale is still present in the reservoir.
18. Screw the lid back onto the reservoir and replace the rear plate.
19. Clear the service parameter counter in the Service Menu **2.6 Descale / filter /2.6.2 Reset service counter.**
20. The device is now ready for use again.

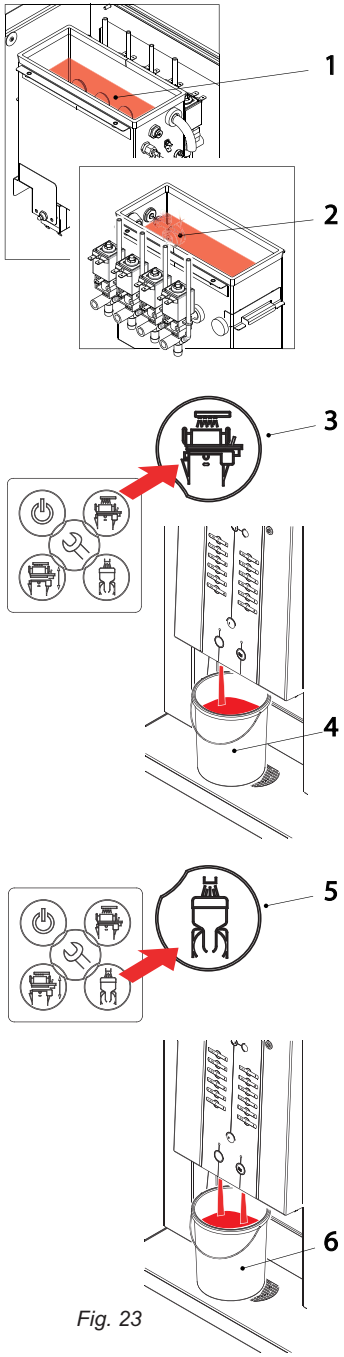


Fig. 23

6. COMPONENT ACCESSIBILITY

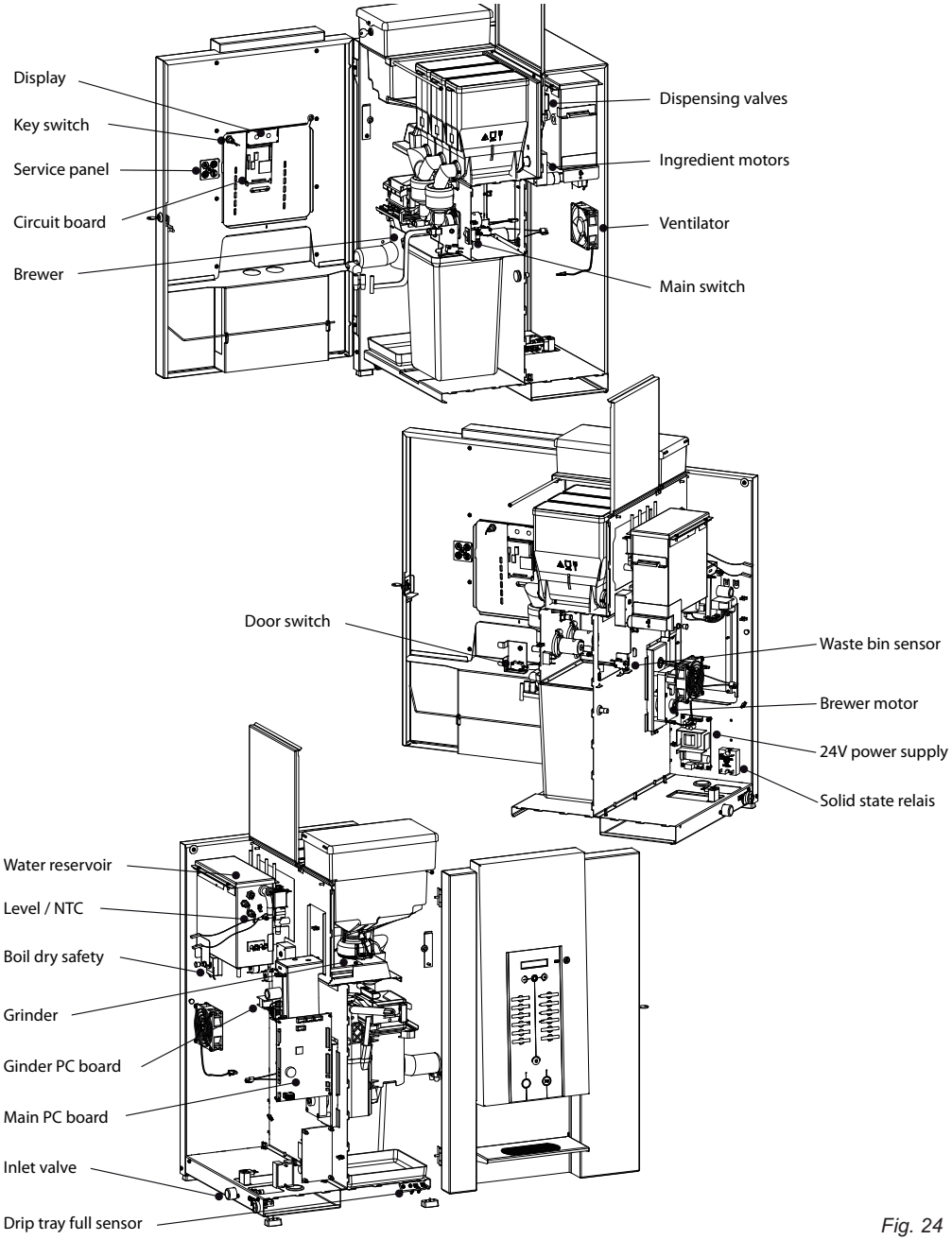


Fig. 24

7. ELECTRONICS SUMMARY

WARNING

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

- Main PC board 7.1
- Interface board / display 7.2
- Power supply 230Vac:24V 65W 7.3
- Grinder board 230Vac:24V 65W 7.4

7.1 Main PC board

This control unit is the device's main control unit and is accessible by removing the left side panel (fig. 25a). The following important parts can be found in the main control unit (fig. 25):

- 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.

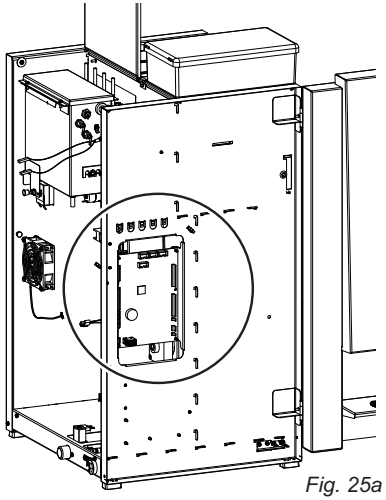


Fig. 25a

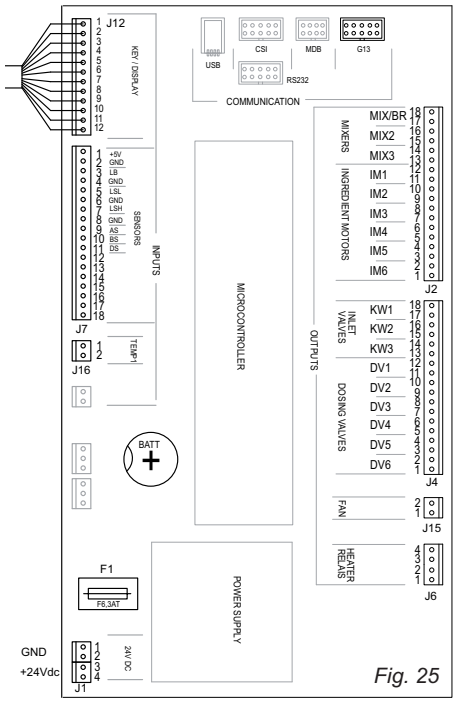


Fig. 25

7.1.1 Main circuit board entrances

Connector J12
Connector cable between the main circuit and door circuit

Connector J7			
Pin	**Sensor**	**Colour**	**Comments**
1-2	-		
3	Drip tray sensor	Yellow	
4	Drip tray sensor Mass	Black	
5	Level sensor Low	Brown	
6	Level sensor Mass	Green	
7	Level sensor High	White	
8	-		
9	Waste bin switch	Pink	Waste bin in position; contact closed
10	Brewer switch	Grey	Brewer in home position; contact closed
11	Door switch	Or-ange	Door closed; contact closed
12-18	-		

Connector J18 (J16 not used)			
Pin	**Sensor**	**Colour**	**Comments**
1	NTC sensor	Violet	
2	-	-	
3	NTC sensor	Violet	

Battery B1	
Lithium 3V Type CR2025	**Art. No. 02816**

Fuse F1	
6,3A slow	**Art. No. 03391**

Connector J1			
Pin		**Colour**	**Comments**
1	Mass (GND)	Black	
2	Mass (GND)	Black	
3	+24V DC	Red	
4	+24V DC	Red	

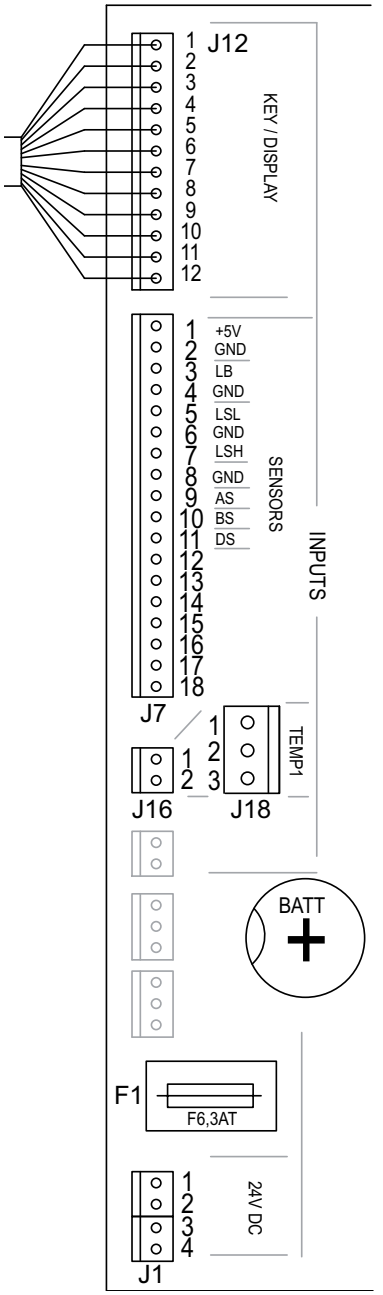


Fig. 26

7.1.2 Main circuit board exits

Connector J2			
Pin	**Motor**	**Colour**	**Comments**
17-18	Brewer / Mixer 1	Black	Correct direction of rotation = red wire (+24VDC) **NOT** on red spot of the Brewer Motor
15-16	Mixer 2	Violet	**Take care to rotate in the right direction!** Shared +24 DC (red wire) on red spot on Mixer and Ingredients Motor.
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**	**Comments**
17-18	KW 1 (inlet valve)	Violet	Red wire is a shared (24VDC) connection
15-16	KW 2	-	
13-14	KW 3	-	
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	
3-4	DV 5	Grey	
1-2	DV 6 (cold water tap	-	-

Connector J15			
Pin	**Motor**	**Colour**	**Comments**
2	Ventilator	Red	
1		Orange	

Connector J6			
Pin	**Relay**	**Colour**	**Comments**
4	Power relay (element)	Red	
3		White	
2	-	-	-
1			

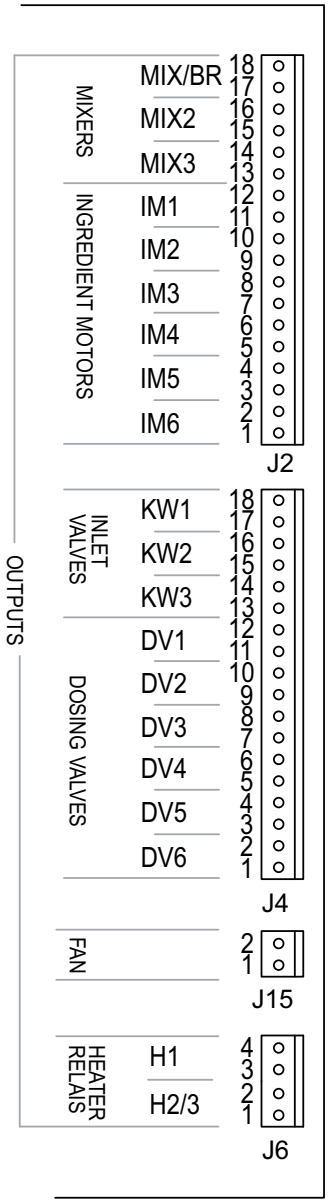


Fig. 27

7.1.3 Main circuit board communication

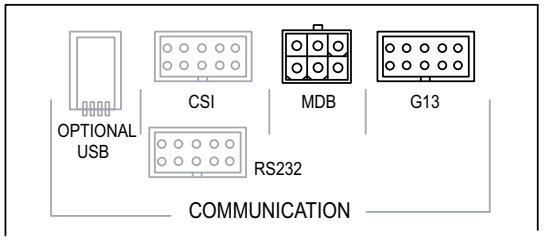


Fig. 28

Communication			
Conn			**Comments**
G13	Coin tester NRI G13		
MDB	Coin changer NRI C²		
CSI			Future port
RS232			Future port
USB			Future port

7.2 Interface / Display

The interface (fig. 29) connects all components found inside and on the door with the main control unit via a flat cable.

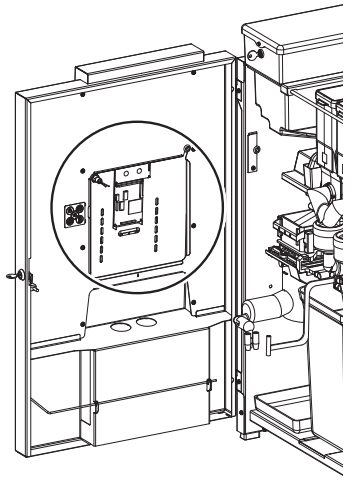


Fig. 29a

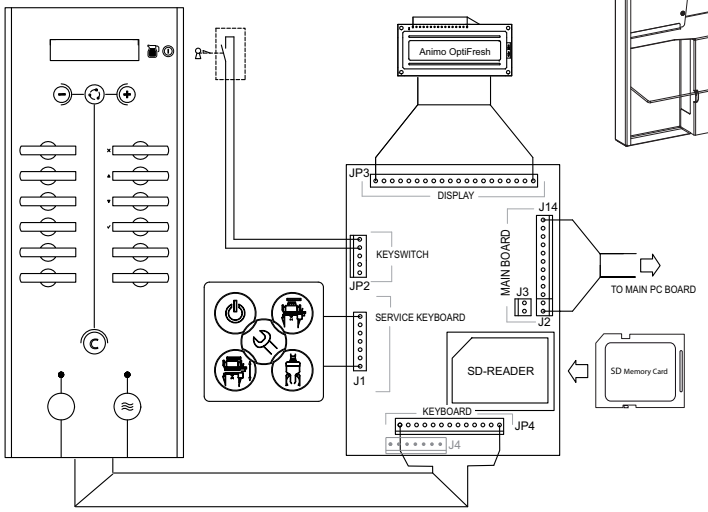


Fig. 29

7.3 Power supply

The 24 V DC power supply (fig. 30) consists of a 24V DC 65W switch mode power supply and can be accessed by removing the rear plate.

The power supply is located under the main circuit (fig. 30a).

- During an overload the power supply automatically switches off. Reset the power supply by turning the main switch off and on.

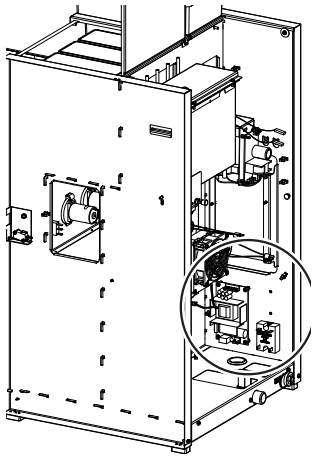


Fig. 30a

7.3.1 Connections

Connector TB2 24Vdc			
Pin		**Colour**	**Comments**
1	230Vac Neutral	blue	
3	230Vac Phase	yellow	

Connector TB1 100-240Vac			
Pin		**Colour**	**Comments**
1-2	24Vdc +	Red	
6-7	24Vdc -	black	

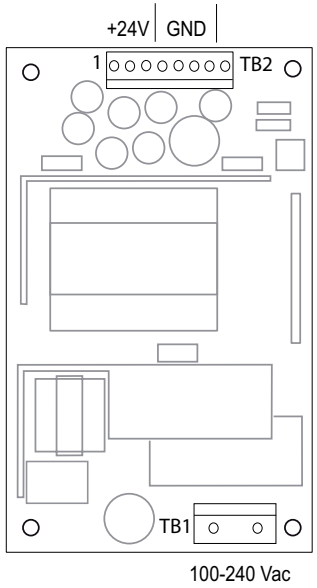


Fig. 30

7.4 Grinder PC board 230Vac / 230Vdc

This grinder PC board (Fig. 31) convert 230Vac (AC) trough a rectifier in 230Vdc (DC) that drives the grinder motor.

The IM1 signal (24Vdc) of the main PC board is fed to connector J5-J6 (red LED turns on). This signal switch on the grinder motor by a triac.

This PC board is accessible through the rear to disassemble.

Fuse 3,15 A T (Art. No. 02580) ; to protect the grinder motor.

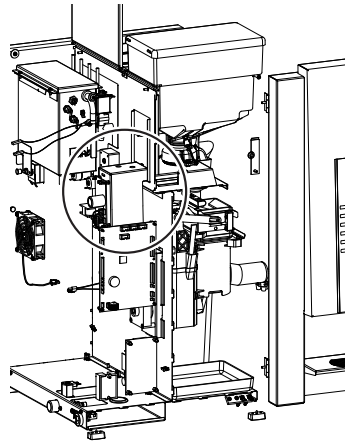


Fig. 31a

7.4.1 Connections

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

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

230Vac			
Pin		**Colour**	**Comments**
J2	230Vac Nul	blue	
J3	PE (aarde)	yellow/ green/	
J4	230Vac Fase	brown	

Fuse F1	
3,15A 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	

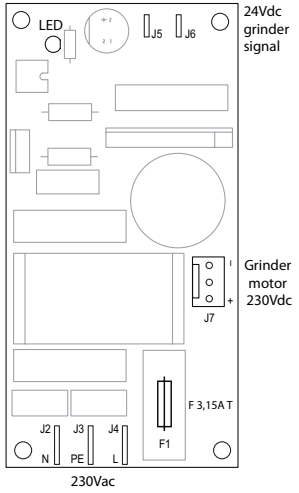


Fig. 31

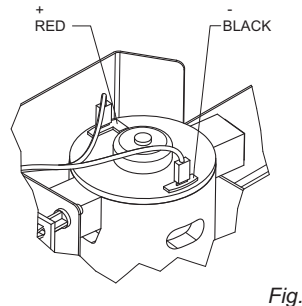


Fig. 31b

8. TROUBLESHOOTING

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.

8.1 Read log

The last 20 error messages displayed during use are registered and saved (fig. 32).

To read out these error messages activate the menu item 2.8. The first error is the most recent error message.

- The first line shows the same error codes listed in the troubleshooting analysis table (see section 8.3)
- The second line shows the date and time at which the error message occurred.

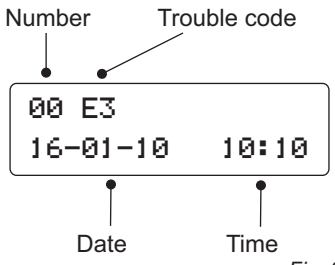


Fig. 32

8.2 Clear log

Use the Clear log function in service menu 2.9 to clear the log.

8.3 Troubleshooting

Display	Possible cause	Action
Out of order Boiler filling	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 is heating up'.
	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.

Display	Possible cause	Action
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.
Out of order Waste bin is 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.
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.
Out of order 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.
Out of order E3 Level 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.
Out of order 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 fluted pin of Brewer motor. Replace if broken (fig 33).
		Check the brewer switch. When brewer motor is in its home position, switch lever must fall into driving wheel notch (fig. 34A). Contact must be closed. When brewer motor rotates, switch lever must be pressed IN (fig. 34B). 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 fluted pin of Brewer motor. Replace if broken (fig. 33).
Out of order E6 Boiler temp	Temperature sensor or power relay problem. From Machine 1S06945 number the power relay is replaced by a solid state relay (SSR)	Check the temperature sensor function in the service menu **2.7 Hardware test.**
		Check if the steam thermostat in the over-flow pipe has been triggert. Reset if necessary.
Out of order E7 BM error	The Brewer motor stuck. Brewer motor exit overload (power too high). Control unit has switched off the exit.	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.
Out of order E8 Mixer 2 error	Mixer 2 motor stuck. Mixer 2 motor exit overload (power too high). Control unit has switched off the exit.	Check if Mixer 2 is unclean or incorrectly fitted. Clean and/or check whether the rotor can run freely. Switch the device off and on again.
Out of order E9 Mixer 3 error	Mixer 3 motor stuck. Mixer 3 motor exit overload (power too high). Control unit has switched off the exit.	Check if Mixer 3 is unclean or incorrectly fitted. Clean and/or check whether the rotor can run freely. Switch the device off and on again.
Out of order E10 Valve error	Valve exit overload (power too high). Control unit has switched off the exit.	Check valves and wiring for leakage. Switch the device off and on again.
Out of order E11 Ingr. m error	Ingredient motor stuck. Ingredient motor exit overload (power too high). Control unit has switched off the exits.	Check the driving motor function in service menu **2.7 Hardware test**. Empty the Canister(s) and clean thoroughly. See User manual section **8.9 Cleaning the canister(s)**. Switch the device off and on again.
Out of order E12 Fan error	Fan exit overload (power too high). Control unit has switched off the exits.	Check the ventilator and wiring for leakage. Switch the device off and on again.

Display	Possible cause	Action
Out of order E13 Mixer error	Brewer and Mixer exit group overload (power too high). (power too high). Control unit has switched off the exits.	Carry out the inspection actions as described for E7, E8 and E9. Switch the device off and on again.
Out of order E14 Output err.	Ingredient motor and ventilator exit group overload (power too high). Control unit has switched off the exits.	Carry out the inspection actions as described for E11 and E12. Switch the device off and on again.
	Valve exit group overload (power too high). Control unit has switched off the exits.	Carry out the inspection actions as described for E10. Switch the device off and on again.
Out of order 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.
Out of order E17 MDB error	There is no communication between machine and MDB payment system	Check the connection between the machine and MDB payment system.

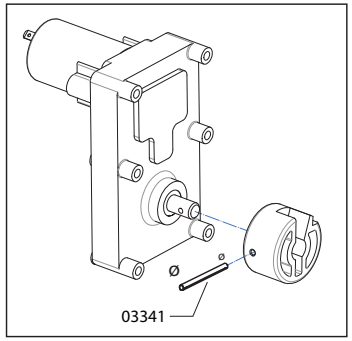


fig. 33

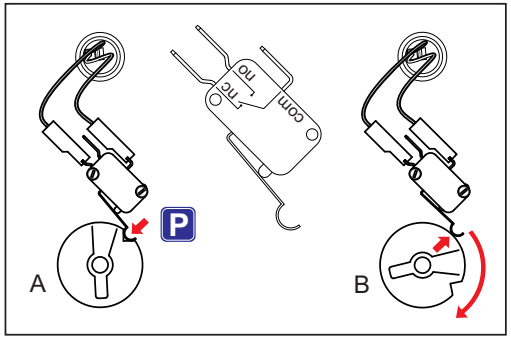


fig. 34

9. PAYMENT SYSTEMS

9.1 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 (fig. 25).

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

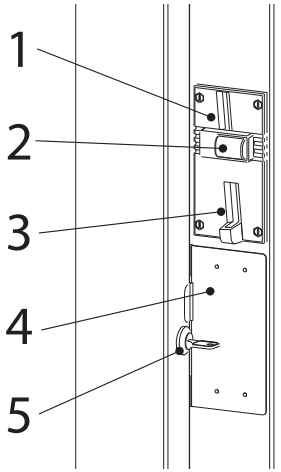


Fig. 35

9.1.1 Standard configuration

Fig. 24 shows the standard configuration of the DIL switches, S1-10 ON

The coin mechanism is connected to the device with a connector (Fig. 36A).

9.1.2 Rejecting coins

If desired, certain types of euro coins can be rejected by using DIL-Switch block S1 + S2 (fig. 36).

Coin	DIL +	DIL
€ 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 = rejected / OFF = accepted		

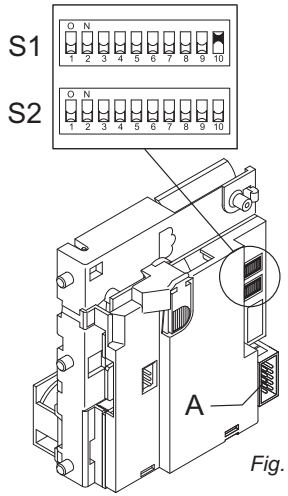


Fig. 36

Example: Reject €1 and €2 euro coins (fig. 37)

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

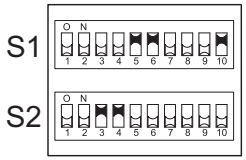


Fig. 37

9.1.3 Activating existing tokens

The token shown here (fig. 38) 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


Fig. 38

9.1.4 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 (fig. 39).
   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.

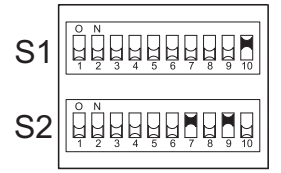


Fig. 39

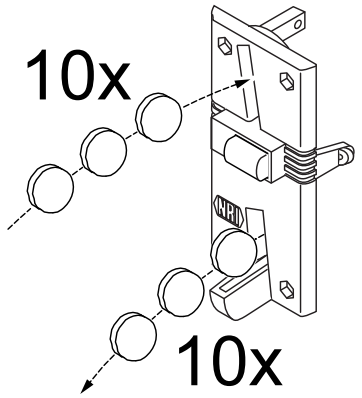


Fig. 40

9.1.5 Accepting Euros and Tokens

Carry out section 9.1.3 and 9.1.4 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!

9.1.6 Accepting Tokens only

Carry out sections 9.1.3 and 9.1.4 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	DIL +	DIL
€ 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 = rejected / OFF = accepted		

9.1.7 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 should not be too wet as any liquid that gets into the device will damage the printed circuit board.
- Do not use any solvents or scouring agents that may damage the

1. Turn off the device.
2. Take the coin mechanism out of the side panel.
3. Carefully open the coin holder valve (fig. 41A) and hold it open.
4. Clean the coin holder with a cloth and close the valve again.
5. Turn on the device again.

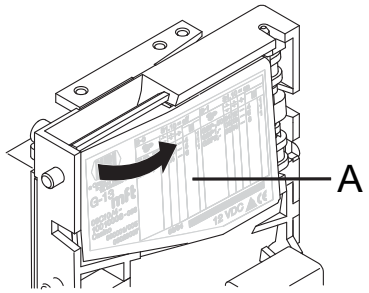


Fig. 41

9.2 Coin changer (optional)

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

Other currencies are available on request.

The coin changer has 6 coin tubes (€ 0.05 / 2x 0.10 / 0.20 / 0.50 / 1,00).

1. Return button
2. Coin insert
3. Lock
4. Change

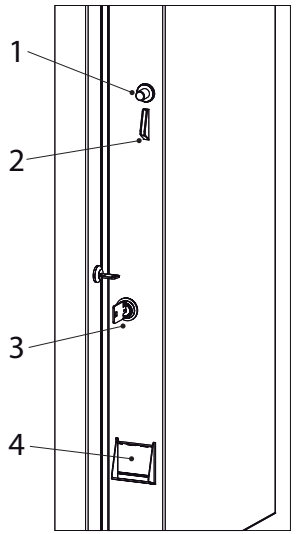


Fig. 42

9.2.1 Troubleshooting

In order to diagnose the cause of the fault in detail, please refer the NRI technical Documentation.

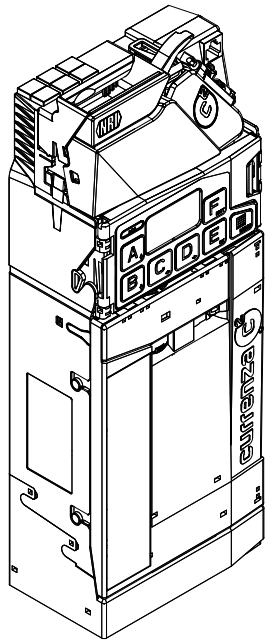


Fig. 43

Animo®

OPTIFRESH bean

Animo B.V. Headoffice
Dr. A.F. Philipsweg 47
P.O. Box 71
9400 AB Assen
The Netherlands
Tel. no. +31 (0)592 376376
Fax no. +31 (0)592 341751
E-mail: info@animo.nl
Internet: http://www.animo.eu

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