ANIMO

OptiVend Next Generation
Model 2015

Tastes differ.

service book

instruction video

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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.

WARNING
Warning of serious damage to the machine or physical injury.

WARNING
Warning of an electrical or steam hazard.

WARNING
Warning of electrostatic discharge (ESD) to electronics.

1. INTRODUCTION OPTIVEND NG

Explanation OptiVend NG type designation:

Designation	Meaning	Description	Dispensing Hight cup	Thermos jug
1e digit	Number canisters	1 - 6		
2e digit	Number of mixers	1 - 3		
s	Narrow	compact execution	118mm	
-	Cups / mugs		118mm	
TS	Thermos Small	thermos jug medium	100-155mm	235mm
TL	Thermos Large	thermos jug high	100-155mm	355mm
HS	High Speed	high brew capacity	100-155mm	235mm
DUO	Double outlet	high brew capacity	100-155mm	235mm
NG	Next Generation	model year 2015		

11s
21s
22s
32s

32
42
33
43
53
63

11s TS
21s TS
32s TS

11 TS
22 TS (HS)
32 TS
42 TS
33 TS
43 TS
53 TS
63 TS

22 TS HS DUO
32 TS HS DUO
42 TS HS DUO
43 TS HS DUO
53 TS HS DUO

11 TL
42 TL

22 TL HS DUO
32 TL HS DUO

1.1 Model code

Standard canister configuration

The OptiVend NG models are standard executed according below mentioned canister configuration printed in **bold.**

Alternative canister configuration

The OptiVend NG models can be altered with a alternative canister configuration printed in *Italic.* This models are standard available in the software from April 2016

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.

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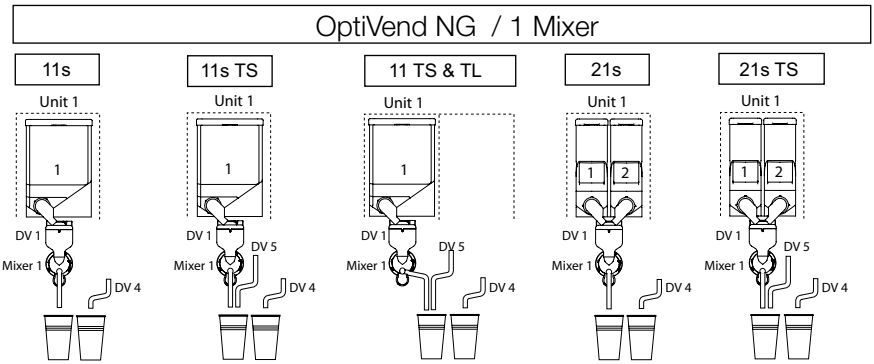
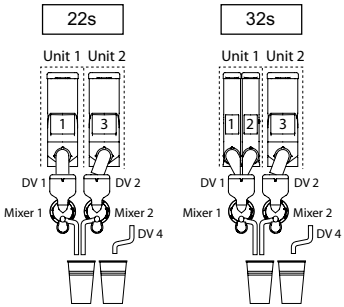


OptiVend 1 mixer	Model code	Canister	
		1	2
11s	**2V1A**	**Coffee**	**-**
11s TS	**2VCA**	**Coffee**	**-**
11 TS / 11 TL	**2V2A**	**Coffee**	**-**
21s	**2V3A**	**Coffee**	**Topping**
	2V1C	*Coffee*	*Coffee*
	2V2C	*Coffee*	*Cocoa*
	2V3C	*Cocoa*	*Cocoa*
	2V4C	*Cocoa*	*Topping*
21s TS	*2VDA*	**Coffee**	**Topping**

DV = Dispensing valve*

OptiVend NG / 2 Mixers



DV = Dispensing valve*

OptiVend 2 mixers	Model code	Canister			
		1	2	3	4
22s	**2VEA**	**Cocoa**	**-**	**Coffee**	**-**
	2V1M	*Topping*	-	*Coffee*	-
32s & 32s TS	**2V5A**	**Cocoa**	**Topping**	**Coffee**	**-**
	2VBC	*Sugar*	*Topping*	*Coffee*	-
	2VCC	*Soup*	*Soup*	*Soup*	-
	2VDC	*Espresso*	*Coffee*	*Topping*	-
	2VEC	*Tea*	*Thee*	*Cocoa*	-
	2VFC	*Coffee*	*Topping*	*Cocoa*	-
	2V9C	*Decaf*	*Coffee*	*Topping*	
	2VAC	*Cocoa*	*Coffee*	*Topping*	
	2V6M	*Cocoa*	*Cocoa*	*Cocoa*	-

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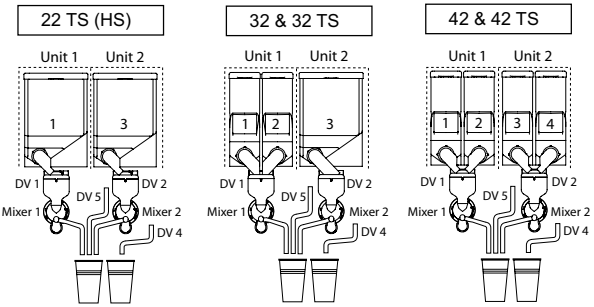
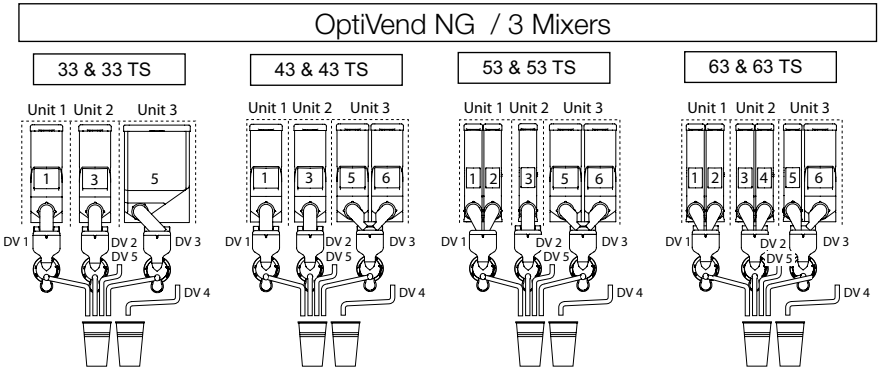
OptiVend NG / 2 Mixers



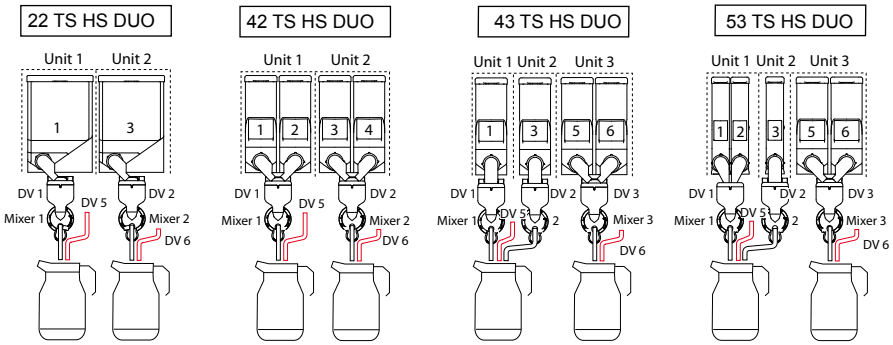
DV = Dispensing valve*

OptiVend 2 mixers	Model code	Canister			
		1	2	3	4
22 TS	**2V4A**	**Coffee**	**-**	**Topping**	-
	2V6C	*Coffee*	-	*Coffee*	-
	2V7C	*Coffee*	-	*Cocoa*	-
22 TS HS	**2VFA**	**Coffee**	-	**Coffee**	-
32 & 32 TS	**2V6A**	**Cocoa**	**Topping**	**Coffee**	**-**
	2VGC	*Coffee*	*Topping*	*Cocoa*	-
	2VHC	*Sugar*	*Topping*	*Coffee*	-
	2VIC	*Cocoa*	*Coffee*	*Topping*	-
	2VJC	*Cocoa*	*Cocoa*	*Cocoa*	-
42 & 42 TS	**2V8A**	**Cocoa**	**Topping**	**Coffee**	**Sugar**
	2VCD	*Cocoa*	*Topping*	*Coffee*	*Decaf*
	2VDD	*Cocoa*	*Topping*	*Coffee*	*Espresso*
	2VED	*Cocoa*	*Coffee*	*Topping*	*Cappuccino mix*
	2VFD	*Coffee*	*Topping*	*Tea*	*Sugar*



OptiVend 3 mixers	Model code	Canister					
		1	2	3	4	5	6
33 & 33 TS	**2V7A**	**Cocoa**	**-**	**Coffee**	**-**	**Topping**	**-**
	2V8D	*Cocoa*	*-*	*Tea*	*-*	*Coffee*	*-*
	2V9D	*Cocoa*	*-*	*Topping*	*-*	*Coffee*	*-*
43 & 43 TS	**2V9A**	**Cocoa**	**-**	**Topping**	**-**	**Coffee**	**Sugar**
	2V1D	*Soup*	*-*	*Topping*	*-*	*Cocoa*	*Coffee*
	2VGD	*Coffee*	*-*	*Tea*	*-*	*Cocoa*	*Topping*
	2VHD	*Cocoa*	*-*	*Topping*	*-*	*Coffee*	*Espresso*
	2VID	*Cocoa*	*-*	*Topping*	*-*	*Coffee*	*Decaf*
	2VJD	*Soup*	*-*	*Tea*	*-*	*Cocoa*	*Topping*
	2VKD	*Coffee*	*-*	*Soup*	*-*	*Cocoa*	*Topping*
53 & 53 TS	**2VAA**	**Coffee**	**Decaf**	**Sugar**	**-**	**Cocoa**	**Topping**
	2V2E	*Cocoa*	*Topping*	*Soup*	*-*	*Coffee*	*Espresso*
	2V3E	*Coffee*	*Sugar*	*Soup*	*-*	*Cocoa*	*Topping*
	2V4E	*Coffee*	*Sugar*	*Tea*	*-*	*Cocoa*	*Topping*
	2V5E	*Cocoa*	*Sugar*	*Tea*	*-*	*Coffee*	*Topping*
	2V6E	*Coffee*	*Sugar*	*Creamer*	*-*	*Cocoa*	*Topping*
	2V7E	*Cocoa*	*Sugar*	*Soup*	*-*	*Coffee*	*Topping*
	2V8E	*Topping*	*Sugar*	*Creamer*		*Cocoa*	*Coffee*
63 & 63 TS	**2VBA**	**Coffee**	**Decaf**	**Sugar**	**Tea**	**Cocoa**	**Topping**
	2VCE	*Coffee*	*Sugar*	*Soup*	*Soup*	*Cocoa*	*Topping*
	2VGE	*Coffee*	*Tea*	*Soup*	*Soup*	*Cocoa*	*Topping*

OptiVend NG HS DUO



DV = Dispensing valve*

OptiVend HS DUO	Model code	Canister					
		1	2	3	4	5	6
22 TS	**2V1F**	**Coffee**	**-**	**Coffee**	**-**	**-**	**-**
22 TS [2]	*2VAF*	*Coffee*	*-*	*Coffee*	*-*	*-*	*-*
22 TS	*2V1G*	*Coffee*	*-*	*Decaf*	*-*	*-*	*-*
22 TS	*2V3G*	*Topping*	*-*	*Coffee*			
32 TS	*2V4G*	*Coffee*	*Cocoa*	*Coffee*	*-*	*-*	*-*
42 TS	**2V2F**	**Coffee**	**Topping**	**Coffee**	**Topping**	-	-
42 TS [2]	*2VBF*	*Coffee*	*Topping*	*Coffee*	*Topping*		
42 TS	*2VAG*	*Coffee*	*Cocoa*	*Coffee*	*Topping*		
43 TS	**2VCG**	**Coffee**	**-**	**Topping**	**-**	**Coffee**	**Cocoa**
53 TS	**2V3F**	**Coffee**	**Topping**	**Cocoa**	**-**	**Coffee**	**Topping**
53 TS [2]	*2VCF*	*Coffee*	*Topping*	*Cocoa*	*-*	*Coffee*	*Topping*
63 TS	*2VHG*	*Cocoa*	*Topping*	*Coffee*	*Espresso*	*Topping*	*Coffee*

[1] Default setting (Quick dispensing)

Two (2) jugs of coffee of 2 litres in approximately 77 sec.

Four (4) pitchers in a row **Coffee** sec., followed by a recovery boiler about 32 sec.

[2] Alternative model setting (Continuous brewing, no boiler recovery time)

Two (2) Coffee 2-liter jugs in 121 sec., four pitchers in a row 242 sec.
After every two jugs no recovery boiler will follows.

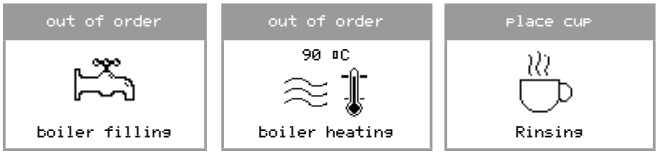
2. FIRST MENU SETTINGS AFTER INSTALLATION

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 machine

- *Follow the instructions on the display*

Switch the machine on using the ON/OFF switch. The display shows; [boiler filling] and [boiler heating]. As soon as the set temperature has been reached, the heating element will be switched off.



Operatormenu (Page 33)

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

Service menu (Page 36)

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

Months

If desired a point of time can de set when the **service boiler** needs to appear.
Example: If 12 months is set during installation the boiler service message will appear on the display 12 months after installation.

Water hardness table

Water Quality	Hardness				Service moment after x (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	268-321	12.500
Average	8-12	15-22	1,4-2,2	214-268	20.000*
Soft	4-8	7-15	0,7-1,4	72-214	40.000
Very soft	0-4	0-7	0- 0,7	0-72	0 = uit

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- *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/en/sd
  The same table also indicates which additional recipes in the software are available.

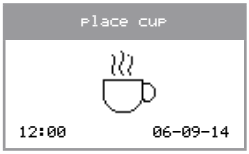
  See chapter 2.1 How to program a recipe

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

  The coffee, topping and chocolate setting is a dispensing time in seconds for a 100ml drink. When the cup volume (menu parameter) is increased, the coffee, Topping, Chocolate and Sugar will be automatically proportional increased (not visible in the display).

  See chapter 2.2 How to correct a recipe

- *Run the cleaning program to reset the rinsing message*

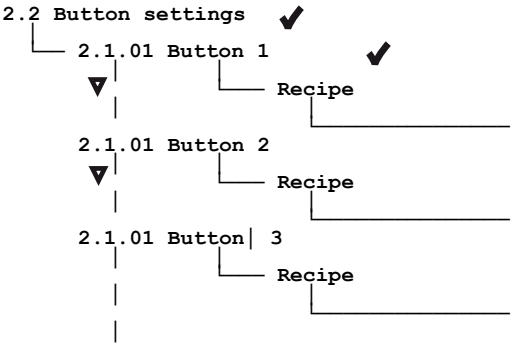


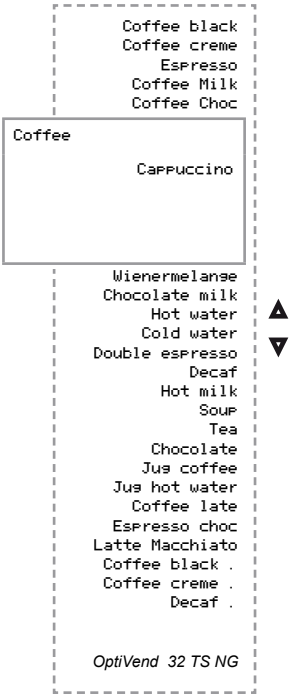
Shut down

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**.





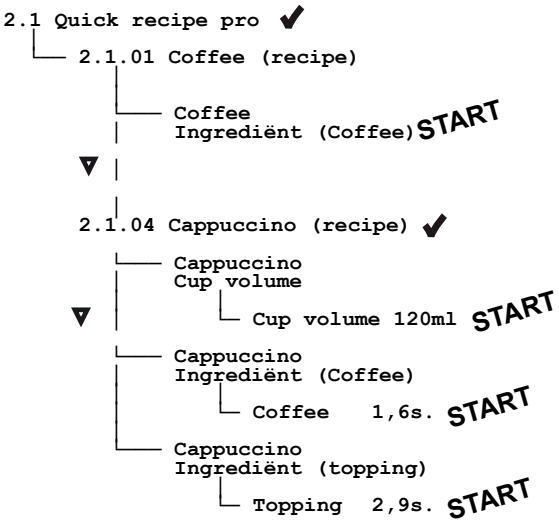
1. Navigate to above mentioned service menu item.
2. Go to Button 1 - Recipe and confirm (v).
   The 1st line in de display shows the programmed recipe.

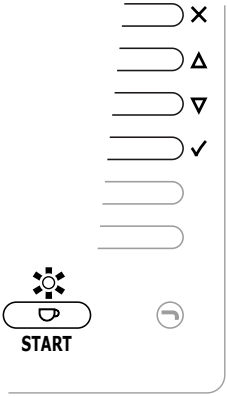
   The 2nd line in the display shows the first recipe from a hole range (see dotted frame) of pre-programmed and extra recipes.
3. Scrol with the navigation buttons though the range untill the desirable recipe and confirm 2x (v)

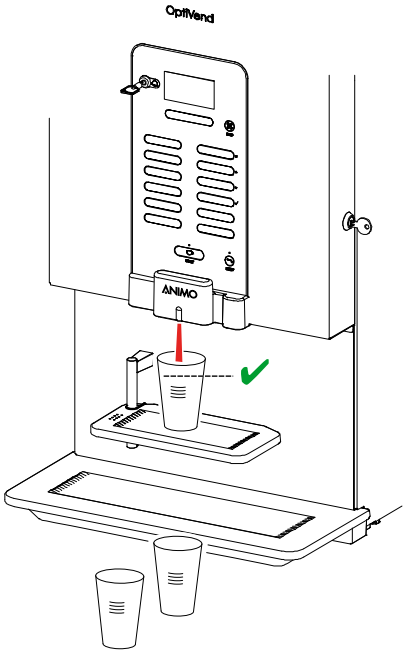
Which recipes are factory-set can be found in recipes settings document which can be downloaded. See http://www.animo.nl/en/downloads/service-documentation/

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.

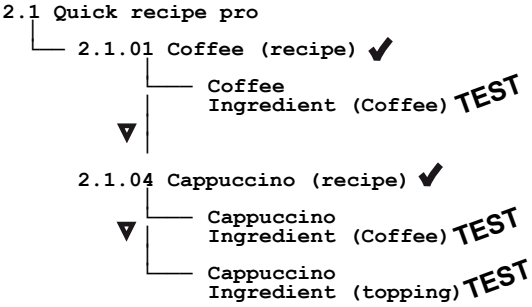
   When the Cup volume (menu parameter) is increased, instant products Coffee, Topping and Chocolate will be automatically proportional increased.
4. If the strength of the drink is not perfect the instant ingredient can be adjusted separately. Scroll to the desired ingredient to be adjusted, and change the dispensing time ▲ ▼ and confirm (v) it. The START led flashes.

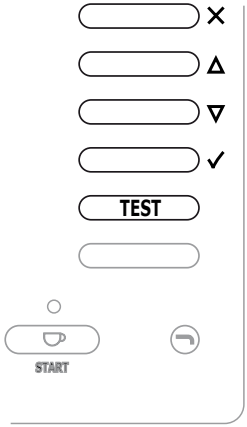
   Repeat this procedure until the drink is perfect.
5. See the following chapter if it is desirable to measure the weight for each dispensed ingredient.

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

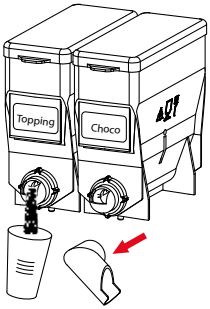
Only the ingredient motor will be driven (no mixer motor is driven and no water is dispensed).

It is recommended to check the ingredient measurements using a mini scale.
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.



2.4 Advanced recipe settings

Before changing the advanced recipe settings (service menu 2.3) you should first know how the various parts such as valves, coffee grinder, ingredient motors and mixers work together, see Section Time line recipe settings.

Keep to the following guidelines:

- Water (valves) are simply set in millilitres.
- Ingredient dispensing times are set in seconds (steps of 0.01 sec.)
- All parameters (water and ingredients such as topping and cocoa) are based on a 100 ml drink and converted automatically in the programme to the cup volume as set in 1.4 Quick recipe / 2.1 Quick recipe pro 2) and 2.2 Button settings.
- When a drink consists of DV1 and DV2, the sum of these water quantities must always be 100 ml.
- A rinse parameter is used to ensure that the mixer is properly rinsed after the mixers is almost empty a small amount of hot water is dispensed to the mixer so that it is clean as possible on completion.

  A realistic rinse value is 8 ml. Note; this does not have to be deducted from the water quantity. The programme calculates this automatically! Example: set parameter DV2 = 100 ml, Rinse 2 = 8 ml --> Programme carries out action as follows: DV2 = 92 ml, Rinse 2 = 8 ml

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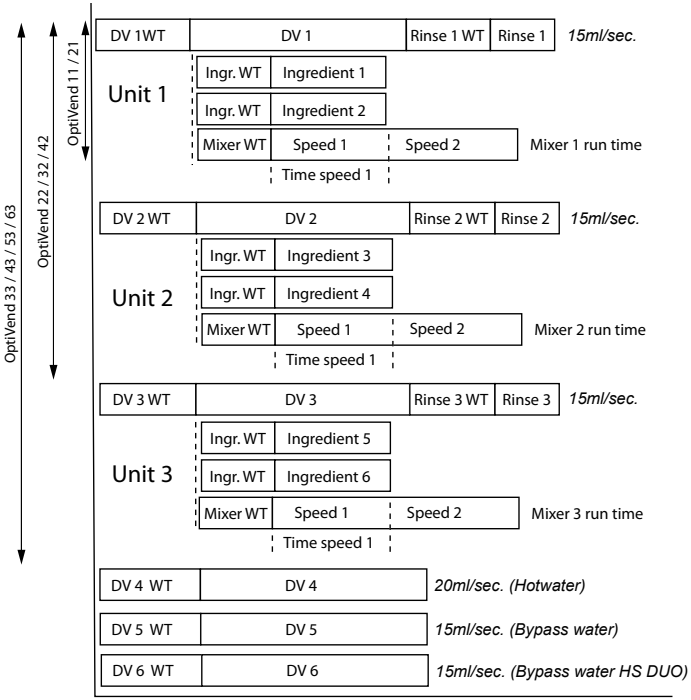
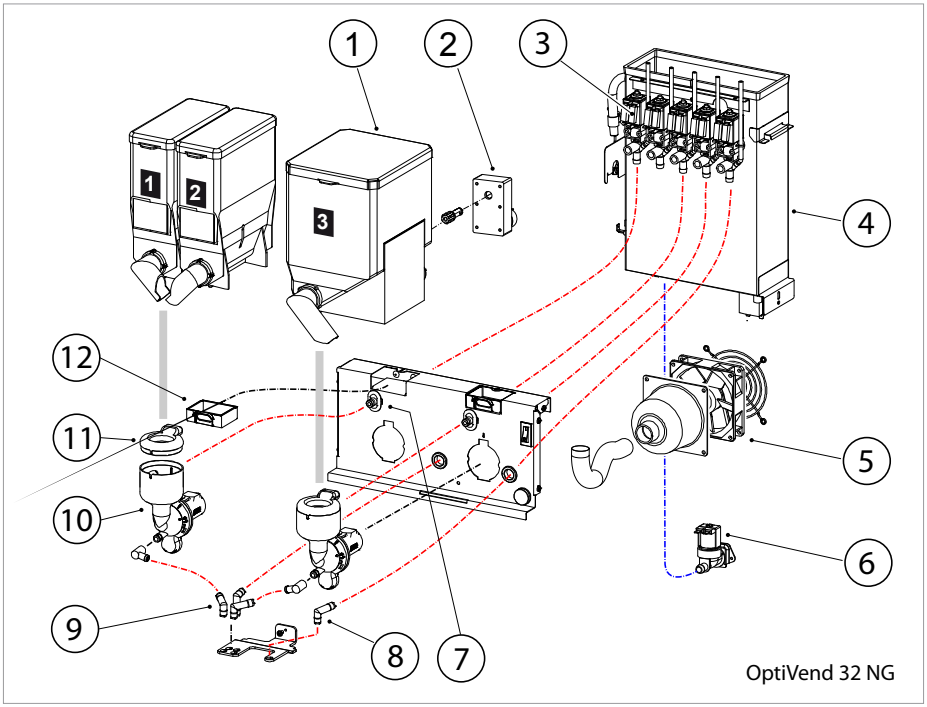
2.5 Timeline recipe settings



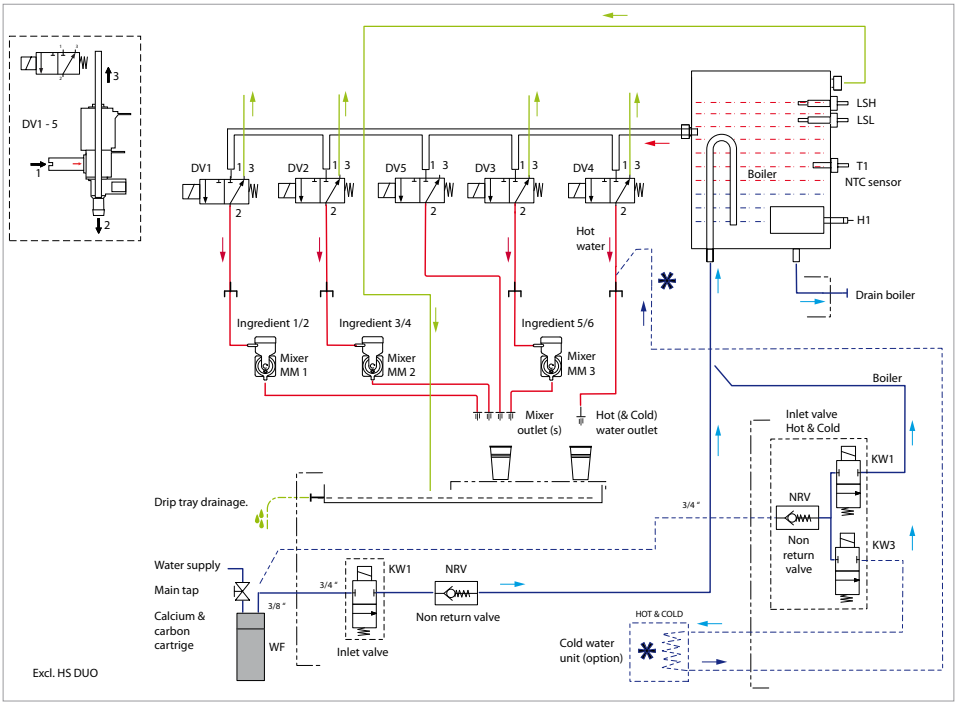
3. PRINCIPLE OF OPERATION



Item		Description
1.		Instant canisters
2.	IM 1-6	Canister drive motor
3.	DV 1-6	Dispensing valves
4.	H 2-3	Boiler
5.	FAN	Ventilator
6.	KW1	Inlet valve

Item		Description
7.		water inlet mixer bowl
8.		Hot water spout
9.		Drink spout
10.	MM 1-3	Mixer system
11.		Mixer motor steam vapour ring
12.		Moisture extraction cassettte

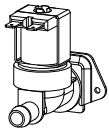
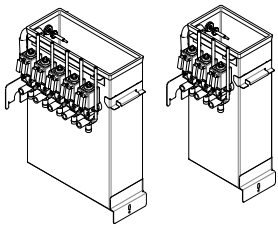
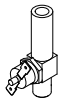
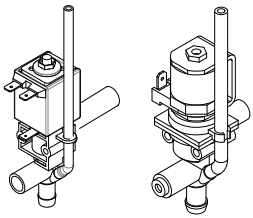
3.1 Water management

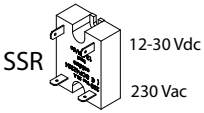
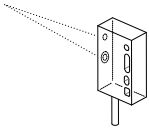
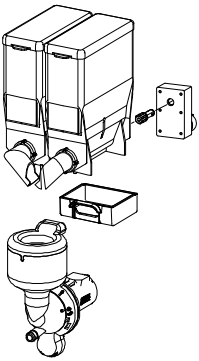
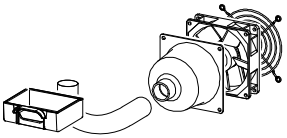


Code	Description
WF	Water filter
KW1	Inlet valve
NRV	Non-return valve
H1	Boiler
T1	NTC sensor
LSL	Minimum niveau sensor
LSH	Maximum niveau sensor
DV1	Mixer 1 dispensing valve
DV2	Mixer 2 dispensing valve

Code	Description
DV3	Mixer 3 dispensing valve
DV4	Hot water dispensing valve
DV5	Bypass dispensing valve
DV6	Bypass dispensing valve (HS DUO)
KW3	Cold water inlet valve (H&C optioneel)
MM1	Mixer system ingredient 1 & 2
MM2	Mixer system ingredient 3 & 4
MM3	Mixer system ingredient 5 & 6

3.2 Components

Components	Image
Inlet valve KW1 [02801] Opens and closes the water supply, 24 Vdc coil closure. Flow speed abt. 2,5 L/min. **Inlet valve KW1 [1005239]** Opens and closes the water supply, 24 Vdc coil closure. Flow speed abt. 7,0 L/min.	
Boiler OptiVend NG (TS) 5,5 litres / OptiVend NG s 2,5 litres Open boiler manufactured entirely from material AISI 316L insulated. **Temperature sensor T1 [80063]** 100kΩ/25°C **Heating element H1 [03216]** 230V 3200W **Dry-boil protection [03093] 1N~230V** Activation temperature 135°C / 1 pole / manual reset. **Dry-boil protection [03106] 3N~400V** Activation temperature 135°C / 3 pole / manual reset. See chapter **3.5 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.	
(Left) Dispensing valve DV [03250] Supplies water to the mixers. **(Right) Dispensing valve DV [02803] HS DUO only** Supplies water to the mixers. See chapter **3.5.1 Dispensing valves** for operation.	

Components	Image
Solid State Relais (SSR) [02799] The heating element is controlled by a solid state relay. Pay attention for the polarity of the 24Vdc side!	
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 16,500 rpm. The drink flows via the drink outlet into the cup. **Ingredient motor [02906] + Shaft shaft [03330]** See chapter **3.4 Instant group** for operation.	
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 **3.4.3 Ventilation mixer group** for operation.	

EN

3.3 Cup detection (optional) (excl. HS DUO)

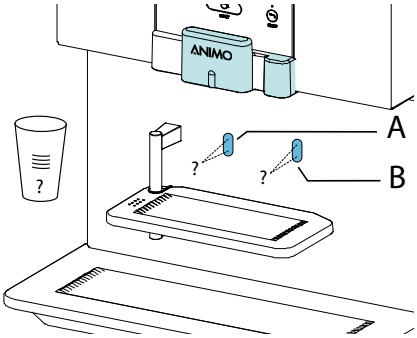
The sensors detect the presence of a cup below the coffee outlet of the beverage dispenser. Coffee is only prepared when a cup has been placed. Also the outlet for hot water is equipped with a cup sensor. The sensitive sensors will detect paper cups, as well as porcelain or glass cups.

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.

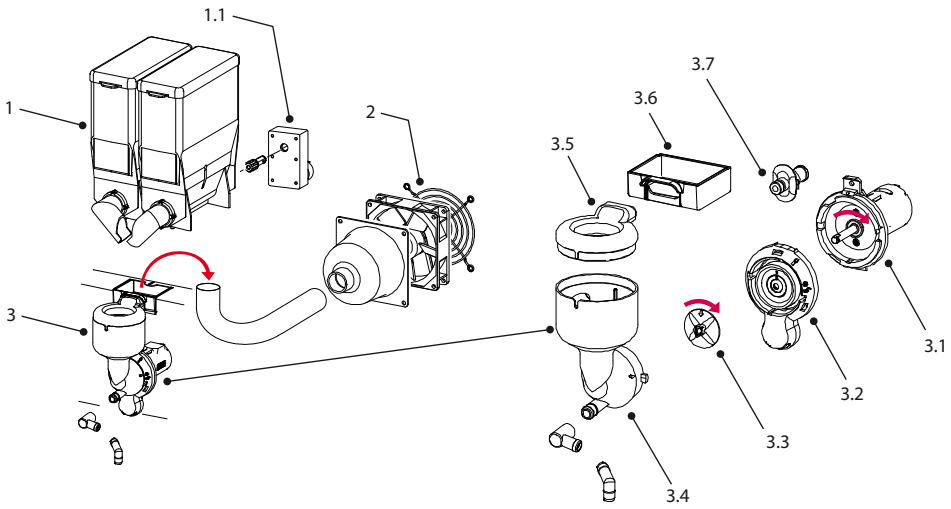
B: Cup detection for tea water spout

3.4 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 16.500 rpm . The drink flows via the drink outlet into the cup.

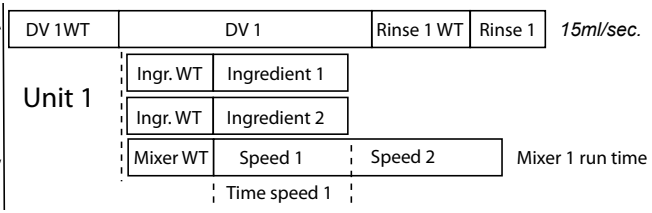
Most of the water vapour given off during the mixing is collected by the vapour drain ring [3.5] and extracted via the extraction tray [3.6] by the fan [2]. The instant residue is collected by the extraction tray. The extraction tray can be easily removed (for cleaning) by dismantling the mixer unit. 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	1003567	24Vdc / 16.500 RPM
	3.2 Mounting ring cpl	1003568	
	3.3 Mixer rotor	1003569	
	3.4 Mixer bowl	1003570	
	3.5 Extraction ring	1003571	
	3.6 Extraction drawer	1003273	
	3.7 Water inlet adapter	1003575	



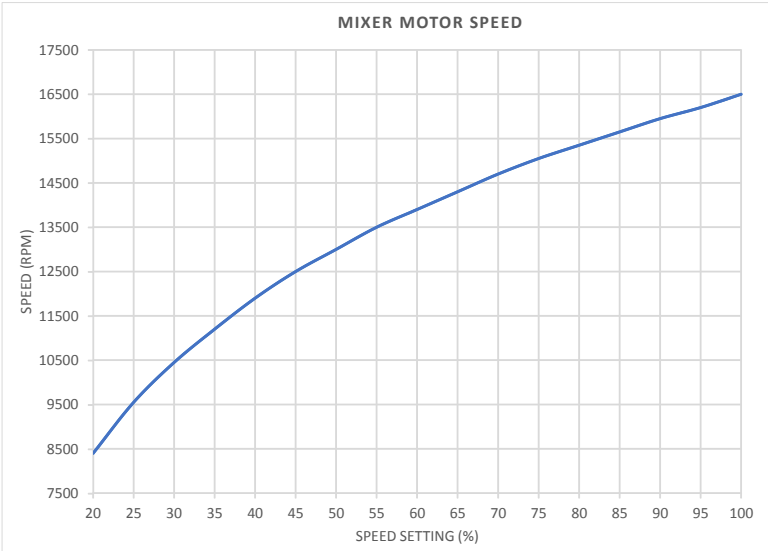
3.4.1 Adjustable mixer speed

The mixer speed is adjustable from 20 to 100%.
During the **Running time** two speeds can set, **Speed 1** and **Speed 2**.
It's possible to adjust the percentage of **Time speed 1.**
Speed 2 is then performed over the remaining **mixing time**.



At low speed, instant product is less whipped as it is at a high speed.

Mixing coffee briefly at at low speed (20%)	Provides a black coffee (no cream layer) (Jug of coffee)
Mixing coffee + milk at a moderate speed 40%)	Provides a coffee mixed with milk (no foam)
Mixing coffee at a moderate rate (40%)	Provides a coffee with cream layer
Mixing topping at a high speed (100%)	Provides a solid milk foam



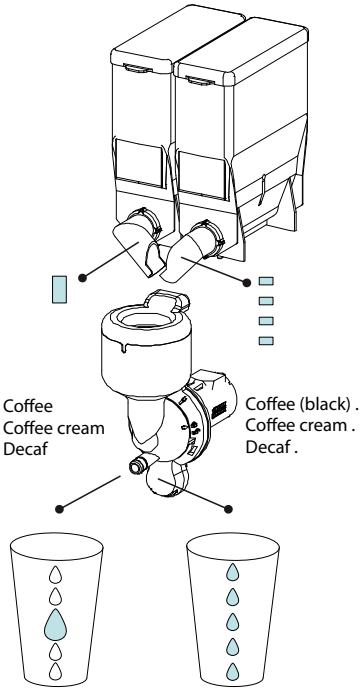
3.4.2 Multi shot coffee recipe

Normally it is sufficient to dispense the instant coffee product in one single shot (see left) in the mixer bowl. Visually a quite short of concentrated coffee runs into the cup, the rest is water.

In the optional recipes there are some special coffee recipes available where this single instant coffee shot is divided over 4 small shots (see right) dispensed into the mixer bowl so that the coffee beam is visible as long as possible.

The multi shot coffee recipes are recognizable to the dot behind the recipe name:

- Coffee (black) .
- Coffee cream .
- Decaf .



EN

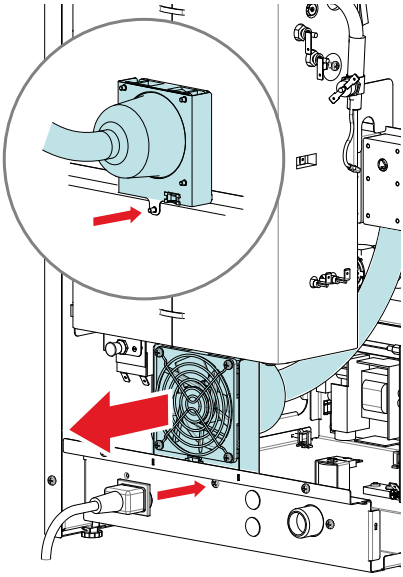
3.4.3 Ventilation mixer group

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:

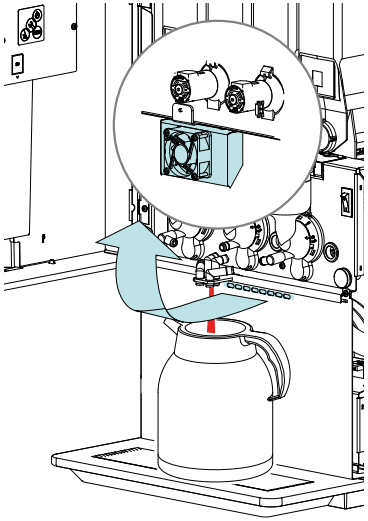
```
2.4 Settings
    └── 2.4.05 Ventilator
            ├── Fan time
            ├── Fan speed 1
            └── Fan speed 2
```



3.4.4 Ventilation TS models

The TS model has an extra fan. The airflow dissipates the moisture rising from a thermos so it does not rises up through the door.

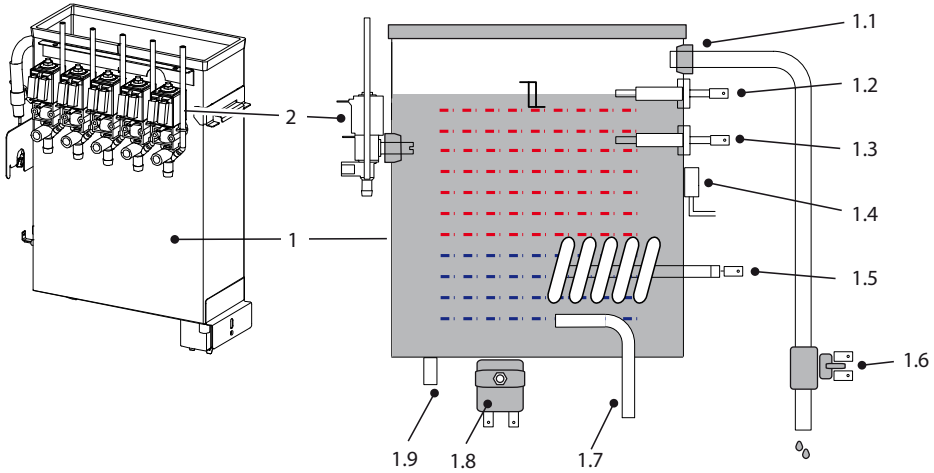
The fan runs as long as the machine is switched on.



3.5 Boiler system

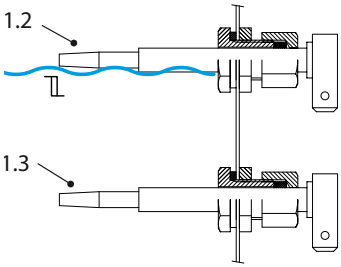
Turn on the device using the ON/OFF switch. The display will light up. The magnetic valve [1.7] will open and the hot water reservoir [1] will be filled to the maximum level electrode [1.2]. The heating element [1.5] will be switched on when the minimum level electrode [1.3] is in the water. As soon as the NTC sensor [1.4] measures the set temperature, the heating element [1.5] will be switched off.

Major parts		Technical data	Material
1 Boiler system		2,5 / 5,5 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		
	1.5 Heating element	230V 3200W	st.st.
	1.6 Steam thermostat	230V 16A	
	1.7 Boiler inlet		st.st.
	1.8 Dry boil protection	1N~230V 16A / 3N~400V 16A	
	1.9 Boiler drain		
2. Dispensing valve		Zie 3.5.1 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].



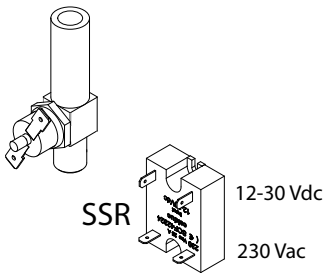
Temperature regulation

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

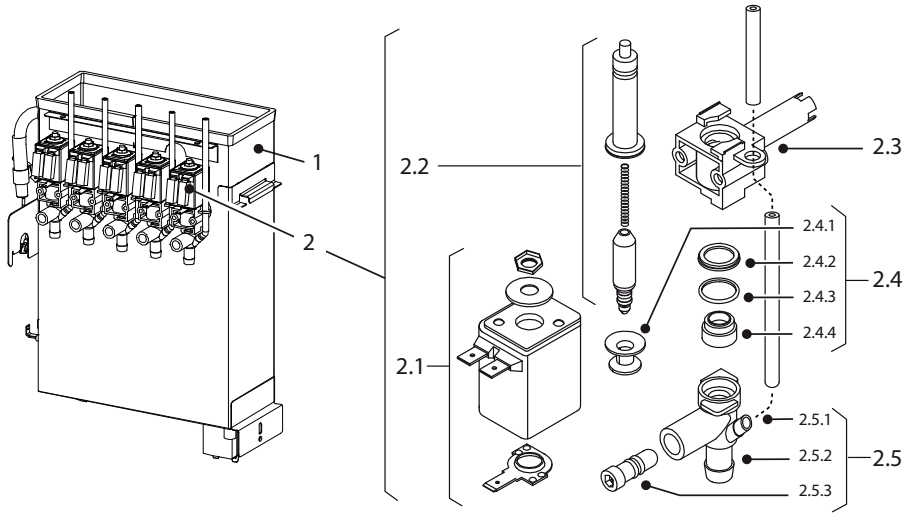
The solid state relay (SSR) is secured by a steam thermostat [1.6] which is build in line with the overflow tube [1.1] from the boiler. The steam thermostat contact is in series with the solid state. This thermostat prevents the boiler from boiling empty when the solid state breaks down in a operating 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.



3.5.1 Dispensing valves [03250]

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	2,5 / 5,5 Litre	AISI 316
2. Displensing 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 3.5.3 Calibrating	PSU

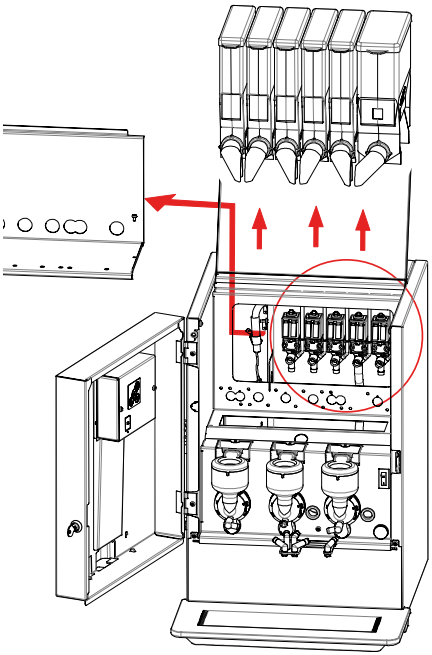


3.5.2 Removing / replacing

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.



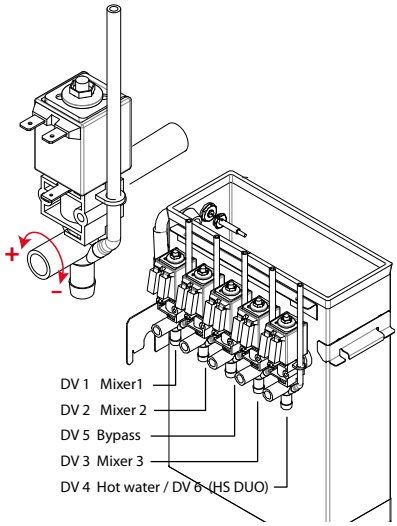
3.5.3 Calibration

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**

```
2.7 Hardware test
    └── 2.7.02 Calibrating valves
            ├── DV1
            ├── DV2
            │
            ├── DV3
            ├── DV4
            │
            ├── DV5
            └── DV6
```

TEST
1 sec.



1. Place a empty measuring cup with a minimum volume of 250ml under de drinkoutlet.
2. Select the valve (DV) which need to be calibrate and press TEST button for 1 sec. to open the relevant valve for 10 seconds.
3. Set on the basis of the measured quantity the adjusting screw on to 150 ml or 200 ml.

4. MENU STRUCTURE

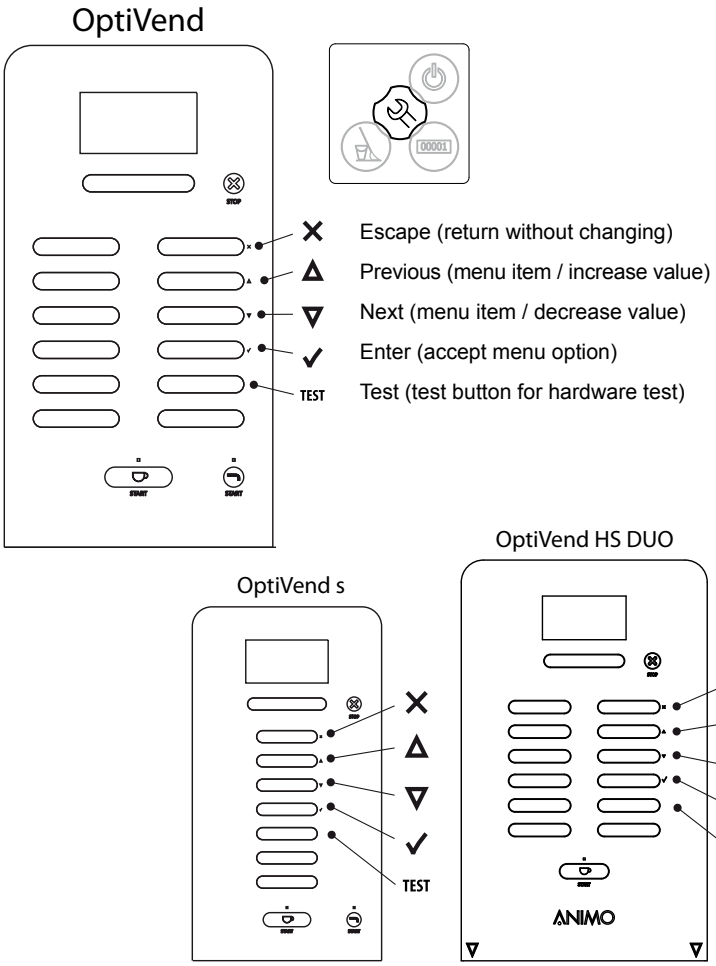
4.1 The operator / service menu

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.

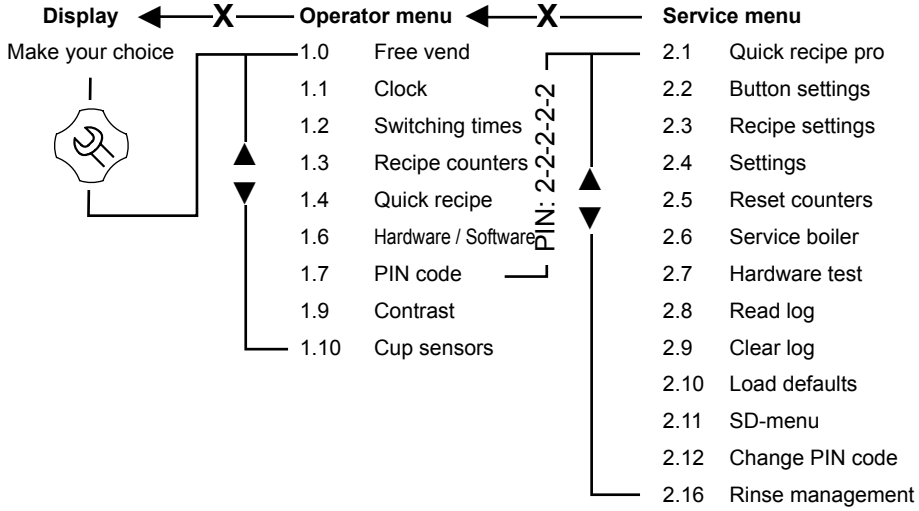
This chapter describes the various settings that can be changed by **trained, authorised service personnel**. How you gain access to the **service menu** is described below. Once in the service menu, the control panel has the following functions:

EN



- 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:



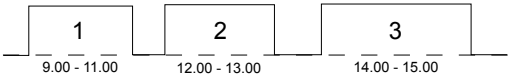
4.2 The operator menu

Operator menu					
Main item	Sub-item		Range	Set	Description
1.0 Free vend			yes-no	yes	Set the machine for free or paid vending. (if activated)
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 Mo-Fri 2 Mo-Fri 3	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). **Pricing at time period:** On/Off time set (max 3 timers.): The machine performs in this period the set **price choice, Price low** or **Free**. If no time is set **price high** will be used. **Price choice:** Specify here at what pricing choice, **free, price high or price low**, the machine must handle.
			Pricing time per.	On time Off time	
			Price choice	Free High Low	
	sat	sat 1 sat 2 sat 3	Stand-by	On time Off time	
			Pricing time per.	On time Off time	
			Price choice	Free High Low	
	sun	sun 1 sun 2 sun 3	Stand-by	On time Off time	
			Pricing time per.	On time Off time	
			Price choice	Free High Low	
	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.
		Boiler temp.	off / 60-80°C	off	Boiler temperature during power save.

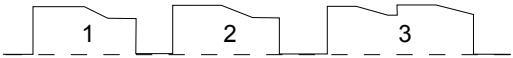
EN

Example:

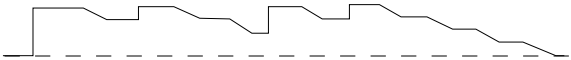
Three switching times set
Machine automatically switches from Stand-by to ON at 9 am. At 11am back to Stand-by, etc., etc.
During stand-by the key panel is switched off and the boiler temperature drops to the set stand-by temperature (menu 2.4 Settings / Stand-by temp / off - 60-80°C (by default the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

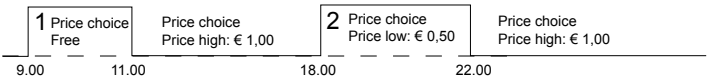


Energy save mode activated (no switching times set)
If there is no dispensing, the machine switches to power save after 30 min. The boiler temperature decreases by 5°C every 30 minutes. If a product is chosen after 2 hours, the machine springs back into life. In this way, less energy is used if the machine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



Example:

Three set prices for beverages Mon-Fri.



Service menu / 2.2 Button settings / Button 1- - - - 10 Price / Price high 1,00 + Price low 0,50
Service menu / 2.4 Settings / Payment system / G13
Operator menu / 1.0 Free vend / No

1.2 Switching times / mo-fri / mo-fri 1

9.00 till 11.00 free
Pricing time / on time 9.00 & off time 11.00
Price choice / free

If no time is set from 11:00 to 18:00 the machine is automatically switched from free to price high rate.

1.2 Switching times / mo-fri / mo-fri 2

18.00 till 22.00 price low (0,50)
Pricing time / on time 18.00 & off time 22.00
Price choice / price low 0,50

After 22:00 the machine will automatically switch over from low price to high price. When Saturday and Sunday have not been set the machine stays these days on price high rate.

EN

Operator menu continued...					
Main item	Sub-item		Range	Set	Description
1.3 Recipe counters	Recipe 1 Recipe 12	Total	cups		Total count per recipe (from free till jugs).
		Free	cups		Number of drinks free
		Paid low price	cups		Number of drinks paid low price
		Paid high price	cups		Number of drinks paid high price
		Test recipe	cups		Number of drinks made by test recipe
		Token	cups		Number of drinks paid with token per recipe
		Jug	cups		Number of drinks dispensed in jug
	Recipes total	See above	cups		Total count for all recipes with the same subdivision as above
	service counters	Rinse			Rinse 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. See the example on page 45 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 Recipe name 12	Cup volume	50-350 ml	120ml	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.
		Ingr. 1	-20 / +20%	0%	
		Ingr. 2	-20 / +20%	0%	
		Ingr. 3	-20 / +20%	0%	
		Ingr. 4	-20 / +20%	0%	
		Ingr. 5	-20 / +20%	0%	
		Ingr. 6	-20 / +20%	0%	
1.6 Hardware / 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
1.9 Contrast			0-100%	25%	Set the contrast of the LCD display
1.10 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	

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.
		Ingredient 1	0 - 10,00 s		
		Ingredient 2	0 - 10,00 s		
		Ingredient 3	0 - 10,00 s		
	<Recipe name> 12	Ingredient 4	0 - 10,00 s		
		Ingredient 5	0 - 10,00 s		
		Ingredient 6	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. See chapter 2.1 How to program a recipe?
		Recipe active	Yes/no	Yes	Use this to place the product concerned out of service.
		Price			
		Price high	0,05-2,00	0,50	For paid dispensing a price high can be set here for each product button.
		Price low	0,05-2,00	0,25	For paid dispensing a price low can be set here for each product button.
	Button 12	Kopvolume	50-350ml	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!
		Multicup	0-30	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.

Key switch

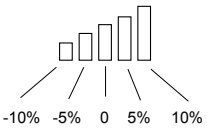
Software menu parameter				Key switch	
Key switch	Multicup	Free vend	Payment system G13 / MDB	(off)	(on)
Table	0	Yes	n.a.	free cup	free cup
		No	Yes	paid cup	free cup
			No	free cup	free cup
	>1	Yes	n.a.	free jug	free jug
		No	Yes	paid jug	free jug
			No	free jug	free jug
1	0	Yes	n.a.	free cup	free cup
		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

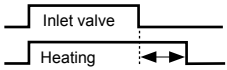
Table 2

EN

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
			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 Ingredient 1
			Ingredient 1	0,0-10,0 s	Product dispensing time Ingredient 1
			Ingredient 2 WT	0,0-30,0 s	Delay time Ingredient 2
			Ingredient 2	0,0-10,0 s	Product dispensing time Ingredient 2
			Mixer 1 WT	0,0-30,0 s	Delay time Mixer 1
			Mixer 1		
			Running time	0,0-10,0 s	Mixing time Mixer 1
			Speed 1	20-100%	1st speed Mixer 1
			Time speed 1	0-100%	Time 1st speed Mixer 1
	<Recipe name>12		Speed 2	20-100%	2nd speed Mixer 1
		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	0,0-10,0 s	Product dispensing time Ingredient 3
			Ingredient 4 WT	0,0-30,0 s	Delay time Ingredient 4
			Ingredient 4	0,0-10,0 s	Product dispensing time Ingredient 4
			Mixer 2 WT	0,0-30,0 s	Delay time Mixer 2
			Mixer 2		
			Running time	0,0-10,0 s	Mixing time Mixer 2
			Speed 1	20-100%	1st speed Mixer 2
			Time speed 1	0-100%	Time 1st speed Mixer 2
			Speed 2	20-100%	2nd speed 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	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	0-15 ml	Dispensing amount Rinsing Water 3 Automatically deducted from Water 3
			Ingredient 5 WT	0,0-30,0 s	Delay time Ingredient 5
			Ingredient 5	0,0-10,0 s	Product dispensing time Ingredient 5
			Ingredient 6 WT	0,0-30,0 s	Delay time Ingredient 6
			Ingredient 6	0,0-10,0 s	Product dispensing time Ingredient 6
			Mixer 3 WT	0,0-30,0 s	Delay time Mixer 3
			Mixer 3		
			Running time	0,0-10,0 s	Mixing time Mixer 3
			Speed 1	20-100%	1st speed Mixer 3
			Time speed 1	0-100%	Time 1st speed Mixer 3
			Speed 2	20-100%	2nd speed 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	Delay time Water 5
		DV 5		0-100 ml	Dispensing amount Water 5 (Bypass dispense)
		DV 6 WT		0,0-30,0 s	not used
		DV 6		0-100 ml	
		Range ingredient	Ingredient 1	0-50%	Use the strength setting item to add an ingredient to the strength adjustment. Ingredient strength adjustment: 0= off / > 1 = on Example: [coffee] 10% 
			Ingredient 2	0-50%	
			Ingredient 3	0-50%	
			Ingredient 4	0-50%	
			Ingredient 5	0-50%	
			Ingredient 6	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 Instellingen	Taal	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 *	85°C	Boiler temperature models OV (s) NG
				90°C	Boiler temperature models OV TS NG
		Hysteresis	2-10°C	2°C	Temperature drop, after which boiler must reheat
		Output block	70-80°C	78°C	Boiler temperature disables dispens-ing. Display: [Out of order, boiler heating]
		Output release	70-90°C	83°C	Boiler temperature allows dispens-ing again
		Stand-by	uit / 60-80°C	uit	Boiler temperature during stand-by
		Extended Heating	0-5 sec.	5 sec.	To maintain the optimum boiler tem-perature 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
		Daylight saving time			
		Autom saving time	Yes/no	Yes	Automatic summer time
		Summertime zone	EU/USA zone	EU	Summer time zone
		Time differences	+1 / -1 DTS	+1	Time difference
	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%	50%	Fan speed when resting
		Fan speed 2	40-100%	60%	Fan speed during dispensing

New!
from V5.51

Service menu continued …..						
Main item	Sub item	Item		Range	Set-ting	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

EN

Service menu continued ...					
Main item	Sub-item	Item	Range	Set	Description
2.4 Instellingen (vervolg...)	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	no	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 and the Display operate normally.
	Stop button		yes-no	yes	If this function is set to Yes, the Hot water (and cold water) can be stopped using the stop button.
	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 not possible anymore.
	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.
	Telemetry New! from V5.52	None			No telemetry system connected.
		MDB			Telemetry system connected via MBD port. Insert SD card with min. 1Gb in card holder, here the EVA DTS file will be stored. Data transfer via MDB connection.
		DEX-UCS			Telemetry system connected via DEX port. Insert SD card with min. 1Gb in card holder, here the EVA DTS file will be stored. Data transfer via DEX connection.
2.5 Reset counters	Service counters	Rinse counter?			Reset rinse 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.

Service menu vervolg ...					
Hoofd item	Sub item	Item	Bereik	Set	Beschrijving
2.6 Service boiler	Service moment	Cups	0-50.000	20.000	After reaching the set service moment (cups or month), the message Service boiler appears in the display on switching on. See also Chapter 6 Service.
		Month	0-18	0	If desired a point of time can be set when the **Service boiler** signal should appear. Example: If 12 months is set during installation the service boiler message will appear on the display 12 months after installation.
	Service counter	Cups			The total number of vended cups or passed month 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.
		Month			
	Reset service counter				After periodic maintenance has been carried out (boiler descaled or filter replaced) the service counter must be set to zero.

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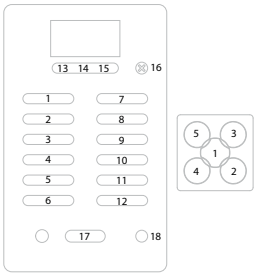
Water hardness table

Water Quality	Hardness					Service moment after x (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

* factory setting

# 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	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	
		Key panel		
		Service panel		
		Cup sensor left	Yes/no	
		Cup sensor middle	Yes/no	
		Cup sensor right	Yes/no	
		Jumper detection	Yes/no	yes: cup sensors activ
	Outputs **Test by holding in TEST button** # 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 (Mixer 1)
		DV2		Dispenser valve 2 (Mixer 2)
		DV3		Dispenser valve 3 (Mixer 3)
		DV4		Dispenser valve 4 (Hot water)
		DV5		Dispenser valve 5 (Bypass)
		DV6		Dispenser valve 6 (By-pass HS DUO)
		IM1 #	600mA	Ingredient motor 1 (Canister 1)
		IM2 #		Ingredient motor 2 (Canister 2)
		IM3 #		Ingredient motor 3 (Canister 3)
		IM4 #		Ingredient motor 4 (Canister 4)
		IM5 #		Ingredient motor 5 (Canister 5)
		IM6 #		Ingredient motor 6 (Canister 6)
		MM1 #	2000mA	Mixer motor 1
		MM2 #		Mixer motor 2
		MM3 #		Mixer motor 3
		Ventilator	200mA	Ventilator
		LED's		LED's
		KW3		Inlet valve (Optional Cold water)

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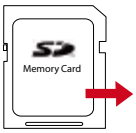
Service menu continued….				
Main item	Sub item	Sub	Range	Description
2.7 Hardware test (continued...)	Calib. valves **Test by holding in TEST button (for 1 sec.) to open the relevant valve for 10 seconds.**	DV1	15 ml / sec.	Calibrate to 150ml (10sec. x 15ml)
		DV2	15 ml / sec.	Calibrate to 150ml (10sec. x 15ml)
		DV3	15 ml / sec.	Calibrate to 150ml (10sec. x 15ml)
		DV4	20 ml / sec.	Calibrate to 200ml (10sec. x 20ml)
		DV5	15 ml / sec.	Calibrate to 150ml (10sec. x 15ml)
		DV6	15 ml / sec.	Calibrate to 150ml (10sec. x 15ml)
		KW3	35 ml / sec.	Cold water inlet valve cannot be calibrated (fixed flow)
	Operating hours	Mixer(s)	Mixer 1	Day - Hour : Min. 0 - 00 : 00 Number x activated _ _ _ _ x
			Mixer 2	
			Mixer 3	
		Ingredient motor(s)	IM 1	
			IM 2	
			IM 3	
			IM 4	
			IM 5	
			IM 6	
			KW1 (inlet valve)	
			KW3 (cold water)	
		Valves	DV1 (mixer 1)	
			DV2 (mixer 2)	
			DV3 (mixer 3)	
			DV4 (heetwater)	
			DV5 (bypass)	
			DV6 (bypass HS DUO)	
		Element	Element 1	
			Element 2	

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 code			
	Model **#** HS DUO OV11s OV22 TS OV53 TS OV63TS	Type code HS DUO 2V1A 2V1F 2V3F 2VBA	The defaults must be loaded when a new circuit board is installed. When loading the defaults, the OptiVend 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 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!

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	The SD card can safely be removed after confirming with Yes

EN

Service menu continued ...					
Main item	Sub-item	Item	Range	Set	Description
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 (8) * * * * *			
2.16 Rinse 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 - 5000	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.

Pin code Tabel

Nr.	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

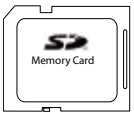
Nr.	Pincode				
8	2	3	2	4	1
9	2	4	3	2	3
10	3	1	3	3	2
11	1	3	3	3	2
12	1	2	4	1	3
13	4	3	1	2	1
14	1	1	1	4	2

Nr.	Pincode				
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

5. SOFTWARE

5.1 Memory card specs

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



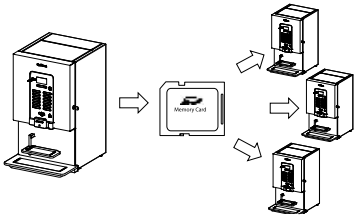
5.2 Machine setting management

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. 45 & 46 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

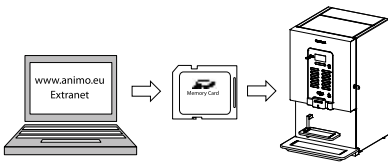
Note: Depending on your settings, Windows can see the LOG file as a TXT file.

```
Generated on 2014-11-10,
14:10:38
Software version: V5.50.1729

Button 1 (Coffee creme)
Free:          15
PayedLow:      0
PayedHigh:     8
PayedToken:    0
Test:          24
Total:         47
Pot:           6
PriceLow:      0
PriceHigh:     0
PriceTotal:    400

        :
        :
        :

Button 12 (hot water)
Free:          20
PayedLow:      0
PayedHigh:     0
PayedToken:    0
Test:          1
Total:         21
Pot:           11
PriceLow:      0
PriceHigh:     0
PriceTotal:    0

Totals
Free:          69
PayedLow:      0
PayedHigh:     9
PayedToken:    0
Test:          46
Total:         124
Pot:           17
PriceTotal:    450

Other counters
Clean:    2
Service: 19940
Service Month: -91
Operating: 152
```

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:

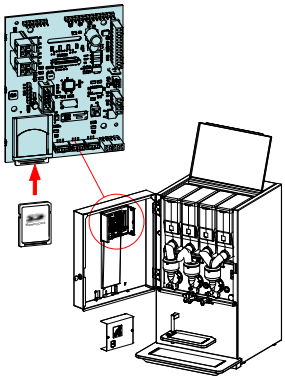
- Changed recipes
- Changed personal settings
- A non-standard language file will be overwritten by the standard language file NL/GB/DU/FR

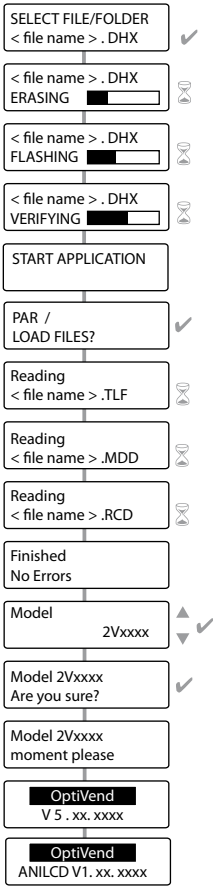
Counts, Log and operating hours will be preserved!

1. Download the OptiVend NG software from the Animo extranet site.
2. Unpack the ZIP file and copy all files in the root of the 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 (V-key). 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**

Attention: 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.





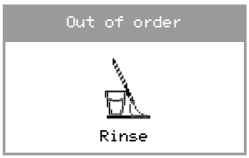
6. MAINTENANCE

6.1 Daily rinsing program

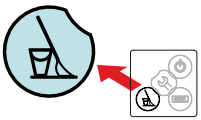
After 1 day the display shows RINSE.
This message will disappear again after the rinsing program is executed.

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

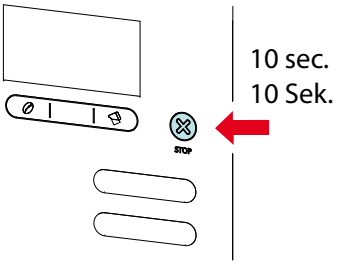
In the **Service menu / 2.16 Rinse management / Rinsing mandatory** (yes / no), the user can even be obliged to carry out the rinsing program. If the rinsing program is not activated the machine blocks.



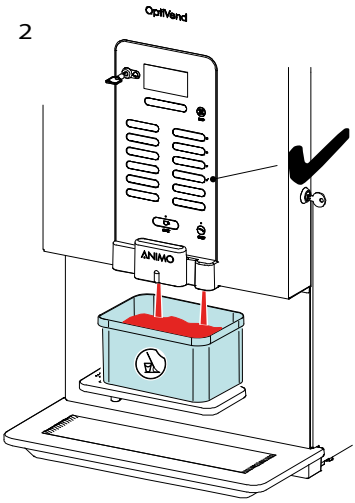
1a



1b



2



EN

6.2 Periodic maintenance

6.2.1 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**

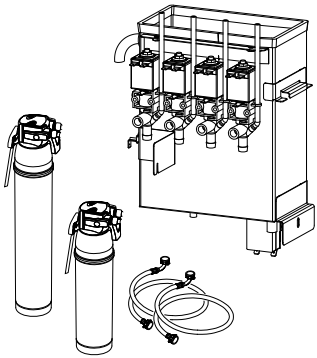
During use, the drinks are counted. When the boiler service moment is reached the text [*Service Boiler*] will appear in the display.

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 boiler signal service 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.



6.2.2 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.

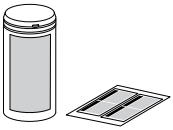
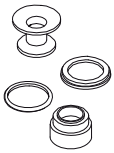
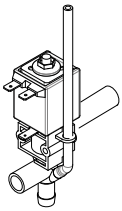
User manuals, service manuals and software updates can be found on the Extranet section of www.animo.eu. If you do not have access, please request your personal login code on our website.

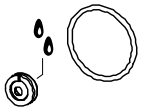
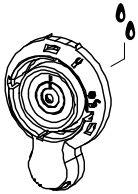
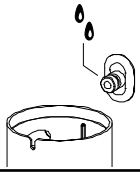
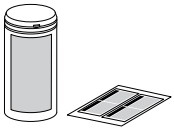
Water filter

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.

6.2.3 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.	OptiVend NG		
				x1(s)	x2(s)	x3
Descale	45 min.					
Descale boiler system and dispensing valves (see service manual).			00009 (can) / 49007 (sachet)			
Use valve seal set if necessary.			99673	2-3x	3-4x	5x
Or replace the dispensing valves complete.			03250	2-3x	3-4x	5x
			Attention: HS DUO 02803	22TS 4x	42TS 4x	53TS 5x

Service activity	Time	Product	Art.No.	OptiVend NG		
				x1(s)	x2(s)	x3
Mixer(s)	10 min.					
Check the motor shaft for dirt and wear. Apply food grade grease to the water connection.						
Replace mixer blade.			1003569	1x	2x	3x
Replace the seals in the green mixer mounting ring.			1000742	1x	2x	3x
			1003572	1x	2x	3x
or replace green mounting ring complete.			1003568	1x	2x	3x
Lubricate mixer house water inlet with food grade grease.						
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.						

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.

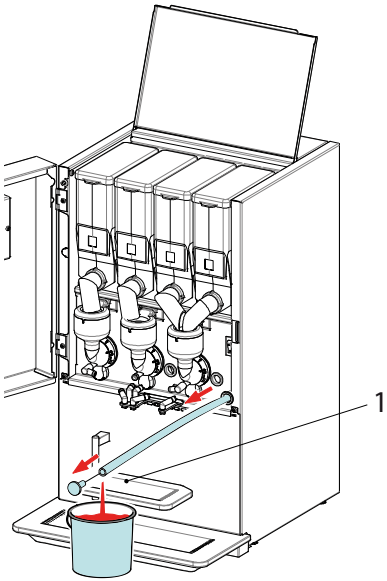
6.3 Descaling instructions

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



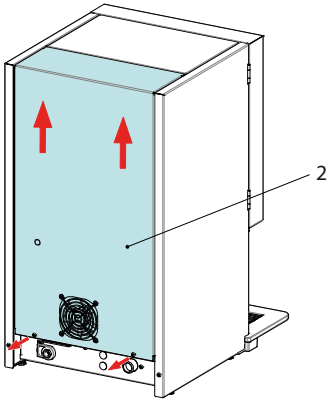
Descale preparations

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

Attention: HOT !

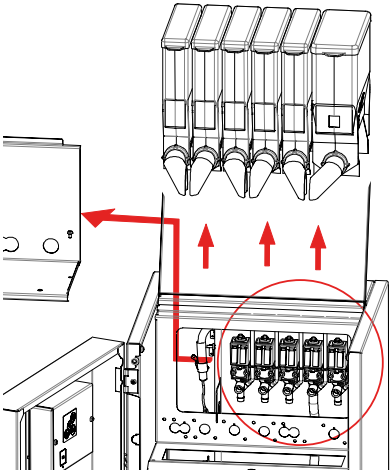
Boiler content OptiVend NG s abt. 2,5 litre, OptiVend NG abt. 5,5 litre

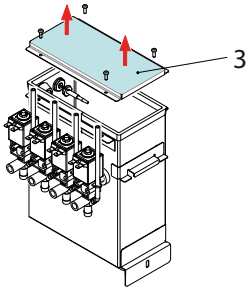
3. Remove the rear plate [2] and unscrew the reservoir lid [3]. Take care: HOT!
4. Read the warnings and instructions for use on the Animo Descaler sachets before dissolving two 50g sachets (8-10 dessert spoons) into 2 litres warm water.
5. Slowly pour the 1 litre acid solution into the reservoir [4]. 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.

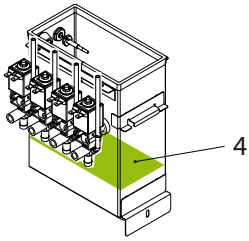


Disassemble the dispensing valves

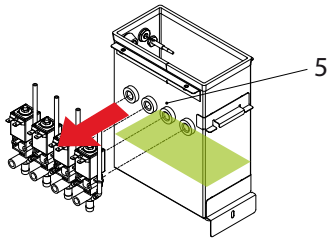
7. Remove the dispensing valves. They are accessible through the cover plate behind the ingredient canisters







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



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

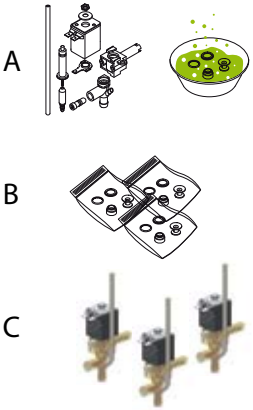
   B Fit a replacement set

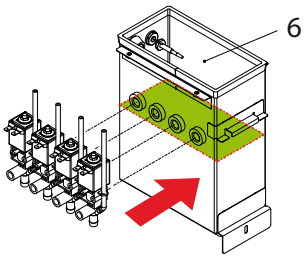
   After the parts are replaced entirely by the seal replacement set build the valves back together. See Section 3.5.1 Dispensing valves

   C Fit new valves

   Attention: new dispensing valves must be set on the correct dosing!
   See Section 3.5.3 Calibration

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

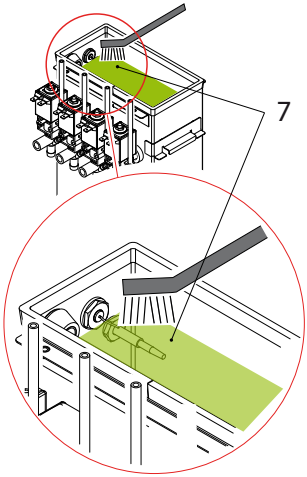




continuation boiler descaling....

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

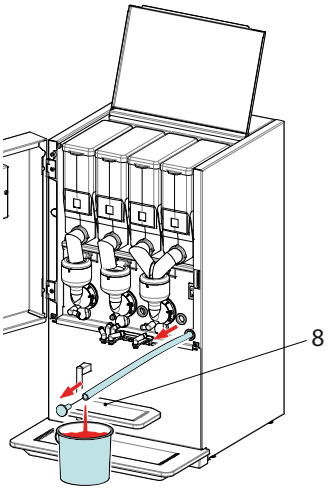
    Use a brush to spread the descaler over the level electrodes [7] during the soaking time.



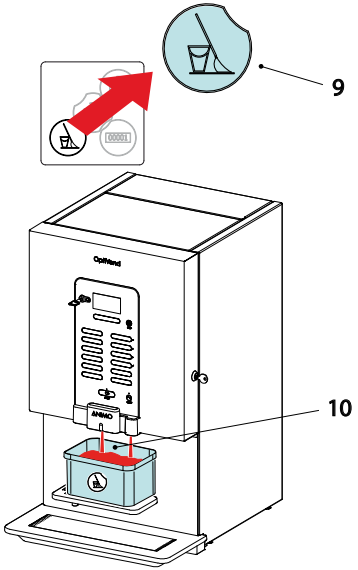
EN

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.

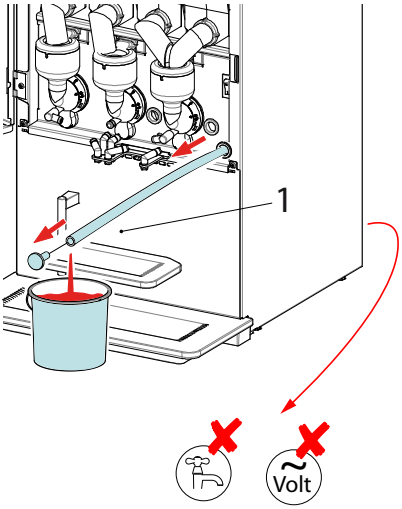


7. TRANSPORT / STORAGE

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 by using the draining tube [1].
   - OptiVend NG s = 2,5 litre
   - OptiVend NG (TS/TL) = 5,5 litre
   - OptiVend NG (HS DUO TS/TL) = 5,5 litre

   Attention: Hot water.
6. The device is now ready for transport.



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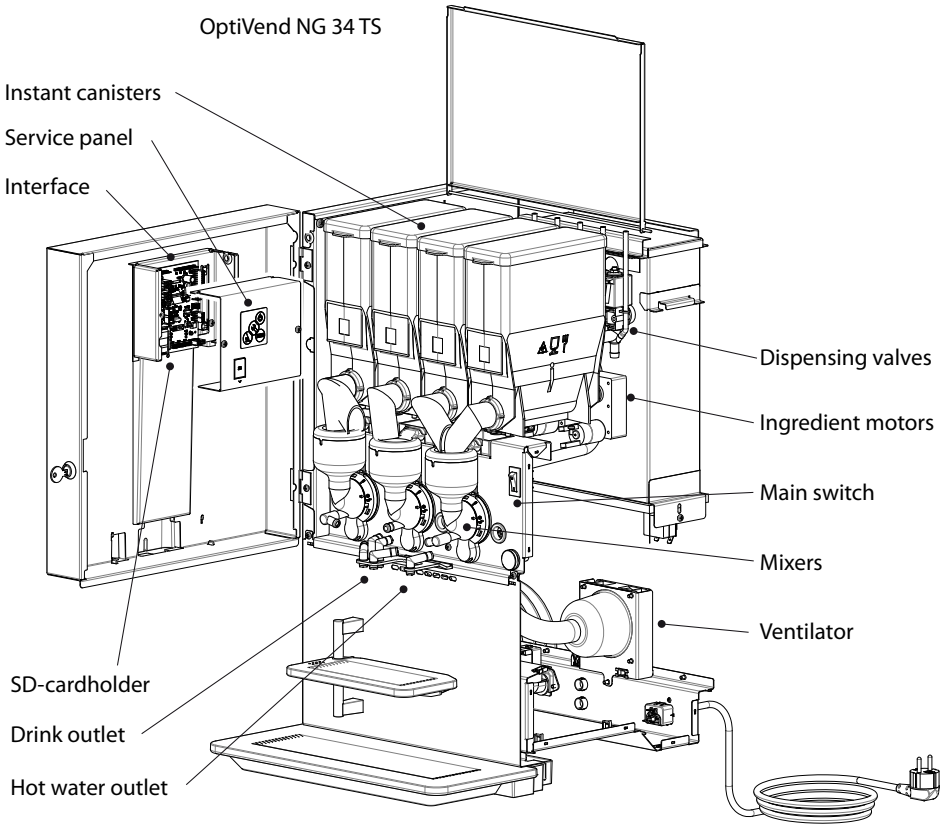
8. COMPONENT ACCESSIBILITY



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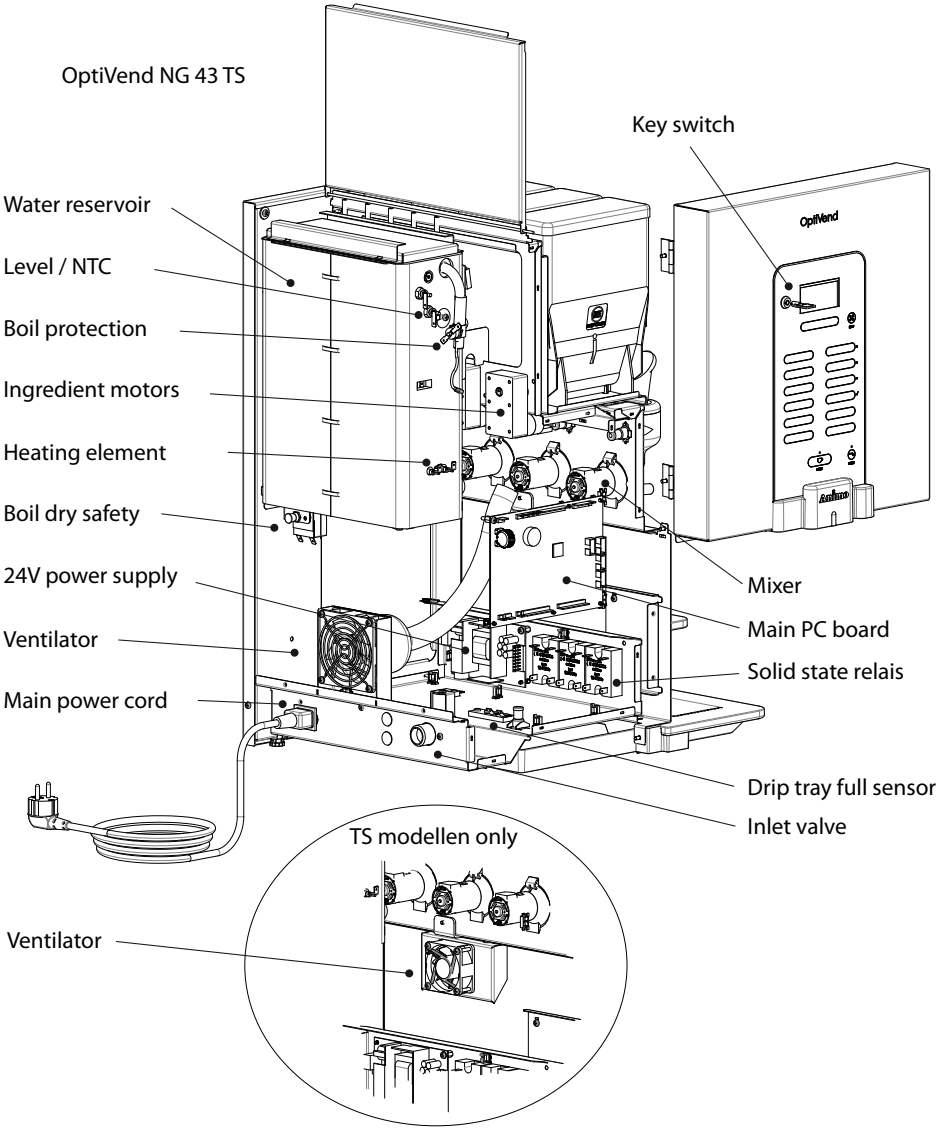

OptiVend NG 43 TS
Key switch
Water reservoir
Level / NTC
Boil protection
Ingredient motors
Heating element
Boil dry safety
24V power supply
Ventilator
Main power cord
Mixer
Main PC board
Solid state relais
Drip tray full sensor
Inlet valve
TS modellen only
Ventilator

9. ELECTRONICS SUMMARY

WARNING

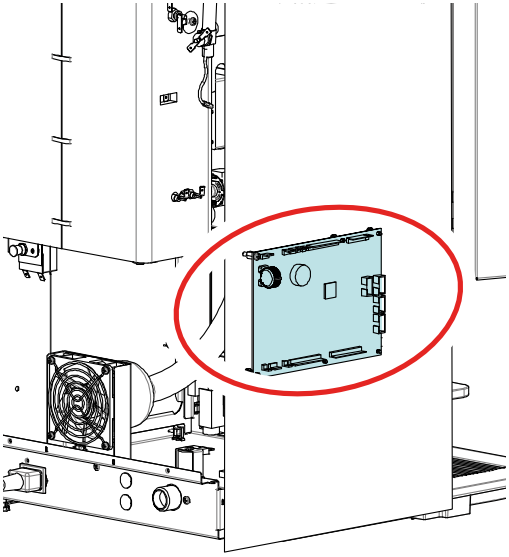
During repairs or maintenance work, avoid electrostatic discharge (ESD) on the control unit.

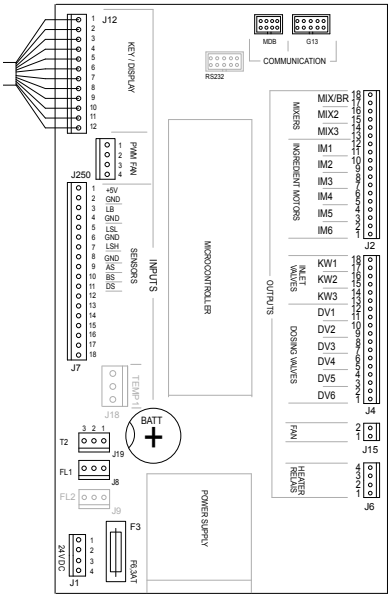
9.1 Main PC board

This control unit is the device's main control unit [Art.No. 1004068] 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 inputs

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	

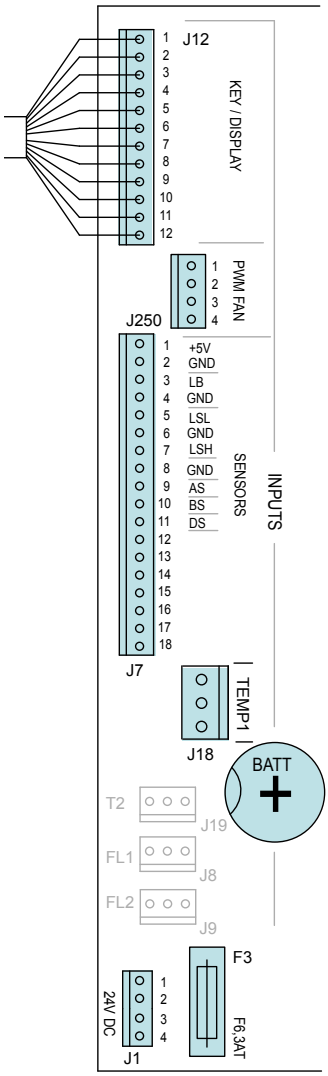
Connector J7 (Inputs)			
Pin	**Sensor**	**Colour**	**Notes**
1-2	-	-	
3	LB Drip tray	Yellow	
4	GND Drip tray	Black	
5	LSL level low	Brown	
6	GND level mass	Green	
7	LSH level high	White	
8-18	-	-	

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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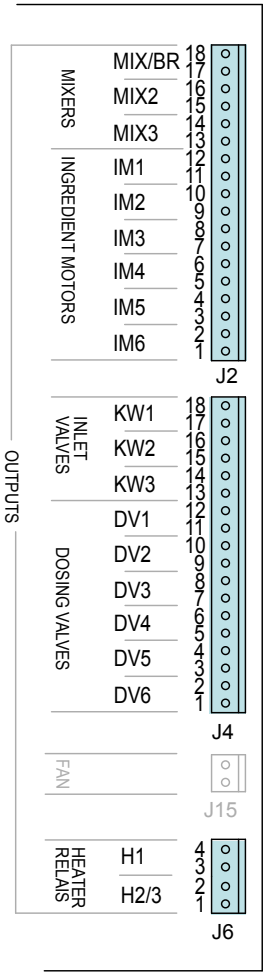
9.1.2 Main circuit board outputs

Connector J2			
Pin	**Motor**	**Colour**	**Notes**
17-18	Mixer 1	Black	**Pay attention to the right direction!** Common +24 Vdc (red wire) to red point on Mixer and Ingredient motor.
15-16	Mixer 2	Violet	
13-14	Mixer 3	Pink	
11-12	Ingredient Motor 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	Orange	

Connector J4			
Pin	**Valve**	**Colour**	**Notes**
17-18	KW 1 (inlet valve)	Violet	* Hot & Cold optiion Red wire is + 24Vdc common terminal
15-16	KW 2 (venting valve)*		
13-14	KW 3 (Cold water)*	Blue	
11-12	DV 1 (mixer 1 ventiel)	Brown	
9-10	DV 2 (mixer 2 ventiel)	White	
7-8	DV 3 (mixer 3 valve)	Yellow	
5-6	DV 4 (hot water tap)	Green	
3-4	DV 5 (bypass valve)	Grey	
1-2	DV 6 (bypass valve)	Orange	-

Connector J6			
Pin	**Relais**	**Colour**	**Notes**
4	Solid state relay (SSR) (heating element H1)	Red	
3		White	
2	Extra Solid state relay (SSR) (heating element H2/3)	Red	Multi phase execution
1		White	

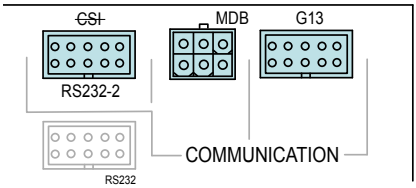


9.1.3 Main circuit board communication

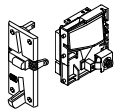
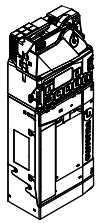
The machine has standardized vending machine connections for connecting coin mechanism, coin changer or cashless payment systems.

These connectors meet the MDB protocol for vending machines.

For further information or advice please contact our support department.



EN

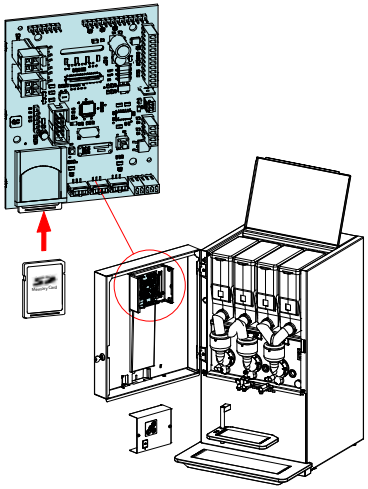
Communication		
Conn	**Protocol**	**Notes**
G13	Parallel interface  art. no. 04025 03267	- Coin acceptor NRI G13 - External release contact* **the machine can be released by using a potential-free contact (pulse).* - G13 Kabel 1 meter art. no. 03392 - Extern vrijgave contact; kabel 1004237
MDB	Serial interface MDB (Multi Drop Bus)  art. no. 03433	- Coin changer NRI C^2 - Cashless payment system - Telemetry EVA DTS (SD card needed)  - MDB cable 1 meter art. no. 03479 - MDB cable 1 meter art. no. 1004564 (2x male connector) - MDB Y-kabel art.no. 1002008
RS232-2	Serieel interface DEX UCS new from sept 2015	- Telemetry EVA DTS / DEX UCS (SD card needed) 
RS232		not used

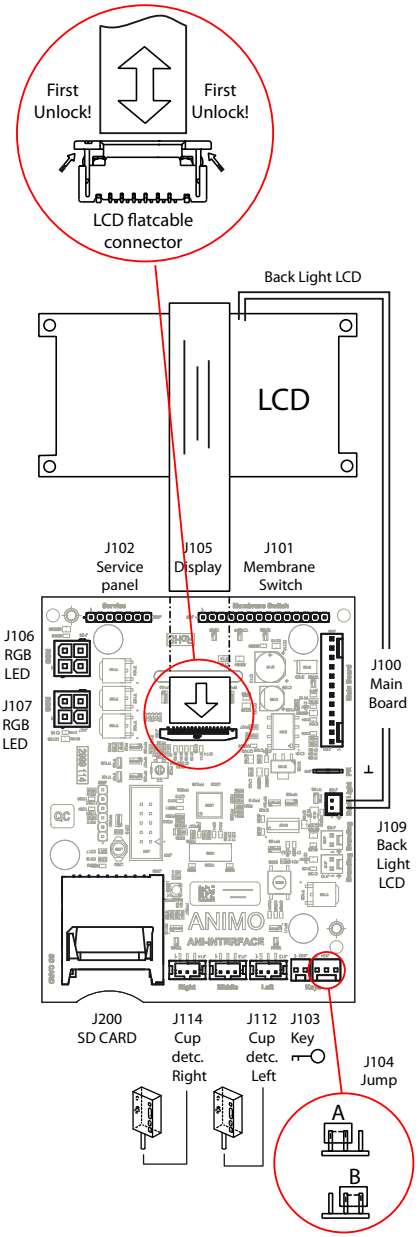
9.2 Interface / Display

The interface board [Art.No. 1004066] 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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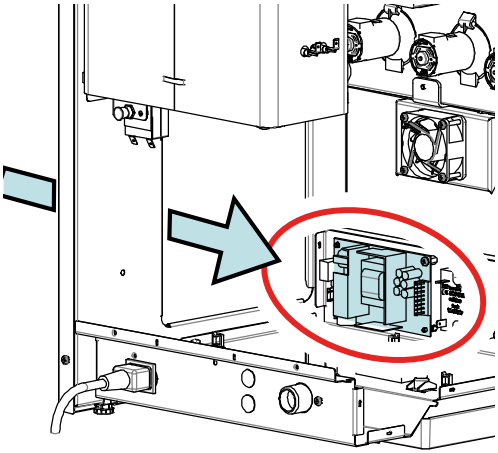
9.3 Power supply

The 24 Vdc supply [Art.No. 1004606] 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.

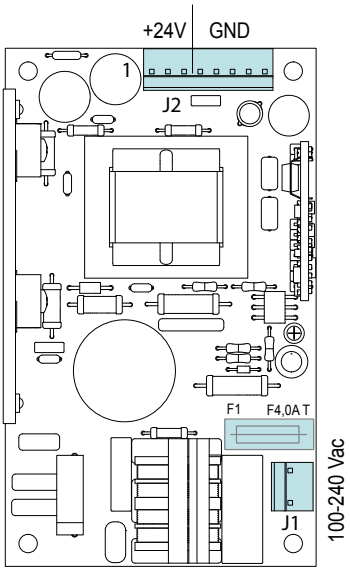


9.3.1 Connections

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	

Fuse F1	
4A slow	**art.no. 1004957**



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.

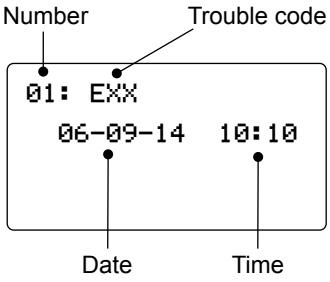
Preface

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 10.4 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.

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 10.4).
- 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.

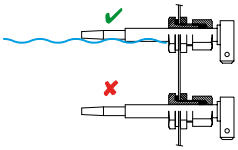
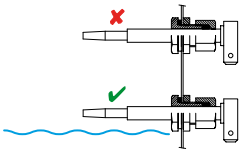
10.3 Display messages during use

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 **6. Maintenance / 6.1 daily rinsing program**
Make your choice  Service boiler	Boiler needs maintenance.	Inspect boiler for scale and descale if necessary descaling / Replace water filter, see chapter **6.2 Periodic maintenance / 6.2.1 Service boiler.**
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  Stand-by	The machine is on standby.	This function can be set manually or automatically.
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 **6. Maintenance / 6.1 daily rinsing program**
Coffee Place cup 	no cup positioned under the spout.	position a cup under the spout.
Coffee Place cup under correct outlet 	no cup positioned under the correct the spout.	position a cup under the correct spout.

EN

Display	Possible cause	Action
your drink has been canceled	the cup was taken away to quickly	keep the cup in position during the drink preparation.
Make your choice  cup sensor left error	the cup detection sensor as shown in the display is faulty cup detection window is dirty	the fault can be (temporarily) be neutralized by pressing the stop button. after 20 reset attempts the error will be registered in the log menu clean the cup detection sensor windows. replace the cup detection sensor
Make your choice  cup sensor middle error		
Make your choice  cup sensor right error		

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.	Ensure the actual water level by opening the boiler.
		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 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.
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 Mixer 1 error	Mixer 1 motor stalled. Mixer 1 motor output(s) overloaded (current too high). The control has disabled the output.	Check whether mixer 1 is contaminated or incorrectly mounted. Clean and/or check whether the rotor turns freely. Switch the machine off and on again.

EN

Display	Possible cause	Action
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.
E13 Mixer error	Mixer output group overloaded (current too high). The control has disabled the output.	Carry out the checks as specified for E7, E8 and E9. Switch the machine off and on again.
E14 Output error	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.
E16 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 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.

Display	Possible cause	Action
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 1.8. 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.

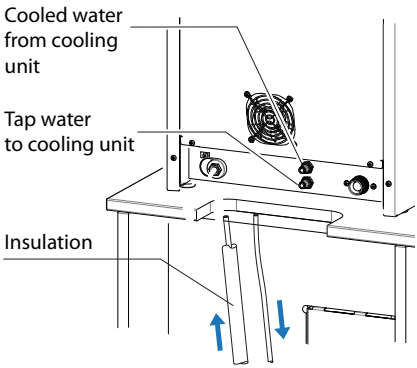
11. SPECIAL OPTIONS

11.1 Installation OptiVend NG Hot & Cold

Required equipment:

- OptiVend H&C
- Base cabinet with cooling unit

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.



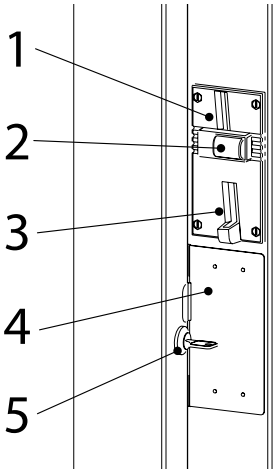
12. PAYMENT SYSTEMS

12.1 Coin mechanism (optional)

The OptiVend 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.

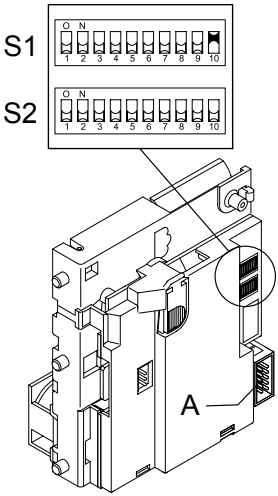


1. Coin insert
2. Return button
3. Return slot
4. Money drawer
5. Door lock (also locks the money drawer)

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.



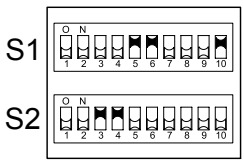
12.1.2 Rejecting coins

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

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

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

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

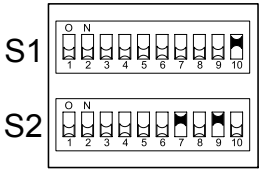
Configure the service menu as described in the following section from point 4.

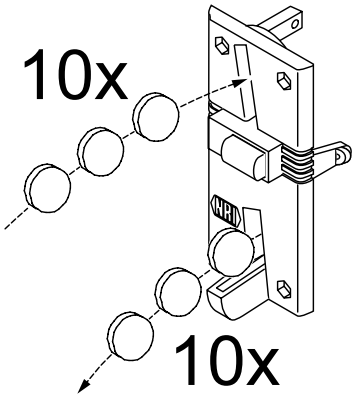
Token Art. No. : 03344

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 2.4 Settings / 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 Token

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!

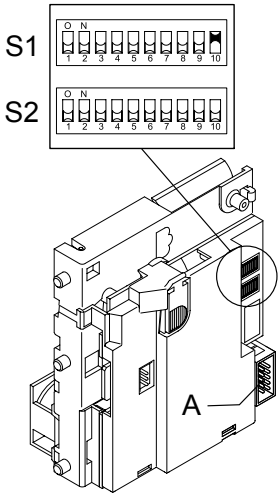
12.1.6 Accepting Tokens only (no Euro's)

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

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



EN

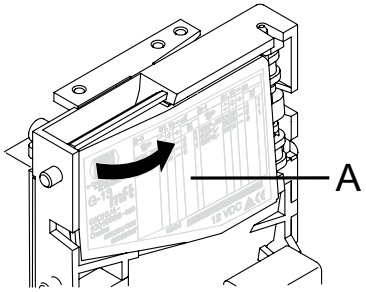
12.1.7 Coin channel cleaning

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.

WARNING

- 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 and hold it open.
4. Clean the coin holder with a cloth and close the valve again.
5. Turn on the device again.

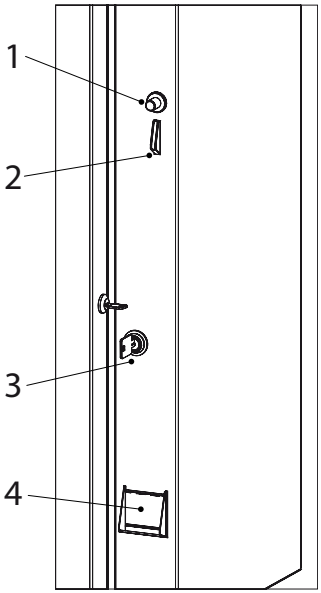


12.2 Coin changer (optional)

The OptiVend 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).

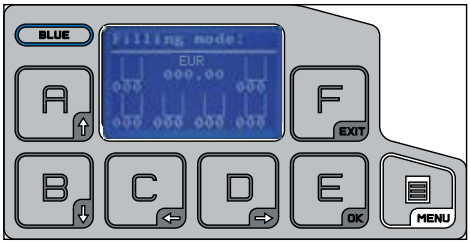


1. Return button
2. Coin slot
3. Door lock
4. Change
5. Return lever
6. Coin insert funnel
7. Display
8. Key panel
9. Cassette removal Lever
10. Tube cassette

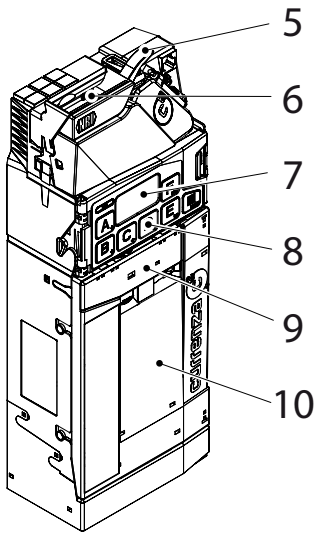
12.2.1 Tube filling

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.

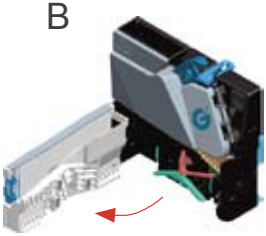
WARNING

- 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

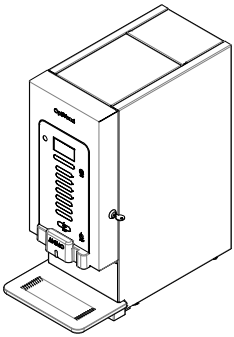


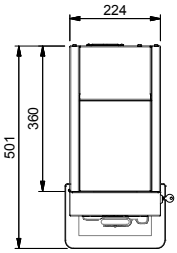
C

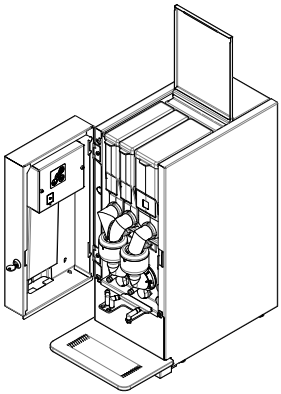
12.2.5 Fault analysis

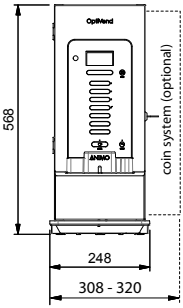
For a detailed diagnosis of the fault, see the NRI technical documentation.

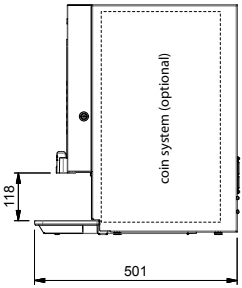
OptiVend 11s NG
OptiVend 21s NG
OptiVend 22s NG
OptiVend 32s NG

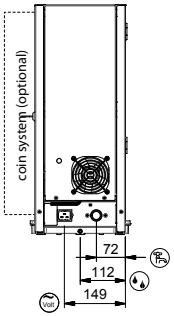


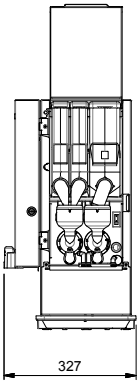


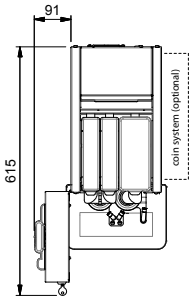


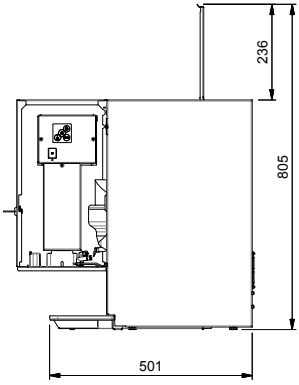












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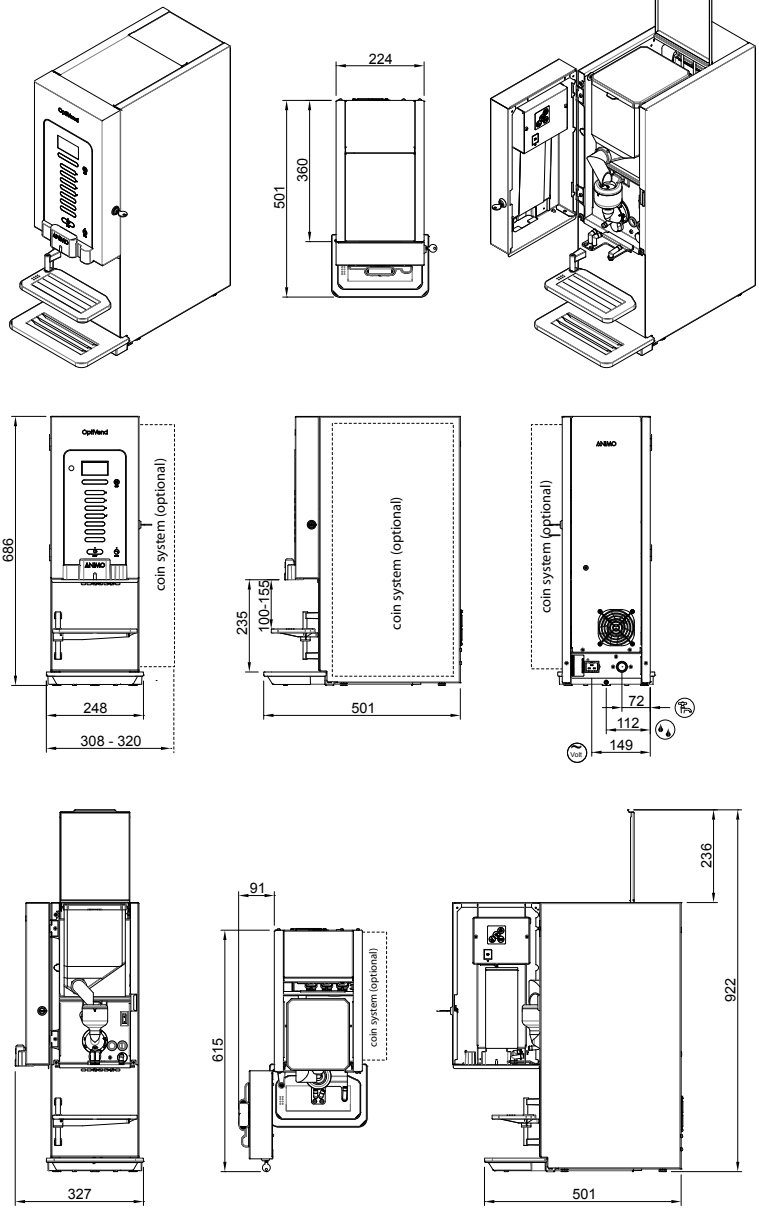
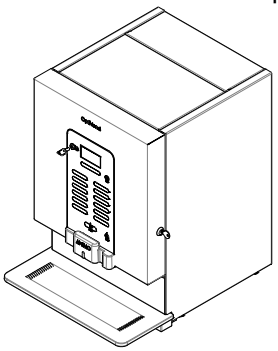
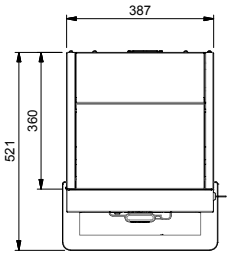
OptiVend 11s TS NG

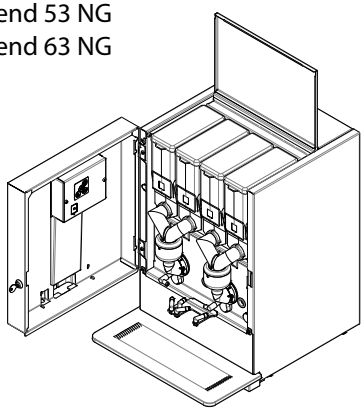


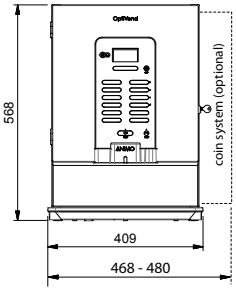
OptiVend 32 NG
OptiVend 42 NG
OptiVend 33 NG

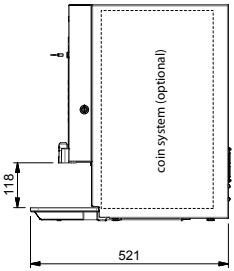
OptiVend 43 NG
OptiVend 53 NG
OptiVend 63 NG

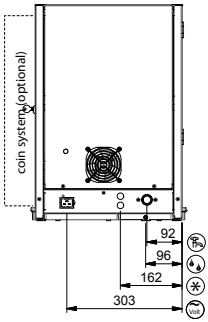


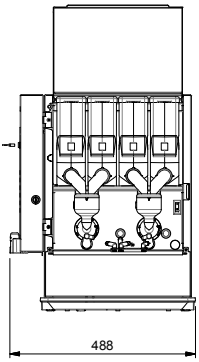


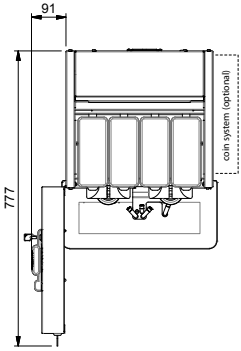


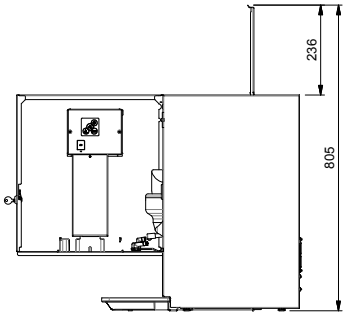






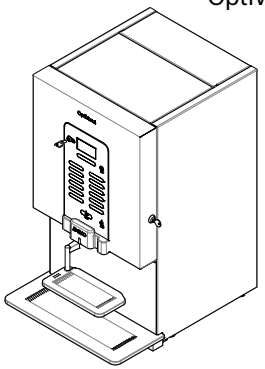


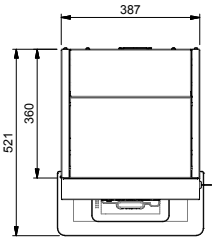


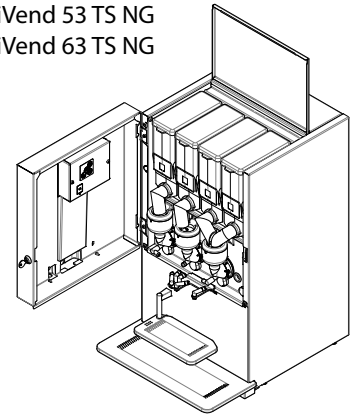


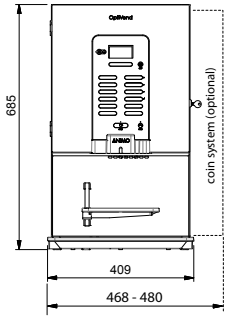
OptiVend 11 TS NG
OptiVend 22 TS (HS) NG
OptiVend 32 TS NG
OptiVend 42 TS NG
OptiVend 33 TS NG
OptiVend 43 TS NG
OptiVend 53 TS NG
OptiVend 63 TS NG

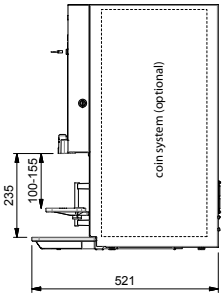
EN

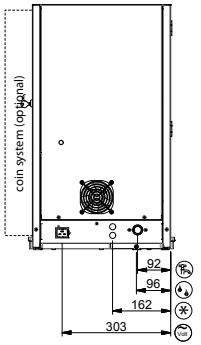


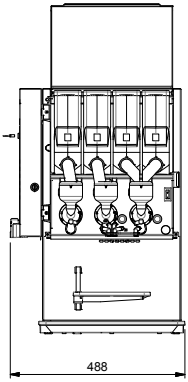


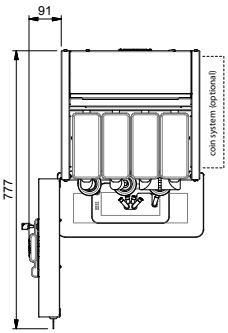


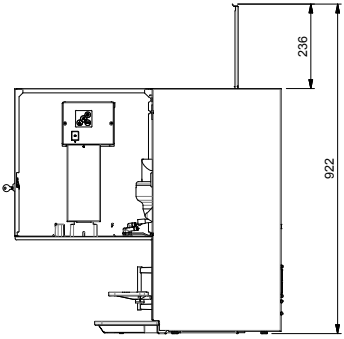




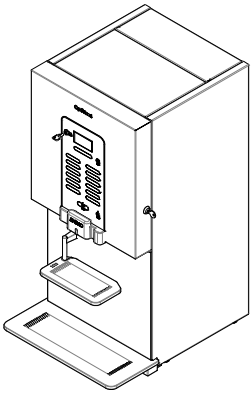


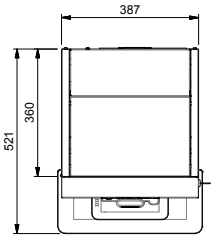


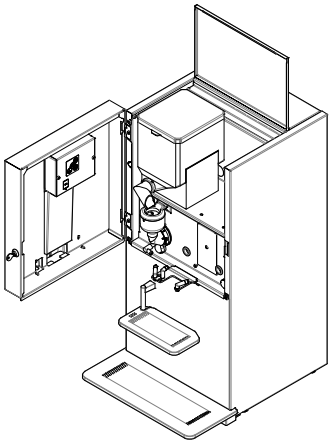


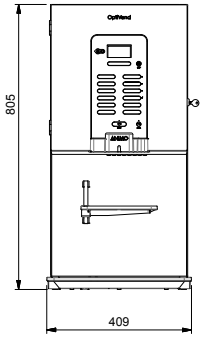


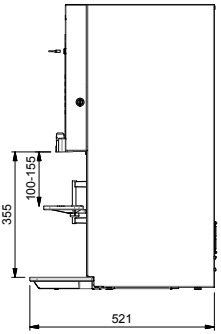
OptiVend 11 TL NG

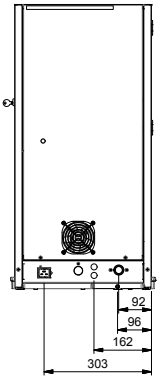


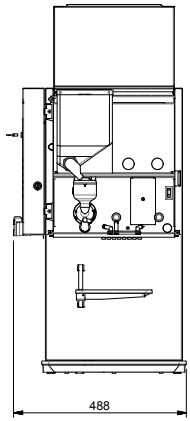


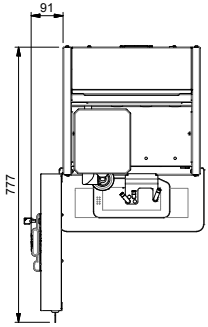


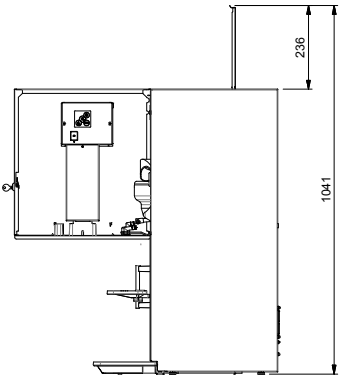






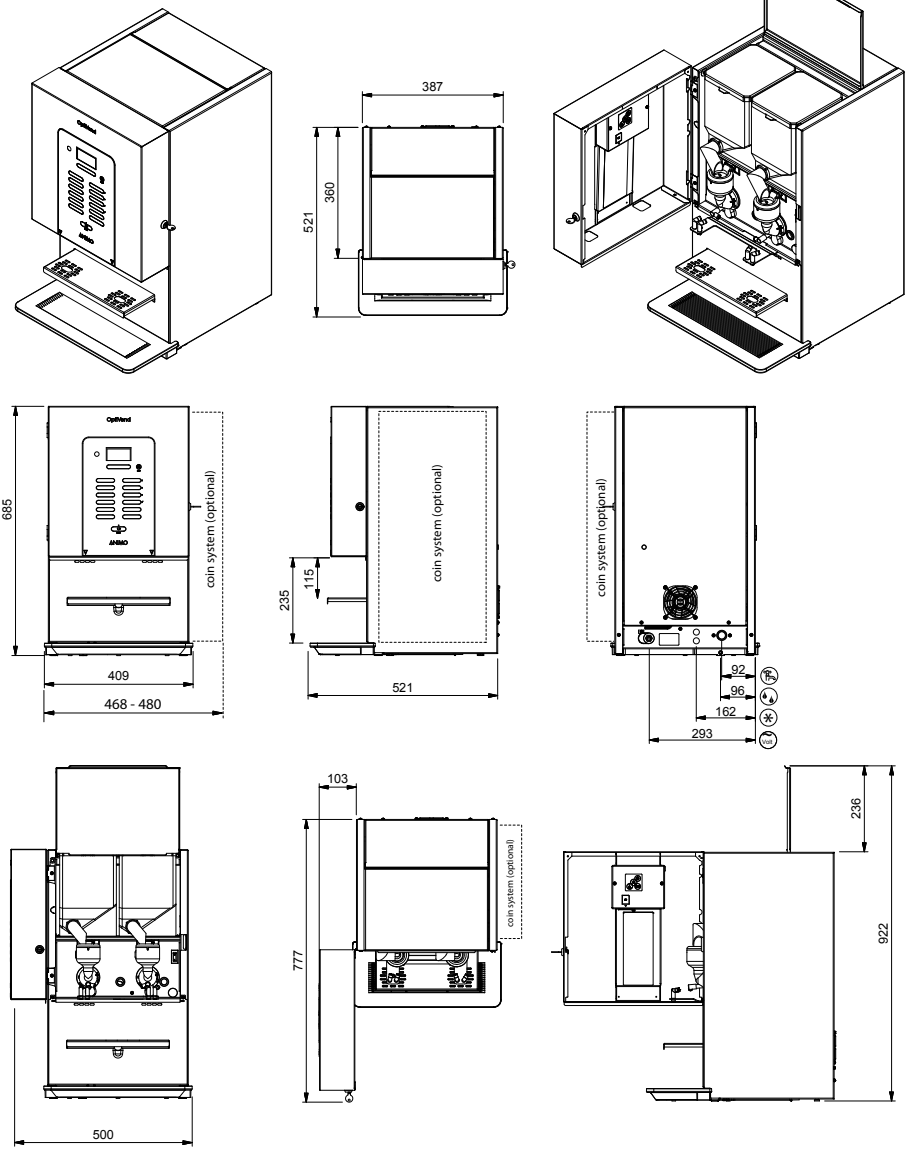






OptiVend 22 TS HS DUO NG
OptiVend 42 TS HS DUO NG
OptiVend 53 TS HS DUO NG

EN



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