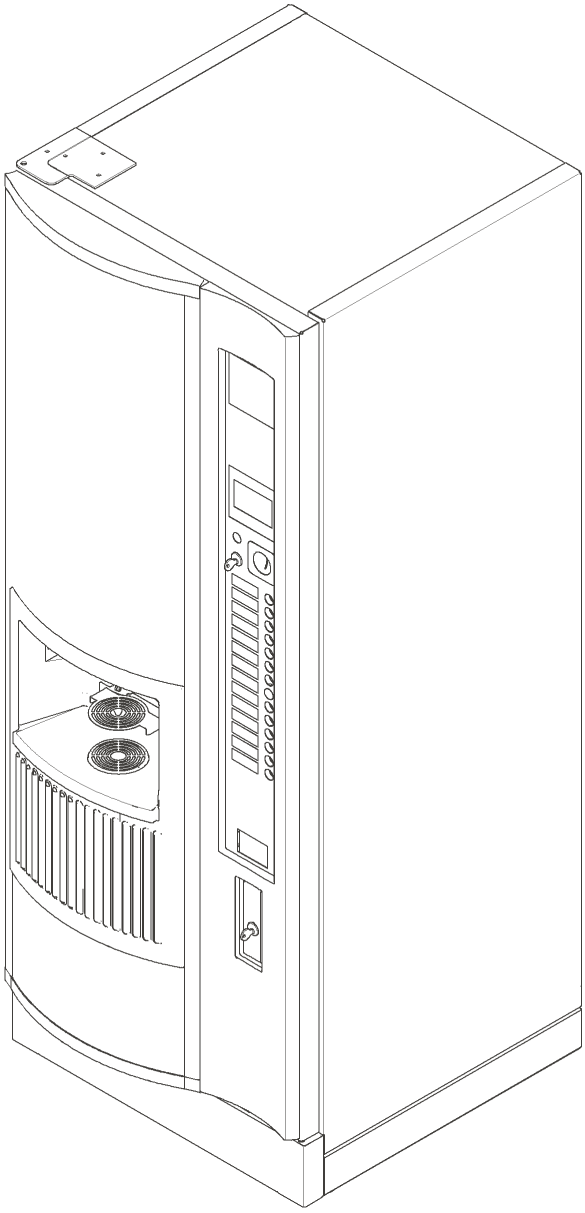

Hot drinks vending machine CVS 500

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Index 03
As at: 15.05.06

Technical manual

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Changes

Index	Date	Short description	Pages
00	23.08.04	Manual written	
01	11.04.05	Adaptation to new software hte5s318	all
02	27.09.05	Adaptation to new software hte5s313	54-63
03	15.05.06	Adaptation to new software hte6s510	53-125

Technical manual CVS 500

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1 GENERAL INFORMATION

The CVS 500 vending machine dispenses instant hot beverages, which can be prepared to suit individual tastes. A selection of coffees and chocolate drinks are available along with tea and soup as options. The coffee is brewed using freshly ground beans.

Seven variants of the CVS 500 vending machine can be supplied (5301 - 6403). The standard external design is consistent throughout the range. The difference between the variants is the number of product containers and mixers inside the machine. Refer to chapter 13.1 for additional information. Your particular model number can be found inside the machine.
This manual is based on model 6402. Other variants are covered where applicable.

Drink selection is made by illuminated keypad. Once the selection button is pressed, the machine operates automatically.

A two-line LCD provides selection and system information.

Data can be entered and retrieved via an infrared interface located next to the display, using a hand-held data transfer unit.
Machine controlling may be performed by SIELECTOR software for PC-supported programming on Windows basis. The software supports the duplication, creation, saving and printing out of all parameters.

To access machine functions a service keypad is located inside the door.

All machine functions are controlled and checked via a microprocessor module. This unit records and saves sales and error statistics.
A telemetry unit can be installed for remote data transmission and retrieval.

The coffee beans are ground in the integrated grinder and then transferred to the brewing unit.
The coffee is brewed at a water temperature of 93°C and a water pressure of 10 bar. Thus the coffee has a special flavour and aroma and is extremely gentle on the stomach.
The dry coffee powder is put into the grounds container after the brewing process.
The instant products are transported from the product containers to the mixer bowl. There they are blended and dissolved in hot water. The prepared hot drink is held in the drink dispenser until a cup is detected by a sensor.
If no cup is detected beneath the dispenser at the time of drink selection, a cup automatically drops. The special features of this sensor are explained in chapter 4.9.

An integrated rinse program facilitates daily machine cleaning.

A moisture sensor monitors the liquid level in the drip container.

The vending machine is prepared as standard for operation with a coin mechanism.

1 Technical manual CVS 500

General information

1.1 Hotline

For information or orders please contact:

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Telefax: **(01922) 743659**

E-Mail: **info@sielaff.co.uk**

WWW: **www.sielaff.de**

This vending machine was installed on your premises by:

2 TECHNICAL DATA

Dimensions W x H x D	700 x 1830 x 770 mm
Weight	ca. 230 kg
Product quantity	14 options max. (depending on the variant)
Dosing	Freely programmable or can be set automatically depending on cup size
Drink volume	May be set freely between 50 ml and 300 ml max. per vend Hot water max. 1.5 l
Water temperature	May be set from 70 – 95°C, standard setting 85°C
Dispensing rate	Approx. 180 cups per hour
Mixer speed	May be freely set between 0 – 17,000 rpm.
Cup unit	Holder for cups of 70 mm Ø (150 ml and 180 ml cups) Special sizes on request
Cup unit capacity	500 cups max.

Product container

Container width **Container volume**	**67 mm** **4,900 ccm**	**78 mm** **5,800 ccm**	**137 mm** **10,000 ccm**
Instant coffee	1,000 g	1,250 g	---
Sugar	4,000 g	5,000 g	---
Whitener/ topping	2,500 g	3,000 g	---
Cocoa	---	---	6,000 g
Tea	4,500 g	5,500 g	---
Soup	3,500 g	4,500 g	---
In-Cap	2,500 g	3,000 g	5,000 g

Bean container	3,000 g

2 Technical manual CVS 500

Technical data

Electrical connection	230 V – 50 Hz
Power input	Boiler heater 2.8 kW, total 3.5 kW max.
Load capacity of service socket	230 V ~, 16 A, max. 2500 W
Water connection	R $^{3}/_{8}$“ internal screw thread, flexible water hose with protective outer layer, 200,000 - 600,000 Pa (2 - 6 bar)
Ambient temperature	Standard: 0-32°C with additional heater: -15-32°C
Infra-red interface for data transmission	according to EVA-DTS
On-site electrical connection	Socket outlet with earthing contact (installed according to VDE)
On-site fusing	Miniature circuit breaker L16A
On-site water pressure	min. 200,000 Pa; max. 600,000 Pa (2-6 bar), otherwise a pressure reducer must be used
On-site water hardness	max. 8°dH, otherwise water must be pre-filtered
Residual current circuit breaker	$I\Delta_N$ = 30 mA is recommended or can be retrofitted as an option.
Max. sound pressure level	< 70 dB (A)

3 SAFETY

The operating manual should be kept in an easily accessible place.

- The vending machine must only be used to supply hot drinks.
- Before commissioning of the machine the operating manual should be read and understood.
- When the vending machine is being transported, installed, serviced or repaired, it is recommended to observe the following regulations and guidelines in their latest version:
  - Regulations of the responsible utility company
  - Accident prevention regulations
  - Trade association guidelines
  - Industrial code
  - EU guidelines
  - VDE regulations (Association of German Electrotechnical Engineers)
  - Observance of the current hygiene regulations
  - Country-specific regulations
- The machine must be put up in a level position. It has to be secured to the wall or to the floor.
- Machine installation and repairs may only be performed by trained service engineers.
- If the connection cable is damaged, it may only be replaced by a service engineer of the manufacturer or an equally qualified person.
- The mains plug must be easily accessible.
- Appliance plugs should never be inserted in sockets when damp or touched with wet hands
- Liquids dispensed from the machine are hot. To protect against scalding following the start of the vending process do not reach under the drink dispenser.
- The vending machine may be optionally retrofitted with a residual current circuit breaker should the latter not already be installed on-site.
- When the main switch is switched off voltage is still supplied up to the main switch (see wiring diagram). Ensure that mains plug is disconnected when servicing the vending machine.
- During all work on the machine with the door open and inserted service key please ensure that the selection keypad is not pressed inadvertently.
- Switch off the main switch prior to cleaning jobs
- Use only approved agents, compatible with foodstuffs, for cleaning purposes
- The venting clearance between the rear wall of the vending machine and the wall at the mounting site must be observed.
- The machine is only suited to be put up indoors in dry and heated rooms.
  The vending machine may be retrofitted with a winter package as an option (indoor heater and heat insulation).
- Use only original spare parts
- Only products approved by SIELAFF may be used.
  Any other use is not in accordance with the purpose of the machine. The manufacturer is not liable for any damage resulting therefrom. The sole risk is borne by the operator.

NOTE
Any modification or conversion of the machine is prohibited!
SIELAFF disclaims liability for any defects in these cases!

3 Technical manual CVS 500

Safety

3.1 Explanation of symbols and signs

This vending machine was manufactured in accordance with state-of-the-art technology standards. Nevertheless, the design of the machine necessitates that due care and attention must be observed at all times.
In order to assure sufficient protection for the operator, additional safety instructions are supplied as detailed below:
Only if these are observed sufficient safety during operation is assured.

The marked text sections differ in meaning:

DANGER!
Indicates imminent danger possibly resulting in death or serious injury.

WARNING!
Indicates a potentially dangerous situation, which may result in death or serious injury.

CAUTION!
Indicates a dangerous situation possibly resulting in slight injury or machine damage.

NOTE
Guidelines to facilitate machine operation.

IMPORTANT!
Guidelines to facilitate machine operation. Non-compliance may damage the machine or its immediate environment.

In addition the following danger symbols are used in some places.
Special care should be taken.
The symbols have the following meaning:

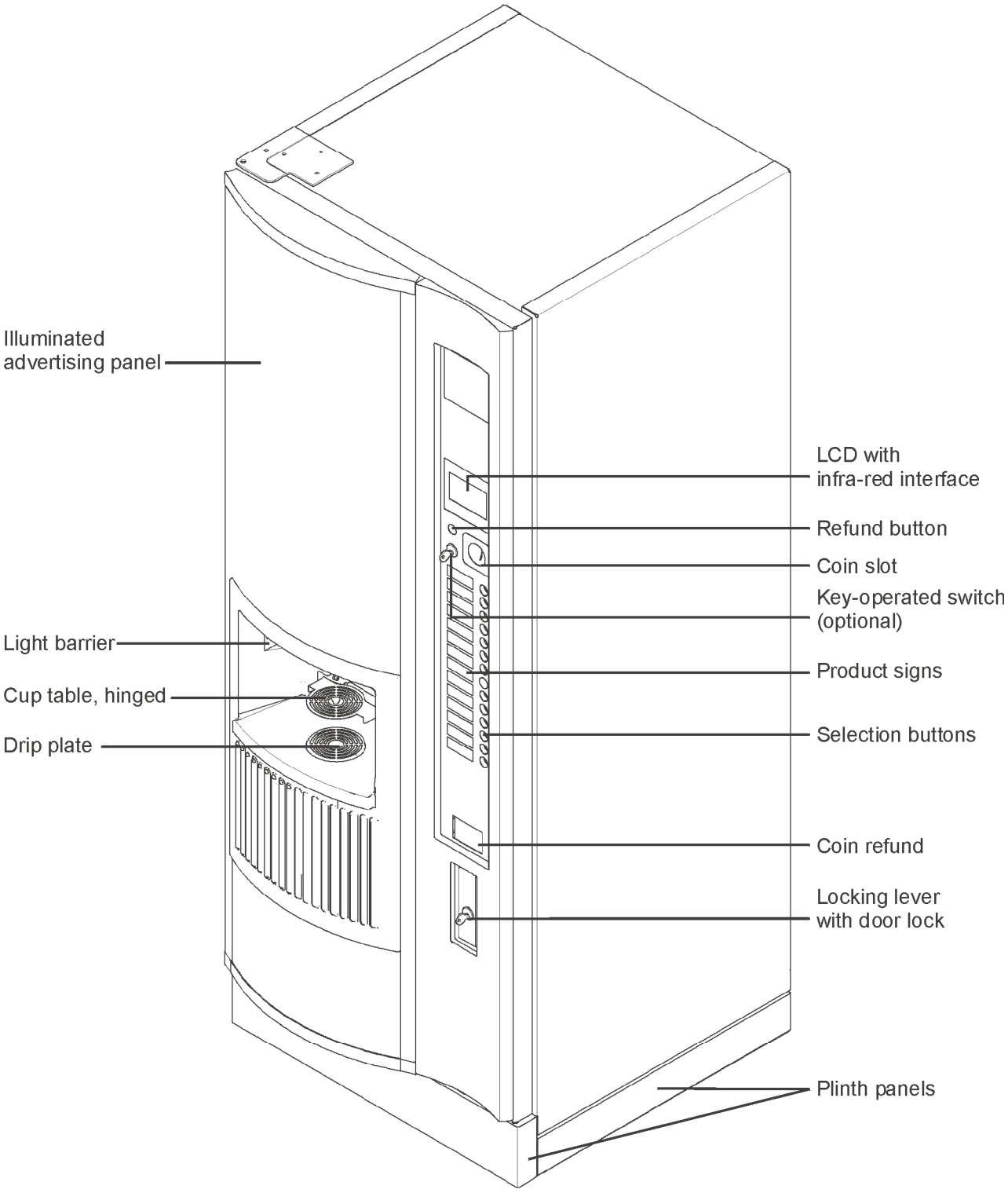
WARNING! Electrical power! Risk to life!
Live parts are mounted near this symbol. Covers labelled as such may only be removed by a qualified electrician.

WARNING! Hot surfaces
This symbol is attached to surfaces that become hot.
Risk of serious burning or scalding.
The surfaces may remain hot once the machine is switched off. Work near these surfaces should only be performed once they have cooled down.

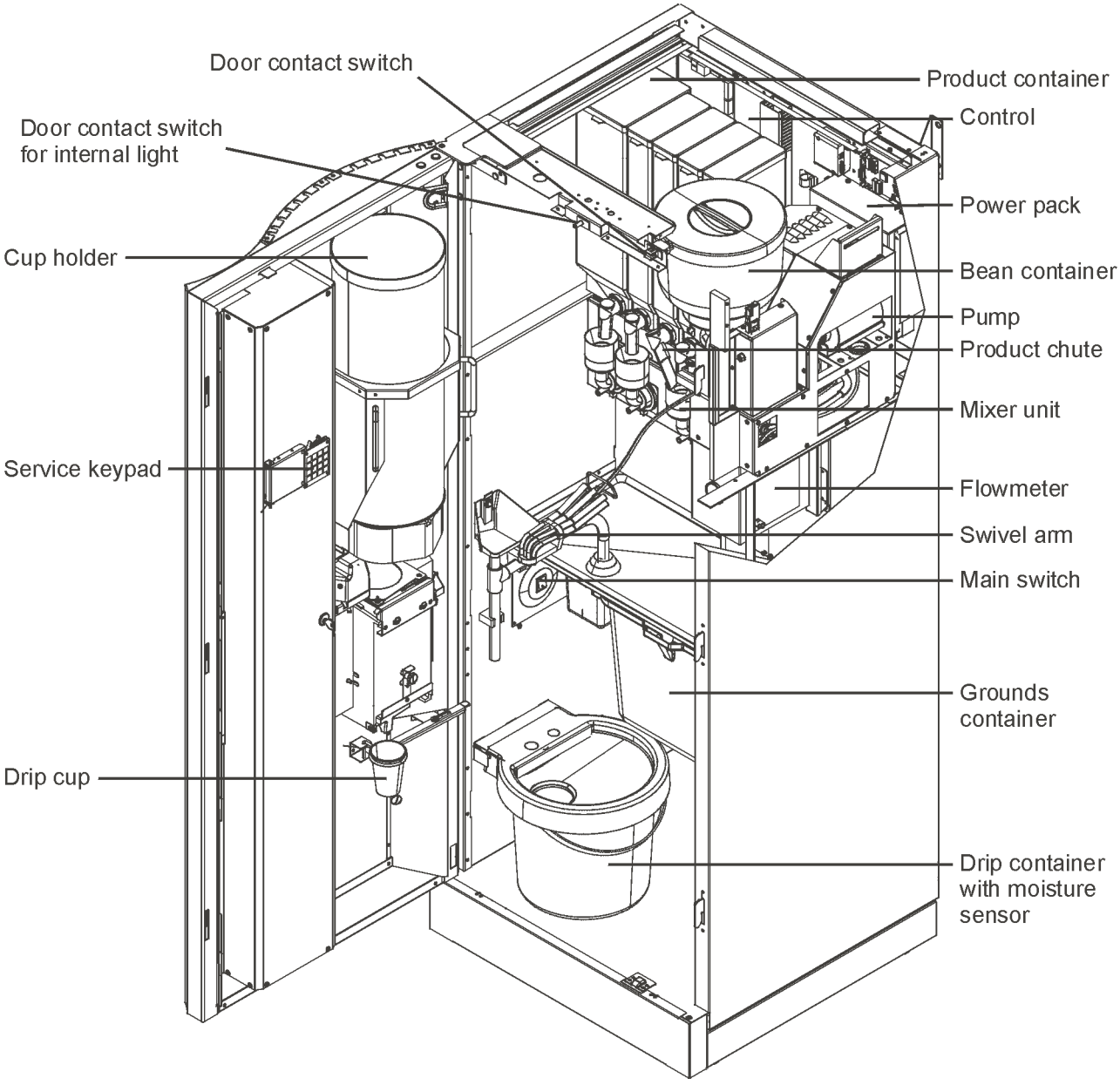
Handling regulations for dealing with electrostatically sensitive components and modules (ESD)
Covers labelled with the symbol opposite conceal dangerous electrical voltages.
Touching plug connections, printed conductors and component pins should be avoided at all times.
Only qualified personnel with ESD knowledge are authorised to remove covers.

4 MACHINE DESCRIPTION

4.1 Exterior view

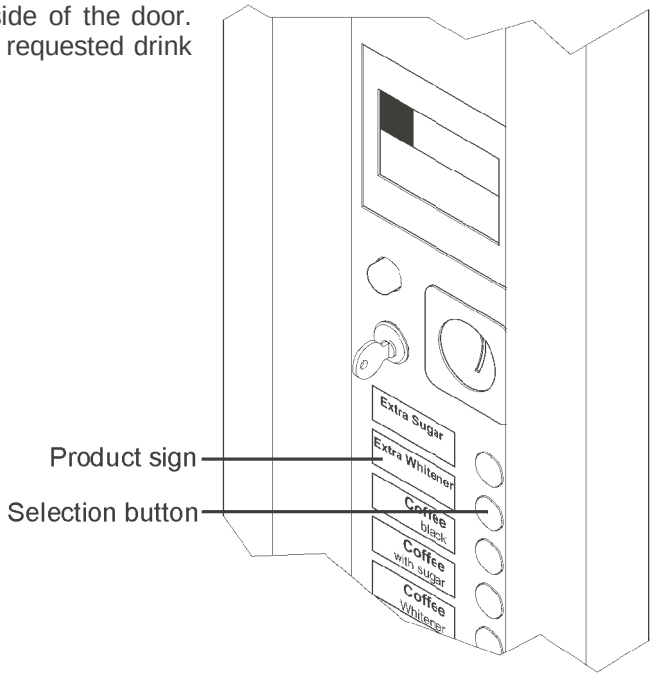


4.2 Interior view



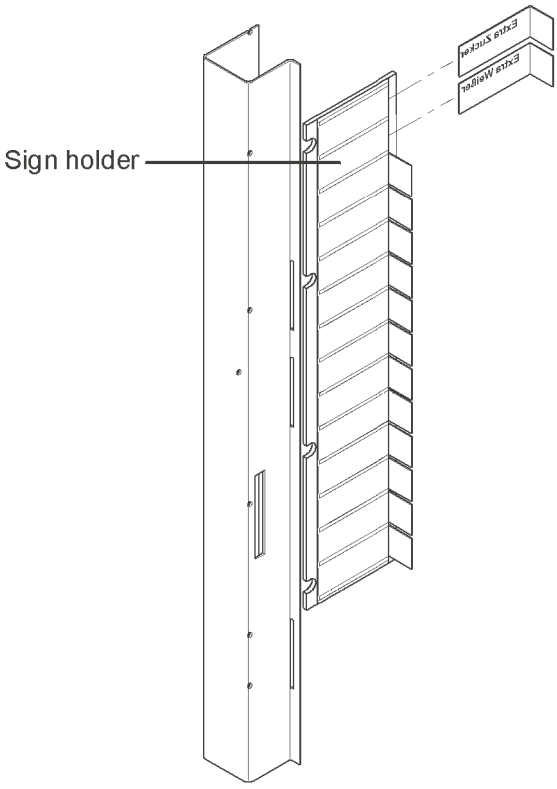
4.3 Selection keypad/ product signs

The selection keypad is located at the right hand side of the door. Drink dispensing is performed immediately after the requested drink is chosen via the selection keypad.



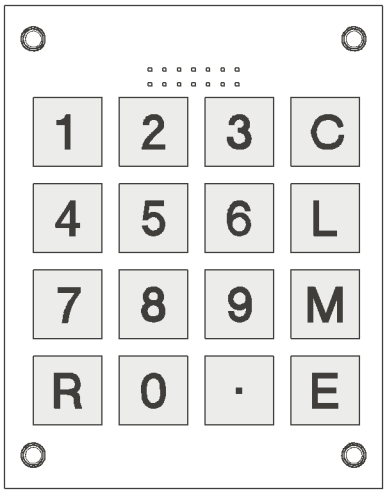
Replace product signs

The product signs are inserted in the sign holders on the door interior.
They may be pulled out from the side for replacement purposes.



4.4 Service keypad

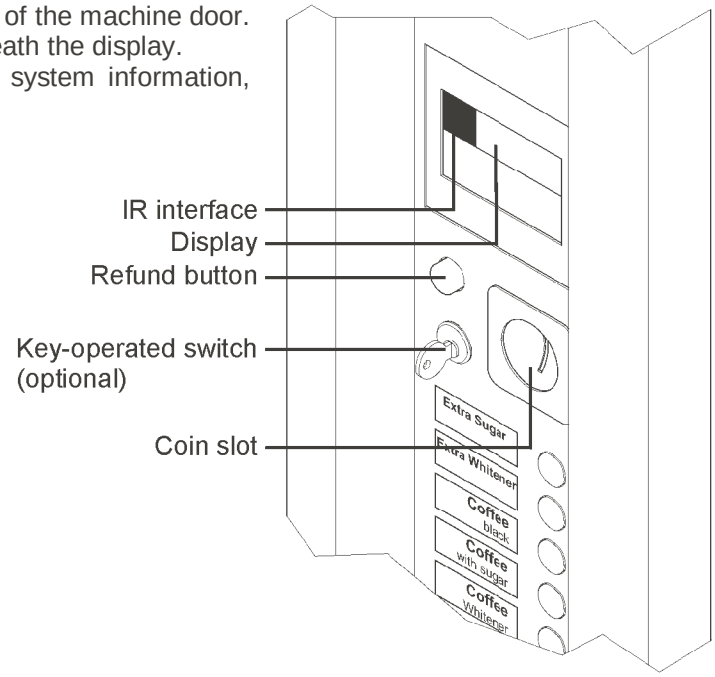
The service keypad is located on the machine door interior.
For service purposes, the keypad may be lifted up and swivelled into the holder. This permits a simultaneous view of the display and keypad.



Button	Meaning
C	• Acknowledge/delete error messages • Data deletion
L	• Menu selection • Backward step in menu • Display of machine data in the menu Service (M8)
M	• Menu selection • Forward step within a menu • Execution during test functions in the menu Service (M8)
E	• Entry acknowledgement • Progressing in the menu • Acknowledgement of a menu selection
R	• Return to vending mode
1	• Progress selection or scroll within a menu

4.5 Display

The display is located at the top right hand side of the machine door.
A key-operated switch (optional) is located beneath the display.
The two-line display indicates drink selection, system information, product prices and the current operating status.



4.5.1 Contrast setting

The display contrast may be adjusted in very bright rooms or to the light conditions in direct sunlight.

NOTE
To permanently save the contrast change the door switch must be actuated during modification.

Procedure

- Hold down C button for at least 2 seconds. The contrast changes continually. Hold down as required until the writing becomes visible.
- Once the optimum contrast setting is achieved, release the C button

4.6 Infra-red interface

The machine is fitted with an infrared interface on the left side on the display. Via this, you may enter and read out data for the machine control. A mobile data capture device (MDC) is required for this process.

Machine programming may be prepared on the PC and entered quickly and easily with the help of the on-site MDE.
In this way, it is also possible to copy a specific customer configuration from one machine to another.
(Further information on the infrared interface may be obtained directly from SIELAFF).

4.7 Product container

NOTE
The product containers are numbered throughout and labelled with the appropriate product name.
The respective container positions in the machine are labelled identically.

NOTE
Please observe hygiene regulations!
General hygiene requirements must be observed, e.g.:

- Wash hands before filling the product containers
- Avoid direct contact with the product
- Do not sneeze or cough into the product/container
- Following cleaning do not touch the container interior again

4.8 Main switch/ service socket

The machine features a main switch.
The machine may be powered down via this main switch.

DANGER! Electrical power
Risk to life!
When the door is open, the filter and interior light will continue to be supplied with power when the main switch is switched off.

- Disconnect the mains plug when working on these parts.

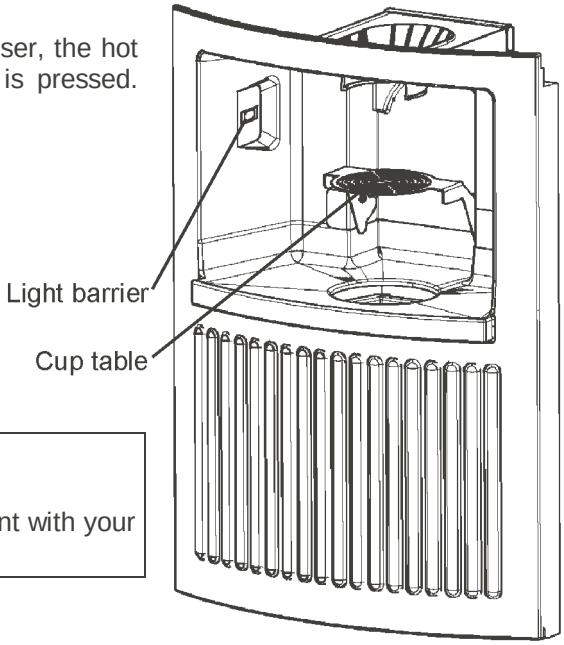
Auxiliary appliances required for a short time for service purposes may be connected to the service socket (laptop, vacuum cleaner etc.).

CAUTION! Overloading of the internal voltage supply
Machine damage possible!

- Do not use the service socket for permanent supplying of other appliances.

4.9 Light barrier

A light barrier monitors the drink dispensing area.
If the light barrier detects an object under the drinks dispenser, the hot drink will be delivered instantly after the selection button is pressed. Otherwise, a cup will be supplied from the cup unit first.



WARNING! Hot liquids
Risk of scalding!

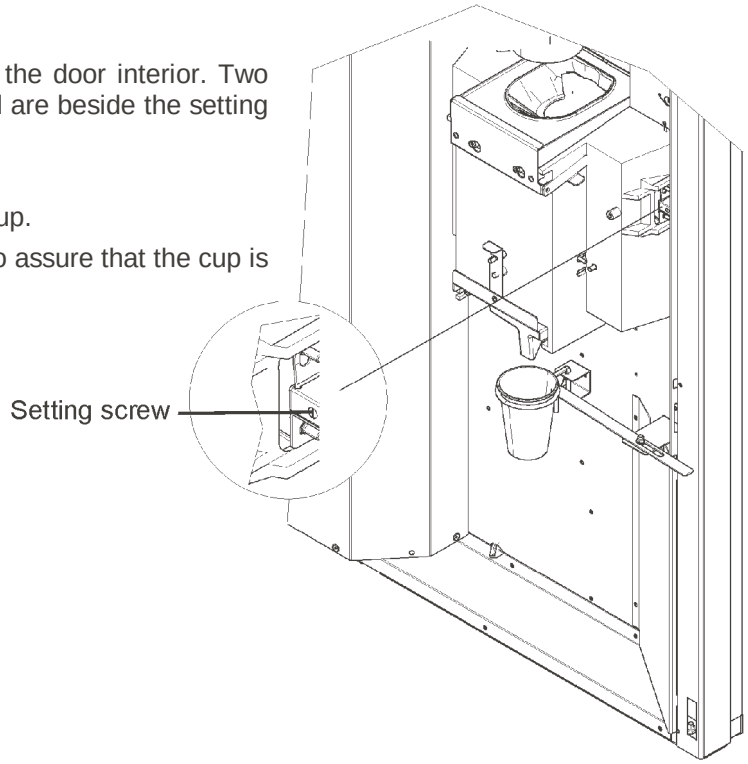
- Do not reach into the dispenser compartment with your hand

NOTE
The sensitivity of the light barrier must be adjusted to the light conditions of the machine position.

4.9.1 Set light barrier

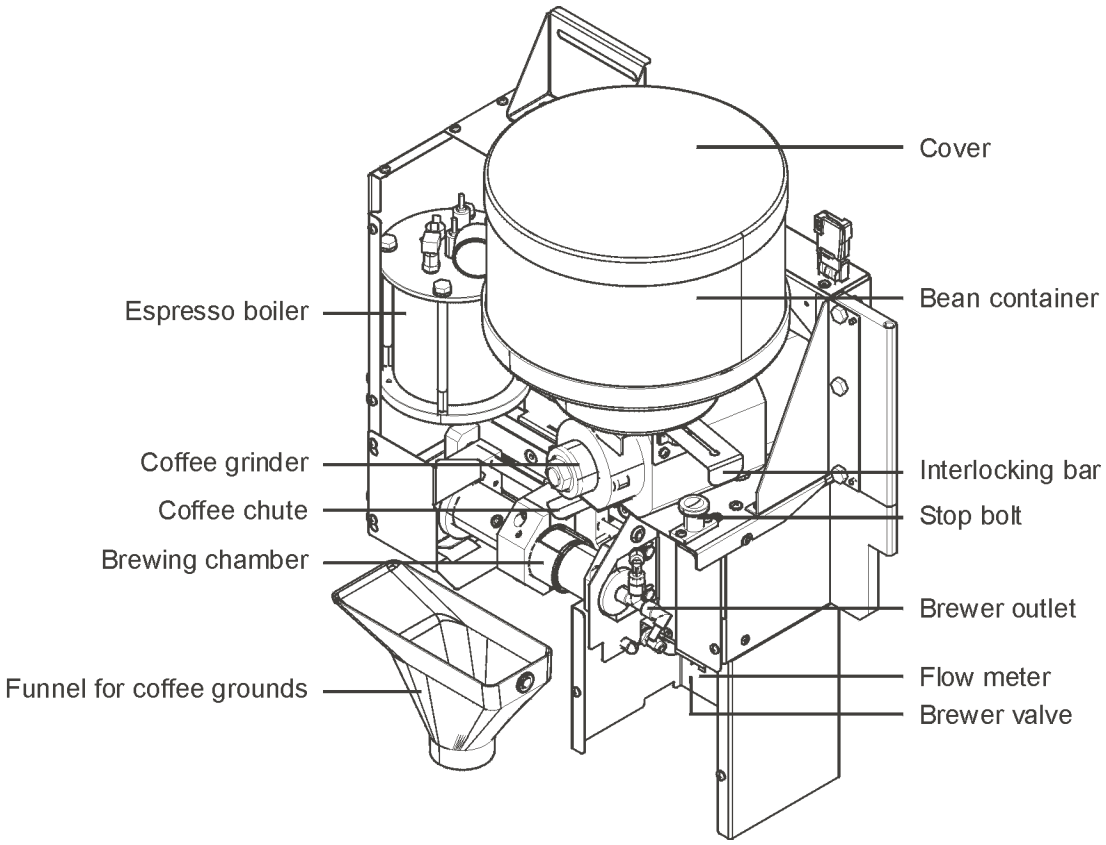
The light barrier setting screw is located on the door interior. Two LEDs that light up when an object is detected are beside the setting screw .

- Place cup on cup-table.
- Adjust setting screw until both LEDs light up.
- Remove and position cup several times to assure that the cup is always detected. Check LEDs.



4.10 Brewer unit

The grinder with the bean container can be pulled out for easier refilling.
The bean container can be taken out for cleaning.



5 CLEANLINESS/ HYGIENE

Machine cleanliness is the responsibility of the operator.

When handling the vending machines general hygiene requirements must be observed.

- Wash and disinfect hands prior to handling foodstuffs
- Use only cleaning agents compatible with foodstuffs for machine cleaning
- Remove mixing bowls, hoses and mixer housing and rinse under running water
- Following cleaning parts that come into contact with foodstuffs should no longer be touched.
- Avoid sneezing and coughing when handling exposed foodstuffs.
- Opened products must be properly closed and stored safely.
- Product residue must be removed
- Store products separately, in a cool dry place
- Direct contact with the product should be avoided

5.1 Perishable foodstuffs

WARNING! Perishable foodstuffs
Risk of food poisoning and illness!

- Please adhere to the expiry date of products specified by the manufacturer
- Promptly replace products past their sell-by date by products with a valid expiry date
- Do no use products the expiry date of which has elapsed
- Do not use products that are about to reach their expiry date
- Only fill with products suitable for vending machines
- The products must not be stored in the machine

6 FIRST-TIME COMMISSIONING

NOTE
Prior to mounting and commissioning the machine, the attached operating manual must be read fully and understood.

NOTE
If the water hardness at the mounting site exceeds the prescribed value (8°dH), a filter must be fitted.

6.1 Mounting

WARNING! Danger of tilting
Injury due to crushing!

- Secure machine to wall or floor

WARNING! Short circuit due to water
Risk to life! Machine damage!

- Do not erect the machine on a surface that is cleaned with a water spray
- Do not clean the machine with water from a hose

NOTE
The machine may only be erected and commissioned by trained personnel!

NOTE
For safety reasons the machine connection socket must be easily accessible.

- The machine may only be operated in dry, heated and well-ventilated rooms. The vending machine may be fitted with a winter package as an option.
- On selecting the mounting site, please ensure that the machine may be easily accessed for operation, filling, cleaning and maintenance purposes.
- To assure perfect machine function it must stand exactly horizontally. The feet are adjustable and can compensate floor irregularities. It should furthermore be ensured that the front right hand foot is not under pressure.
- The supplied wall clearance spacers should be used so that a wall clearance of 50 mm is observed to ensure perfect air circulation.
- Should wall securing not be possible the machine must be fixed to the floor.
  Floor securing components may be ordered, at least two per machine.
- The supplied panels may be mounted on the feet and removed for cleaning the floor.
- The machine is not suitable for mounting outdoors.

First-time commissioning

Sequence

- Erect machine at its final mounting site and, with the help of the adjustable feet, adjust so that the machine door closes properly. The front right adjustable foot must be relieved.
  If necessary, readjust door hinges and actuators for door contact on the machine door.
- Prior to machine connection rinse on-site water line thoroughly
- Connect machine with pre-mounted water hose to the cold water supply.
  The maximum permissible water supply pressure must not exceed 600,000 Pa (6 bar). If the supply has a higher water pressure, then a pressure reducer must be used.

CAUTION! Insufficient power supply
Machine damage!

- The existing electrical network must match the specifications on the type plate.
- Protect the appropriate power circuit on-site with maximum 16 A
- Only operate the machine on an earthed socket outlet installed according to regulations

NOTE
To connect the machine to the water supply only use the connecting hose supplied with the machine. The connecting hose must not be kinked.
Please ensure that the connection lines are firmly secured.
Only pipes that have been approved and are suitable for drinking-water must be used for connection.

6.1.1 Wall securing

Instructions for the wall securing are affixed to the machine rear .
The machine screw fittings are standard accessories.
Article reference: 991 00 005 96

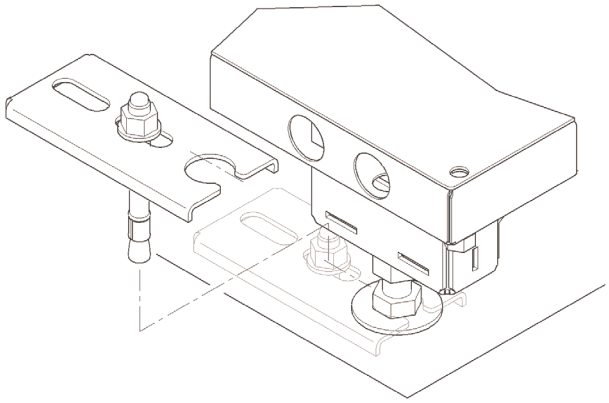
NOTE
If wall securing of the machine is not possible at the selected mounting site the machine must be fixed to the floor by securing components (at least 2 per machine).

6.1.2 Floor securing

If wall securing of the machine is not possible at the selected place of installation the machine must be fixed to the floor by securing components (at least 2 per machine). Article reference: 603 01 639 00

CAUTION!
The floor surface must be suitable for floor securing.
Make sure that there are no installations underneath the floor surface (cables, pipes, coil heating etc.).

- Position the machine at the place of installation
- Fix the floor-securing component to the adjusting foot and mark the drill holes.
  (The adjusting foot may have to be screwed out by approx. 4mm in order to fix the floor-securing component)
- Drill a hole with a diameter of 12mm at least 90mm deep into the floor.
- Clean the drill hole
- Hammer the threaded floor plug through the floor-securing component into the drill hole. The nut must be flush with the top edge of the thread.



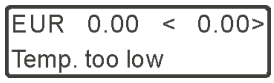
- Push machine to the place of installation.
- Insert washer between nut and floor securing component and screw nut tight (torque 50Nm). If the torque cannot be achieved no strain may be exerted on the threaded floor plug.

6.2 Commissioning

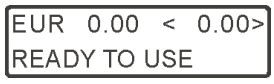
For commissioning the machine please proceed as follows:

- Once the coin mechanism is inserted or exchanged for a different make, the change return motor must be adjusted to the new coin mechanism by using the slots provided. The motor must not block, on the other hand, the coin validator arm should be opened as far as possible.
- Check all components to ensure they are complete and positioned securely.
- Switch on the machine by actuating the main switch.
  The vending machine switches on automatically once the machine door is closed. The instant boiler fills up with water automatically. The level sensors in the boiler open supply valves until the maximum level is achieved.
- The espresso boiler has to be filled manually. For this purpose enter the service number 88M in the menu Service (→ page 77).
- Switch on boiler heaters
  For safety reasons the control switches off the boiler heater as soon as one of the boilers is emptied. For commissioning purposes the boiler heater must be switched on in the Installation menu (M7). (see chapter 10.10)

  Until the operating temperature is reached, the corresponding information is indicated on the display. No drinks may be dispensed.

  Following a brief heating-up period (approx. 7 mins) the vending machine is operational.
  The message is displayed:

- Fill the product containers and position them correctly in the machine (see chapter 13.2).

Then the machine is ready for operation. The machine operates with the saved factory pre-settings.

6.3 Product container

6.3.1 Configuring the containers

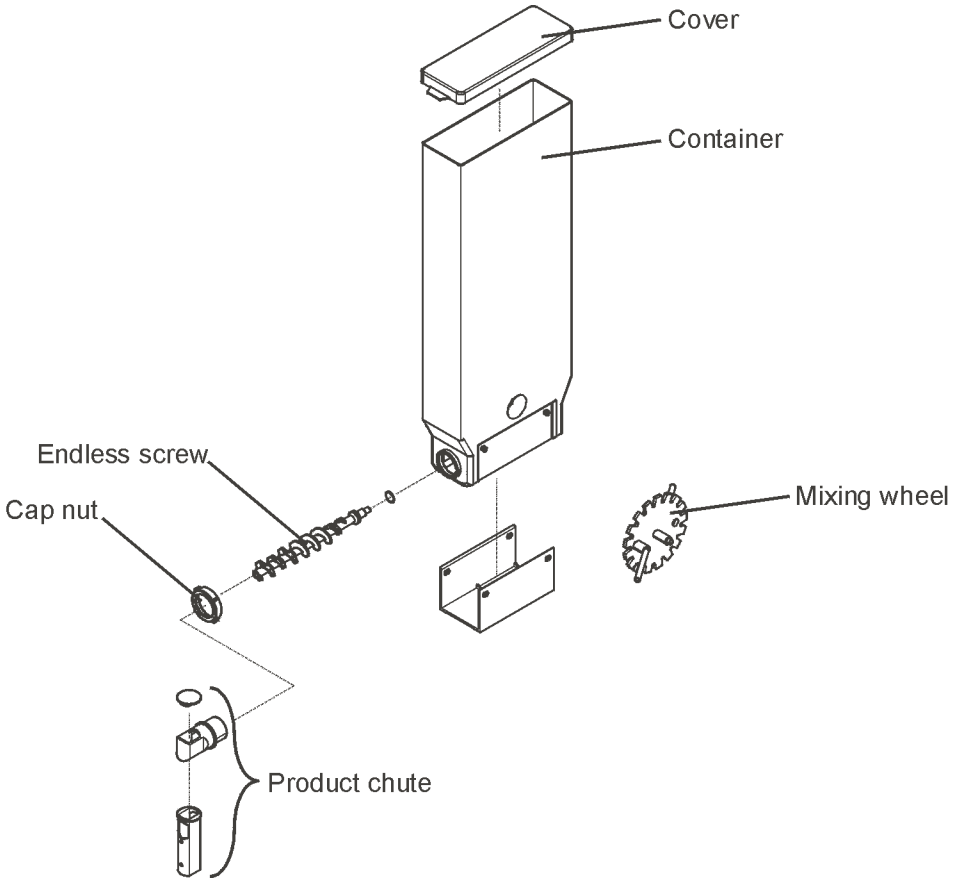
Product containers come in sizes 67 mm, 78 mm and 137 mm. Container capacities are detailed in chapter 2 of this manual.
In order to achieve consistent dispensing of all products, the following parts can be fitted in the product containers:

- Plastic endless screw
- Stainless steel endless screw
- Wire endless screw
- Mixing wheel with various springs

As standard, except for the coffee container, all containers are fitted with a plastic endless screw and a mixing wheel. The coffee containers are equipped with a stainless steel endless screw without mixing wheel. The only exception is the 137 mm wide container, in which a bevelled mixer is always fitted.
If you wish to dispense spray-dried coffee from your machine, it is recommended that you retrofit a mixing wheel. On the other hand, however, if freeze-dried coffee is being dispensed, no mixing wheel should be fitted, as this will damage the coffee.

If particularly coarse sugar is being vended, it is recommended that a stainless steel endless screw is fitted into the container.

NOTE
When removing the mixing wheel from the 78 mm wide container, holes are left in the sidewalls of the container. These can be closed off with stoppers.



6.3.2 Filling

NOTE
Check that containers are clean and dry before filling.
If necessary clean and dry thoroughly.

6.3.2.1 Bean container

The bean container may be left inside the machine for filling.

- Open machine door
- Swivel the grinder with the bean container outside
- Remove the cover of the bean container
- Fill with beans
- Replace the cover again
- Swivel the grinder back into its original position
  Make sure that the sliding cover of the bean container is open.
- Close the machine door

6.3.2.2 Product container

The product containers must be removed from the machine for filling purposes.

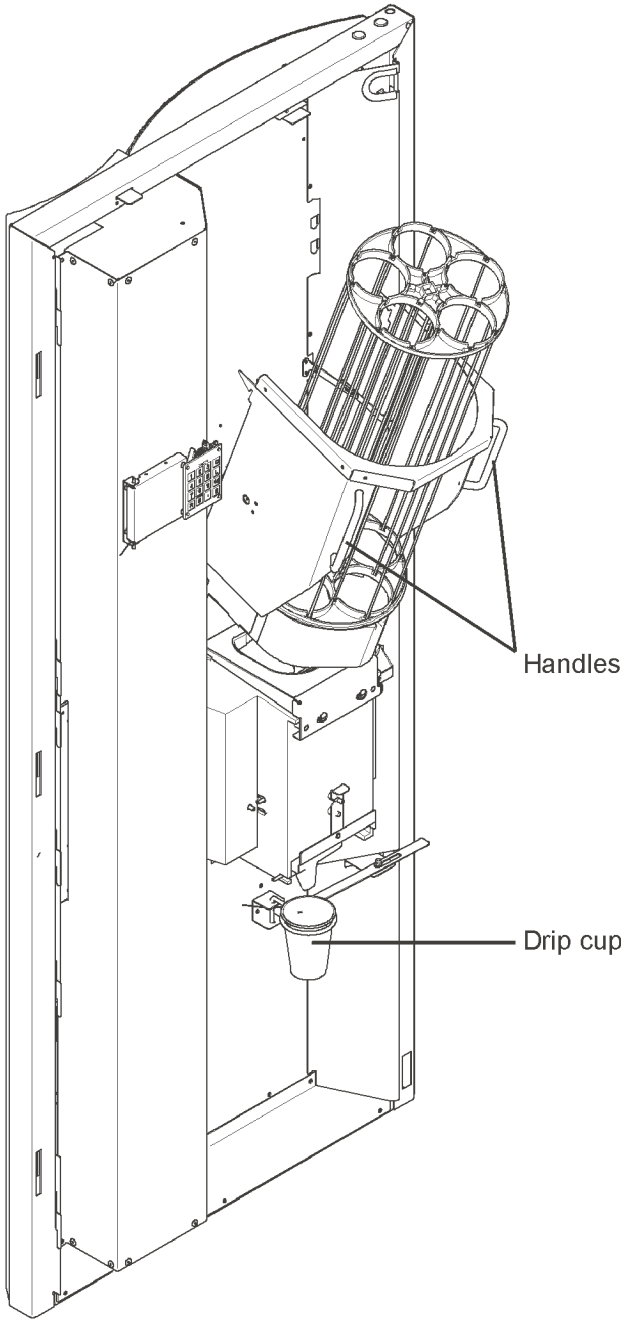
NOTE
Only products suitable for machines may be used. Only fill with loose products. Products must not be compacted!

- Open machine door
- Push up product chute.
- Raise the container a little at the front so that the locking pins are free and remove to the front.
- Remove container cover and fill with product (loosen products prior to filling to avoid lumps).
- Ensure each designated product container is filled with the correct product.
  Please ensure that each container is inserted on the driving pinion and the locating pin at the front is secure.
- Push down product chute
- Start cleaning program (see page 37)

NOTE
After filling the containers for the first time or filling after the container has been emptied completely, (e.g. for cleaning) a few test vends must be performed first so that the feed screws are filled again completely with the product in the container.
If the drink tastes „watery“ it may be that the product in the container has gathered in one place. From the front the container looks sufficiently full but the feed screw is exposed.
Please pay attention to the sell-by date of the product given by the manufacturer.

6.4 Fill cup unit

For easier filling the cup unit may be swivelled out when the door is open.



- Switch the machine off and on again
- Open door
- Grip cup unit by both handles, lift and swivel round to the stop.
- Remove cover
- Insert cup stack with bases facing down in the five carousel compartments
- Fit cover
- Grip cup unit by the handles
- Swivel back and clip into door after raising slightly. (The cup unit must be latched in)
- After filling press the R button
  „Service performed" is indicated in the display.
- The drip container prevents drink residue dripping on the floor when the door is open.

NOTE
Fill the cup unit only up to the top edge. The cups must not be pressed together.

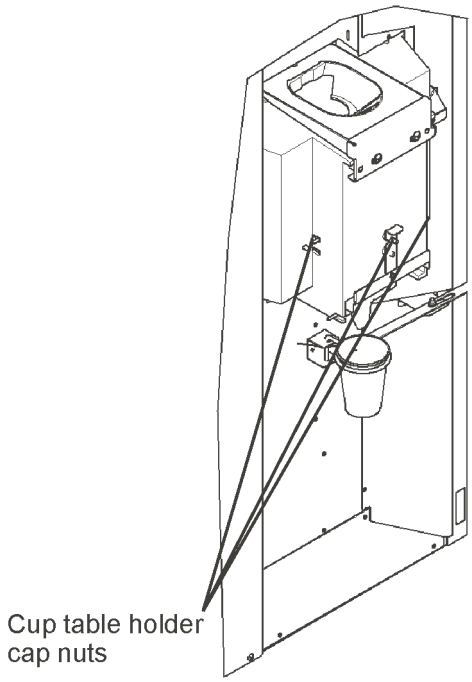
6.5 Drink volume setting

The machine features an automatic drink volume adjustment facility. It permits all machine parameters to be adjusted based on standard values to variable drink quantities.
A drink volume for cup size 180ml is preset.
An exact description of the drink quantity setting may be found in chapter 10.5.1.

6.6 Set cup table

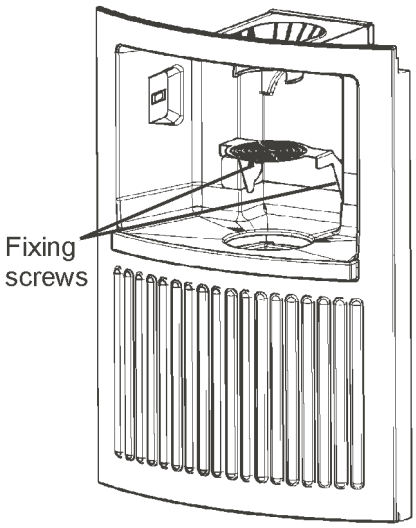
The cup table may be set to two different cup heights.
The top mounting position corresponds to a maximum cup height of 9 cm.
The bottom mounting position corresponds to a maximum cup height of 11.5 cm.
The cup table is hinged up for filling pots.

- Remove the three cap nuts on the cup table holder.
- Remove cup table from the holder.
- Turn the cup table by 180 degrees and put it back into the holder.
- Turn the cup table holder with the cup table by 180 degrees.
- Screw the cup table holder back into the machine.



Cup table removal

If both fixing screws are replaced by the supplied thread forming screws with spacer roller, the cup table may be removed without using tools.



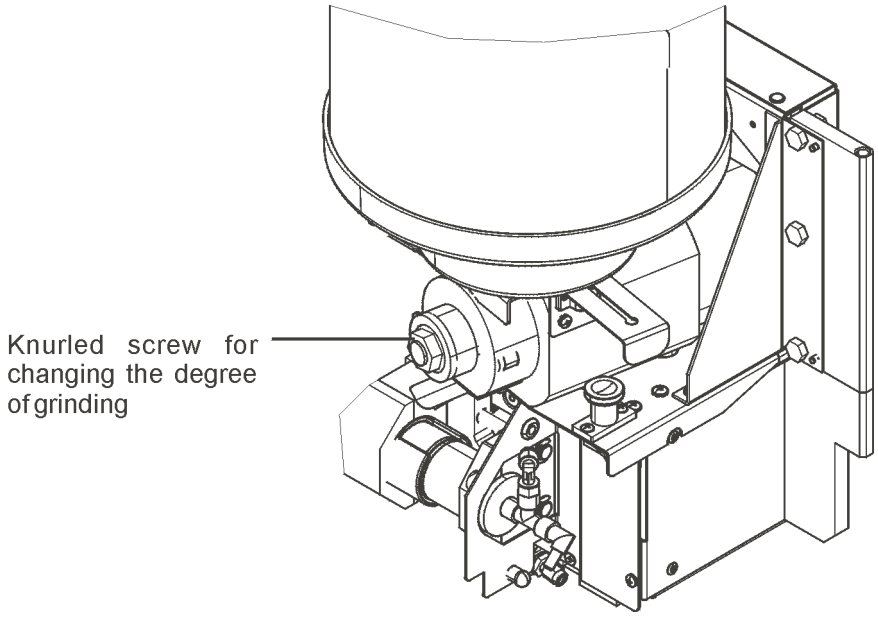
6.7 Adjusting the grinding degree

In order to adjust the grinding degree, please turn the knurled screw at the front of the grinder gradually.

Turn to the right → Powder finer → Brewing time longer

Turn to the left → Powder rougher → Brewing time shorter

Afterwards grind about 4 portions of coffee in the Service menu (→ page 77) via service function 10M and check the grinding degree. If necessary repeat the adjusting of the grinding degree.
When the grinding degree is as required, set the dosing values in the drink setting menu (→ page 53).



NOTE
If a different coffee brand is used, the grinding degree has to be re-adjusted.
After re-adjusting the grinding degree the dosing values and the brewing time have to be set again.

6.8 Final check

Once the machine has been mounted accordingly and is operational, it must again be checked to ensure that it is sealed tight.

- Open machine door and check the interior connections for any leakages
  - Mixer water connections
  - Discharge hoses
- Check water connection on the machine rear
- Close machine door and remove key
- Following a brief heating-up period the vending machine is operational.

7 DAILY OPERATION

7.1 Switch on machine

- Ensure external water supply is turned on.
- Open machine door
- Switch on main switch
- Close machine door and remove key

Following a brief heating-up period the vending machine is operational.
The message is displayed:

```
EUR  0.00  <  0.00>
READY TO USE
```

7.2 Operation

WARNING! Hot liquids
Risk of scalding!

- Remove dispensed drinks carefully
- Do not spill drinks

Operation of the vending machine is performed in vending mode exclusively via the selection buttons.
Authorised personnel may switch the machine into the dispensing modes „free vending“ and „pot“ via an optional key-operated switch. (see chapter 14.1)
Cups may be placed on the cup table.

NOTE
In pot mode the cup table must be hinged up.

- Place a suitable container beneath the drink dispenser, otherwise the cup unit will supply a cup.
- Select additional option button if available (e.g. extra whitener, extra sugar)
  (The quantity of additional option may be graduated in three stages)
- Insert coins to reach the required drink price
  (Following the drink selection the corresponding price will be indicated on the display)
- Press the drink selection button (and start button, if applicable, depending on model).
- The drink will be prepared and dispensed.

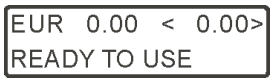
Upon correct payment the selected drink will be dispensed.
Depending on the set vending mode change will be given or a new drink selection expected. In the case of credit card systems the amount will be deducted from the card.
Change is dispensed via the returned change dispenser.

7 Technical manual CVS 500

Daily operation

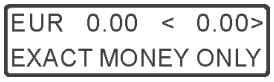
Operational

- If the machine is operational the selection buttons will light up.
- One of the three messages opposite will appear in the display:



No change

If „No change“ is indicated in the display, the correct money must be inserted.
In the case of over-payment no change is returned. (see chapter 10.10)



Vending mode

If the machine is set to „Multi-Vend“, the remaining change will not be returned following the drink selection. Until the remaining credit is used up, further drinks may be dispensed.
The process is aborted via the coin refund button and the remaining change refunded.
If the machine is set to compulsory vend a drink must be selected before coins are refunded. (see chapter 10.10)

Switched off until

If the flashing message „switched off until 07.00“ is indicated in the display, no drinks will be dispensed. Outside of the operating periods the machine is in an economy mode during which the boiler temperature is reduced to a lower level (60°C). (see chapter 10.9)

Vending from

If the message „Vending from 13.00“ is indicated in the display, no drinks will be dispensed. The machine is in a closed period. This means that during this closed period no drinks are dispensed. Vending is only possible from the displayed time onwards. (see chapter 10.9)

8 CLEANING

For hygienically perfect drink quality thorough cleaning at the recommended intervals is essential.
Thorough, regular cleaning or maintenance may be performed with relatively little expenditure of time and money.

CAUTION! Cleaning temperature too high
Damage to plastic parts!

- When cleaning plastic machine parts in the dishwasher the temperature of 65°C must not be exceeded

Machine cleaning should be performed in the following sequence:

- Dismantle interior parts and clean
- Dry interior parts thoroughly and reassemble
- Call up automatic rinse program
- Clean housing

NOTE
We recommend recording of the cleaning and maintenance jobs performed in a machine log-book.

8.1 Cleaning list

Component	Measure	Frequency	Auxiliary medium
Housing exterior: drink dispenser, cup table, light barrier, display	Clean	Daily	Damp cloth
Collect container	Clean	Daily	Cleaning agent, cloth
Cup chute	Clean	Daily	Cleaning agent, cloth
Brewer unit	Remove coffee powder on the outside	Daily	Brush
Moisture sensor	Wipe with a wet cloth	Daily	Cleaning agent, cloth
Perforated outlet plate	Clean	Daily	Cleaning agent, cloth
Mixer unit	Clean all individual parts	Daily	Cleaning agent, cloth
Rinse funnel	Clean	Daily	Cleaning agent, cloth
Sink	Empty and clean	Daily	Cleaning agent, cloth
Drip container	Empty and clean	Daily	Cleaning agent, cloth
Product chutes	Clean	Daily	Cleaning agent, cloth
Espresso brewer	Run rinse program	Weekly	Cleaning tablet
Suction device	Clean all individual parts	Weekly	Cleaning agent, cloth
Drip container	Replace	Weekly	
Product container	Clean	Weekly	Dishwasher
Coin changer	Cleaning according to manufacturer's specifications		

8.2 Cleaning programs

For carrying out cleaning programs, no safety code is required.

Button	Display	Function
0	Clean/ rinse	Start complete cleaning program/ clean the brewing unit
1	Mixer 1 rinses	Cleaning program mixer 1 is performed as long as the button is held down
2	Mixer 2 rinses	Cleaning program mixer 2 is performed as long as the button is held down
3	Mixer 3 rinses	Cleaning program mixer 3 is performed as long as the button is held down
4	Mixer 4 rinses	Cleaning program mixer 4 is performed as long as the button is held down
5	Clean/ rinse	Start cleaning program/ clean the mixing bowls

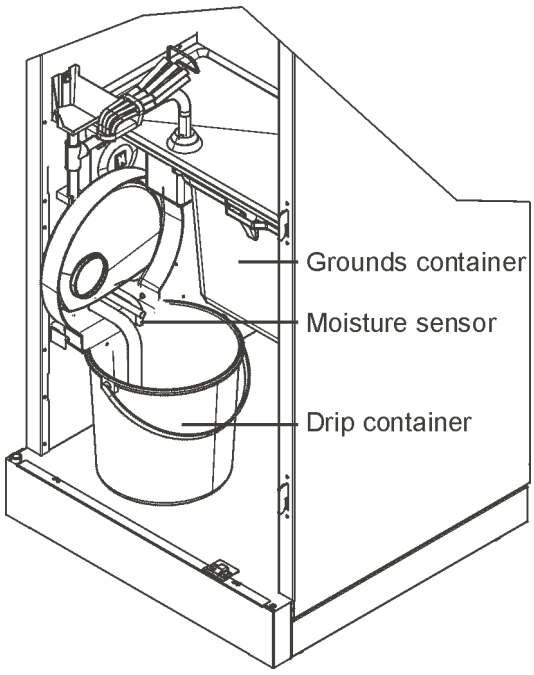
8.3 Daily cleaning

NOTE
After cleaning the parts that come into contact with foodstuffs may no longer be touched.

NOTE
Hygiene/ cleanliness
General hygiene requirements must be observed (see chapter **5**). Use only agents compatible with foodstuffs to clean the machine!

8.3.1 Empty grounds container

- Pull grounds container out to front
- Empty, clean and dry grounds container
- Reinsert grounds container



NOTE
For disposal of grounds we suggest the use of a standard refuse bag.

8.3.2 Empty drip container

- Lift the cover of the drip container
- Pull drip container out to front
- Empty, clean and dry drip container
- Clean and dry moisture sensor
- Lift the cover of the drip container
- Re-insert the drip container
- Close cover on container

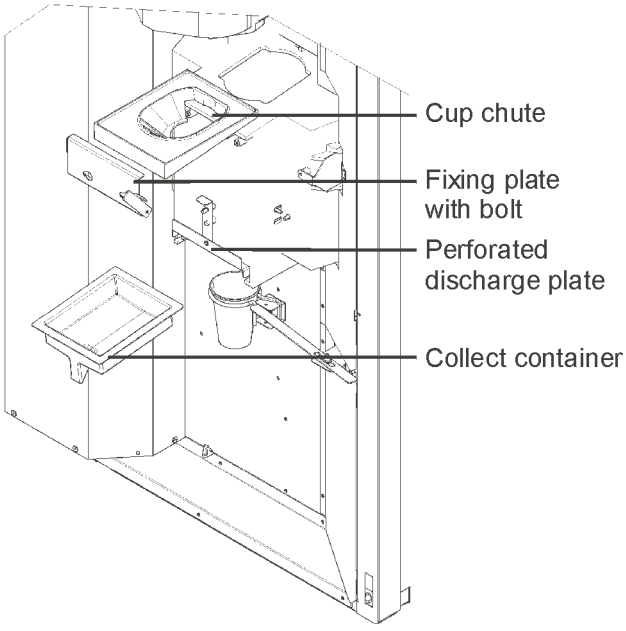
IMPORTANT!
Check moisture sensor position.

8.3.3 Clean drip container and perforated plate

To clean the drip container and perforated plate both parts must be dismantled.

- Lift drip container slightly, pull out and clean
- Flip over lever on perforated plate and pull out perforated plate

Mounting is performed in reverse order.



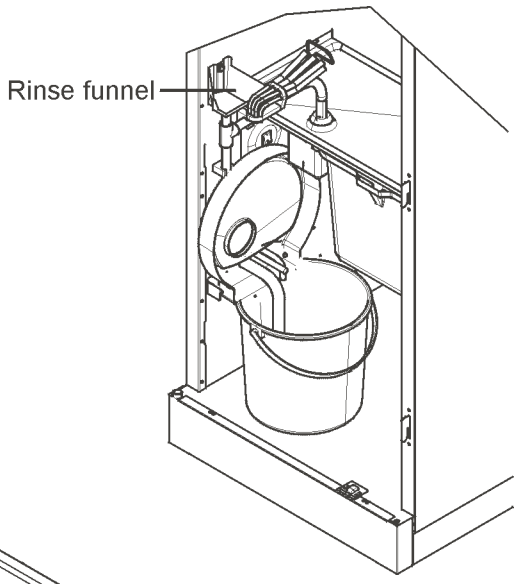
8.3.4 Clean cup chute

- Open door
- Pull bolt forward
- Push fixing plate to the left and remove
- Remove and clean cup chute

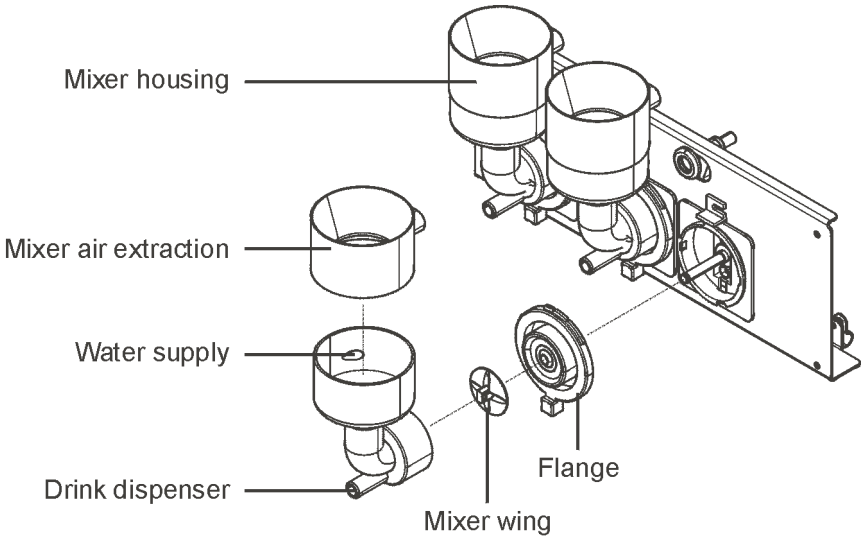
Mounting is performed in reverse order.

8.3.5 Clean rinse funnel

The rinse funnel can be easily removed by moving the rotating arm. If the door is open and the service key in place, the rotating arm can be moved by using quick selection key 6 (Code selection → page 43).
Mounting is performed in reverse order.



8.3.6 Clean mixer unit



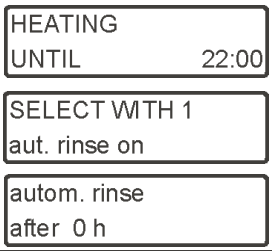
- Push up product container chutes and remove product containers
- Remove the discharge hose from the mixing bowl.
- Turn the flange anti-clockwise to its unlatching' position
- Twist the mixer air extraction unit so that the vent faces towards the front of the machine.
- Lift outlet out of holder and remove
- Remove the mixer wing and the flange
- Clean mixer housing, mixer air extraction, flange and mixer wing thoroughly with hot water and commercially available washing-up liquid. Then rinse under hot running water and dry well with a clean dishcloth.
- Reinsert all parts in reverse order
- Refill product container as required.
  Observe general hygiene requirements during filling.
- Insert product container and push down product chute

CAUTION! Incorrect water connection
Danger of flooding!
- Assure firm and correct fitting of all water connections

8.3.7 Automatic rinsing

NOTE
The end of the heating period may be used for automatic rinsing. For this purpose

- automatic rinsing must be switched on in the installation menu and
- the rinse interval must be set to 0 hours.



8.3.8 Exterior cleaning

Clean the machine exterior with a damp cloth:

- Machine housing
- Drink dispense area
- Cup table
- Light barrier

8.4 Clean weekly

NOTE
Hygiene/ cleanliness
General hygiene requirements must be observed (see chapter 5)

The following cleaning jobs must be additionally performed every week:

8.4.1 Clean product container

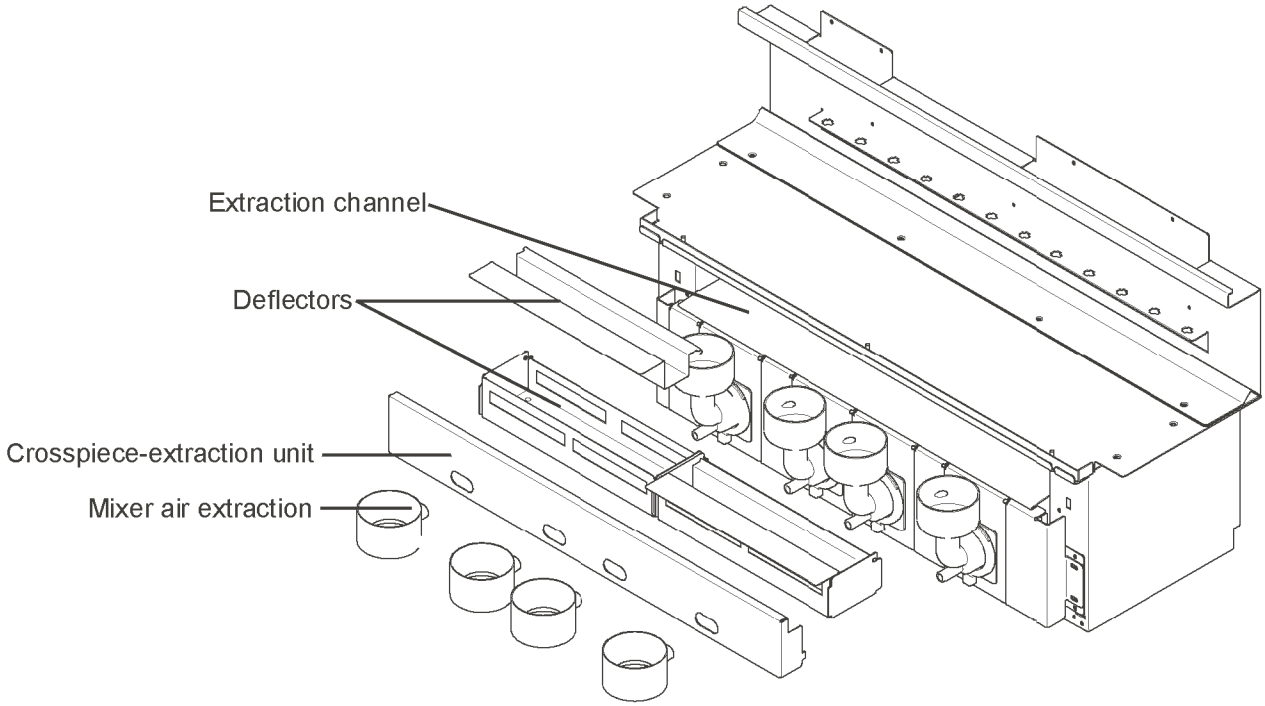
- Push up product chute.
- Raise the container a little at the front so that the locking pins are free and remove to the front.
- Empty product container, tap out dry residue
- Clean container with hot water and washing-up liquid, rinse with hot running water.
- Dry well with a clean dish cloth/disposable cloth. The product container must be completely dry again.
- Before inserting the cleaned product container clean and dry the container base plate
- Refill products
  Wash hands before filling. Direct contact with the product powder should be avoided.
  Observe general hygiene requirements during filling (see chapter 5)
- Insert product container
  .It is essential that the containers are correctly inserted (according to the labelling).
- Push down the product chute and align with the centre of the mixer bowl

8.4.2 Suction device

The mixer units must be dismantled to clean the extraction unit.

- Dismantle the fascia plate of the extractor unit
- Pull out the baffle plate
- Clean and dry all parts thoroughly
- Wipe extraction channel with a damp cloth and dry well

Mounting is performed in reverse order

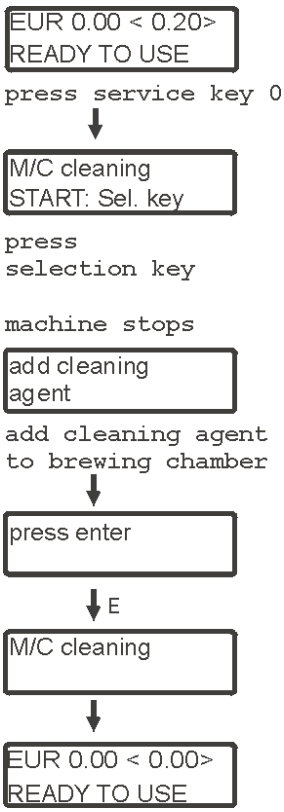


WARNING! Risk of cutting!
Sharp-edged plates

- Caution when cleaning the extraction unit

8.4.3 Clean brewing unit

A rinse program is available for the cleaning of the brewing unit. This must be run once a week.



WARNING! Hot rinse water
Risk of scalding!

- Do not place hand into rinse water
- Do not spill rinse water

NOTE
Before starting the cleaning program it is essential that all parts are reassembled.
The cleaning program should be executed with the door open and the service key in place.

The automatic cleaning program is started as follows:

- Open door
- Press button 0
- Press any button
  pre-rinsing starts,
  approx. 200 – 300ml of hot water are rinsed out
- Machine stops
- Put cleaning tablet into the brewer
- Press button E
- Press any selection button
  The cleaning process of the brewing unit is started.
  Display shows "M/C cleaning"

The cleaning program takes about 8 minutes. After completion the machine is ready to use.

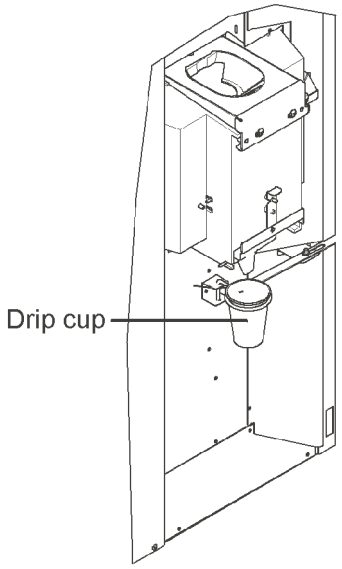
NOTE
If the rinse program was interrupted or terminated prematurely an indicatory message is displayed. The rinse program must be started again

NOTE
Individual mixer bowls may be rinsed via digit buttons 1 to 4. The rinse water runs for as long as the button is pressed.
Rinsing the individual mixer bowls does not replace the full cleaning program!

8.4.4 Replace drip container

The drip container prevents product residue dripping on the floor when the door is open.

- Replace the drip container in the lower area of the door interior with a new one

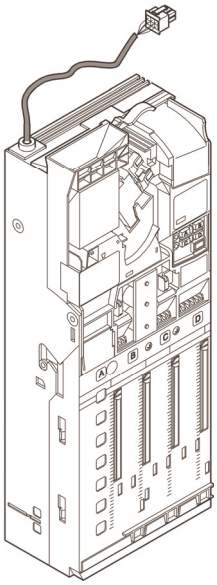


8.4.5 Clean coin changer

Depending on the credit system used cleaning instructions may differ.

In the case of the MDB credit system used customarily the coin changer need simply be wiped with a damp cloth from time to time.

NOTE
Please observe the documentation and safety instructions of the manufacturer of your credit system.



9 DECOMMISSIONING

9.1 Daily machine switch-off

NOTE
The vending machine must be decommissioned at the end of service.

- Switch off the machine at the main switch
- Shut off external water supply

9.2 Empty boiler

When changing the machine location and during an extended period of non-usage, empty the boilers. This prevents the boilers leaking or freezing.

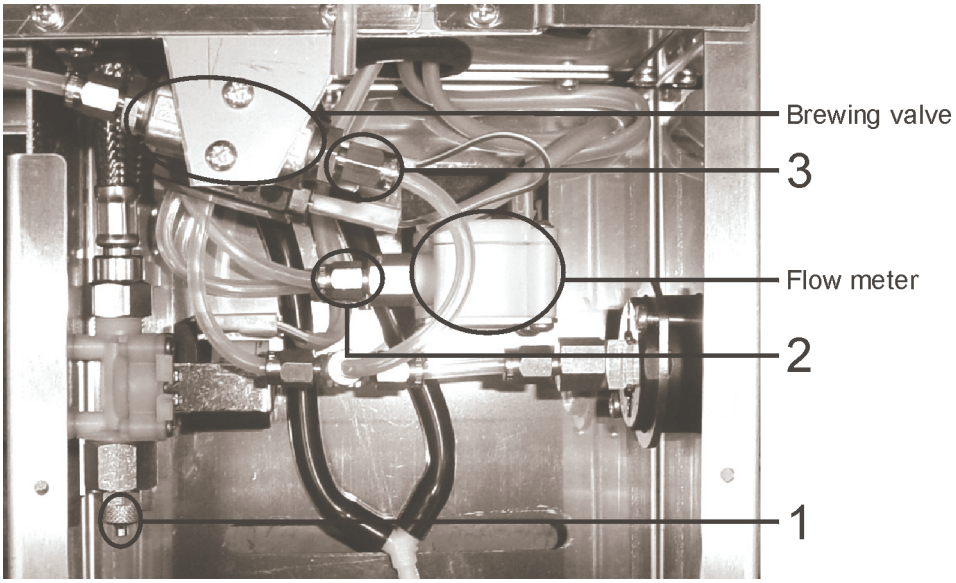
WARNING!Hot boilers and hot water
Danger of burning!

- Allow boilers to cool down first
- Do not dip hand into the water
- Do not spill water

NOTE
The water quantity during boiler emptying is approx. 3 litres.
Emptying of the instant boiler can be stopped by pressing any button. It is restarted via 87 + M. Instant-boiler emptying may also be performed manually via the boiler drain plug. (→ 11.7)

1. Shut off external water supply.
2. Disconnect external water supply.
3. Switch on machine at the main switch and insert the service key.
4. Call up the Service menu with the M and 8 buttons and confirm with button E.
5. Empty the instant-boiler via service number 87 + M
   The boiler heater is automatically switched off during electrical emptying.
6. Loosen the hose as shown in diagram 1 and hold a container under the connection.
   The water runs out of the Espresso boiler.
7. Blow compressed air (max. 2 bar) for approx. 1 minute into the machine's water connection.
8. Loosen the hoses marked in the diagram by 2 and 3.
9. Blow compressed air (max. 2 bar) into hose connection 1.
   Remaining water in the espresso boiler runs out of hose connection 2.
10. Re-tighten the hoses.
11. Switch off main switch and disconnect mains plug.
12. Pack machine securely for transport

Decommissioning



10 MACHINE CONTROL

10.1 Code selection

Various functions may be performed via the code numbers on the service keypad. No safety code is required.

Procedure

- The door must be open so that the service keypad is accessible.
- The service key must be inserted
- The display must indicate that the machine is operational
- Press the digit button of the required function

NOTE
The requested function is immediately performed.
During test vending a suitable container must be held under the dispenser position of the swivel arm. Alternatively the service key may be removed before requesting the test vend function and then the machine door closed.

Button	Display	Function
0	Clean / rinse	Start complete cleaning program/ clean the brewing unit
1	Mixer 1 rinses	Cleaning program mixer 1 is performed as long as the button is held down
2	Mixer 2 rinses	Cleaning program mixer 2 is performed as long as the button is held down
3	Mixer 3 rinses	Cleaning program mixer 3 is performed as long as the button is held down
4	Mixer 4 rinses	Cleaning program mixer 4 is performed as long as the button is held down
5	Clean / rinse	Start cleaning program/ clean the mixing bowls
6	Filter counter	Swivel arm/ Display filter scope counter status (optional)
7	Test vend	A test vend is performed
8	Cup dispensing	A cup is dispensed
9	Total vends	Display total vends statistics

NOTE
The availability of the individual functions depends on the machine variant (→ chapter 13.1). Your particular model number can be found inside the machine.

10 Technical manual CVS 500

Machine control

The control features nine menus in which the machine functions are systematically ordered.
A menu is selected via the button sequence M and the menu digit (0 – 8). Button E activates a selected menu.

A menu may also be selected by pressing buttons L or M several times.
In the Drink Setting menu this procedure leads to further sub-menus.

- Button C deletes an entry
- Button E acknowledges an entry
- Button L returns to the previous entry field
- Button M switches to the next menu item
- Button R switches back to vend mode

If no button is pressed for a period of time the control automatically switches to vend mode.
Exception: In the Service menu no automatic return to the vend menu takes place.

In order to avoid unwanted programming by unauthorised persons menus may be provided with an inhibit code. The control features hierarchical inhibit codes.

- Code A features the lowest access level.
- Code B also permits access to code A protected menus.

NOTE
Please note that program modifications cause basic parameter changes that have a major influence on the machine function.
The set values should be noted down prior to a change. Thus the old values may be re-entered as required. Alternatively SIELECTOR PC software (see chapter 14.4) may be implemented.

Overview of the HG2540 control memory

The control features a reprogrammable flash memory in which mainly program data are stored, and a user memory (RAM). The program data contains all default values (factory settings) required for machine operation. Variable data such as dosing, prices, selection button assignment, product texts, statistics etc. are saved in the RAM.
This is battery-buffered so that data remain unchanged after the machine is switched off and on again.
Additionally a flash backup of these setting values is kept as a backup copy in a free flash sector.
These are triggered manually in the Service menu via the service number 99+M+89+M or automatically on every 100th vend. When you enter the service number 99+M+90+M the flash memory will be fetched out again.

10.1.1 Buffer battery

There is a lithium buffer battery on the VMC. This ensures that data is retained during transportation or in cases of power failure. Faultless operation is only possible if this battery has sufficient capacity to store programming and statistical data.
Should a data error occur after a lengthy voltage interruption, check the battery. If this is less than 2.8V, install a new battery CR 2032 (Part No. 985 26 436 02).

NOTE
Batteries are consumable parts. No warranty claims may be made. Defective batteries must be disposed of correctly. Observe the regulations for disposal of batteries.

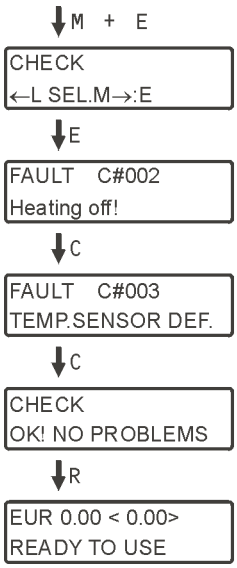
10.2 Menu – quick overview

NOTE
When inhibit codes A and B were installed in the installation menu, the marked menus are locked and can only be accessed after the corresponding code is entered.

Menu-No.	Display	Code	Function
0	CHECK ←L SEL.M→:E	-	Error display, deletion of error messages
1	PROGRAMMING MODE ←L SEL.M→:E	B	Entry of vending prices, assignment of products to a selection button
2	BEVERAGE ALLOC. ← L SEL. M→ :E	B	Entry or change of dosing parameters and cup adjustment
3	TEST VENDS ←L SEL.M→:E	A	Check vending procedure
4	SHOW STATISTICS ←L SEL.M→:E	A	Display of vending statistics
5	SHOW FULL STAT. ←L SEL.M→:E	B	Display of vending statistics. The entire statistics may only be deleted by the manufacturer
6	PROG.TIME/ LOCKS ←L SEL.M→:E	B	Setting of local time, boiler temperature, heating periods, heating days, prices and illumination times
7	INSTALLATION ←L SEL.M→:E	B	Setting of country, currency, machine type, machine number, inhibit codes, pre-selection times, credit system, vending mode, coin change parameters, machine options, service telephone number
8	SERVICE MODE ←L SEL. M→:E	B	Machine component test Reading of machine parameters Filling and emptying of the coin changer.

10.3 Menu Check (M0)

The current machine errors are displayed in words in the Check menu. A current counter status is overlaid with each malfunction.



The machine is operational again.

- Button E acknowledges the error messages
- Button C deletes the error messages.
  If several malfunctions occur at the same time the next message is displayed following acknowledgement.
- Button 1 indicates the error statistics
- Button E switches through the error statistics list
- Button R switches back to vending mode

If no button is pressed for a period of time the control automatically switches back into vending mode.

On page 97 of this operating manual you will find a table listing all error numbers and corresponding errors.

10.4 Menu Prices/ Assignment (M1)

In the Prices/ Assignment menu various functions are assigned to the selection buttons.

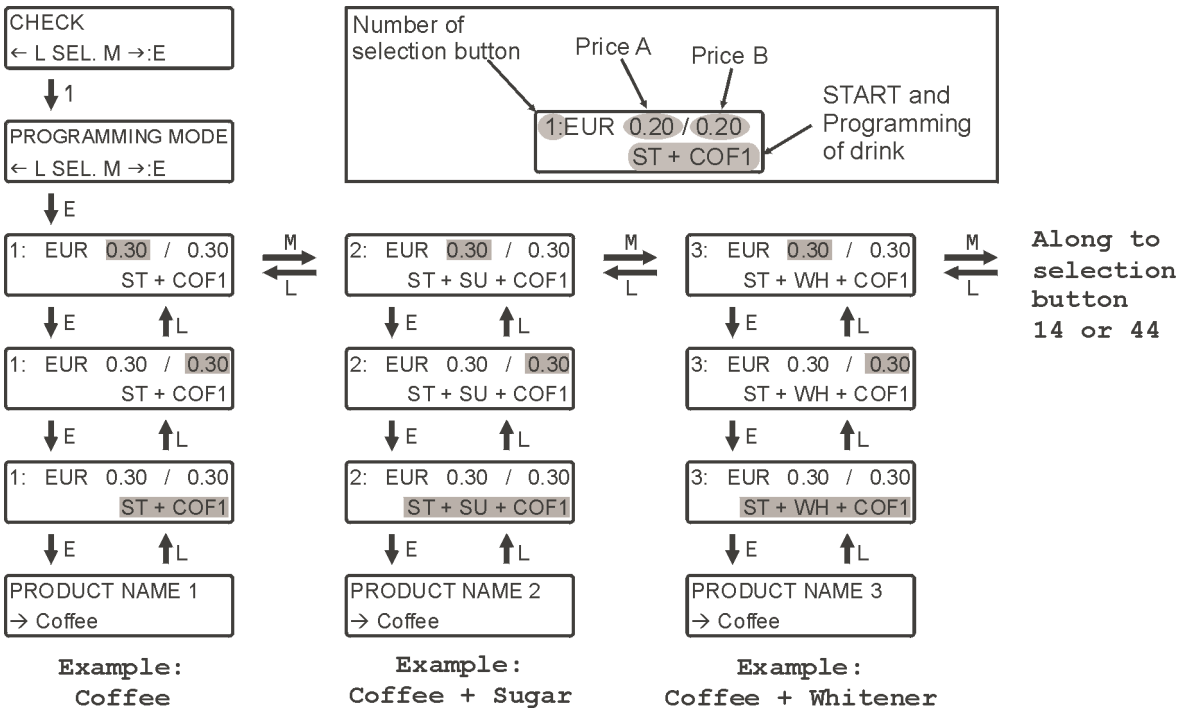
All 14 selection buttons of the machine may be assigned and programmed with full freedom of choice.
Any drink, drink combination, drink and function combination or only a pre-selection and additional selection function may be assigned to each selection button. In addition a name may be entered for each drink.
An overview of all programmable drinks and pre-selection/ additional functions may be found in chapter 10.4.2.

Prices A and B are related to the validity period entered in the Clock/ Inhibit menu.

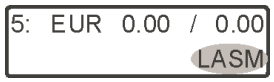
Press digit buttons 1 (forwards) or 2 (backwards) until the required drink code is displayed for drink programming (Factory setting see chapter 13.2)

The flashing cursor indicates the current entry field.

- Button C deletes the entry field of the current cursor position
- Buttons 0-9 to enter the required values
- Button E saves the displayed value and jumps to the next entry field
- Button M switches to the next selection button
- Button L returns to the previous entry field



NOTE
When programming for dispensing into a “MUG”, it is essential that the large drink uses the prefix of the small drink (+30) i.e. drink option 2 becomes 32.
With pre-selection <LASM> (large/ small) the selection button (+30) is set (refer to chapter 10.4.2).



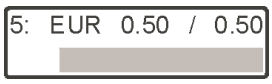
NOTE
Manufacturer recommendation
For correct statistical evaluation both a price A and B must be assigned to each selection button.
To dispense free drinks set the machine to “free vend” in the Installation menu.

NOTE
The vending prices may also be set by inserting the corresponding value of coins.
- Select menu M1 and acknowledge via ENTER
- Insert coins to the value of the lowest vending price and press the required selection buttons
- Insert more coins and press the selection button for the new amount
- Repeat until a price is programmed for each selection button

Please note the set time (price A and B) as well as the key position (MUG – CUP)

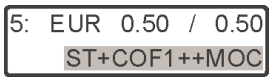
Deactivate the selection button

Should a selection button be purposely deactivated all button commands must be deleted via the button combination C + E.
The second option for deactivating a selection button is located in the Clock/ Inhibit menu. Here individual buttons may be completely inhibited or only at certain times.



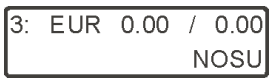
Mocca pre-selection (+MOC)

Mocca pre-selection <+MOC> is not a drink but a possible pre-selection option.
The mocca pre-selection reduces the amount of water added by up to 50%. The powder quantity remains the same. Thus the coffee is stronger and the drink size is reduced.
Pre-selection may be programmed to a separate selection button or in combination with a drink selection.



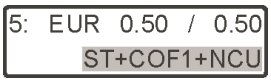
Sugar selection (NOSU)

The <NOSU> function is a pre-selection, which determines whether a drink is automatically dispensed with a set amount of sugar or without sugar.

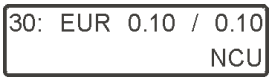


No cup (NCU)

In the programming example opposite a portion of coffee is sold at selection button 5. Additionally, the functions direct start <ST> and no cup<NCU> are programmed.
On pressing selection button 5 a light barrier checks whether a container is positioned in the drink dispenser.
If there is no container, no drink will be dispensed and “cup/ mug?” will be indicated in the display.
If a container is detected, the coffee will be sold immediately at a reduced price. (See below: programmed cup price 10 cents)
The function <NCU> is permanently programmed to option 30. Only the amount may be changed.

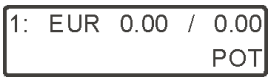


NOTE
The function <NCU> is a credit function.
The amount programmed at this point will be deducted from the price of a drink.



Pot

A pot portion is the equivalent of X-fold cups. Factor X is programmed in the Installation menu (see chapter 10.10). By pressing the pot button you can step to the desired number of portions. Afterwards the drink is selected.



NOTE
No price may be assigned to the „POT“-preselection.

10.4.1 Assignment of selection buttons

NOTE
The selection button assignment of other machine variants may be found in chapter 13.1.

In the default setting selection buttons of variant 6402 are assigned as follows:

Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF1 + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au Lait	ST + CAL	0,50	0,50
9	**(39)**	Cappuccino	ST + COF1	0,50	0,50
10	**(40)**	ChocoCreme	ST + COM	0,50	0,50
11	**(41)**	Instant coffee	ST + COF2	0,50	0,50
12	**(42)**	Chocolate	ST + CHOC	0,50	0,50
13	**(43)**	Tea	ST + TEA	0,50	0,50
14	**(44)**	Soup	ST + SOU	0,50	0,50

NOTE
In the factory setting selection buttons are assigned direct selection. Dispensing is performed immediately on selection of a drink. The start command <ST> is contained in the drink programming.
A possibly desired pre-selection must be performed before the drink selection.
Without direct selection a separate selection button must be reserved for the start command and assigned.

10.4.2 Abbreviations

Drink	Abbreviation
Café au lait	CAL/ CALl
Cappuccino	CAP1/ CP1l
Cappuccino	CAP2/ CP2l
Cappuccino	CAP3/ CP3l
Americano	AMl/ AMll
Cap. Spec.	CSP1/ CS1l
Cap. Spec.	CSP2/ CS2l
Espresso	EXP/ EXPl
EXP CHOC	EXCO/ EXCl
EXP CHOC	EXC2/ ES2l
Hot water	HW
Coffee	COF1/ CO1l
Coffee	COF2/ CO2l
Coffee	COF3/ CO3l
Latte Macchiato	MAC/ MACl
Chocolate	CHOC/ CHOl
Choco Milk	COM/ COMl
Milk	MIL/ MILl
Soup	SOU/ SOUl
Tea	TEA1/ TE1l

The ingredients of the individual drinks and their dosing are listed in chapter **13**.

Pre-selection/ option-Abbreviation	Function
ST	Start of drink dispensing
NCU	No cup
SU	Sugar (one stage)
SU>>	Sugar (three stages)
NOSU	No sugar
WH	Whitener (one stage)
WH>>	Whitener (three stages)
>>	Stronger
<<	Weaker
STK	Stick dispensing
LASM	Large/ small
+MOC	Mocca pre-selection (water reduction)
Pot	Set to X' x desired cup portions

10.4.3 Product names

A product name may be assigned to each product abbreviation that is indicated in the display on vending. Product names are entered via the digit keypad.

- Press the appropriate digit button and step via button M to the required character.
- Repeat process until the required text is indicated in the display
- Acknowledge entire text via button E
- Button L deletes the character before the current cursor position
- Button C deletes the entire character string

The following characters are assigned to the digits:

Digit	Character	Digit	Character
1	1, A, B, C, D, a, b, c, d	**6**	6, U, V, W, X, u, v, w, x
2	2, E, F, G, H, e, f, g, h	**7**	7, Y, Z, y, z, $
3	3, I, J, K, L, i, j, k, l	**8**	8, +, (,), .
4	4, M, N, O, P, m, n, o, p	**9**	9, ä, ö, ü
5	5, Q, R, S, T, q, r, s, t	**0**	0, /, _, *, -

10.5 Drink setting menu (M2)

NOTE
Dose testing must take place with the door open.
The service key must be inserted in the door switch and the machine must be operational.

In the Drink setting menu all drink preparation parameters may be set. It is divided into the categories calibration, dosing and cup adjustment.

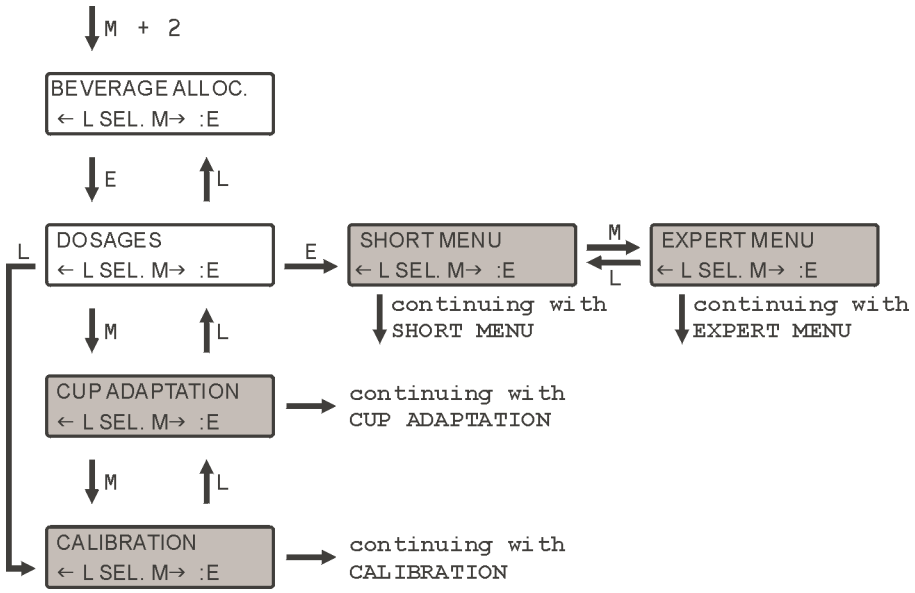
- The quantities that are dispensed from the individual product containers and via the pump are set in the calibration menu. This has to be done only once for each product container.
- Dosing is used for the flavour setting of the drink. A differentiation is made between a simple short menu and a very extensive expert menu. The required powder and water quantities can be entered in grams. The dosing settings are displayed by means of the respective drink examples.
- Cup adjustment is used for quick modification of the filling quantity. Two different modes may be selected.

Required accessories for setting drinks

→ Product scale with 0.1g precision (TARE function)
→ Measuring jug with ml-scale
→ A suitable collection receptacle

NOTE
A comfortable solution for entering drink settings and all other machine parameters is offered by the SIELECTOR PC software

Accessing drink setting is via M + 2 as illustrated below.



10.5.1 Calibration

NOTE
After a product has been changed the respective container must be re-calibrated.

Procedure

NOTE
Before calibrating the product containers every product motor should be run for a few seconds in the service menu (→ page 77), so that the endless screw in the container is completely filled with product powder. Otherwise the calibration gives incorrect values.
Before testing, the mixer bowl for the powder to be checked must be removed and a suitable collection receptacle be placed under the product outlet of the container.
The amount of water delivered should not be measured using the measuring jug but weighed for greater accuracy.

→ Open machine and call up the calibration menu via the key combination M + 2 + E + L

→ Select the desired container using the digit keypad and confirm selection by pressing E:

Container	5301	5302	5305	5401	6301	6402	6403
1	Cocoa	CSP1	CSP1	Cocoa	Cocoa	Cocoa	Cocoa
2	-	Cocoa	Tea	-	CSP1	Tea	CSP1
3	Soup	Tea	Sugar	Tea	Soup	Soup	Tea
4	Sugar	Whitener	Cocoa	Soup	Sugar	Whitener	Soup
5	Coffee 2	Sugar	Whitener	Whitener	Coffee 2	Coffee 2	Whitener
6	Whitener	-	-	Sugar	Whitener	Sugar	Sugar
9	Coffee grinder	Coffee grinder	Coffee grinder	Coffee grinder	Coffee grinder	Coffee grinder	Coffee grinder
0	Pump	Pump	Pump	Pump	Pump	Pump	Pump

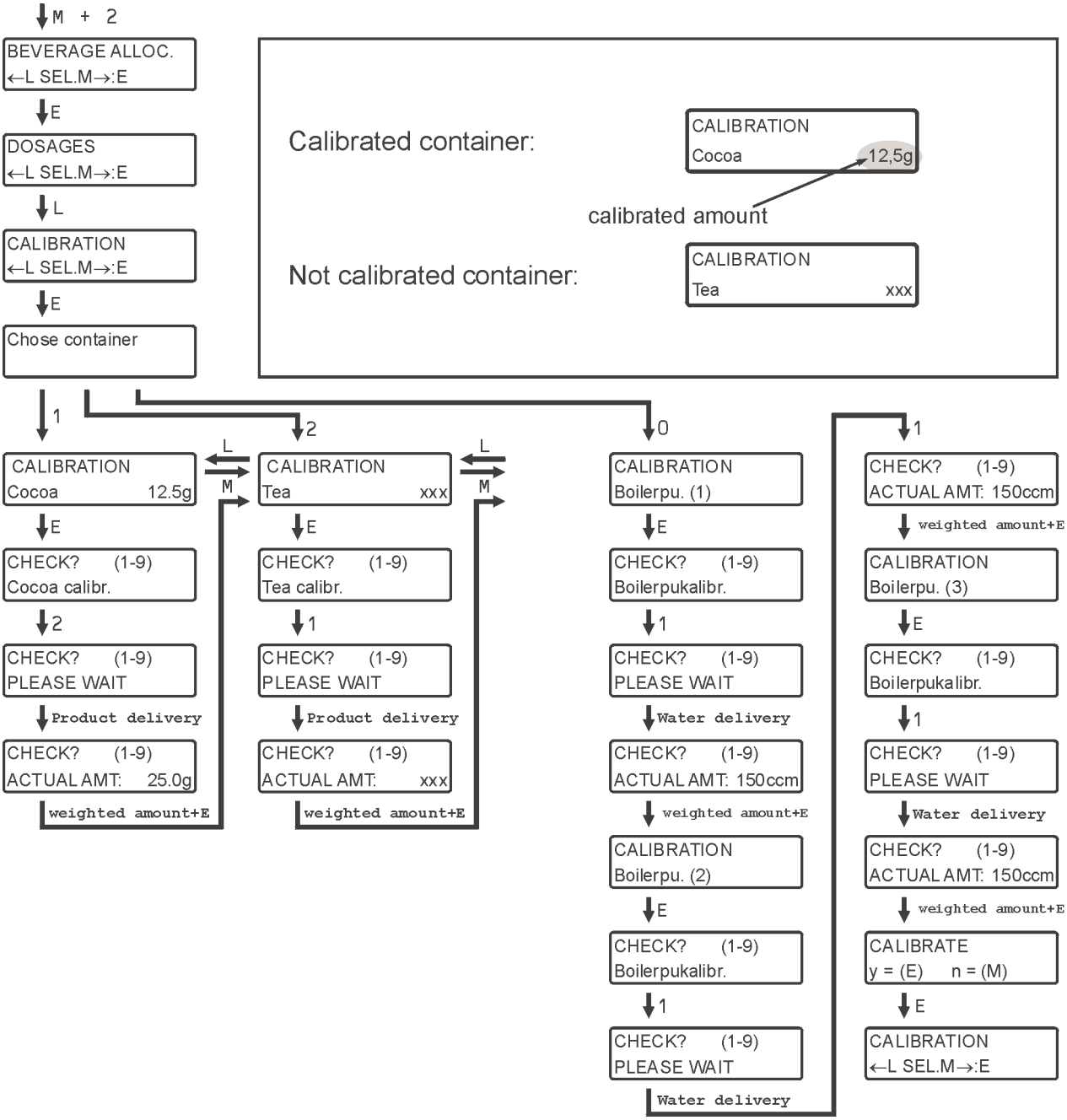
→ On entering digit 1 in the entry field the selected product component will be dispensed from the container into the receptacle provided.
On entering another digit this will be used as a multiplier. Product dispensing is performed in the correspondingly multiplied quantity. Precision may thus be increased in the case of very small dispensing quantities.
The water quantity is not multiplied.

→ Weigh the quantity delivered, enter the reading taken and press E to enter.

→ The procedure may be repeated for checking purposes

→ Once all containers have been calibrated, it is necessary to enter the quantities for the individual drinks in the Short Menu.

Calibration menu overview



10.5.2 Cup adjustment

In the cup adjustment sub-menu the total dispensed volume of the individual selection buttons may be checked and set.
On entering the dispensed ACTUAL quantity and the required SET quantity the control automatically calculates the required water quantity and product quantities of the individual mixer bowls.
An individual adjustment of dispensing quantities is performed in the expert menu.

The following modes are available:

1. **Water with product**

A complete drink is dispensed. By changing the “SET quantity“ only the water quantity is changed.

2. **Complete cup**

A complete drink is dispensed. By changing the „SET quantity“ the water quantity and the quantities of the drink ingredients are changed.

Procedure

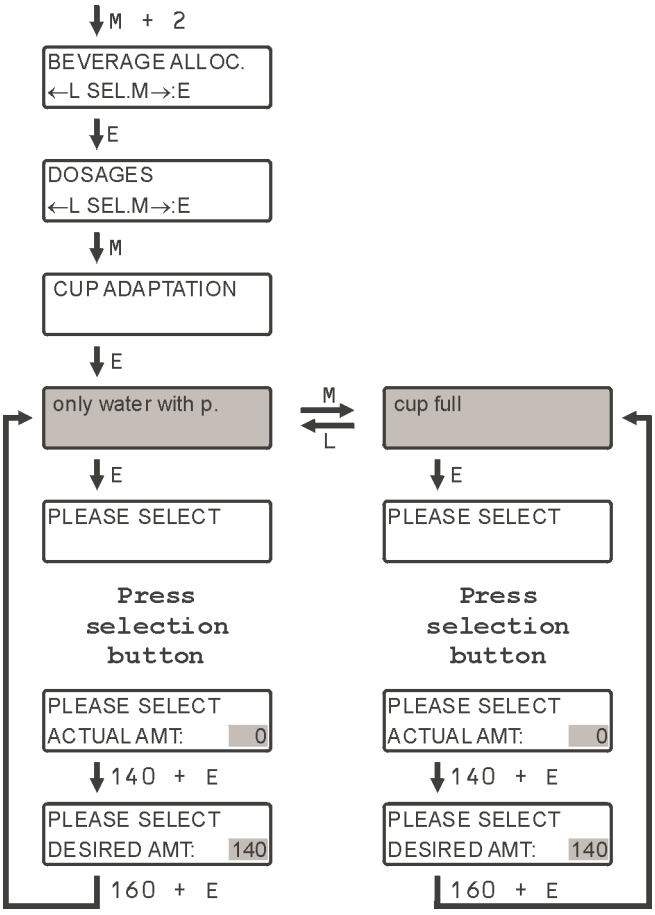
- → Open machine and call up the cup adjustment menu via the button combination M + 2 + E + M
- → Call up the required setting mode (only water or complete)
- → Hold the measuring jug under the drink dispenser and press the selection button of the drink to be adjusted
- → The swivel arm proceeds forwards, the selected drink is dispensed
- → Read off dispensed quantity in ml on the measuring jug and enter the „ACTUAL quantity“ via the keypad
  Save entry via button E
- → Enter required quantity as „SET quantity“
  Save entry via button E.

NOTE
If the dispensed “ACTUAL quantity” corresponds to the required “SET quantity” the saved values need only be acknowledged by pressing button E twice.

- → The procedure may be repeated for checking purposes

Cup adjustment overview

NOTE
In the following example a dispensed quantity of 140ml and a required quantity of 160ml are assumed.



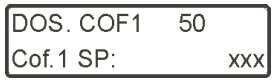
10.5.3 Short menu

In the short menu only the powder quantities of products relating to the drink selected are called up. They can be adjusted and tested. Water quantities are set in the expert menu.

Thereby a simple modification of the drink strength and thus flavour may be achieved.

More product	→	Flavour stronger
Less water	→	Flavour stronger
Less product	→	Flavour weaker
More water	→	Flavour weaker

NOTE
Before you can enter powder quantities in the short menu, you have to calibrate all containers in the Calibration menu (→ page 54).
If a container has not been calibrated, the display shows:



Procedure

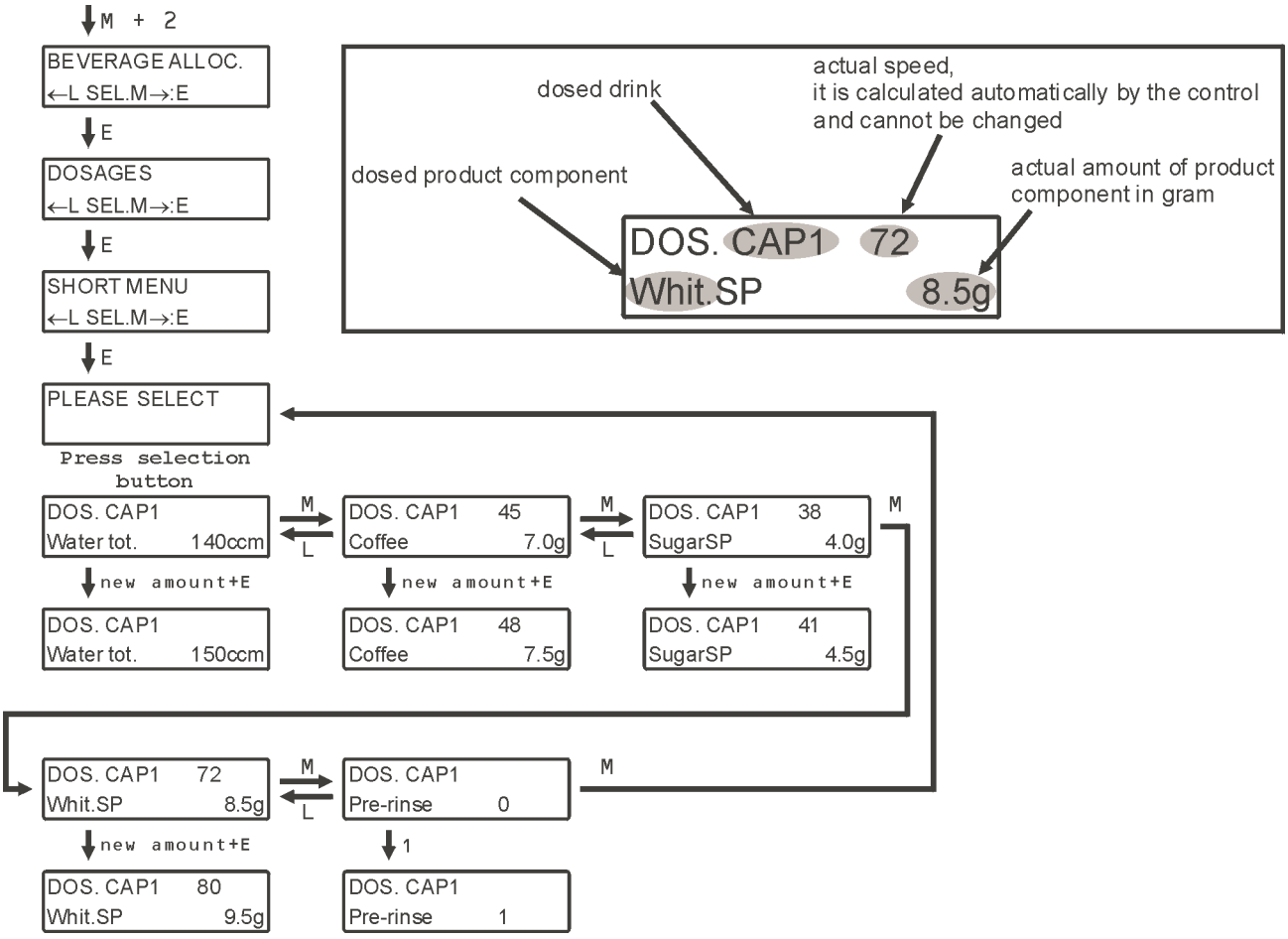
- → Open machine and call up the short menu via the key combination M + 2 + E + E
- → Press the selection button of the drink to be checked
- → Select a product component with the M and L buttons in the menu, change the displayed value via the digit buttons and acknowledge selection via button E

Pre-rinsing

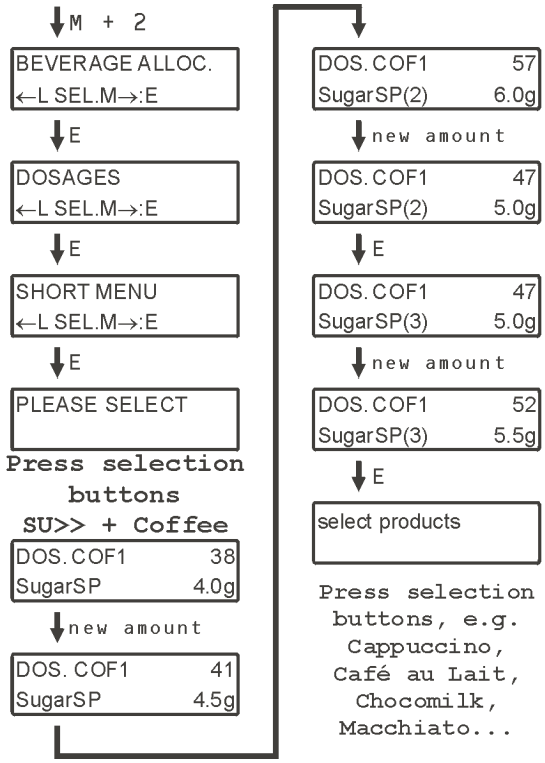
If "Pre-rinse 1" is set, the brewer and in the case of instant drinks all mixer bowls used for the drink are rinsed with hot water when the standby time is reached, in order to warm up the system. Pre-rinsing may be selected for each product.
The standby time may be set in the Clock/ Inhibit menu (→ page 67).

Short menu overview

Example: Cappuccino (CAP1)



Example: Dosing of extra sugar (SU>>)



NOTE
After setting these values once they can be taken for all other drinks provided the option of extra sugar or extra whitener is possible with those (→ Factory settings, page 99).
The dosing for the button for extra whitener and the button Stronger-Weaker may also be set.

10.5.4 Expert menu

In the expert menu all water, product and mixer parameters may be set. These parameters are waiting time, run time and speed respectively. In the menu each sub-product and each mixer required is listed.
Basic procedure is the same as for the short menu, however greatly extended in scope.

Abbreviations overview

Due to the limited display parameters must be indicated by abbreviations. The following table shows the abbreviations used. For some parameters a test vend follows their modification. The table also specifies for which parameters this is the case.

NOTE
When changing water values all parts must be completely mounted as a complete drink is dispensed.
If only product values are to be changed the mixer bowls must first be dismantled and a suitable container placed underneath as only the product is dispensed.

Abbreviation	Description	Test dispensing
… mixDT	... Mixer motor waiting time	no
… mixRT	... Mixer motor run time	no
… mixSP	... Mixer motor speed	no
… watDT	… Water pump waiting time	yes
… watRT	… Water pump run time	yes
… watSP	… Water pump speed	yes
... DT	... Product motor waiting time	no
... RT	... Product motor run time	yes
... SP	... Product motor speed	yes
… SP(2)	2. step of extra selection	no
… SP(3)	3. step of extra selection	no
CoffeeSP(>)	Value for "stronger"	no
CoffeeSP(<)	Value for "weaker"	no
PressSP	Pressure	no
Pressagain	Press again	no
SwivelDT	Swivel arm waiting time	no

Procedure

NOTE
Before testing a powder quantity the mixer bowl of the powder to be tested must be dismantled and a suitable container placed under the product dispenser.
Before the test vending all mixer bowls must be mounted again.

→ Open machine and call up the Expert menu via the button combination M + 2 + E + E + M and acknowledge via button E
→ Press the selection button of the drink to be checked
→ Select a component in the menu via buttons M and L and acknowledge via button E
→ Check the waiting time (WT)
→ Check the run time (RT)
→ Check the speed (SP)
Powder is ready to dispense. Remove mixer bowl and place container underneath

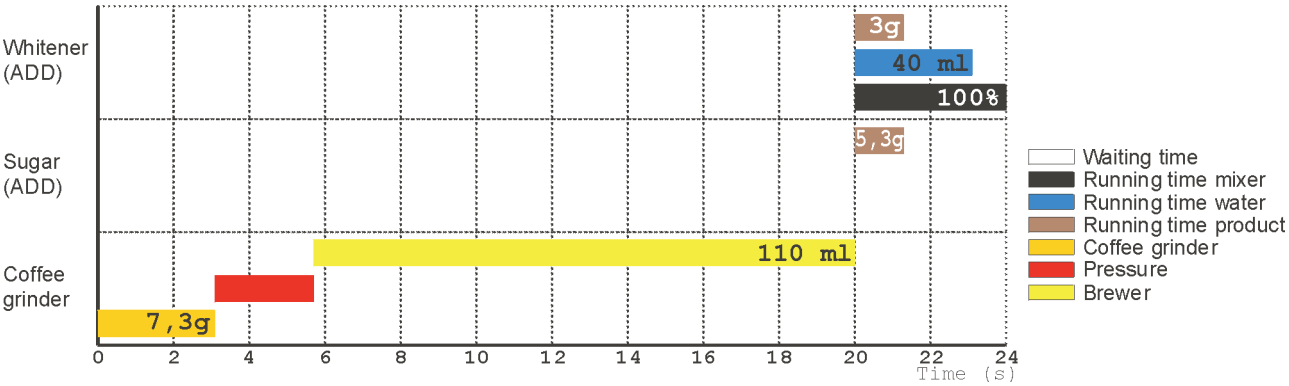
On entering digit 1 in the entry field the selected product component will be dispensed from the container into the receptacle provided.
On entering another digit this will be used as a multiplier. Product dispensing is performed in the correspondingly multiplied quantity. Precision may thus be increased in the case of very small dispensing quantities.
→ The procedure may be repeated for checking purposes

NOTE
- For safety reasons water quantities cannot be dispensed in multiplied form
- Regardless of the checked partial water quantity the full drink water quantity will always be dispensed

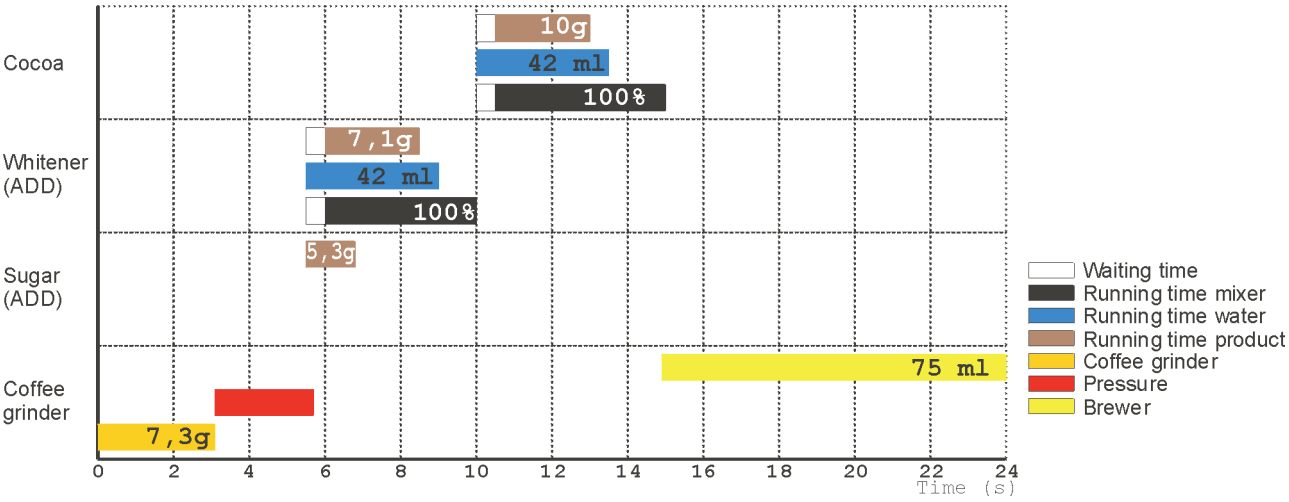
NOTE
The diagrams on the following pages only show the time sequences of all triggered motors and valves. It can be seen which motors run simultaneously and which follow on from one another.

Expert menu overviews

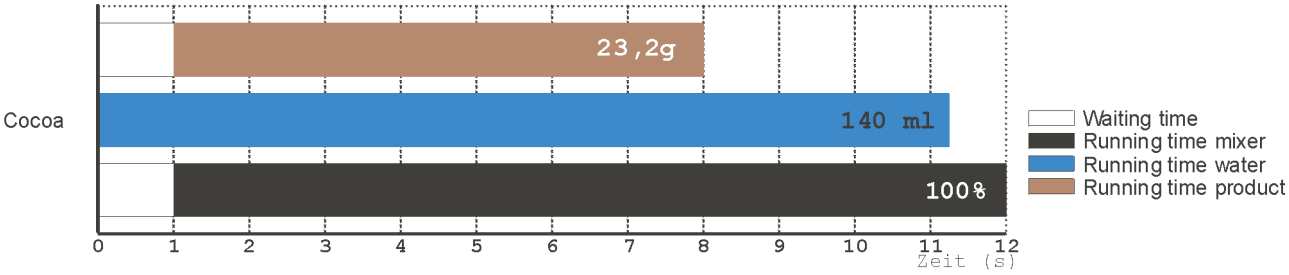
Example: Coffee (COF1)



Example: Cappuccino Choc (CAP2)

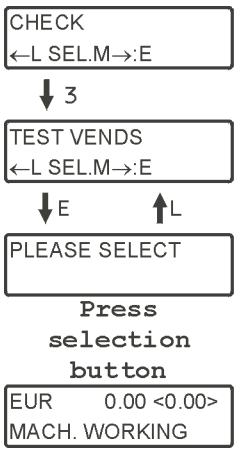


Example: Chocolate (CHOC)



10.6 Test vends menu (M3)

In the Test Vends menu drink preparation may be checked.
The selected drink is dispensed free and recorded in a separate statistics memory as a test vend.

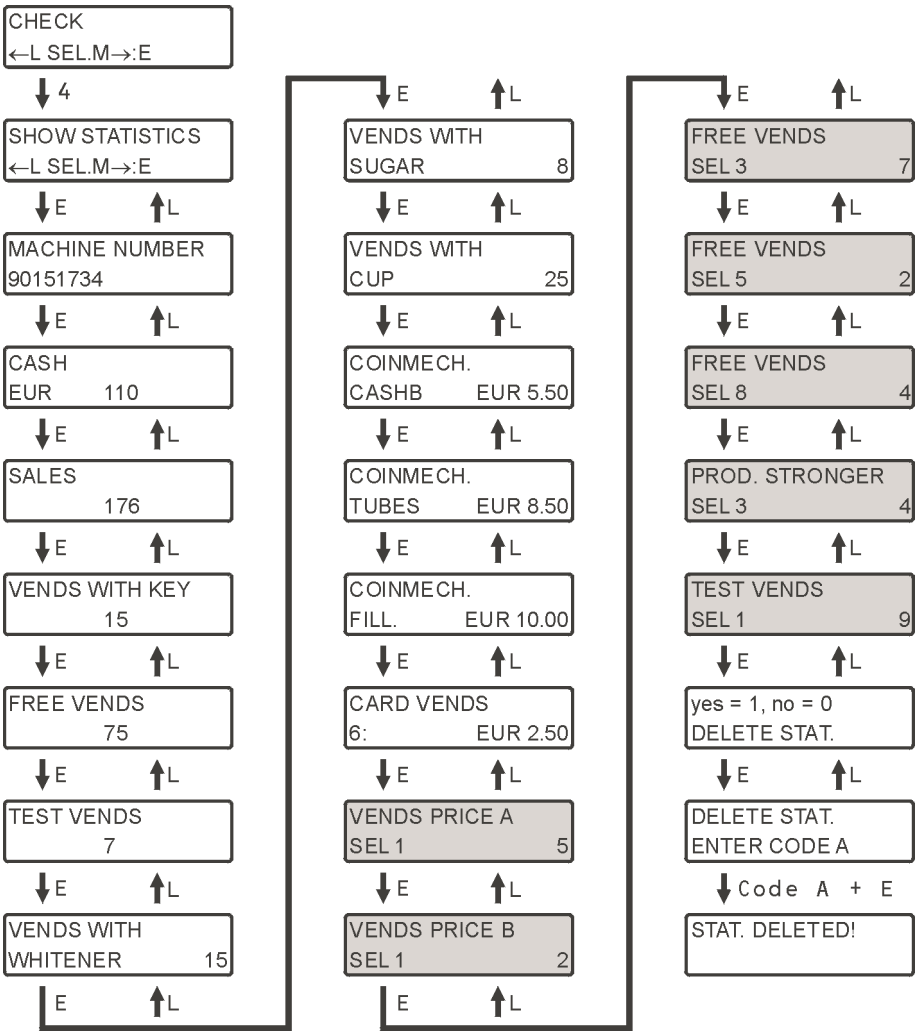


CAUTION! Swivel arm with product discharge immediately swivels into dispensing position
Risk of scalding!

- hold suitable receptacle under the drink dispenser

10.7 Statistics menu (M4)

Vend statistics are displayed in the Statistics menu. Targeted product supply may be performed via the vend statistics.
If inhibit codes have been entered the statistics may be deleted by the operator via code A.

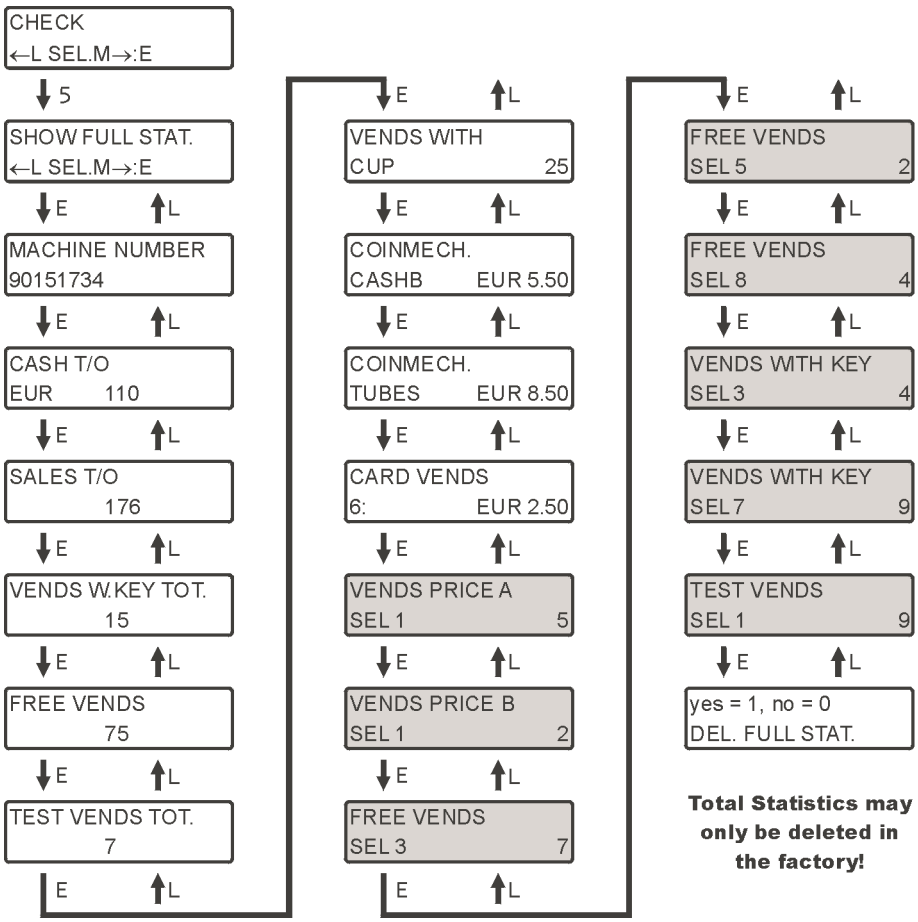


NOTE
The marked fields indicate the individual vend types per selection button.
All values not equal to zero are displayed. As such the display in the vending machine may deviate from the above illustration.

NOTE
The actual deletion of statistics is performed only once the next drink is dispensed. In the meantime statistics data may be viewed again.

10.8 Total statistics menu (M5)

In the Total Statistics menu vend values from the first commissioning of the machine are displayed.
The total statistics may only be deleted in the factory.

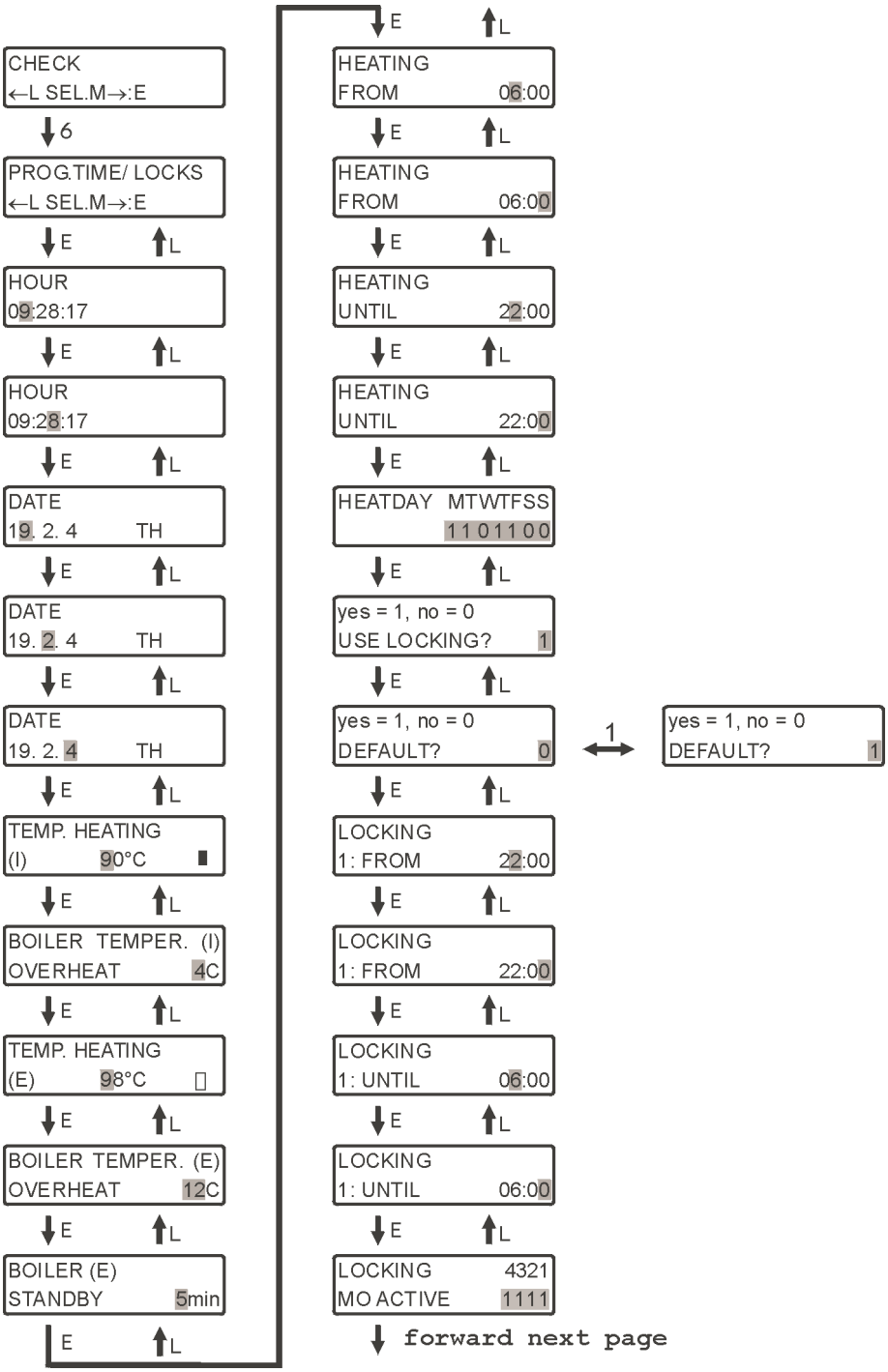


NOTE
The marked fields indicate the individual vend types per selection button.
All values not equal to zero are displayed. As such the display in the vending machine may deviate from the above illustration.

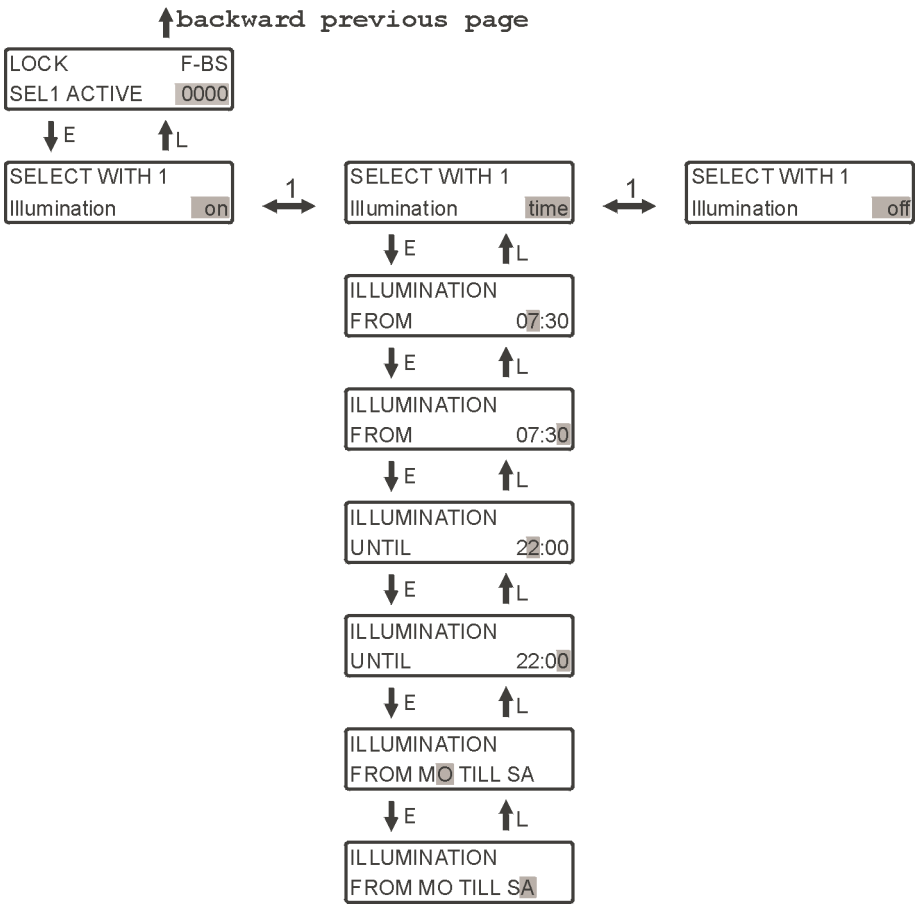
IMPORTANT!
In the case of control replacement the statistics remain on the old control. The SIELECTOR PC software may be used to transfer them to the new control.

10.9 Clock/ Inhibit menu (M6)

The system clock is set to local time in the Clock/ Inhibit menu.
Boiler temperature and operating times (heating times, vend days and illumination times) may be adjusted to the operator's requirements.



NOTE
Change boiler temperature
Even entries not acknowledged by button E are stored!


backward previous page
LOCK F-BS
SEL1 ACTIVE 0000
E
L
SELECT WITH 1
Illumination on
1
SELECT WITH 1
Illumination time
1
SELECT WITH 1
Illumination off
E
L
ILLUMINATION
FROM 07:30
E
L
ILLUMINATION
FROM 07:30
E
L
ILLUMINATION
UNTIL 22:00
E
L
ILLUMINATION
UNTIL 22:00
E
L
ILLUMINATION
FROM MO TILL SA
E
L
ILLUMINATION
FROM MO TILL SA

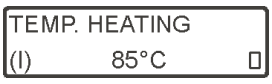
Clock/ date

Set system clock to the time at the installation site. Entering is performed via the digit keypad in the appropriate entry field.
The weekday is automatically calculated by the control.

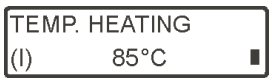
Water temperature

NOTE
The espresso boiler is under pressure. Therefore a temperature in excess of 100°C (Boiler temperature + excess temperature) can be set without any problem, without achieving water boiling point.

Set the boiler heater switch-off temperature. The instant boiler is limited to 95°C, the espresso boiler to 100°C.
The display after °C indicates the boiler heater status.



= Boiler heater OFF



= Boiler heater ON

Boiler over-temperature

The boiler temperature will be increased by the programmed number of degrees when the standby time is reached after the last drink was dispensed. By means of this temperature increase the temperature loss of the drink is compensated by the cooled hoses.
Afterwards the boiler temperature is reduced again to the programmed boiler temperature.
The setting is limited to 4°C on the instant boiler (boiler I), the espresso boiler (boiler E) can be set to a maximum of 20°C.

Standby time

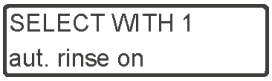
After this time the temperature of the espresso boiler will be increased by the over-temperature. In addition the brewer will be pre-rinsed once the standby time has expired, if specified in the expert menu (→ page 61).

Heating time

The heating time is the period during which the boiler is heated up on heating days. Entering is performed via the digit keypad in the appropriate entry field.
Operating time (vending time) is limited by this setting. Outside heating time the message is indicated on the display:

NOTE
The end of the heating period may be used for automatic rinsing. For this purpose

- automatic rinsing must be switched on in the installation menu and
- the rinse interval must be set to 0 hours.



Heating day

Heating days are those days on which the boiler is heated. Thus, for instance, switching-off of the boiler may be achieved for the weekend.
A whole week must always be entered (7 digits).
1 = heating day, 0 = no heating day
(in the example heating is on the days Monday, Tuesday, Thursday and Friday only)

Example:

HEATDAY	MTWTFSS
	1101100

Inhibit times

The operation of the entire machine or only individual selection buttons may be very flexibly set via the inhibit times. A total of 4 inhibit times may be set.
Switch inhibit times on/ off
0 = inhibit times not active, machine is always operational
1 = inhibit times active, machine only operational during the set times

yes = 1, no = 0	
USE LOCKING?	1

Switch basic values on/ off
0 = inhibit times may be set individually
1 = basic values

yes = 1, no = 0	
DEFAULT?	0

Assign validity of the 4 optional times for each weekday individually
0 = not valid
1 = valid, inhibit time active
Select button E = weekdays (Mon - Sun)

LOCKING	4321
MO ACTIVE	1111

Link selection button function with the inhibit times
F = free vend B = price B I = inhibit
Selection xx: 0000 No inhibiting
Selection xx: 0001 Inhibited during the inhibit time
Selection xx: 1000 Set to free vend during the inhibit time
Selection xx: 0010 Set to price B during the inhibit time

LOCK	F-BS
SEL1 ACTIVE	0000

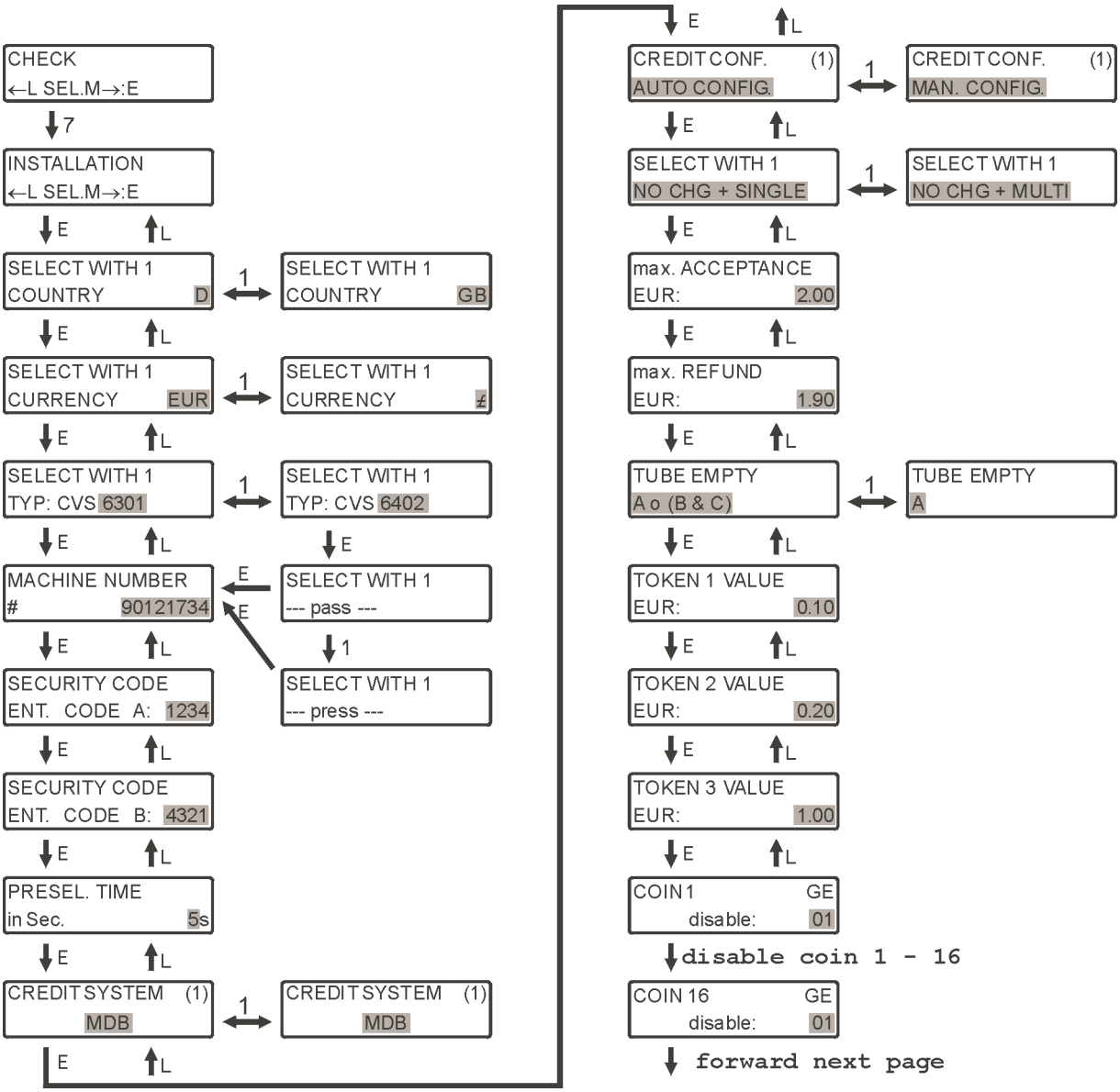
Illumination

Set the period and days on which the illuminated advertising is switched on.
Entering of the weekdays is via the digit keypad.
(1 = Mon, 2 = Tues, 3 = Wed, 4 = Thurs, 5 = Fri, 6 = Sat, 7 = Sun)

ILLUMINATION
FROM MO TILL SA

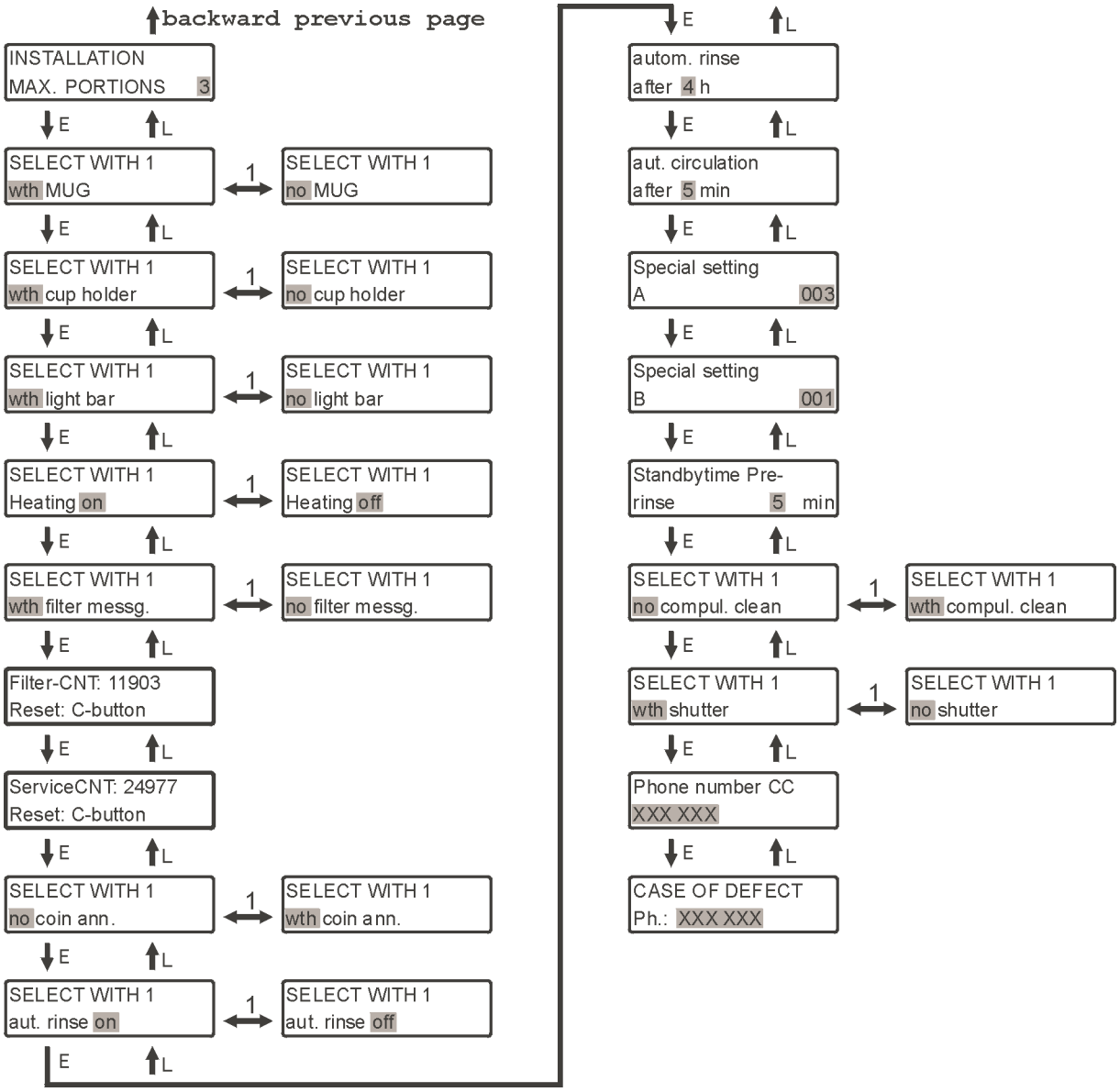
10.10 Installation menu (M7)

In the Installation menu the machine parameters country, currency, machine type, machine number (see type plate), inhibit codes, credit system, vend mode, coin changer parameters, appliance options and service telephone number are set.
In the fields (SELECT WITH 1) each next possibility may be selected by pressing key 1.



NOTE
Machine type
The set machine type must correspond to your machine variant (see chapter **13.2**).

Machine control



Language change

When changing the language the following values are set from the program data:

- Currency of the country
- Code selection texts
- Motor texts
- Messages (errors, instructions, menu...) are displayed in the respective language immediately after the change.

Machine type

The machine type must be set according to its machine variant (see sticker on the machine interior or chapter 13.2).

Variant change

When changing selected variants the new data is loaded from the programmed data (factory settings). The data comprises the following:

- Temperature values
- Display texts (in the current language)
- Definitions for container, mixer, valve arrangement
- Products (dosing) featured in this variant
- Option assignments
- Product default prices

Pre-selection times

The pre-selection time describes the maximum waiting time in seconds (selection buttons light up) for automatic drink dispensing following coin insertion.

Credit system

Selection of the credit system used (see chapter 14.2).

Cred. Config.

Automatic or manual setting of the coin switching device configuration
(see separate coin switching device manual for further information).

Automatic circulation on/ off

By means of automatic circulation hot water is pumped from the boiler through the valve unit. This prevents too much cooling of the drinks because of cold hoses. Circulation is performed in a closed loop, no water is lost.

Vending mode

Setting of the required vending mode

NO CHG	Compulsory vending:	After coin insertion at least one drink must be bought before coins are refunded
CHANGE	Coin return:	No drink need be bought, on aborting coins are refunded (with this setting the machine may be misused as a coin changer)
MULTI	Multi vend:	In the case of over-payment the machine expects further drink selection Aborting and refunding is possible
SINGLE	Single vend:	In the case of over-payment refunding is automatic following drink selection

Max. acceptance

Setting the maximum acceptance of coins
Is not displayed with AUTO CONFIG.

Max. refund

Setting the maximum refund of coins
Is not displayed with AUTO CONFIG.

Tube empty message

If the refund tubes are empty according to the logic link, the following message is indicated in the display „No coin refund“.
A = tube with the lowest coin denomination

Maximum number of portions

Setting the maximum number of portions for the selection button "Pot". The maximum number that can be set is 9.

With/ without cup holder

The cup holder can be switched off, in order to avoid unnecessary cups being dispensed e.g. during cup adjustment.

Cup not compulsory/ compulsory

This function only appears if the cup holder is switched on. If it is set to “cup not compulsory” the machine will still be operational even if the cup holder is empty, provided that the customer uses his/ her own cup/ mug.

Light barrier on/ off

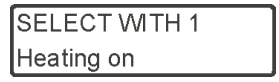
The cup unit is controlled via the light barrier. If the light barrier is switched off a cup is dispensed automatically on each drink selection.

Boiler heater on/off

This point switches on the boiler heater.

NOTE
Only once the boiler heater is switched on in the Installation menu may the water be heated at the times set in the Clock/ Inhibit menu.
The heater is switched off automatically:

- During software updating
- Following data error
- During boiler emptying

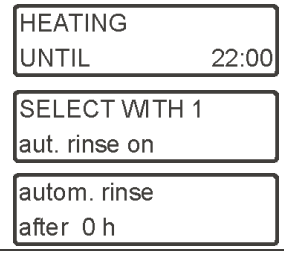


Automatic rinsing on/ off

The machine rinse program is automatically triggered via this parameter.
An internal stopwatch monitors the set time. Each drink dispensed starts the stopwatch at zero. If no drink is dispensed up to expiry of the set time, the machine rinses.

NOTE
The end of the heating period may be used for automatic rinsing. For this purpose

- automatic rinsing must be switched on in the installation menu and
- the rinse interval must be set to 0 hours.



Cleaning essential/ not essential

If the option for essential cleaning is set, a warning is displayed after 500 vends that cleaning should be done. After another 50 vends the machine stops operating.

Standby time pre-rinsing

The mixer bowls for those drinks specified in the expert menu will be pre-rinsed once the standby time has expired (→ page 61).

Special settings

Here a value may be entered in order to activate one or several of the following special settings. If several of these functions are to be set the sum of the corresponding numbers must be entered. If, for example, refilling of the boiler during product dispensing is to be permitted (01) and no moisture sensor self test performed (16), 17 must be entered.
Entering a new value deletes the previous value, therefore it should be determined before programming which special settings are to be activated.

Special settings A:

01	Refilling of the boiler during product dispensing is permitted
02	Return brewer unit after pre-rinsing for espresso
08	No supply valve test at the end of the rinse program
16	No moisture sensor self-test
32	No error set, if after circulation at least 3s refilled.
64	No error set for standby-leakage monitoring.
128	For cup price 0.00, after incorrect cup dispensing money is refunded by pressing the refund button even if compulsory vending is set.

Special settings B:

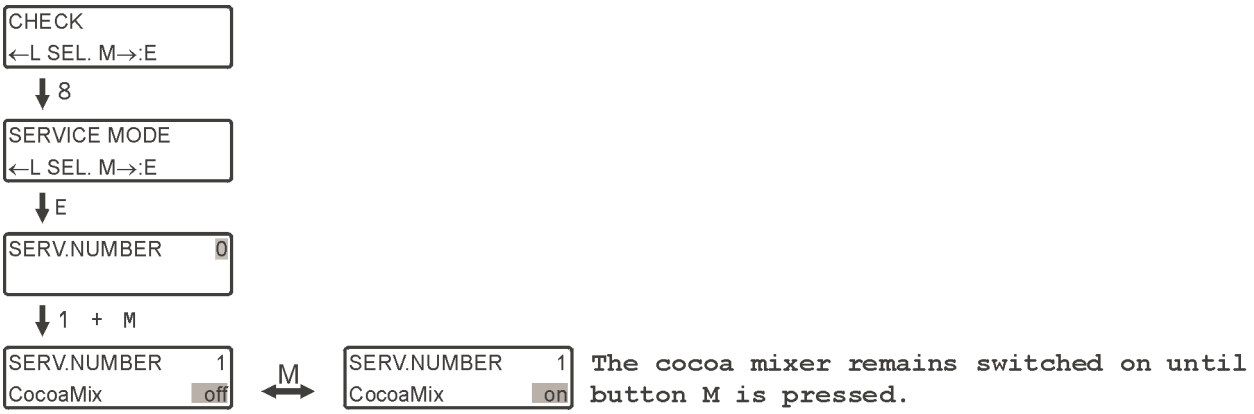
01	No water spray when the brewer is referencing
02	No water spray when the coffee dregs are being discarded (end of brewing process)
04	Old stick dispensing: The run time of the stick dispensing motor is set from 1.3s to 4.0s

10.11 Service menu (M8)

In the Service menu all important machine parameters are displayed. Service mode provides support during error location and machine maintenance.
Various functions may be tested and the coin changer may be emptied.

NOTE
Service jobs must be performed with the machine door open.
The service key must be inserted in the door switch.
Machine components are triggered directly.

Example: Test cocoa mixer



NOTE
Button E increases the service number.
Button M changes the function status.

10.11.1 Service numbers

The service numbers are divided into categories M, double M and L functions.
The M functions are suitable for testing control outputs that are to respond to a motor or similar actors. L functions display a value.

No.	Button	Display	Note
1	M	Valve coffee grinder	
2	M	Mixer instant coffee	
3	M	Mixer cocoa	
4	M	Mixer tea	
5	M	Mixer soup	
6	M	Mixer topping	
7	M	Mixer sugar	
8	M	Mixer whitener	
10	M	Coffee grinder	→ The coffee grinder runs as long as button M is pressed
11	M	Dosing motor instant coffee	
12	M	Dosing motor cocoa	
13	M	Dosing motor tea	
14	M	Dosing motor soup	
15	M	Dosing motor topping	
16	M	Dosing motor sugar	
17	M	Dosing motor whitener	
19	M	Valve supply 1	
20	M	Valve supply 2	
21	M	Brewing valve	
22	M	Valve coffee 2	
23	M	Valve cocoa	
24	M	Valve tea	
25	M	Valve soup	
26	M	Valve topping	
27	M	Valve sugar	
28	M	Valve whitener	
29	M	Valve hot water	
30	M	Boiler pump forwards	→ stop with M
33	M	Fan	
34	M	Heater	**WARNING!** The heater can burn out
44	M	Boiler pump backwards	
47	M	Illumination	
50	M	Coin return	
56	M	Cup	
57	M	Close brewing chamber	
58	M	Open brewing chamber	

No.	Button	Display	Note
59	M	Advance swivel arm	
60	M	Retract swivel arm	
65	M	One stick delivery	
66	M	Circulation valve	
76	M	Close delivery unit lock	
77	M	Open delivery unit lock	
86	M	Pressure test pump	
87	M	Empty boiler	Shut off water supply
88	M	Refill espresso boiler	
152	M	Open supply valves 1 and 2 simultaneously	
5	L	Temperature Instant boiler	At 255 °C the sensor or supply line is defective; Short circuit or interruption; Water too cold (≥ 34°C)
7	L	Temperature Espresso boiler	
8	L	Operating voltage of motors in mV	
14	L	Output value light barrier	Cup detection if value = 1
17	L	Position contacts and sensors	Explanation of displayed values on page 123
18	L	Display keyboard status	Display change on actuation
21	L	Display software version	e.g.: HTE6S510
22	L	Display operating days	
23	L	Display operating hours	
25	L	No. of rinses	Sum of rinses
69	L	Statistics can be read out once more	
85	L	Set machine in a flash load status	(see chapter 11.18 Software upload with programming device)

Double M functions

No.	Display	Note
99 M 81 M	Generate data error 81	
99 M 89 M	Save all parameter settings as flash backup	
99 M 90 M	Read out flash memory	
99 M 123 M	Switch on heater	Following boiler emptying or software upload if not already switched on in the Installation menu

Empty instant-boiler

Enter the number 87+M in the Service menu to empty the instant boiler. Water is discharged from the coffee valve.

WARNING!Hot boiler and hot water
Danger of burning!

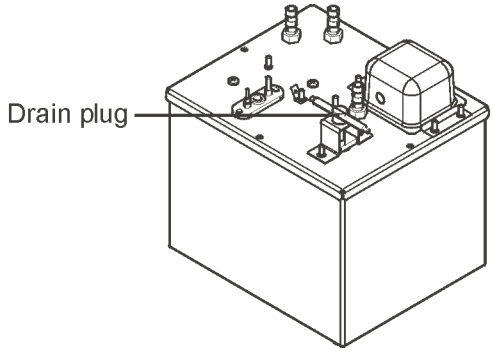
- Allow boilers to cool down first
- Do not dip hand into the water
- Do not spill water

NOTE
The water quantity during boiler emptying is approx. 3 litres.
Boiler emptying can be stopped by pressing any button. It is restarted via 87 + M.

NOTE
Boiler emptying may also be performed manually via the boiler drain plug.

Open drain plug

Close drain plug



IMPORTANT!
Close the drain plug again to the stop following boiler emptying.

Display software version

Enter the number 21 + L in the Service menu. The software version is indicated on the display.

Data errors

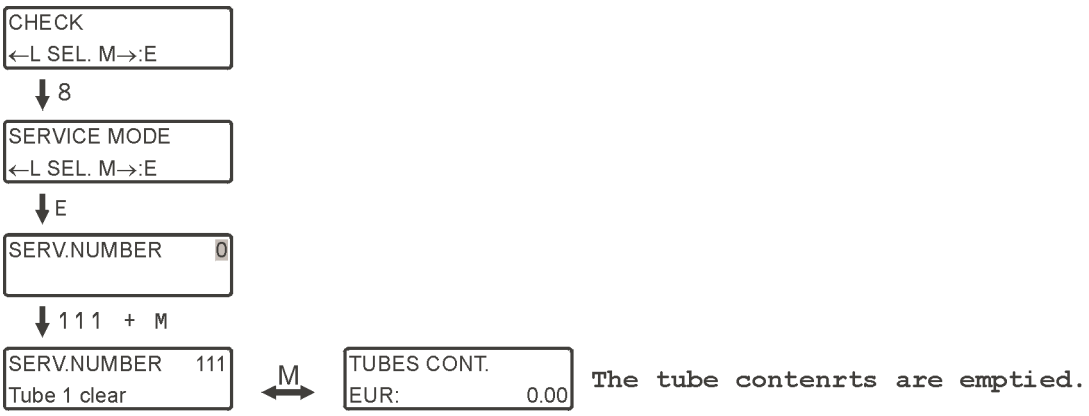
Data error means that special data in the RAM reveal a check sum error. This indicates that the data is no longer valid and must be restored so that the machine may continue to operate. A data error is triggered if:

- the battery can no longer supply the RAM (under 2V) while the machine is switched off
- a software upload has been performed
- 99+M+81+M is initiated in the Service menu

In these cases the invalid operating data must be overwritten by valid data on restarting the control. If a flash back-up data record exists it will be written into the RAM as new operating data. As a rule the user does not notice this process, only the heater must be re-enabled (for safety reasons). If no flash back-up data exist the factory settings from the program data will become the operating data.

Empty refund tubes

On replacing the coin switching device (MSD) or control the tube summator must be reset.
The refund tubes must be completely emptied for this purpose. Enter the corresponding service number and execute via button M.



The service numbers for tube emptying are listed in the following table:

	3-tube coin changer		4-/5-tube coin changer	
	all coins	**single coins**	**all coins**	**single coins**
Tube 1	111	101	115	105
Tube 2	112	102	116	106
Tube 3	113	103	117	107
Tube 4			118	108
Tube 5			119	109

If coins remain in the tubes they must be removed via the service keypad of the coin switching device (MSD).
The assignment of the coins to the tubes is specified on the MSD manufacturer's type plate.

Fill refund tubes

- Insert coins in the coin switching device(In the case of acceptance limitation the max. set amount)
- Press button E
- Actuate button R

On first-time filling approx. 20 coins should be inserted per coin tube. The machine is thus operational.

NOTE
If the Service menu is active the tubes may also be filled directly via the coin slot. The control then counts the inserted coins.

11 MAINTENANCE

During all repair and maintenance work the greatest care and attention must be exercised.

The safety instructions must be observed.

Only original SIELAFF spare parts may be used and mounted.

DANGER! Live electrical components
Risk to life!

- Switch off machine and disconnect mains plug prior to maintenance and repair work

WARNING! Hot surfaces
Danger of burning!

- Allow the machine to cool down prior to maintenance and repair work

CAUTION!
Hoses and water lines must not be kinked

ESD-sensitive components
In the event of improper handling destruction of components!

- Only qualified personnel with ESD knowledge are authorised to intervene

NOTE
Maintenance and repair jobs may only be performed by trained and qualified personnel!
Maintenance and repair jobs to electrical machine equipment may only be performed by an authorised electrician!

11 Technical manual CVS 500

Maintenance

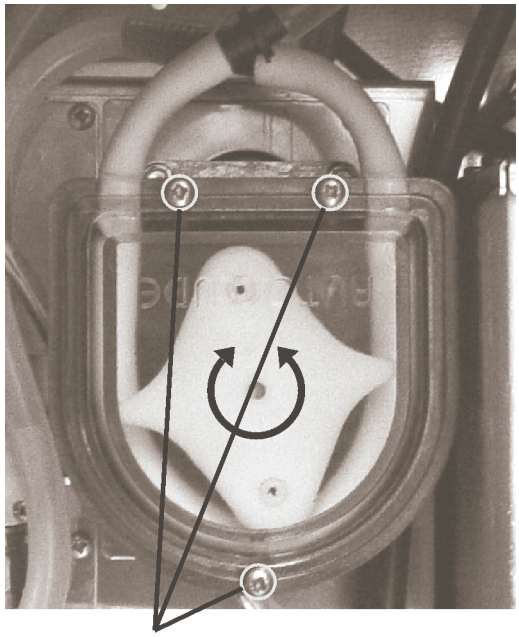
11.1 Maintenance list

Part concerned	Action	Frequency	Procedure & part required	Chapter
Fan	check function and clean	half-yearly	Service number 33M	11.15
Water circulation system	check for leakages and scale	half-yearly		
Dirt trap/ fine filter	check, if necessary clean	depending on the water quality, at least half-yearly		11.3
Boiler	descale	depending on the water quality, at least half-yearly		11.8
Mixer water coupling and nozzle	Clean if necessary replace	depending on the water quality, at least half-yearly	402 00 326 00 404 00 032 00	
Mixer wing	replace	yearly or after 25,000 vends *	404 00 309 00	11.14
Flange (V-ring and O-ring)	replace	yearly or after 25,000 vends *	V-ring: 404 00 331 01 O-ring: 952 40 040 25	11.4
O-ring:	replace	yearly or after 25,000 vends *	952 40 031 35	11.5
Discharge hoses	replace	yearly	985 13 420 17	
Silicone hoses	check for leakages if necessary replace	yearly	985 13 420 20	
Hose in hose pump	replace	yearly or after 25,000 vends *	985 27 735 09	11.2
Valve hoses	replace	yearly or after 25,000 vends *	Mixer: 404 00 434 00 Circulation valve: 404 00 435 00	11.6
Hose clamping valves	check	yearly or after 25,000 vends *		
Mixer housing and mixer motor	check	yearly or after 25,000 vends *		
Water inlet valves	function check	yearly	Service numbers 19M and 20M	
Moisture sensor	function check	yearly		
Product container	check, if necessary replace	yearly		
Interior illumination	check, if necessary replace fluorescent tube and starter	yearly	Service number 47M	
Water quantities	check, if necessary set	yearly	Measuring jug	10.5
Dosing	check, if necessary set	yearly	Measuring jug, scale with 0.1g precision	10.5
Brewing temperature	check, if necessary set	yearly	Thermometer	
Water intake hoses	replace	every 2 years	Water intake hose: 402 00 082 00 Armoured tube: 402 40 905 00	
Checking to VDE 0701		every 2 years		

* depending which occurs first!

11.2 Replace hose in the hose pump

- Drain the water from the boiler
- Pull off the two hoses connected to the hose pump
- Remove 3 screws and hose pump cover
- Remove the old hose
- Insert the new hose with the connection pieces carefully into the hose pump
  It should be centred in the pump and must not be twisted
  In order to centre the hose turn the rotor in the middle of the pump to the left or to the right.
- Screw the cover tight again
- Re-connect the two hoses to the pump



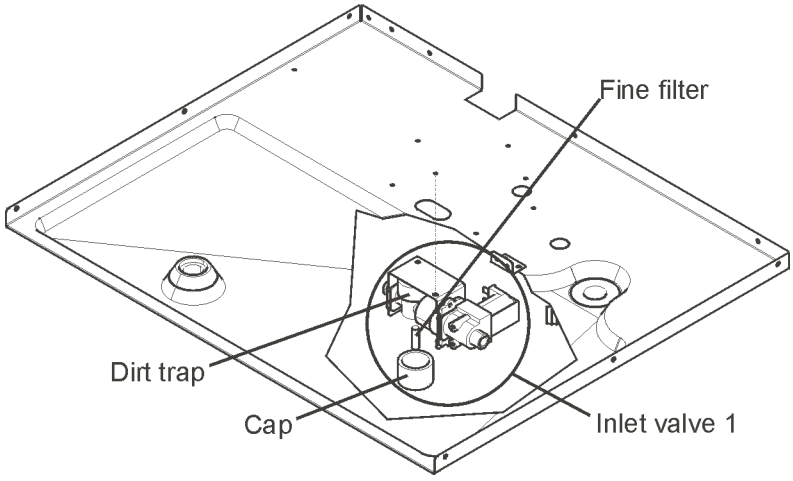
11.3 Clean dirt trap/ fine filter

A dirt trap is installed in the water pipe in front of inlet valve 1 of the machine. A fine filter that filters out soiling in the water is located in the cap of the dirt trap.

NOTE
By screwing off the cap the water supply to the machine is shut off.
The fine filter must be checked monthly and if necessary rinsed clean.

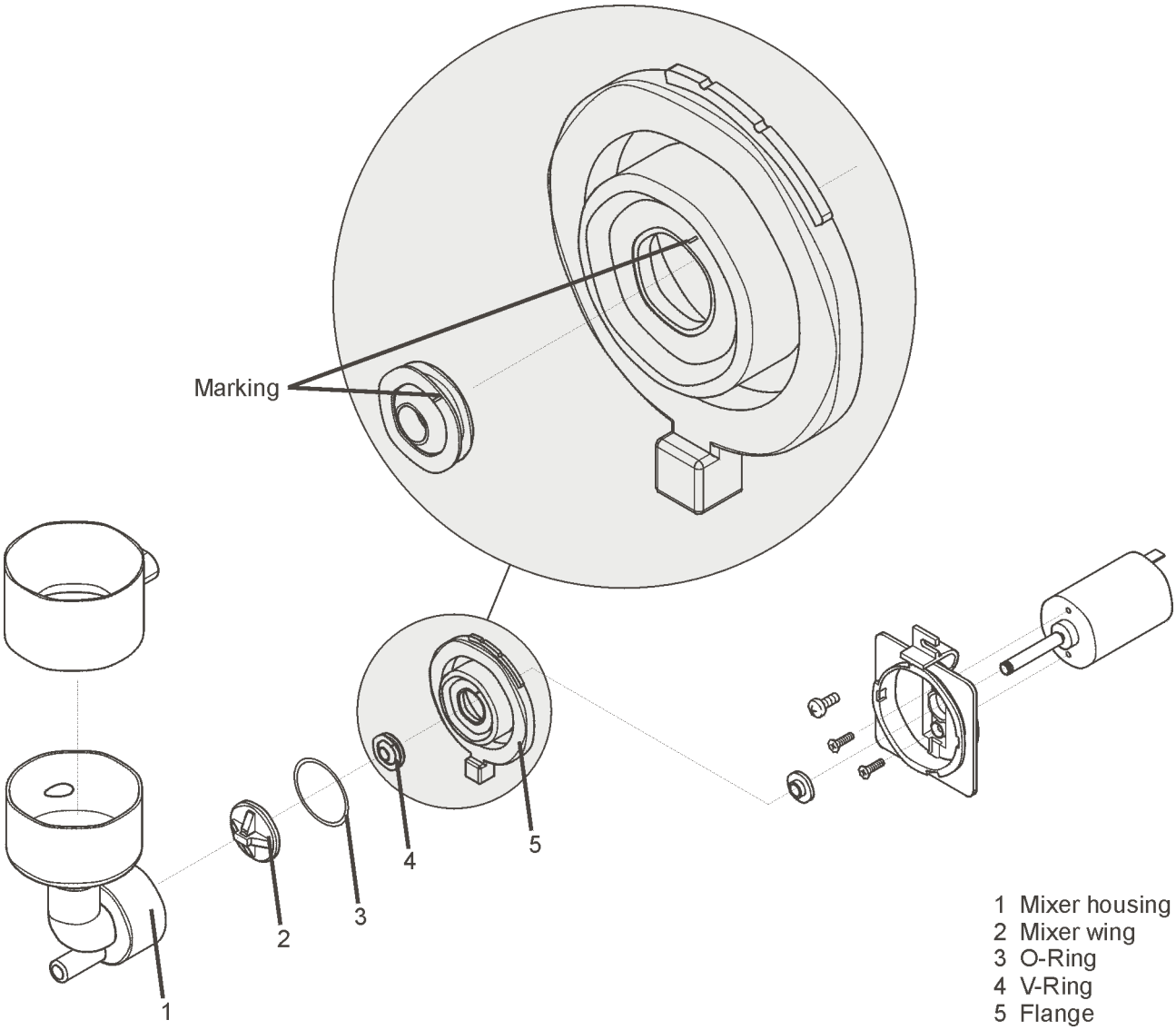
- Remove grounds container
- Screw off cap
- Rinse out and clean fine filter

Mounting is performed in reverse order.



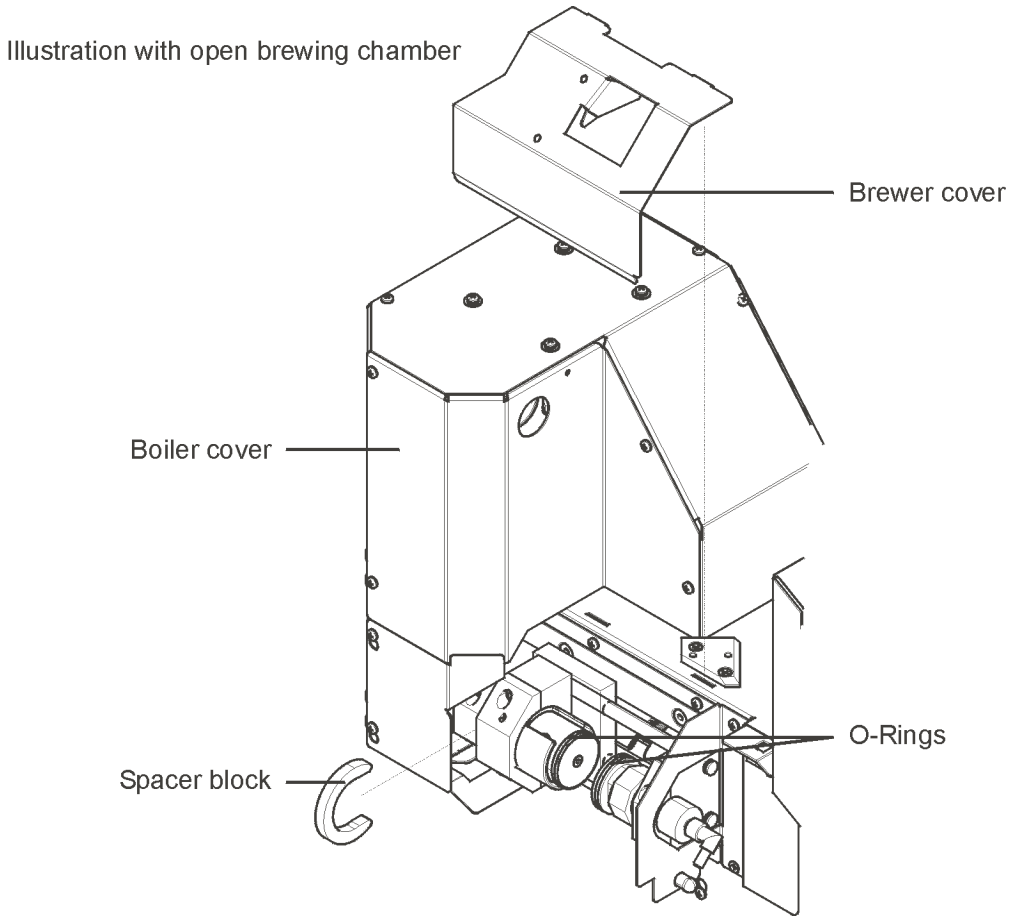
11.4 Replace washers on the flange

- Remove mixer housing with air extraction (1) to the front
- Remove mixer wing (2)
- Turn the flange (5) to the left and remove
- Replace both washers (O-ring (3) and V-ring (4))
  The mixer wing may also be replaced
- On inserting the V-ring ensure that the marking on the flange and the marking on the gasket match (see magnified detail of the drawing).
- Reinsert all parts in reverse order



1 Mixer housing
2 Mixer wing
3 O-Ring
4 V-Ring
5 Flange

11.5 Renewing brewer seal



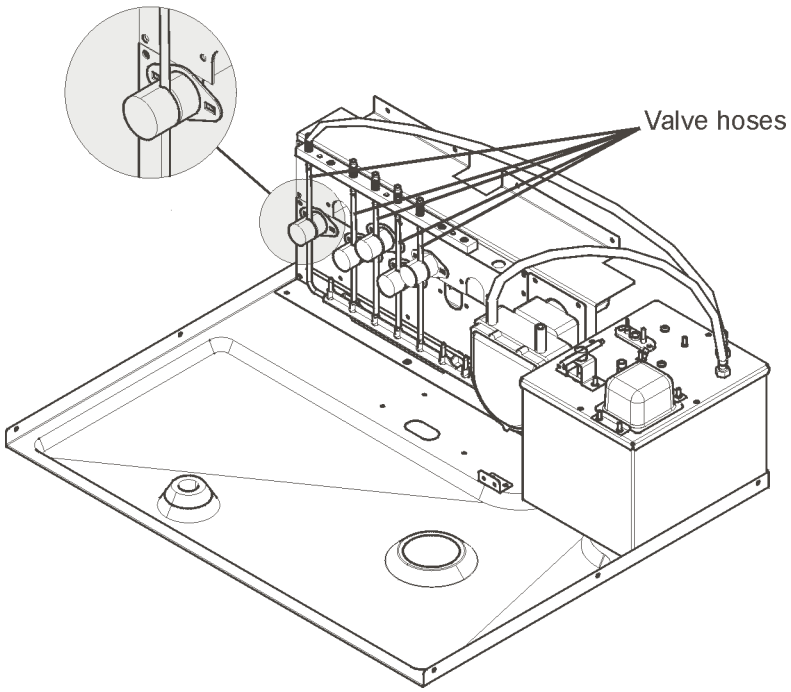
- Open the door, insert service key
- Remove brewer cover
- Take out spacer block
- Enter 58 M in the service menu to open the brewing chamber
- Remove O-rings
- Place the new O-rings
- Enter 57 M in the service menu to close the brewing chamber
- Replace spacer block
- Put on brewer cover
- Remove service key

NOTE
Discard the old O-rings.

11.6 Replace valve hoses

IMPORTANT!
To prevent leakages during operation the hoses must be replaced annually.
Only platinum-linked silicone hoses may be used.
Article reference: 404 00 400 00

- Shut off on-site water connection
- Switch off machine and disconnect mains plug
- Remove Makrolon disk (2 screws)
- Renew silicone hoses. Insert the new hoses in the valves.
  The silicone hoses must not be kinked.

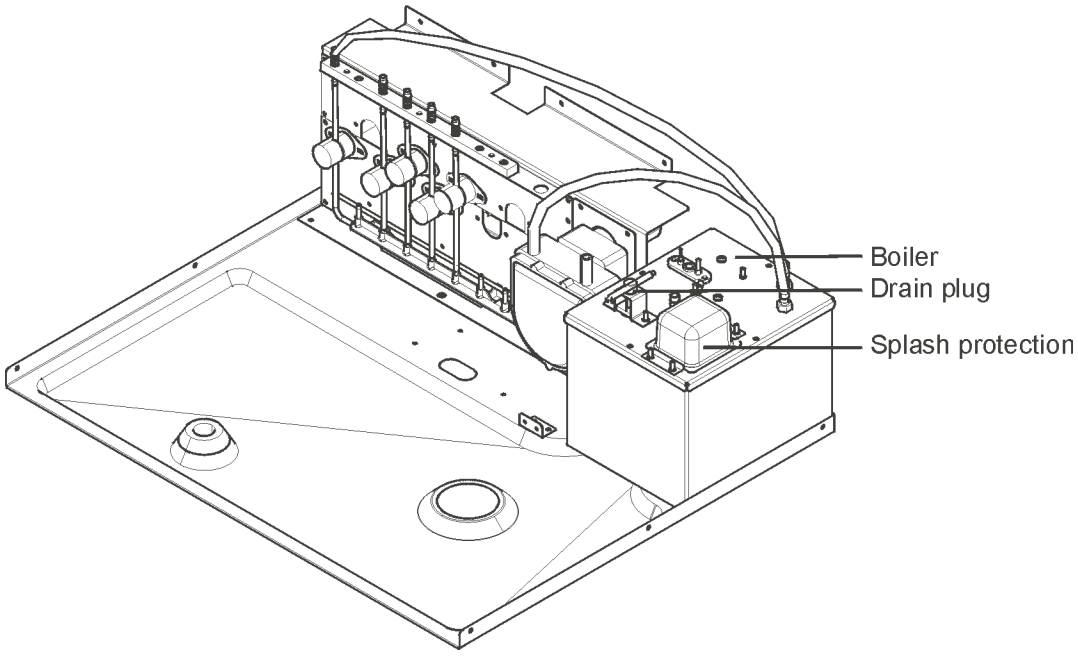


11.7 Removing the instant boiler

DANGER! Live electrical components
Risk to life!
- Prior to dismantling the boiler switch off the machine and disconnect the mains plug

- Shut off on-site water connection or remove the fine filter
- Dismantle the metal and plastic cover
- Allow the boiler to cool down
- Loosen the electrical connections on the boiler
- Empty the boiler via the drain plug
- Disconnect the hoses on the boiler
- Unscrew the splash protection
- Pull out the boiler to the front

Mounting is performed in reverse order.



11.8 Descaling the instant boiler

Depending on the local water quality the boiler must be descaled regularly.
A commercially available de-scale agent may be used for descaling purposes. The latter must be compatible with foodstuffs.

NOTE
To assure fast drink preparation the boiler should be de-scaled at least every six months.

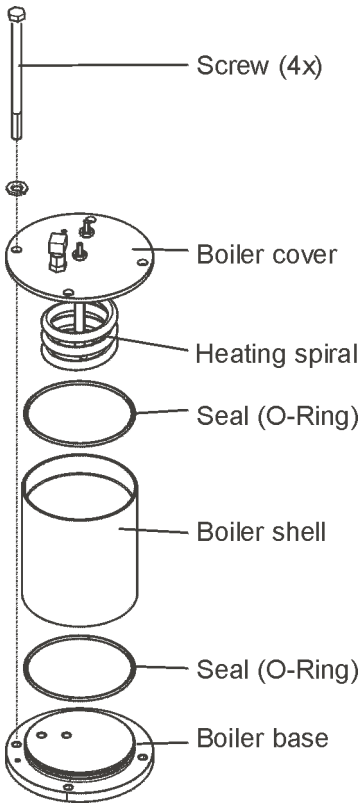
NOTE
Manufacturer recommendation
From a water hardness of 8°dH onwards a water filter should be fitted upstream.

11.9 Removing the espresso boiler

- Open the door and insert the service key.
- Switch off boiler heater in installation menu.
- Fill the espresso boiler in servcie menu (service number 88M).
  This has to be done possibly twice to cool down the boiler.
- Switch off the machine.
- Remove boiler cover (see page 86).
- Separate all electronic connections to the espresso boiler.
- Remove all hoses which are connected to the boiler cover.
- Place a bucket or similar under the boiler and remove the two connected hoses.
- Loosen the retaining screw at the bottom of the boiler.
- Take out the boiler frontwards.

11.10 Descaling the espresso boiler

- Remove the espresso boiler as described above.
- Remove the insulation.
- Remove the 4 screws. Dismantle the boiler as shown here in the picture.
- Decalcify the single parts of the boiler except the insulation.
- Re-build the boiler in reverse order. Pay attention to the correct positioning of the insulation rings on the boiler.
- Install the insulation on the boiler.
- Re-install the boiler and secure it with the lower screws.
- Install all cables and hoses.
- Switch on the machine.
- Fill the espresso boiler in service menu (service number 87M).
- Switch on the boiler heater in the installation menu (M 7 E).

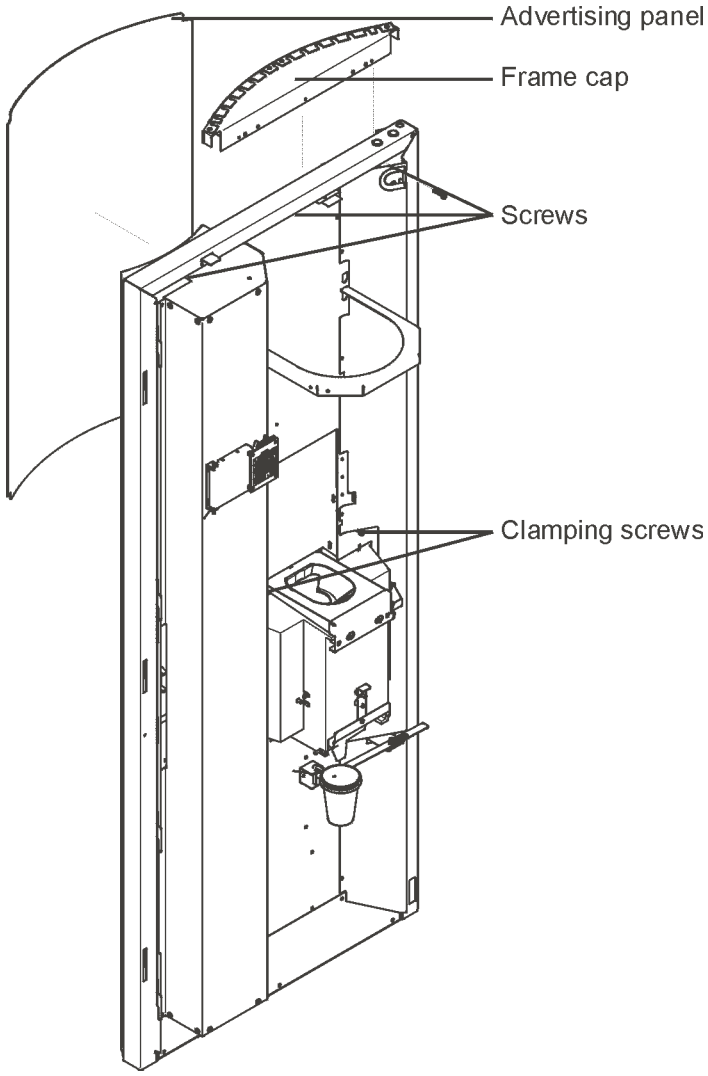


11.11 Replace advertising panel and illumination

- Remove frame cap (3 screws).
- Lift up and remove frame cap
- Hinge out cup unit
- Remove the 2 clamping screws
- Remove the lower frame cap
- Remove the advertising panel to the front

Mounting is performed in reverse order.

NOTE
To replace the advertising illumination the advertising panel must be removed.

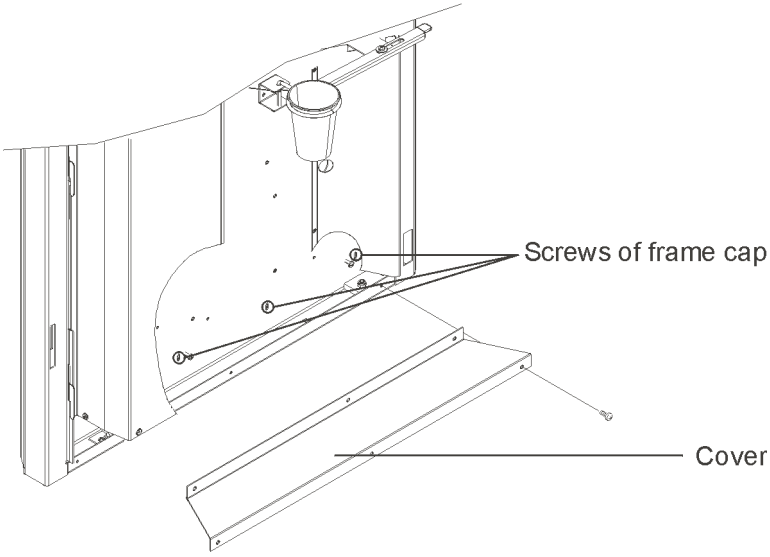


11.12 Replace lower advertising illumination

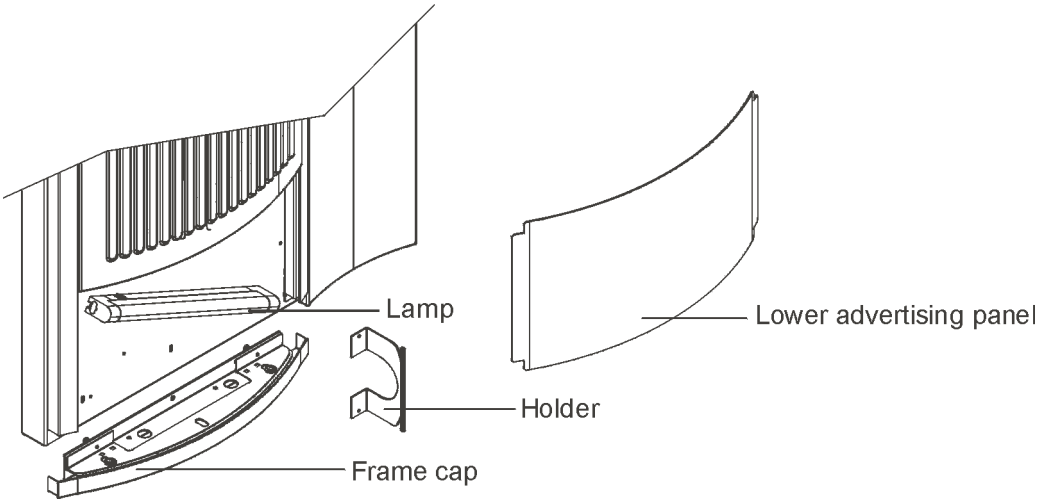
- Remove the cover of the machine door interior. For this purpose you have to remove 6 screws.
- Loosen the 3 clamping screws of the lower frame cap and remove the frame cap.
- Push the lower advertising panel downwards and remove it to the front.
- Then the lamp is accessible. If necessary the holder may be removed too.

Mounting is performed in reverse order.

Interior of the door:



Exterior of the door:

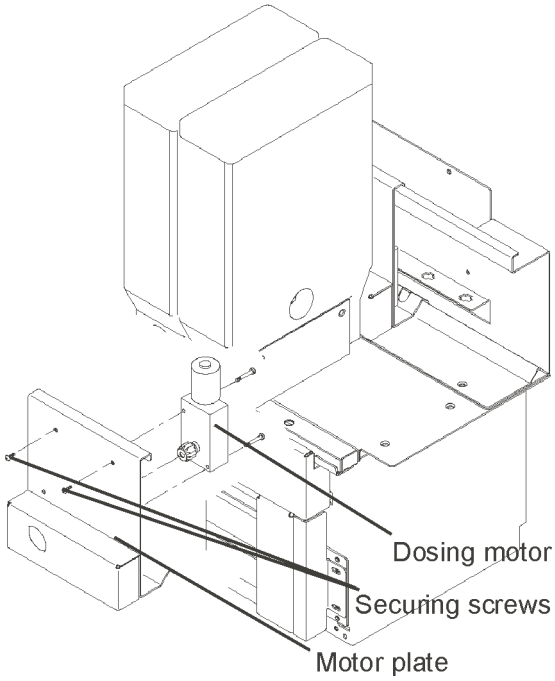


11.13 Dosing motor dismantling

DANGER! Live electrical components
Risk to life!
- Prior to dismantling the dosing motors switch off the machine and disconnect the mains plug

- Close product chutes
- Remove product container
- Remove motor plate of the appropriate motor by loosening the top securing screw
- Remove motor plate and motor to the front
- Loosen motor plug connection
- Unscrew motor from motor plate and replace with new motor
- Electrically connect new motor

Mounting is performed in reverse order.

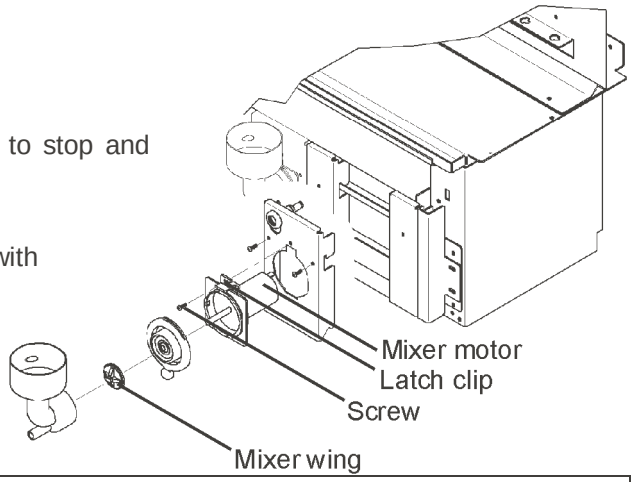


11.14 Mixer motor dismantling

DANGER! Live electrical components
Risk to life!
- Prior to dismantling the mixer motors switch off the machine and disconnect the mains plug

- Close product chutes
- Remove product container
- Pull off the mixer wing to the front
- Turn bayonet lock ring in anti-clockwise direction to stop and pull off to the front
- Remove the top centre screw
- Press latch clip downwards and remove motor with plastic flange from the mixer plate
- Loosen motor plug connection

Mounting is performed in reverse order.



NOTE
When mounting the mixer wing the marking must point towards the axle surface.

11.15 Fan dismantling

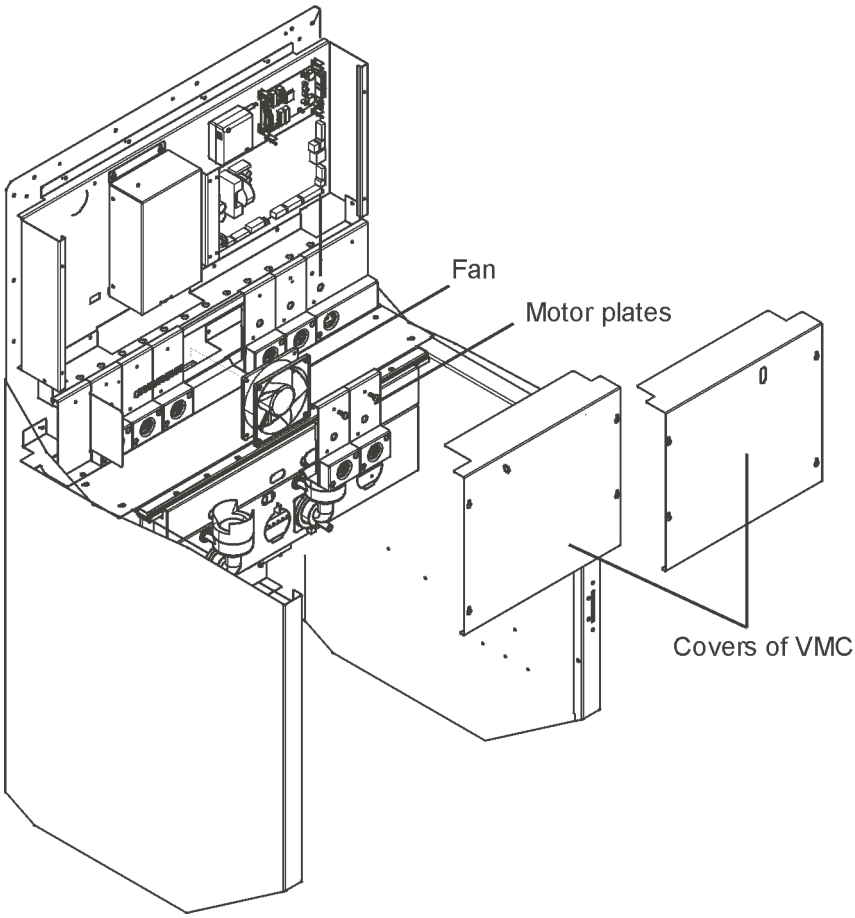
DANGER! live electrical components
Risk to life!

- Switch off the machine and disconnect the mains plug prior to dismantling the fan

- take out product containers as described above
- remove covers of VMC - to do so, loosen 4 screws for each, push the covers upwards and remove them to the front
- remove the upper mounting screws of the two middle motor plates
- remove the motor plates with motor to the front
- demount plug-in connection of the motors
- lift up the compact fan and demount the plug-in connection

Mounting is performed in reverse order.

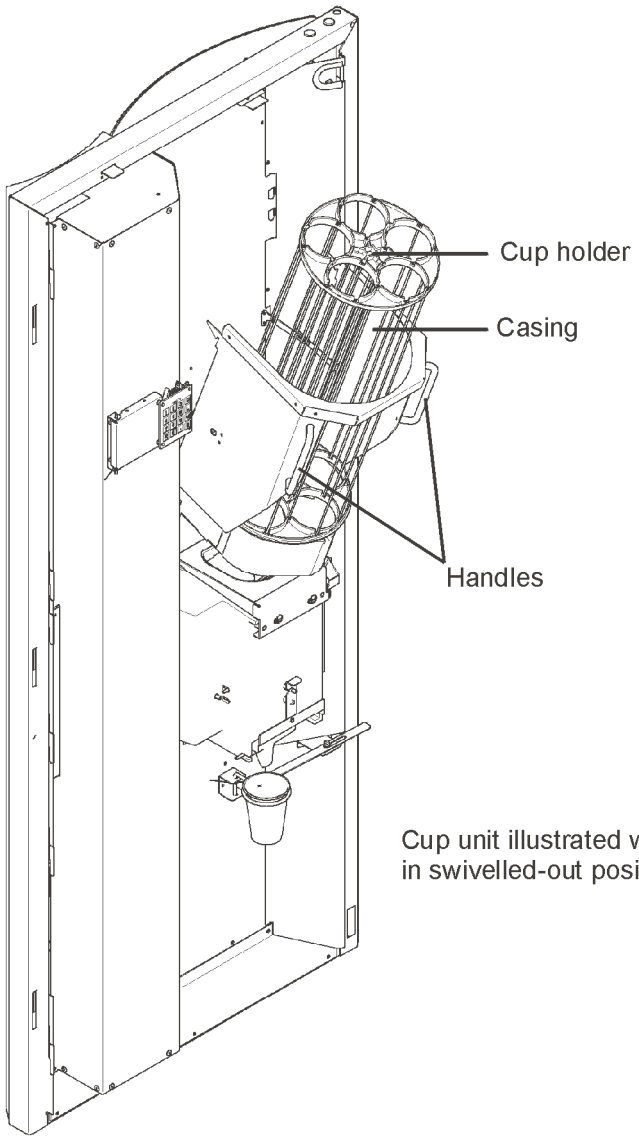
NOTE
On inserting the fan please ensure that the arrow on the fan housing points towards the machine rear.



11.16 Cup unit dismantling

To clear a jam in the cup dispenser or make accessible for cleaning, the cup unit may be removed.

- Hold cup unit by the handles, lift slightly and swivel to stop
- Remove cover
- Pull the transparent casing upwards
- Push up the individual cup stacks and remove
- Grip cup stack at the top centre and pull up and out
- Mounting is performed in reverse order.
  When opening the cup unit heed the position of the profile.



Cup unit illustrated without cover
in swivelled-out position.

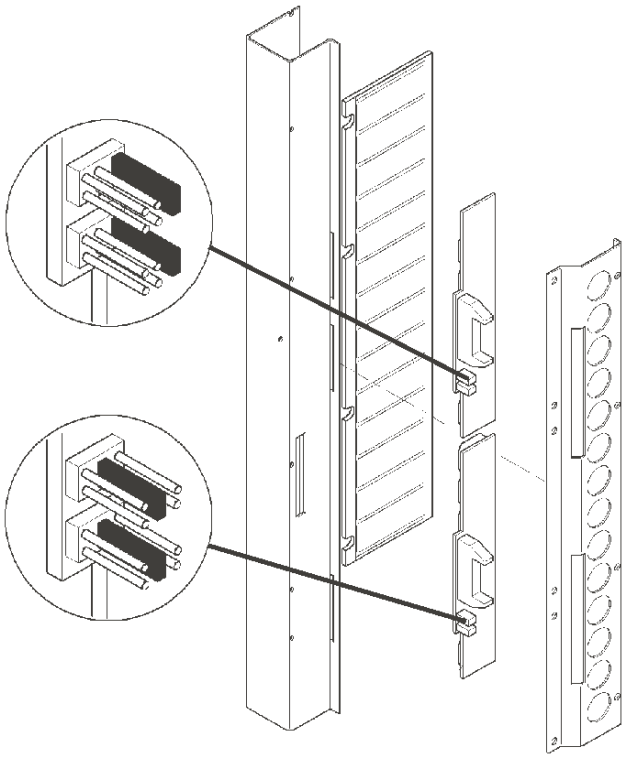
11.17 Selection keypad jumper field

When replacing the selection keypad the position of the jumpers must be checked. The jumpers address the selection buttons.

NOTE
Only correctly connected jumpers ensure correct drink dispensing on drink selection.
If jumpers are incorrectly connected either not the selected drink or no drink at all will be dispensed.

The jumpers in the top jumper field must be connected vertically in the right hand side position.

The jumpers in the bottom jumper field must be connected vertically in the centre position.



11.18 Software upload with programming device

The programming device is a small electronic unit in which the most up-to-date current software version is saved.
Article reference: Complete programming device 890 11 502 00

- Open door
- Switch off machine at main switch
- Insert programming device in MBD socket on the display.
- Switch on main switch
- Insert service key
- Call up Service menu and switch control via service number 85 + L to flash load status (LED on the programming box lights up green)
- Press button E on the programming box. During transmission the green LED flashes on the programming box.
  In the display „Flash load“ (approx. 3min) is indicated
- Once transmission is complete „LOAD OK VERS....." is indicated on the display.
- Switch off main switch and remove service key
- Disconnect programming device (re-insert possibly existing credit system)
- Switch on main switch
- Switch on the heater in the installation menu
- Call up the Installation menu and check that all machine constants (e.g. machine type, credit system etc.) are correct
- Check machine functions in the Test vend menu

12 ERROR MESSAGES

Error messages are divided into three groups. Depending on the group to which the error message belongs it is indicated on the display or not.

Group	Meaning
No external display	Messages from this group are not indicated on the display. They may be called up in the Check menu.
External error number	Messages from this group indicate an error number on the display. The meaning of the error numbers may be found in the following list.
Clear wording	Messages from this group are indicated on the display. On the basis of this message appropriate measures may be performed immediately.

NOTE
Errors within a group may be added together! It is thus possible that an error number is displayed that is not featured in the table.
Example: An error 9.5 is displayed. This means that errors 9.4 and 9.1 have occurred.

Error number (group)	Error number	Event/ error (description)	External			Out of service
			Error number	No external display	Clear wording	
1	81	Data error 81	X			X
1	82	Data error 82	X			X
1	83	Data error 83	X			X
1	85	Remote maintenance			X	X
1	11	Procedure error, division by zero		X		
2	64	Credit system communication			X	X
3	8	Switched off during vending (Timing error)		X		
4	8	Button jammed			X	
5	32	Temperature too low			X	X
6	32	Lack of water (filling level sensors instant boiler)			X	X
6	64	Lack of water (manometric switch)				X
7	1	Reference run of brewer		X		
7	2	Brewer cannot be positioned	X			
7	32	Temporarily out of service due to brewer error				X
9	1	Cup carousel empty			X	
9	2	Cup empty			X	
9	4	Cup unit (e.g. timeout)	X			
9	8	Cup dispensing timeout	X			
9	32	Cup empty, when cup compulsory out of service			X	X
10	32	Moisture in system, loss of water	X			X
10	64	Moisture in system, loss of water	X			X
10	128	Moisture sensor error (drip container)	X			

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Error messages

Error number (group)	Error number	Event/ error (description)	External			Out of service
			Error number	No external display	Clear wording	
11	1	Inlet valve defective	X			
11	2	Inlet valve defective	X			
11	4	Inlet valve defective	X			
11	32	Water level sequence wrong	X			X
11	64	Humidity sensors defective				X
12	32	Temperature sensor defective	X			X
13	32	Out of operation, night time reduction			X	X
14	32	Grounds container	X			X
15	32	Cleaning interrupted	X			X
16	32	Light barrier continually set			X	X
17	1	Water must be refilled for a long time			X	
18	32	Pressure sensor defective	X			X
19	32	Coin refund defective	X			X
22	1	Brewing motor lines open	X			
23	32	Door open			X	X
24	32	Heater not enabled			X	X
25	32	Wrong software/ keypad			X	X
26	32	Swivel arm defective			X	X
26	64	Swivel arm timeout			X	X
27	16	Warning: Grounds container full	X			
27	32	Error: Grounds container full	X			X
28	1	Warning: Beans container empty			X	
29	16	Warning: Cleaning should be performed	X			
29	32	It is essential that cleaning be performed	X			X
30	1	Warning: Replace filter		X		
30	2	Warning: Service required		X		
31	1	Max. no. of errors per day exceeded		X		
31	2	No vending for approx. 24 hrs		X		
31	32	Timeout delivery unit lock		X		X
63	0	Motor error: Brewer motor Timeout				
65	0	Error: MDB coin mech			X	
66	0	Error: MDB card reader			X	
67	0	Error: MDB bill validator			X	
69	0	Error: MDB slave machine			X	

13 FACTORY SETTINGS

13.1 Abbreviations

Display Standard values	Drinks-abbreviation	
Café au lait	CAL/ CALl	
Cappuccino	CAP1/ CP1l	(Cof 1, SU, WH)
Cappuccino	CAP2/ CP2l	(Cof 1, SU, WH, Cocoa)
Cappuccino	CAP3/ CP3l	(Cof 2, SU, WH, Cocoa)
Americano	AMI/ AMIl	
Cap. Spec.	CSP1/ CP1l	Cappuccino special (InCap)
Espresso	EXP/ EXPl	
EXP CHOC	EXCO/ EXCl	(Cof 1, SU, WH, Cocoa)
EXP CHOC	EXC2/ ES2l	(Cof 2, SU, WH, Cocoa)
Hot water	HW	
Coffee	COF1/ CO1l	(Cof 1)
Instant coffee	COF2/ CO2l	(Cof 2)
Macchiato	MAC/ MACl	
Chocolate	CHOC/ CHOl	
Choco Milk	COM/ COMl	
Milk	MIL/ MILl	
Soup	SOU/ SOUl	
Tea	TEA1/ TE1l	

Pre-selection/ option-Abbreviation	Function
ST	Start of drink dispensing
NCU	No cup
SU	Sugar (one stage)
SU>>	Sugar (three stages)
NOSU	No sugar
WH	Whitener (one stage)
WH>>	Whitener (three stages)
>>	Stronger
<<	Weaker
STK	Stick dispensing
LASM	Large/ small
+MOC	Mocca pre-selection (water reduction)
Pot	Set to X' x desired cup portions

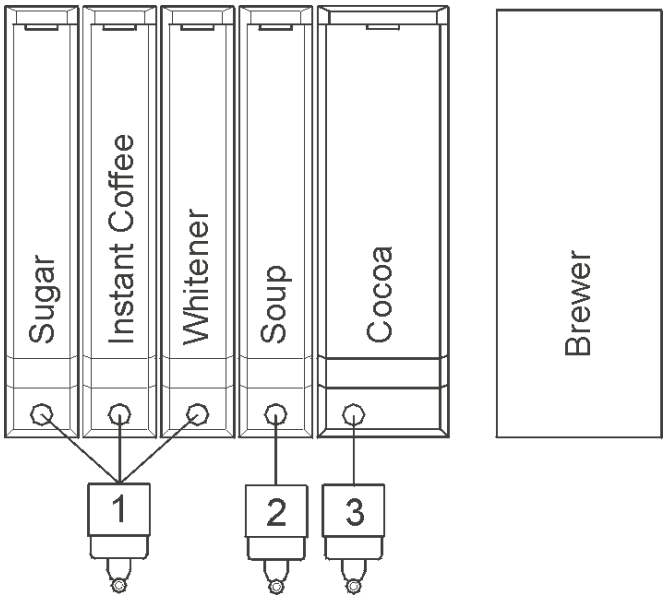
13.2 Machine variants

13.2.1 Variant 5301

The variant features 3 mixers and 5 product containers.

NOTE
For this variant in the Installation menu "6301" must be set. Cappuccino Special (CSP) cannot be programmed.

	Sub-products							
Drink Abbrev.	**Sugar**	**Coffee1**	**Instant coffee**	**Whitener**	**Soup**	**Cocoa**		
COF1	Z	X		Z				
COF2	Z		X	Z				
EXP	Z	X		Z				
CAL	Z	X		X				
CAP1	Z	X		X				
CAP2	Z	X		X		X		
CAP3	Z		X	X		X		
EXCO	Z	X		X		X		
EXC2	Z		X	X		X		
AMI	Z	X		X				
CHOC						X		
COM	Z			X		X		
MIL	Z			X				
SOUP					X			
HW	HW valve available as special accessory							



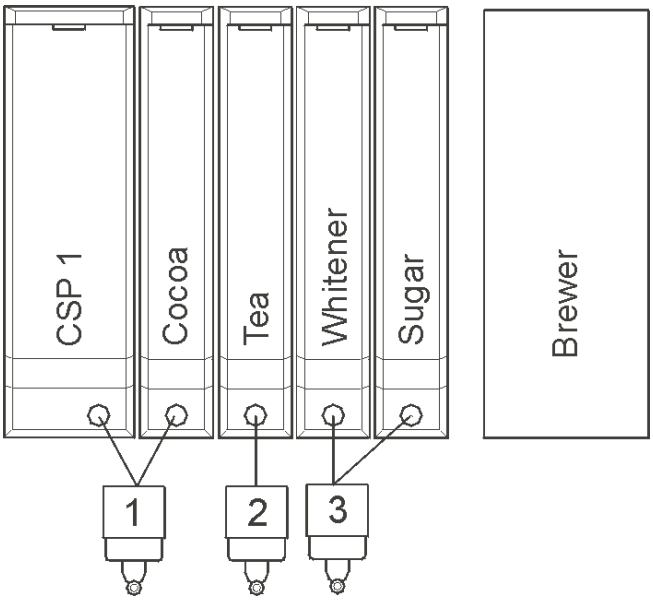
Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF1 + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au lait	ST + CAL	0,50	0,50
9	**(39)**	Cappuccino	ST + COF1	0,50	0,50
10	**(40)**	EspressoChoc	ST + EXCO	0,50	0,50
11	**(41)**	Instant coffee	ST + COF2	0,50	0,50
12	**(42)**	Chocolate	ST + CHOC	0,50	0,50
13	**(43)**	ChocoCreme	ST + COM	0,50	0,50
14	**(44)**	Soup	ST + SOU	0,50	0,50

Z = Pre-selection

13.2.2 Variant 5302

The variant features 3 mixers and 5 product containers.

	Sub-products							
Drink Abbrev.	**Sugar**	**Coffee1**	**Whit-ener**	**Tea**	**Cocoa**	**CSP1**		
COF1	Z	X	Z					
EXP	Z	X	Z					
CAL	Z	X	X					
CAP1	Z	X	X					
CAP2	Z	X	X		X			
EXCO	Z	X	X		X			
AMI	Z	X	X					
CHOC					X			
COM	Z		X		X			
MIL	Z		X					
CSP1						X		
TEA				X				
HW	HW valve available as special accessory							



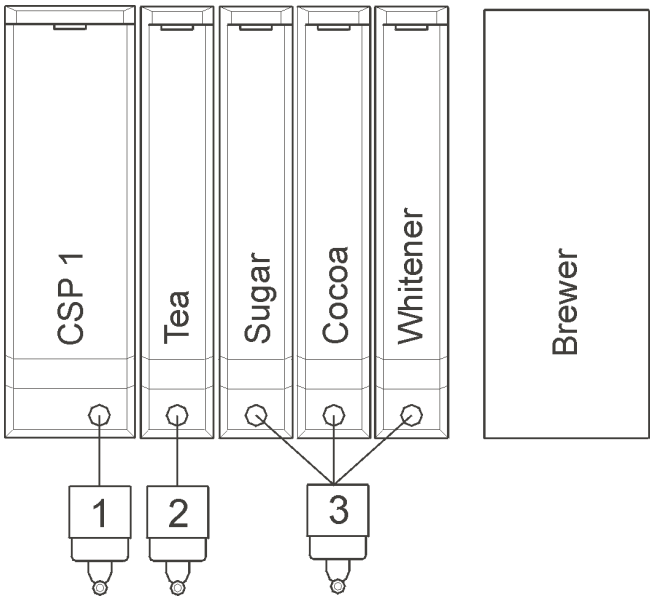
Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF1 + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au lait	ST + CAL	0,50	0,50
9	**(39)**	Café au lait with sugar	ST + CAL + SU	0,50	0,50
10	**(40)**	Cappuccino	ST + CAP1	0,50	0,50
11	**(41)**	Chocolate	ST + CHOC	0,50	0,50
12	**(42)**	ChocoCreme	ST + COM	0,50	0,50
13	**(43)**	Cappuccino Special	ST + CSP1	0,50	0,50
14	**(44)**	Tea	ST + TEA1	0,50	0,50

Z = Pre-selection

13.2.3 Variant 5305

The variant features 3 mixers and 5 product containers.

	Sub-products						
Drink Abbrev.	Coffee1	Cocoa	Tea	Sugar	Whitener	CSP 1	
COF1	X			Z	Z		
EXP	X			Z	Z		
CAL	X			Z	X		
CAP1	X			Z	X		
CAP2	X	X		Z	X		
EXCO	X	X		Z	X		
AMI	X			Z	X		
MAC	X			Z	X		
CHOC		X					
COM		X		Z	X		
MIL				Z	X		
TEA			X				
CSP1						X	
HW	HW valve available as special accessory						



Selection buttons			Programming	Price (EUR)	
				A	B
1	(31)	Espresso	+MOC		
2	(32)	Pre-selection sugar	SU>>		
3	(33)	Pre-selection with glass	LASM	0,50	0,50
4	(34)	Coffee	ST + COF1	0,50	0,50
5	(35)	Coffee	ST + WH + COF1	0,50	0,50
6	(36)	Cappuc. Special	ST + CSP1	0,50	0,50
7	(37)	Latte Macchiato	ST + MAC	0,50	0,50
8	(38)	Café au lait	ST + CAL	0,50	0,50
9	(39)	Espres.Macchiato	WH + ST + EXP	0,50	0,50
10	(40)	Cappuc.originale	ST + CAP1	0,50	0,50
11	(41)	Café au lait	ST + CP1l	0,50	0,50
12	(42)	Cocoa	ST + CHOC	0,50	0,50
13	(43)	Choco Milk	ST + COM	0,50	0,50
14	(44)	Tea	ST + TEA	0,50	0,50

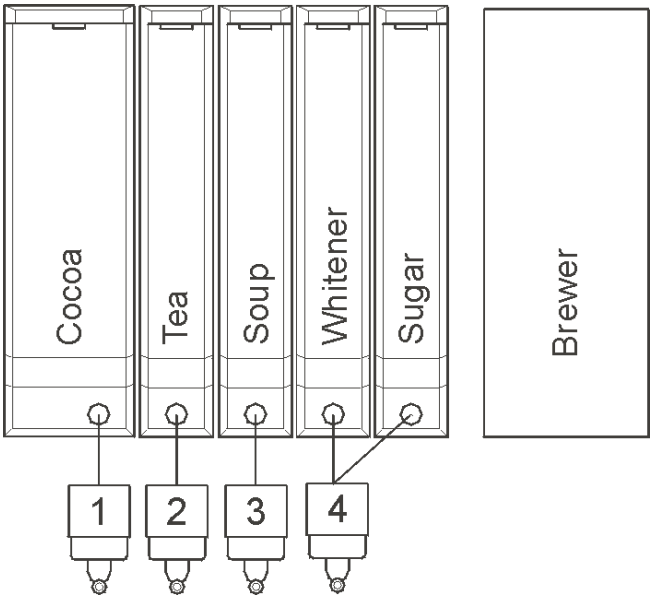
Z = Pre-selection

13.2.4 Variant 5401

The variant features 4 mixers and 5 product containers.

NOTE
For this variant in the Installation menu "6403" must be set. Cappuccino Special (CSP) cannot be programmed.

	Sub-products						
Drink Abbrev.	**Sugar**	**Coffee1**	**Whitener**	**Soup**	**Tea**	**Cocoa**	
COF1	Z	X	Z				
EXP	Z	X	Z				
CAL	Z	X	X				
CAP1	Z	X	X				
CAP2	Z	X	X			X	
EXCO	Z	X	X			X	
AMI	Z	X	X				
CHOC						X	
COM	Z		X			X	
MIL	Z		X				
TEA					X		
SOUP				X			
HW	HW valve available as special accessory						



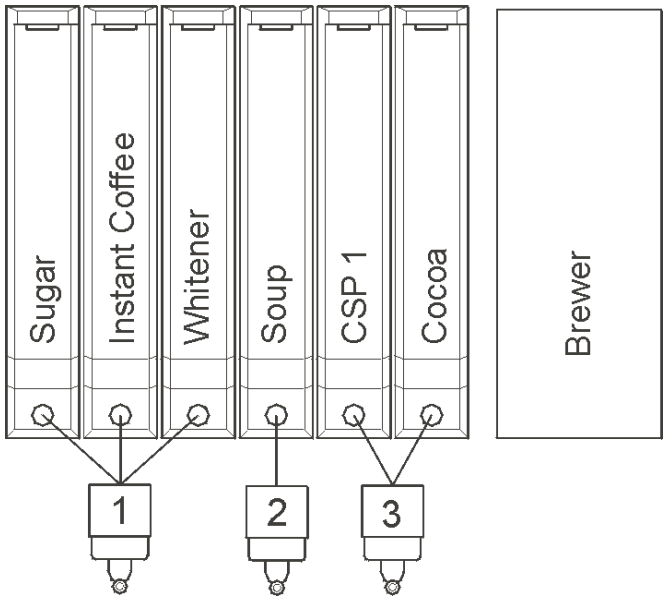
Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF1 + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au lait	ST + CAL	0,50	0,50
9	**(39)**	Cappuccino	ST + CAP1	0,50	0,50
10	**(40)**	Cappuccino with sugar	ST + CAP1 + SU	0,50	0,50
11	**(41)**	Chocolate	ST + CHOC	0,50	0,50
12	**(42)**	ChocoCreme	ST + COM	0,50	0,50
13	**(43)**	Tea	ST + TEA1	0,50	0,50
14	**(44)**	Soup	ST + SOU	0,50	0,50

Z = Pre-selection

13.2.5 Variant 6301

The variant features 3 mixers and 6 product containers.

	Sub-products						
Drink Abbrev.	**Sugar**	**Coffee1**	**Instant Coffee**	**Whitener**	**Soup**	**Cocoa**	**CSP1**
COF1	**Z**	**X**		**Z**			
COF2	**Z**		**X**	**Z**			
EXP	**Z**	**X**		**Z**			
CAL	**Z**	**X**		**X**			
CAP1	**Z**	**X**		**X**			
CAP2	**Z**	**X**		**X**		**X**	
CAP3	**Z**		**X**	**X**		**X**	
EXCO	**Z**	**X**		**X**		**X**	
EXC2	**Z**		**X**	**X**		**X**	
AMI	**Z**	**X**		**X**			
CHOC						**X**	
COM	**Z**			**X**		**X**	
MIL	**Z**			**X**			
CSP1							**X**
SOUP					**X**		
HW	HW valve available as special accessory						



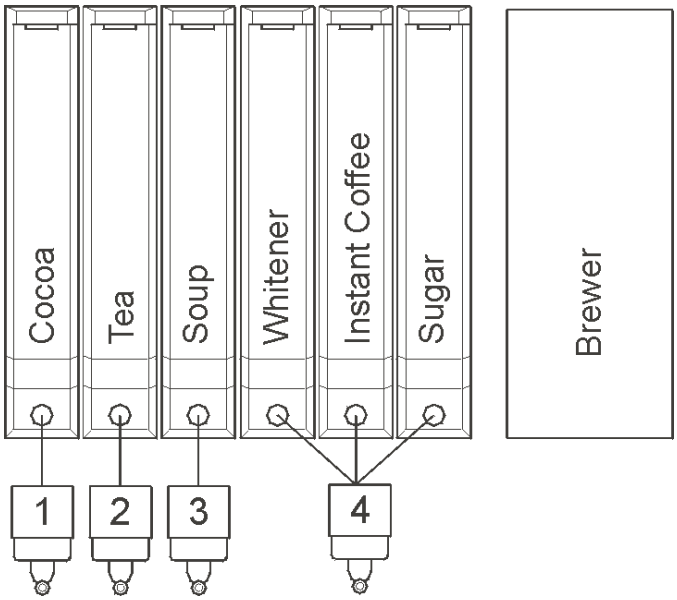
Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF1 + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au lait	ST + CAL	0,50	0,50
9	**(39)**	Cappuccino	ST + CAP1	0,50	0,50
10	**(40)**	Cappuccino Special	ST + CSP1	0,50	0,50
11	**(41)**	Instant coffee	ST + COF2	0,50	0,50
12	**(42)**	Chocolate	ST + CHOC	0,50	0,50
13	**(43)**	ChocoCreme	ST + COM	0,50	0,50
14	**(44)**	Soup	ST + SOU	0,50	0,50

Z = Pre-selection

13.2.6 Variant 6402

The variant features 4 mixers and 6 product containers.

	Sub-products						
Drink Abbrev.	Sugar	Coffee1	Instant coffee	Whitener	Soup	Tea	Cocoa
COF1	Z	X		Z			
COF2	Z		X	Z			
EXP	Z	X		Z			
CAL	Z	X		X			
CAP1	Z	X		X			
CAP2	Z	X		X			X
CAP3	Z		X	X			X
EXCO	Z	X		X			X
EXC2	Z		X	X			X
AMI	Z	X		X			
CHOC							X
COM	Z			X			X
MIL	Z			X			
TEA						X	
SOUP					X		
HW	HW valve available as special accessory						



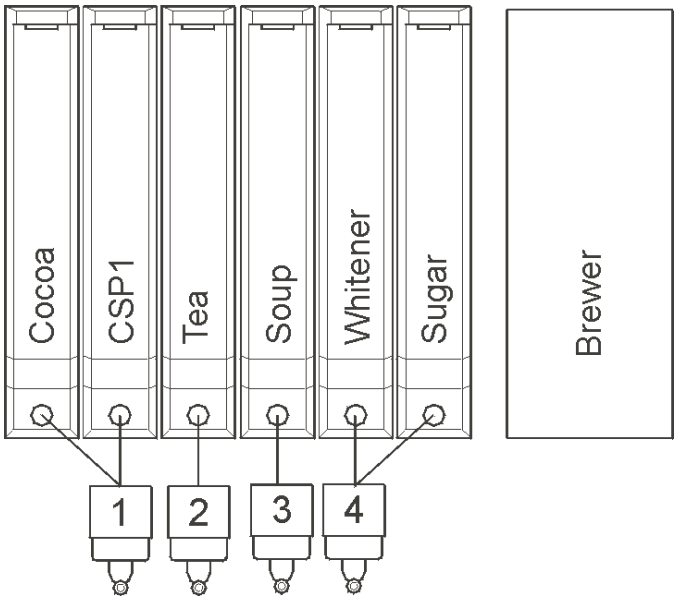
Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF1 + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au Lait	ST + CAL	0,50	0,50
9	**(39)**	Cappuccino	ST + CAP1	0,50	0,50
10	**(40)**	ChocoCreme	ST + COM	0,50	0,50
11	**(41)**	Instant coffee	ST + COF2	0,50	0,50
12	**(42)**	Chocolate	ST + CHOC	0,50	0,50
13	**(43)**	Tea	ST + TEA	0,50	0,50
14	**(44)**	Soup	ST + SOU	0,50	0,50

Z = Pre-selection

13.2.7 Variant 6403

The variant features 4 mixers and 6 product containers.

	Sub-products						
Drink Abbrev.	**Sugar**	**Coffee1**	**Whitener**	**Soup**	**Tea**	**Cocoa**	**CSP1**
COF1	Z	X	Z				
EXP	Z	X	Z				
CAL	Z	X	X				
CAP1	Z	X	X				
CAP2	Z	X	X			X	
EXCO	Z	X	X			X	
AMI	Z	X	X				
CHOC						X	
COM	Z		X			X	
MIL	Z		X				
CSP1							X
TEA					X		
SOUP				X			
HW	HW valve available as special accessory						



Selection buttons			Programming	Price (EUR)	
				A	B
1	**(31)**	Extra sugar	SU>>		
2	**(32)**	Extra whitener	WH>>		
3	**(33)**	Espresso	ST + EXP	0,50	0,50
4	**(34)**	Coffee	ST + COF1	0,50	0,50
5	**(35)**	Coffee with sugar	ST + COF1 + SU	0,50	0,50
6	**(36)**	Coffee with whitener	ST + COF + WH	0,50	0,50
7	**(37)**	Coffee with sugar and whitener	ST + COF1 + SU + WH	0,50	0,50
8	**(38)**	Café au lait	ST + CAL	0,50	0,50
9	**(39)**	Cappuccino	ST + CAP1	0,50	0,50
10	**(40)**	Chocolate	ST + CHOC	0,50	0,50
11	**(41)**	ChocoCreme	ST + COM	0,50	0,50
12	**(42)**	Cappuccino Special	ST + CSP1	0,50	0,50
13	**(43)**	Tea	ST + TEA1	0,50	0,50
14	**(44)**	Soup	ST + SOU	0,50	0,50

Z = Pre-selection

13.3 Drink dosing (standard values)

NOTE
The drink dosing standard values may be reloaded by changing the machine variant in the Installation menu. All values are overwritten.
Alternatively our free SIELECTOR software may be used.

13.3.1 Coffee

COF1/ CO1I	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	COF1	CO1I	COF1	CO1I	COF1	CO1I
Valve coffee grinder	0.0	0.0	150ml	150ml	100	100
Coffee grinder	0.0	0.0	3.7	3.7	100	100
Brewer press	---	---	---	---	80	80
Brewer repress	---	---	---	---	80	80
Sugar	0.0	0.0	2.0	2.0	38	38
Mixer whitener	0.0	0.0	3.0	3.0	100	100
Valve whitener	0.0	0.0	2.0	2.0	90	90
Whitener	0.0	0.0	2.0	2.0	60	60

COF2/ CO2I Instant coffee	5301	5302	5401	6301	6402	6403
	X			X	X	

	DT [s]		RT [s]		SP [%]	
	COF2	CO2I	COF2	CO2I	COF2	CO2I
Mixer coffee 2	1.0	1.0	11.9	11.9	100	100
Valve coffee 2	0.0	0.0	11.4	11.4	90	90
Coffee 2	1.0	1.0	3.0	3.0	31	31
Mixer sugar	2.7	2.6	4.4	5.1	100	100
Valve sugar	1.7	1.6	3.9	4.6	90	90
Sugar	2.7	2.6	1.7	1.7	30	30
Mixer whitener	2.7	2.6	6.5	6.5	100	100
Valve whitener	1.7	1.6	6.0	6.0	90	90
Whitener	2.7	2.6	2.0	2.0	37	37

13.3.2 Espresso

EXPI (with dry sugar)	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	EXP	EXPI	EXP	EXPI	EXP	EXPI
Valve coffee grinder	---	0.0	---	90ml	---	100
Coffee grinder	---	0.0	---	3.5	---	100
Brewer press	---	---	---	---	---	80
Brewer repress	---	---	---	---	---	80
Dry sugar	---	0.0	---	2.0	---	38

EXP	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	EXP	EXPI	EXP	EXPI	EXP	EXPI
Valve coffee grinder	0.0	---	90ml	---	100	---
Coffee grinder	0.0	---	3.5	---	100	---
Brewer press	---	---	---	---	80	---
Brewer repress	---	---	---	---	80	---
Sugar	0.0	---	2.0	---	38	---
Mixer whitener	0.0	---	3.5	---	100	---
Valve whitener	0.0	---	2.0	---	90	---
Whitener	0.0	---	1.0	---	60	---

13.3.3 EspressoChoc

EXCO/ EXCI (Cof1. Cocoa, SU. WH.)	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	EXCO	EXCI	EXCO	EXCI	EXCO	EXCI
Valve coffee grinder	0.0	0.0	74ml	74ml	100	100
Coffee grinder	0.0	0.0	3.7	3.7	100	100
Brewer press	---	---	---	---	80	80
Brewer repress	---	---	---	---	80	80
Sugar	0.0	0.0	1.0	1.0	50	50
Mixer sugar	0.0	0.0	3.0	3.0	100	100
Mixer whitener	0.5	0.5	2.6	2.6	100	100
Valve whitener	0.0	0.0	2.1	2.1	90	90
Whitener	0.5	0.5	1.7	1.7	43	43
Mixer cocoa	0.5	0.5	2.6	2.6	100	100
Valve cocoa	0.0	0.0	2.6	2.6	90	90
Cocoa	0.5	0.5	2.1	2.1	50	50

EXC2/ ES2I (Cof2. WH. Cocoa. Su.)	5301	5302	5401	6301	6402	6403
	X			X	X	

	DT [s]		RT [s]		SP [%]	
	EXC2	EX2I	EXC2	EX2I	EXC2	EX2I
Mixer coffee 2	1.0	1.0	7.4	7.4	100	100
Valve coffee 2	0.0	0.0	6.9	6.9	90	90
Coffee 2	1.0	1.0	3.0	3.0	31	31
Mixer sugar	2.6	2.6	4.4	4.4	100	100
Valve sugar	1.6	1.6	3.9	3.9	90	90
Sugar	2.7	2.6	1.7	1.7	30	30
Mixer cocoa	5.2	5.2	8.0	8.0	100	100
Valve cocoa	4.2	4.2	7.5	7.5	90	90
Cocoa	1.0	1.0	3.0	3.0	50	50
Mixer whitener	5.2	5.2	8.0	8.0	100	100
Valve whitener	4.2	4.2	7.5	7.5	90	90
Whitener	2.7	2.6	2.0	2.0	37	37

13.3.4 Café au Lait

CAL/ CALI	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	CAL	CALI	CAL	CALI	CAL	CALI
Valve coffee grinder	0.0	0.0	82ml	82ml	100	100
Coffee grinder	0.0	0.0	3.7	3.7	100	100
Brewer press	---	---	---	---	80	80
Brewer repress	---	---	---	---	80	80
Sugar	0.0	0.0	1.0	1.0	50	50
Mixer sugar	0.0	0.0	2.9	2.9	100	100
Mixer whitener	0.5	0.5	4.9	4.9	100	100
Valve whitener	0.0	0.0	4.5	4.5	90	90
Whitener	0.5	0.5	2.0	2.0	60	60

13.3.5 Cappuccino

CAP1/ CP1I (Cof1. WH. SU)	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	CAP1	CP1I	CAP1	CP1I	CAP1	CP1I
Valve coffee grinder	0.0	0.0	74ml	74ml	100	100
Coffee grinder	0.0	0.0	4.2	3.5	100	100
Brewer press	---	---	---	---	80	80
Brewer repress	---	---	---	---	80	80
Sugar	0.0	0.0	1.0	1.0	50	50
Mixer sugar	0.0	0.0	2.9	2.9	100	100
Mixer whitener	0.5	0.5	5.4	5.4	100	100
Valve whitener	0.0	0.0	5.4	5.4	90	90
Whitener	0.5	0.5	2.0	2.0	63	63

CAP2/ CP2I (Cof1. Cocoa, SU. WH.)	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	CAP2	CP2I	CAP2	CP2I	CAP2	CP2I
Valve coffee grinder	0.0	0.0	74ml	74ml	100	100
Coffee grinder	0.0	0.0	4.2	3.5	100	100
Brewer press	---	---	---	---	80	80
Brewer repress	---	---	---	---	80	80
Sugar	0.0	0.0	1.0	1.0	50	50
Mixer sugar	0.0	0.0	3.0	3.0	100	100
Mixer whitener	0.5	0.5	2.6	2.6	100	100
Valve whitener	0.0	0.0	2.1	2.1	90	90
Whitener	0.5	0.5	2.0	2.0	58	58
Mixer cocoa	0.5	0.5	2.6	2.6	100	100
Valve cocoa	0.0	0.0	2.6	2.6	90	90
Cocoa	0.5	0.5	2.5	2.5	50	50

CAP3/ CP3I (Cof2. SU. WH. Cocoa)	5301	5302	5401	6301	6402	6403
	X			X	X	

	DT [s]		RT [s]		SP [%]	
	CAP3	CP3I	CAP3	CP3I	CAP3	CP3I
Mixer coffee 2	5.8	5.8	3.8	3.8	100	100
Valve coffee 2	4.8	4.8	3.3	3.3	90	90
Coffee 2	5.8	5.8	3.0	3.0	50	50
Mixer sugar	6.2	6.2	3.1	3.1	100	100
Valve sugar	5.2	5.2	2.6	2.6	90	90
Sugar	6.2	6.2	2.5	2.5	38	38
Mixer cocoa	1.0	1.0	5.3	5.3	50	50
Valve cocoa	0.0	0.0	4.8	4.8	90	90
Cocoa	1.0	1.0	3.0	3.0	50	50
Mixer whitener	1.0	1.0	5.3	5.3	100	100
Valve whitener	0.0	0.0	4.8	4.8	90	90
Whitener	1.0	1.0	3.0	3.0	50	50

13.3.6 Chocolate

CHOC/ CHOI	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	CHOC	CHOI	CHOC	CHOI	CHOC	CHOI
Mixer cocoa	1.0	1.0	8.1	8.1	100	100
Valve cocoa	0.0	0.0	7.6	7.6	90	90
Cocoa	1.0	1.0	7.0	7.0	48	48

13.3.7 Cappuccino Special

CSP1/ CS1I	5301	5302	5401	6301	6402	6403
		X		X		X

	DT [s]		RT [s]		SP [%]	
	CSP1	CS1I	CSP1	CS1I	CSP1	CS1I
Mixer Cap. Spec.	1.0	1.0	11.9	11.9	100	100
Valve Cap. Spec.	0.0	0.0	11.4	11.4	90	90
Cap. Spec.	1.0	1.0	7.0	7.0	38	38

13.3.8 Chocomilk

COM/ COMI	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	COM	COMI	COM	COMI	COM	COMI
Mixer cocoa	1.0	1.0	8.7	8.7	100	100
Valve cocoa	0.0	0.0	8.2	8.2	90	90
Cocoa	1.0	1.0	7.0	7.0	45	45
Mixer sugar	2.0	2.0	3.7	3.7	100	100
Valve sugar	1.0	1.0	3.2	3.2	90	90
Sugar	2.0	2.0	1.0	1.0	50	50
Mixer whitener	1.0	1.0	8.7	8.7	100	100
Valve whitener	0.0	0.0	8.2	8.2	90	90
Whitener	1.0	1.0	1.0	1.0	60	60

13.3.9 Tea

TEA1/ TE1l	5301	5302	5401	6301	6402	6403
		X	X		X	X

	DT [s]		RT [s]		SP [%]	
	TEA1	TE1l	TEA1	TE1l	TEA1	TE1l
Mixer tea	1.0	1.0	8.5	8.5	100	100
Valve tea	0.0	0.0	8.0	8.0	90	90
Tea	3.0	3.0	5.0	5.0	34	34

13.3.10 Soup

SOU/ SOUl	5301	5302	5401	6301	6402	6403
	X		X	X	X	X

	DT [s]		RT [s]		SP [%]	
	SOUP	SOUl	SOUP	SOUl	SOUP	SOUl
Mixer soup	1.0	1.0	9.4	9.4	100	100
Valve soup	0.0	0.0	8.9	8.9	90	90
Soup	3.0	3.0	5.0	5.0	35	35

13.3.11 Americano

AMl/ AMll (Cof1. WH. SU)	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	AMl	AMll	AMl	AMll	AMl	AMll
Valve coffee grinder	0.0	0.0	90ml	90ml	100	100
Coffee grinder	0.0	0.0	3.5	3.5	100	100
Brewer press	---	---	---	---	80	80
Brewer repress	---	---	---	---	80	80
Sugar	0.0	0.0	2.5	2.5	38	38
Mixer whitener	0.0	0.0	3.5	3.5	100	100
Valve whitener	0.0	0.0	1.6	1.6	48	48
Whitener	0.0	0.0	5.5	5.5	90	90

13.3.12 Milk

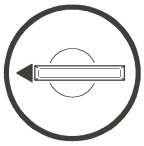
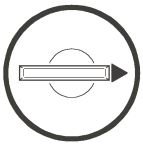
MIL/ MILl	5301	5302	5401	6301	6402	6403
	X	X	X	X	X	X

	DT [s]		RT [s]		SP [%]	
	MIL	MILl	MIL	MILl	MIL	MILl
Mixer whitener	1.0	1.0	11.2	11.2	100	100
Valve whitener	0.0	0.0	10.7	10.7	90	90
Whitener	1.0	1.0	3.0	3.0	50	50
Mixer sugar	2.0	2.0	4.8	4.8	100	100
Valve sugar	1.0	1.0	4.3	4.3	90	90
Sugar	2.0	2.0	2.5	2.5	38	38

14 SPECIAL ACCESSORY

14.1 Key-operated switch

The key-operated switch has the following functions:

Left	Basic setting	Right
EUR 0.00 < 0.00> FREE VEND 	EUR 0.00 < 0.00> READY TO USE 	EUR 0.00 < 0.00> POT 
Free drink dispensing **(Free vend cup-volume)** Standard free drink dispensing is performed	**Drink vending** **(Cup-volume)** Vending of drinks is performed according to the prices set in the Prices menu as well as the coin system options set in the Installation menu.	**Free drink dispensing** **(Free vending pot–volume)** Free drink dispensing is performed in pot portions. A pot portion is the equivalent of X-fold cups. The factor X is set in the Installation menu.

NOTE
The key may only be removed in the home position.

14.2 Credit system

The machine may be fitted with credit systems according to the following interface standards:

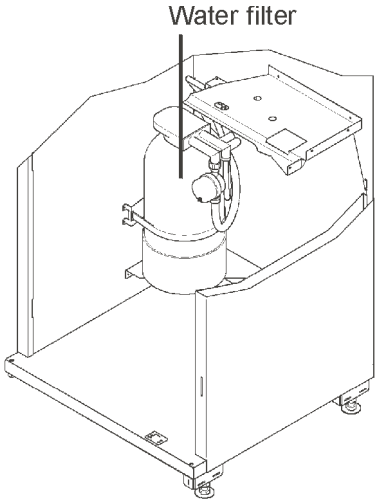
- MDB
- BDV
- Executive

The credit system with MDB is used by preference.
Please refer to the credit system manual for detailed information on the credit system or apply directly to SIELAFF.

NOTE
For BDV-systems under no circumstances should an MDB-BDV-adapter cable be utilised. A special extension is required. part number 306 00 511 00
To connect the Executive-system a special adaptor is needed: part number 404 50 541 00

14.3 Water filter

From a water hardness of 8°dH onwards a water filter should be fitted upstream.

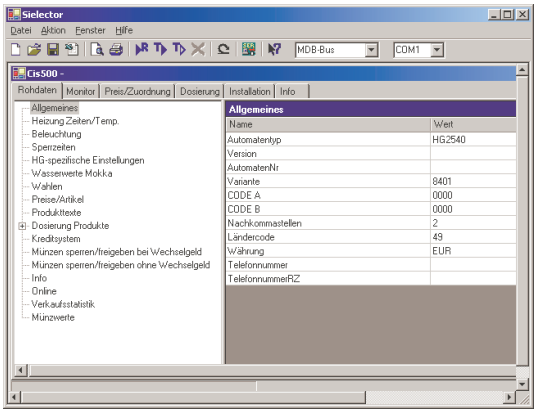


NOTE
Manufacturer instructions must be observed.

Please refer to the water filter manual for detailed information on water filter usage or apply directly to SIELAFF.

14.4 SIELECTOR PC software

Machine controlling may be performed by SIELECTOR software for PC-supported programming on Windows basis.
The software supports the duplication, creation, saving and printing out of all parameters.



Please refer to the separate SIELECTOR manual for detailed description of SIELECTOR software.

14.5 Winter package

The machine is available in an anti-frost design. The housing is additionally insulated. Further a heater is fitted, which is connected to the service socket.
The heating switches on at 2-3°C and prevents the machine from freezing up.

NOTE
The winter package cannot be retro-fitted. If this option is required it must be ordered with the machine.

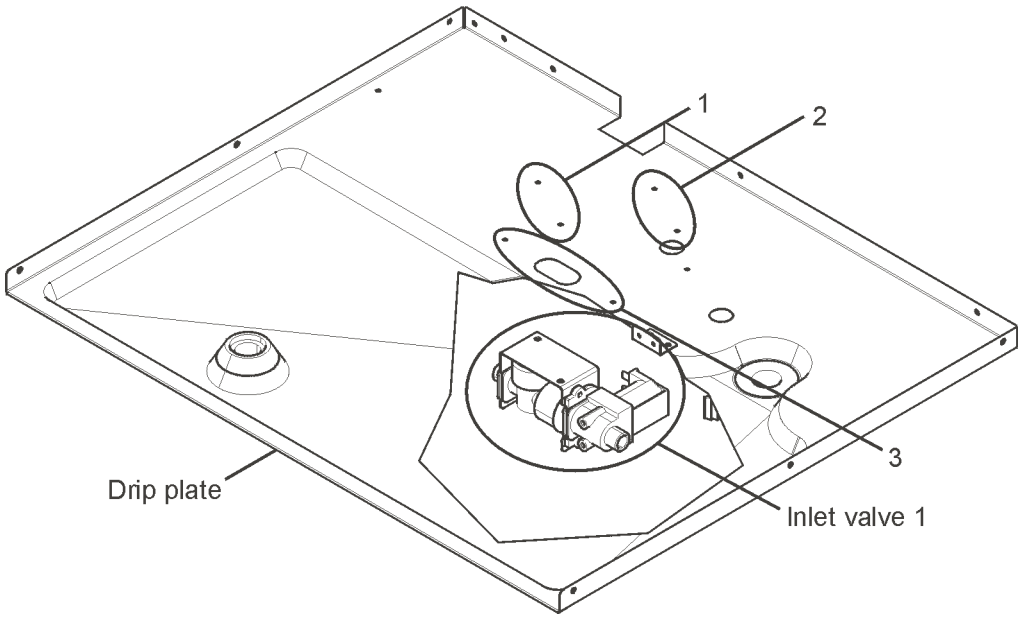
14.6 Flow heater

If warm water is required for cleaning the machine, a flow heater can be fitted. This is connected to the service socket. It warms water to around 40°C.

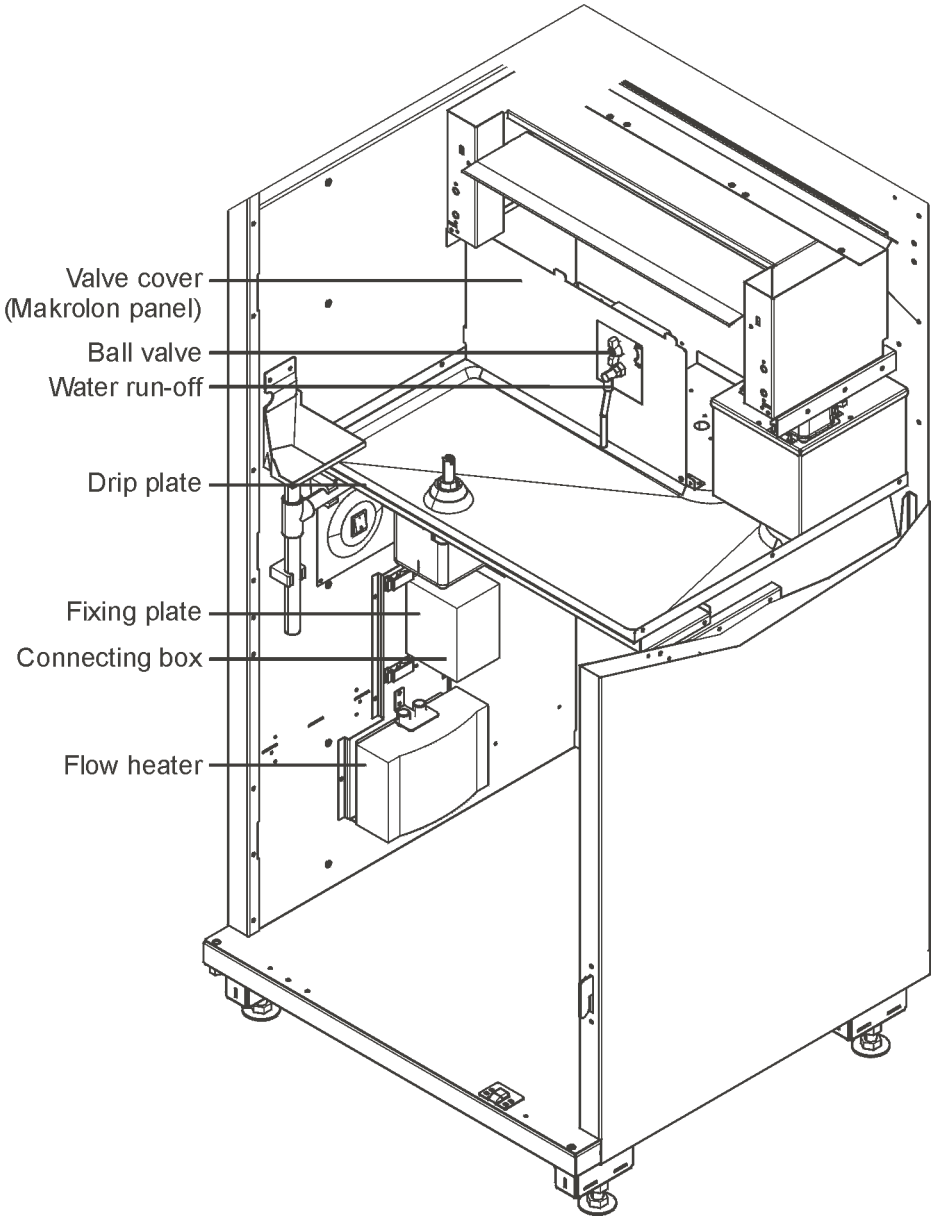
NOTE
The flow heater requires circuit pressure and can therefore not be used in conjunction with the water canister.
The flow heater functions only when the machine door is open and can therefore not be operated in conjunction with the water container.

To install the flow heater, follow the instructions detailed below:

- Unplug machine from the mains supply
- Unscrew the internal flexible water connection hose on the back wall and, in its place, screw on the T-piece supplied
- Water inlet valve 1 must be moved from position 1 to position 2. The hole positions are shown in the diagram.
- The hose previously removed from the back wall should now be attached to the run-off on the side of the T-piece
- Affix the pre-assembled fixing plate with the flow heater and the connecting box with the screws supplied to the left side wall of the machine. (Refer to diagram)
- Put the mains plug on the flow heater into the service socket. The wiring to the connecting box must be connected to the existing cable harness under the drip plate.
- Remove the Makrolon panel (valve cover) by loosening one screw
- Fit the pre-assembled water run-off as shown in the diagram. Position 3 must be firmly screwed down. At the same time guide the three hoses attached to the water run-off through the oblong hole.
- Connect the three hoses so that they are in the following order: water connection → ball valve → flow heater → water run-off
- Affix the new valve cover



Special accessory



15 MACHINE LOG BOOK

In the event of malfunctions arising please contact our customer care service.

Please note down the machine number and software version of the coffee machine.
The machine number is located on the type plate.
Establishing the software version is described in chapter 10.11.1.
This information is important to assure swift aid from the customer care service!

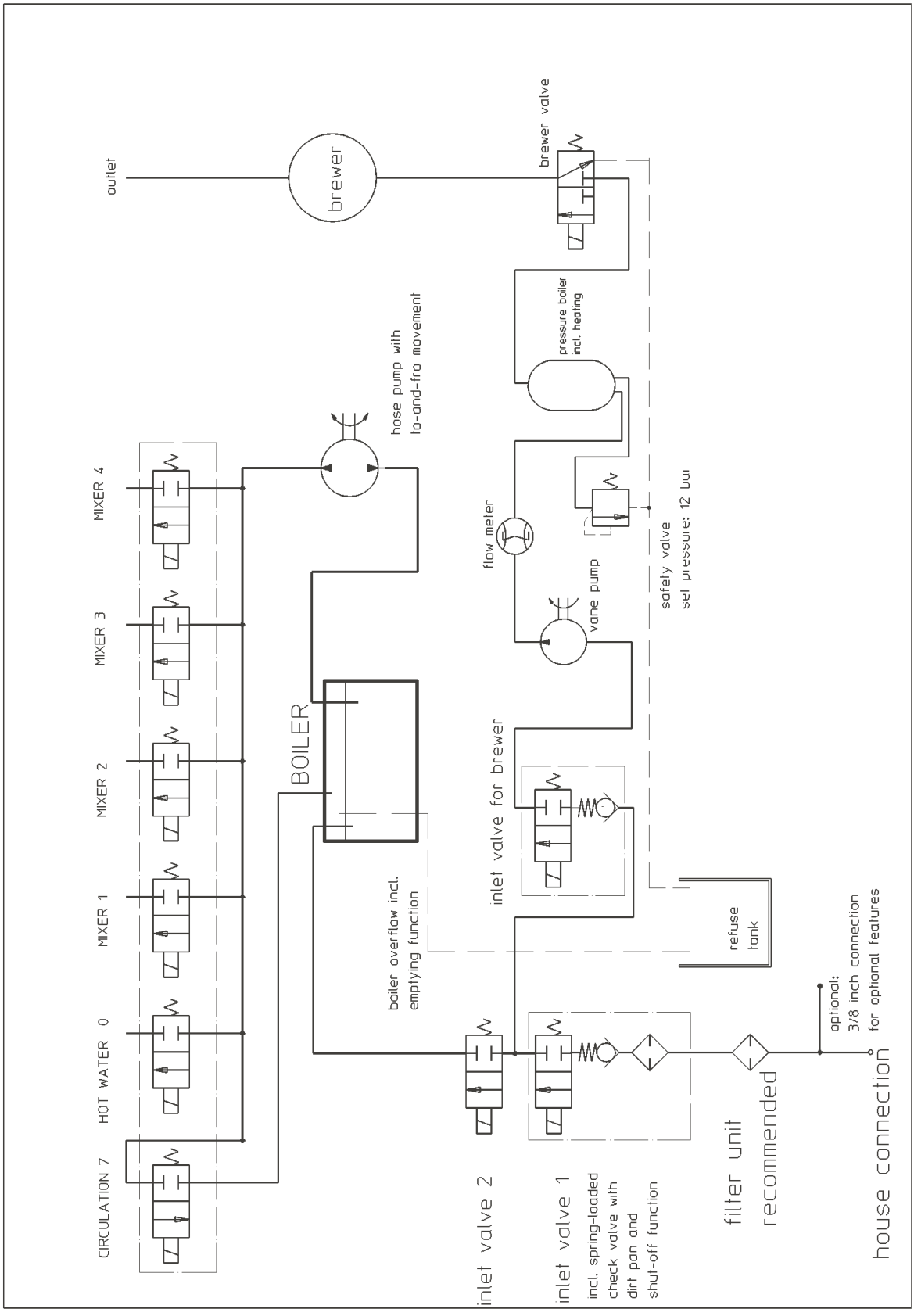
Machine number: _____

Software version: _____

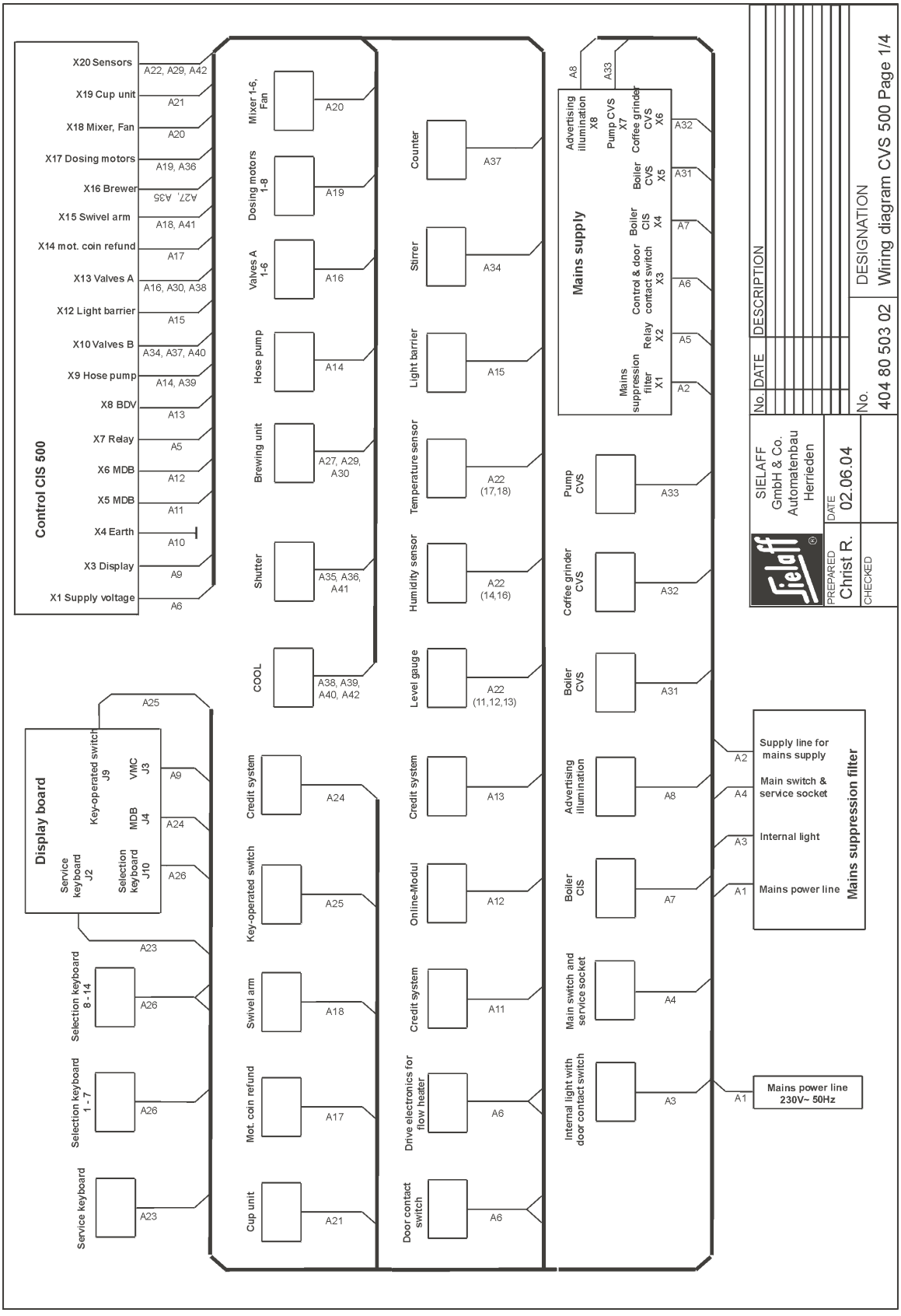
Machine log book

Date	Cleaning daily/ weekly	Maintenance	Performed by Name/ signature	Notes

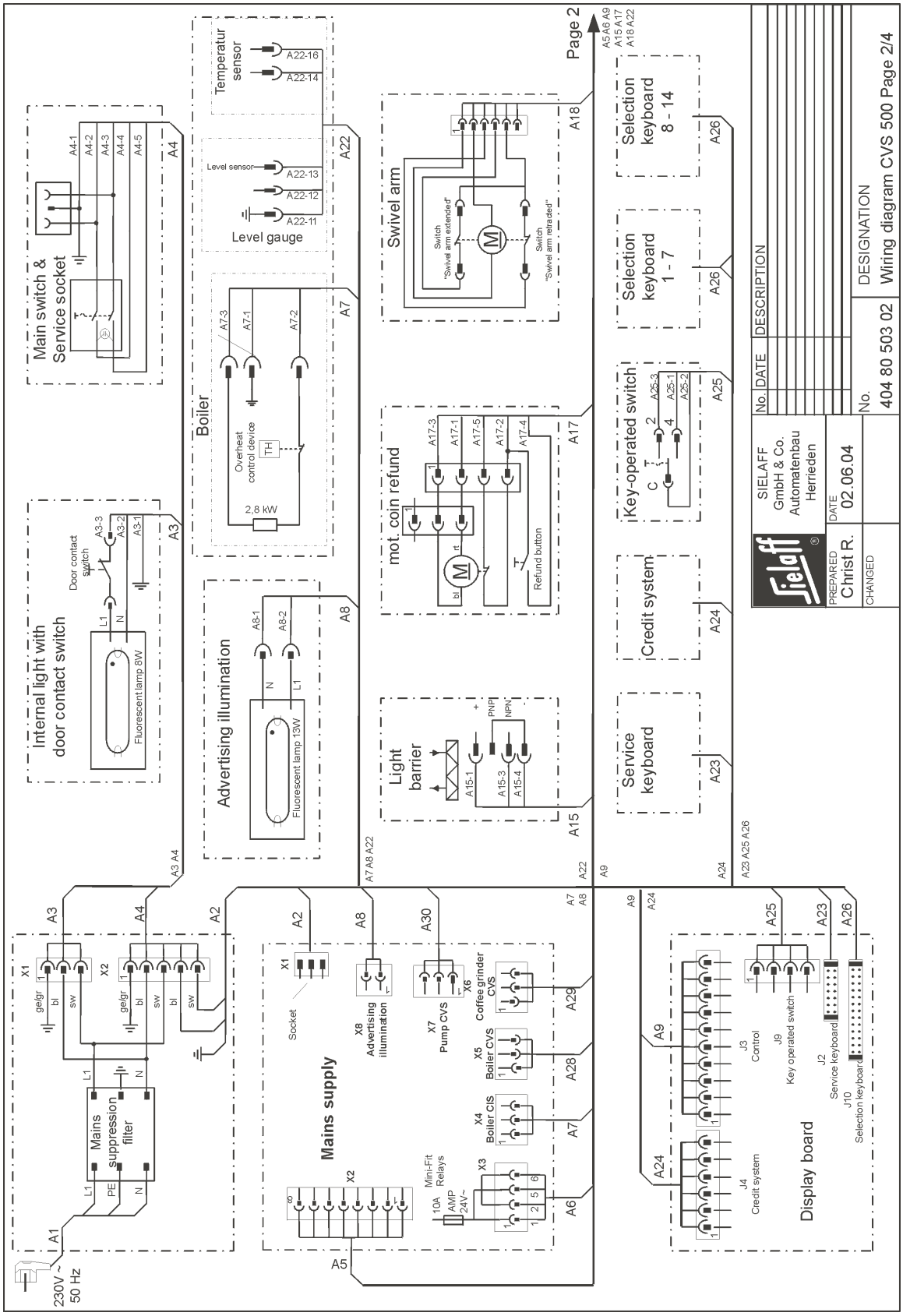
15.1 Water system diagram



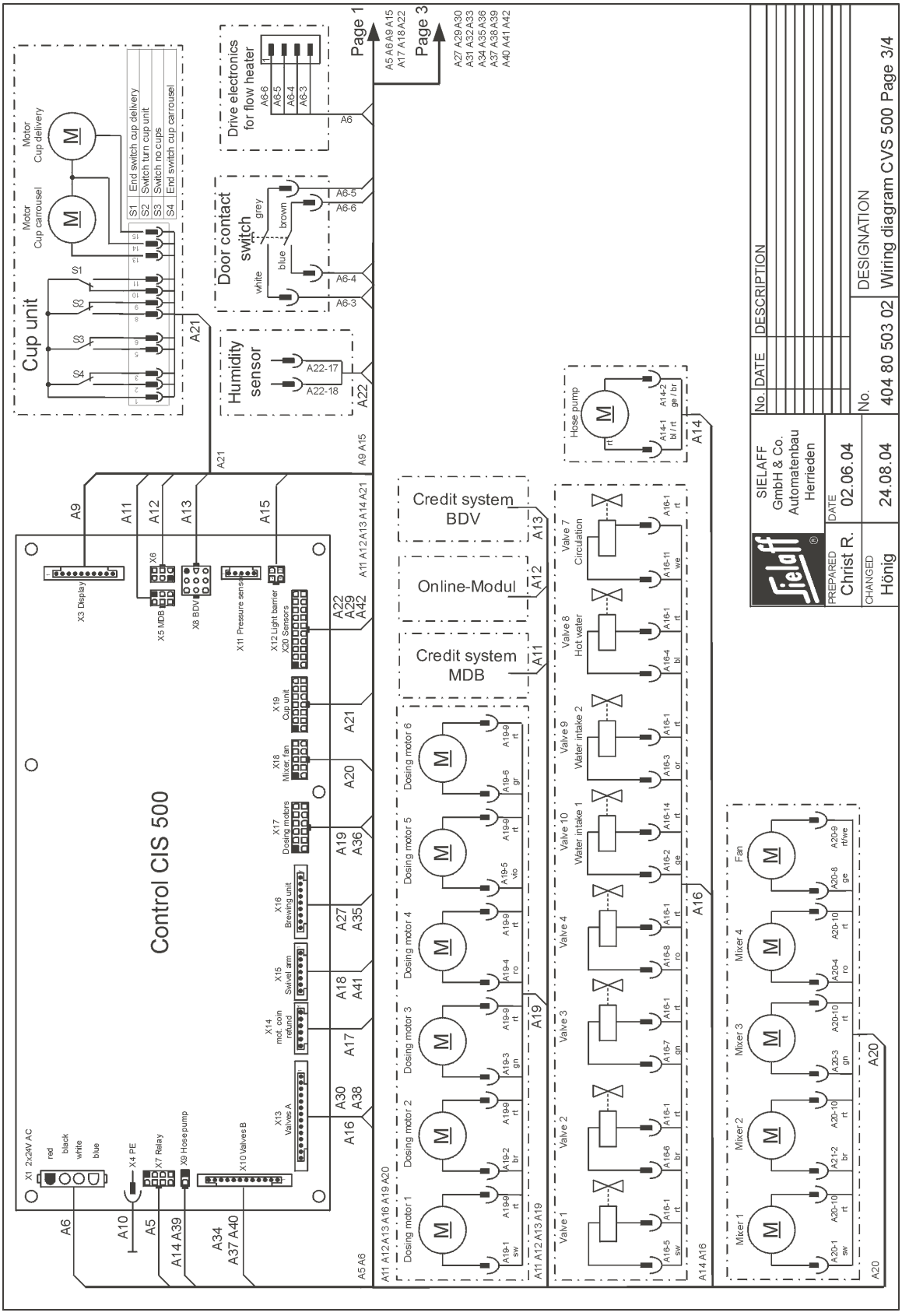
15.2 Diagram

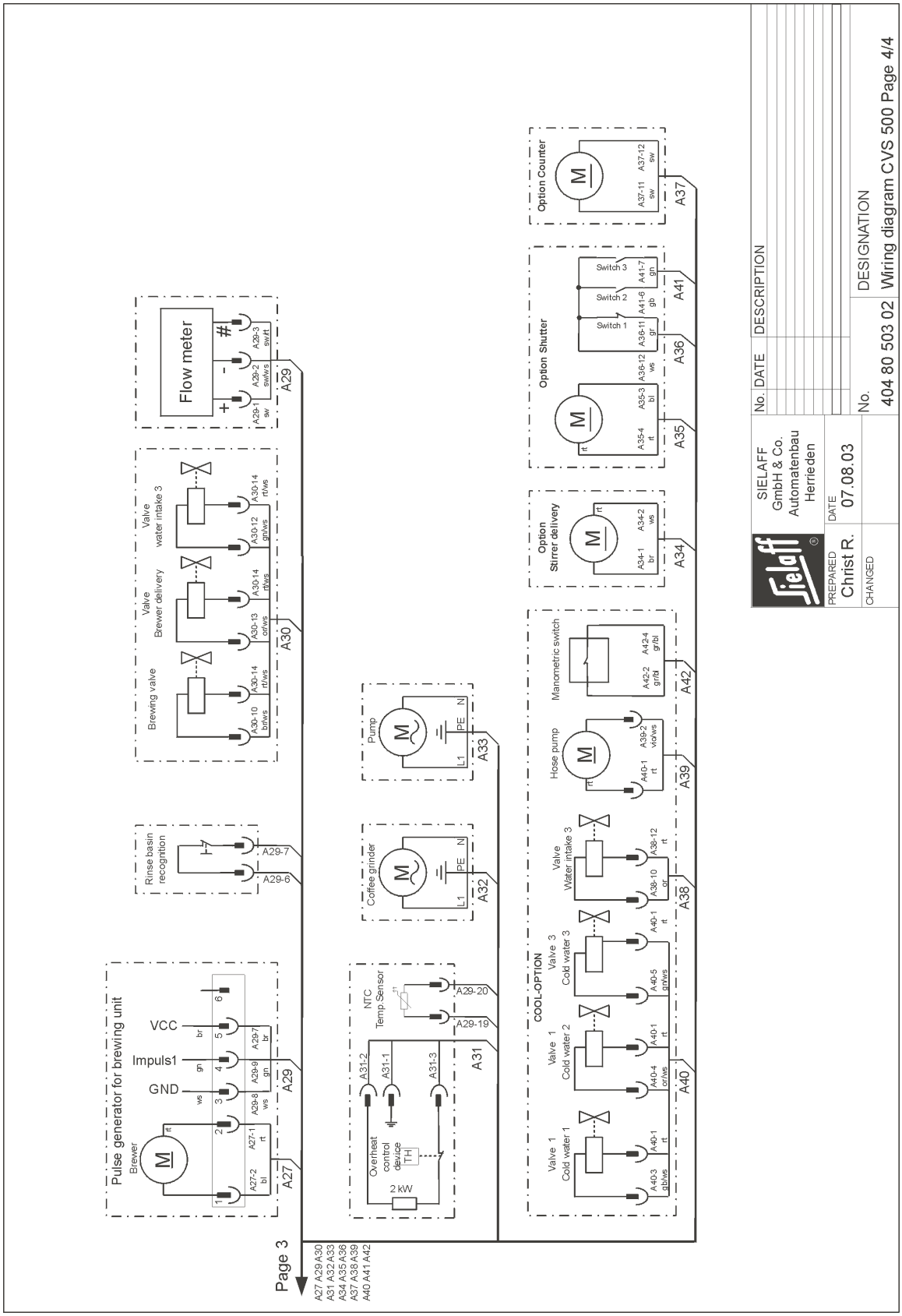

Control CIS 500
X20 Sensors
X19 Cup unit
X18 Mixer, Fan
X17 Dosing motors
X16 Brewer
X15 Swivel arm
X14 mot. coin refund
X13 Valves A
X12 Light barrier
X10 Valves B
X9 Hose pump
X8 BDV
X7 Relay
X6 MDB
X5 MDB
X4 Earth
X3 Display
X1 Supply voltage
A22, A29, A42
A21
A20
A19, A36
A27, A35
A18, A41
A17
A16, A30, A38
A15
A34, A37, A40
A14, A39
A13
A5
A12
A11
A10
A9
A6
Mixer 1-6, Fan
Dosing motors 1-8
Valves A 1-6
Hose pump
Brewing unit
Shutter
COOL
A20
A19
A16
A14
A27, A29, A30
A35, A36, A41
A38, A39, A40, A42
Counter
Stirrer
Light barrier
Temperature sensor
Humidity sensor
Level gauge
A37
A34
A15
A22 (17,18)
A22 (14,16)
A22 (11,12,13)
Mains supply
Mains suppression filter X1
Relay X2
Control & door contact switch X3
Boiler CIS X4
Boiler CVS X5
Coffee grinder CVS X6
Pump CVS X7
Advertising illumination X8
A8
A33
A2
A6
A5
A7
A31
A32
Pump CVS
Coffee grinder CVS
Boiler CVS
Advertising illumination
Boiler CIS
Main switch and service socket
Internal light with door contact switch
A33
A32
A31
A8
A7
A4
A3
Display board
Service keyboard J2
Selection keyboard J10
MDB J4
Key-operated switch J9
VMC J3
A25
A9
A24
A26
A23
Selection keyboard 8 - 14
Selection keyboard 1 - 7
Service keyboard
A26
A26
A23
Credit system
Key-operated switch
Swivel arm
Mot. coin refund
Cup unit
A24
A25
A18
A17
A21
Credit system
Online-Modul
Credit system
Drive electronics for flow heater
Door contact switch
A13
A12
A11
A6
A6
A2
A4
A3
A1
Supply line for mains supply
Main switch & service socket
Internal light
Mains power line
Mains suppression filter
Mains power line 230V~ 50Hz
SIELAFF GmbH & Co. Automatenbau Herrieden
DATE 02.06.04
PREPARED Christ R.
CHECKED
No. DATE DESCRIPTION
No. 404 80 503 02
DESIGNATION Wiring diagram CVS 500 Page 1/4

Machine log book



Machine log book




Pulse generator for brewing unit
Brewer
VCC
Impuls1
GND
Rinse basin recognition
Flow meter
Brewing valve
Valve Brewer delivery
Valve water intake 3
Pump
Coffee grinder
NTC Temp.Sensor
Overheat control device
2 kW
COOL-OPTION
Valve 1 Cold water 1
Valve 1 Cold water 2
Valve 3 Cold water 3
Valve Water intake 3
Hose pump
Manometric switch
Option Stirrer delivery
Option Shutter
Switch 1
Switch 2
Switch 3
Option Counter
Page 3
A27 A29 A30 A31 A32 A33 A34 A35 A36 A37 A38 A39 A40 A41 A42
SIELAFF GmbH & Co. Automatenbau Herrieden
PREPARED Christ R.
DATE 07.08.03
CHANGED
No. DATE DESCRIPTION
No. 404 80 503 02
DESIGNATION Wiring diagram CVS 500 Page 4/4

15.3 Position contacts/ sensors

An 8-digit hexadecimal number is displayed, e.g. 0F000000. The individual digits of this number have the following meaning:

first byte	second byte	third byte	fourth byte
0F	00	00	00

Contacts		Moisture sensors	
open	closed	open	closed
0	1	1	0

First byte:

Value	Name	Function
0x80		
0x40		
0x20		
0x10		
0x08	E_ST[27]	Moisture sensor reserve
0x04	E_ST[26]	Moisture sensor drip container
0x02	E_ST[25]	Boiler level high
0x01	E_ST[24]	Boiler level low

Second byte:

Value	Name	Function
0x80	E_ST[23]	Limit switch cup carousel (cup unit II)
0x40	E_ST[22]	Cups empty (cup unit II)
0x20	E_ST[21]	Cup carousel empty (cup unit II)
0x10	E_ST[20]	Limit switch cup dispenser (cup unit II)
0x08	E_ST[19]	Limit switch cup carousel (cup unit I)
0x04	E_ST[18]	Cups empty (cup unit I)
0x02	E_ST[17]	Cup carousel empty (cup unit I)
0x01	E_ST[16]	Limit switch cup dispenser (cup unit I)

Third byte:

Value	Name	Function
0x80	E_ST[15]	Res. D
0x40	E_ST[14]	Brewer pulse 2
0x20	E_ST[13]	Brewer pulse 1
0x10	E_ST[12]	Delivery unit lock switch 3
0x08	E_ST[11]	Brewer contact 4
0x04	E_ST[10]	Brewer contact 3
0x02	E_ST[9]	Brewer contact 2
0x01	E_ST[8]	Brewer contact 1

Fourth byte:

Value	Name	Function
0x80	E_ST[7]	Delivery unit lock switch 2
0x40	E_ST[6]	Refund button
0x20	E_ST[5]	Limit switch coin refund
0x10	E_ST[4]	
0x08	E_ST[3]	Delivery unit lock switch 1
0x04	E_ST[2]	Swivel arm extended
0x02	E_ST[1]	Swivel arm retracted
0x01	E_ST[0]	Grout container

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