Service Manual

bremer VIVA

bremer

These service instructions are intended for authorised bremer Customer Service staff only!

The adjustments, repairs and maintenance work described in these service instructions may only be carried out by qualified bremer service engineers using original bremer spare parts!

Safety information in service instructions

Caution: Always de−energise the unit before opening it!

If, for some reason, the unit has to be put into operation when open, please observe the following instructions:

WARNING! Risk of accident from electric shock!

Protect conductive parts against accidental contact, e.g. by covering them with an insulating mat.

WARNING! Risk of crushing!

Beware moving parts, e.g. during functional tests

CAUTION! Destruction of components!

Do not place any conductive objects on printed circuit boards

No static discharge may take place via lifters!

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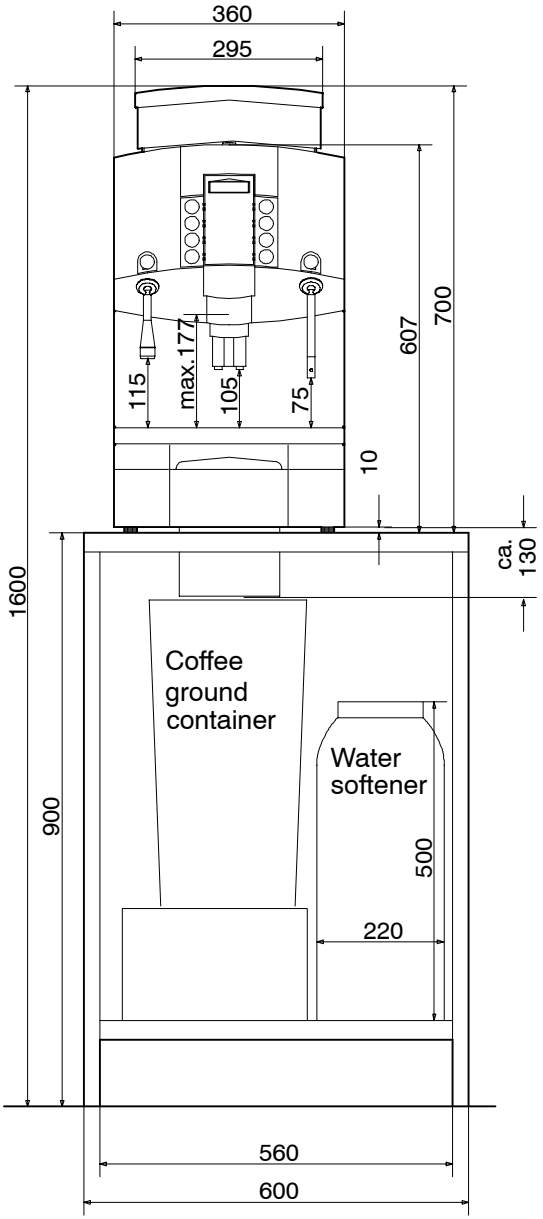
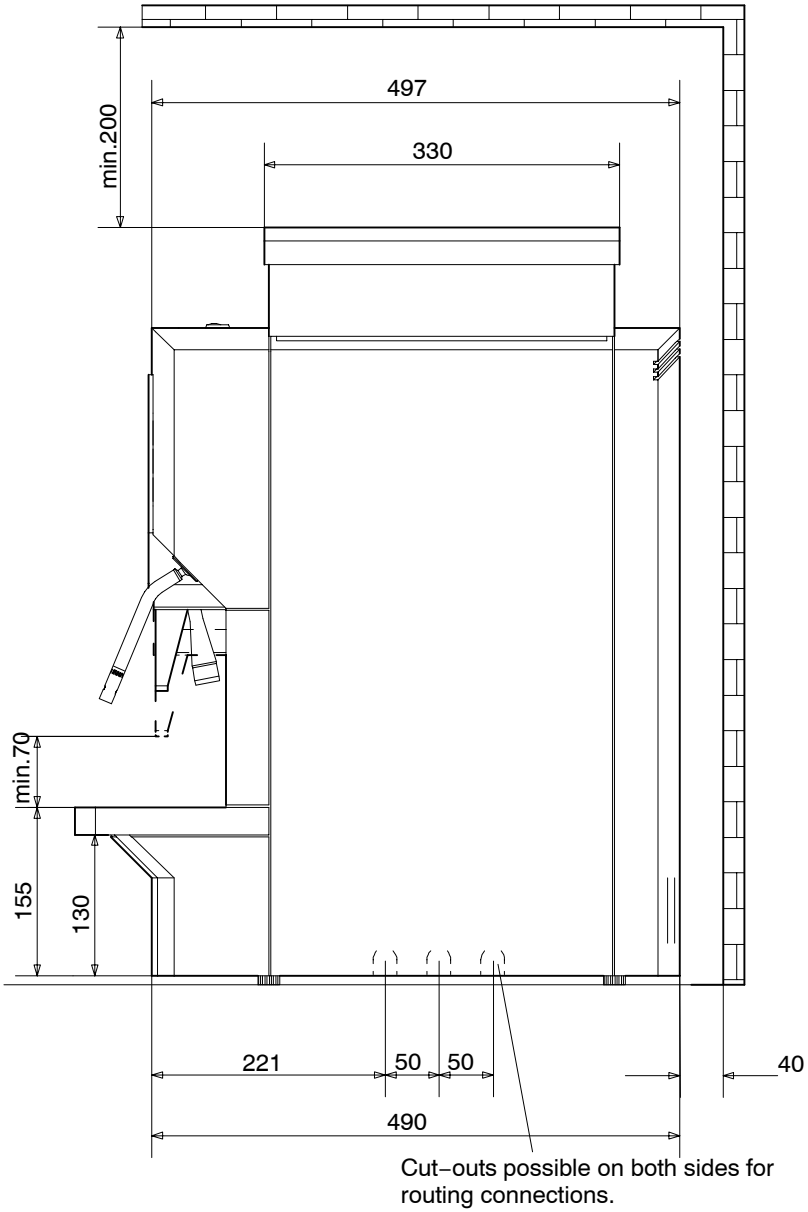
2. Dimensions, table cut–outs

2.1 Outer dimensions

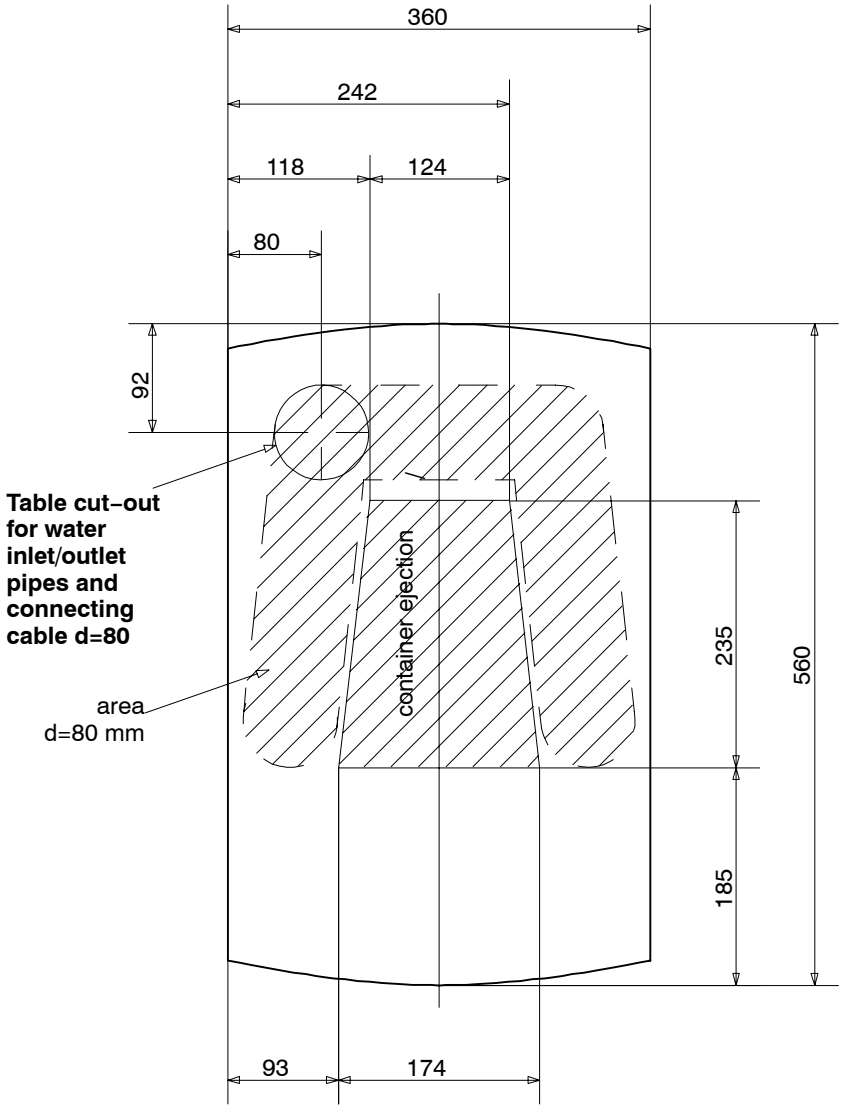
Front view



Side view


497
330
min.200
min.70
155
130
221
50
50
40
490
Cut−outs possible on both sides for routing connections.

2.2 Table cut–outs



3. Operating instructions

Operating instructions bremer VIVA in German, identity no.: 652067

Operating instructions “neutral” in English, identity no.: 668613

Operating instructions bremer VIVA in English, identity no.: 659800

Operating instructions bremer VIVA in Japanese, identity no.: 663204

Operating instructions bremer VIVA in French, identity no.: 684716

Operating instructions bremer VIVA in Netherland, identity no.: 690899

4. Adjustments prior to operation

4.1 Setting the coffee quality (till Software-Version 2.05)

See operating instructions for how to assemble and connect the machine.

Set the machine to the coffee quality required by the customer: coffee type, coffee bean quanity, water quantity, etc.

Standard factory setting for VIVA Standard (up to Vers. 2.05)

Article	Grinder	Ground coffee quantity app. 1/100 s	Brewing water app 0,5 ml / imp.	Brewing pressure	Milk froth ON = Y7 open	Milk dosage	Brewing time	Grinder locking position
Coffee	centre	220	265	OFF	ON	0	0	9
	centre	380	530	OFF	ON	0	0	9
Cafe Crème	right	220	240	ON	ON	0	140	6
	right	380	480	ON	ON	0	200	6
Espresso	left	220	120	ON	ON	0	100	6
	left	380	240	ON	ON	0	160	6
Cappuccino	left	220	200	ON	ON	200	140	6
	left	380	400	ON	ON	300	200	6
Hot water	-	-	100	-	-	-	-	-
Steam	-	-	-	-	-	-	-	-

Brewing temperature: 93°C

Capacity of grounds container: 100 tablets

Steam boiler available: YES / NO

Voltage: 230 V / 400 V

Hot water dispensing: metered / not–metered

Dampfausgabe: dosiert / undosiert

Pump pressure: 8 bar

4.2 Standard settings (since Software-Version 3.02)

VIVA Standard factory setting with 3 coffee grinders (since Vers. 3.02)

Article	**Grinder** left centre right	**Grinder locking position** 0-14	**Ground coffee quantity** 0-999 app. 1/100 s	**Brewing water** 0-999 app. 0,5 ml / imp.	**Brewing pressure** OFF, ON	**Brewing time** (only if brewing pressure is ON)	**Milk froth** 0-999	**Milk dosage** 0-999	**Dosing sequence** B=brewing M=milk MS= milk foam 1, 2, 3, 0=Aus
Coffee	centre	12	170	265	OFF	0	0	0	B=1 M=0 MS=0
	centre	12	280	530	OFF	0	0	0	
Cafe Crème	right	10	240	240	ON	140	0	0	B=1 M=0 MS=0
	right	10	380	480	ON	200	0	0	
Espresso	left	10	240	120	ON	100	0	0	B=1 M=0 MS=0
	left	10	380	240	ON	160	0	0	
Cappuccino	left	10	240	200	ON	140	200	0	B=1 M=0 MS=1
White coffee	left	10	220	150	ON	100	0	90	B=1 M=1 MS=0
Hot water	-	-	-	100	-	-	-	-	-

Brewing temperature: 93°C

Capacity of grounds container: 100 tablets

Steam boiler available: YES / NO

old: Voltage: 230 V / 400 V
new: E1-E2 locked / unlocked

Hot water dispensing: metered / not–metered

Dampfausgabe: dosiert / undosiert

Pump pressure: 8 bar

Pressure-reducing valve in the equipment: 2.6 bar

VIVA Standard - Notes for customer's settings

Article	**Grinder** left centre right	**Grinder locking position** 0-14	**Ground coffee quantity** 0-999 app. 1/100 s	**Brewing water** 0-999 app 0,5 ml / imp.	**Brewing pressure** OFF, ON	**Brewing time** (only if brewing pressure is ON)	**Milk froth** 0-999	**Milk dosage** 0-999	**Dosing sequence** B=brewing M=milk MS= milk foam 1, 2, 3, 0=Aus
Coffee 									
									
Cafe Crème 									
									
Espresso 									
									
Cappuccino 									
White coffee 									
Hot water 									

Brewing temperature:

Pump pressure:

Grounds container capacity:

Steam boiler available:

Voltage / E1-E2 locked:

Hot water dispensing:

Customer:

Coffee roaster:

VIVA au lait – without adjustable milk dosage – factory setting

Article	Grinder left centre right	Grinder lokking position 0-14	Ground coffee quantity 0-999 app. 1/100 s	Brewing water 0-999 app. 0,5 ml / imp.	Brewing pressure OFF, ON	Brewing time (only if brewing pressure is ON)	Milk froth 0-999	Milk dosage 0-999	Dosing sequence B=brewing M=milk MS= milk foam 1, 2, 3, 0=Aus
Coffee	centre	12	170	265	OFF	0	0	0	B=1 M=0 MS=0
Cafe Crème	right	10	240	240	ON	140	0	0	B=1 M=0 MS=0
Espresso	left	10	240	120	ON	100	0	0	B=1 M=0 MS=0
Latte Macchiato	left	10	240	200	ON	140	200	0	B=3 M=1 MS=2
Cappuccino	left	10	240	200	ON	140	200	0	B=1 M=0 MS=1
White coffee	left	10	220	150	ON	100	0	90	B=1 M=1 MS=0
Espresso Macchiato	left	10	240	120	ON	100	0	0	B=1 M=0 MS=2
Hot Milk	left	10	0	0	OFF	0	0	100	B=0 M=1 MS=0
Hot water	–	–	–	100	–	–	–	–	–

Brewing temperature: 93°C

Capacity of grounds container: 100 tablets

Steam boiler available: YES / NO

old: Voltage: 230 V / 400 V
new: E1-E2 locked / unlocked

Hot water dispensing: metered / not–metered

Dampfausgabe: dosiert / undosiert

Pump pressure: 8 bar

Pressure-reducing valve in the equipment: 2.6 bar

VIVA au lait – without adjustable milk dosage – customer's settings

Article	**Grinder** left centre right	**Grinder lokking position** 0-14	**Ground coffee quantity** 0-999 app. 1/100 s	**Brewing water** 0-999 app. 0,5 ml / imp.	**Brewing pressure** OFF, ON	**Brewing time** (only if brewing pressure is ON)	**Milk froth** 0-999	**Milk dosage** 0-999	**Dosing sequence** B=brewing M=milk MS= milk foam 1, 2, 3, 0=Aus
Coffee									
Cafe Crème									
Espresso									
Latte Macchiato									
Cappuccino									
White coffee									
Espresso Macchiato									
Hot Milk									
Hot water									

Brewing temperature:

Grounds container capacity:

Steam boiler available:

Voltage / E1-E2 locked:

Hot water dispensing:

Pump pressure:

Customer:

Coffee roaster:

VIVA au lait – with adjustable milk dosage – factory setting

Article	Grinder left centre right	Grinder locking position 0-14	Ground coffee quantity 0-999 app. 1/100 s	Brewing water 0-999 app. 0,5 ml / imp.	Brewing pressure OFF, ON	Brewing time (only if brewing pressure is ON)	Milk froth 0-999	Milk dosage 0-999	Dosing sequence B=brewing M=milk MS= milk foam 1, 2, 3, 0=Aus
Coffee 	centre	12	190 190 190 190	250 250 250 250	OFF	0	0	0	B=1 M=0 MS=0
Cafe Crème 	right	10	230 260 280 300	190 240 320 320	ON	100 140 160 180	0	0	B=1 M=0 MS=0
Espresso 	left	10	260 280 300 320	95 150 200 240	ON	120 140 180 200	0	0	B=1 M=0 MS=0
Latte Macchiato 	left	10	280 280 280 280	70 70 70 70	ON	130	120 120 120 120	100	B=3 M=1 MS=2
Cappuccino 	left	10	240 260 280 320	160 240 280 420	ON	140	130 220 280 440	0	B=1 M=0 MS=1
White coffee 	left	10	220 250 280 320	150 180 240 400	ON	100 120 140 140	0	90 260 400 600	B=1 M=1 MS=0
Espresso Macchiato 	left	10	260 280 300 320	70 130 180 220	ON	120 140 180 200	40 80 120 140	0	B=1 M=0 MS=2
Hot milk	–	–	0	0	OFF	0	0	280 350 650 999	B=0 M=1 MS=0

Brewing temperature: 93°C

Capacity of grounds container: 100 tablets

Steam boiler available: <u>YES</u> / NO

old: Voltage: 230 V / <u>400 V</u>

new: E1-E2 locked / <u>unlocked</u>

Hot water dispensing: <u>metered</u> / not–metered

Expenditure for steam: metered / <u>not–metered</u>

Pump pressure: 8 bar

Pressure-reducing valve in the equipment: 2.6 bar

VIVA au lait – with adjustable milk dosage – customer's settings

Article	Grinder left centre right	Grinder lokking position 0-14	Ground coffee quantity 0-999 app. 1/100 s	Brewing water 0-999 app. 0,5 ml / imp.	Brewing pressure OFF, ON	Brewing time (only if brewing pressure is ON)	Milk froth 0-999	Milk dosage 0-999	Dosing sequence B=brewing M=milk MS= milk foam 1, 2, 3, 0=Aus
Coffee 									
Cafe Crème 									
Espresso 									
Latte Macchiato 									
Cappuccino 									
White coffee 									
Espresso Macchiato 									

Hot milk									

Brewing temperature:

Grounds container capacity:

Steam boiler available:

Voltage / E1-E2 locked:

Hot water dispensing:

Customer:

Pump pressure:

Coffee roaster:

VIVA Barista – factory setting (Vers. 1.0)

Article	Grinder left centre right	Grinder locking position 0-14	Ground coffee quantity 0-999 app. 1/100 s	Brewing water 0-999 app. 0,5 ml / imp.	Brewing pressure OFF, ON	Brewing time (only if brewing pressure is ON)	Milk froth 0-999	Milk dosage 0-999
Espresso	left	10	240	120	EIN	100	0	0
	left		380	240	EIN	160	0	0
	left		450	350	EIN	220	0	0
Coffee	centre	12	170	265	AUS	0	0	0
Preserve coffee	manually	–	170	265	AUS	0	0	0
Cafe Crème	left	10	240	240	EIN	140	0	0
Hot water	–	–	–	100	–	–	–	–
Steam	–	–	–	–	–	–	–	–

Brewing temperature: 93°C

Capacity of grounds container: 100 tablets

Steam boiler available: YES / NO

old: Voltage: 230 V / 400 V
new: E1-E2 locked / unlocked

Hot water dispensing: metered / not–metered

Expenditure for steam:
temperature: 72 °C (adjustable)

Pump pressure:

Dosing sequence: 0, 1, 2, 0=OFF
B=Brewing: B=1
M=Milk: M=0
MS=Milk foam: MS=0

Note

With equipment variant for the Netherlands ”2” instead of ”3” Espresso are shown in the indication area.

VIVA Barista – customer's settings

Article	Grinder left centre right	Grinder locking position 0-14	Ground coffee quantity 0-999 app. 1/100 s	Brewing water 0-999 app. 0,5 ml / imp.	Brewing pressure OFF, ON	Brewing time (only if brewing pressure is ON)	Milk froth 0-999	Milk dosage 0-999
Espresso								
Coffee								
Preserve coffee								
Cafe Crème								
Hot water								
Steam								

Brewing temperature:

Capacity of grounds container:

Steam boiler available:

old: Voltage:
new: E1-E2

Hot water dispensing:

Expenditure for steam:
temperature: ..... °C (adjustable)

Pump pressure: ... bar

Dosing sequence: 0, 1, 2, 0=OFF
B=Brewing: B=1
M=Milk: M=0
MS=Milk foam: MS=0

VIVA TRAIN COOL With 2 Grinders – Factory Setting (Type 984329)

Article	**Grinder** left centre right	**Grinder lokking position** 0-14	**Ground coffee quantity** 0-999 app. 1/100 s	**Brewing water** 0-999 app. 0,5 ml / imp.	**Brewing pressure** OFF, ON	**Brewing time** (only if brewing pressure is ON)	**Milk froth** 0-999	**Milk dosage** 0-999	**Dosing sequence** B=brewing M=milk MS= milk foam 1, 2, 3, 0=OFF
Key 1 + 2 Coffee	Centre	10	240	350	OFF	0	0	0	B=1 M=0 MS=0
Key 3, Decaf.	Manual	10	240	350	OFF	0	0	0	B=1 M=0 MS=0
Key 4, Espresso	Left	8	260	120	ON	120	0	0	B=1 M=0 MS=0
Key 5, Milk Coffee	Centre	10	260	300	ON	100	0	260	B=1 M=1 MS=0
AKey 6, Latte Macchiato	Left	8	280	100	ON	100	240	200	B=3 M=1 MS=2
Key 7 + 8, Cappuccino	Left	8	260	300	ON	160	200	0	B=1, M=0 MS=1
Article Key, Tea Water	–	–	–	140	–	–	–	–	–

Brewing temperature: 93°C

Capacity of grounds container: 100 tablets

Steam boiler available: YES / NO

old: Voltage: 230 V / 400 V
new: E1-E2 locked / unlocked

Hot water dispensing: metered / non-metered

Steam dispensing: metered / non-metered

Pump pressure: 7.5 bar

Pressure-reducing valve in the equipment: 2.6 bar

VIVA TRAIN COOL With 2 Grinders – Notes For Customer's Settings

Article	**Grinder** left centre right	**Grinder lokking position** 0-14	**Ground coffee quantity** 0-999 app. 1/100 s	**Brewing water** 0-999 app. 0,5 ml / imp.	**Brewing pressure** OFF, ON	**Brewing time** (only if brewing pressure is ON)	**Milk froth** 0-999	**Milk dosage** 0-999	**Dosing sequence** B=brewing M=milk MS= milk foam 1, 2, 3, 0=OFF
Key 1 + 2 Coffee									
Key 3, Decaf.									
Key 4, Espresso									
Key 5, Milk Coffee									
AKey 6, Latte Macchiato									
Key 7 + 8, Cappuccino									
Article Key, Tea Water									

Brewing temperature: ..... °C

Capacity of grounds container: ..... tablets

Steam boiler available: YES / NO

old: Voltage: 230 V / 400 V
new: E1-E2 locked / unlocked

Hot water dispensing: metered / non-metered

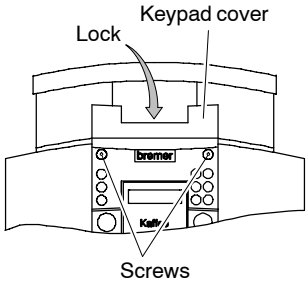
Steam dispensing: metered / non-metered

Pump pressure: ..... bar

Pressure-reducing valve
in the equipment: ..... bar

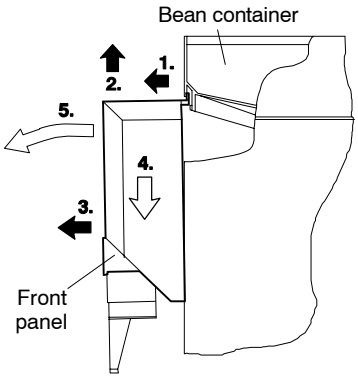
5. Removing the housing

5.1 Opening ”upper front panel” / removing ”lower front panel”

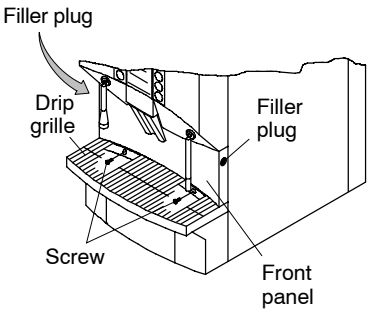


Preparatory work

- ☞ Unlock keypad cover with key and open.
- ☞ Switch machine to ”Standby” by pressing the on/off switch ⏻ .
- ☞ Disconnect machine from power supply.
- ☞ Remove 2 screws.

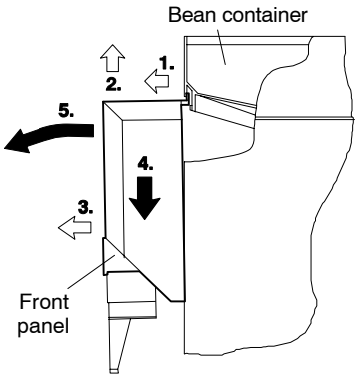


1. Pull upper edge of front panel forwards until it is touching the bean container.
2. Push up front panel.
3. Pull lower edge of front panel forwards as far as possible.



Removing the ”lower front panel”

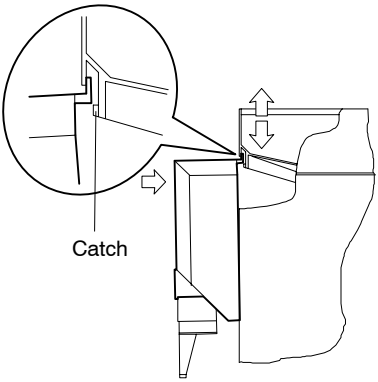
- ☞ Push up dispenser block.
- ☞ Remove filler plug.
- ☞ Remove drip grille.
- ☞ Remove 2 screws.
- ☞ Pull ”lower front panel” out forwards.



Opening the front panel

4. Push down front panel – it should now be possible to move the top side of the front panel out of the bean container.
5. Open or disengage front panel as far as possible.

- It is now possible to remove the side sections (see next section).

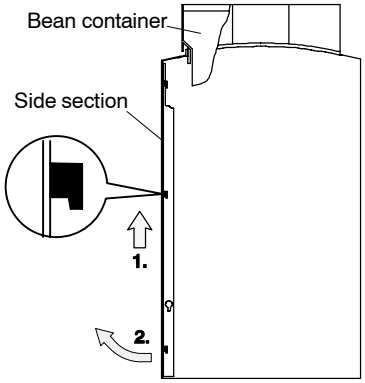


Closing the front panel

While closing the front panel, move the bean container up and down slightly in order to engage the catch.

5.2 Removing the left / right–hand side section

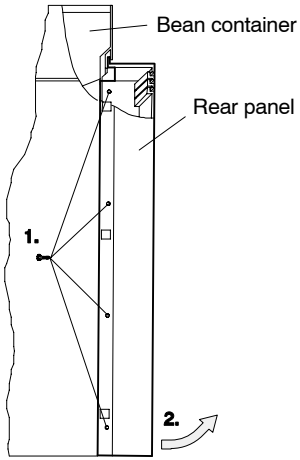
Before removing the side sections, open the upper front panel (steps 1.,2. and 3. are sufficient – see section 5.1.



1. Push up the side section.
2. Pull out from the bottom and remove.

5.3 Removing the rear panel

Before removing the rear panel, open the upper front panel and take out the side sections (see sections 5.1 and 5.2).

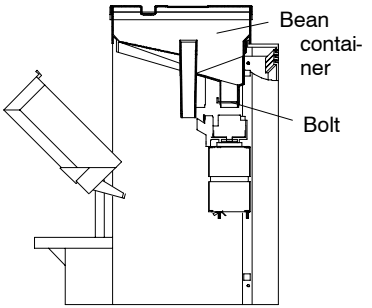


☞ Remove 4 screws from each side.

☞ Pull out rear panel from the bottom and remove.

5.4 Removing the bean container

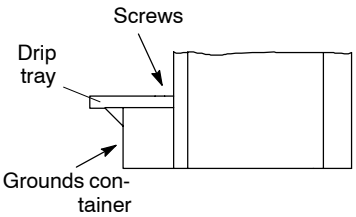
Before removing the bean container, open the upper front panel and take out the side sections (see sections 5.1 and 5.2).



- ☞ Close the bolt.
- ☞ Pull the bean container forward slightly to release it from its anchoring in the rear panel.
- ☞ Take out the bean container from the top.

5.5 Removing the drip tray and drip tray base

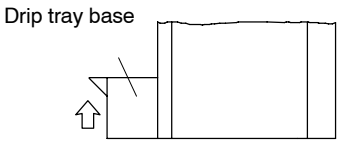
Before removing the drip tray, remove the lower front panel (see section 5.1).



Drip tray

- ☞ Remove grounds container.
- ☞ Remove 2 screws.
- ☞ Pull drip tray forwards.
- ☞ Remove outlet hoses.
- ☞ Take out drip tray.

- When reassembling, take care not to displace the microswitch.

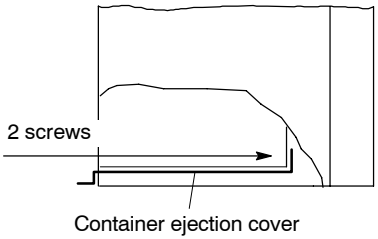


Drip tray base

- ☞ Detach the microswitch.
- ☞ Push up the ”drip tray base” and remove.

5.6 Removing the container ejection cover

Before removing the container ejection cover, take out the drip tray and drip tray base (see section 5.5).

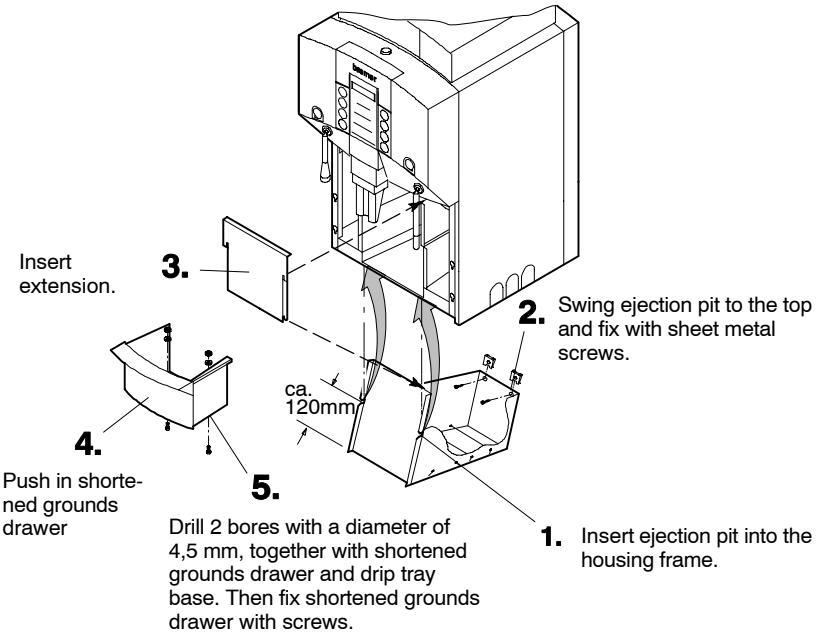


☞ Remove 2 screws.

☞ Take out container ejection cover.

5.7 Inserting the ejection pit for container ejection

Before inserting the ejection pit, take off container ejection cover, see chapter 5.6.



Further procedures for container ejection

Produce table breaking–through for container ejection, see page 2-3, chapter 2.2

Adjust number of grounds tablets, see page 7-2, chapter 7.2

6. Structural components

6.1 Coffee grinder

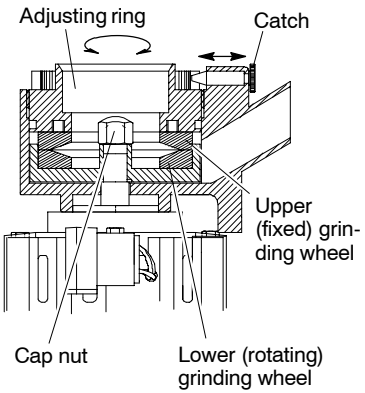
The service life of the grinding wheels is approx. 80.000 grinding processes (1 grinding process = approx. 10 g). The grinding capacity on the finest setting is approx. 180 g/min, i.e. roughly 3 g/s. The grinding capacity decreases as the wheels begin to wear down.

The grinding process is timer-controlled, which means that less ground coffee is dispensed as the grinding wheels begin to wear down. The reduced grinding capacity can be compensated by increasing the grinder running time (parameter: ground coffee quantity). If the grinding capacity is severely reduced, the grinding wheels must be replaced.

6.1.1 Adjusting the grinding fineness

☞ Set the ground coffee quantity and grinder running time to the standard value.

⚠ Disconnect the machine from the mains!



Adjusting the grinding wheels

☞ Release the catch.

☞ Tighten the adjusting ring until the upper grinding wheel touches the lower grinding wheel.

☞ Turn the adjusting ring back a notch.

☞ Grasp the cap nut and turn the lower grinding wheel manually through at least 1 complete revolution.

- There should no longer be any rubbing sounds: otherwise, turn back another notch.
- Then perform the following setting for the coffee type.

Settings for coffee type

After adjusting the grinding wheels:

- Instant coffee = turn back approx. 12 notches
- Cafe Crème = turn back approx. 10 notches,
- Espresso = turn back approx. 10 notches.

☞ Carry out test run.

☞ If necessary, correct the setting on the coffee grinder: loosening the adjusting ring (i.e. turning anti-clockwise) causes the beans to be ground more coarsely (please note that the ground coffee quantity increases accordingly).

6.1.2 Weighing the ground coffee

Weighing without dismounting the housing

Please note that slight deviations are possible due to ground coffee remnants in the brewing unit.

☞ Place a sheet of paper or filter bag in the grounds container.

☞ Press the desired article key.

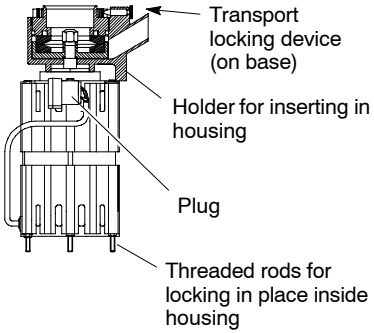
- Grinding takes place and ground coffee is metered into the brewing cylinder.

☞ Switch the machine off and on again:
  - after the grinding process,
  - immediately after opening the brewing valve.

- The brewing unit moves upwards and scrapes the ground coffee powder into the grounds container.

☞ Take out the grounds container and weigh the ground coffee powder.

6.1.3 Removing the coffee grinder



☞ Remove the plug.

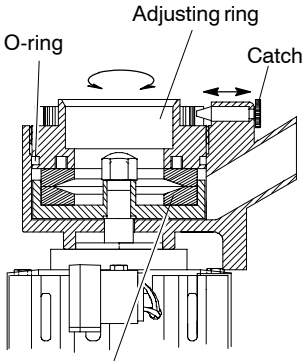
☞ Bend up the transport locking device.

☞ Lift out the coffee grinder from the top.

6.1.4 Replacing the grinding wheels

Replace the grinding wheels:

- after approx. 80.000 grinding processes,
- if the grinding capacity is still only about 80-100 g/min (approx. 1.5 g/s) on the finest setting,
- if grinding becomes uneven.



Grinding wheels:
The grinding wheels are each fastened with 2 screws.

⚠ Disconnect machine from mains!

☞ Take coffee beans out of coffee grinder.

☞ Release catch.

☞ Unscrew adjusting ring.

☞ Replace both grinding wheels.

Assembly

☞ Replace old O-ring with a new one.

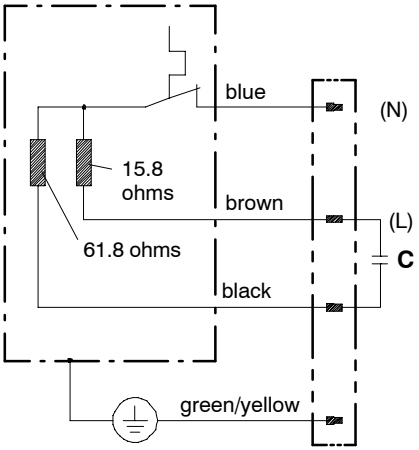
☞ Clean screw thread.

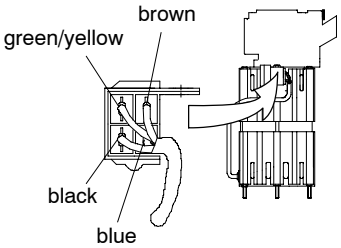
☞ Grease screw thread and O-ring with food-compatible grease (identity no. 693847, 400 g cartridge).

6.1.5 Technical data of coffee grinder motor

Voltage: 230 V AC 50 Hz ⇒ ⇒ ⇒ ⇒	Nominal output: 450 W
Running capacitor: 12.5 µF/450 V	Speed: 1320 rpm
Nominal power consumption: 2.35 A	Thermal motor protection: 140°C +/- 5°C

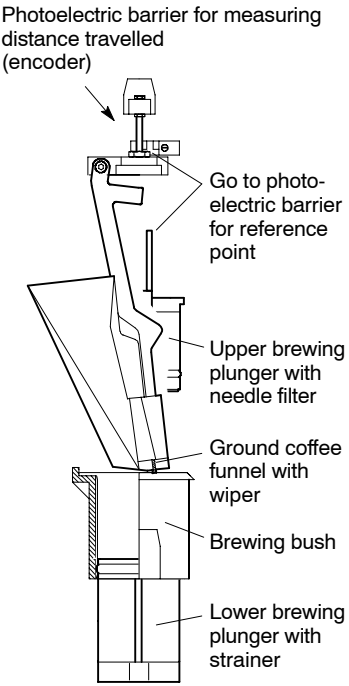
6.1.6 Electrical connection of coffee grinder motor





6.2 Brewing unit

6.2.1 Operation of brewing unit



Calibration process

The brewing group is calibrated every time the machine is switched on. This involves measuring the upper and lower limit positions of the plunger, then calculating and storing the distance between the two.

Procedure:

1. Brewing plunger moves upwards to determine the upper limit position (reference point) and is wiped at the same time.
2. Brewing plunger moves all the way down to record the bottom limit position. At the same time, the distance covered is recorded via the perforated disc and encoder.
3. Brewing plunger moves upwards then back to the home position (ready for brewing; ground coffee funnel in filling position).

Using the stored data, the control system is now able to move the ”upper brewing plunger” to each desired/programmed position:

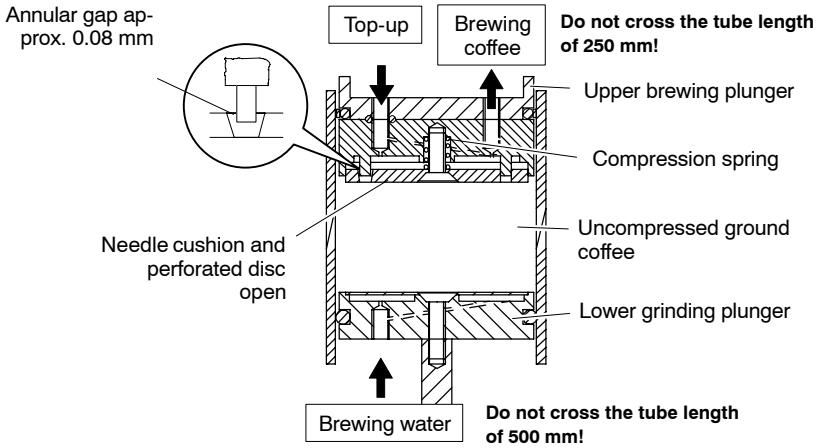
e. g. to the positions ”Fill with ground coffee”, ”Brew coffee”, ”Compress ground coffee” or ”Wipe off coffee grounds”.

Brewing sequence

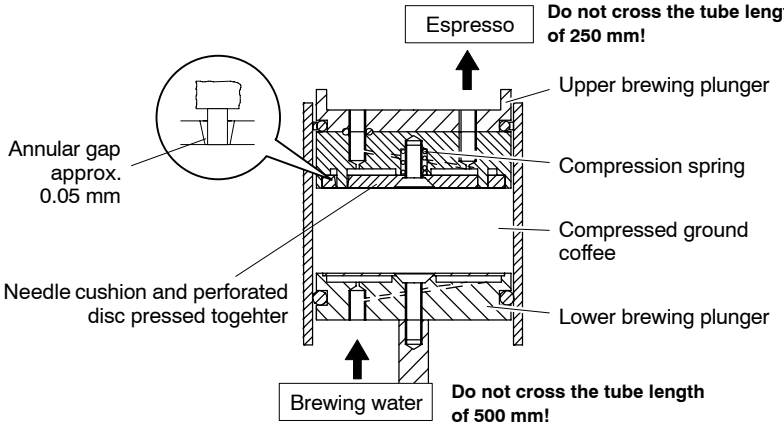
After having pressed the product key:

1. Coffee is ground and falls into the brewing cylinder.
2. ”Upper brewing plunger” moves down until it is a set distance away from the ”lower brewing plunger” depending on the required article.
   The machine checks whether the metered quantity of ground coffee is sufficient by attempting to recompress it with the ”upper brewing plunger” at reduced motor power(”bean container empty” signal).
   The grinder of the assigned product keys gets blocked.
   After refilling the bean container and deleating the blocked product keys by pressing one of them more than 5 seconds they are again usable. The next 2 products after deblocking are not checked if there is enough coffee dispensed.
3. Brewing water is metered.
4. ”Upper brewing plunger” recompresses the ground coffee in order to to dry it.
5. ”Upper brewing plunger” and ”lower brewing plunger” move upwards, thus automatically actuating the wiper. The coffee grounds are scraped off into the grounds container.
6. Brewing plunger moves to the home (i.e. filling) position.

Filter and plunger position for instant coffee



Filter and plunger position for espresso



Automatic cleaning of brewing unit (duration: approx. 5 minutes)

After confirmation that the cleaning tablet has been added:

1. The ”upper brewing plunger” moves down into the brewing cylinder and closes the brewing chamber.
2. The brewing cylinder is filled with hot water. A reaction time of approx. 60 seconds then ensues during which the cleaning tablet is dissolved.
3. 4 rinses are carried out under pump pressure, using approx. 70 ml of hot water each time. The detergent solution is pumped through the coffee-carrying pipes into the coffee dispenser.
4. The ”upper brewing plunger” moves to the lower imit position to squeeze out the remaining detergent solution.
5. 4 rinses are carried out under pump pressure with clear hot water. For this purpose, the ”upper brewing plunger” moves upwards slightly and hot water is pumped in. Afterwards, the ”upper brewing plunger” moves down to the lower limit position to squeeze out the remaining water.
6. The machine switches off automatically (standby).
7. When the machine is switched on again:
   - the brewing unit is calibrated,
   - the brewing water and hot water/steam boilers are heated up,
   - a brewing cycle takes place to neutralise the brewing unit and coffee-carrying components. The neutralisation results from the setted values of the article key one (left hand side the first).

Notes Cleaning

If the automatic cleaning sequence is interrupted by switching off the machine or disconnecting the power supply, it is resumed as soon as the machine is switched on again and the command "Add cleaning tablet" appears. The automatic cleaning sequence must be completed.

If, during a working time of 24 hours, cleaning has not been carried out the display box will show the request "Clean machine".
If, despite this request, the machine is not cleaned the display box will show the command "Add cleansing tablet" after another 26 hours thus forcing a cleaning cycle.

6.2.2 Maintenance of brewing unit

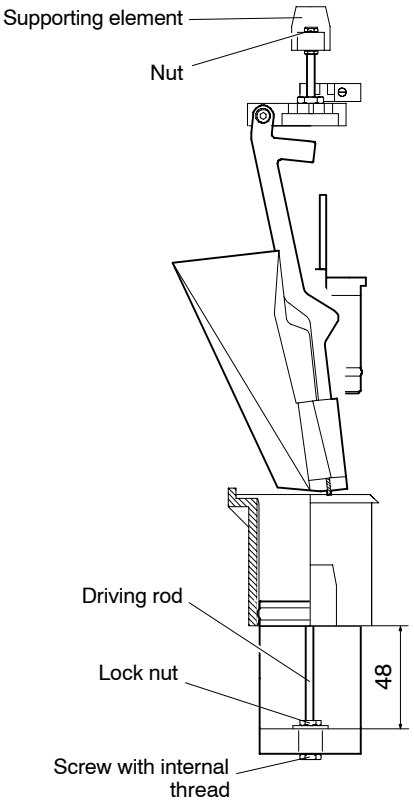
The brewing unit must be serviced

- after approx. 60 000 brewing processes,
- at least once a year.

Maintenance comprises:

- replacement of wearing parts such as O-rings, strainers, etc. or
- replacement of the entire brewing unit;
- greasing of threaded spindle with food-compatible grease (400 g cartridge, identity no. 693847).

6.2.3 Checking/adjusting the brewing unit



☞ Carry out functional test.

☞ Subject all parts to a visual inspection for signs of wear, breakage or stiffness, e.g.:
- O-rings,
- strainers,
- springs,
- hoses, plug-in connectors, screw joints,
- wipers,
- guides.

Checking 48 mm measurement

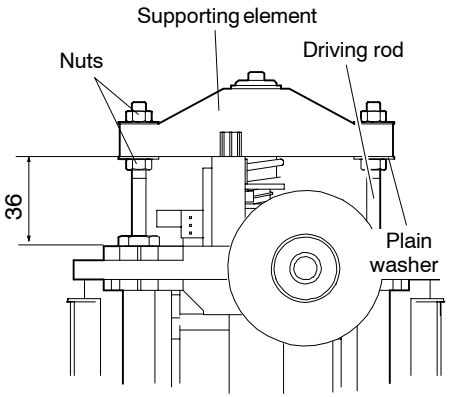
- Permissible deviation -0.5 mm
- Above 48 mm: volume of brewing chamber too large; ”bean container empty” signal not working
- Below 48 mm: reference point may not be reached

Setting 48 mm measurement

- Permissible deviation -0.5 mm

• During the setting procedure, make sure that
  - the brewing unit is in the home (i.e. filling) position,
  - the driving rod is not rotating. If necessary, tighten nuts on supporting element and loosen again after adjustment

• Perform adjustment using lock nut and screw with internal thread



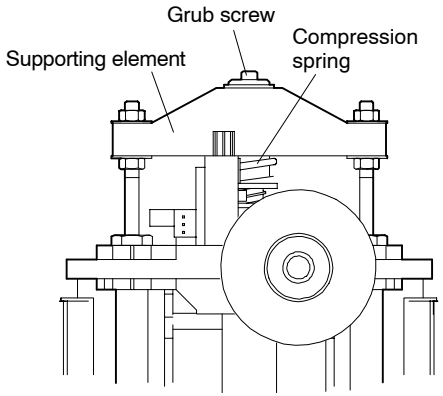
Checking 36 mm measurement

- Permissible deviation +/-0.5 mm.
- Above 36 mm: ”lower plunger” possibly moving upwards too late - wiping occurs before ”lower plunger” has reached the upper limit position.
- Below 36 mm: ”lower plunger” possibly moving right to the stop - ”upper plunger” cannot move up far enough, so that reference point is not reached.

Setting 36 mm measurement

- Permissible deviation +/-0.5 mm

- During the setting procedure, make sure that
  - the brewing unit is in the home (i.e. filling) position,
  - the driving rod is not rotating
- Perform setting using nuts on the left and right of the supporting element. After tightening, loosen the upper nuts by 1/4 turn. The plain washers under the supporting element must be able to turn.

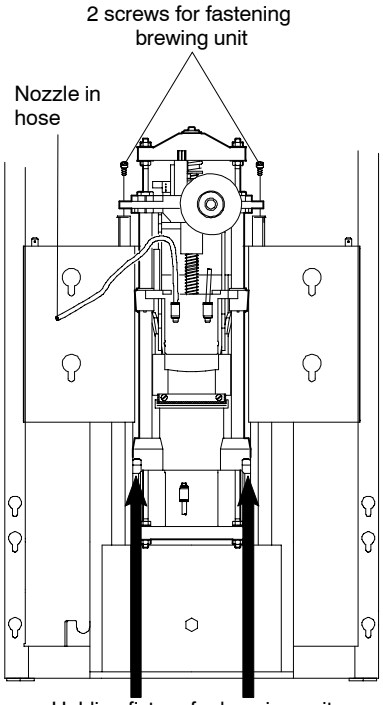


Readjusting the spring pressure

- Readjustment is necessary when the spring power of the compression spring is no longer sufficient and the wiping process begins before the ”lower plunger” has reached the upper limit position.
  - Tightening the grub screw: increases spring power so that ”lower plunger” reaches upper limit position sooner.
  - Loosening the grub screw: reduces spring power so that ”lower plunger” reaches upper limit position later.

- Secure the grub screw with white Loctite 187798.

6.2.4 Removing the brewing unit from the machine

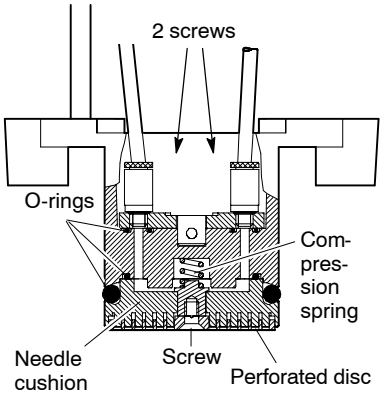


⚠ Disconnect machine from mains, shut off the water valve and relieve the boiler pressure.

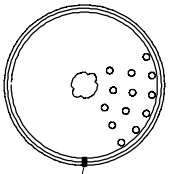
⚠ A nozzle is fitted to the top-up valve in the hose.

- ☞ Unplug the electrical connections.
- ☞ Disconnect the teflon hoses (see section 6.2.11).
- ☞ Remove 2 screws.
- ☞ Lift out the brewing unit from the top.

6.2.5 Replacing worn parts of the "upper plunger"



- ☞ Remove brewing unit (see section 6.2.4).
- ☞ Remove 2 screws.
- ☞ Take out needle filter with O-rings.
- ☞ Remove perforated disc from needle cushion.
- ☞ Clean all parts.
- ☞ Replace worn parts.
- Always replace O-rings!

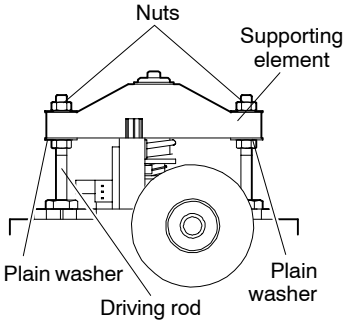


Observe marks on perforated disc and needle cushion!

Assembly

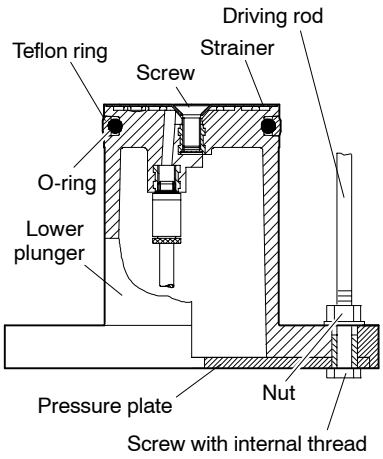
- Make sure the O-rings are securely seated
- Do not grease the O-rings
- When joining the perforated disc and needle cushion, observe the corresponding marks.

6.2.6 Replacing worn parts of the ”lower plunger”



☞ Remove brewing unit (see section 6.2.4).

☞ Tighten nuts on supporting element to prevent the driving rods from rotating while you loosen the 2 nuts on the ”lower plunger”.



☞ Remove 2 screws with internal thread and pressure plate at the bottom of the brewing unit.

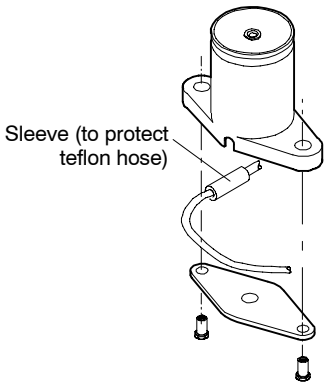
☞ Withdraw ”lower plunger” from brewing bush.

☞ Remove strainer.

☞ Clean all parts.

☞ Replace worn parts.

- Always replace O-ring and teflon ring.
- Heat up teflon ring in hot water before installing to make it flexible and easier to slide over the plunger.

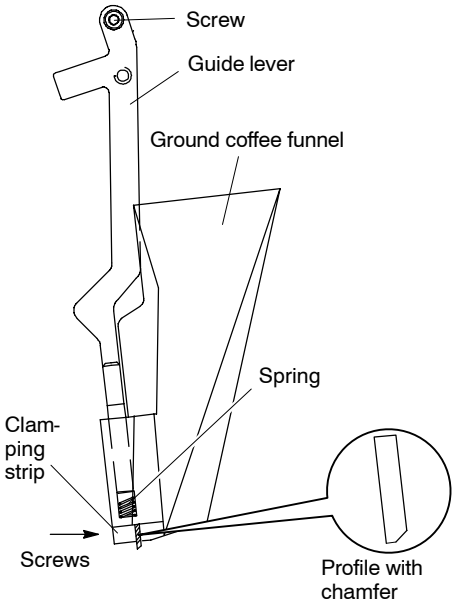


Assembly

⚠ Observe 48 mm clearance (see section 6.2.3).

- Do not grease O-ring and teflon ring.
- Observe recess for teflon hose on ”lower brewing plunger”. Lead teflon hose out to the rear.
- After assembly, loosen the upper nuts on the supporting element again by 1/4 turn. The plain washers under the supporting element must be able to turn.

6.2.7 Replacing the wiper profile



☞ Remove brewing unit (see section 6.2.4).

☞ Unscrew guide lever with ground coffee funnel from brewing unit.

☞ Remove 2 screws from profile.

☞ Remove clamping strip together with profile.

☞ Clean parts.

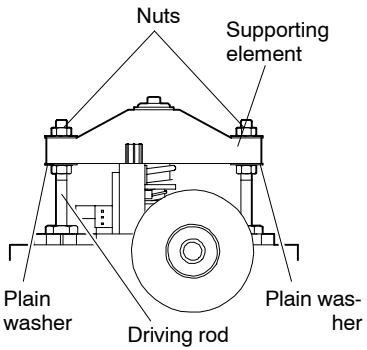
☞ Replace profile and spring.

- Note mounting position of profile!

Assembly

Check ease of movement and spring action of ground coffee funnel.

6.2.8 Replacing the supporting element



☞ Remove brewing unit (see section 6.2.4).

☞ Loosen 2 nuts in supporting element.

- Make sure that the driving rods do not rotate as you loosen the nuts. If necessary, tighten the nuts on the ”lower brewing plunger”.

☞ Remove supporting element.

☞ Remove mounted parts and install in a new supporting element.

Assembly

⚠ Observe 36 mm clearance (see section 6.2.3).

- Tighten nuts on supporting element, then loosen upper nut by 1/4 turn. The plain washers under the supporting element must be able to turn.

6.2.9 Test run of brewing unit

Carry out a test run after
- removing and reinstalling the brewing unit,
- replacing O-rings,
- replacing strainers, etc.

Test run of brewing unit: carry out several brewing cycles with all coffee types.

Check whether
- the coffee grounds are wiped off fully and cleanly,
- the coffee grounds are well compressed (tablet),
- the brewing chamber is tightly sealed during the brewing process,
- the quick couplings are leakproof.

Also check:
- electrical plug connections for secure seating,
- teflon hoses for secure seating and water-tightness.

6.2.10 Technical data of motor

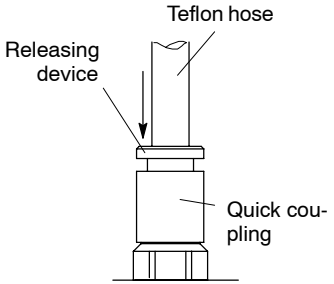
Voltage: U = 24 V DC

Direction of rotation: left/right

Power consumption limited by control system to 4 A

Distance measurement: 32 impulses/ revolution - 1 impulse/0.187 mm

Feed: 3.02 m / min



Removing the teflon hose

☞ Push teflon hose in the direction of the arrow.

☞ Push releasing device in the direction of the arrow and hold.

☞ Detach teflon hose.

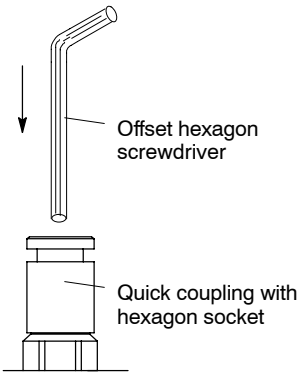
Inserting the teflon hose

☞ Check teflon hose for damage and cut off the ends cleanly and smoothly with a sharp knife if necessary.

☞ Grip teflon hose with abrasive cloth to prevent slippage.

☞ Push teflon hose firmly into the quick coupling (as far as it will go).

☞ Pull teflon hose back firmly to check whether it is securely in place.



Unscrewing the quick coupling

☞ Remove the teflon hose.

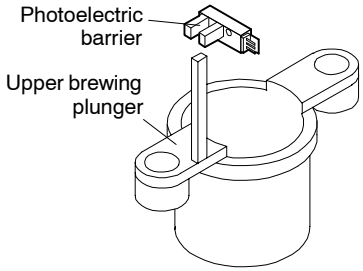
☞ Unscrew the quick coupling with a hexagon offset screwdriver.

Replacing the teflon hose

- The quick coupling is fitted with an O-ring for sealing off the teflon hose.
- To avoid damaging the O-ring:
  - make sure the end of the hose is not deformed,
  - check that the end of the hose is free of burrs,
  - cut off the end of the hose smoothly and cleanly with a sharp knife.

6.3 Reference point switch and encoder (photelectric barrier)

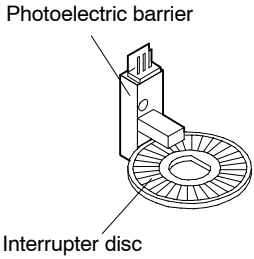
6.3.1 Operation of reference point switch



The reference point switch reports to the control system when the ”upper plunger” is in the upper limit position.

When the machine is switched on, the distance counter in the control system is set to zero as soon as the upper limit position is reached.

6.3.2 Operation of encoder

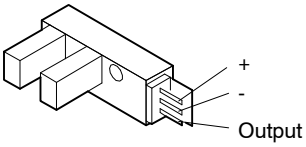


The encoder reports the impulses to the control system, which uses them to calculate the current position of the ”upper plunger”.

Each revolution of the interrupter disc corresponds to 32 impulses and a distance of 6 mm.

Approx. 810 impulses are required for the entire distance.

6.3.3 Technical data of photoelectric barrier



Voltage supply: 5 V DC

Voltage at output

- with uninterrupted light flux: 0 V
- with interrupted light flux: 5 V DC

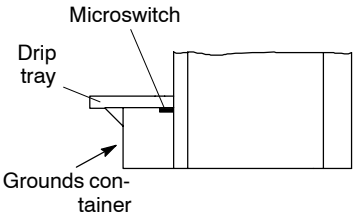
6.4 Grounds container and microswitch

6.4.1 Operation

The parameter ”Grounds container capacity” is preset to 100 tablets at the factory. When the set quantity of tablets is reached, a message appears in the display field requesting that you empty the grounds container.

When this message appears, it is no longer possible to make coffee. This lock is released once the grounds container has been removed for approx. 10 seconds (time required to empty the grounds container).

A microswitch reports to the control system whether the grounds container is inserted or removed.



Replacing the microswitch

The microswitch is located under the drip tray.

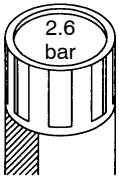
To replace the microswitch, remove the drip tray (see section 6.17).

6.4.2 Technical data of microswitch

Voltage supply: 5 V DC	The switch contact is closed when the grounds drawer is inserted.

6.5 Pressure regulator

6.5.1 Operation

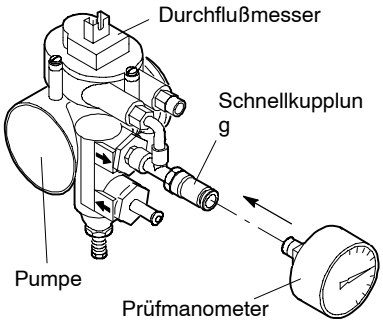


The pressure regulator is set to 2.6 bar.

To ensure trouble-free operation of the pressure regulator, the input pressure should be at least 1 bar higher than the set pressure (input pressure approx. 3.6 bar).

From software version 2.05 up the integrated pressure-reducing valve must be adjusted to 2.6 bar.

6.5.2 Maintenance: cleaning the pressure regulator cartridge

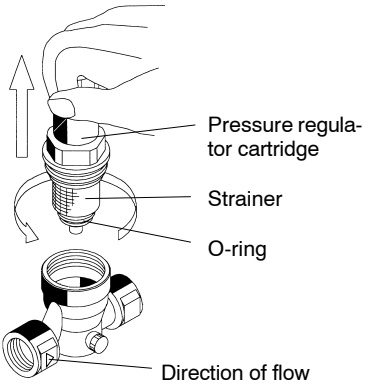


Checking the pressure with the attachable pressure gauge

- with the machine in the operational state

If the pressure gauge reading rises above 2.6 bar, check whether

- this is due to contamination of the pressure regulator cartridge,
- the check valve between the flow meter and brewing water boiler is closing correctly (see section 6.17 on check valve).



Cleaning the pressure regulator cartridge

⚠ Disconnect machine from mains!

☞ Shut off water valve upstream of pressure regulator.

☞ Relieve pressure on brewing water and hot water/steam boilers via safety valves.

☞ Unscrew cartridge from pressure regulator.

☞ Clean pressure regulator cartridge with clear water - do not add any detergents!

Replacing

- If parts are due for replacement, it may not be necessary to change the entire pressure regulator. In this case, it is sufficient to insert a new pressure regulator cartridge.
- Before changing the entire pressure regulator, check the direction of flow.

6.5.3 Technical data of pressure regulator

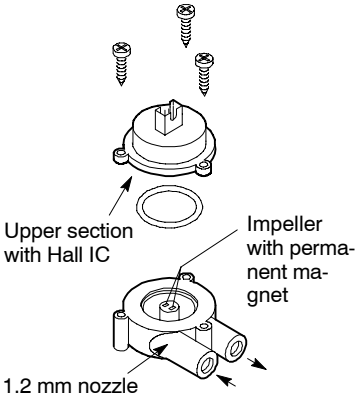
Input overpressure: max. 16 bar, min. 3.6 bar

Output pressure: 2.6 bar

Operating temperature: max. 60°C

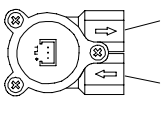
6.6 Flow sensor

6.6.1 Operation



The water flowing in through the nozzle causes the impeller in the flow sensor to rotate.
The 2 permanent magnets at the top of the impeller pass a Hall IC once per revolution.
The Hall IC then emits 2 electrical impulses per revolution of the impeller, which are detected by the control system and processed accordingly.

6.6.2 Removing and replacing the flow sensor



☞ If the flow sensor becomes blocked, furred up or defective, it must be cleaned or replaced.

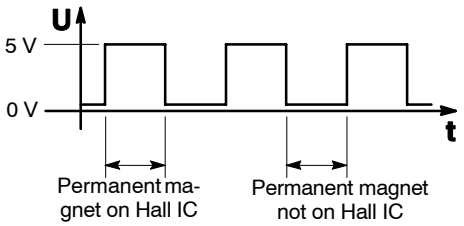
- Observe the flow direction!

6.6.3 Technical data of flow sensor

Voltage supply: 5 V DC

Impulse rates:
Approx. 0.5 cm^3 per impulse / 2000 impulses per litre

Voltage at output:

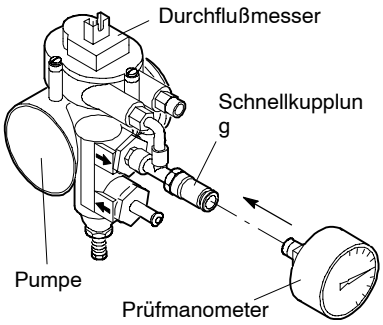


6.7 Motor-driven pump

The motor-driven pump is required for the coffee specialities espresso, schümli and cappuccino.

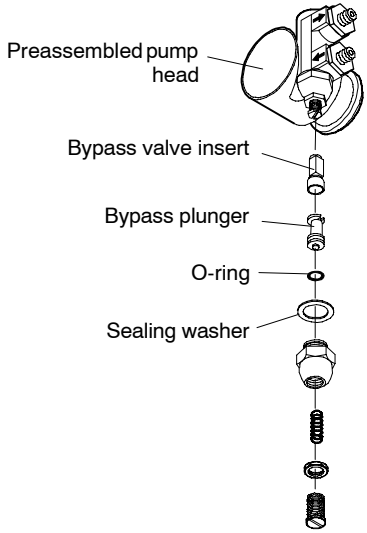
The motor-driven pump must not be allowed to run dry.

6.7.1 Checking/adjusting the motor-driven pump



- The motor-driven pump is set to a pressure of approx. 8 bar at the factory.
- The pump pressure can be checked using a test pressure gauge.
- If the pressure is too high (above 10 bar),
  - the overpressure valve on the brewing water boiler opens,
  - fluctuations occur in the metered quantities,
  - the pump pressure must be set to 7.5 - 8 bar using the adjusting screw.

6.7.2 Maintenance of pressure regulating device on pump head



☞ Check whether the pressure regulating device is furred up or contaminated.

☞ Decalcify, clean or replace parts as necessary.

- Do not expose surfaces to decalcifier for too long, as they will otherwise be damaged.

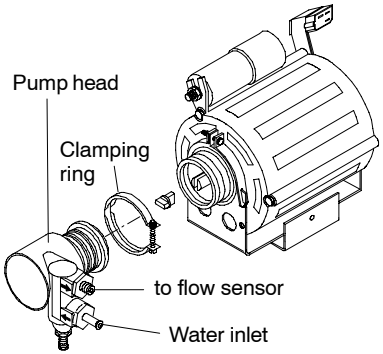
☞ Replace O-ring and grease with food-compatible grease (identity no. 693847, 400 g cartridge)

6.7.3 Removing the pump head / removing the motor-driven pump

⚠ Disconnect machine from mains!

☞ Shut off water valve.

☞ Relieve pressure on brewing water and hot water/steam boiler by opening safety valves.

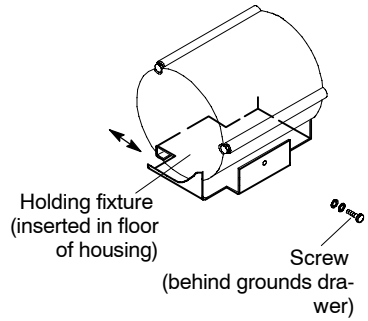


☞ Undo screw joints on pump head for water inlet and outlet pipes.

Removing the pump head

☞ Loosen clamping ring.

☞ Withdraw pump head



Removing the motor-driven pump

☞ Remove grounds drawer.

☞ Loosen and remove screw.

☞ Slide pump backwards out of housing floor together with holding fixture.

☞ Take pump out of machine to the left or rear side.

6.7.4 Technical data of motor-driven pump

Voltage: 230 V AC 50/60 Hz

Running capacitor: 10 µF / 450 V

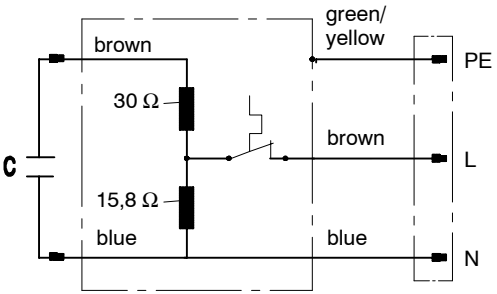
Nominal power consumption: 1.7 A

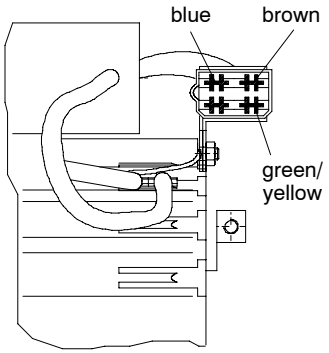
Nominal output: 184 W

Speed: 1400 rpm

Thermal motor protection: 140°C +/- 5°C

6.7.5 Electrical connection of motor-driven pump





6.8 Brewing water boiler

6.8.1 Operation of brewing water boiler (installed on left-hand side of machine)

Brewing water boiler:

1. For preparing hot water for all types of coffee.
   - Brewing pressure for coffee approx. 0.4 - 0.6 bar: the pressure for the brewing water is reduced via the nozzle (1.2 mm dia.) in the flow sensor.
   - Brewing pressure for coffee types espresso, schümli and cappuccino approx. 8 bar. The pressure for the brewing water is increased via the motor-driven pump.
2. For dispensing hot water in machines without a hot water/steam boiler. In these models, it is not possible to brew and dispense hot water at the same time (interlocked functions).

- The water is supplied to the brewing water boiler
  - from the pressure regulator,
  - by the motor-driven pump M1,
  - via the flow sensor B4,
  - via the check valve.
- The boiler pressure in the operational state is 2.6 - 10 bar.
- When hot water is dispensed from the brewing water boiler, more cold water is automatically supplied.
- The temperature is controlled via the NTC temperature sensor B1.

Filling the brewing water boiler

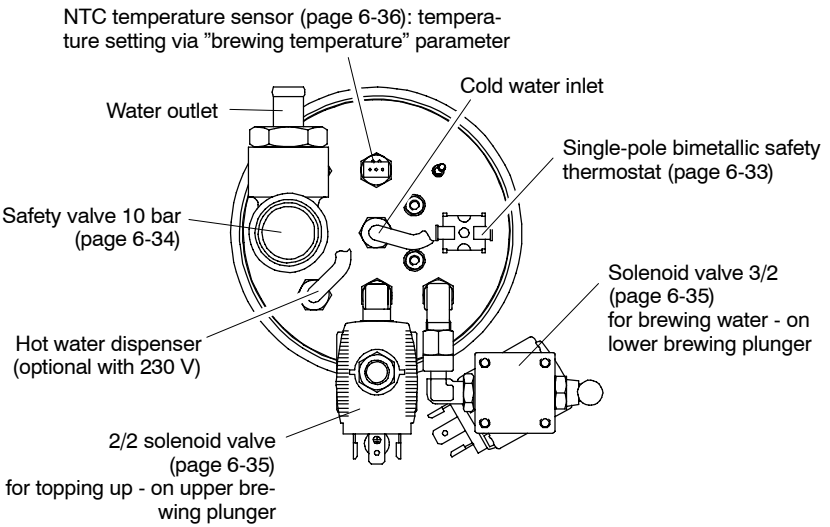
After opening the on-site water valve:

- Cold water flows into the brewing water boiler until a pressure of 2.6 bar is built up. A previously empty brewing boiler (initial filling) is now filled with water to approx. 2/3 of its capacity.

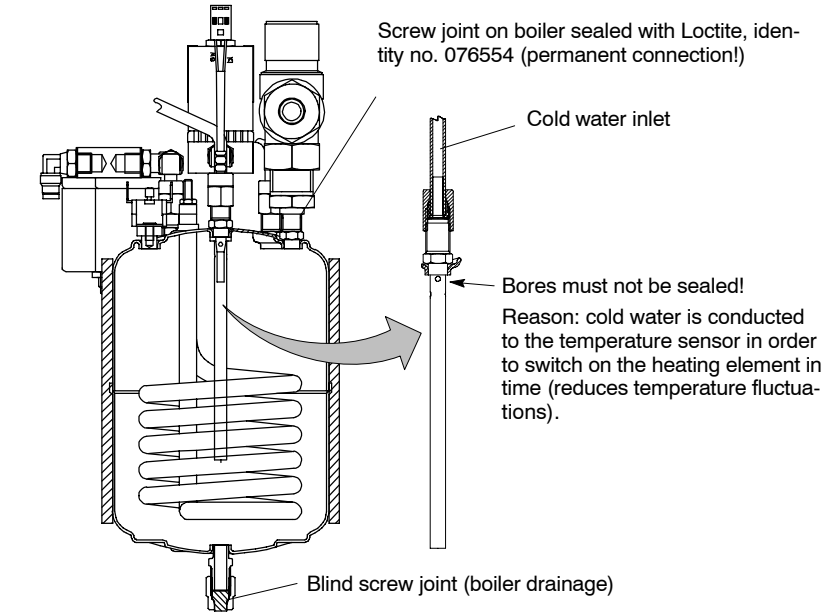
After switching on the machine:

- The control system checks whether the flow meter is emitting impulses.
- If the flow meter is no longer emitting impulses, the brewing unit moves to the brewing position.
- The brewing valve opens and remains open until the flow meter has measured a suitable number of impulses (predetermined by the control system). During this time, any air present in the brewing water boiler escapes. The supplied quantity of water is sufficient to fill the boiler completely (including initial filling). Any excess water flows out of the coffee dispenser.
- The heater of the brewing water boiler is switched on and heats the water to brewing temperature. From 80°C upwards, the article keys are released for coffee-making.

Preassembled brewing water boiler



Preassembled brewing water boiler



6.8.2 Temperature settings for brewing water boiler

These are adjusted via the parameter ”Brewing water temperature”.

Factory setting: 93°C.

6.8.3 Maintenance intervals for brewing water boiler

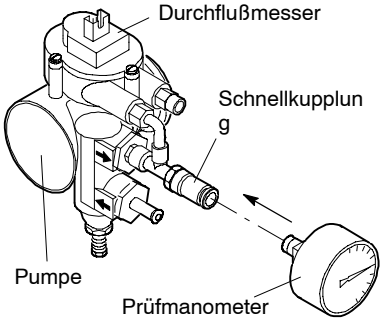
These depend on

- water hardness,
- flow rate.

If the water hardness is above 5°dKH, it is necessary to install a water softener.

6.8.4 Inspection of brewing water boiler

This inspection must be carried out at least once a year.



☞ Attach the test pressure gauge.

☞ Start up the machine.

- During the heating-up process, the 10 bar safety valve on the brewing water boiler should open to drain off the excess expanded water.
- The 10 bar safety valve should not open during a brewing cycle under pump pressure (e.g. espresso 7.5 to 8 bar).

☞ Check screwed and soldered joints for leaks (visual inspection).

6.8.5 Technical data of brewing water boiler

Votlage of heating element: 230 V AC

Max. nominal voltage of heating element: 260 V AC

Output of heating element: 3300 W

Reistance of heating element: approx. 16 Ω

Temperature of medium: max. 130°C

Continuous operating pressure: 10 bar

Capacity: approx. 1.1 litres

6.9 Hot water/steam boiler

6.9.1 Operation of hot water/steam boiler (installed on right-hand side of machine)

Hot water/steam boiler:

1. For dispensing steam and hot water.
2. For frothing or heating up milk.

- The water is supplied to the hot water/steam boiler
  - from the pressure regulator,
  - via the check valve,
  - via solenoid valve Y2.
- The boiler pressure in the operational state is approx.1.3 bar.
- The water level in the hot water/steam boiler is controlled by the electrode.
- The NTC temperature sensor B2 enables hot water, steam and milk products to be dispensed from a temperature of 110°C upwards.
- The temperature is regulated via the pressure switch.

Filling and heating process of hot water / steam boiler

When the machine is switched on, the boiler heating is deactivated until the electrode is moistened with water for the first time (automatic filling during initial start-up).

If the electrode is not moistened with water within 200 seconds, the control system switches off the hot water/steam boiler and locks the corresponding article keys. In standby mode, the error code 02 is displayed.

If the machine is switched on again, the boiler filling procedure is repeated. Once the electrode is moistened with water, the heater switches on. The solenoid valves for hot water and steam dispensing are open, and close when a temperature of 85°C is detected by the NTC temperature sensor.

Limit values for hot water / steam boiler cut-off

- For first filling: If the electrode is not wetted with water within 200 seconds.
- For first filling: If the releasing temperature of 110°C is not reached within 7 minutes.
- During operation, after having taken hot water: If the electrode is not wetted with water within 240 seconds.

Ventilation of the hot water / steam boiler

Ventilation during the heating process:

- The magnetic valves Y4 for hot water, Y6 for steam and Y5 for milk foam are left open for ventilation of the hot water / steam boiler until the temperature of 85°C has been reached in the boiler.

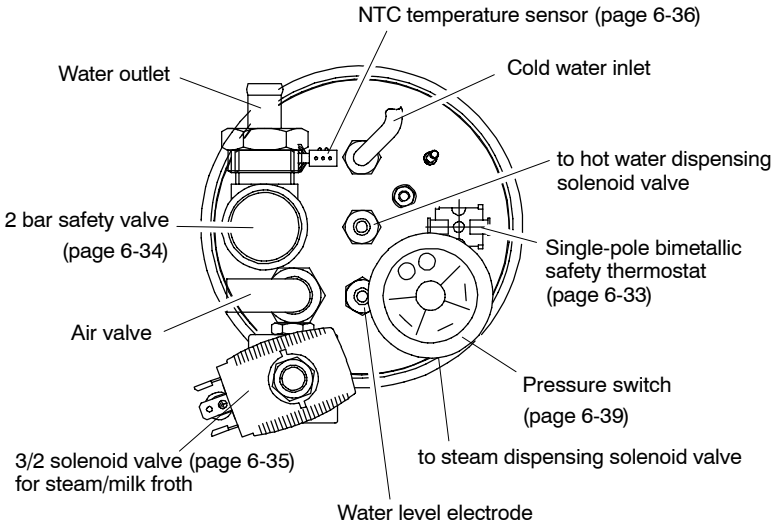
Ventilation for cold pressure:

- The magnetic valve Y5 is opened for a period of 0.5 seconds if temperature has fallen below the releasing temperature of 110°C and temperature has not gone up for a period of one minute.

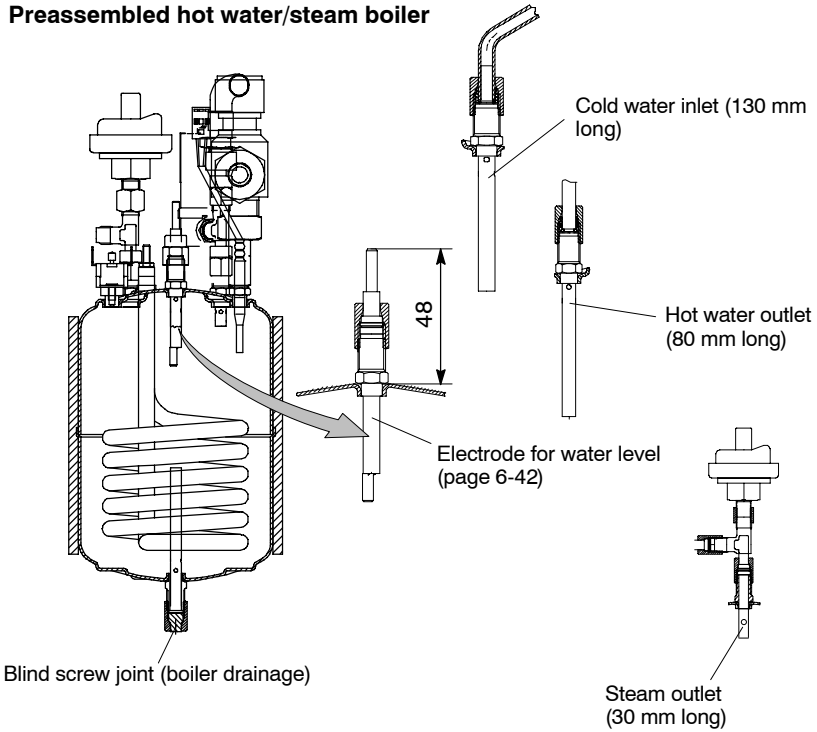
Topping up with cold water during dispenser of hot water

Topping up with cold water during dispensing of hot water (to avoid excessive splashing): when the hot water dispensing solenoid valve Y4 opens, the level in the hot water/steam boiler falls. The cold water supply solenoid valve Y2 then opens, allowing cold water to flow into the boiler and, at the same time, via a nozzle to the hot water dispenser.

Preassembled hot water/steam boiler



Preassembled hot water/steam boiler



6.9.2 Maintenance interval for hot water/steam boiler

Depends on
- water hardness
- flow rate.

If the water hardness is above 5°dKH, it is necessary to install a water softener.

6.9.3 Checking the hot water/steam boiler

⚠ **Risk of injury!** When inspecting the safety valves, please note that steam or hot water may escape uncontrollably due to leaks or defective components.

The following inspection must be carried out at least once a year:

☞ Connect test pressure gauge to steam dispenser.

☞ Start up machine.

☞ Press steam dispensing key.
- The current operating pressure of the hot water/steam boiler is displayed.

☞ Bridge pressure switch contacts 1 and 2 and check whether the safety valve opens at an overpressure of 2 bar.

☞ Check screwed and soldered joints for leaks (visual inspection).

☞ Check measurement 48 for water level electrode (see section 6.18).

6.9.4 Technical data of hot water/steam boiler

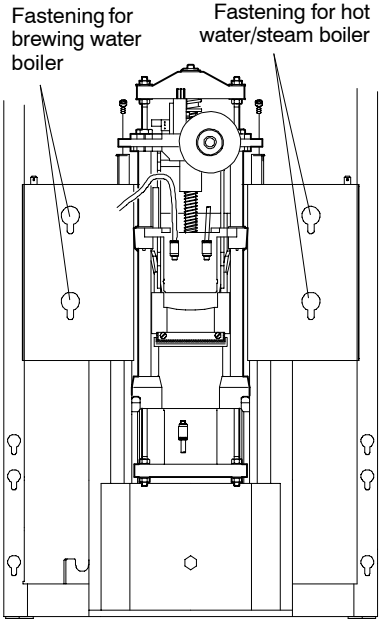
Heating element voltage: 230 V AC	Medium temperature: max. 130°C
Max. nominal voltage of heating element: 260 V AC	Continuous operating pressure: 1.3 bar
Heating element output: 3300 W	Total capacity approx. 1.1 litres
Heating element resistance: approx. 16 Ω	Capacity up to electrode: approx. 0.8 litres

6.10 Removing the brewing water or hot water/steam boiler

The boilers must be replaced in the event of
- leaks,
- calcification.

Removal

⚠ Disconnect machine from the mains and shut off the water valve.



☞ Relieve boiler pressure.

☞ Remove all supply connections.

☞ Detach electrical connections.

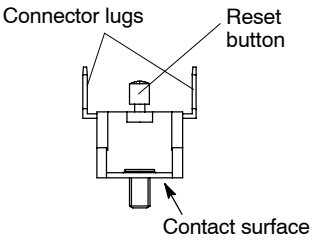
☞ Loosen 2 nuts.

☞ Lift out boiler.

Installation

- Tightening torque of nipple-type screw joints: approx. 15 NM.
- Check
  - brewing water boiler (see section 6.8.4)
  - hot water/steam boiler (see section 6.9.3)

6.11 Safety thermostat (bimetallic thermostat)



Temperature limit: 132°C. Contacts open from 132°C upwards.

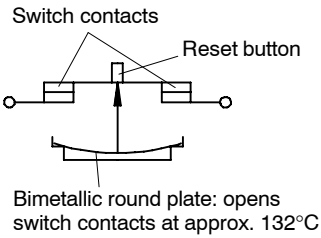
If a safety thermostat is activated:

- rectify the cause of the fault,
- allow the boiler and safety themostat to cool down,
- close the safety themostat again by pressing the reset button.

⚠ If the riveted connector lugs work loose, the bimetallic thermostat must be replaced, as an adequate contact can no longer be guaranteed and this will cause scorching in the rivet area.

6.11.1 Technical data of safety thermostat

Switching principle



Nominal voltage: 250 V AC

Nominal currenty intensity: 16 A

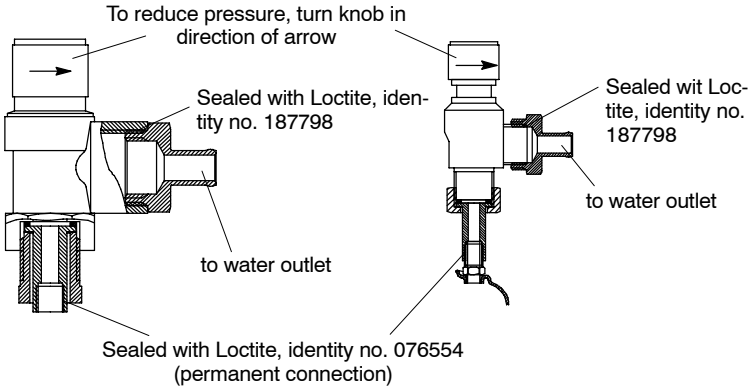
Cut-out temperature: 132°C ±5°C

6.12 Safety valves

Safety valves serve to prevent pressurised fluid systems from exceeding the pressure limits.

10 bar safety valve
(on brewing water boiler)

2 bar safety valve
(on hot water/steam boiler)



6.12.1 Checking/maintenance of safety valves

Checking

The safety valves should be checked:
- when the machine is first put into operation,
- during every maintenance routine,
- at least once a year.

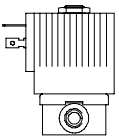
Inspection of safety valves:
- Brewing water boiler: see page 6-27,
- Hot water / steam boiler: see page 6-31.

If the safety valve drips, this may be due to contamination or wear of the seal.

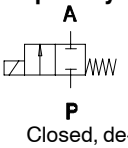
Maintenance

⚠ For safety reasons, safety valves must not be descaled or serviced. If a safety valves is not woringk properly, it must be replaced immediately!

6.13 Solenoid valves



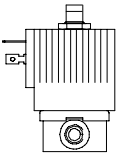
Graphic symbol



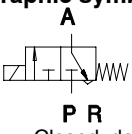
Closed, de-energised

2/2-way valve

- Y2 for supplying cold water to hot water/steam boiler
- Y3 for topping up brewing water
- Y4 for dispensing hot water



Graphic symbol



Closed, de-energised

3/2-way valve

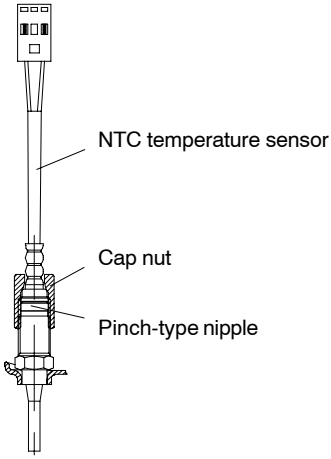
- Y1 for brewing water and for ventilating the brewing chamber (pressure relief).
- Y5 steam for milk frother
- Y6 for dispensing steam
- Y7 air for milk frother (option) - alternatives: hot milk/milk froth

6.13.1 Technical data of solenoid valves

Operating voltage: 24 V DC

Inductive resistance: approx. 58 Ω (cold)

6.14 NTC temperature sensor

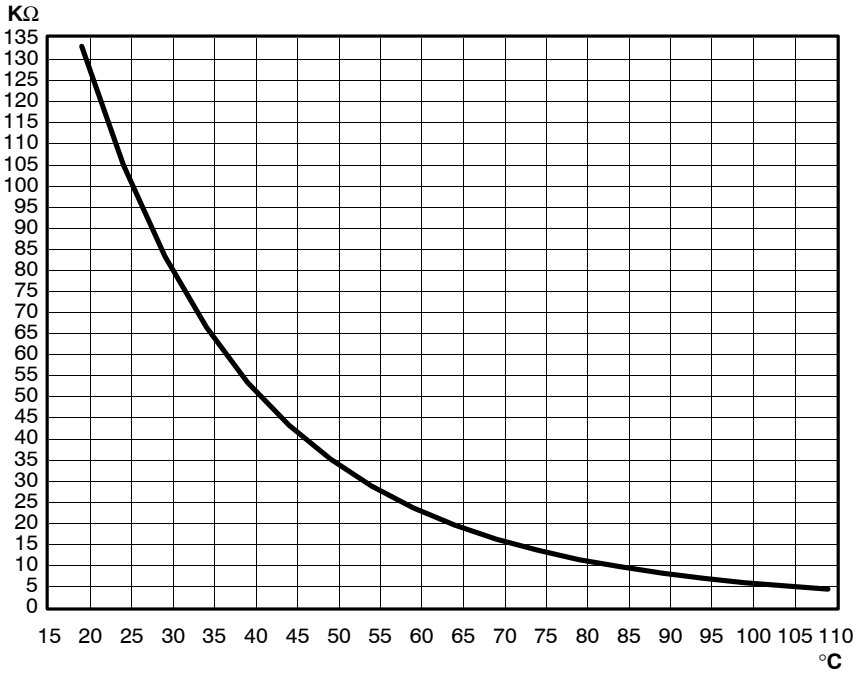


NTC temperature sensor

- in hot water/steam boiler: for hot water and steam release temperature
- in brewing water boiler: for temperature control.

6.14.1 Operation/graph of NTC temperature sensor

Resistors with negative temperature coefficients: the higher the temperature, the lower the sensor resistance.



6.14.2 Checking/replacing the NTC temperature sensor

In the event of a fault, the following error codes may appear in the display field:

- 05 brewing water temperature sensor interrupted
- 06 brewing water temperature sensor short-circuited
- 07 HW/steam boiler temperature sensor interrupted
- 08 HW/steam boiler temperature sensor short-circuited

Checking

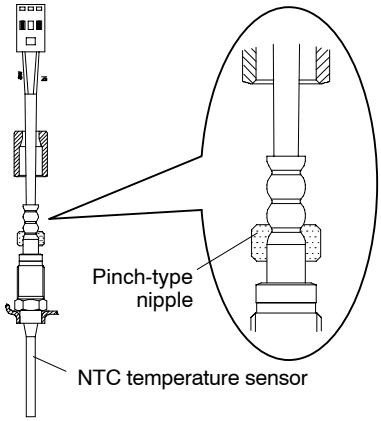
☞ Before replacing a temperature sensor, check the connecting cable and plug connection.

☞ Determine resistance of NTC temperature sensor and ambient temperature with suitable measuring devices and compare measured values with graph (section 6.14.1).
Example: ambient temperature 20°C, resistance 126 kΩ = sensor OK!

Replacement

⚠ Disconnect machine from mains and shut off water valve.

☞ Relieve pressure of brewing water or hot water/ steam boiler via safety valve.



☞ Replace NTC temperature sensor.

- To prevent the NTC temperature sensor from shifting its position during operation, position the pinch-type nipple as shown in the diagram.

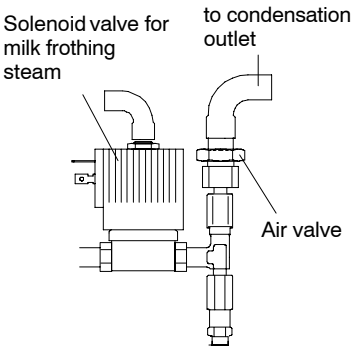
☞ Open water valve.

☞ Switch on machine to heat up the boiler.

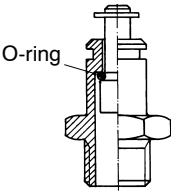
☞ Check screw joints for leaks (visual inspection): see also sections 6.8.4 and 6.9.3 (overpressure check).

6.15 Air valve (removed at 30.8.99)

6.15.1 Operation of air valve



Mounted on hot water/steam boiler.



The air valve

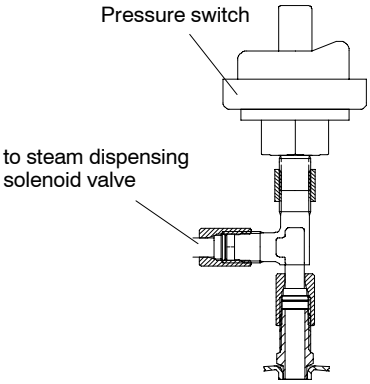
- allows the displaced air to escape during filling of the hot water/ steam boiler,
- is closed during the heating phase by the rising steam pressure in the hot water/steam boiler.

6.15.2 Maintenance of air valve

- If pressure escapes when the air valve is closed, replace the O-ring or the entire air valve if necessary.

6.16 Pressure switch

6.16.1 Operation of pressure switch



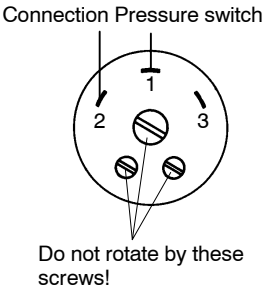
Mounted on hot water/steam boiler.

Pressure switch designs

Up to 6.1999: Pressure switch 1.0 bar
- Identification colour: black
- Imprint (mmwc): “10 000”

From 6.1999 up, from serial no. 314441 up: Pressure switch 1.3 bar
- Identification colour: red
- Imprint (mmwc): “13 000”

mmwc = Millimetres water column



The pressure switch regulates the temperature in the hot water/steam boiler:
- pressure in hot water/steam boiler below 0.95 / 1.25 bar - heating on, connecting contacts 1 and 2 closed
- perssure in hot water/steam boiler above 1.0 / 1.35 bar - heating off, connecting contacts 1 and 2 open.

6.16.2 Checking/maintenance of pressure switch

Checking

☞ Start up machine.

☞ Connect test pressure gauge to steam dispenser.

☞ Press steam dispensing key.

- The current pressure in the hot water/steam boiler is displayed:
  - Pressure switch 1.0 bar: Heating should switch off at 1.0 bar and switch on at 0.95 bar
  - Pressure switch 1.3 bar: Heating should switch off at 1.25 bar and switch on at 1.35 bar

Maintenance

⚠ For safety reasons, the pressure switch must not be descaled or serviced.

If a pressure switch is not working properly, it must be replaced.

6.16.3 Technical data of pressure switch

Switching capacity: max. 6 A / 250 V 50 Hz

Voltage supply: 24 V DC

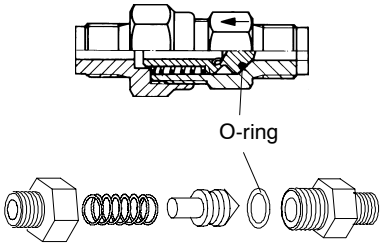
Pressure switch 1,0 bar - till 6.1999

Pressure range: 0.95 ± 0.01 to 1 ± 0.01 bar

Pressure switch 1,3 bar - since 6.1999

Pressure range: 1.25 ± 0,01 to 1.35 ± 0,01 bar

6.17 Check valve



The check valves prevent the water from flowing back out of the brewing water and hot water/steam boilers.

They are installed

- between the flow meter and the brewing water boiler,
- between the pressure regulator and the solenoid valve for the hot water/steam boiler water supply.

For mounting position, see function diagram, identity no. 654841 (section 8.5)!

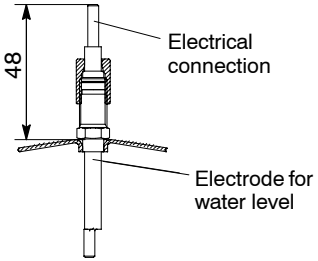
6.17.1 Maintenance of check valve

☞ Clean check valve and replace O-ring.

• Do not grease O-rings, springs, etc.

6.18 Electrode for hot water/steam boiler water level

6.18.1 Operation



An alternating voltage in the kHz range is applied to the electrical connection of the electrode. If the electrode makes contact with earth (boiler wall) via water, this is detected by the control system and the solenoid valve for the water supply is switched off.

6.18.2 Checking

Measuring with ordinary multimeters is not possible due to the use of high-frequency voltage.

☞ Remove electrical connection from electrode and hold against earth (boiler wall).

- The water supply solenoid valve Y2 should close.
- When the electrical connection is removed, the water supply solenoid valve Y2 should open again.

6.18.3 Maintenance

☞ Remove electrode.

☞ Only use decalcifier to remove limescale from electrode.

- Do not roughen the electrode (e.g. with abrasive cloth).

6.19 Coffee dispenser with frother head

6.19.1 Operation

The prepared coffee flows through the dispenser block.

The milk frother for producing hot milk or milk froth is integrated in the dispenser block.

The dispensed quantities of coffee and milk/milk froth are divided in the dispenser rocker, thus allowing 2 cups to be filled simultaneously.

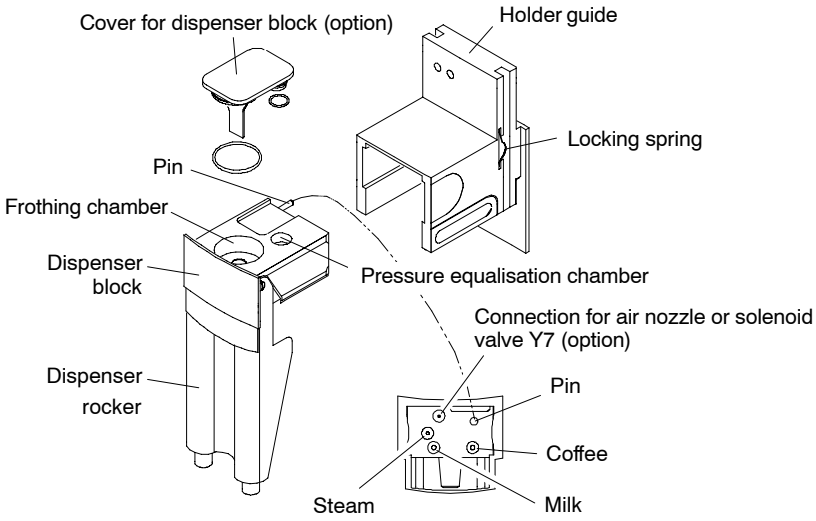
The coffee dispenser is locked when the dispenser block is pulled out. The pin on the dispenser block actuates the microswitch on the holder guide.

Production of milk froth

The steam solenoid valve Y5 opens, allowing steam to flow through the dispenser block while milk is simultaneously sucked in (injector principle). Via the air nozzle air passes through the pressure equalising chamber and mingles with the milk and steam to produce milk froth. The milk froth flows into the frothing chamber, settles and then flows out again.

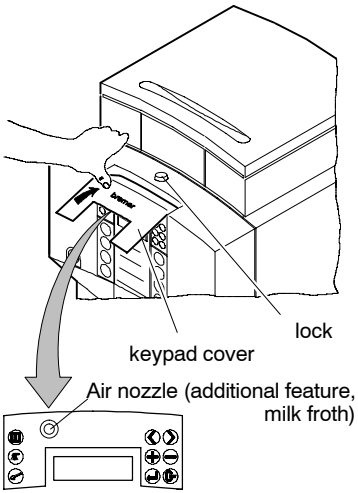
Production of hot milk (option)

The steam solenoid valve Y5 opens, allowing steam to flow through the dispenser block while milk is simultaneously sucked in (injector principle). Solenoid valve Y7 is switched to prevent the entry of air. After being heated by the steam, the milk flows into the frothing chamber, settles and flows out again.



6.19.2 Adjusting the milk froth dispenser

Depending on the sort of milk or its quality, it is necessary to modify the air supply for milk frothing.



There are two different air nozzles enclosed. One air nozzle is already inserted under the keypad cover. The air nozzles are indicated with a white or red O-ring:

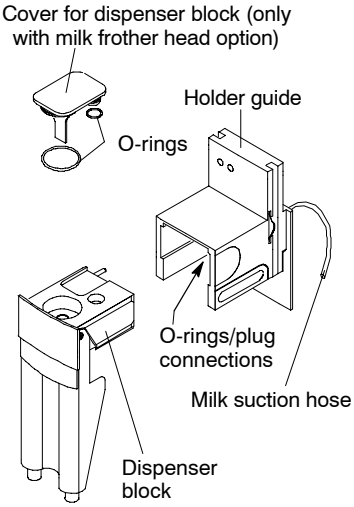
- white = smaller nozzle diameter, for milk froth with fine bubbles
- red = bigger nozzle diameter, for milk froth with large bubbles

Changing air nozzles enables you to influence the milk froth quality accordingly!

Note

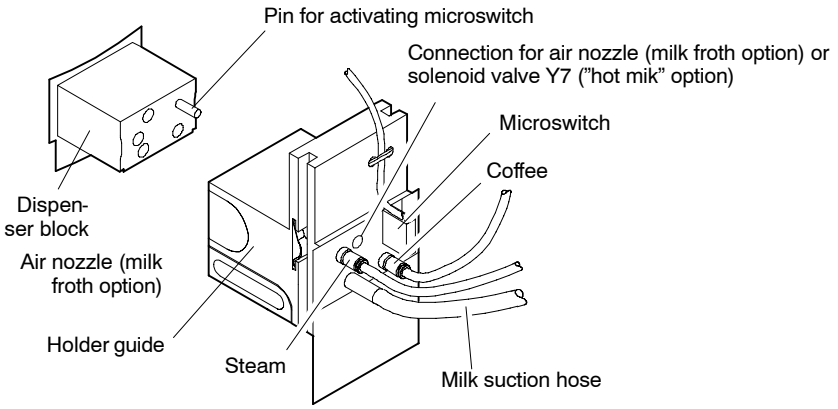
For option ”hot milk” (milky coffee) control of air supply is effected via the magnetic valve Y7.

6.19.3 Maintenance / cleaning / replacement of O-rings



- ☞ Pull down holder guide.
- ☞ Unlock and pull out dispenser block.
- ☞ Remove cover for dispenser block and air nozzle.
- ☞ Check milk suction hose and clean or replace if necessary.
- ☞ Clean all parts and plug connections thoroughly.
- ☞ Replace all O-rings.

6.19.4 Connections



Microswitch

Voltage supply: 5 V DC

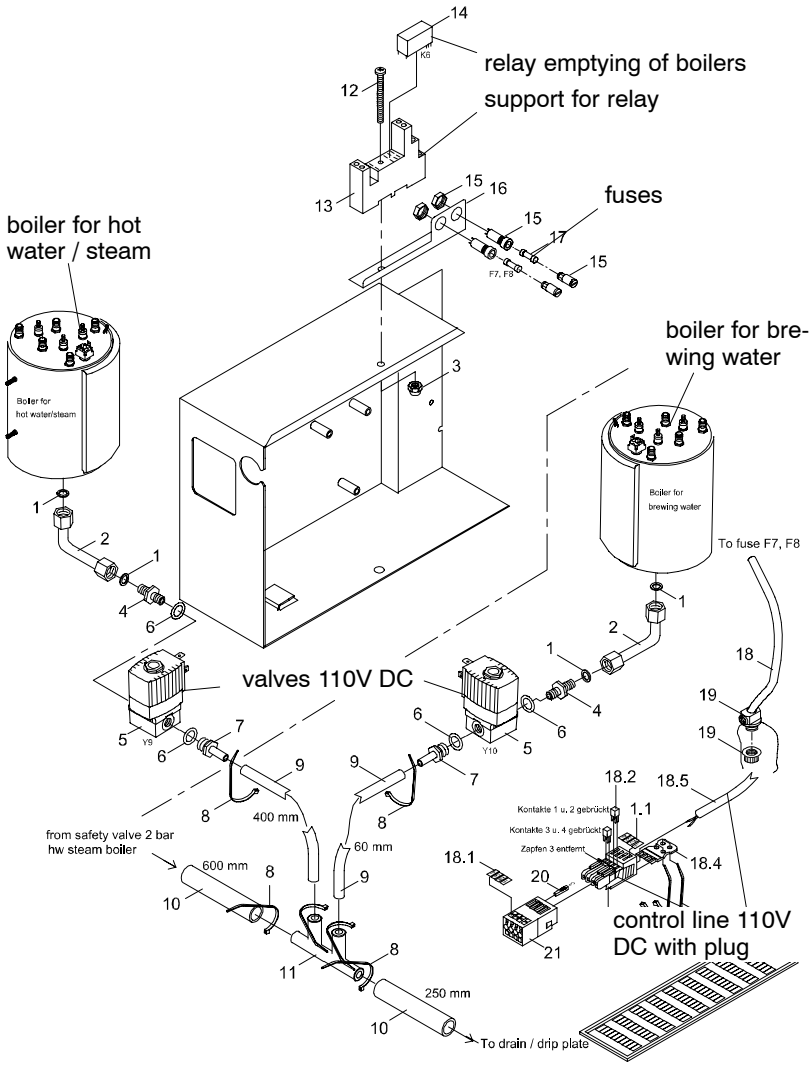
The switch contact is closed when the dispenser block is inserted.

6.20 Emptying of Boilers (VIVA TRAIN)

This function serves the VIVA coffee machines execution TRAIN for the protection from the freezing damage. The water in the construction units would freeze and these otherwise would damage.

The mechanism “Emptying of Boilers” is operated over a advised halogeneous–free control line with a tension by 110V DC (DC voltage).

Over the control line relays are headed for, which empty the storage water heaters/boilers (see illustration).



7. Menu control

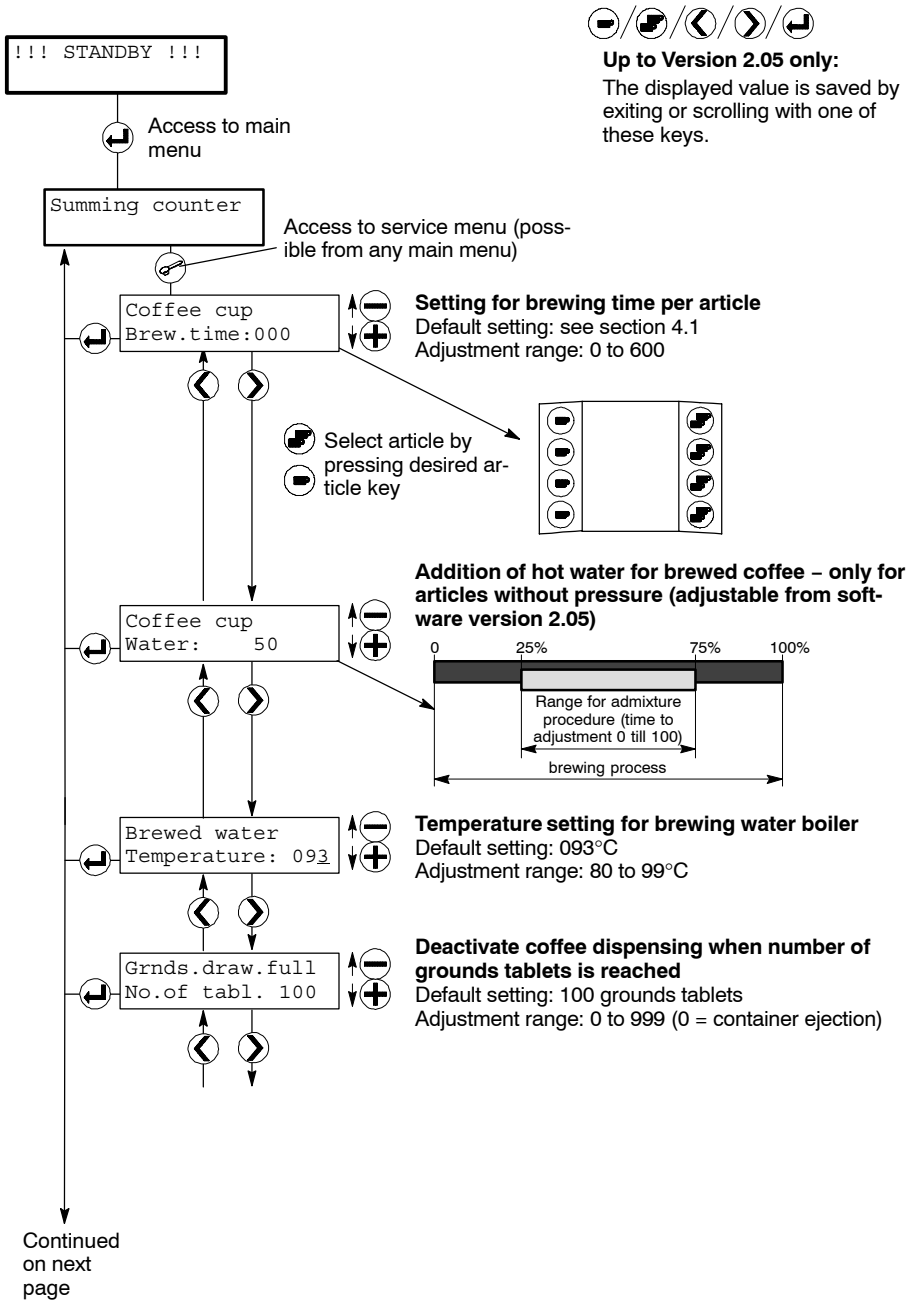
7.1 Settings/displays

The following are described in the operating instructions:

- How to display or delete summing counter readings
- How to perform the settings for the various types of coffee.

For adjustments to the device, see the following section 7.2.

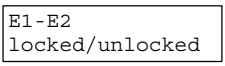
7.2 Service menu (1st gen.)

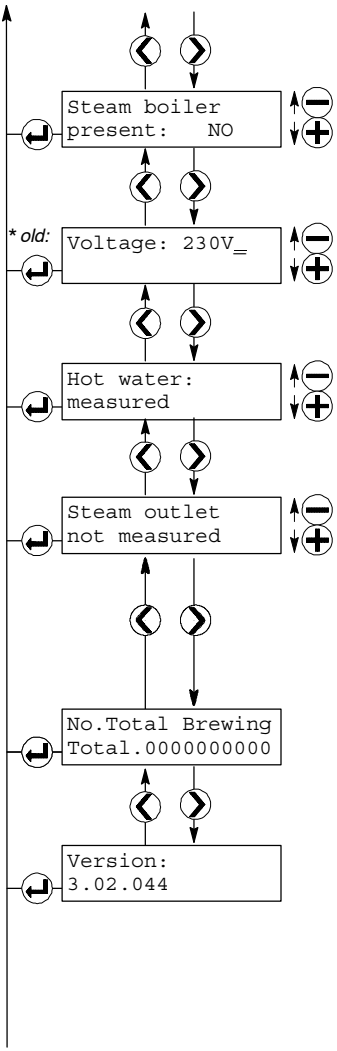


Up to version 2.05 only:
The displayed value is saved by exiting or scrolling with one of these keys.

Continued on previous page

*new:





Activate controller for hot water/steam boiler (NTC temperature sensor, electrode etc.)
Switching options: YES/NO
NO = steam boiler controller off, steam boiler faults are not displayed

Voltage selection (Locking of the boilers)
Depends on device model (refer to rating plate).
Switching options: 230 V / 400 V
Switching options Japan: 200 V / 3 x 200 V

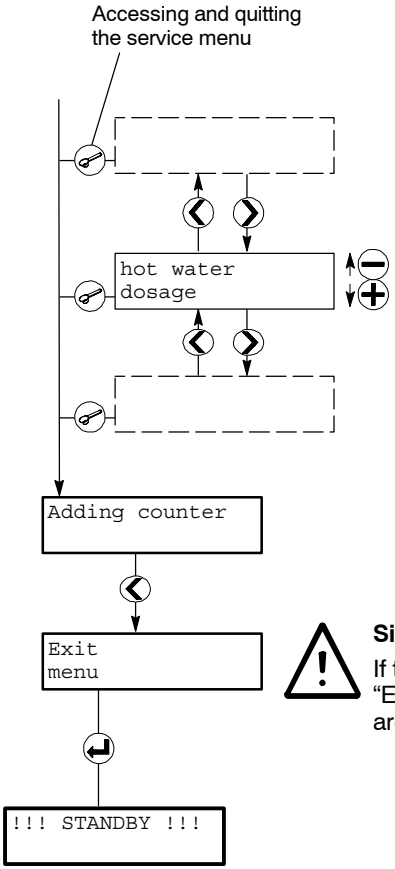
Hot water metered or not metred
Default setting: metered

Steam dispensing switch start/stop function (adjustable from software version 2.00)
Switching options: Metered = press steam key to start, then press again to stop steam dispensing / Non−metered = keep steam key pressed for as long as steam is required.
Default setting: non−metered

Display of completed brewing cycles
This counter cannot be deleted.

Display of software version number

7.2.1 Exit service menu

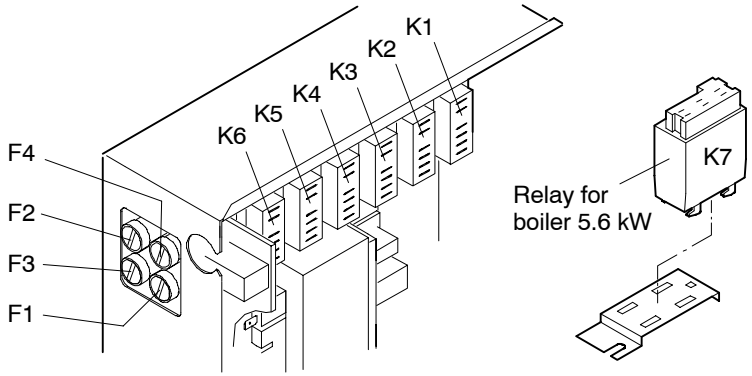


Since Version 3.02:

If the machine is switched off before the function “Exit menu” adjustments which have been made are lost!

8. Control system

8.1 Arrangement of fuses and relays



F1 4 AT/from 8.98 on – 3,5 AT 230 V AC
Transformer primary voltage

F2 4 AT/from 8.98 on – 3,5 AT 24 V AC
for control pcb

F3 1 AT 8 V AC
for control pcb

F4 6.3 AT 230 V AC
for motor–driven pump and grinders

K1 Brewing water boiler

K2 Hot water/steam boiler

K3 Motor–driven pump M1

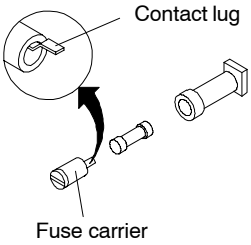
K4 Left grinder M2

K5 Centre grinder M3

K6 Right grinder M4

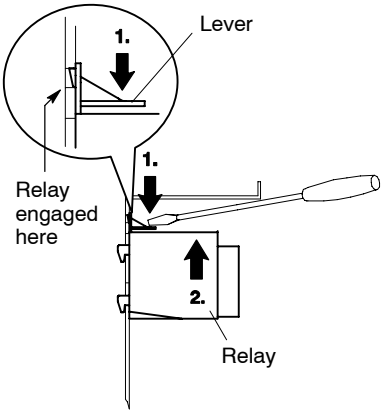
K7 Additional relay for 5.6 kW Hot water/ steam boiler

8.2 Uninstalling/changing the fuses



⚠ When changing fuses, make sure that the contact lug on the fuse carrier
- is not bent and
- has proper contact after insertion!

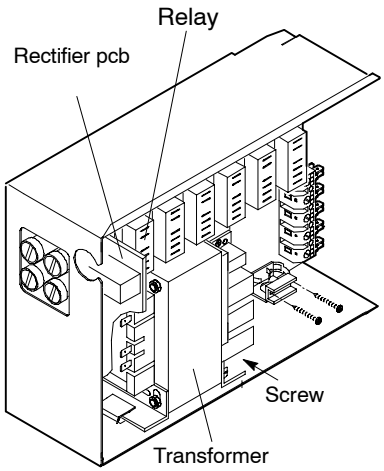
8.3 Removing the relays



Removal

1. Press down lever and hold firmly.
2. Slide up and detach relay.

8.4 Replacing the rectifier pcb/transformer



- ☞ Detach 1 relay next to the rectifier pbc.
- ☞ Remove 1 screw from the transformer.
- ☞ Swing out the transformer together with the rectifier pcb.

8.5 Circuit diagrams/function diagrams

Control system function diagram identity no.
- version 1: 654 841
- version 2: 751 561

Control system version 1

Circuit diagram identity no.
- 230 V version: 657 379
- 400 V version: 657 387
- 200 V / 3 x 200 V version Japan: 671703

Control system version 2

Circuit diagram identity no.
- 230 V version: 720615
- 400 V version: 720623

9. Faults and remedies

9.1 Machine error code display

Error code	Error	Cause of error
01	Brewing unit has not reached its position	Photoelectric barrier defective (encoder or reference switch) Brewing unit stiff Motor control defective Motor defective
02	Filling level not reached in hot water/steam boiler	Lack of water pressure Supply valve defective Filling level electrode faulty Error code only displayed in standby mode!
03	Correct temperature not reached in hot water/steam boiler	Boiler heating defective: boiler is switched off if the release temperature is not reached within 7 minutes. Error code only displayed in standby mode!
04	No impulses received from flow meter	No water pressure Flow meter contaminated Flow meter defective
05	Temperature sensor for brewing water interrupted	
06	Temperature sensor for brewing water short–circuited	
07	Temperature sensor for hot water/ steam boiler interrupted	Error code only displayed in standby mode!
08	Temperature sensor for hot water/ steam boiler short–circuited	Error code only displayed in standby mode!
09 Since software version 03.03	Temperature in Hotwater-Steamboiler higher than 130°C. The Hotwater-/Steamboiler will be switched off.	Failure during heating up. Heating elements is not switched off by the relay or pressure switch. Error code only displayed in standby mode!

9.2 Faults and remedies

Fault/error	Check	Cause	Remedy

9.3 Special tools/lubricants

Recommended special tools

Hexagon/ball−head screwdriver, 2.5 mm

Hexagon/ball−head screwdriver, 3 mm

Hexagon/ball−head screwdriver, 4 mm

Torx screwdriver, size TX20

Phillips screwdriver size 2, shank length approx. 250 mm

Tubular hexagon box wrench, width across flats 12/13 mm

Double−ended flat flare nut ring wrench, width across flats 12/14 mm

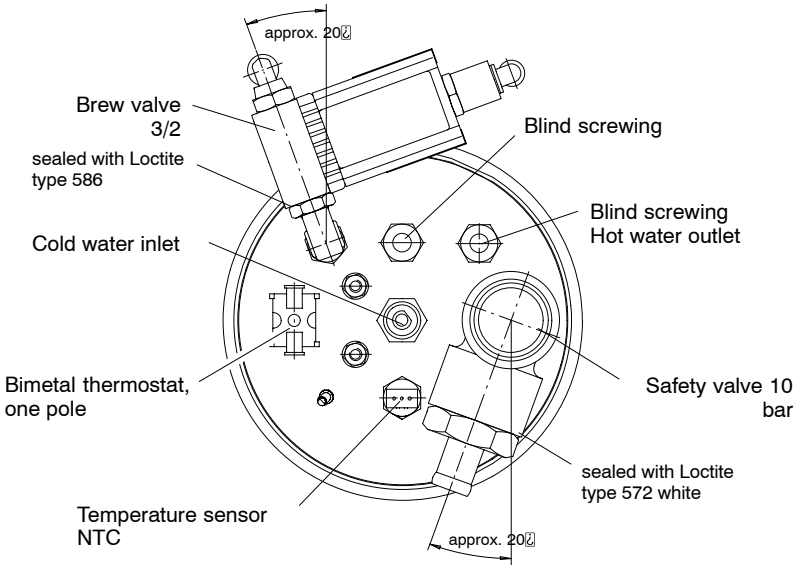
Test pressure gauge with plug connector (included in original spare parts kit)

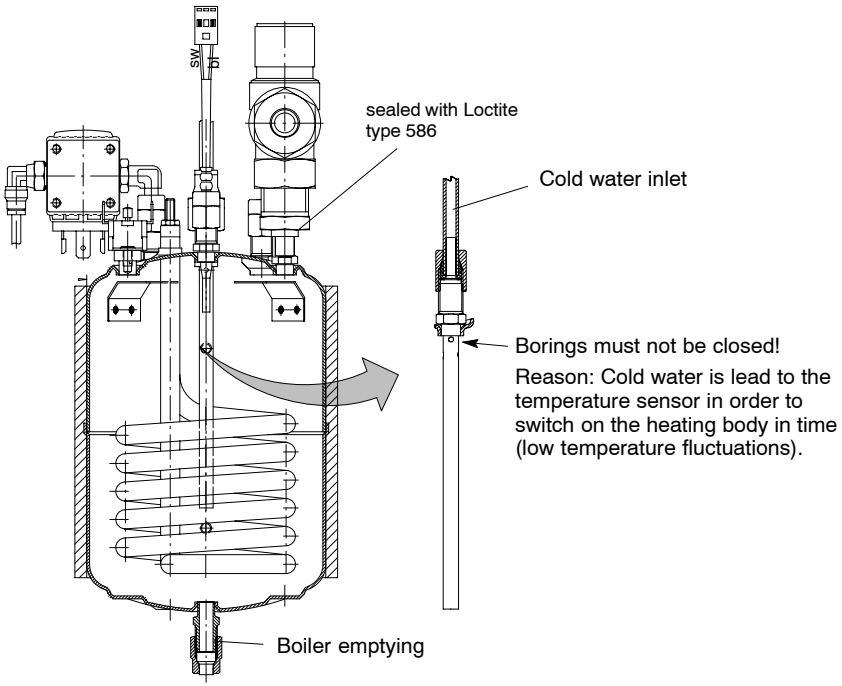
Lubricant

Multipurpose grease EP2, 400 g cartridge, identity no. 693847

10. Miscellaneous

10.1 Water boiler (VIVA au lait, VIVA Barista, Europa)





10.1.1 Technical data: water boiler (VIVA au lait, Barista)

Voltage heating body:
230V AC

Max. nominal voltage heating body:
260 V AC

Max. heating power / capacity of the heating body: 3300 W

Resistance heating body:
approx. 16 Ω

Fluid temperature: max. 130°C

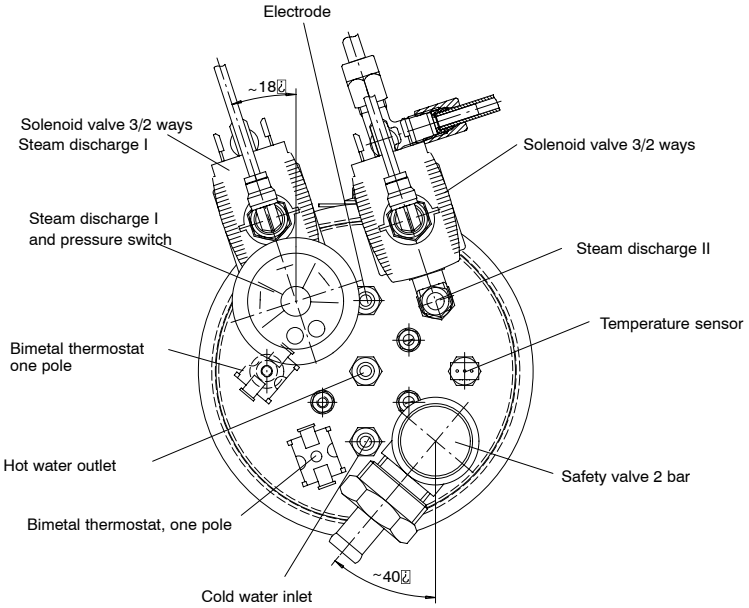
Permissible operational pressure:
0.8 MPa

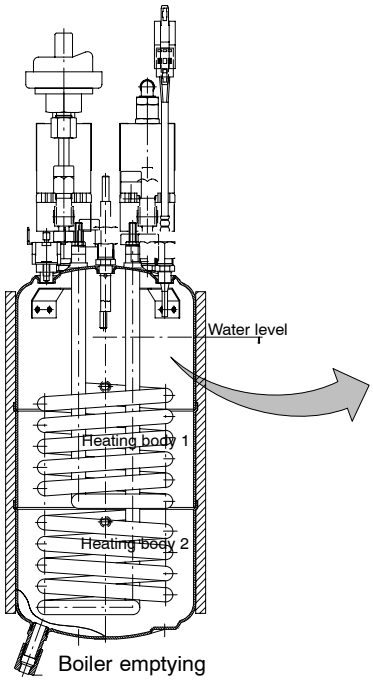
Max. permissible operational pressure:
10 bar (1.0 MPa)

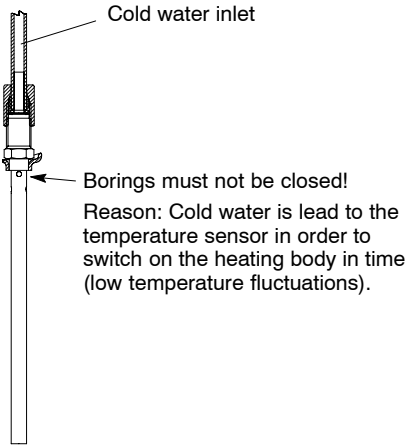
Volume: max. 1.1 liters

Max. retention torque for screwings:
15 Nm

10.2 HW Steam boiler (VIVA Barista, Europa)







10.2.1 Technical data HW Steam boiler (VIVA Barista Europa)

Voltage heating body: 230V AC

Max. nominal voltage heating body: 260 V AC

Max. heating power / capacity of the heating body: 5,600 W

Resistance heating body: approx. 16 Ω

Fluid temperature: max. 130°C

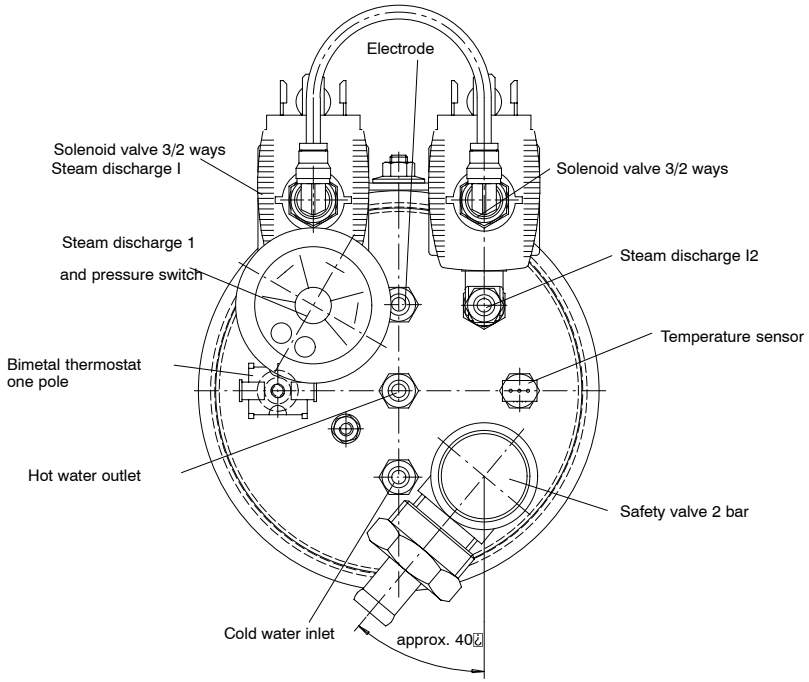
Permissible operational pressure: 0.13 MPa (1.3 bar)

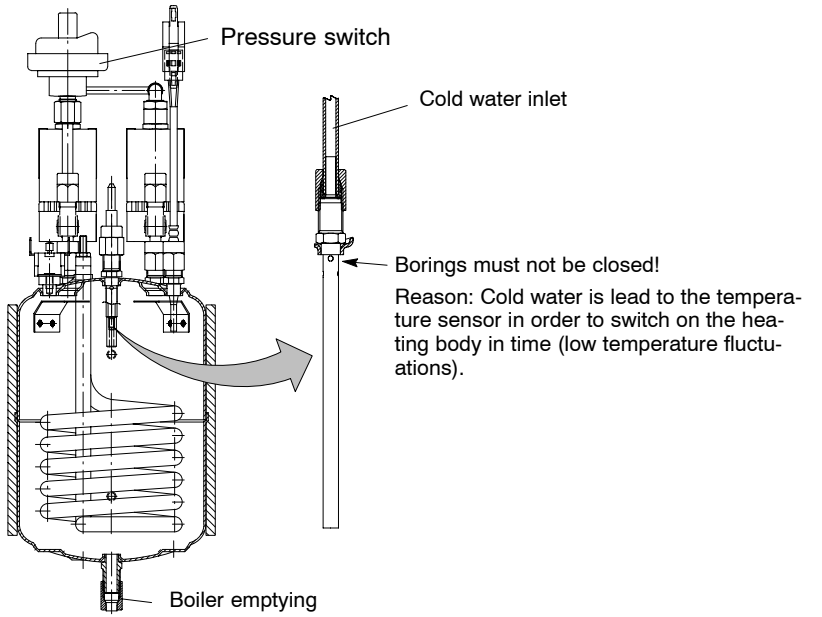
Max. permissible operational pressure: 0.2 MPa (2 bar)

Max. water volume: 1.7 liters

Max. retention torque for screwings: 15 Nm

10.3 HW Steam boiler (VIVA McD)





10.3.1 Technical data HW Steam boiler (VIVA McD)

Voltage heating body: 230V AC

Max. nominal voltage heating body: 260 V AC

Max. heating power / capacity of the heating body: 3,300 W

Resistance heating body: approx. 16Ω

Fluid temperature: max. 130°C

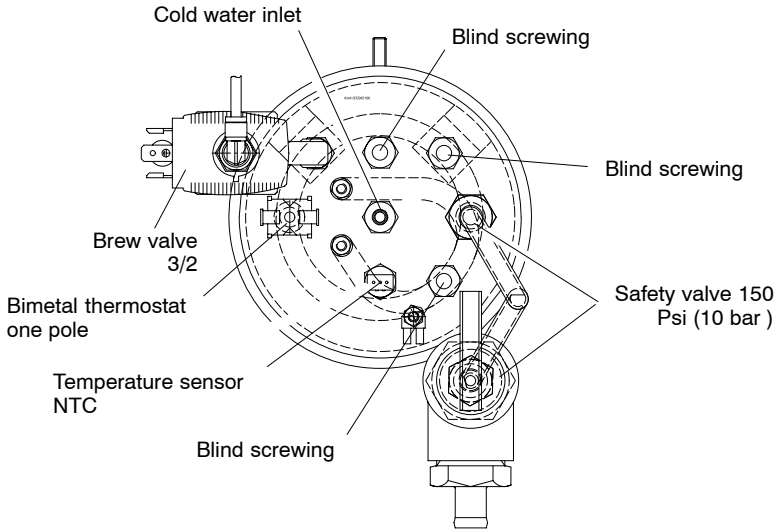
Permissible operational pressure: 0.13 MPa (1.3 bar)

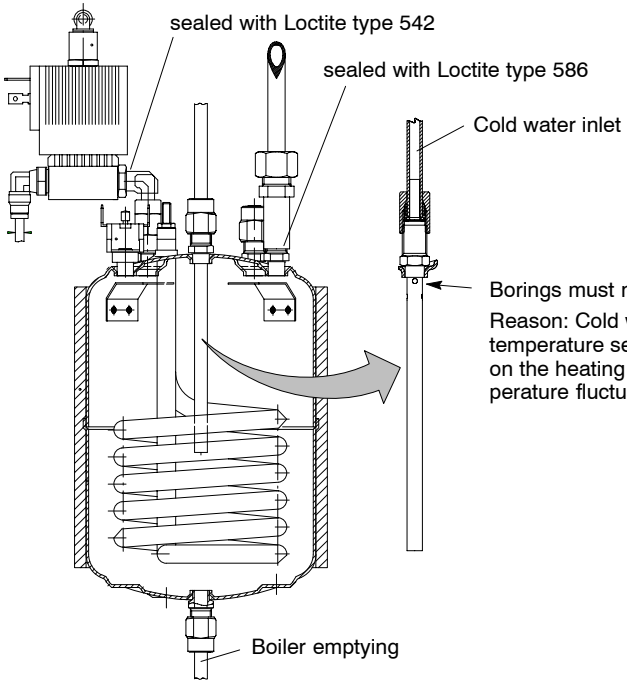
Max. permissible operational pressure: 0.2 MPa (2 bar)

Water volume: 0.8 liters

Max. retention torque for screwings: 15 Nm

10.4 Water boiler (VIVA 220V 3.0 kW UL, America)





10.4.1 Technical data: water boiler (VIVA 220V 3.0 kW UL, America)

Voltage heating body:
220 V 2AC/3AC 60Hz

Max. nominal voltage heating body:
260 V AC

Capacity of the heating body:
3,000 W

Resistance heating body:
approx. 16 Ω

Fluid temperature: max. 130°C

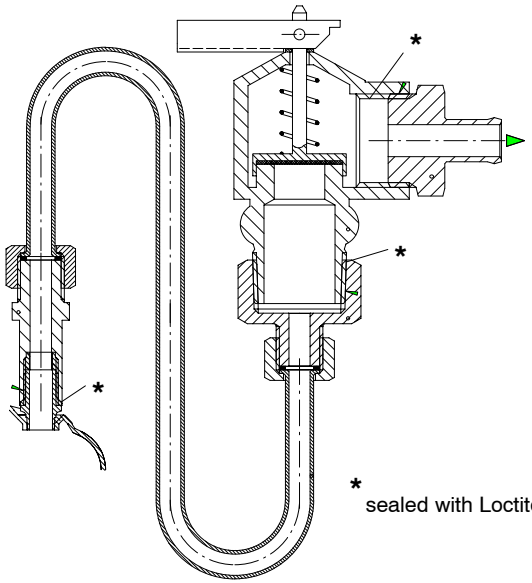
Permissible operational overpressure: 0.8 MPa (120 PSI, 8 bar)

Operational overpressure:
1.0 MPa (150 PSI, 10 bar)

Max. water volume:
approx. 1.1 liters (0.29 Gallons)

Max. torque for screwings: 15 Nm

10.4.2 Safety valve for water boiler (VIVA 220V 3.0 kW UL, America)



* sealed with Loctite type 586 red

Type: FWL–2 Series 10

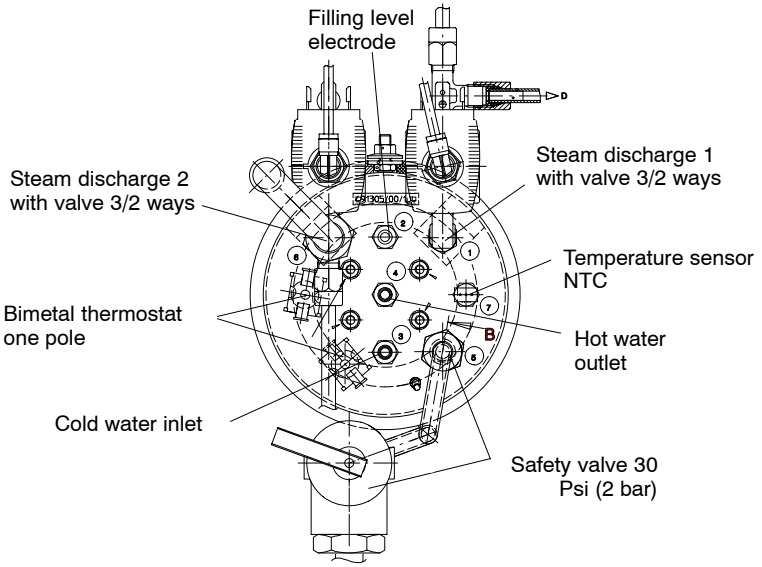
Size: 3/4“ NPT

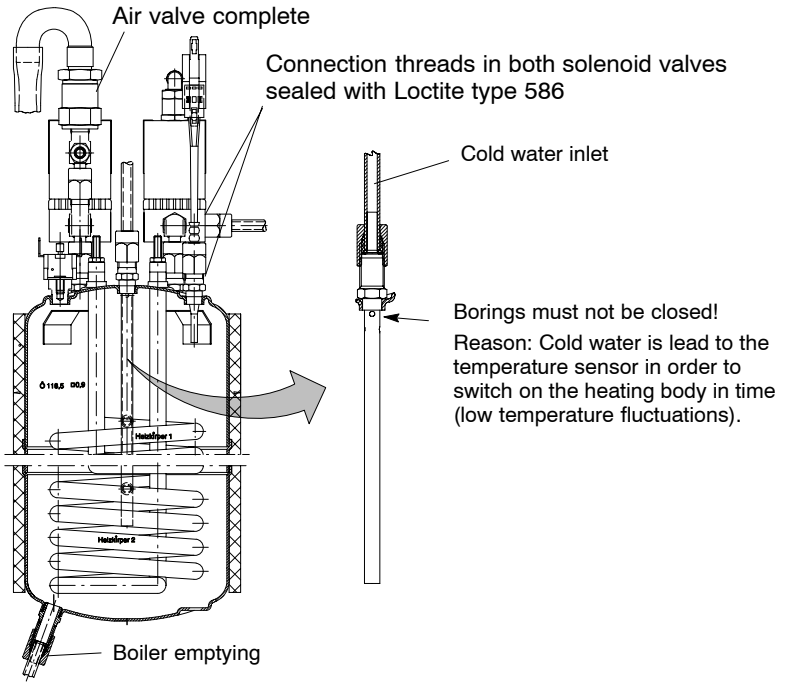
Opening pressure: 150 PSI (10 bar)

Approbation: A.S.M.E.

Fluids: Hot water,
steam

10.5 Hot water steam boiler (VIVA Barista UL, America)





10.5.1 Technical data HW Steam boiler (VIVA Barista UL, America)

Voltage heating body:
220 V 2AC/3AC 60Hz

Max. nominal voltage heating body:
260 V AC

Fluid temperature: max. 130°C

Capacity of the heating body:
5,120 W

Resistance heating body:
approx. 16 Ω

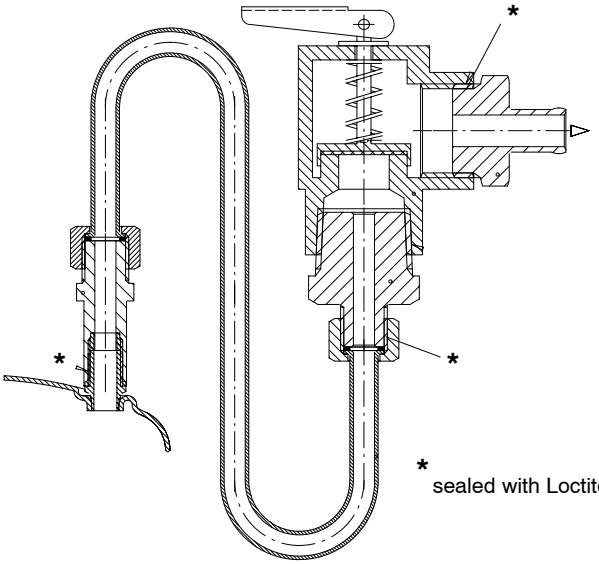
Permissible operational overpressure:
0.13 MPa (20 PSI, 1.3 bar)

Operational overpressure:
0.2 MPa (30 PSI, 2 bar)

Water volume:
approx. 1.1 liters (0.29 Gallons)

Max. retention torque for screwings:
15 Nm

10.5.2 Safety valve HW Steam boiler (VIVA Barista UL, America)



* sealed with Loctite type 586 red

Type: M1 No. 335

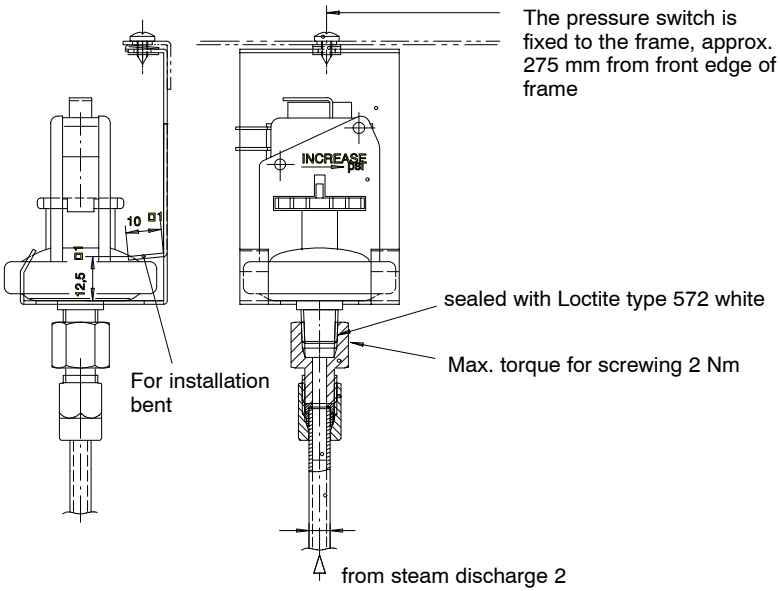
Size: 3/4“ NPT

Opening pressure: 30 PSI (2 bar)

Approbation: A.S.M.E.

Fluids: Hot water, steam

10.5.3 Pressure switch HW Steam boiler (VIVA Barista UL, America)



Type: 800132–3

Opening pressure: 20 PSI (1.3 bar)

Fluids: Hot water,
steam

10.6 Completion of Service-Menu – control board II (2cd gen.)

- Guilty for the bremer VIVA-Series: Standard, au lait, Barista, XXL, XXL-T and VIVA Filtro – ab Version 5.03

☞ Switch off the bremer VIVA by pressing the  ON / OFF button.

```
!!! STANDBY !!!
```

- The bremer VIVA is now on Standby-Mode.

☞ Go to Service-Menues

– key  afterwards press  key.

```
set the date
 17:07:02
```

☞ By pressing the key  to Menue "`set the date`".

- set day, month, year:
  - change value by  key
  - Move the the write mark or Curser with key  to the right hand side.

```
Set the time
 13:58
```

☞ By pressing the key  to menue"`set the time`".

- set the hours and minutes "like the date.

```
int.temper.of
machine_60 C
```

☞ By pressing the key  to menue "`int. temper. of machine`".

- You can read-out the actual temperature on the control-board. there are no settings possible.

```
Britamodus     0
```

```
Filter: 6000
Rest:
```

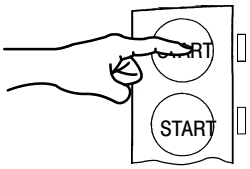
☞ By pressing the key ❯ to menue "Brita Mode".

- You can adjust the predetermining counter to the desired mode of operation. More informations about that in the following chapter 10.8.

10.7 Set the language for the menue

```
STANDBY
```

- You can set the language of the texts or country code at the machine
  - **before switching on**
  - in STANDBY Mode.



☞ Press the upper article key on the left hand side continuously, press at the same time key ❯ or ❮ till the requested country code apears in the display

Ländercode

```
044  STANDBY
```

Country code	Language
031	Netherlands
033	French
044	**English**
049	German
081	Japanese (2002-11)
095	Russian

☞ Confirm the setted contry code with key ↵

```
Summenzähler
```

- Subsequently the setted language is shown (Summing counter) in the display.

Menü verlassen

☞ Go to "Menü verlassen" (Exit menu) with key 

☞ Confirm the setting with key 

STANDBY

- The machine goes into the STANBY Mode and stores the new setting.
- With deviating proceeding the setting may be lost after wetting running.

10.8 Prevented Service for Brita water softener

- The pulse trigger of the water gauge can be connected
  - on the 5 pole connectionbenave the connection of the hot water outlet
  - PIN 1 + 5
  - Required 5– pol. plug (Id.Nr. 094196).

description of the system

To prevent calcification on coffee machines, Britta Waterfilters are placed into the water supply of the coffee machines. The Problem is, that they have a limitted throughput rate and they have no efffect anymore to soften the water. The Flowrate is dependent from different factors. f.e. from the water hardness in the area. Therefore is to each brita filter a table enclosed, how much water, at which water hardness can run through the filter before it has to be changed. Now you get a message in the display of the Coffee machine, if the water filter needs to be exchanged.

Function

Therefore you have a preselected counter from 00 000 to 99 999 .unit = Liter (realistic values are between 3000 and 50 000 Liter). With a parameter in the Service menue You can preset the counter to the Value which you need with your filter and water quality.

Presetting Counter = 6000 liter
Presetting operation mode = 0

operation mode 0 = no water softener
operation mode 1 = metering with the internal Waterturbine
operation mode 2 = metering with external water gauge
operation mode 3 = Meassuring with internal water turbine and external water gauge

operation mode 0

- no metering
- no hint in the display

operation mode 1

The Impulses of the internal Turbine are counted and with a devider in the software side (1 Impuls is corresponding 0,5 bis 0,55 ml), will be the presetted counter counted down. 1 step corresponds 1 Liter. By reaching the value “00 000”
–>further on [successive event]

operation mode 2

The trigger impulses of the external water gauge are counted and by a software side included Devider will the presetted counter be counted down. 1 impuls of the water gauge corresponds 10 Liter and stays on the control board for 1 second. 1 step is 1 liter –> that means per Impuls = 10 steps counted down. By reaching the value 00 000.
–>further on “succesive event”.

operation mode 3

The impulses of the external water gauge are counted down and by a software side included Devider will the presetted counter be counted down.
The Impulses of the internal turbine are also counted down and by a software side included Devider will the presetted counter be counted down (not displayed) the one which is first on 00 000 will be triggered
–> further on ”successive event”.

Successive event:

An information (Error Nr. nn by ”nn”).
will be generated (Journalinformations; Network variable etc..)
– the presetted counter will count to the negative.
– no limitation of the function in the machine
– Hint ”Waterfilter ” in the Display.

You can quit this hint with an additional point in the menue ”Quit error ” and that hint is continuously switched off. (This point in the menue could also just appear, if there is a message).

10.9 Software to the new PC board, PlugIn (Version II)

Download of the new Software to the new PC board VIVA II (Id.nr. 810 932)

In the new PC board we have for controlling the device applications a 32 Bit processor inserted. The Neuronchip is just used for the communication of the LON−Network

- programmdownload
- Communication in the network (f.e. VIVA with MDB Interface).

The APB−File for the Neuronchip is downloaded by the manufacturer and has just to be downloaded new, when there are changes in the ntework interface via ALEX (like untill now).

The Applicationprogramm (machineprogram) exists out of 4 blocks.They are zipped in a file and get automatic unzipped by a download start and after a programdownload again deleted − the zipped file remains. The name of the zipped file is the name of the Software Version

f.e. VMK_0501_22.zdl

The Firmware of the control board includes a program named Bootloader. It corresponds the BIOS of a PC. It is downloaded by the manufacturer and will be automatical installed by a download of the applicationprogram with plugin(improvement).

The Bootloader will be started first by switching on the PC board.

The Bootloader has following jobs:

1.Intialising of Hardware components (processor, memories − not In and Outputs)

2.Check of the applicationprogram (checksum)

3.Start application

If the application test is negative the machine application will not be started.

LED of the product keys will flash.

The applicationprogram must be new downloaded.

The Bootloader is starting a LON−Application to make a LON−Communication possible. This application, which is part of the bootloader program, is also used by the PlugIn by downloading of the applicationprogram.

When the application is started, the bootloader is not any more required.

How to make a download to the PCb:

With Alex you communicate via the LON Network.Creation of Project– and temülates, Produce bindings, Read, change etc. the Networkvariables.
–> like until now.

1.generate a device template.

2.Generate a device and make your Reset and Test

- APB–File must not be downloaded – just by changes in the Network interface.

3.register PlugIn (chapter EXTRAS)

4.Start PlugIn

- Controls are done automatical.

5.choose device type – displayed in left upper side “device type”.

6.Choose directories and files.

This must be setted once per device Otherwise choose over point 5 – or by changes of directiories f.e. Disk

7.Start Download

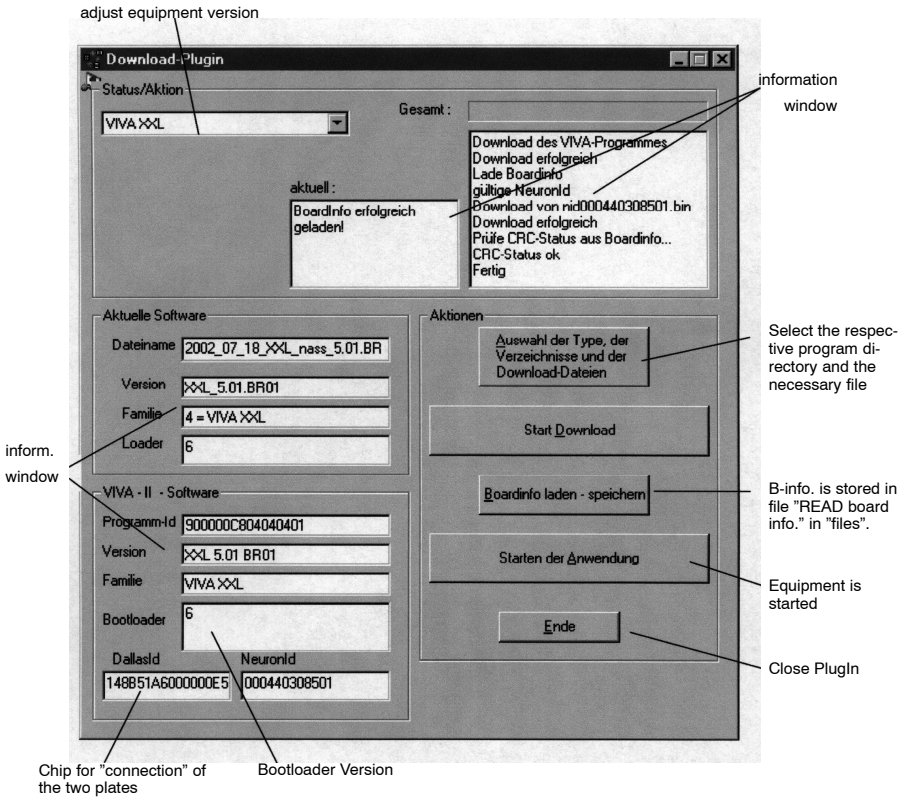
8.Start application

9.leave PlugIn.

Download of more PC boards:

Exchange the device in Alex and repeat – point 2 – 9 .

PlugIn – description



Remark : In ZDL–files are now all data blocks (programfiles) for the download included.

First the bootloader version is detectedt. by a new Bootloader, or already present application the last used device type/zdl–file maintained. In these cases the actual Board info is read out of the Control board and displayed in the lower left area.

If required you need to choose a new one.

Then Data access on the ZDL–fileand detecting DAtas and Displaying them

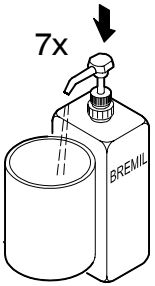
From the princip the download should now be possible, if not, then the downloaded XIF and APB is blocked, if the XIF/APB–file are not matching with the zdl–File.

The Download transfers the new Bootloader, the User – Blocks and is loading then the Dallas–ID. At least the board info is downloaded and the CRC values are checked.

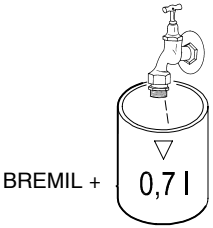
10.10Short instructions for cleaning the milkpipe and brewing unit

A) Cleaning of the milk and suction pipe

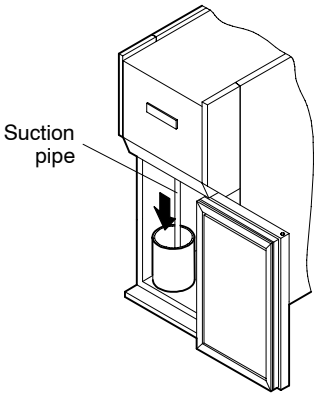
1.) Add detergent fluid BREMIL – pump 7 times.



2.) Add aprrox. 0.7 litres of WARM water.

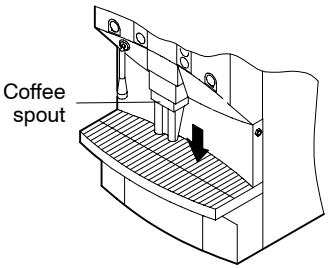


3.) Push it into the cooling compartment of the milk fridge. Immerse the suction pipe for milk into the detergent solution.

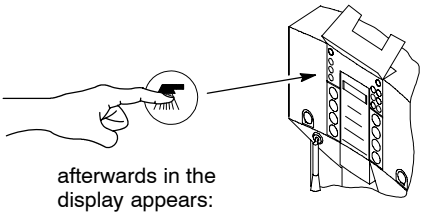


4.) Slide coffee spout down as far as possible.

CAUTION ! The coffee spout may be hot.



5.) Press button “Cleaning program”

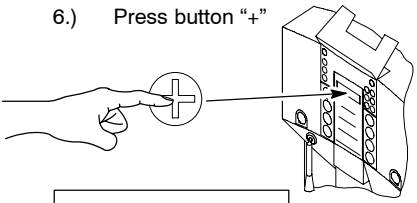


afterwards in the display appears:

```
Press + to Clean
Milk pipe
```

+ = button ⊕

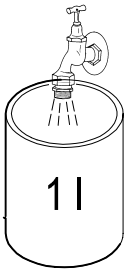
6.) Press button “+”



```
Cleaning cycle
1  13 rest time
```

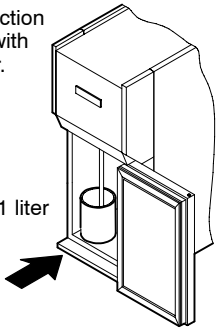
Intermittent rinsing starts with 12 cycles (continues for approx. 3 minutes) “00” = last cycle.

7.) Remove the jug with the detergent solutuin.



Fill approx. 1 litre of clear COLD water into a jug.

8.) Immerse the suction pipe in the jug with clear cold water.

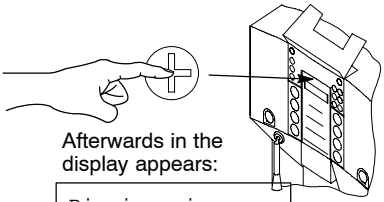


In the display appears:

```
Press + To Rinse
2 pipe
```

+ = button for a second pipe cleaning

9.) Press button “+”



Afterwards in the display appears:

```
Rinsing pipe
Please wait
```

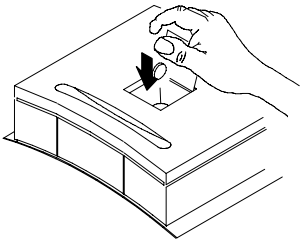
Rinsing process starts (continues for approx. 1 minute).

B) Cleaning the brewing feature

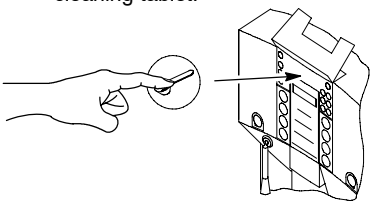
10.)

```
Please insert
detergent tablet
```

Insert detergent tablet



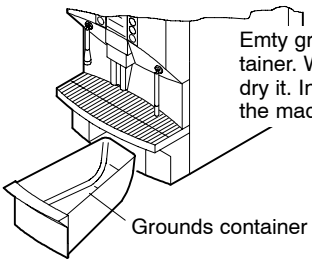
11.) Press button to confirm the insert of the cleaning tablet.



Automatic cleaning process starts (continues for approx. 3 minutes).

12.) At the end of the cleaning process program follwing display appears:

```
!!! STANDBY !!!
```



Emty grounds container. Wash and dry it. Insert it into the machine.

Grounds container

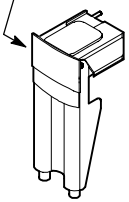
Clean the dispenser block daily with the detergent BREMIL in order to ensure the hygiene

1.) Pull out the dispener block – only in Standby mode

```
!!! STANDBY !!!
```

CAUTION ! Risk of scalding.

Press and hold catch



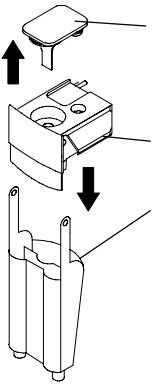
Pull the dispenser block with the coffee outlet down as far as possible.

Press and hold.

Pull out the dispenser block.

We recommend to add a second dispenser block in order to avoid operational interruptions.

2.) Removing the dispenser block



Remove the cover from the dispenser block

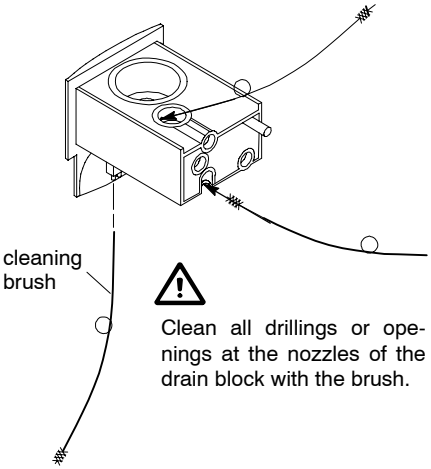
dispenser block

Remove the coffee outlet from the dispenser block – unhinge on both sides.

3.) Precleaning the dispenser block

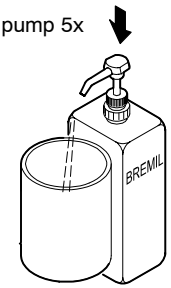
Clean all parts of the removed dispenser block individually under flowing warm water with the brush.

Example: Precleaning the drillings



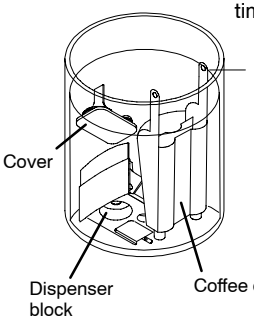
Clean all drillings or openings at the nozzles of the drain block with the brush.

4.) Dosage of detergent BREMIL



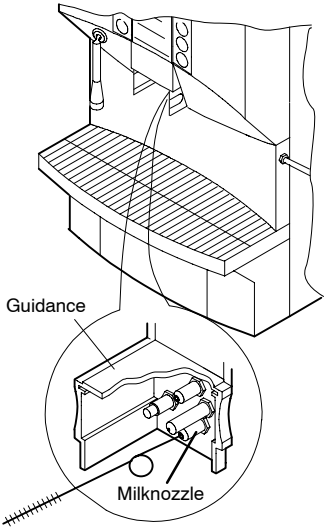
Measure out sansitsier detergent in a container (d100, h150 mm) and add approx. 0.75 litres of HOT water.

5.) Insert the dispenser block, cover, coffeeoutlet into a cleaning bath
- approx. 20 min.
- if necessary several times a day.



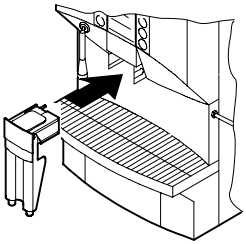
All parts must be completely covered with cleaner solution !

6.) Cleaning the nozzles of the guidance



Clean the drillings and openings
- at all nozzles of the guidance
- only with the CLEAN wire end of the brush.

7.) Attach the clean assembled dispenser block to the coffeemachine
- after the cleaning always rinse the cover, dispenser block and coffee outlet with CLEAR water,
- dry it with a one-way cloth
- assemble it and attach to the guidance of the coffeemachine.



8.) Set the cleaned and disinfected milk container with fresh milk into the cooling compartment of the VIVA milk refrigerator.

9.) For a neutralization all milk and coffee guiding parts

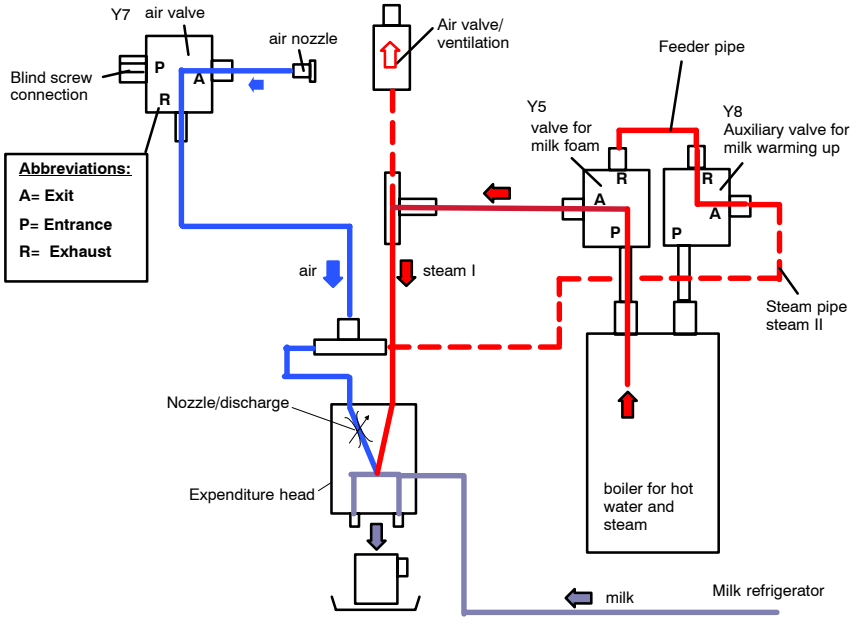
- switch on the coffee machine (rinsing procedure runs with following neutralization)
- flush afterwards the milk pipe with key “+” until milk comes from the coffee outlet. Subsequently keep approx. 3 seconds.

Functional Description

The VIVA au lait has two valves more than the VIVA standard design. The single solenoid valves sit in contrast to the standard design directly on the hot water/steam boiler. The steam valve Y8 is used additionally for the heating up of milk and provides for an optimal expenditure temperature of approx. 71 degree C, for the product milk.

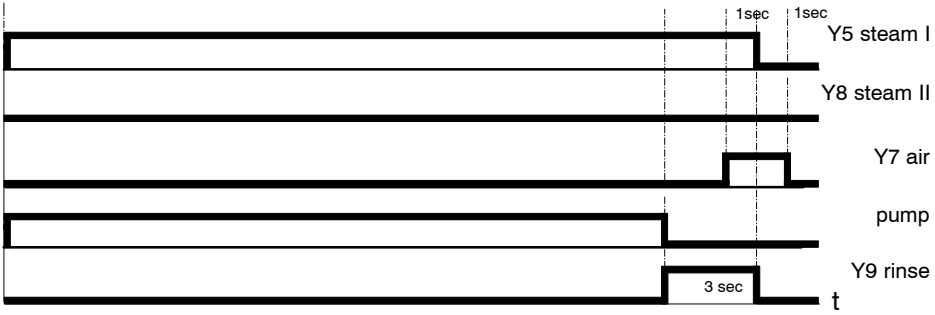
The additional steam pipe waives the Injectorprinzip. Thus independent sucking in of the milk is no longer possible. In the milk refrigerator is a pump, which promotes the milk to the expenditure head. The steam valve Y9 is in each case always needed for free blisters of the milk pipe by milk remainders, after the expenditure for product.

Operation diagramme: Milk foam (VIVA au lait)

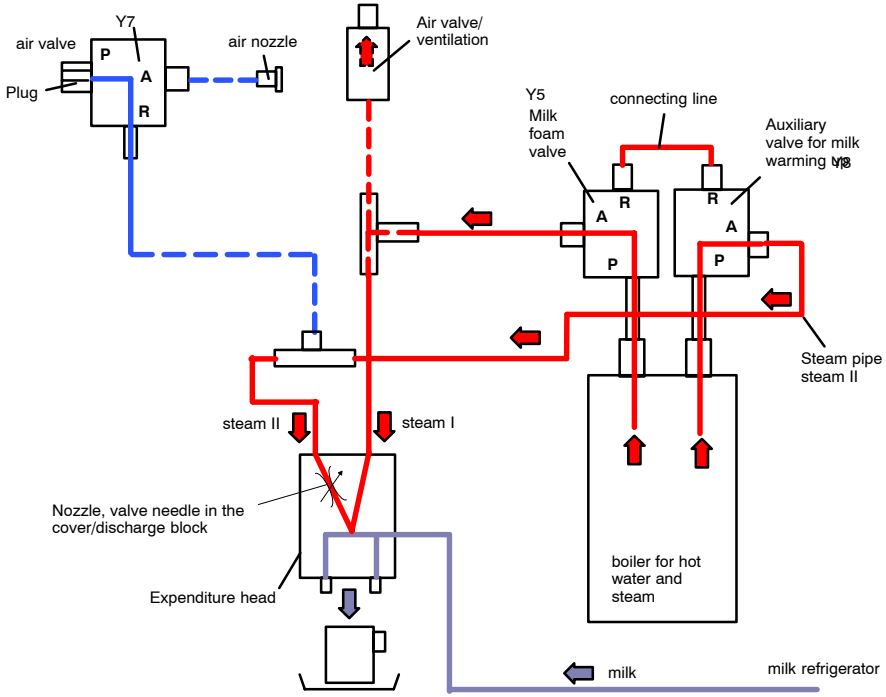


During requirement of milk foam, e.g. for Cappuccino, Valve Y5 opens and leaves steam I into the expenditure head, in order to warm the milk up. Air for milk foam is sucked in as with VIVA standard machine design over Valve Y7. After expenditure for product Valve Y5 switches off. The pressure drop takes place from Valve Y5 by means of the feeder pipe and Valve Y8 into the steam pipe II.

Flow chart: ”milk foam”

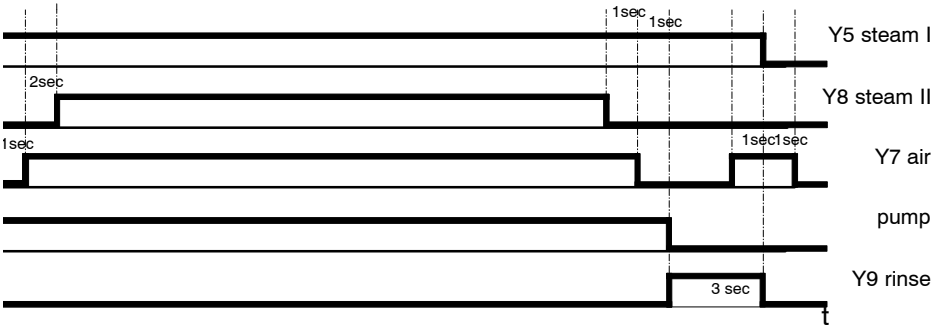


Operation diagramme: ”milk” (VIVA au lait)

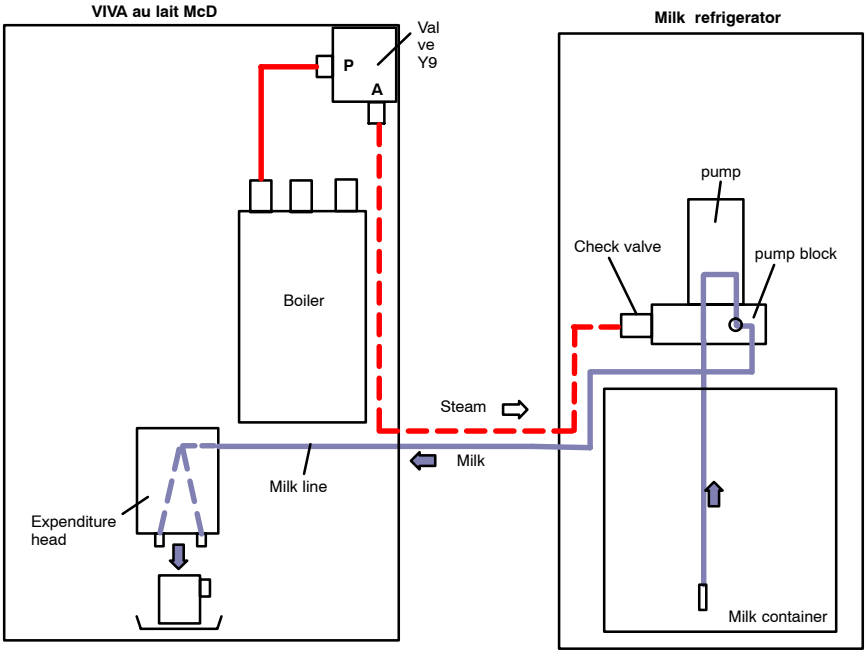


Valve Y5 and Y8 at the boiler (for steam I and II) opens. Steam flows into the expenditure head, in order to heat the milk up. By the additional steam pipe II the milk can be brought in the expenditure head on a temperature over 70 degree C. After expenditure for product Valve Y5 and Y8 drops. The pressure drop is made by the steam pipe II.

Flow chart: ”milk”

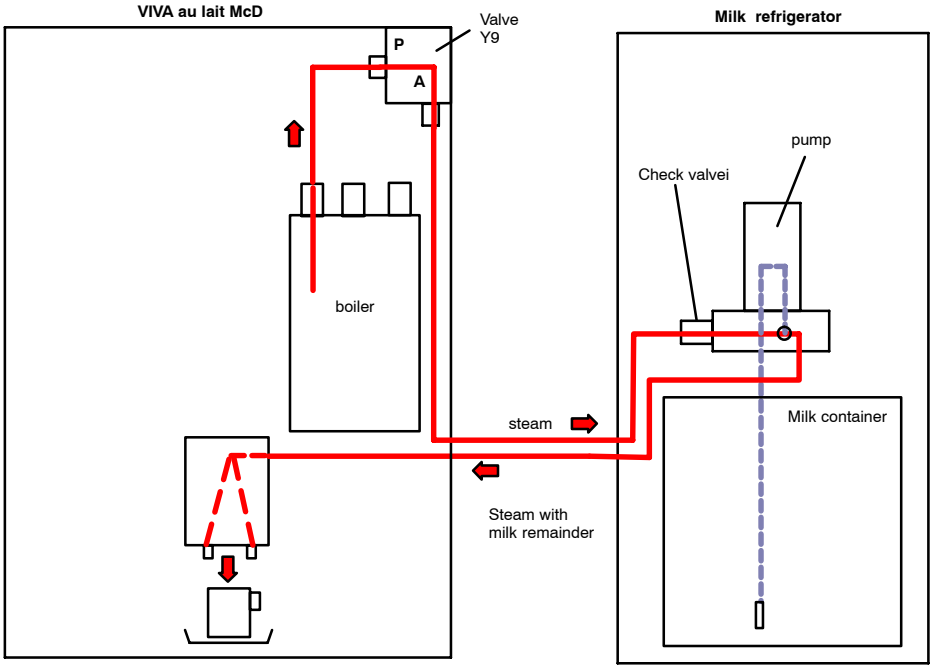


Operation diagramme: ”milk” – refrigerator with 1 milk container



During requirement of a milk product, e.g., the pump milk from the milk container promotes Cappuccino. The milk flows over pump block and milk line to the expenditure head and with steam is heated up there. The check valve prevents that milk arrives into the steam pipe at Valve Y9.

Operation diagramme: ”free blisters of the milk line”



Valve Y9 opens for aprrox. 3 sec. after the expenditure for product, in order to out–blow milk remainders in the milk pipe by means of steam. The pump in the milk refrigerator is not in enterprise and promotes therefore no milk. The check valve prevents that milk arrives into the steam pipe at Valve Y9.

Photo documentation VIVA au lait type 810. . .

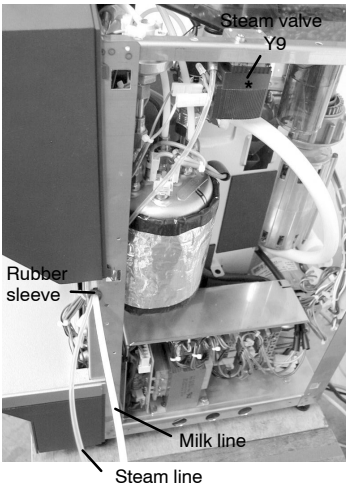


Illustration: VIVA au lait, right side

Steam valve to free blisters of the milk pipe of milk remainders. Connecting cables steam and milk for the connection at the Viva milk refrigerator. The steam pipe is to be led by the rubber sleeve.

*only with VIVA au lait

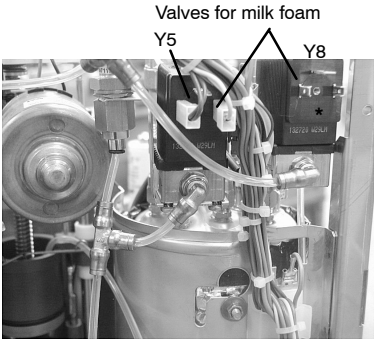


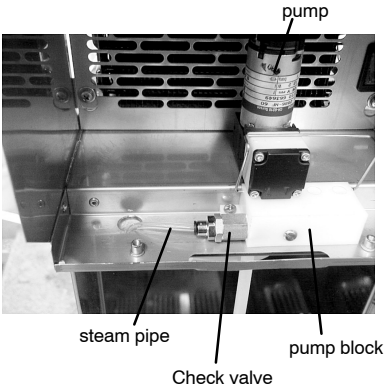
Illustration: VIVA au lait, front side

Valves Y5 and Y8 are for milk warming up. Auxiliary steam valve Y8 sits right. Valve Y5 is active with milk foam products.

*only with VIVA au lait

Photo documentation

VIVA au lait type 810 . . ., Milk refrigerator with 1 pump



Pump block with a pump and a check valve.

The steam pipe is attached directly to the check valve.

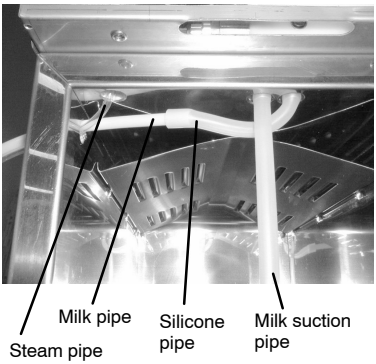


Illustration: Milkfridge VIVA au lait

The transparent steam pipe is led upward by the interior of the milk refrigerator to the check valve.

The milk pipe becomes approx. 3 cm into the silicone pipe at the pump block pushed in.

Photo documentation

VIVA au lait type 810 . . ., Milkfridge with 1 pump

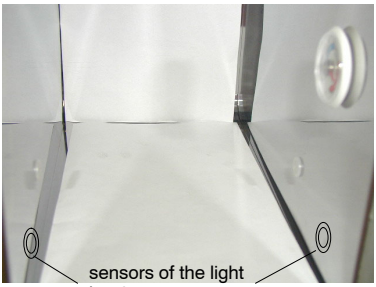


Illustration: Milk refrigerator with sensors for level announcement

The sensors of the level announcement continue to lead a signal, after the minimum supply level is fallen below in the milk container.

The sensors of the level announcement on the right and left side in the cooling subject are to be kept always clean, in order to guarantee the function.

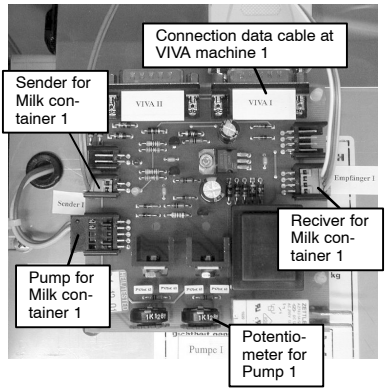


Illustration: Plate in the milk refrigerator

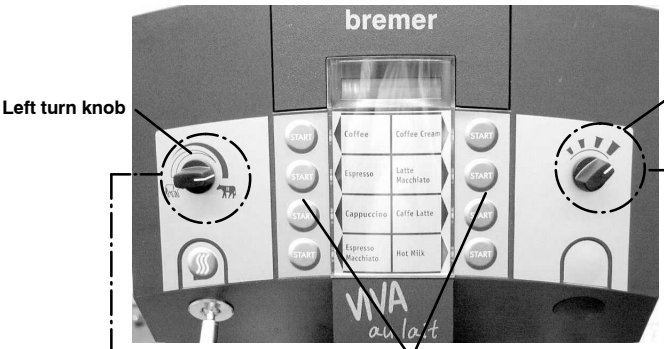
The basic adjustment potentiometer for pump: 14.9 V, with the voltmeter based on the pump.

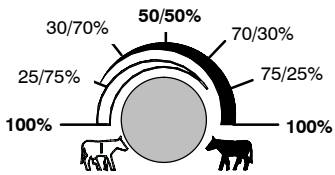
Functional description

The VIVA au lait has two more valves than the VIVA standard-model. As opposed to the standard model, on the VIVA au lait the magnetic valves are seated directly on the boiler.

This results in a significant reduction of condensation build-up. The steam valve Y9 is for blowing the milk pipe clear of milk residue, always after dispensing the product.

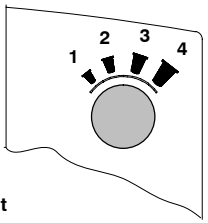
Functional diagram: VIVA au lait, with two milk containers





Milk metering

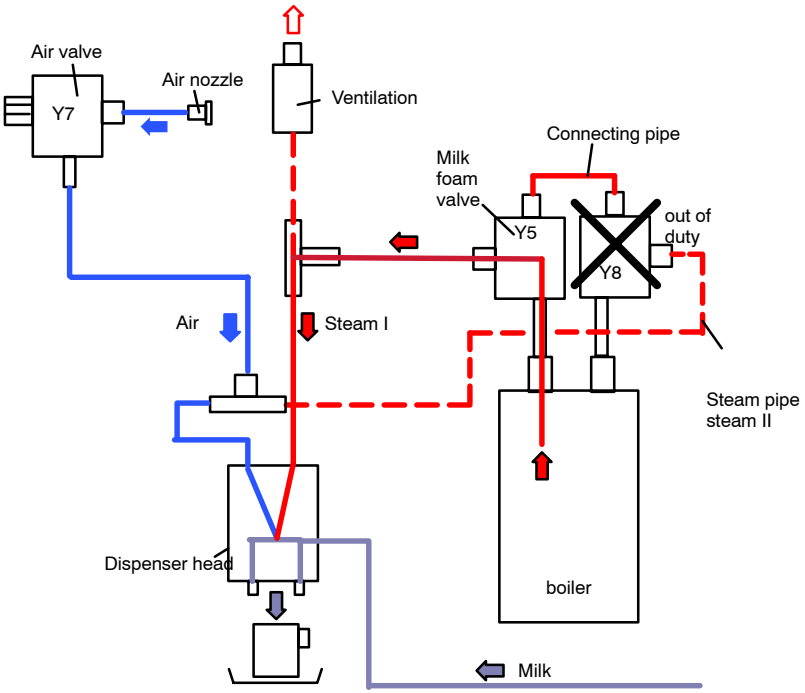
The milk metering can vary on a percentage basis according to the position of the turn knob from milk type 1 and / or milk type 2.



Product-adjustment

Four different brew parameters can be set for each product. Thus 32 products with individual settings can be produced from 8 basic products.

Functional Diagram: “Milk foam” (Viva au lait)

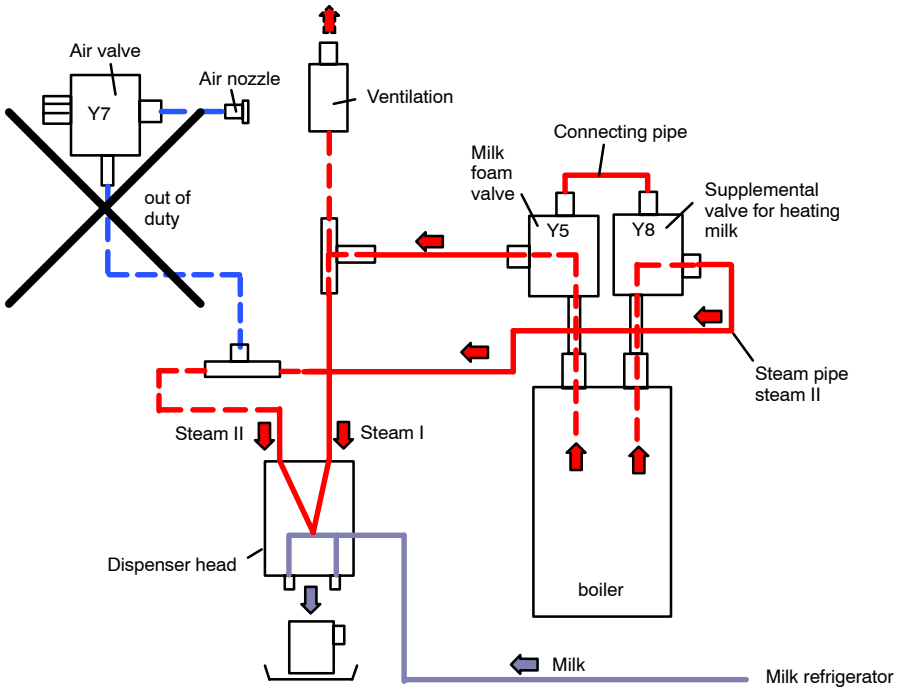


If Milk foam is required, for example for cappuccino, valve Y5 opens and let steam I in the dispenser head to heat up the milk.

Air for Milk foam is drawn in via valve Y7, as is the case with the VIVA standard-design.

After dispensing product, valve Y5 turns off and lets steam into the steam pipe II via the connecting pipe and valve Y8 in order to blow out these pipes. Valve Y8 is not required for Milk foam.

Functional Diagram: “Milk” (Viva au lait)



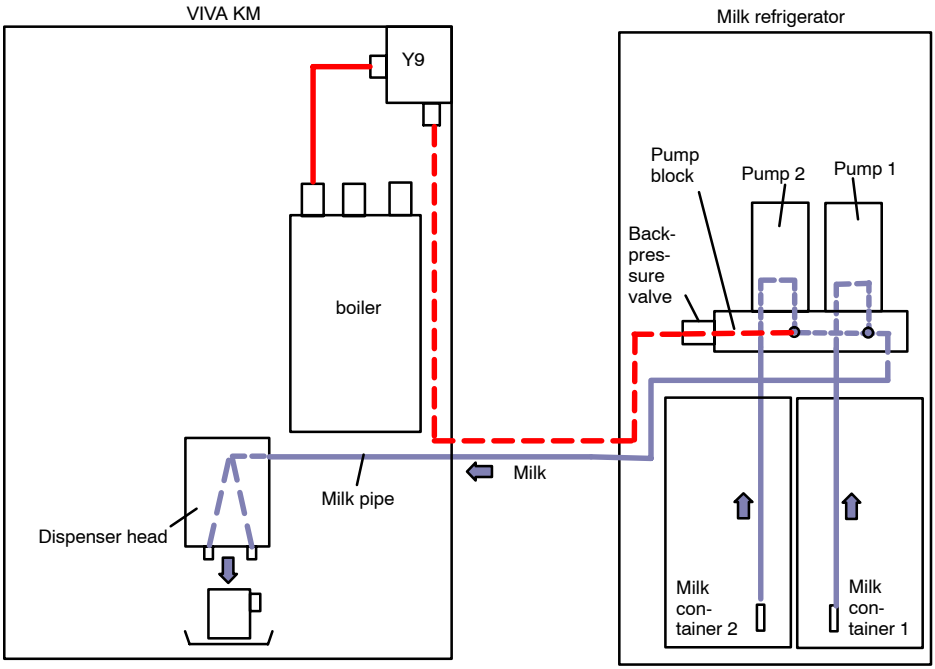
The valves Y5 and Y8 opens on the boiler (for steam I and II) to heat up the milk in the dispenser head.

Valve Y8 also warms the milk via steam pipe II in the dispenser head.

After dispensing, product valve Y8 drops out. Then shortly after the dropout, valve Y5 lets in steam via connecting pipe / valve Y8 and blows out steam pipe II.

No air suction (valve Y7) is required for milk products. Air valve Y7 only opens for products with Milk foam (for example cappuccino) to froth the milk with air.

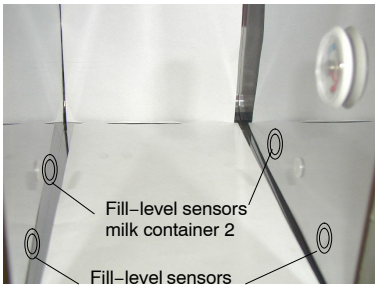
Functional Diagram: “Milk” (Viva au lait with milk refrigerator)



When requesting a milk product, cappuccino for example, the pump feeds milk from the milk container. Milk flows via the pump block and milk pipe to the dispenser head where it is heated with steam.

According to the position (left turn knob on the VIVA KM au lait), milk metering from the different milk containers can be individually adjusted.

Milk refrigerator with a fill-level sensor

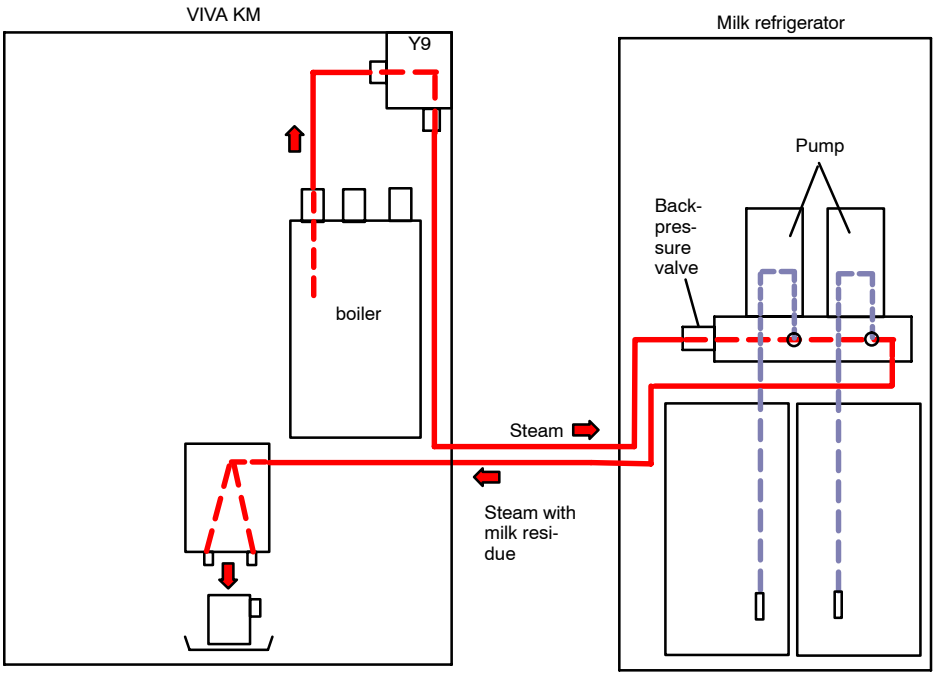


Milk refrigerator with fill-level displays

Each fill-level display conducts a signal when the fill level in the milk container is below the minimum fill-level.

The fill-level display sensors on the right and left side in the cooler drawer must always be kept clean in order to insure their function.

Functional diagram: “blowing out the milk pipe”



Valve Y9 opens after dispensing product to remove milk residue in the milk pipe by blowing out with steam.

The backpressure valve opens briefly and lets the steam pressure directly into the milk pump for an instant via the pump block; steam with milk residue is released via the coffee dispenser.

The pump in the milk refrigerator is not in operation and thus does not pump any milk.

Photo Documentation bremer Viva au lait

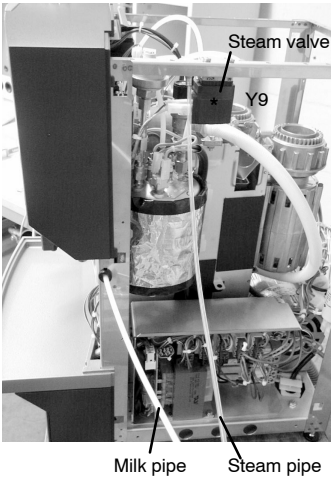


Fig. Viva au lait, right side:

steam valve for clearing the milk pipe of milk residue. Connecting pipes steam and milk for connection to the Viva milk refrigerator.

*only for Viva au lait

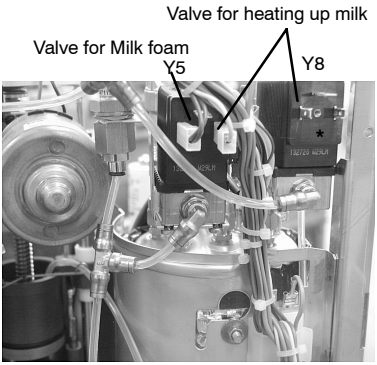


Fig. Viva au lait, front view:

Valves Y5 and Y8 are for heating milk. Supplemental steam valve Y8 is located to the right. Valve Y5 is active for Milk foam products.

*only for Viva au lait

bremer Viva au lait – milk refrigerator with two milk containers

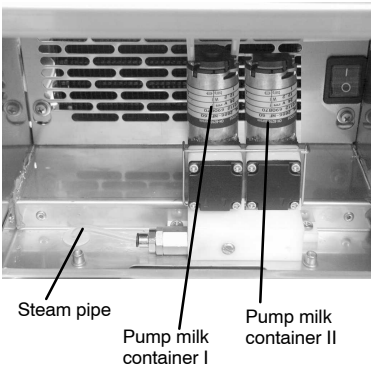


Fig. Viva au lait milk refrigerator:

Pump block with two pumps and one backpressure valve. The steam pipe is directly connected to the backpressure valve.

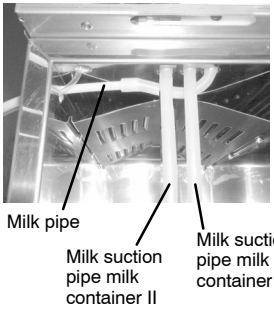
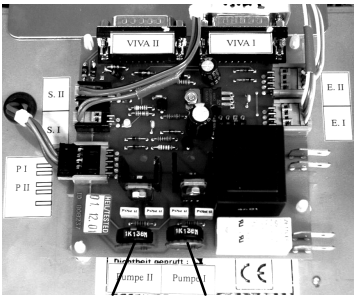


Fig. Viva au lait milk refrigerator:

The transparent steam pipe is routed through the interior of milk refrigerator and upwards to the backpressure valve.



PCB / Circuit board

The basic adjustment of the potentiometer is 14.9 Volt, based at the pump with the voltmeter.

10.13Description of function VIVA Barista, type 807 . . .

Description of function

The VIVA Barista corresponds to Version 3.12 in the basic functions of the standard VIVA with the software.

Differences in terms of software and on the hardware side to the VIVA V 3.12:

1.Mehrfachbruehung is void.

2.Turbo-enterprise is void.

3.Attitude Dispenser for steam proportioned/undosiert is void.

4.Product key 4 (Cappuccino simply) becomes the CLEAR key of the pile function.

5.Product key 8 (Cappuccino doubles) is used for the start of the intermediate flushing.

6.Temperature price increase steam cock with additional sensor in the discharge pipe.

7.Slidegate valve for Aufschaeumen or heating of the milk up.

It is added:

1. Product preselection:

- Products (50 is demand for customer) can be preselected – also the same several times up to 99.
- The preselected products are stored on a pile and processed successively.
- The number on the pile of products present is indicated at the display, above right.
- In the second display line becomes, if available, the product which can be manufactured next indicated.
- The product pile is not deleted in the case of errors, which are to be eliminated by the user.
- With the CLEAR key the product pile can be deleted. A current brewing is terminated.

2. Intermediate cleaning

- With the rinsing key you can start the flushing of the brewing unit with hot water. The flushing is several times repeated by repeated pressing.
- During the flushing the brewing unit is rinsed with hot water and it runs from the dispenser.

3. Dispenser for steam: Like standard VIVA

Exceptions:

- Second temperature sensor in the Dispenser in front of the steam pipe. With this temperature sensor the medium temperature in the preparation container can be measured in each case.
- In the service menu the switching off temperature between 0–90 degrees C can be stopped. The maximum temperature is firmly adjusted to 90 degrees C.

Function of the steam valve price increase with temperature sensor in the discharge pipe

Case 1

Steaming branch operates briefly

- Dispenser for steam switches on, if temperature is smaller than target medium temperature.

Target temperature in the medium reaches

- Dispenser for steam switches off.

Case 2

Steaming branch operates briefly

- Dispenser for steam switches on, if temperature is smaller than target medium temperature.

Steaming branch operates briefly

- Dispenser for steam switches off

Case 3

Keep pressed to steaming branch

- Dispenser for steam also switches on, if temperature is more largely/equal target medium temperature.

Maximum temperature reaches

- Dispenser for steam switches off even if tracers is still pressed.

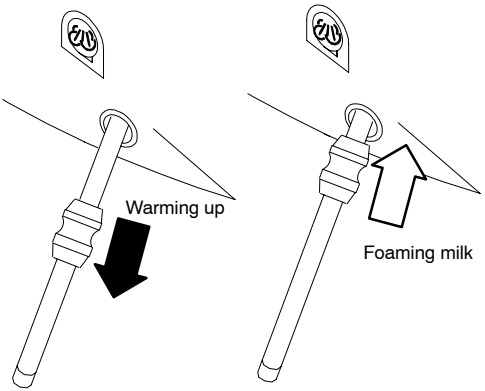
4. Slidegate valve / Handle for foaming the milk

By means of a slidegate valve the function foaming or heating up the milk can be stopped. With the foaming function additionally air is sucked in over the steam pipe.

Assembly drawing for steam pipe with sensor: Order no. 730971.

Design assembly: steam pipe with sensor, Ident. no. 730971

Function of Steam dispenser



Dispenser for steam installed

Dispenser for steam deinstalled

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