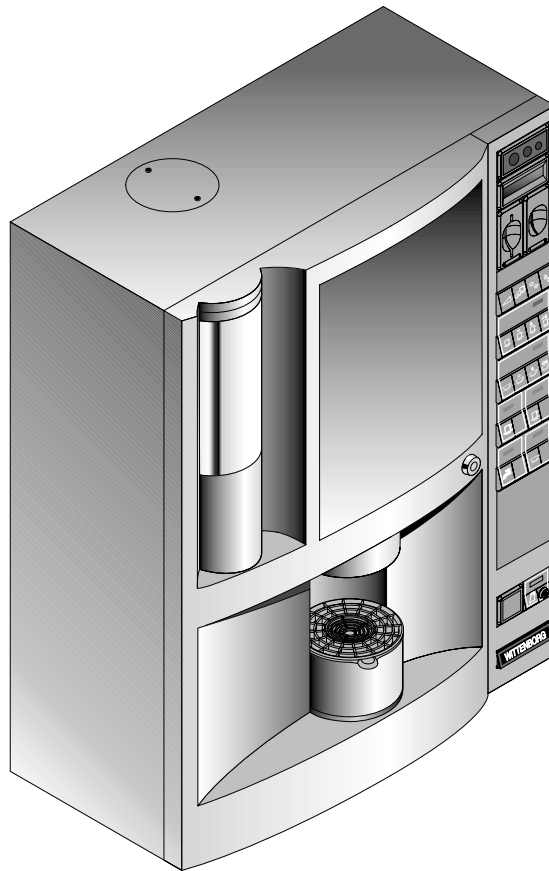


WITTENBORG

Gallery 300 Freshbrew



Service Manual



Disclaimer

Wittenborg issues no explanations or guarantees with regard to the contents of this manual and expressly disclaims all responsibility for any implied or imputed guarantees. Wittenborg A/S reserves the right to revise this manual and to introduce changes at its discretion without undertaking any obligation to provide notification of said changes.

Published by Wittenborg A/S
Seebladsgade 1-3
DK-5000 Odense C
(Third Edition, March 2000)

Part No: 75402600

Safety Precautions

The following general safety precautions apply to the operation and maintenance of the vending machine and must be observed. Non-compliance with these instructions could cause the machine to suffer damage which may be irreparable. Wittenborg A/S refuses to accept liability for incorrect handling.

Notes on Safety

In this manual, the safety notes (printed in bold type) and the symbol shown below are used to draw your attention to hazards.



The information introduced in this way is of particular importance with regard to your understanding of the machine and how it works.

Study and make sure you fully understand the text of a safety note before moving on to the next section.



Safety Notes Summary

- The installation and repair of the machine must be entrusted only to trained service technicians.
 - Use only the manufacturer's genuine spare parts.
 - Read and make sure you understand the operation instruction of the manuals before you start up the machine.
 - Before starting any repairs: Switch off the main switch, unplug the power supply plug and close the water cock.
 - Safety devices may not be bridged or put out of function.
 - The liquids dispensed by the machine are hot. To avoid the risk of injury by scalding, keep hands and other parts of the body clear of the cup station after pressing a selection button or carrying out a functional test.
 - Never reach from underneath into the cup mechanism during a functional test. There is danger of injuries.
 - To avoid contact with hot liquids, do not attempt to fill several cups by pressing the Pot selection button (MultiBrew). The machine does not stop immediately when the pot or cup is removed from the cup station after a selection button is pressed. Brewing is completed for the requested quantity, i.e. hot liquid is dispensed.
 - If a fault occurs during dispensing and the machine shuts down with the brewer full or partially filled, place a suitable container under the outlet pipe and keep hands and other parts of the body clear of the brewer.
 - Never insert the plug into the socket if either is wet and never touch the plug with wet hands.
 - The vending machine must be connected to the mains in accordance with all official regulations and local stipulations.
 - The vending machine must be connected to earth by the facility's protective conductor and provided with a device for disconnecting the voltage supply.
 - Make sure that a clearance, specified in the installation instructions in operator manual, is maintained between the rear of the machine and the wall in order to permit adequate ventilation.
 - The vending machine is suitable for indoor use only.
-

Lithium Battery

Note

The Vending machine Controller contains a lithium battery. Lithium batteries can explode if not handled correctly. Do not recharge, disassemble, short-circuit, expose to water or to flame or temperatures in excess of 100°C. Use only replacement batteries of the same make and type. Return discharged batteries to the supplier.



Purpose of the Manual

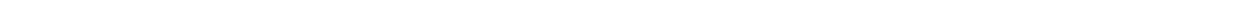
This manual is intended for service technicians who have gone through Wittenborg's product training courses. These are the only people who may install and repair the vending machine.

The instructions in this manual are applicable to more than one version of the machine. Consequently, you may find references to facilities not fitted on the machine.

WITTENBORG

- 1. Installation Guide**
 - 2. Technical Data**
 - 3. Door Parts**
 - 4. Advertising Panel**
 - 5. Cup Dispensing System**
 - 6. Water System**
 - 7. FB Unit**
 - 8. Ingredient Motor**
 - 9. Branch Pipe**
 - 10. Machine Type Setting #2233**
 - 11. Payment System**
 - 12. Trouble shooting**
 - 13. Terminal Copying/Communication**
 - 14. Functional Tests and Machine Settings**
 - 15. View of the Menu System**
 - 16. Spare Parts List 5500**
 - 17. Wiring Diagrams**
 - 18. “Release Notes” and “Service Messages”**
-

WITTENBORG





Installation Guide

Overview

- Safety Instructions
 - Unpacking
 - Connections
 - Preparation
 - Switching on
 - Initial Settings to be Made
-

Safety Instructions



Only trained service technicians should carry through the installation of the vending machine!

Connection of the Vending Machine to the Power Circuit

- The vending machine is a class 1 apparatus, intended for additional protection by means of a permanent earthing.
 - The vending machine is intended for indoor installation.
 - If the vending machine is connected to a socket outlet, this should be located in such a way that it is possible to switch off the vending machine.
 - If the vending machine is connected to the power circuit by means of a permanent installation, a 2-poled switch should be accessible for switching off the phase as well as the neutral wire.
-

Note

Regional or national requirements might differ from the above mentioned. It is always important to pay attention to local regulations.

Unpacking

Warning

Shock hazard when testing and repairing the machine.

Be careful of hot liquids when function testing and performing repair work. These liquids can cause injury by scalding.

Note

Do not install the machine outdoors.

Unpacking and preparation

The procedure for unpacking and preparing the machine for operation is as follows:

Schritt	Vorgehen
1.	Level the machine by adjusting the feet. Note: It is essential that the machine is completely level.
2.	Ensure that the machine has not been damaged during transport.
3.	Remove transport protections
4.	Unpack, fill and insert the IN ingredient canisters and the FB ingredient canister.
5.	Fill the cup magazine with cups.

Note

Check the list of components of the vending machine.

Connections

Note

This section contains important technical information and regulations which you must read carefully before switching on the machine.

Preparation

Clearance

To ensure adequate space for water connection, leave a clearance of at least 40 mm between the rear of the machine and the wall.

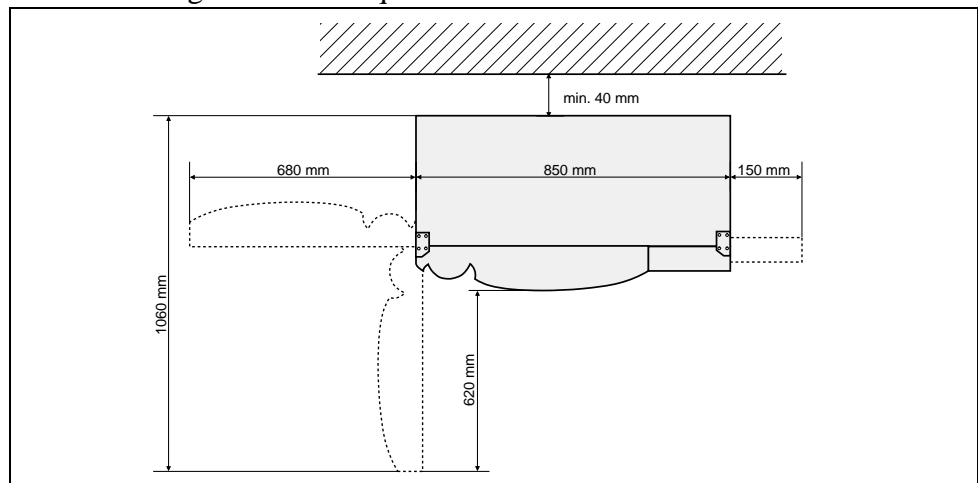
A clear space of 620 mm is required in front of the machine in order to allow the door to be fully opened; see illustration below.

- Note

To ensure easy access to the machine, for servicing, it must be possible to open the left door completely.

Dimensional drawing

This drawing shows the requisite clearances:



Ambient temperature

5°C - 36°C.

Water drain

It is not necessary to connect the vending machine to a waste discharge system (the machine incorporates a bucket and a drip tray for waste; the level of liquid in bucket and drip tray is monitored by an electronic overflow sensor).

Requirements for electricity supply

Connect the vending machine to the electricity supply in accordance with all applicable national regulations and regional by-laws. Make sure that the vending machine is correctly earthed at all times.

- Note

Install a readily accessible means of isolating the vending machine from the electricity supply for maintenance work and service.

- Data

The electrical data of the vending machine is listed in the table below.

Description	Data
Connections	230 V a.c., +6%/-15% 50 Hz
Phases	single phase + neutral + ground (IEC standard) black = phase blue = neutral yellow/green = ground
Maximum power consumption	2900W
Connecting cable length	approximately 1.80 m

Requirements for water supply

Connect the vending machine to a cold water supply (potable water).

- Minimum back pressure

The minimum back pressure is 1.25 bar ($\sim 1.25 \times 10^5$ Pa (~ 1.25 kg/cm²)).

- Maximum pressure

The maximum permissible pressure is 6 bar ($\sim 6 \times 10^5$ Pa (~ 6 kg/cm²))

Note

If the mains pressure is higher (even temporarily), install a pressure reducer in the water supply line.

- Other protective measures

Consult the local authority to ascertain whether a non-return valve (adjustable) has to be installed.

- Connection-related data

The supply hose is fitted with a 1/4" - 3/8" reducer. Fit a 3/8" adapter with female thread to the mains water outlet.

Switching on Vending Machine

Procedure

The start-up procedure is as follows:

Step	Description
1.	Open the water supply valve.
2.	Check for leakages.
3.	Switch on the power at the main switch.

Sequence of events

When you start the machine as described above, the following must take place:

Step	Description
1.	The machine automatically fills the water tank.

Initial Settings to Be Made

Introduction

This paragraph provides you with an overview of the initial settings you need to make as well as optional settings you can make once you have unpacked your drink vending machine, fitted loose parts inside it and connected it to the electrical supply and water supply.

The settings are made by means of the Programming Panel.

Note!

As this overview of initial settings comprises various types of vending machines it may be possible that one of the functions listed is not an element of the machine in question. In that case you just skip the function and go on to the next function.

Initial Settings

The table below classifies initial settings according to the order in which you need to perform them.

Important! You must carry out these settings in order to make the machine operational.

Setting	Programming Panel #
*Date and Time	#241
*Country and Language	#243
*Keypad on/off	#2201
Shut down on/off	#2211
Water dispensing temperature from IN water tank	#2232
Water temperature in IN water tank at temperature lowering	
Water dispensing temperature from pressure water tank (ES)	
Machine Light on/off at temperature lowering	#2235
Password number for each access level	#2400
Time for machine rinse	#2210
Standard ingredient strength	#2230
Naming articles	#201
Main information on articles	#2000
Article vend mode	#2001
Article ingredients	#210-#219
VAT groups	#202
Filling water on ES Water Tank start/stop	#4131
Watertank filling OK (switching on heating element)	#4132



Setting	Programming Panel #
Machine number	#242
Communication	#247
Payment system (card and/or coin)	#246
Vend mode (multi or single)	#2231
Coin	#260
User groups	#251
ID-Codes	#2042
Terminal mode	#253
Security (maximum amount on card)	#254

Optional Settings

The table below classifies settings which you can set at your option.

Setting	Programming Panel #
Article Step Audit	#2451
External display show amount	#2223
Errors on External Display	#2220
User Groups Articles	#2450
The discount system:	
Setting	Programming Panel #
Article Periods	#2002
Article Normal Discount	#2003
Global Normal	#2040
Article Time Discount	#2004
Time Periods	#203
Global Time	#2041
Article Subsidy Discount	#2005
Global Subsidy	#2042
Fixed Food Subsidy	#205
Subsidy Quota	#206

Mounting the machine on the wall

Procedure

Follow this procedure to mount the machine on the wall:

Step	Action	Illustration
1.	Place the template on the wall and drill the holes.	
2.	Mount the brackets.	
3.	Remove the small cover plates at the back of the machine.	
4.	Before mounting the machine on the wall <ul style="list-style-type: none"> • remove the drip tray and the waste bucket • remove the FB canister and the IN canisters • unscrew the legs of the machine • tilt the brewer forwards. 	
5.	Lift the machine up and place it on the brackets. Note: It will take two people to lift the machine up and place it on the brackets.	
6.	Fasten the machine to the brackets by: <ul style="list-style-type: none"> • using two screws 1, one for each bracket, to fasten the upper part of the machine. • using two bolts 2, one for each bracket, to fasten the lower part of the machine. Insert the bolts in the holes from the legs. Note: The two bolts and two screws are in a plastic bag in the waste bucket.	
7.	After mounting the machine on the wall: <ul style="list-style-type: none"> • relocate the drip tray and the waste bucket • push the brewer back into the proper position. • relocate the FB canister and the IN canisters 	

Technical Data

Introduction

In this section you will find technical data about the machine. The information is structured as follows:

- dimensions
- weight
- connecting to power supply
- power consumption
- waste bucket capacity
- drip tray capacity
- cups
- canister capacities
- water tank capacity

Dimensions

Height: 950 - 960 mm
 Width: 850 mm
 Depth: 440/390 mm

Weight

Basic machine version
 (without ingredients): 90 kg

Connecting to power supply

230V +6%/-15%
 (UK: 240V +6%/-15%)

Power consumption

42 W (stand-by)

Power consumption
2200 W with 2 kW heater and 230 V
2400 W with 2 kW heater and 240 V
2900 W with 2,7 kW heater and 230 V

Waste bucket capacity

12 ltr.

Drip tray capacity

3 ltr.

Cups

Approximately 350 pcs.

Canister capacities

The following table shows the capacity of the different canisters

Type of Canister	Canister Volume	Weight	Number of portions
FB Coffee	5.2 l	1.6 - 2.5 kg	175-275
Sugar	3.0 l	2.7 kg	450
Whitener	3.0 l	1.4 kg	350
IN Chocolate	3.0 l	2.3 kg	115
IN lemon tea	3.0 l	2.8 kg	185
IN Soup	3.0 l	2.0 kg	150

Water tank capacity

8 ltr.

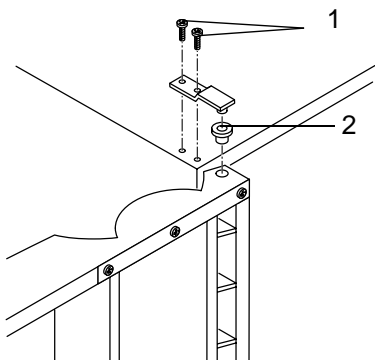
Door Parts

Overview

In this section you will find the following information about various Door Parts

- Dismounting the left and right door
 - Dismounting the door lock and the door locking mechanism
 - Dismounting the key bracket and the key module
 - Dismounting the door cover
 - Dismounting the info display
-

Dismounting the left and right door

Step	Action	Illustration
1.	Open the doors	
1.	Switch off the main switch.	
2.	Dismounting the left door <ul style="list-style-type: none"> • Remove the cover and the covering foil of the cup magazine. • Remove all cups in upwards direction. • Remove the cup magazine • Continue at step 3. 	Dismounting the right door Release lever **** continue at step 3.
3.	Disconnect all electrical plug connections to the machine.	
4.	Remove the lock nut.	
5.	Hold the door and remove 2 screws (1).	
6.	Lift the door out of the lower guide.	

Tip:

For the above mentioned items refer to 'Dismounting the cup mechanism'.

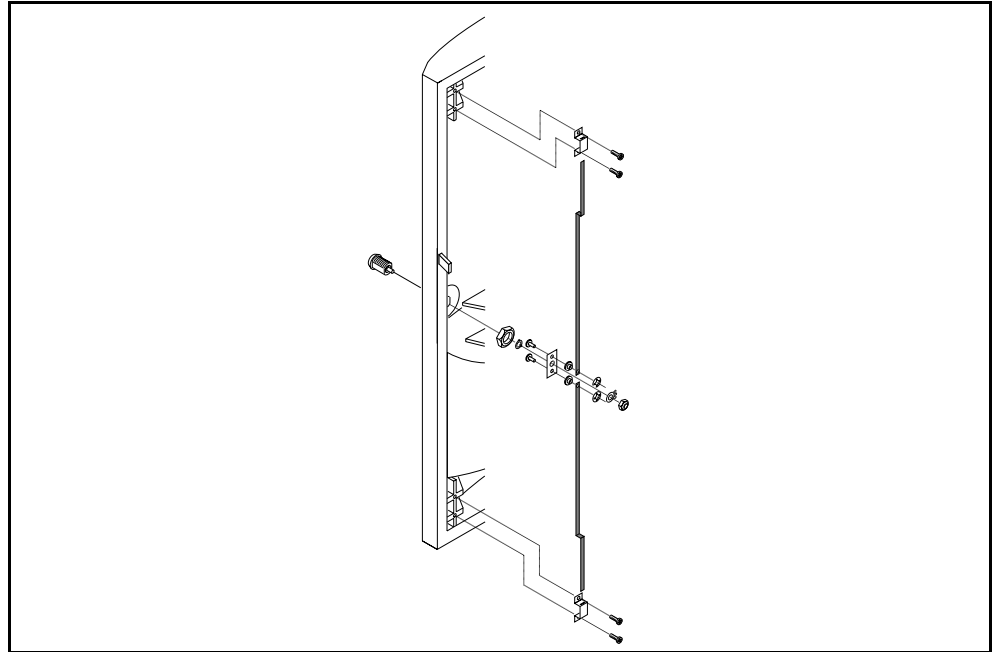
Note for reinstallation

- Make sure that the top and bottom bearing bushes (2) are positioned correctly.
- Tighten the lock nut (= protection against theft).

Dismounting the door lock and the door locking mechanism

Dismount

Dismount these components in accordance with illustration below



Note for re-installation

Make sure the components are installed in the correct order.

Dismounting the key bracket and the key module

Dismounting the key bracket

Step	Action
1.	Dismount the door cover.
2.	Remove the screws.
3.	Remove the key bracket.

Dismounting the key module

Step	Action
1.	Dismount the key module.
2.	Slide the key module to the left side and remove it.

Note:

Do not loose the transparent price label cover of the window.

Dismounting the door cover

Dismounting

Step	Action	Illustration
1.	Open the doors.	
2.	Switch off the main switch.	
3.	Release lever ***	
4.	Remove the cash box, if fitted.	
5.	Remove the securing band.	
6.	Disconnect the electrical connection to the machine. Remove the screw at (1) and swing the door cover open.	
7.	Slightly pull the door cover (2) forwards and lift its bottom part out of the key console (3).	

Dismounting the info display

Dismount

Step	Action	Illustration
1.	Remove the key module.	
2.	Disconnect the electrical connections to the info display.	
3.	Remove 4 screws (1), then remove the LCD module (4) with the info display.	
4.	Remove 4 screws (2) in the LCD module frame, then remove the info display (3).	



Advertising Panel

Overview

In this section you will find the following information about the Advertising Panel:

- Dismounting the advertising panel
 - Replacing the advertising picture
-

Dismounting the advertising panel

Dismounting the panel

The procedure for dismounting the advertising panel is as follows:

Step	Action	Illustration
1.	Open the doors.	
2.	Switch the main switch off.	
3.	Tilt the cup mechanism forwards.	
4.	<p>Press the red snap hooks (1)</p> <ul style="list-style-type: none"> • start at the side of the door where the lock is, • one after the other to the centre of the door. <p>Each time pull the panel (2) slightly forwards at the side where the door is.</p> <p>Note: The panel itself is straight. It only bends when it is engaged into the snap hooks.</p>	
5.	Remove the panel and the advertising picture.	

Re-installation note

First engage the snap hook behind the cup magazine.

Replacing the advertising picture

Replacement

The procedure replacing the advertising picture is as follows:

Step	Action
1.	Open the doors.
2.	Tilt the cup dispenser forwards.
3.	Press open only the snap hooks on side of the panel where the lock is, and hold the panel.
4.	Replace the advertising picture.
5.	Re-engage the panel into the snap hooks.
6.	Tilt back the cup dispenser.

WITTENBORG



Cup Dispensing System

Overview

In this section you will find the following information about the Dispensing System

- Description
- Cup Dispenser
- Cup Catcher Plate
- Cup Station

Description

The Dispensing System automatically dispenses cups if you do not use your own cup.

Cup Dispenser

Introduction

In this section you will find the following information about the Cup Dispenser:

- Description
 - Warning
 - Parts and Functions
 - Dismounting the cup magazine (cup turret)
 - Dismounting the cup mechanism
 - Notes for reinstallation of cup mechanism
 - Replacing the Cup Drop Ring
 - Testing the Cup Dispenser
 - References
-

Description

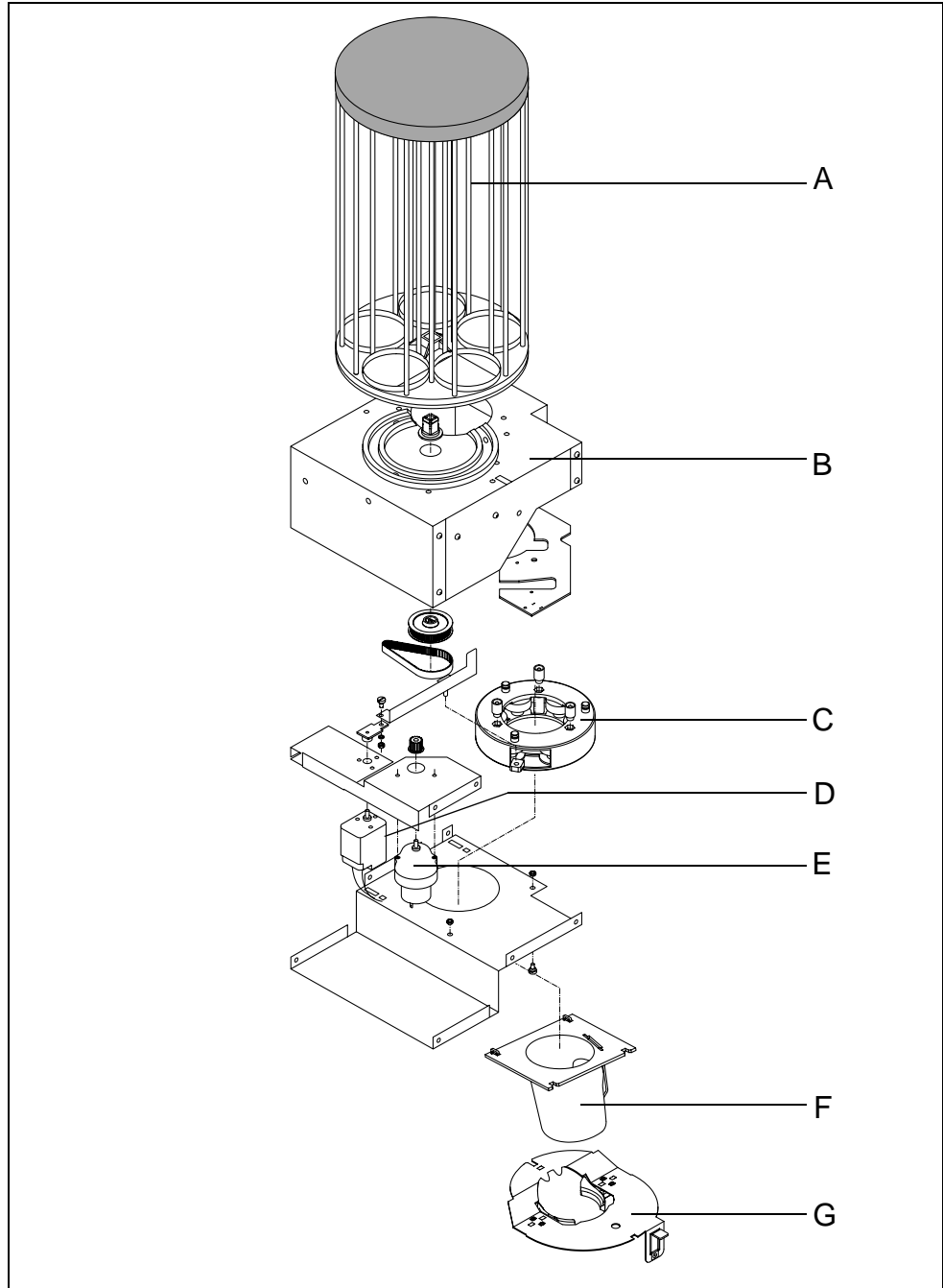
This chapter contains a description of the cup dispenser as well as a description of the cup magazine.

Warning

When test and repair work is carried out, care must be taken to avoid burning!

Parts and Functions

This illustration shows the location of the cup dispenser components:



This table describes the basic parts of the Cup Dispenser and their functions.

Part		Function
A	Cup Magazine	Holds the cups
B	Cup Mechanism	Dispenses the cups.

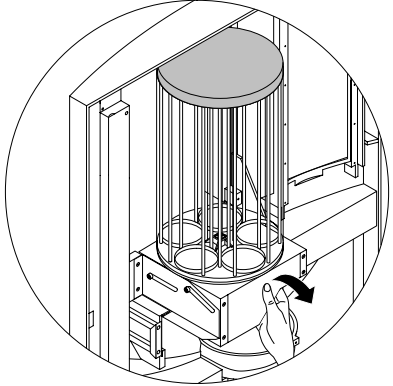
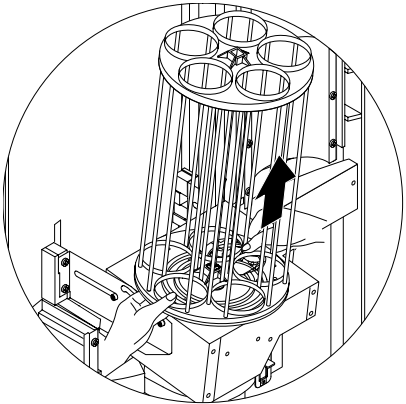
Part		Function
C	Cup Drop Ring	Drops a cup when a drink is selected
D	Motor for Cup Magazine	When activated the motor turns the cup magazine
E	Motor for Cup Drop Ring	When activated the motor moves the clutches in the cup drop ring.
F	Cup Drop Tube	Directs the cup from cup drop ring and down into cup catcher plate.
G	Cup Catcher Plate	Catches the cup - dropped from the cup drop ring - by the cup guides located on it.

NB!

If no cups are left, the display will show a message indicating this.

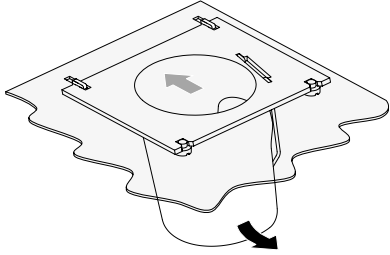
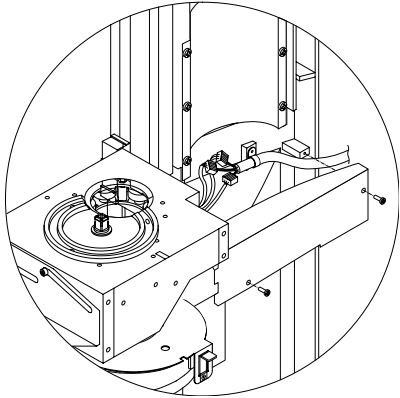
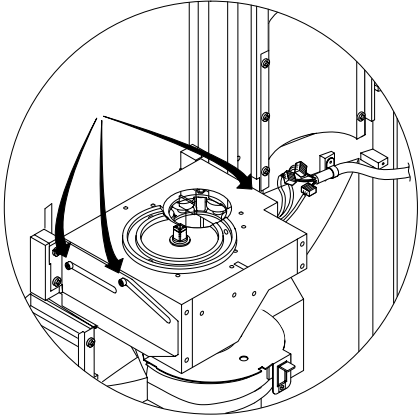
Dismounting the cup magazine (cup turret)

The following procedure shows how the cup magazine is removed.

Step	Action	Illustration
1.	Open the left door.	
2.	Switch off the main switch.	
3.	<p>Take a grip on the seat of the cup mechanism and tilt it forwards.</p> <p>Pull off the lid and the covering foil of the cup magazine.</p> <p>Remove all cups from the cup magazine.</p> <p>NB: To remove all cups in the cup pile ready for dispensing, simply lift the pile with one hand through the cup drop tube and remove pile with the other.</p>	
4.	<p>Take a grip around the rim of the bottom of the cup magazine with your fingers. Press your thumbs against the bottom of the cup magazine and unsnap it from the turret drive dog.</p>	

Dismounting the cup mechanism

The following procedure shows how the cup mechanism is removed.

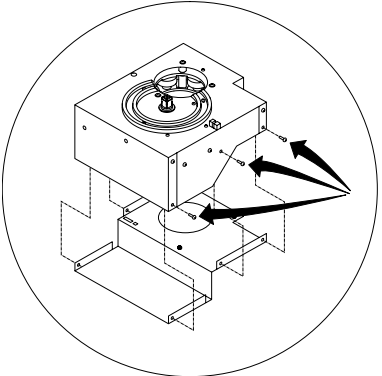
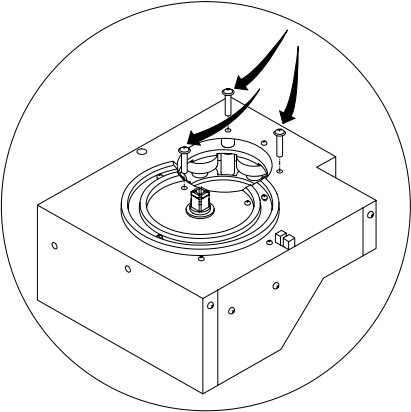
Step	Action	Illustration
1.	Remove cup magazine, see procedure for Dismounting the Cup Magazine (Cup Turret).	
2.	Take a grip on cup drop tube, push backwards and remove it in a downward movement.	
3.	Dismount the cover plate for plugs by loosening its two screws.	
4.	Disconnect plug connections to the cup mechanism (low voltage).	
5.	Dismount the cup mechanism by removing two screws with bush on the left side and one screw with bush on the right side of the cup mechanism.	

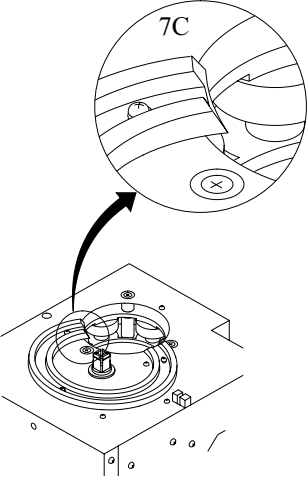
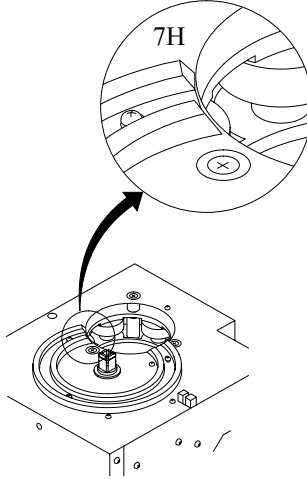
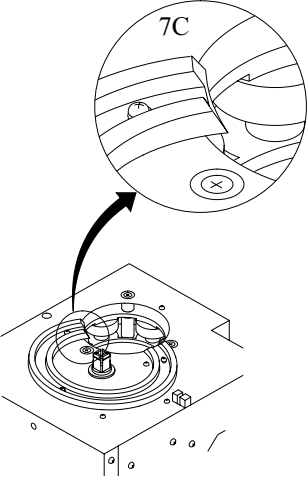
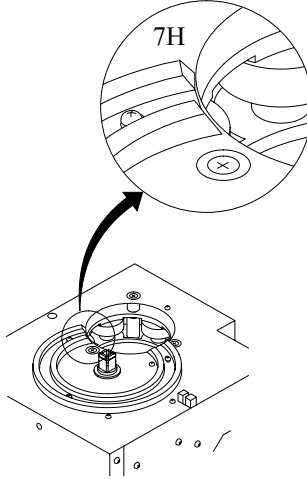
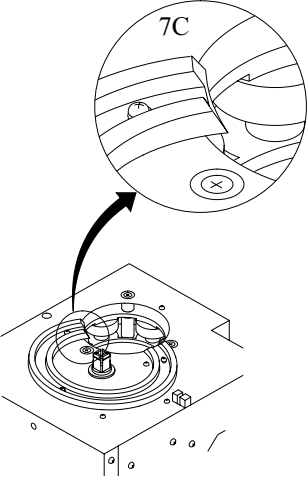
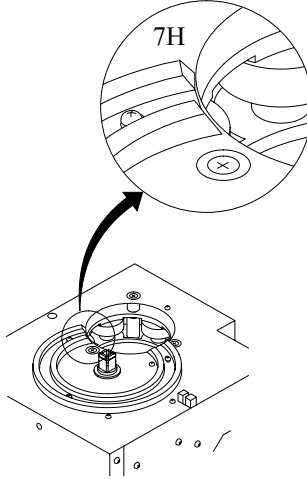
Notes for reinstallation of cup mechanism

During reinstallation make sure that each screw is provided with a bush. Fasten the bush together with the screw. Make sure that the cup mechanism can be easily tilted.

Replacing the Cup Drop Ring

The following procedure shows how the Cup Drop Ring is replaced

Step	Action	Illustration
1.	Dismount cup mechanism, see procedure for Dismounting the Cup Magazine.	
2.	Dismount the lower plate for cup mechanism by removing the three screws on both left and right side of the mechanism.	
3.	Loosen three screws retaining the Cup Drop Ring. NB: If necessary loosen the screws of the bearing rail for cup mechanism.	
4.	Turn the cup mechanism upside down.	
5.	Remove the old Cup Drop Ring and relocate the new Cup Drop Ring ensuring that its tension rod engages with the pin of the connecting rod for cup drop ring motor.	
6.	Tighten screws retaining the cup drop ring.	

Step	Action	Illustration										
7.	Slide rail to suit the cup as follows:											
	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">If 7C cups</th> <th style="text-align: center;">If 7H cups</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="text-align: center;">Loosen screws retaining the bearing rail</td> </tr> <tr> <td style="text-align: center;">Let one end of bearing rail protude over the hole for cup drop:</td> <td style="text-align: center;">Let both ends of bearing rail level with hole for cup drop:</td> </tr> <tr> <td style="text-align: center;">  </td> <td style="text-align: center;">  </td> </tr> <tr> <td colspan="2" style="text-align: center;">Retighten screws of bearing rail.</td> </tr> </tbody> </table>	If 7C cups	If 7H cups	Loosen screws retaining the bearing rail		Let one end of bearing rail protude over the hole for cup drop:	Let both ends of bearing rail level with hole for cup drop:			Retighten screws of bearing rail.		
If 7C cups	If 7H cups											
Loosen screws retaining the bearing rail												
Let one end of bearing rail protude over the hole for cup drop:	Let both ends of bearing rail level with hole for cup drop:											
												
Retighten screws of bearing rail.												
8.	Relocate and fix remaining parts in reverse order											

Testing the Cup Dispenser

Using the programming panel, it is possible to test the cup dispenser.

#402 Cup Test
#4020 Cup Drop

References

For more details about...	Please see...
Cup Dispenser parts	Spare Parts List
Cup Dispenser faults	Trouble Shooting

Cup Catcher Plate

Introduction

In this section you will find the following information about the Cup Catcher Plate

Overview

- Description
 - Warning
 - Parts of Cup Catcher Plate
 - Two types of Cup Catcher Plates
 - Testing the Cup Dispensing
 - References
-

Description

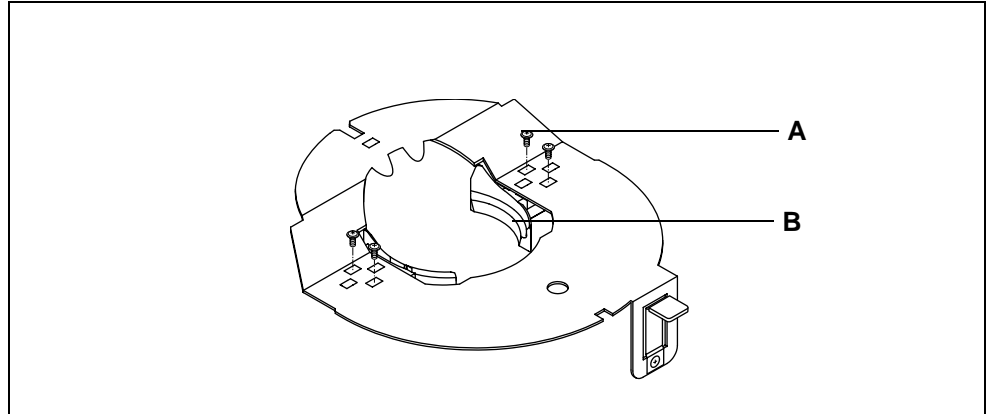
The Cup Catcher Plate receives the cup from the cup ring of the cup mechanism and holds the cup in place while it is filled.

Warning

When test and repair work is carried out, care must be taken to avoid burning!

Parts of Cup Catcher Plate

This illustration shows the location of the components of the Cup Catcher Plate:



This table gives an overview of the parts of the Cup Catcher Plate

Item	Part
A	Cup Catcher Plate
B	Cup Guide

Two types of Cup Catcher Plates

If a new cup type is used it may be necessary to replace the Cup Catcher Plate observing the below considerations:

Description	Illustration
The choice of cup catcher plate depends on the diameter of the cup used considering diameters D1 and D2	
The cup catcher plate is available in 2 types: - for 7C cups - for 7H cups.	

Testing the Cup Dispensing

Using the MasterModule, it is possible to test the cup dispensing

#402 Cup Test
#4020 Cup Drop

References

For more details about...	Please see...
Cup Dispenser parts	Spare Parts List
Cup Dispenser faults	Test Functions

Cup Station

Introduction

In this section you will find the following information about the Cup Station:

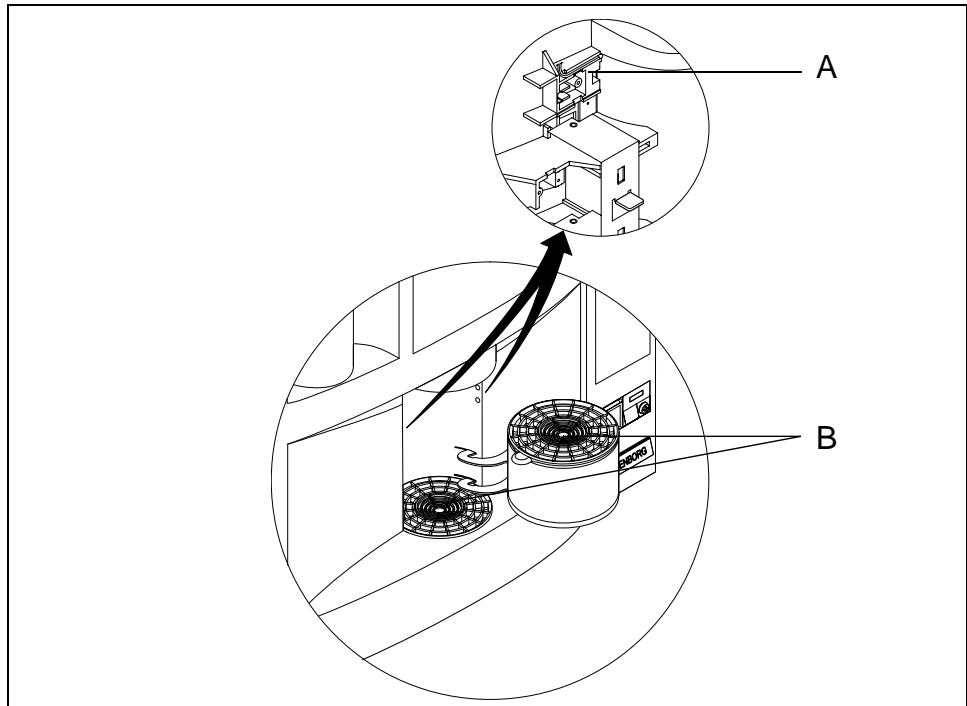
- Description
- Parts and Functions
- Maintenance Requirements
- Adjusting the Sensibility of the Cup Sensors
- Testing the Cup Dispensing or the Cup Sensors
- References

Description

The Cup Station is designed to facilitates easy cleaning and operation.

Parts and Functions

This illustrations show the location of the Cup Station components



This table describes the basic parts of the Cup Station and their functions.

Part		Function
A	Cup Sensors	Detects if a cup is placed on the cup platform.
B	Drip Grates	Let spilt liquid from pass through to drip tray below

Maintenance Requirements

The Cup Station easily maintained. Simply follow these principles in order to avoid malfunctioning:

Nature	Parts	Frequency
Replacement	Cup Sensor (Entire Harness)	Each time Cup Sensor is out of order.
Setting, Sensor Sensibility	Cup Sensor	Each time the Cup Sensor is replaced.

Adjusting the Sensitivity of the Cup Sensors

The Cup Sensors can be adjusted on the potentiometer, which is situated on the MC circuit board.

Testing the Cup Dispensing or the Cup Sensors

Using the programming panel, it is possible to test the Cup Dispensing and the functioning of the Cup Sensors

#402 Cup Test
#4020 Cup Drop

References

For more details about...	Please see...
Cup Station parts	Spare Parts List
Cup Dispenser faults	Trouble Shooting

Water System

Introduction

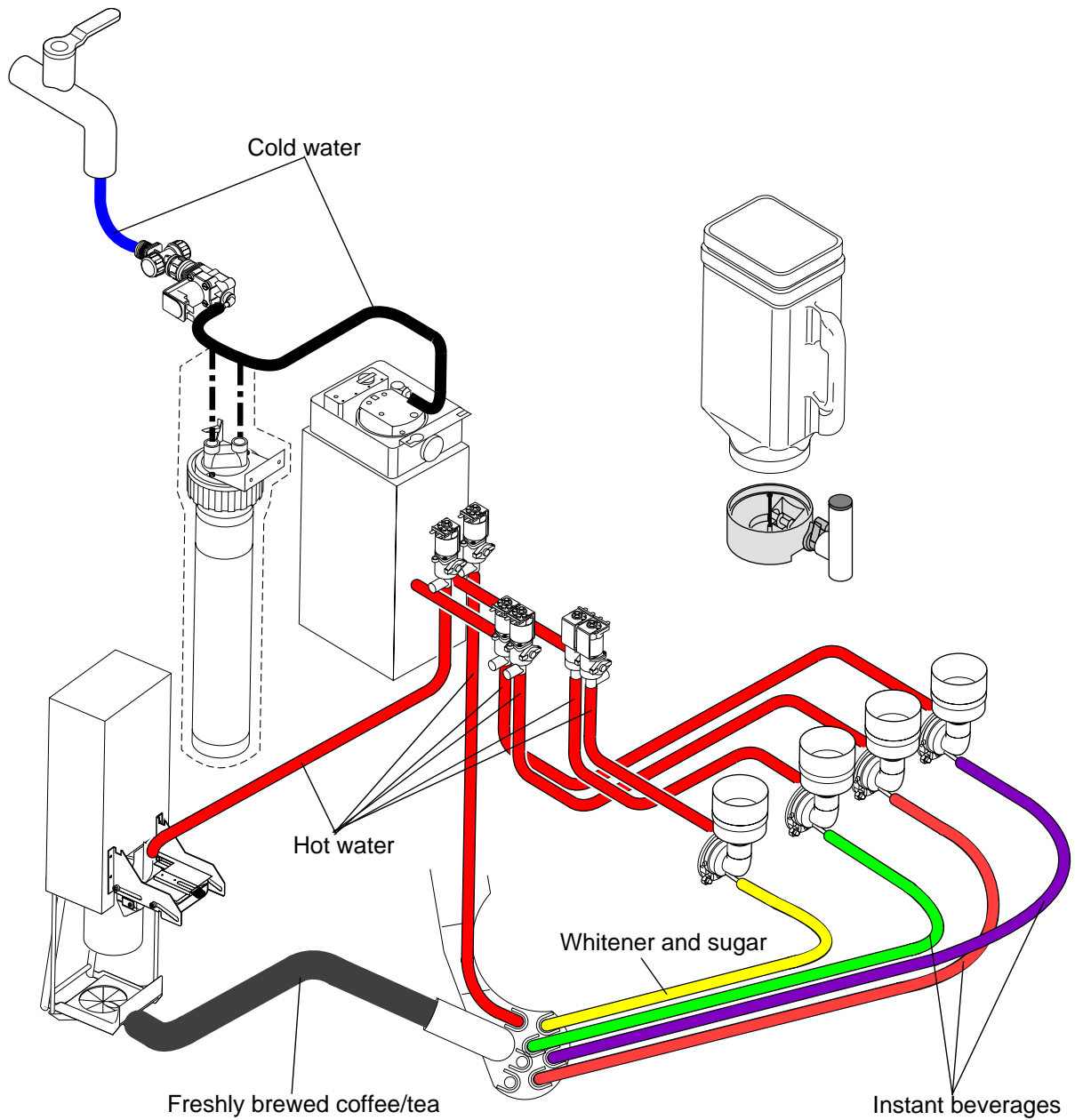
In this section you will find the following information about the Water System:

- Survey of the water system
 - Dismounting components from the water tank
 - Draining water from the water tank
 - Dismounting solenoid valves for brewer, instant beverages and hot water
 - Dismounting the water tank
 - Dismounting the water tank cover
 - Dismounting the temperature sensor
 - Dismounting and resetting the safety cut-out thermostat
 - Dismounting the water level sensor (electrode)
 - Dismounting filter, inlet valve and connecting hose
 - Dismounting the water pipes
 - Dismounting the water purifying filter
-

Survey of the Water System

Water system

The illustration below shows the water system



Dismounting components from the water tank

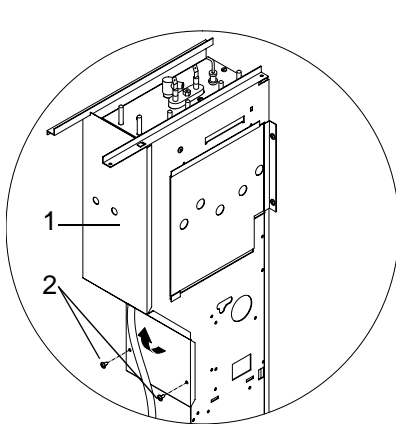
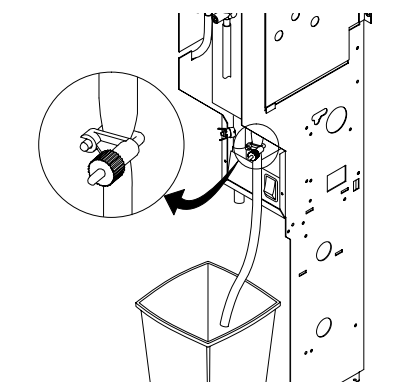
Warning

- There is an increased risk of injuries when the safety switch (behind the water tank cover) is activated. The white cables carry 230V. The brewer starts moving automatically.
 - Be careful when the water tank cover has been dismantled. There is an increased risk of being scalded. Components on the water tank like valves are plugged to the water tank.
 - When working on the water tank there is no protection against unintentionally pulling out a component and spilling hot water as a result.
 - Replace cable harnesses only as complete original spare parts!
 - Never repair the cable harness of the heating system. There is a risk of a fire !
 - For safety reasons the heating element, the dry running protection and the cable harness of the heating system may only be replaced completely and together with the assembly group water tank or spare part water tank cover.
 - When disconnecting electrical connections hold the components to avoid draining the water tank. There is a risk of being scalded !
-

Draining water from the water tank

Procedure

Follow this procedure to drain water from the water tank

Step	Action	Illustration
1.	Open the left door.	
2.	Switch off the main switch and close the water cock.	
3.	Remove the FB canister situated in front of the water tank.	
4.	Unclip from the distributor block the outlet hose protruding from the water tank cover.	
5.	<p>Unscrew both screws (2) retaining water tank cover.</p> <p>Remove the water tank cover (1) by turning it slightly upwards.</p> <p>Warning: There is a risk of being scalded, as the valves for the brewer, instant beverages and hot water are plugged to the water tank.</p>	
6.	Remove the hose clamp and place the outlet into a container (min. capacity 5 l).	

**Do not pull the outlet hose out of the water tank.
Hot water, there is the risk of being scalded.**



Dismounting valves for brewer, instant beverages and hot water

Before dismounting:

- When dismounting the solenoid valve for the brewer and hot water take note whether a reduction to 3.5 mm diameter has been installed (to avoid a dosing fault).
- The valves for instant beverages are pre-adjusted (matched valve face 1 l/min).
- If necessary replace the gasket before installing the new solenoid valve.
- Place the valve ventilation on the new valve during installation.
- Solenoid valve for upper position: short valve ventilation.
- Solenoid valve for lower position: long valve ventilation.

Procedure

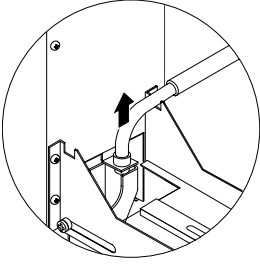
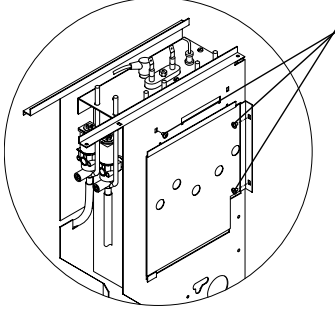
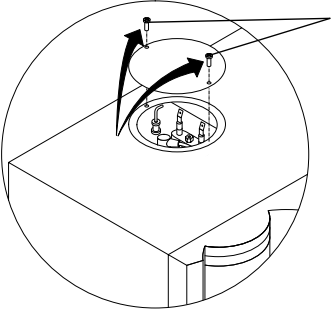
Follow this procedure to dismount valves

Step	Action	Illustration												
1.	Open the left door.													
2.	Switch off the main switch, pull out the power supply plug and close the water cock.													
3.	Drain the water from the water tank following the procedure "Draining water from the water tank".													
4.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e0e0e0;"> <th style="width: 50%;">If valve for hot water or brewer</th> <th style="width: 50%;">If valve for instant drinks</th> </tr> </thead> <tbody> <tr> <td>Pull off the hoses for the valves to be dismounted.</td> <td>Take out ingredient canister situated to the right side next to the water tank</td> </tr> <tr> <td>Disconnect the electrical connections.</td> <td>Loosen 2 screws retaining the cover plate to the right side of the water tank and remove it.</td> </tr> <tr> <td>Pull off the solenoid valve</td> <td>Pull off the hoses for the valves to be dismounted.</td> </tr> <tr> <td></td> <td>Disconnect the electrical connections.</td> </tr> <tr> <td></td> <td>Pull off the solenoid valve.</td> </tr> </tbody> </table>		If valve for hot water or brewer	If valve for instant drinks	Pull off the hoses for the valves to be dismounted.	Take out ingredient canister situated to the right side next to the water tank	Disconnect the electrical connections.	Loosen 2 screws retaining the cover plate to the right side of the water tank and remove it.	Pull off the solenoid valve	Pull off the hoses for the valves to be dismounted.		Disconnect the electrical connections.		Pull off the solenoid valve.
If valve for hot water or brewer	If valve for instant drinks													
Pull off the hoses for the valves to be dismounted.	Take out ingredient canister situated to the right side next to the water tank													
Disconnect the electrical connections.	Loosen 2 screws retaining the cover plate to the right side of the water tank and remove it.													
Pull off the solenoid valve	Pull off the hoses for the valves to be dismounted.													
	Disconnect the electrical connections.													
	Pull off the solenoid valve.													
NB! During installation of new valve place the valve ventilation.														

Dismounting the water tank

Procedure

Follow this procedure to dismount the water tank:

Step	Action	Illustration
1.	Open the left door.	
2.	Switch off the main switch, pull out the power supply plug and close the water cock.	
3.	Drain water from water tank following procedure "Draining water from the water tank".	
4.	Pull off the inlet hose for brewer	
5.	Take out ingredient canister situated to the right side next to the water tank	
6.	Loosen the locking screw at top of the right plate next to the water tank.	
7.	Remove cover plate to the right side of the water tank loosening 2 screws.	
8.	Remove hoses from the water pipes through hole of plate to the right side of the water tank.	
9.	Remove the cover for top plate loosening its 2 screws.	
10.	Pull out water inlet hose and disconnect the electrical connections at top of the water tank.	
11.	Take out water tank disconnecting all remaining electrical connections.	

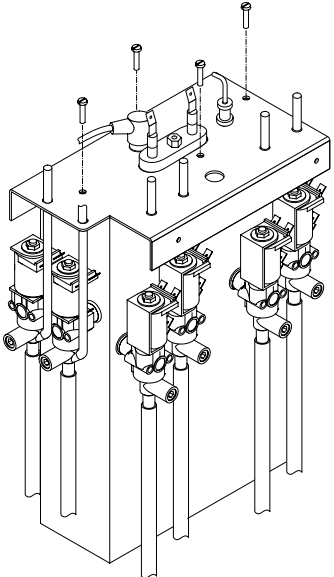
Instructions for re-
installation of the
water tank:

- If the delivery hoses have been disconnected make sure that the sequence and their position is correct.
 - Make sure that the hoses of the tube system are correctly reconnected and tightly fastened.
 - When the cable and/or the plugs shows signs of brittleness (visual check) the assembly group water tank or water tank cover must be replaced as a whole (electrical safety!).
-

Dismounting the water tank cover

Procedure

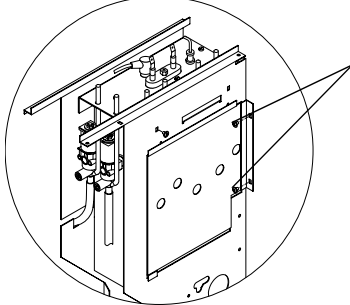
Follow this procedure to dismount the water tank cover:

Step	Action	Illustration
1.	Dismount the water tank following procedure for “dismounting the water tank”.	
2.	Remove valve ventilations from the water tank cover.	
3.	Loosen 3 screws retaining the water tank cover as well as the 1 screw retaining the earthing wire for securing heating element.	

Dismounting the temperature sensor

Procedure

Follow this procedure to dismount the temperature sensor:

Step	Action	Illustration
1.	Open the left door.	
2.	Switch off the main switch, pull out the power supply plug and close the water cock.	
3.	Drain water from the water tank following the procedure "Draining water from the water tank".	
4.	Take out ingredient canister situated to the right side next to the water tank	
5.	Remove cover plate to the right side of the water tank loosening 2 screws.	
6.	Pull out the temperature sensor out of the water tank.	
7.	Disconnect the 2 flat plugs.	
8.	Check the sensor bushing for tears and brittleness, replace it if necessary.	

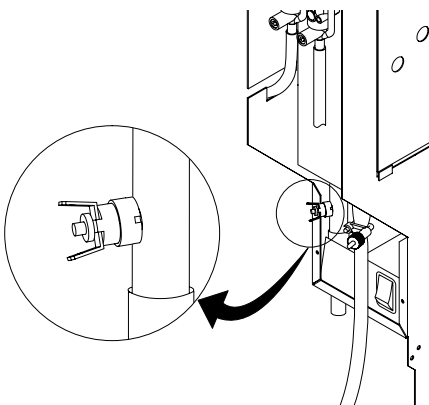
Note:

If the temperature sensor is not properly electrically connected the heating element will not be switched off as long as the machine is switched on (boiling over).

Dismounting and Resetting the Safety Cut-Out Thermostat

Dismounting

Follow this procedure to dismount the safety cut-out thermostat:

Step	Action	Illustration
1.	Open the left door.	
2.	Switch off the main switch, pull out the power supply plug and close the water cock.	
3.	Drain water from the water tank following the procedure "Draining water from the water tank".	
4.	Unscrew the boil over sensor from the overflow pipe of the water tank, situated at the bottom of the water tank.	
5.	Disconnect the electrical connection.	

Resetting

The safety cut-out thermostat cuts out if water is boiling too long. The safety cut-out thermostat has to be reset as follows::

Step	Action
1.	Check the temperature adjustment in menu #2232.
2.	Check the cable connection to the boil over sensor for tight fastening.
3.	Press the "overboil" switch manually

Note:

When the safety cut-out thermostat has been triggered either a case of boiling over has occurred or water has been spilled by moving the machine:

- empty the drip tray.
- dry the drip tray sensor.

The water tank and/or the temperature sensor could be calcified (decalcify if necessary)

Dismounting the Water Level Sensor (Electrode)

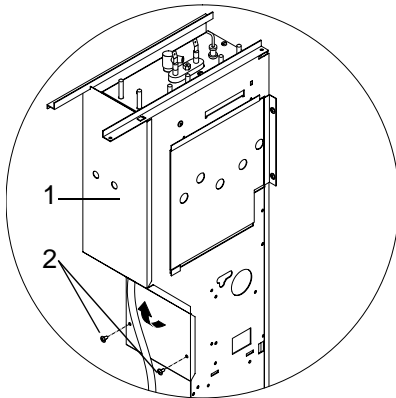
Procedure

Follow this procedure to dismount the electrode:

Step	Action	Illustration
1.	Open the left door.	
2.	Switch off the main switch, pull out the power supply plug and close the water cock. Warning: hot water, there is a risk of being scalded. Wait till the water has cooled down	
3.	Dismount top cover on top of machine (2 screws)	
4.	Through the hole for top cover disconnect electrical connection for electrode.	
5.	Pull out electrode from its holder.	

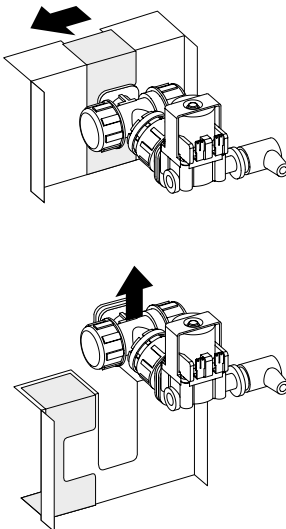
Dismounting filter, inlet valve and connecting hose

Procedure Follow this procedure to dismount the filter, inlet valve and connecting hose:

Step	Action	
1.	Open the doors.	
2.	Switch off the main switch, pull out the power supply plug and close the water cock.	
3.	Remove the FB canister situated in front of the water tank.	
4.	Unclip from the distributor block the outlet hose protruding from the water tank cover.	
5.	<p>Unscrew both screws (2) retaining water tank cover. Remove the water tank cover (1) by turning it slightly upwards.</p> <p>Warning! There is a risk of being scalded, as the valves for the brewer, instant beverages and hot water are plugged to the water tank.</p>	

to be continued on next page ...

(continued)

Step	Action		
6.	Step	Inlet valve situated at rear side of machine	Inlet valve situated at the separating plate between water tank and brewer.
	1.	Loosen locking screw for valve securing device, situated at the rear of the cabinet below the water tank.	Dismount brewer, following the procedure for "Dismounting the FB Unit", chapter FB Unit.
	2.	Slide the valve securing device aside. 	Unscrew connection hose between purifying filter and inlet valve from inlet valve.
	3.	Remove by lifting slightly upwards and forwards.	Slide the water inlet valve upwards in the groove of the separating plate between water tank and brewer and pull entire valve out through slot.
	4.	Guide the connecting hose from the back and pull the inlet valve forwards. Note: If necessary move the machine away from the wall and take the connecting hose off at the back of the machine.	Disconnect electrical connections to inlet valve.
	5.	Pull off the inlet hose for the water tank. Note: If necessary pull off the angular nozzle (before doing that warm it in hot water).	
	6.	Unscrew the connecting hose from the water tank.	
	7.	Disconnect electrical connections to inlet valve.	

Note for re-installation:

The groove in the inlet valve must guide into the console.
Slide the valve securing device into the groove.

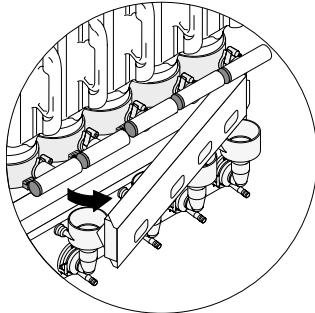
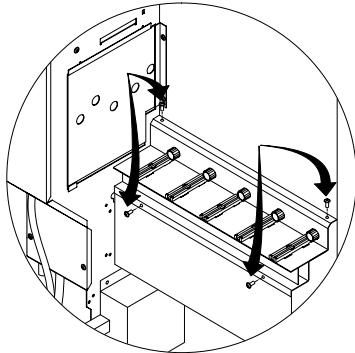
Dismounting the water pipes

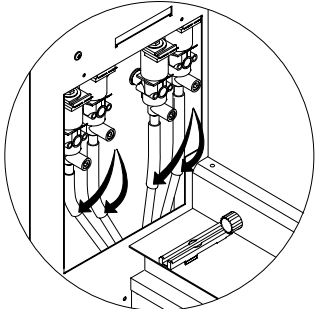
Warning:

There is a risk of being scalded, as the valves are plugged to the water tank.

Procedure

Follow this procedure to dismount the water pipes

Step	Action	Illustration
1.	Open the doors.	
2.	Switch off the main switch, pull out the power supply plug and close the water cock.	
3.	Remove the instant ingredient canister.	
4.	Remove the funnel extensions.	
5.	Turn out holder for dust filter using the holes in the left side of holder.	
6.	Remove the Shelf for ingredient canisters (4 screws).	
7.	Remove cover plate to the right side of the water tank loosening 2 screws.	

Step	Action	Illustration
8.	Remove the hoses of the valves for instant beverages from the water pipes.	
9.	<p>Pull the water pipes out of their connecting sockets in the mixer motor console.</p> <p>Result: The water pipes are now lying loosely in the separating wall opening of the water tank.</p>	
10.	Remove the water pipes by turning them out through the separating wall opening.	

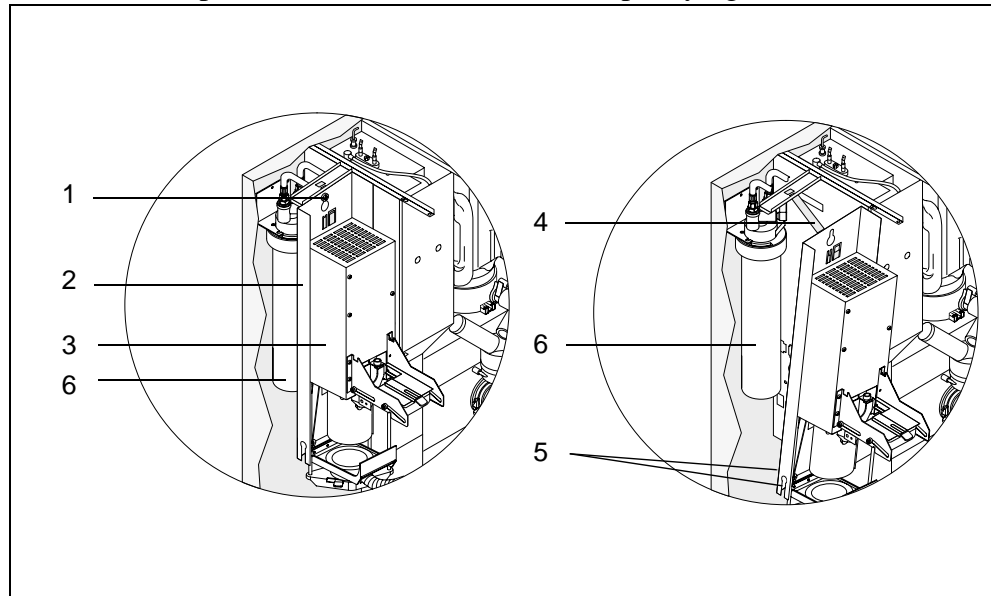
Note:

- If the connecting sockets are heavily calcified they must be replaced.
- Wet the connecting sockets with drinking water before inserting the water pipes. Make sure the water pipes are positioned horizontally to prevent the development of water pockets.

Dismounting the water purifying filter (optional)

Procedure

Follow this procedure to dismount the water purifying filter



Step	Action
1.	Open the doors.
2.	Switch off the main switch, unplug the power supply plug and close the water cock .
3.	Fully open the left door (180°) and fix it in this position by means of a suitable object.
4.	Remove the FB canister.
5.	Loosen the screw (1)
6.	Slightly lift the whole bracket (2) with the brewer (3) and tilt it forwards off the screw (1). Note: The band (4) acts as a stopper so that the bracket will not tilt down completely. The two screws (5) serve as the point of rotation).
7.	Disconnect water inlet by pushing the lever in the filter head
8.	Unscrew the filter cartridge (6) from the filter head (bayonet joint).
9.	Replace the filter cartridge and assemble in reverse order.

Note:

Make sure that inlet and outlet hoses are correctly situated in their appropriate cut in the angle for filter head.

WITTENBORG

Table of Contents *Dismounting / Repair Brewing System*

Brewing System	1
<i>Adjustments</i>	1.1
Dismounting	2
<i>Dismounting Parts of the Brewer / Components of the Brewer</i>	2.1
<i>Safety Instructions</i>	2.2
<i>Dismounting the Brewer Unit</i>	2.3
<i>Testing the Brewer Unit</i>	2.4
<i>Removing the Brewer Housing</i>	2.5
<i>Dismounting the Dosing Motor</i>	2.6
<i>Dismounting the Actuator</i>	2.7
<i>Dismounting the Tachoboard</i>	2.8
<i>Dismounting the Driving Parts for the Actuator</i>	2.9
<i>Dismounting the Actuator</i>	2.10
<i>Mounting the Actuator</i>	2.11
<i>Dismounting/Mounting the Microswitch BSSW</i>	2.12
<i>Dismounting the Bearings of the inner Scraper Arm</i>	2.13
<i>Dismounting the Ejector Spring</i>	2.14
<i>Replacing the Gaskets of the Brewer Cylinder</i>	2.15
<i>Decalcifying and Replacing the Filter Plate</i>	2.16
<i>General Notes</i>	2.17
<i>Check List</i>	2.18
Functional Descriptions	3
<i>Schematic Illustration of the Brewing Process</i>	3.1
<i>Functioning of the Brewer</i>	3.2
Technical Specifications	4
Options	5
Accessories	6

Brewing System

1 Adjustments

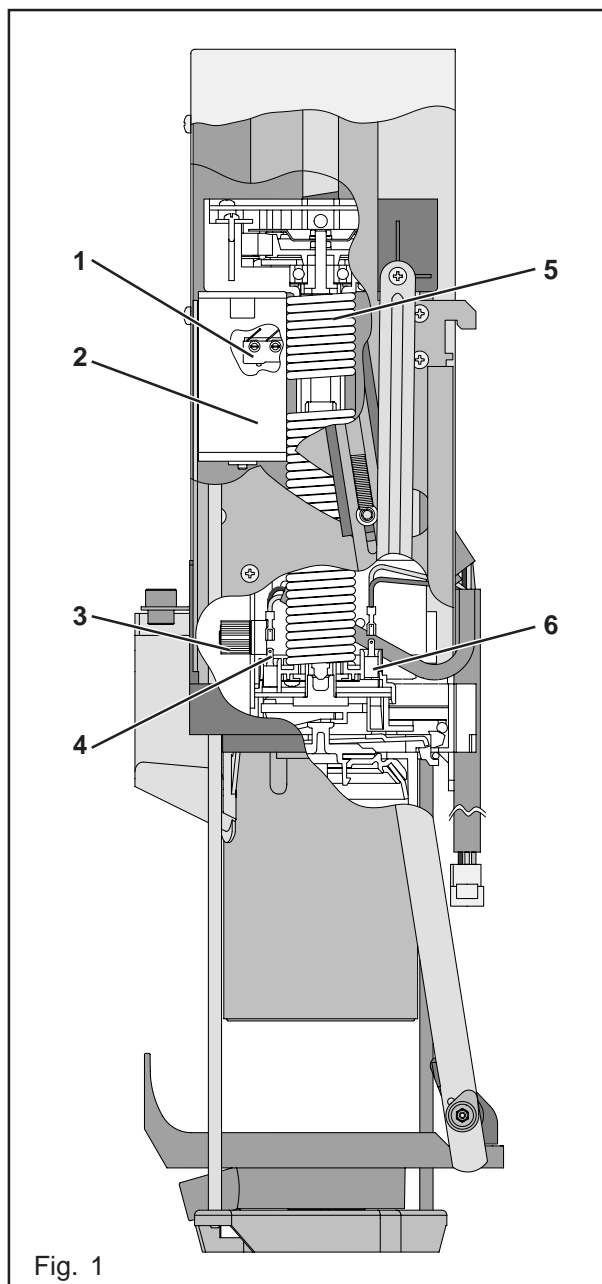
WHAT:	HOW:
Min. + Max. water volume (depending on the flow and the according setting of the valve (l/min.))	Dispenser setting min. (60/80 ml) Programming max. (240 ml)
scraper in front position	Programming FB55 (free programmable) + Programming 5100 (programmable by the service technician) Programming FB5500: front starting position: fixed
scraper in rear position	Programming FB50: rear starting position: fixed

2 Dismounting

2.1 Dismounting Parts of the Brewer / Components of the Brewer

Legend for fig. 1:

- | | |
|-------------------------------|---|
| 1 Safety switch | switches as soon as the brewer moves beyond the closing position. E.g. sealing of the filter plate, filter plate, or brewer cylinder not installed. |
| 2 Actuator motor | drives the actuator, controls the brewing process. |
| 3 Dosing motor | drives the dosing unit, controls the product quantity. |
| 4 Brewer Closed Switch | switches as soon as the brewer cylinder and the filter plate form a chamber. |
| 5 Actuator | controls the functions of the filter plate, the plunger and the scraper during the brewing process. |
| 6 Brewer At End Switch | switches on both end positions of the brewer, e. g. scraper in end position or lower plunger position. |



2.2 Safety Instructions



Installation and repair works on the dispenser may only be carried out by trained service technicians.

General Mounting Instructions

Mounting the scraper guide

- When mounting, the guiding lugs (1) have to point towards the brewer's fastening holes and the cable harness (2). (Fig. 1)

Mounting the support

- When replacing, the screw (3) has to be fastened by means of Loctite. (Fig. 2)

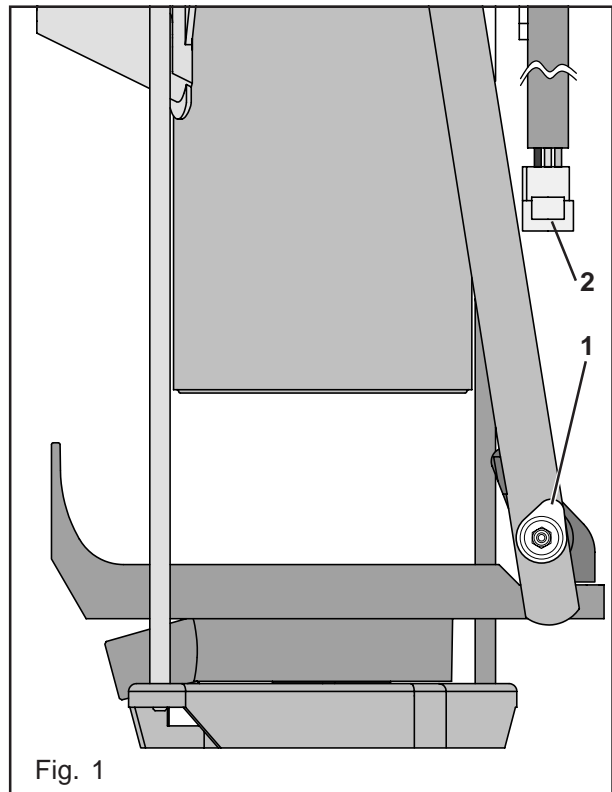


Fig. 1

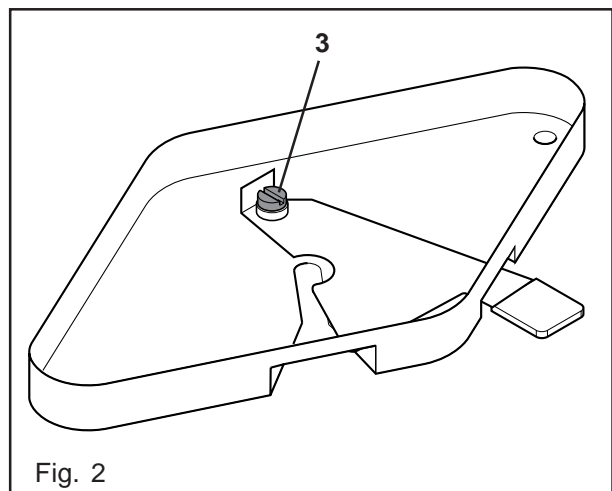


Fig. 2

2.3 Dismounting the Brewer Unit



The following description is valid for FB55. The safety cut-off device for the brewer has to be carried out according to the type of brewer (refer to the corresponding service manual). Furthermore, if necessary the removal of the outlet has to be performed in accordance with the specific dispenser.



When working on the brewer unit be aware of sharp edges. There is a risk of being injured.

- Open the left door.

- Remove the product container.

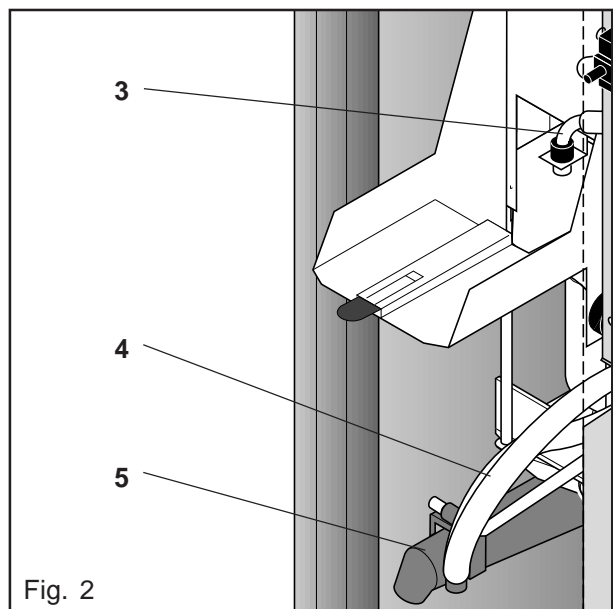
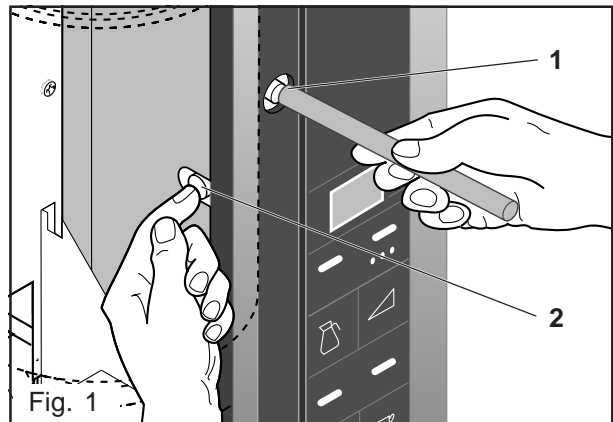


The safety cut-off device of the brewer is put out of function when pressing the safety switch. Keep your clothing and your hands clear of the dispenser. There is a risk of being injured.

- Press the safety switch (1) by means of the special tool, and simultaneously press the rinsing button (2) through the opening in the right door, and keep them pressed until the brewer cylinder has closed completely (fig. 1).

The brewer is now in transport position.

- Unlock the outlet (5) and tilt it upwards (fig. 2). When re-installing, make sure that the outlet is locked into place.
- Remove the coffee grounds container and the drip tray.
- Switch off the mains switch, disconnect the power supply, and close the water cock.
- Pull off the hot water hose (4). (Fig. 2)
- Remove the angle of the water inlet for the brewer (3) from the brewer, and push it to the side. (Fig. 2)



- If necessary, remove the filter plate, the scraper, and the brewer cylinder.
- Remove the two screws (6). (Fig. 3)
- Disconnect the 15-pole plug.
- If necessary, mount the filter plate, the scraper, and the brewer cylinder.



If it was not possible to move the brewer into transport position, only touch the brewer on its outside. Do not reach underneath the brewer cylinder, as there is a risk of injuries if the actuator is defective.

- Take the product console, lift the brewer and pull it out of the support towards the front.
- If necessary, disconnect the ground cable from the brewer housing.

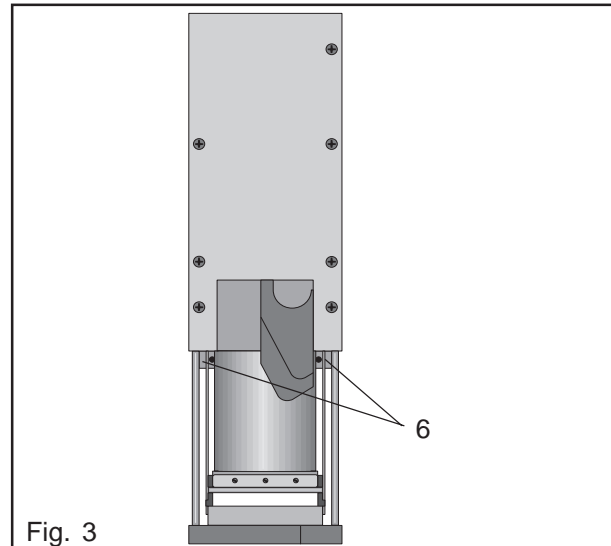


Fig. 3

2.4 Testing the Brewer Unit

Testing the brewer unit next to the dispenser



Connect the hose to the water inlet elbow (1), and put the elbow into a container, so that the water does not run into the dispenser. (Fig. 1)

- Plug the adapter cable harness (2) (for service parts refer to the spare parts list) between the 15-pole plug of the brewer unit and the connection socket of the brewer unit in the dispenser. (Fig. 2)
- Actuate the safety switch.



There is an increased risk of injuries. Keep parts of your body and loose clothing away from the brewer.

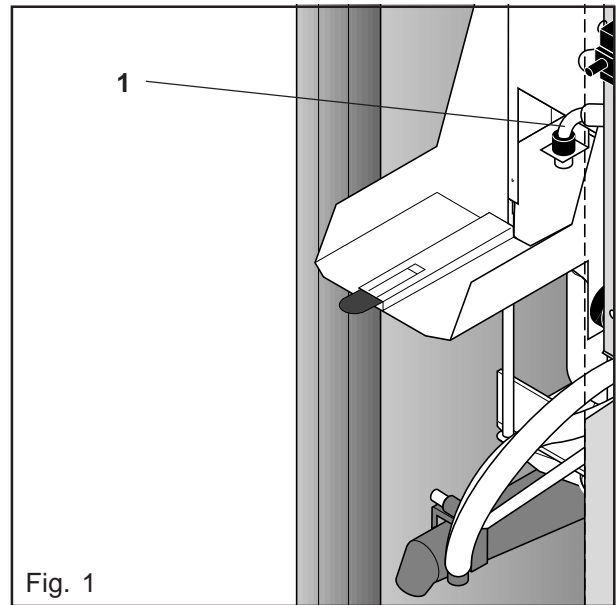


Fig. 1

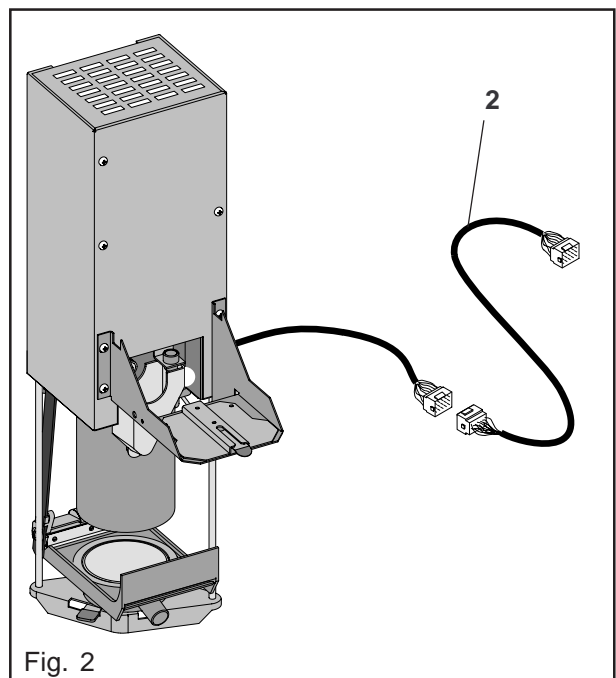
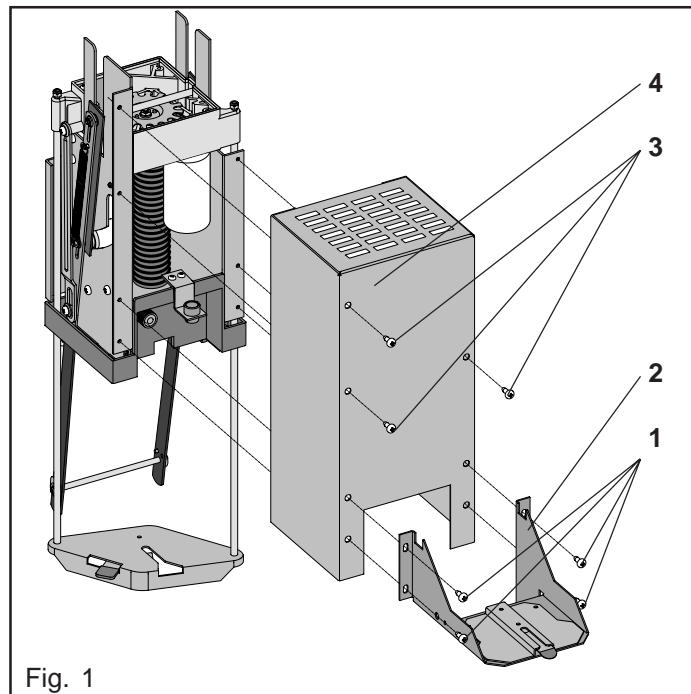


Fig. 2

2.5 Removing the Brewer Housing

- Dismount the brewer.
- Remove the brewer cylinder, the filter plate support, and the scraper.
- Remove the four screws (1). (Fig. 1)
- Remove the product container console (2). (Fig. 1)
- Remove the three screws (3). (Fig. 1)
- Remove the brewer housing (4). (Fig. 1)



2.6 Dismounting the Dosing Motor

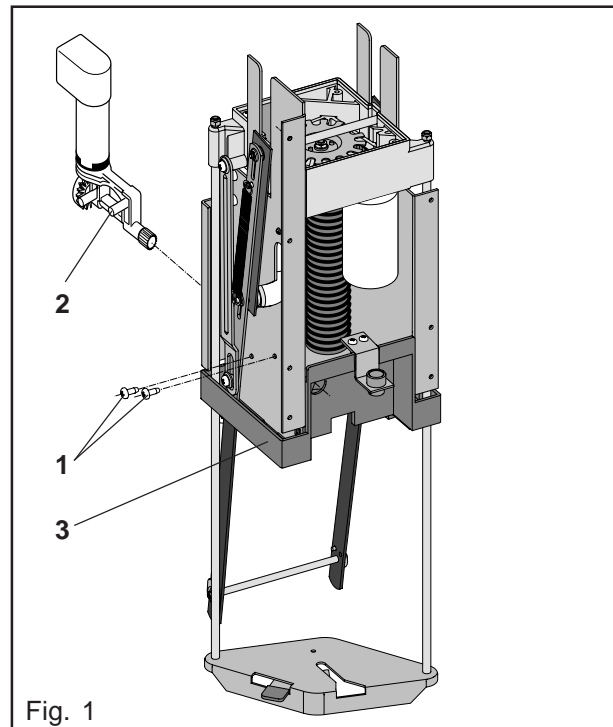


When dismounting the dosing motor, the scraper has to be in the rear position.

- Remove the brewer housing.
- Disconnect the plug connection.
- Remove the two screws (1). (Fig. 1)
- Pull the dosing motor (2) backwards. (Fig. 1)
- Remove the dosing motor.



Brewers are supplied with **grey** or **black** base consoles (3). For brewers with **black** base consoles (3) the following has to be observed: When the dosing motor sticks, check whether the fastening of the base console to the brewer base is defective. In this case, press the actuator against the brewer base. There is a possibility that the fastening domes were broken so that the actuator slid from the brewer base towards the top.



2.7 Dismounting the Actuator



The spring of the actuator is under tension.

In case of a malfunction of the actuator there is an increased risk of injuries due to a sudden expansion of the actuator spring.

If the brewer cylinder cannot be opened (brewer cylinder/filter plate), it is possible that the actuator does not accept the spring tension, which may be the case if:

- Date of manufacture before week 20/96 (see label or printing on the actuator)

These actuators include:

1. Plunge holder not screwed (screws visible from the bottom)
2. Plastic nut (guiding nut)

Reasons for actuator malfunction:

- broken plunge holder (plastic)
- actuator does not retract
- spindle sticks on the bearing housing
- the axle (9) cannot be removed and turned manually (fig. 5)



If in case of a malfunction the described mounting order cannot be performed, please proceed on your own discretion.

Attention: Observe the safety instructions in order to prevent injuries.

Dismounting the actuator

- Dismount the brewer unit according to section "Dismounting the brewer unit".
- Remove the brewer housing. (Fig. 1)
- Dismount the dosing motor (1). (Fig. 2)

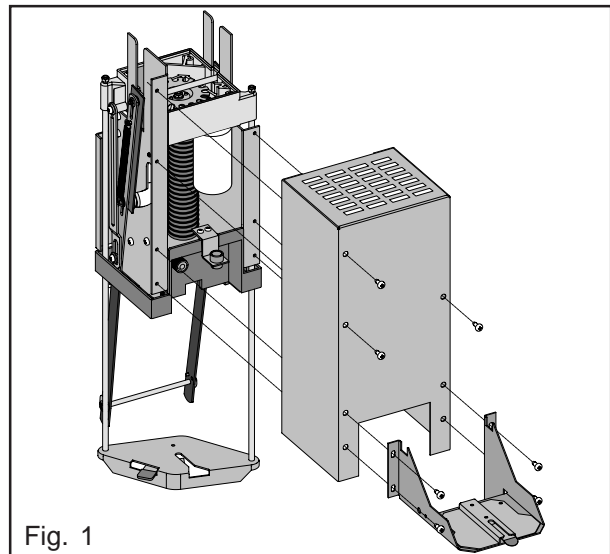


Fig. 1

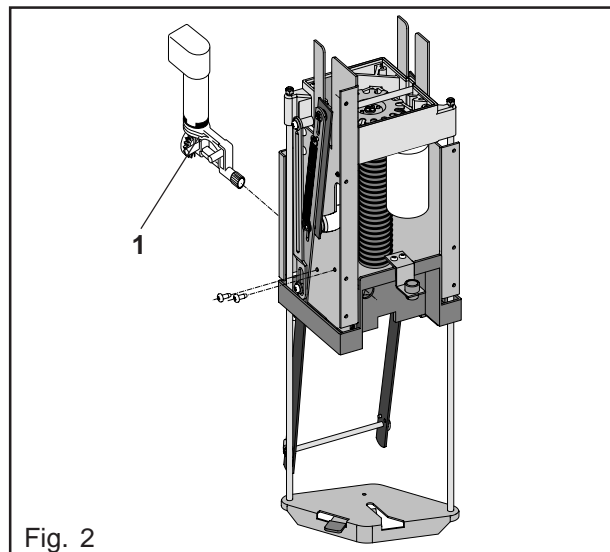


Fig. 2

- Disconnect the plug connection (2) of the actuator motor on the connection console. (Fig. 3)
- Unhinge the spring (3) for the scraper arm (4). (Fig. 4).
- Remove the retaining rings (5) and the washers in front of the outer scraper arm (4). (Fig. 4).
- Remove the fastening screws (6) and the collared bushes (7) of the lever arms (8) on the bearing housing. (Fig. 4)

Carry out the works on both sides.

- Pull the outer scraper arm (4) from the axle (9), remove the retaining ring (above the inner scraper arm) on one side of the axle, then pull the axle (9) out of the other side of the bearing housing (10). (Fig. 4, 5)



**The defective actuator could expand suddenly.
There is an increased risk of injuries!**

- Loosen the tie rod (11) (2 self-locking nuts with washers). (Fig. 5)



When the spring has expanded, the top parts of the actuator as well as the spring can be removed.

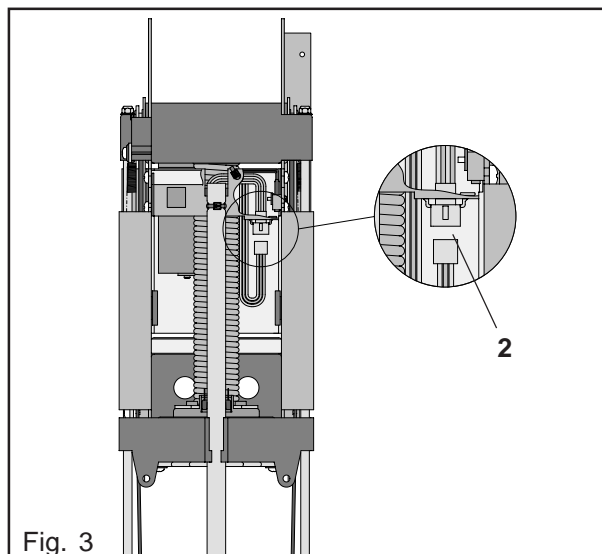


Fig. 3

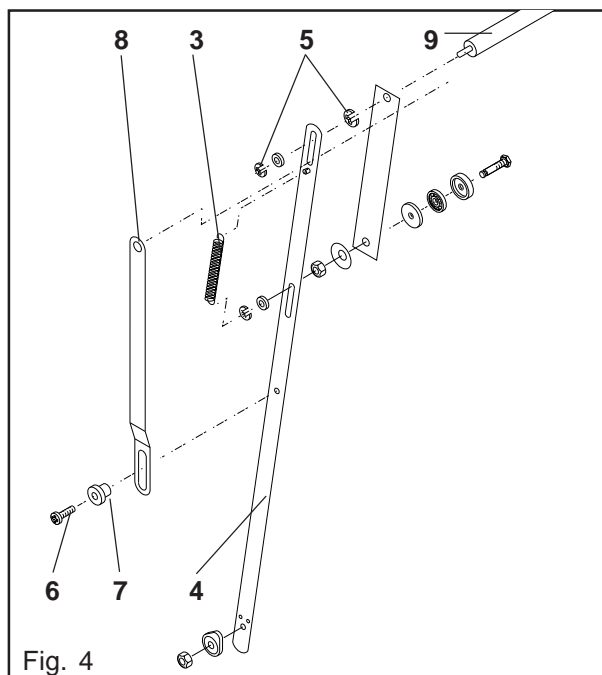


Fig. 4

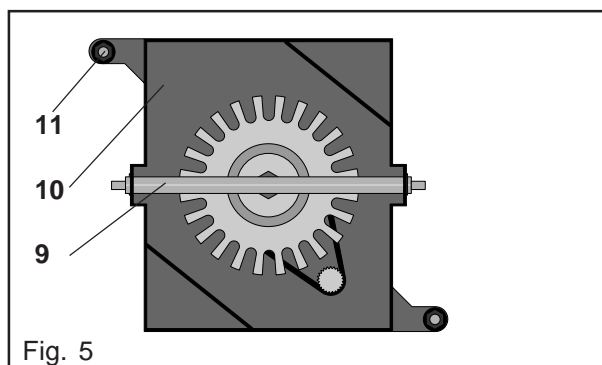


Fig. 5

- Pull out the tie rod together with the filter plate support as well as the filter plate.
- Remove the screws (12) from the base of the brewer. (Fig. 6)
- Carefully pull out the actuator, and simultaneously unplug the cable of the microswitches.
- Remove the locking ring and the washer of the inner scraper arm.
- Remove the inner scraper arm through the lower bore (13) in the side plate. (Fig. 7)

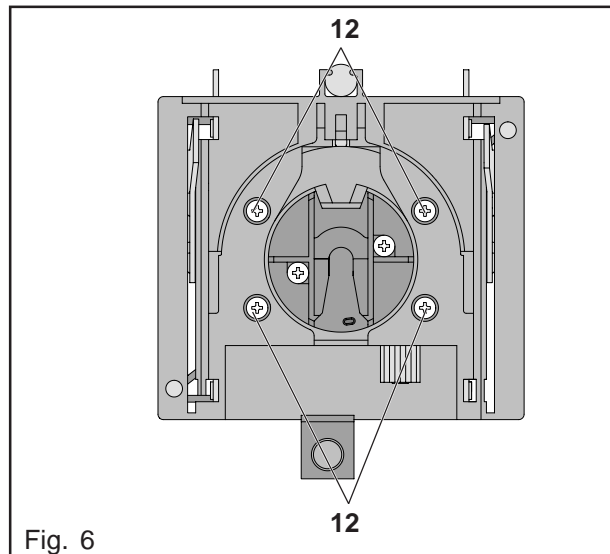


Fig. 6

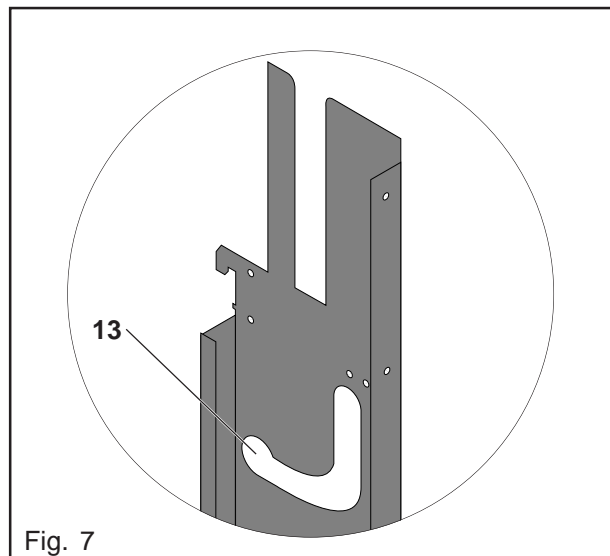


Fig. 7

2.8 Dismounting the Tachoboard

- Remove the brewer housing.
- Remove the two screws (1). (Fig. 1)
- Disconnect the 6-pole plug connection console/tachoboard.
- Pull off the two cable plug connections from the actuator motor.



When remounting:

Observe the correct polarity.

With several dispensers, multiple-digit numbers or roman numbers are printed onto the stranded wire connections.

The higher number represents the negative pole. (Fig. 2)

- Remove the tachoboard (2) together with the cable harness.



When using a new tachoboard, make sure that rubber sleeves are applied to the plug connections for the actuator motor.



If the tothing of the tacho-disc is bent, there is a danger of a short circuit on the tachoboard. Observe the correct installation position of the tachoboard (2). Cables and sound indicator have to point towards the magnet, i.e. towards the inside.

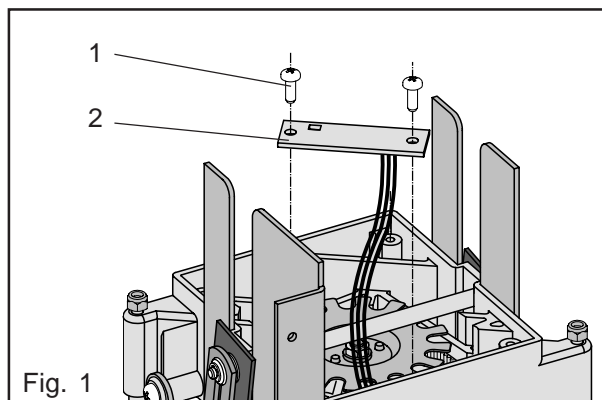


Fig. 1

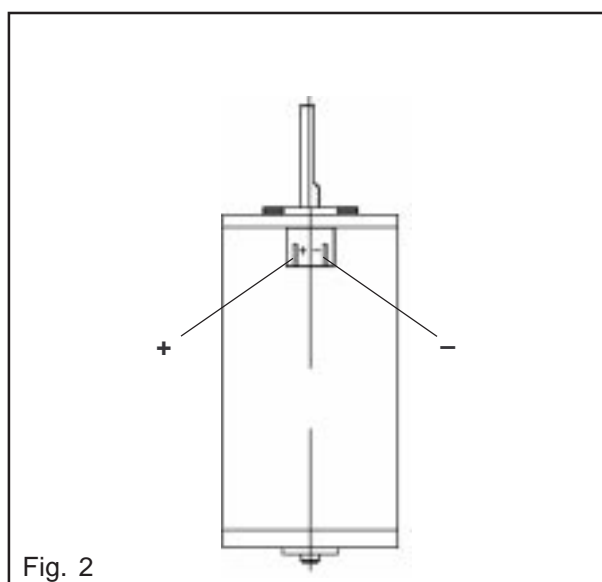


Fig. 2

2.9 Dismounting the Driving Parts for the Actuator

- Remove the brewer housing.
- Remove the retaining rings (1) and the washers (2) on both sides. (Fig. 1)
- Carefully remove the axle (3), first from the scraper arms and then from the housing. (Fig. 1)



When remounting, make sure that the scraper arms are positioned correctly.

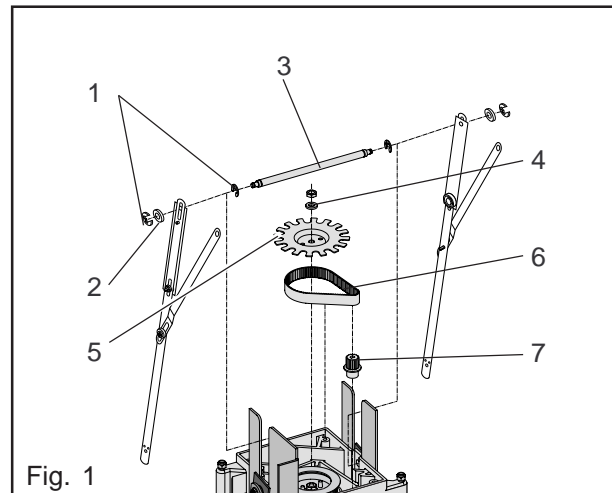
- Remove the hexagonal nut and the washer (4). (Fig. 1)
- Remove the tachoboard disc (5). (Fig. 1)
- Remove the toothed belt (6). (Fig. 1)
- Remove the gear wheel (7) from the actuator motor. (Fig. 1)



In order to replace both gears and toothed belts in one step, the actuator has to be dismounted and expanded.



Risk of injuries.
If the large gear is removed with spring-loaded actuator, the spindle can slide out of the bearing support, causing the actuator to suddenly expand.



Dismounting the actuator motor

- Disconnect the electrical connection (2 plug connectors).



When mounting:

Ensure correct polarity.

With several dispensers, multiple-digit numbers or roman numbers are printed onto the stranded wire connections.

The higher number represents the negative pole. (Fig. 2)



When using a new tachoboard, make sure that rubber sleeves are applied to the plug connections for the actuator motor.

- Carefully remove the four screws of the actuator motor (do not damage the tachoboard disc).



Make sure not to lose the spacer ring (8). (Fig. 2)

- Remove the actuator motor towards the base, and simultaneously pull off the gear. The gear remains inside the bearing housing.

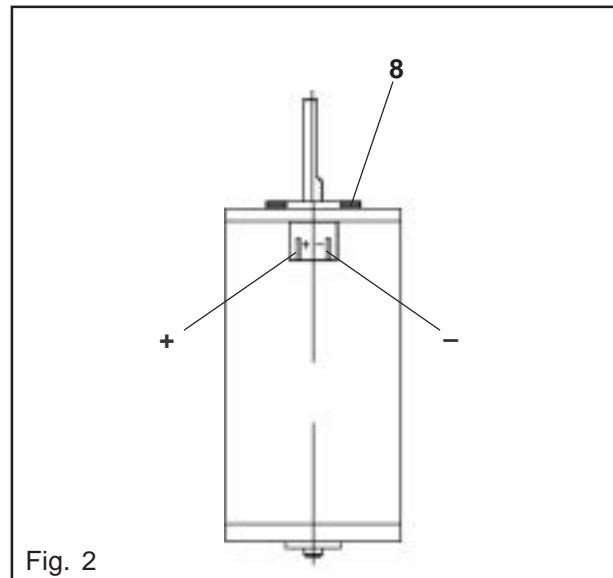


Fig. 2

2.10 Dismounting the Actuator



When dismounting the actuator, the driving parts (tacho disc) must not be dismantled first.

- Release the actuator spring (1) by turning the fastening nut of the tacho disc (2) anti-clockwise. The nut must rotate together with the tacho disc and must not loosen. (Fig. 1)
- Remove the bearing housing (3) and the spring (4). (Fig. 2)
- In order to remove the tacho disc, it must be fixed. (Fig. 3)
- Now unscrew the nut (5). (Fig. 3)
- Hold the large gear wheel (6) tightly and remove the nut. (Fig. 3)

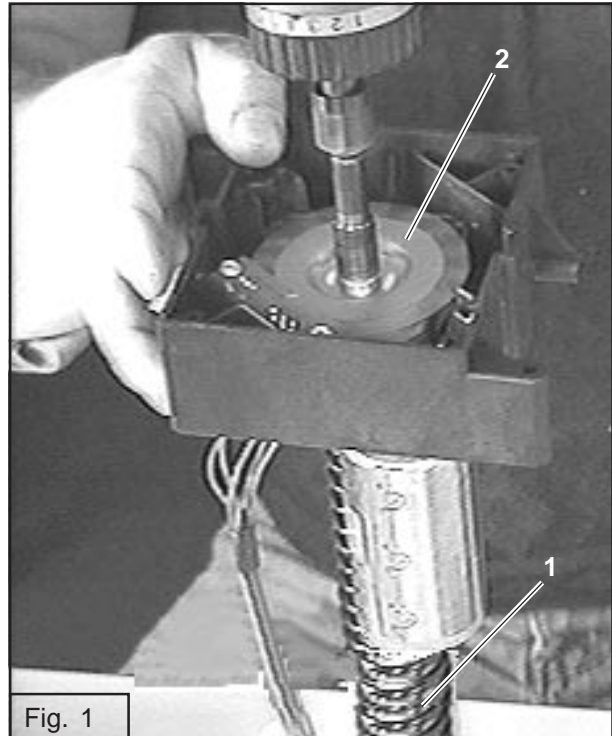


Fig. 1

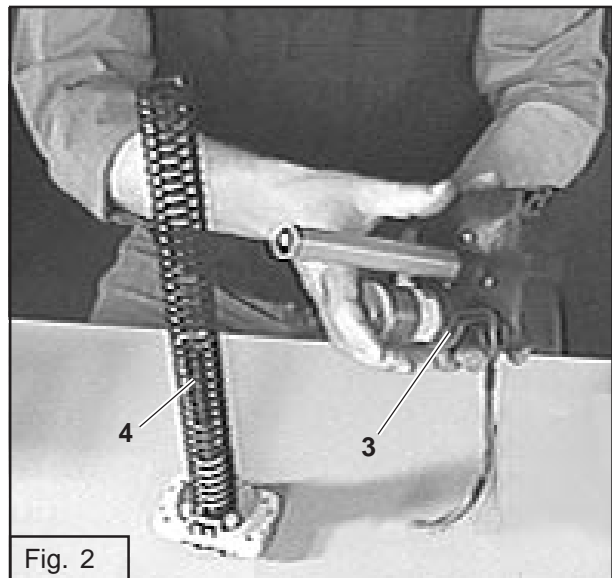


Fig. 2

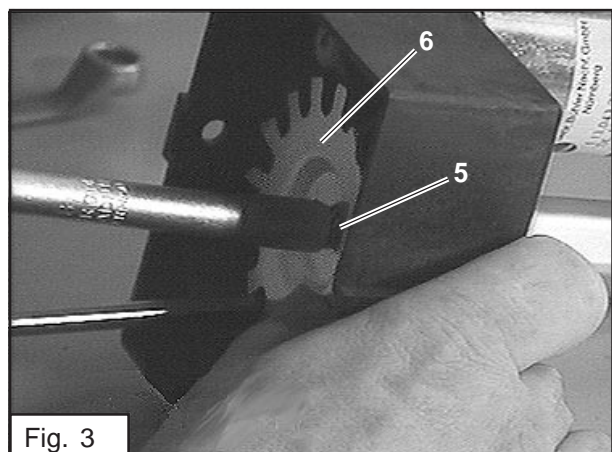


Fig. 3

- Now, the large gear wheel (7) with toothed belt (8) and the small gear wheel (9) can be removed consecutively. (Fig. 4)
- The actuator motor can be removed by loosening the 4 fastening screws.

Dismounting the spindle

- Loosen the 3 fastening screws (10) at the bearing housing. (Fig. 5)
- Press the spindle (11) slightly. Withdraw the spindle together with bearing and washers. (Fig. 5)
- Unscrew the outer tube (12). (Fig. 5)

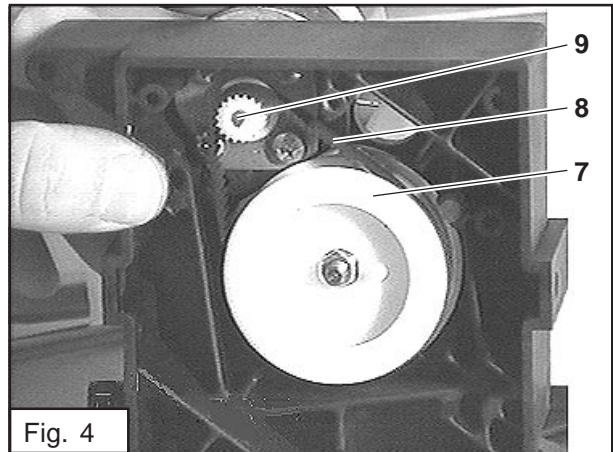


Fig. 4

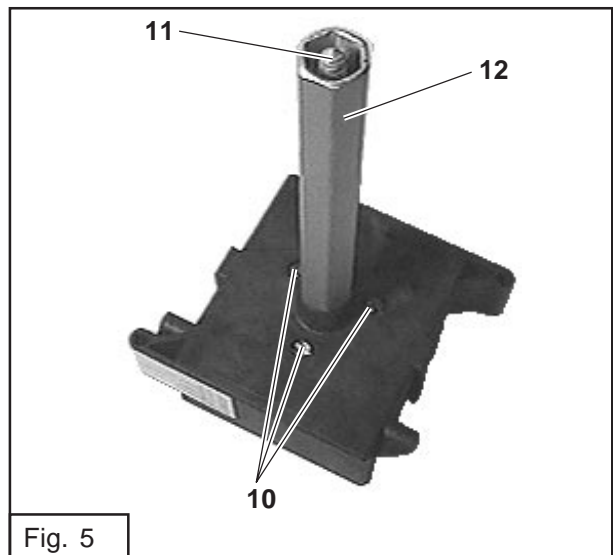


Fig. 5

- For dismounting the bottom console, unscrew the plunge holder (1). (Fig. 6)
- Remove the plate (2) from the bottom console. (Fig. 7)
- Loosen the sealing (3) and press the inner plate outside through the slots (4). A table edge facilitates this process. (Fig. 8, 9)
- Loosen the two accessible screws and withdraw the unit completely from the bottom console.



When mounting the actuator it is imperative to observe that

- the plunge holder opening,
- the flat side of the bottom console and
- the actuator motor are in range.

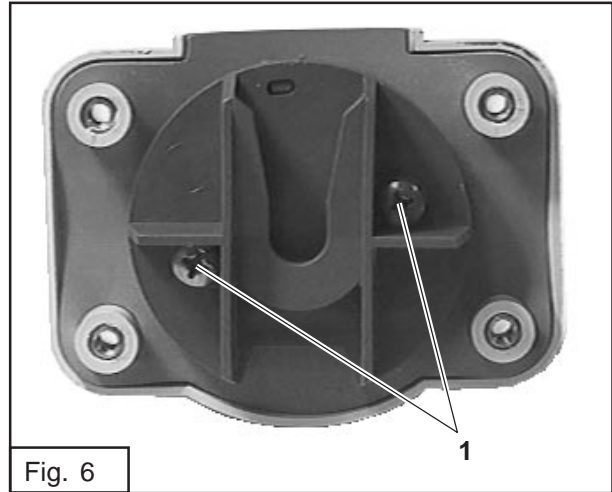


Fig. 6

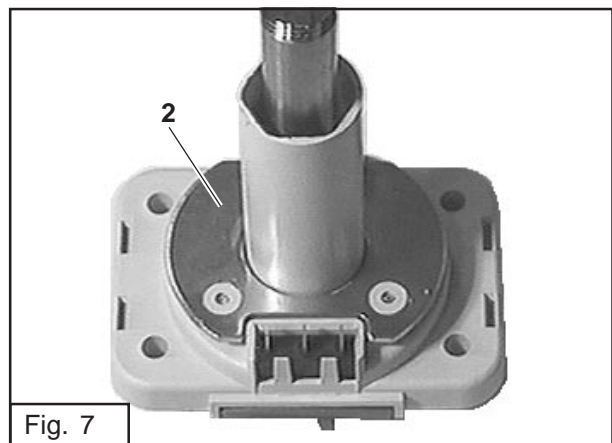


Fig. 7

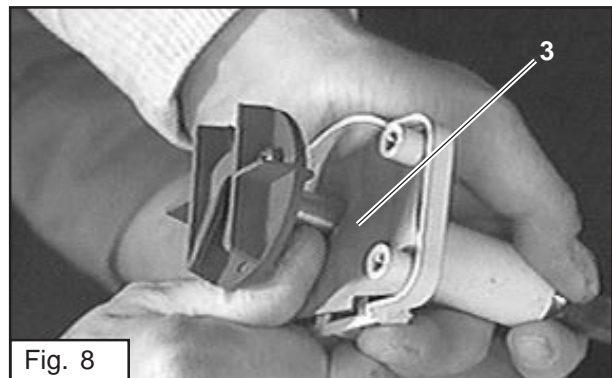


Fig. 8

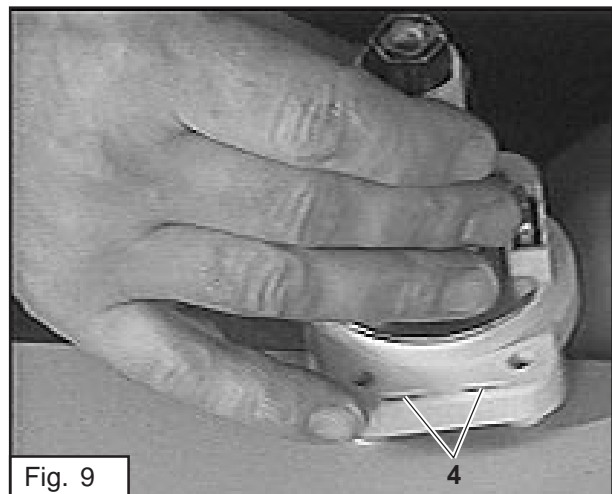


Fig. 9

2.11 Mounting the Actuator

- Slide the actuator into the chassis of the brewer unit, so that the actuator motor shows to the front.
- Prior to the final positioning, push the cables to the according outer contacts of the microswitches.
- The cables:
 - may not come into contact with the gear of the dosing motor. Furthermore, they have to be guided on the opposite side of the dosing motor.
- Fasten the actuator to the brewer base by means of 4 screws (1). (Fig. 1)
- Insert the inner scraper arm (2). (Fig. 2)
- Push the axle (3) through the bore of the inner scraper arm, and then through the bores of the bearing housing. (Fig. 2, 3)
- Slide the second inner scraper arm (2) onto the axle, and apply the retaining rings (4). (Fig. 2)
- Mount the outer scraper arm (5) onto the axle and fasten it by means of the washers and retaining rings (6). (Fig. 2)
- Fasten the lever arm (7) with the collared bushes (8) and fastening screws (9). (Fig. 2)
- Hinge the spring (10) for the scraper arm. (Fig. 2)

Carry out the works on both sides.



Insert the tie rod together with the support in such a manner that

- the locking mechanism for the filter plate shows to the left side,
- the filter plate can be inserted from the front.

- Push the tie rod (11) through the bores of the bearing housing (12), and fasten it by means of washers and two new self-locking nuts. (Fig. 3)



Do not fasten the nuts too tightly, as the plastic parts could tear off.

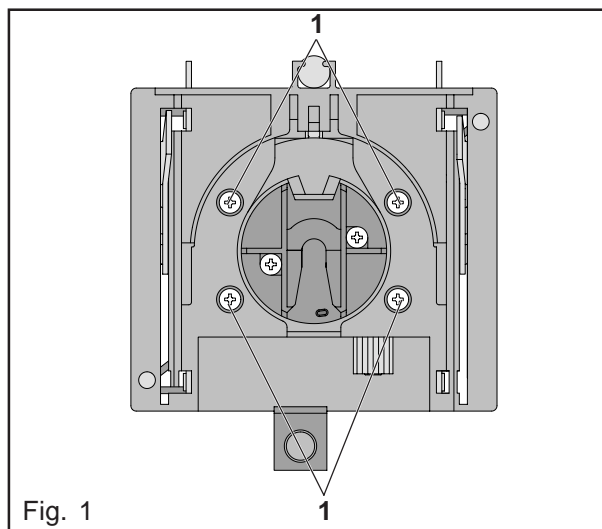


Fig. 1

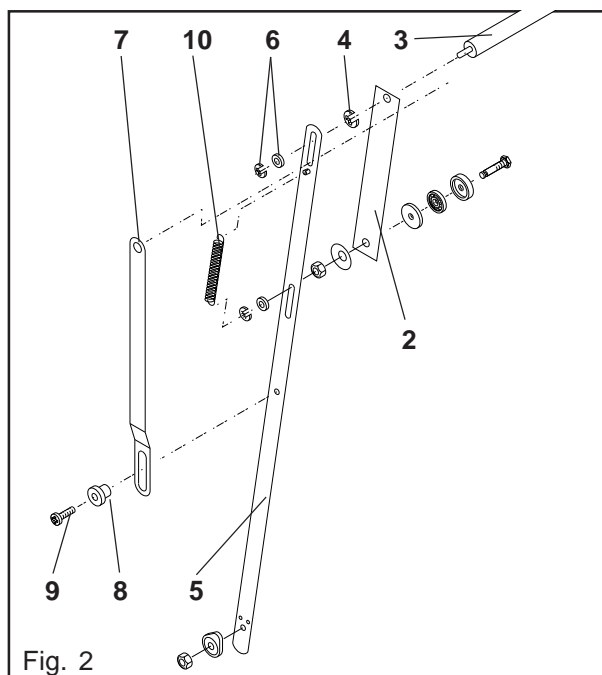


Fig. 2

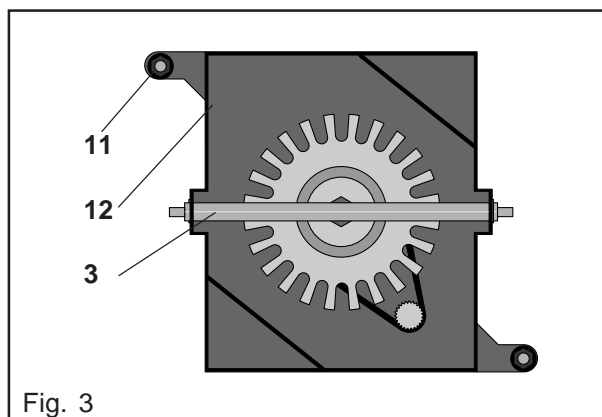
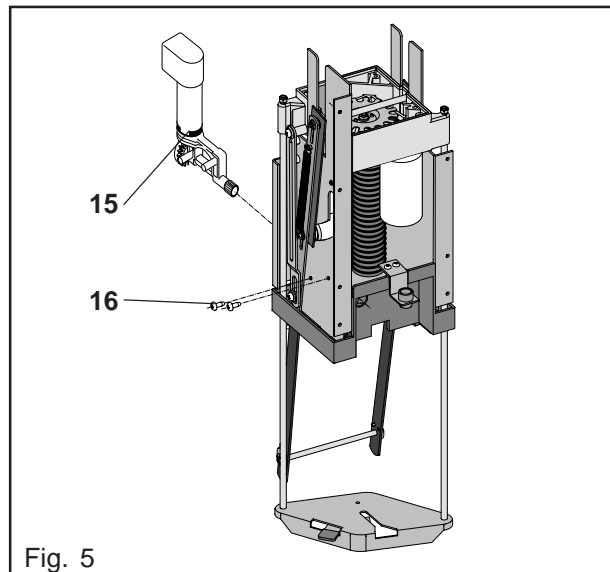
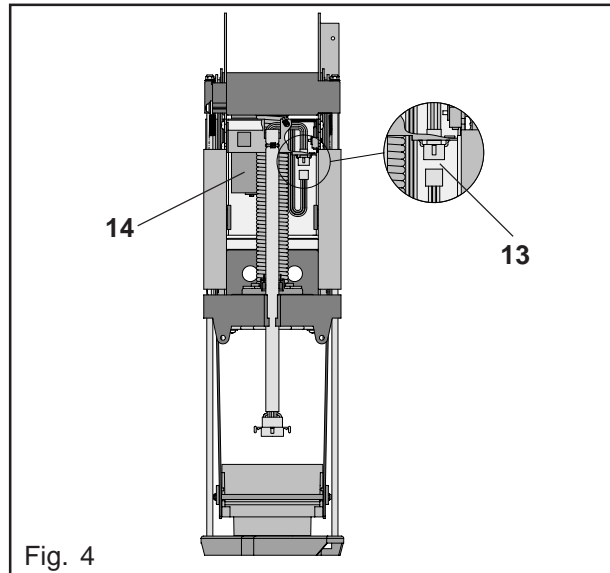


Fig. 3

- Connect the plug (13) of the actuator motor (14) to the socket. The cable harness must be accessible. (Fig. 4)
- Fasten the dosing motor (15) with 2 screws (16) and carry out the electrical connection. (Fig. 5)



2.12 Dismounting/Mounting the Microswitch BSSW

- In case of replacement, dismount the brewer unit according to section "Dismounting the Brewer Unit".
- Remove the fastening screws (1) and the threaded plate of the microswitch (2) and replace the switch. (Fig. 1).
- Unplug the cable lugs of the defective microswitch, and connect them to the new microswitch. Make sure that the insulation hose is positioned correctly. (Fig. 1).
- Fasten the new microswitch (2) by means of the screws (1), washers, and nuts to the brewer housing. (Fig. 1).
Observe that the screws are not fastened too tight.



Horizontally place the microswitch into the 3 mm holes in the highest possible position.

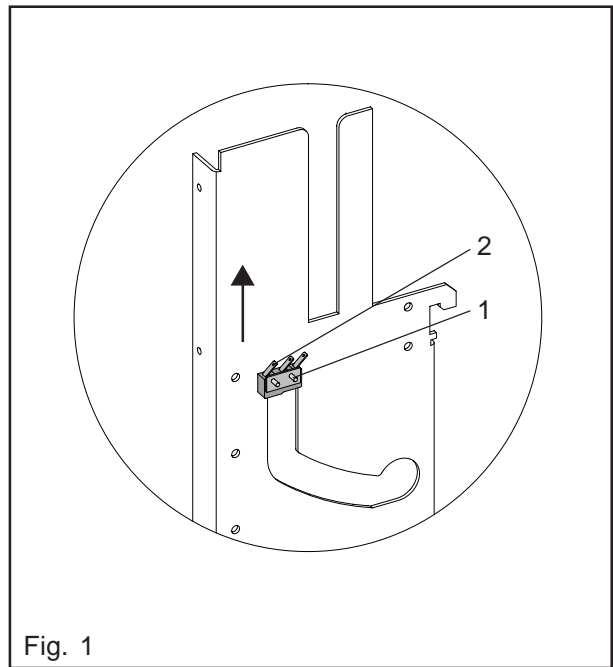


Fig. 1

2.13 Dismounting the Bearings of the inner Scraper Arm

- Unscrew the nut (1). (Fig. 1)
- Remove the spring washer (2). (Fig. 1)
- Unscrew the bearing neck (3) from the inner scraper arm by means of a 10 mm socket wrench. (Fig. 1)
- Remove the guiding washers (4) and the ball bearing (5) from the bearing neck. (Fig. 1)

Mounting instructions:

- The grained surfaces of the guiding washers have to point towards the ball bearing
- Fasten the bearing neck (10 mm socket wrench) in such a manner that the outer bearing ring can be turned. Check by means of a screw driver
- Mount the locking ring.

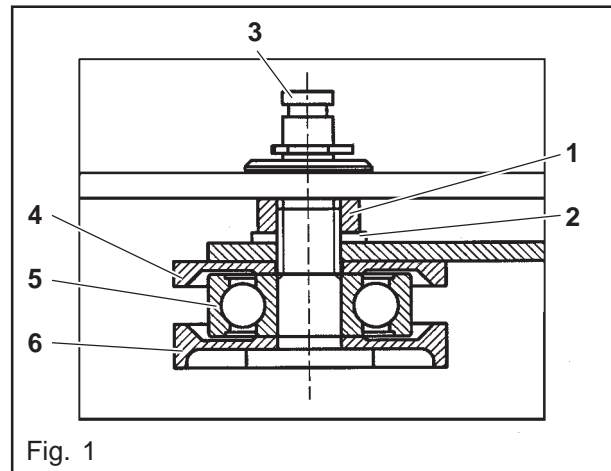


Fig. 1

2.14 Dismounting the Ejector Spring

- Remove the four screws (1) of the brewer cylinder support (2). (Fig. 1)
- Press the spring (3) towards the back by means of a screw driver, and remove it to the side. (Fig. 1)

Mounting instruction:

The spring has to be placed between the fastening domes and the spring guide (see fig. 1).

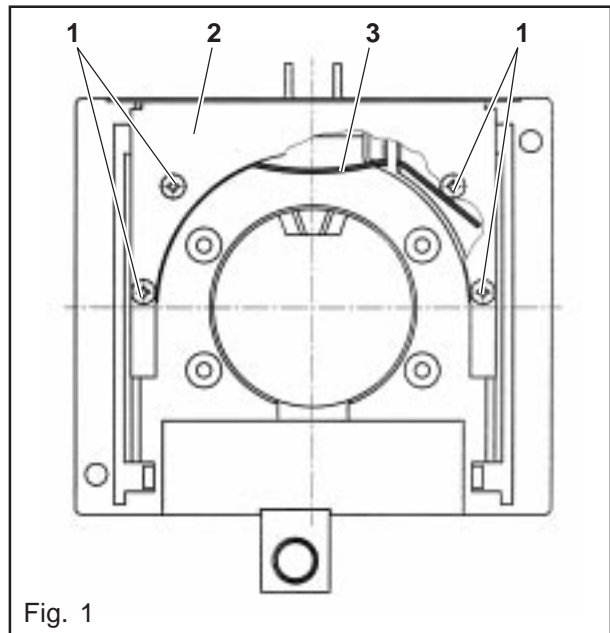


Fig. 1

2.15 Replacing the Gaskets of the Brewer Cylinder



Observe the safety instructions (see section "Dismounting the Brewer Unit").

- Remove the brewer cylinder.
- Remove the plunger from the brewer cylinder.
- The valve with the gasket (1) is located in the centre of the plunger. (Fig. 1)
Press the four supports of the valve together, and pull the valve downwards. (Fig. 2).
- Remove the outer gasket (2) by pulling the sealing lip. (Fig. 1)



Note:
When replacing the gaskets, it is absolutely necessary to replace older versions of the plunger or brewer cylinder by the up-to-date versions.

- Replace the gaskets.
- The mounting is done in reverse order.

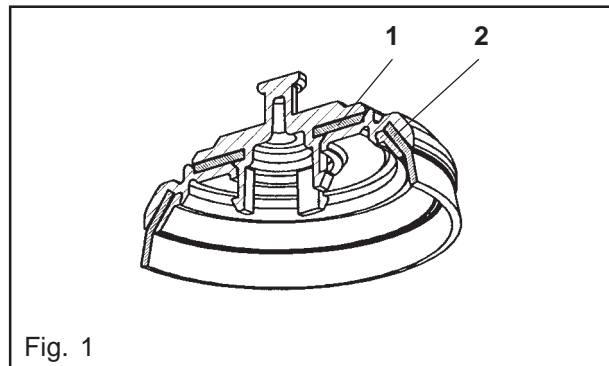


Fig. 1

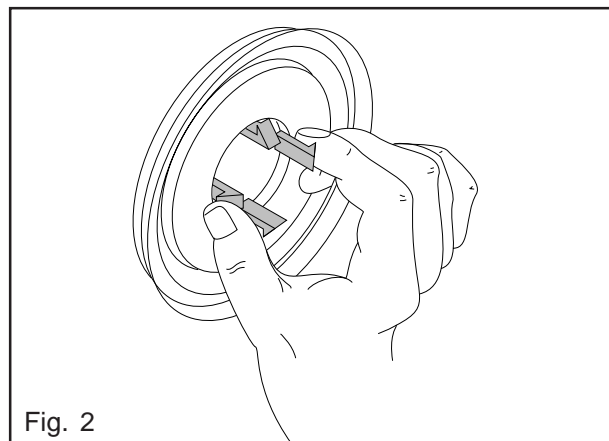
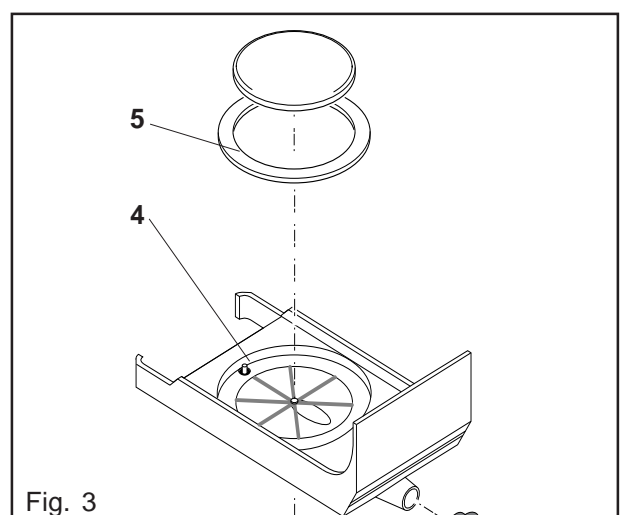
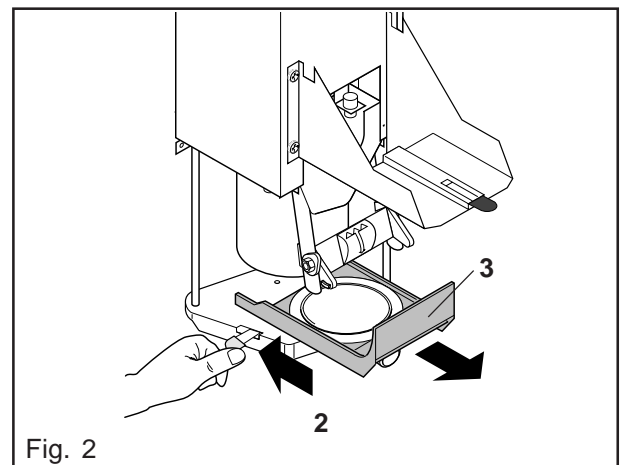
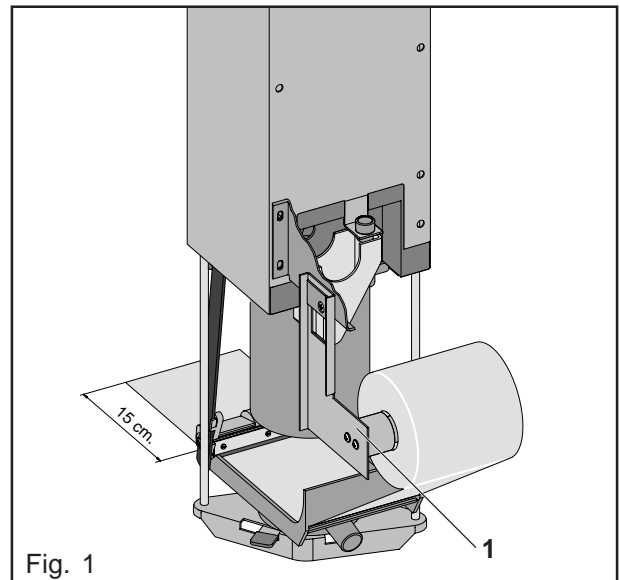


Fig. 2

2.16 Decalcifying and Replacing the Filter Plate

The filter plate has to be decalcified on a regular basis after approx. 1000 deliveries (depending on the hardness of the water).

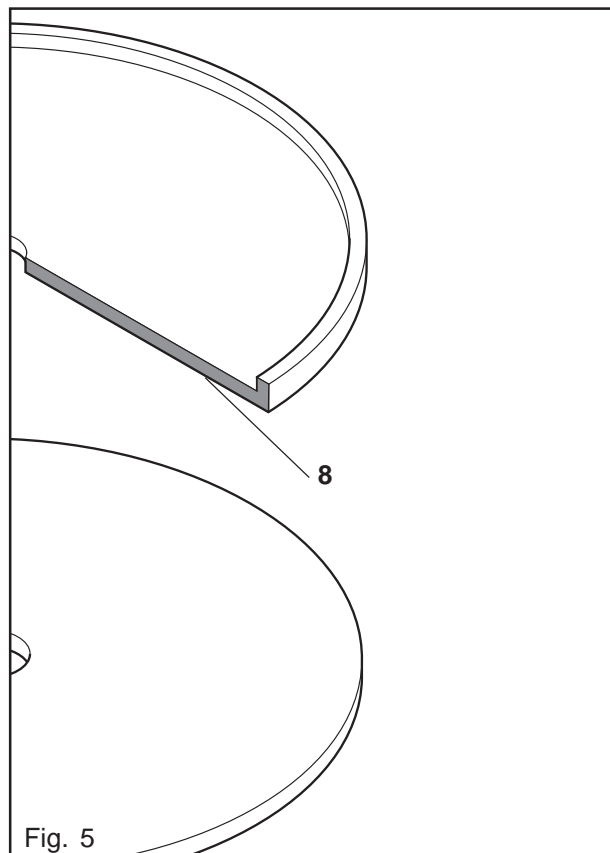
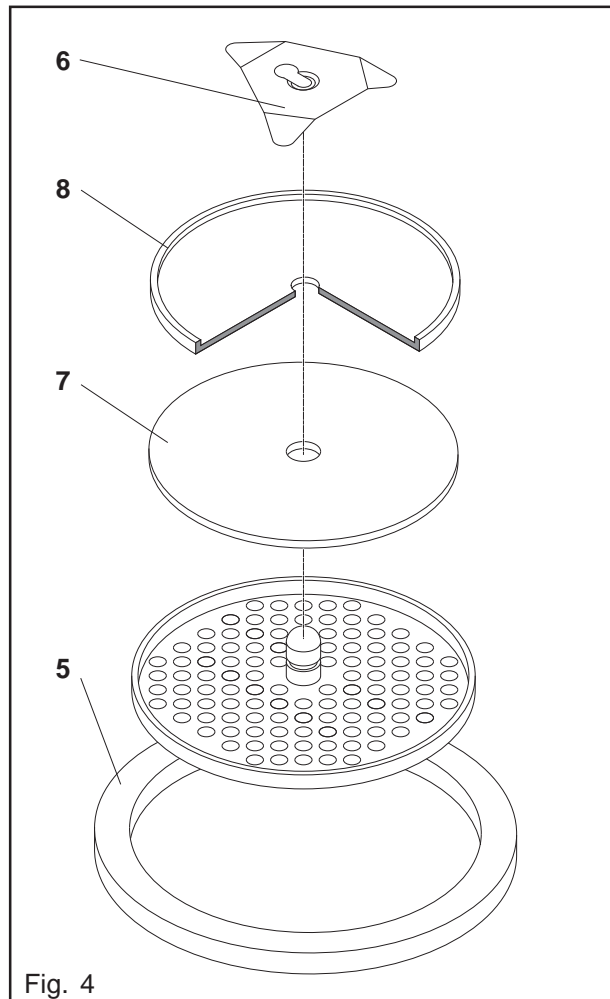
1. Remove the filter paper roll holder (1) (optional), and press the bolt on the filter plate holder backwards (2). Pull out the filter plate holder (3). (Fig. 1, 2)
2. Press down the ejector pin (4) until the sealing ring (5) comes free. (Fig. 3)



3. Remove the jack latch (6) from the filter plate. Decalcify all metal parts of the filter plate. (Fig. 4)
4. Clean the rubber sealing (7), the sealing ring (5), and the filter plate holder in hot water. (Fig. 3, 4)
5. Install the filter plate in reverse order. Make sure that the locking bolt engages, and that the filter plate is guided by the scraper arms. Make sure that the disc (8) is positioned correctly. (The smooth side must face the sealing). (Fig. 4, 5)



Avoid damage of the fine-pore filter.



2.17 General Notes

- Starting with week 42/98 all actuators/ brewers as well as recycled actuators/ brewers are equipped with an additional **Label for Brewer (part-no. 35207300)**. (Fig.1)

Actuator numbers:

- for new actuators (part-no. 35207300) **starting with actuator number 41987389**
- for recycled actuators (part-no. 35207300 R) **from week 42 on**

The label has to be completed as follows:

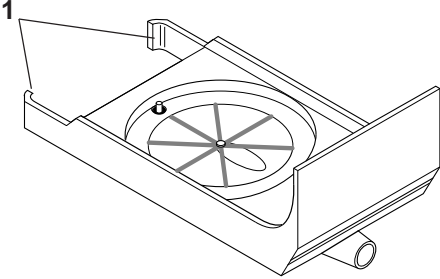
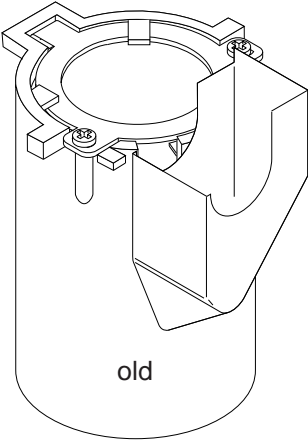
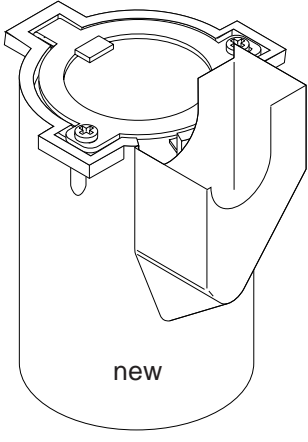
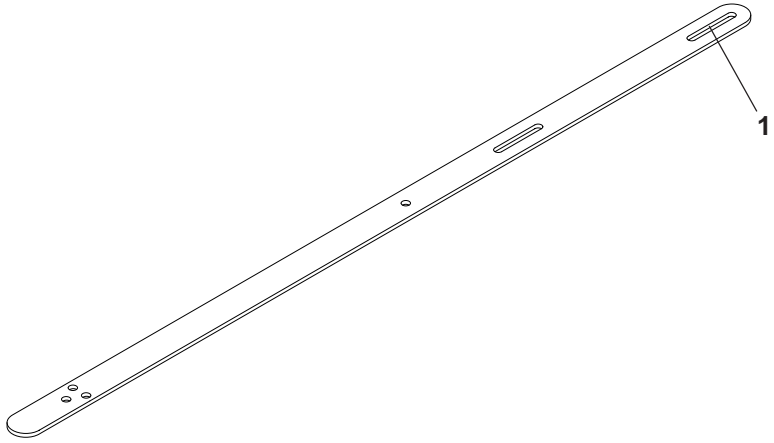
- For brewers which have been installed by the manufacturer the data for the fields MACH. TYPE (1), INSTALL.DATE (2), and COUNTER (3) are already filled in.
- In case of **replacing** brewers/actuators, the data for fields (1), (2) und (3) have to be filled in by the service technician.
- In case of **removing** brewers/actuators for replacement, the data for fields REMOVE DATE (4) and COUNTER (5) have to be filled in by the service technician.

1	2													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;">MACH. TYPE</td> <td style="border: none;"></td> </tr> <tr> <td style="padding: 2px;">FB50....</td> <td style="border: none; text-align: right; padding: 2px;">3</td> </tr> <tr> <td style="padding: 2px;">FB55....</td> <td style="border: none; text-align: right; padding: 2px;">4</td> </tr> <tr> <td style="padding: 2px;">5500....</td> <td style="border: none; text-align: right; padding: 2px;">5</td> </tr> <tr> <td style="padding: 2px;">5100....</td> <td style="border: none;"></td> </tr> <tr> <td style="padding: 2px;">.....</td> <td style="border: none;"></td> </tr> </table>	MACH. TYPE		FB50....	3	FB55....	4	5500....	5	5100....			INSTAL.DATE..... COUNTER..... REMOVE DATE..... COUNTER.....	3 4 5
MACH. TYPE														
FB50....	3													
FB55....	4													
5500....	5													
5100....														
.....														

Fig.1

2.18 Check List

Check list of parts that have to be replaced during repair:

<p>Part:</p>	<p>Up-to-date parts can be recognized by the below stated remarks, all other versions have to be replaced by the following parts:</p>	
<p>Holder for filter plate</p>	<p>Rear guide (1)</p>	
<p>Brewer cylinder and plunger</p>	<p>(old + old)</p>  <p>old</p>	<p>(new + new)</p>  <p>new</p>
<p>Dosing motors</p>	<p>to be recognized by the marking K 4</p> <p style="margin-left: 150px;">Year Month (1,2,3,4,5,6,7,8,9,0,N,D)</p>	
<p>Plunge holder</p>	<p>grey parts</p>	
<p>Scraper arms</p>	<p>new version with 22 mm slotted holes (1)</p> 	

Part:	Up-to-date parts can be recognized by the below stated remarks, all other versions have to be replaced by the following parts:
Spindle	with ball bearing
Premounted assemblies:	
Base console	grey parts with microswitches (microswitches cannot be dismounted because of a one-way snap function)
Inner tube and plunge holder, plastic nut	for part-no. see spare parts list
Spindle with ballbearing, assy.	for part-no. see spare parts list

**General note:**

When replacing the dosing motor, the side parts have to be cleaned. Silicone remnants have to be removed by means of alcohol.

3 Functional Descriptions

3.1 Schematic Illustration of the Brewing Process

Schematic Illustration of the Brewing Process - Starting position front

Fig. 1
Brewer cylinder in start position

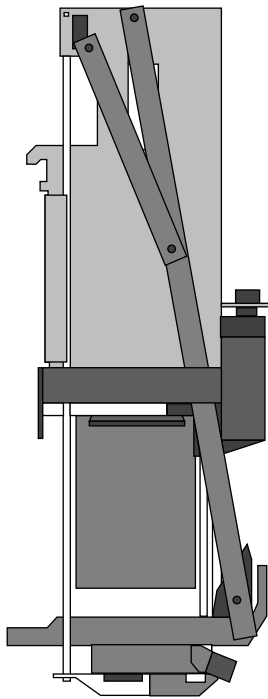


Fig. 2
Brewer cylinder closed

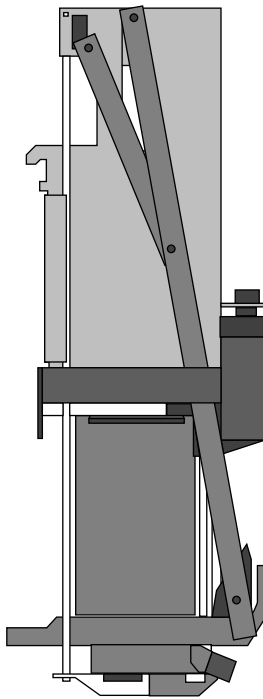


Fig. 3
Plunger in lower position

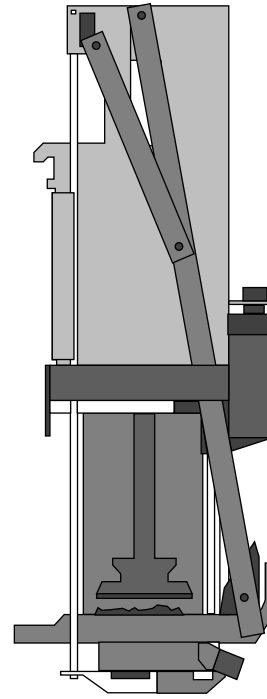


Fig. 4
Plunger in upper position

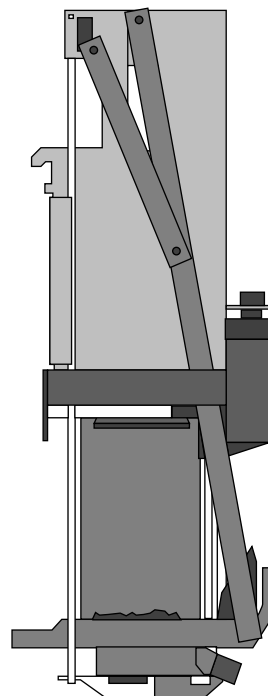


Fig. 5
Brewer cylinder opened

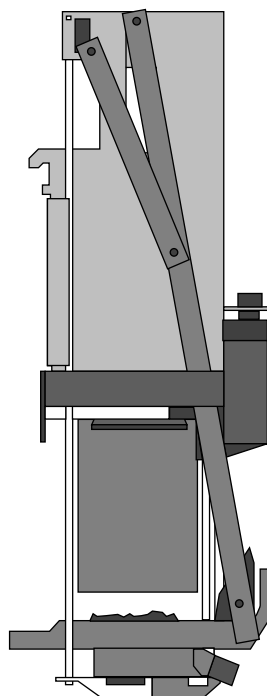
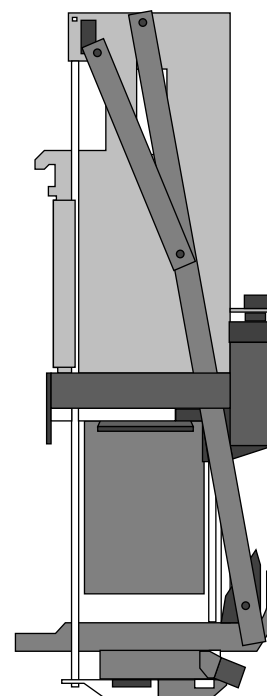


Fig. 6
Scraper in end position



Schematic Illustration of the Brewing Process - Starting position rear

Fig. 1
Brewer cylinder in start position

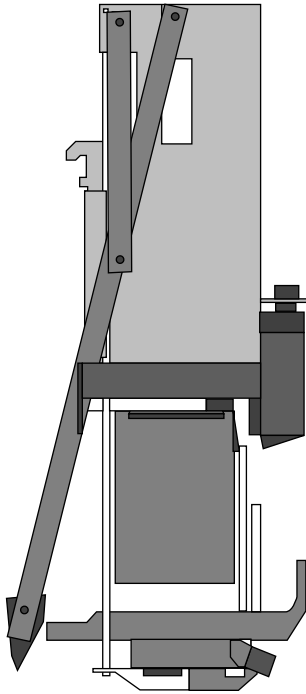


Fig. 2
Brewer cylinder closed

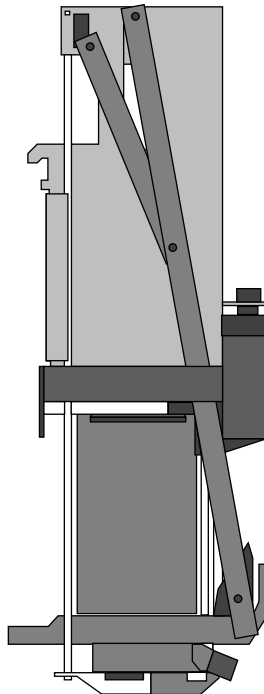


Fig. 3
Plunger in lower position

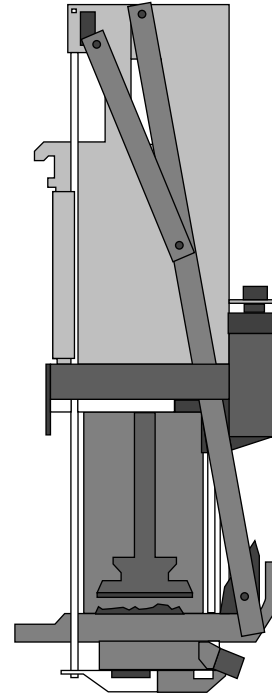


Fig. 4
Plunger in upper position

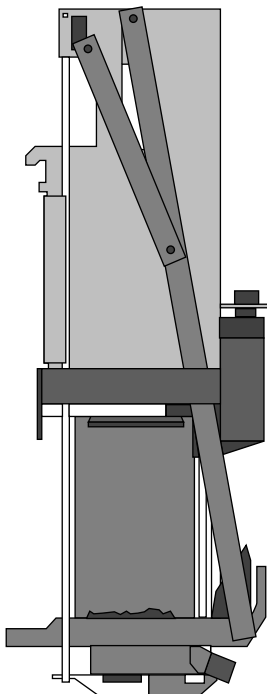


Fig. 5
Brewer cylinder opened

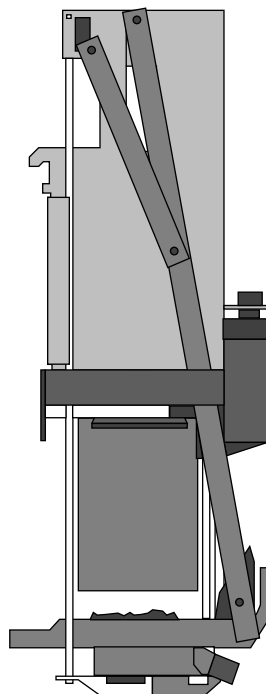
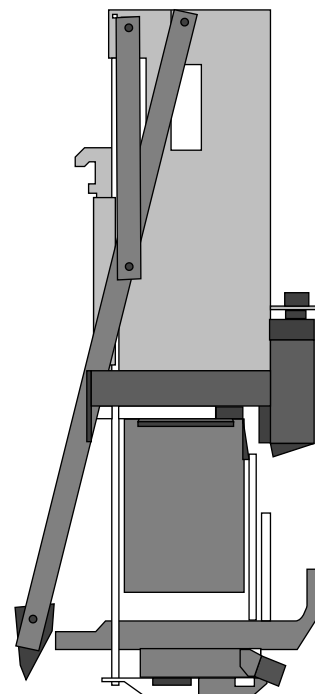


Fig. 6
Scraper in end position



3.2 Functioning of the Brewer

- The brewing process takes place by means of the following steps:
 - The actuator is switched on for direct action by the control
 - The actuator winds up
 - After a few rotations of the spindle the switch BAE (Brewer at end) is opened
 - The actuator continues winding up
 - Simultaneously, the scraper moves forward, and the filter plate closes the brewer cylinder
 - The counterpressure of the brewer cylinder prevents a further ascent of the filter plate and the actuator
 - Via the spindle, the forward movement of the motor presses down the plunger
 - When the pin on the plunge holder does not operate the microswitch BC (Brewer closed) any longer, the control stops the actuator motor
 - The dosing volume is controlled by means of the tachopulses of the dosing motor
 - According to the set product quantity, the control determines the number of rotations of the dosing motor
 - The dosing motor is driven
 - The water flushes the coffee powder into the brewer cylinder
Simultaneously to the coffee dosing hot water flows from the boiler into the mixing funnel
 - After expiration of the set extraction time of the brewer, the actuator motor descends the plunger in the brewer cylinder via the spindle
 - The beverage is filtered through the filter plate and delivered via the delivery spout
 - With correct settings, the brewer is never filled completely
 - The remaining air between the brewer and the plunger serves to dry the coffee grounds
 - As soon as the guiding nut closes the microswitch BAE, the actuator motor stops
 - The plunger is in the lower end position
 - The control switches the actuator motor to reverse motion
 - The plunger ascends
 - When the plunge holder reaches its upper position, the pin on the plunge holder operates the microswitch BC (opener)
 - The actuator motor continues the reverse motion
 - The brewer cylinder opens, and the scraper is guided in such a way that the dried coffee grounds as well as the filter paper** are pushed into the coffee grounds container
 - Simultaneously, the filter paper** is rolled off the paper roll and aligned into position
 - When the scraper is in its rear position, the microswitch BAE is actuated
 - The control stops the actuator motor (according to dispenser type the start positions can be different)
 - The brewing process is completed

BAE = Brewer at end
BC = Brewer closed

**Optional for coffee filling

4 *Technical Specifications*

WHAT:	HOW:
Actuator motor	Voltage: 18 V Rated current: 2.0 A \pm 10%
Dosing motor	Voltage: 24 V DC Rated current: 0.81 A
Tachoboard	Voltage: 12 V DC

5 Options

Not required

6 Accessories

WHAT:	HOW:
Filter paper	Install special kit
Tea filter plate	Install special kit

Ingredient and Mixer Motors

Overview

In this section you will find the following information about the Ingredient and Mixer Motor

- Dismounting the ingredient motor
 - Dismounting the mixer motor
-

Dismounting the ingredient motor

Procedure

Follow this procedure to dismount the ingredient motor:

Step	Action	Illustration
1.	Open the doors.	
2.	Switch off the main switch.	
3.	Remove the instant ingredient canisters.	
4.	Remove the funnel extensions.	
5.	Turn out holder for dust filter using the holes in the left side of holder.	
6.	Remove the Shelf for ingredient canisters (4 screws (1)).	
7.	Remove the dosing motor (3) (1 screw (2)).	
8.	Disconnect the electrical connection	

Dismounting the mixer motor

Procedure

Follow this procedure to dismount the mixer motor:

Step	Action	Illustration
1.	Open the doors	
2.	Switch off the main switch, pull out the power supply plug and close the water cock.	
3.	Remove the funnel extension, the mixing funnel and the whipper housing of the mixer motor in question.	
4.	Loosen 3 screws at the leak protection.	
5.	Slide the leak protection backwards and remove it.	
6.	Disconnect the electrical connection for the mixer motor in question.	
7.	Remove 2 cap nuts retaining the mixer motor to be removed.	
8.	Remove the mixer motor to the back.	

WITTENBORG

Branch Pipe

Introduction

In this section you will find the following information about the motor operated Branch Pipe:

- Description
- Parts and Functions
- Testing the Mixing Unit
- References

Description

The Branch Pipe is electrically driven. It moves forward to the cup dispenser and moves back again after a drinks has been dispensed.

The Branch Pipe has three positions:

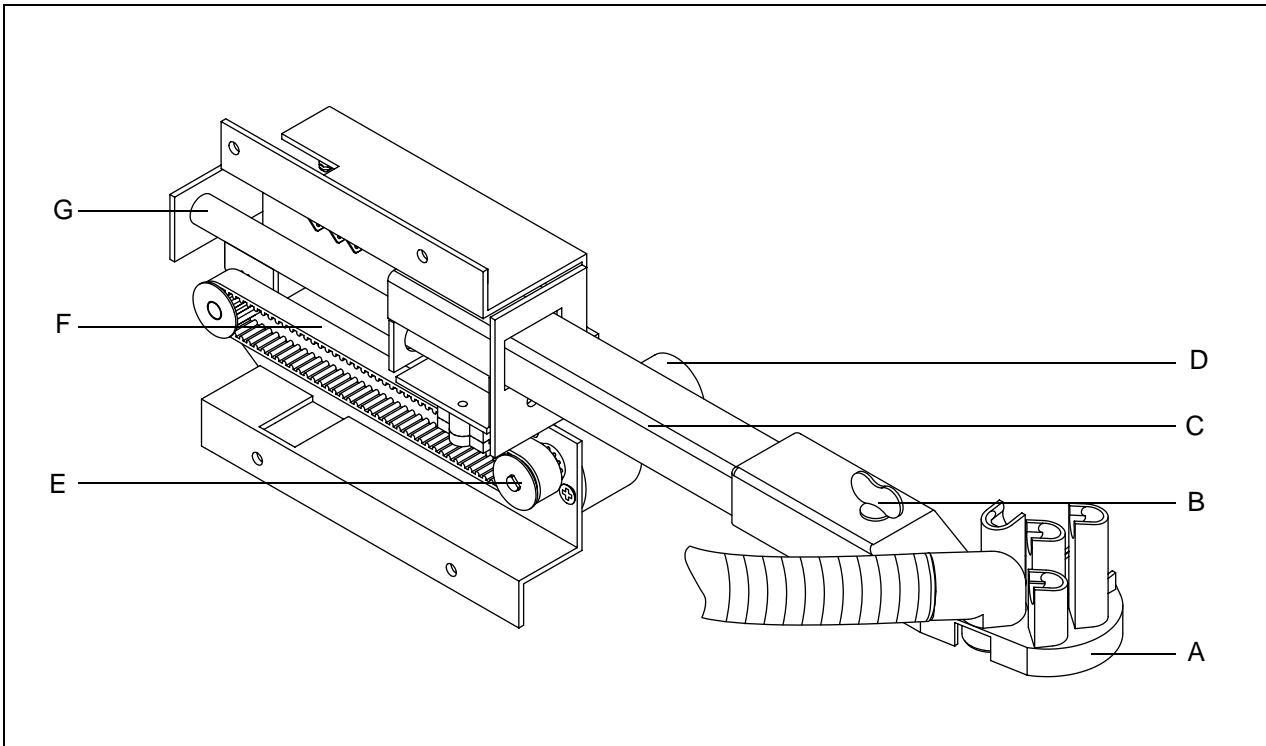
- The inner position (used when standby or dispensing a cup)
- The middle position (used for hot/cold water dispensing only)
- The outer position (used for dispensing all other drinks).

Warning

When test and repair work is carried out, care must be taken to avoid burning!

Parts and Functions

The illustration below shows the location of the Branch Pipe components:



These are the parts and functions of the Branch Pipe:

Part	Function
A	Distributor Block Holds the Outlet Pipes for the drinks
B	Wing Head Stud Locks the Distributor Block to its Holder Arm.
C	Holder Arm for Distributor Block Holds and moves the Distributor Block in and out.
D	Motor Moves the pulley for Toothed Belt to and fro.
E	Pulley for Toothed Belt Drives the Toothed Belt
F	Toothed Belt By means of the pulley the toothed belt drives the Holder Arm through the Sliding block to and fro on the Shaft for Holder Arm.
G	Shaft for Holder arm with Sliding Block The Sliding Block moves to and fro on the Shaft for Holder Arm.

References

For more details about...	Please see...
Branch Pipe	Spare Parts List Test Functions

WITTENBORG



Machine Type Setting #2233

Overview

In this section you will find information about Machine Type Setting #2233.



Machine type settings (#2233). 3

Standard Machine Type. 4

#2233-password -5 4

1.1 NORMAL DRINK 5

1.1.1 Drink Number 5

1.1.2 Drink Test 6

1.1.3 Drink Type 6

1.1.4 Mix drink settings. 7

1.1.4.1 Ingredient setting. 7

1.1.4.3 Total ingredient delay. 8

1.1.4.4 Water Percentage 9

1.1.4.5 Examples of mix settings. 9

1.2 INGRED SETTING. 10

1.2.1 Ingredient setting. 10

1.3 MACHINE RELATION.11

1.3.1 Setting of beverages for push buttons on the selection panel. 11

1.3.2 MS150 price setting. 11

1.4 MULTIBR. SETTINGS 12

1.4.1 Starting value for number of cups 12

1.4.2 Max. number of cups. 12

1.4.3 Pot sensor. 12

1.4.4 Multibrew 12

1.5 MC5500 SETTINGS 13

1.5.1 Water level sensor. 13

1.5.2 Maximum brewer current. 13

1.5.3 Cup Delay. 13

1.5.4 Standby position for cup arm. 14

1.5.5 Dispensing of cup when large quantity has been selected. 14

1.5.6 Fan settings. 14

1.6 BREWER SETTINGS 16

1.6.1 Brewer in waiting position. 16

1.6.2 Brewer in slow (sweep) position. 16

1.6.3 The brewer in scraping position. 16

1.6.4 Brewer dispensing one speed. 17

1.6.5 Brewer dispensing two speeds. 17

1.6.6 Brewer scrape speed. 17

1.6.7 Brewer standard speed. 17

1.6.8 Brewer sweep. 18

Keypad Numbers 20

Machine Type Settings (#2233).

In this document the machine type settings are described. The document is meant for trained technicians and therefore the key sequence on the programming panel are not described in detail. In back of this document you will find a complete menu overview of #2233 (machine type setting) in A3 format.

The menu system under #2233 is divided into six different submenus.

NORMAN DRINK
INGRED SETTINGS
MACHINE RELATION
MULTIBR. SETTINGS
MC5500 SETTINGS
BREWER SETTINGS

In the 'Normal Drink' menu the outline of the beverage is made. Settings for different ingredients drink delays are introduced.

In 'Ingrid Setting' different ingredient texts relating to specific ingredient canisters are entered.

In 'Machine Relation' a push button on the selection panel is related to a beverage under the 'Normal Drink' menu.
The price wires for MS150 are also programmed here.

In 'Multibr. Settings' the different criteria for multibrew e.g. the maximum number of cups, start number of cups and so forth.

In 'MC5500 Settings' the max. brewer current and a value for the level sensors as well as a time span which shows a delay from the moment the cup is dispensed and till the cup is moved forward.

In 'Brewer Settings' different brewer speeds are set and linked to different positions.

In the following the six submenus are described.

Standard Machine Type.

The first window to appear in #2233 is:

MACHINE TYPE _____

In this first window a alphanumeric string of 8 digits is entered. This string is the factory number of the vending machine. This string is used to keep track of versions and setups.

In this menu the texts and information entered in 'NORMAL DRINK' are copied for the rest of the system by pressing <F1>. A beeping sound is heard, indicating that the texts are being copied. The menu system under #210 also changes so that it corresponds with the different beverages.

If <F2> is pressed texts from #2000 (article setting) are copied into #2233 (machine type setting).

#2233-password -5

Move right in the menu system to get to the window:

#2233-PASSWORD 5 MODE_____

In this window it is possible to allow changes in the setting to be performed under password 5 instead of password 6.



1.1 NORMAL DRINK

In this menu the basic setting for each beverage is created. This includes different ingredients and introduction of delays. A maximum of 18 beverages can be set in this menu.

1.1.1 Drink Number

The first window is:

SELECT xx DRINK
DRINK NO. ____

In this window a three digit number is entered, this number is the key to the beverage. In the beverage number the first digit is the Main Group, the second digit is the Drink Type applicable to the Main Group 1-7 and the third digit is the Extra Selection applicable to Drink Type 1-6.

No.	Main Group	No.	Drink Type	No.	Extra Selection
1	FB coffee	1	Normal	1	Cream and sugar
2	FB coffee decaf	2	Mocha	2	Cream and extra sugar
3	IN coffee	3	Reserved	3	Cream
4	IN coffee decaf	4	Reserved	4	Extra whitener and sugar
5	FB tea	5	Long	5	Extra whitener and extra sugar
6	IN tea	6		6	Extra whitener
7	ES coffee	7		7	Sugar
8	Other hot drinks	8		8	Extra sugar
9	Other cold drinks	9		9	Black

Normally you enter 1-7 for Main Group, Drink Type 0 and Extra Choice 0. This is possible because Drink Type and Extra Selection is dependant on the pre-selection. This means that for FB coffee you enter 100, IN coffee 300 and so forth.

In appendix Keypad numbers you can see a list of the numbers used

1.1.2 Drink Test

The following window is:

SELECT xx DRINK TX: _____

In this window the desired text for the beverage is entered.

1.1.3 Drink Type

The next window is:

SELECT xx DRINK DRINK TYPE. ____

In this window the drink type is programmed. The options are:

IN SIMPEL
IN COFFEE
IN TEA
IN MIX
FB COFFEE
FB TEA
FB MIX
ESPRESSO (only if a espresso brewer is fitted)
ES_MIX (only if a espresso brewer is fitted)
COLD IN (only if a cold unit is fitted)
COLD SY (only if a cold unit is fitted)
HOT WATER

This setting has influence on the later settings, including DRINK MIX SETTINGS in #2233 and the menu system under #210 and on what is dispensed by the machine.

1.1.4 Mix drink settings.

The following menu is a new submenu:

```
SELECT xx DRINK  
DRINK MIX SET
```

In this submenu system a maximum of five MIX STEPS can be set/programmed.

1.1.4.1 Ingredient setting.

The first window in the submenu is:

```
MIX STEP # xx  
INGRED.: _____
```

Depending on the chosen drink type different ingredients can now be chosen from the menu 'INGRED SETTINGS' this is described in detail later.

NOTE: if sugar is part of the beverage this must be programmed under MIX STEP #02 and whitener under MIX STEP #03.1.1.4.2 Ingredient delay.

The next window in the submenu is:

```
MIX STEP # xx  
INGR. DELAY.: _._s
```

The delay between water and powder for the ingredient chosen in the previous menu window is set here.

1.1.4.3 Total ingredient delay.

The following window in the submenu is:

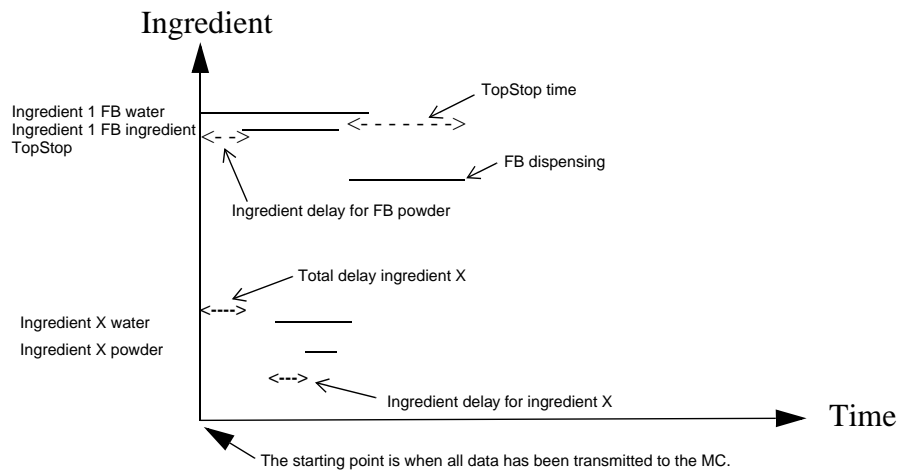
MIX STEP # xx
 TOTAL DELAY.: _._s

In this window 'TOTAL DELAY' is set. Total delay has been defined as the delay when dispensing water for an ingredient compared to a starting point.

The starting point is the moment when all data regarding beverages has been transferred to the MC.

This window does not exist if 'MIX STEP' is 01 and the type of drink is FB-tea, FB-coffee or FB-MIX.

In the following figure the time spans are illustrated.



It is not possible to enter 'Total delay' for ingredient 1 if it is FB powder.

Water for sugar and whitener comes from the same valve and ends in the same mixing bowl, therefore the 'Total delay' for sugar water and whitener water must to be the same. Therefore in #2233 under MIX-settings the program automatically copies the last settings made including 'Total delay' and the water percentage for whitener and sugar.

1.1.4.4 Water Percentage

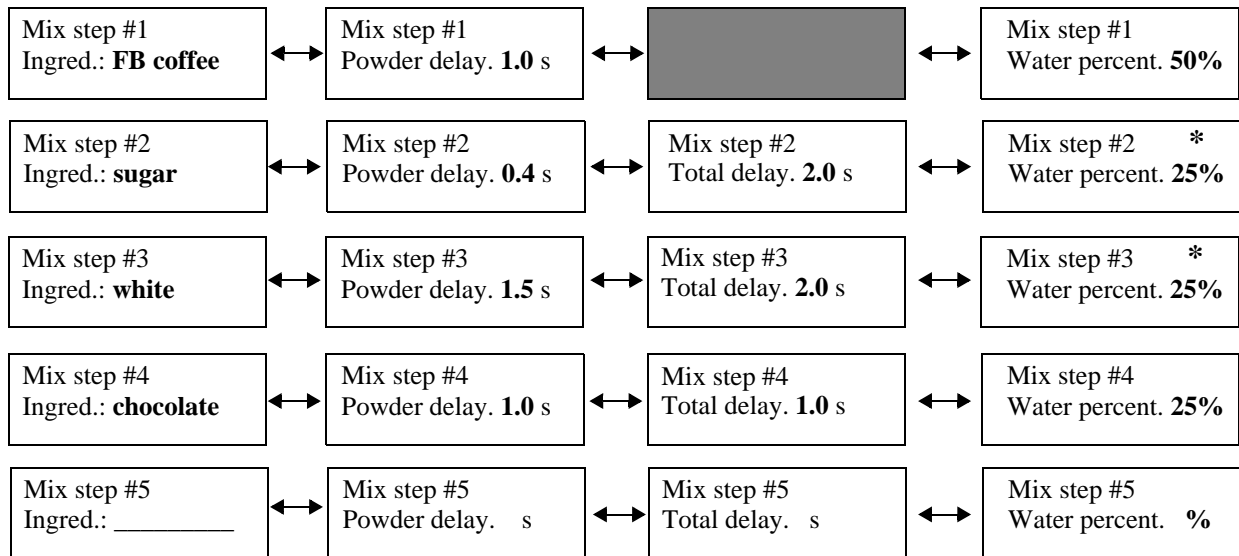
The last window in the submenu is:

MIX STEP # xx WATER PCT. ____

This window can only be used if the drink type is IN-MIX or FB-MIX. In this window the water quantity for each ingredient according to the total quantity is set.

1.1.4.5 Examples of mix settings.

The below figure is an example of MIX-settings for a FB CAPPUCCINO.



* In these windows the settings between sugar and whitener is copied. Please note that it is possible to adjust different ‘Powder delays’ for sugar and whitener.

NB: The ‘Total delay’ window for FB coffee has been left grey, as this setting does not exist. Please note that the total sum of the water percentages is 125%, this is because sugar water and whitener water are the same. When using this setup during dispensing you get 25% water for sugar/whitener, 25% water for chocolate, and 50% water for the coffee. A total of 100%.

1.2 INGRED SETTING.

In this menu the settings for different ingredients are made and linked to a ingredient canister. In this menu the maximum number of different ingredients is 15.

1.2.1 Ingredient setting.

The only window in this menu is:

INGREDIENT # xx TX _____

The names of the different ingredients are entered in this window.

Note: Sugar must always be ingredient no. 3 and whitener must always be no. 4.

1.3 MACHINE RELATION.

This menu is for setting different relations between the different push buttons on the selection panel and the beverage.

The prices for the individual beverages with a MS150 compatible coin-mechanism, with two price wires, are also set here.

The maximum number of different prices and beverages in this menu is 36.

1.3.1 Setting of beverages for push buttons on the selection panel.

The first window in this menu is:

SELECT xx DRINK DRINK NO. _____

In this window the keypad numbers of the different beverages for each button are entered (keypad numbers see appendix).

1.3.2 MS150 price setting.

The last window in the menu is:

MS150 PRICE # xx AMOUNT. _____

Here the price for each beverage is entered. NB: there are only two prices.

1.4 MULTIBR. SETTINGS

In this menu the multibrew function is set.

1.4.1 Starting value for number of cups

The first window in this menu is.

M.BREW START VAL NUMBER CUPS _____

Here the number of cups, to be shown when the cup platform is swung aside, is entered.

1.4.2 Max. number of cups.

The second window in this menu is:

M.BREW MAX VAL NUMBER CUPS _____

In this window the maximum number of cups in multibrew is entered.

1.4.3 Pot sensor.

The third window in this menu is:

MULTIBREW MODE POT SENSOR _____

In this window the pot sensor can be activated or deactivated.

1.4.4 Multibrew

The fourth window in this menu is:

MULTIBREW MODE
MULTIBREW _____

In this window multibrew can be activated or deactivated.

1.5 MC5500 SETTINGS

The settings entered here are transmitted, via wittlink, to the MC every time the vending machine is switched on.

1.5.1 Water level sensor.

The first window in this menu is:

WATER LEVEL
SENSOR VALUE _____

In this window a reference value is entered so that the water level sensor can sense the water. The standard setting is 70.

1.5.2 Maximum brewer current.

The next window in the menu is:

BREWER CURRENT
LIMIT VALUE _____

In this window the maximum current for the brewer is entered.
I max can be expressed as: $I_{max} = 0,036 \cdot I_{max}$ (The value entered).

I max should not exceed 3A.

1.5.3 Cup Delay.

The following window in this menu is:

Here the required delay from the moment the cup is dropped till it is

CUP DELAY

._.

brought forward by the cup arm is entered.
The standard delay from the factory is 2.5 s.

1.5.4 Standby position for cup arm.

The next window in this menu is:

CUP ARM STOP

._.s

This setting shows for how long the cup arm moves forward before stand-by. The cup catchers then avoid getting wet when beverages are dispensed into own cups/mugs.

1.5.5 Dispensing of cup when large quantity has been selected.

The next window in this menu is:

DELIVER LARGE

CUP ____

This setting enables the vending machine to dispense a cup also when a large quantity is selected.

1.5.6 Fan settings.

The last window in this menu is:

FAN

STATUS ____

The fan will normally only be active during beverage dispensing. This set-



ting enables the fan to run with approximately 1/4 of the normal speed when no beverages are being dispensed.

1.6 BREWER SETTINGS

The brewer settings entered here are transmitted, via wittlink, to the MC every time the vending machine is switched on.

1.6.1 Brewer in waiting position.

The first window in this menu is:

BREWER WAIT POS. __mm.

In this window the 'between dispensings position' of the brewer is entered. The position is given in mm. in relation to the revolving spindle. If the position is set to 0 mm the brewer will be at the end position with the scraper back. If 51 mm is entered the brewer will be approximately 5 mm from its closed position.

1.6.2 Brewer in slow (sweep) position.

The following window in this menu is:

BREWER SWEEP POS. __mm.

Here the piston position when the brewing speed changes during dispensing of coffee or tea can be set. The standard position is 0 mm.

1.6.3 The brewer in scraping position.

Then next window in this menu is:

BR. SCRABE POS. __mm.

Under this part of the menu the position where the brewing speed is halted under the scraping movement.

The standard setting is 30 mm.

1.6.4 Brewer dispensing one speed.

The following window in this menu is:

BR. START DELIV. __ms/TACHO

In this window the starting speed of the piston movement can be entered. The standard setting here is 3 ms/TACHO.

1.6.5 Brewer dispensing two speeds.

The following window in this menu is:

BREWER DELIV. __ms/TACHO

In this window the speed of the piston movement is set after the piston has reached slow (sweep) position. Setting 1.6.2 Brewer in slow (sweep) position.

1.6.6 Brewer scrape speed.

The following window in this menu is:

SCRAPE SPEED. __ms/TACHO

In this window the speed of the piston can be set after the brewer has reached the brewers scraping position (setting 1.6.3. Brewer in scraping position). The standard setting is 8 ms/TACHO.

1.6.7 Brewer standard speed.

The following window in this menu is:

DEFAULT SPEED.
___ms/TACHO

In this window the standard speed of the piston during other movements than the recently mentioned is set. The standard setting is 3ms/TACHO.

1.6.8 Brewer sweep.

The last window in this menu is:

INC SPEED RATE.
___TACHO

In this window a sweep after the brewer has gone into slow (sweep) position can be set. After the set number of tacho's the speed is reduced with 1 ms/TACHO. The standard setting is 50 TACHO.

Keypad Numbers

FB Coffee	119
FB Coffee S	117
FB Coffee M	113
FB Coffee S + M	111
IN Coffee	319
IN Coffee S	313
IN Coffee S & M	311
FB Tea	519
FB Tea S	517
FB Tea M	513
FB Tea S + M	511
IN Tea	619
IN Tea S	617
IN Tea M	613
IN Tea S + M	611
Cappuccino	851
Cappuccino No S	852
Wiener Melange	857
Café au lait	858
Espreschoc	856
Chocolate	811
Chocomilk	859
Hot Water Portion	815
Soup	813
Bouillon	814
Lemon Tea	812
Not used	0
Hot Water count.	5
Drink strength	1
Drink size	2
Sugar	3
White	4
IN Cappuccino	817
IN Cappuccino no sugar	818
FB espresso	129
FB espresso S	127
FB espresso M	123
FB espresso S + M	121
IN espresso	329
IN espresso S	327
IN espresso M	323

Payment System

Overview

In this chapter you will find the following information about the Payment System

- Revaluation and Payment System
 - The Card System
 - BDV Coin Mechanism
 - Executive Coin Mechanism
 - Optical Interface Board Error
 - Revaluation
 - Dismounting the payment module
-

Revaluation and Payment System

Introduction

The machine can be provided with a card system and/or a coin mechanism as payment system. The type of payment system desired is selected under #246 "Payment setting". It is possible to select the coin mechanism together with selecting the card system. Please check the section "Programming" in the Operator Manual.

The Menu System will adapt to the choice made under #246, meaning that only relevant menus will be visible. Consequently, if only the card system has been selected, the menus relating to the coin mechanism will not be visible.

The Card System

The card system consists of a card reader and a card return button connected to the card reader. The card reader communicates with the Programming Unit via the serial "data highway", which starts from a plug (see wiring diagram) on the VC print board.

The card reader receives power from a plug (see wiring diagram) on the power supply print board. Voltage with a card reader connected:

Between pins 1 and 2 - approx. 18 V DC.

Between pins 5 and 6 - approx. 24 V DC.

#25 "Card Setting"

All settings related to the card system are made via the Programming Unit #25 "Card Setting". The following setting options exist:

"Blacklist setting"

"User gr. setting"

"ID code setting"

"Terminal setting"

"Security setting"

Please refer to the chapter "Programming" in Operator Manual concerning the above functions.

Error Situations

In connection with the use of the card system, a number of error codes may appear in the "Event book". Errors arising from the card system start with 66-xx.

Please refer to the chapter "Trouble Shooting" for a description of individual errors and their possible causes.

BDV Coin Mechanism

The BDV coin mechanism is a mechanism working according to a standard prepared by:

Bundesverband der Dienstleistungsunternehmen für Verpflegungssysteme e.V.

The coin mechanism communicates with the Programming Unit via the serial "Data highway", which starts from a plug (see wiring diagram) on the VC print board.

The coin mechanism receives power from a plug (see wiring diagram) on the power supply print board. The voltage is 24 - 36 V DC.

#260 "Coinmech. Setting"

All sections of the coin mechanism are made via the MasterModule under #260 "Coinmech.Setting". The following setting options exist:

"Max credit"
"Max change"
"Obligation to buy"
"Coin inhibit"
"Low change inhib"

Please refer to the chapter "Programming" in Operator Manual concerning the above functions.

Operation

In the BDV coin mechanism it is possible to fill the coin tubes manually with change money.

The money is inserted in the usual way and is distributed between the various coin tubes and the cashbox depending on the type of coin. The amount inserted appears on the credit display.

#62 "Manual Filling"

Under #62 "Manual Filling" the amount on the display is converted from a credit amount into a change money amount. Please refer to the Operator Manual concerning the use of this function.

#61 "Paying out
Coins"

It is also possible manually to pay out a number of coins from each coin tube.

This is done by means of #61 "Dispense coins". Please refer to the Operator Manual concerning the use of this function.

Error Situations

If coins have difficulty getting accepted, it is usually because of impurities in the coin track of the validator in the coin mechanism.

By opening the validator the coin track can be cleaned with a piece of cloth saturated with a mild liquid detergent.

Warning!

Remember to cut the power to the vending machine before cleaning!

Executive Coin Mechanism

The executive coin mechanism is a mechanism working in accordance with a standard prepared by Mars Electronics.

The coin mechanism communicates with the Programming Unit via the serial "Data highway", which starts from plug on the VC print board. The coin mechanism receives power from plug on the power supply print board. The voltage is approx. 24 V AC.

Settings

All settings of the coin mechanism are made directly on the coin mechanism itself. When installing the vending machine, the following functions should be applied/considered:

Addresses	Description
Address 11 -	Maximum change
Address 14 -	Exact change coin accept group
Address 15 -	Single/multi vend
Address 16 -	Escrow return inhibit
Address 19 -	Peripheral & clear check sum flag
Address 20-22 -	Coin line inhibit

Please refer to the coin mechanism manual concerning the use of the above functions.

Error Situations

If coins have difficulty getting accepted, it is usually because of impurities in the coin track of the validator in the coin mechanism. By opening the validator it can be cleaned with a piece of cloth saturated with a mild liquid detergent.

Warning!

Remember to cut the power to the vending machine before cleaning!

Optical Interface Board Error

If an error occurs in the optical interface board it may result in problems with coin accept. This error may be traced by unplugging the VC. If subsequently the coins are accepted, the board causes the error. Replace the optical interface board.

For further information on maintenance and trouble-shooting, please refer to the coin mechanism manual.

Revaluation

Adding Value to Cards

If the vending machine is fitted with a card system and a coin mechanism, the machine can be adjusted to be able to add value to cards.

The Card/Coin System

In order to adjust the machine to be able to add value to cards, you have to activate the card system and the coin mechanism. The coin mechanism has to be of the BDV or Executive type.

In #246 "Payment Setting", you have to activate the card system and the coin mechanism, before it will be possible to set up the vending machine to revaluation in #2231.

If you want to activate	then adjust settings in ...
the card system and the coin mechanism	#246 "Payment Setting"
the revaluation facility	#2231 "Vendmode Setting"

#246 "Payment Setting"

In the function #246 "Payment Setting", you have to select card system and coin mechanism.

Follow this procedure to select revaluation in the vending machine

#2231 "Vendmode Setting"

Cf. Operator Manual.

Dismounting the payment module

Warning:

Never adjust the coin module, the card reader or disconnect the connecting cable to the machine while the machine is carrying voltage.

Dismounting the coin module

Step	Action
1.	Remove the cover of the coin module.
2.	Open the door cover (refer to 'Dismounting the door cover').
3.	Disconnect the electrical connection to the coin module.
4.	Lift the coin module and remove it.

For more information concerning the coin module refer to the information of the manufacturer.

Dismounting the card reader

Step	Action	Illustration
1.	Open the door cover, remove it if necessary.	
2.	Disconnect the electrical connection to the card reader.	
3.	Remove the screws (1, 3 pcs.) and remove the card reader.	

For more information concerning the card reader refer to the information from the manufacturer.

WITTENBORG

Trouble shooting

Overview

In this section you will find the following information:

- Description to Error Messages
 - I²C Errors
 - Clock Errors
 - Vending Machine Errors
 - Card System Errors
 - Communication Errors
-

Error Messages

Introduction	<p>This chapter describes error indications, error types, possible causes and corrective action.</p>
Error Indications	<p>All errors registered via the programming panel are listed either in the log book #130 or in the event book #131.</p> <p>Errors are indicated in the form of an error text and an error number.</p> <p>The log book records the time an error arises, whether it is still active, or the time it disappears.</p> <p>The event book records the number of times an error has been reported, the time of the first reporting, the time of the last reporting, and whether it is still active.</p> <p>30 errors can be registered in both books. If more than 30 errors occur, the oldest non-active error will be erased.</p>
Error Indication on the Credit Display	<p>It is possible to let the credit display show the error number while the error is active. This function is selected in submenu 1 in #222. Use submenu 2 to select the errors to be displayed on the credit display. If more than 1 error is active, error numbers will alternate.</p>
Error Groups	<p>Errors are divided into two main groups: Log Book Errors (L) and Event Book Errors (E). Each main group consists of a number of subgroups. The main groups indicate whether an error is IC related, card reader related or vending machine related.</p>
Error Types	<p>Vending machine related errors are divided into 5 types:</p> <ol style="list-style-type: none">1. Fatal vending machine error2. Fatal heating error3. Fatal cold unit error4. Brewer error5. Vending machine error <p>If such errors occur, the vending machine is not capable of dispensing the drinks influenced by them. For example a brewer error means that no FB drinks can be bought. An error which is fatal to the operation of the vending machine will be indicated by the "hot drinks not available" and "cold</p>

drinks not available" signs being lit. If an error is fatal only to one of these areas, only the relevant sign will be lit. A vending machine error does **not** necessarily mean that the machine is not operational.

Error Codes

Each error message has a four digits code. The two first digits indicate which subgroup the error belongs to.

- 01-xx is an I²C-bus error
- 06-xx is a clock error
- 8x-xx is a vending machine error
- 66-xx is a card reader error
- 50-xx is a communication error

The two last digits indicate the number of the error within the subgroup.

I²C Errors

I²C Errors

Error	The display shows	Group	Explanation
01-01	NO EXTERN DISPLAY	L	<p>This error indicates that the programming unit is not receiving any response when an LCD credit display or digit 1-4 on an LED display is addressed via the I²C bus.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Defective display circuit board. • Defective I²C bus cable. • Defective VMC.
01-02	NO 5. EXT. DIGIT	L	<p>This error indicates that the programming unit is not receiving any response when digit 5 on an LED credit display is addressed via the I²C bus.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Defective display circuit board. • Defective I²C bus cable. • Defective VMC.

Clock Errors

Clock Errors

Error	The display shows	Group	Explanation
06-01	CLOCK RESET ERR.	E	<p>Indicates that the clock chip (PCF 8583) has reset.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Defective or incorrectly mounted clock chip in the programming unit. • A passing short circuit of the C-mos voltage. • Defective or bad battery in the programming unit. <p>Warning! NEVER short-circuit the battery or C-mos voltage in the programming unit. The battery is a lithium battery. Do not recharge, disassemble, heat above 100°C (212°F), short-circuit, incinerate or expose to water. Danger of explosion! To be replaced only with a battery of the same make and type.</p>
06-02	CLOCK WRITE ERR.	E	<p>The error occurs when the programming unit has attempted to write a new time to the clock chip (PCF 8583) and has not succeeded.</p> <p>Possible cause: Defective or incorrectly mounted clock chip in the programming unit.</p>

Vending Machine Errors

81-32 -
81-51
Brewer Errors

Brewer errors between code number 81-32 and 81-51:

Error	The display shows	Group	Explanation
81-32	BREWER CLOSE ERR	L	<p>This error indicates that the brewer does not close correctly.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Micro switch BC defective • Defective harness between brewer motor and MC board.
81-33	BREWER MOUNT ERR	L	<p>This error indicates that the brewer is not mounted correctly.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Filter plate, plunger and cylinder not mounted, or mounted incorrectly.
81-34	BREWER DELIV ERR	L	<p>This error indicates a Time-out during the brewing process</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Brewer moving stiffly • Filter plate covered with scale deposits.
81-35	BREW CURRENT ERR	L	<p>This error indicates that the circuit breaker is activated</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Brewer moving stiffly • Filter plate covered with scale deposits.
81-36	BREW CURRENT ERR	L	<p>This error indicates that the circuit breaker is activated during the brewing process</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Brewer moving stiffly • Filter plate covered with scale deposits.
81-37	BREW END ERR	L	<p>This error indicates that the brewer does not reach the highest/lowest position</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Micro switch BAE defective. • Harness defective.

Error	The display shows	Group	Explanation
81-39	BREWER TACHO ERR	L	<p>This error indicates that no tacho pulses was recognized</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Harness defective • Tacho-Hall-Sensor defective • MC board defective.
81-41	WASTE BUCK. FULL	L	<p>This error indicates that the waste bucket is full</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • If the error does not disappear when the waste bucket is emptied, the reason may be moisture or coffee grounds between the electrodes on the sensor circuit board in the waste bucket. Wiping off the moisture or grounds usually removes the error. • Defective harness to sensor • MC board defective.
81-51	FB DOSING ERROR	L	<p>This error indicates a time-out during dosing procedure</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Incorrect tacho pulses • Programming error.

83-01 -
83-34
Water System
Errors

Water system errors between code number 83-01 and 83-34:

Error	The display shows	Group	Explanation
83-01	NO WATER AT INIT	L	<p>This error indicates a time-out at water inlet to water tank after the machine has been switched on</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Water cock closed • Water pressure too low • Leakage • Water level sensor does not feel the water level (please also check programming MC board settings).

Error	The display shows	Group	Explanation
83-02	WATER INLET ERR	L	<p>This error indicates a time-out during operation</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Water cock closed • Water pressure too low • Leakage.
83-32	HEATER ERROR	L	<p>This error indicates that water in water tank is not heated</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Heating element defective • Defective harness • Interruption of the heating electric circuit • Safety circuit interrupted.
83-33	NTC OPEN	L	<p>This error indicates that the circuit of the NTC resistor is open.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Temperature sensor defective • Defective harness.
83-34	NTC SHORT CIRC.	L	<p>This error indicates that the NTC resistor is short circuited.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Temperature sensor defective • Short circuit in the harness • Short circuit in the VMC board.

84-01 -
84-61
Security System
Errors

Security system errors between code number 84-01 and 84-61:

Error	The display shows	Group	Explanation
84-01	DRIP TRAY FULL	L	<p>This error indicates that the sensor in the drip tray is covered with water</p> <p>If emptying the tray and wiping off the sensor does not help, or if the sensor is not covered with water, see below</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Short circuit in the drip tray sensor • Leakage in the water system.

Error	The display shows	Group	Explanation
84-02	24V MELTING FUSE	L	<p>This error indicates that the 24V distribution voltage is too low or missing.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • F3 and/or F4 on the MC-board defective because of a short circuit.
84-03	24V WD RELAY	L	<p>This error indicates that the MC board has switched the relay off for safety reasons</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • General critical error in the vending machine.
84-04	12V ERROR	L	<p>This error indicates that the 12V distribution voltage is too low or missing.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • F2 on the MC-board defective because of a short circuit.
84-05	WASTE EXTRA FULL	L	<p>This error indicates that the waste bucket is full</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Valve or water system leaky • If the error does not disappear when the waste bucket is emptied, the reason may be moisture or coffee grounds between the electrodes on the sensor circuit board in the waste bucket. Wiping off the moisture or grounds usually removes the error. • Defective harness to sensor • Defective MC board.
84-06	36V MELTING FUSE	L	<p>This error indicates that the 36V melting fuse mounted in the transformer box is defective.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Short circuit.
84-61	DOOR OPEN	E	<p>This error indicates that the door is open.</p>

85-32-
85-63
Cup Errors

Cup errors between code number 85-32 and 85-63:

Error	The display shows	Group	Explanation
85-32	CUP DELIVERY ERROR	E	<p>This error indicates that the attempt to deliver a cup was unsuccessful</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Cup is not dispensed or not correctly dispensed • Cup jammed.
85-33	CUP MECH.ROT.ERR	L	<p>This error indicates that an error occurred while turning the cup mechanism.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Cup mechanism mounted incorrectly • Cup mechanism defective • Cup jammed in the cup ring.
85-36	CUP DISPENSER E.	E	<p>This error indicates that the cup dispenser cannot leave or reach stop position when driving the cup ring.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Motor defective • Sensor defective • Harness defective • MC board defective.
85-61	CUP LOCKED	E	<p>This error indicates a jammed cup</p> <p>Possible causes</p> <ul style="list-style-type: none"> • Cup too slippery • Wrong cups
85-62	CUP SENSOR ERR	E	<p>This error indicates a cup sensor error</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Cup sensor optically interrupted • Cup sensor defective.
85-63	NO MORE CUPS	L	<p>This error indicates that there is no more cups</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Cup magazine defective or empty.

86-01 -
86-03
Branch Pipe
Errors

Branch pipe errors between code number 86-01 - 86-03:

Error	The display shows	Group	Explanation
86-01	ARM MOVE ERROR	L	This error indicates that the branch pipe is blocked Possible causes: <ul style="list-style-type: none"> • Defective motor • Defective switch • One or more cups blocking the branch pipe's way
86-02	ARM SWITCH ERROR	L	This error indicates a time-out on a branch pipe switch Possible causes: <ul style="list-style-type: none"> • Defective switch or switches
86-03	ARM INIT ERROR	L	This error indicates that the movable branch pipe could not be safely detected at start up Possible causes: <ul style="list-style-type: none"> • Defective motor • Defective switch • One or more branch pipe switches are defective

88-11 -
88-12
Miscellaneous

Miscellaneous errors between code number 88-11 and 88-62:

Error	The display shows	Group	Explanation
88-11	MC TRANS. ERROR	L	This error indicates that the communication between VC and MC board disturbed or interrupted Possible causes: <ul style="list-style-type: none"> • Harness defective • MC board error • VC board error.
88-12	MC RECE.ERROR	L	This error indicates that the communication between VC and MC board disturbed or interrupted Possible causes: <ul style="list-style-type: none"> • Harness defective • MC board error • VC board error.

Card Errors

Card errors

Error	The display shows	Group	Explanation
66-10	TONEHEAD CABLE	E	<p>The writing and reading circuits for track 1 and the reading circuit for track 2 are checked before a reading sequence begins. If the system finds an error, the card reader is interrupted and this error message appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Defective writing circuit for track 1 on the DCR. • Defective cable to magnetic head. • Defective magnetic head. • Defective reading circuit for track 1 on the DCR. • Defective reading circuit for track 2 on the DCR.
66-11	NO CARD LOCK	E	<p>The card-lock switch (E-switch) must be activated when the tonehead carriage reaches the B-switch for the first time; if this is not the case, the carriage returns to the A-switch, and this error message appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Card wrongly inserted. • Defective E-switch. • Defective E-switch cable. • Defective DCR.
66-12	HEAD CONTACT	E	<p>The contact of the magnetic head with track 1 is checked during the first movement from A-switch to D-switch. There must be at least 1 pulse from the magnetic head for each 80 tacho-pulses. If this is not the case, the card is released and this error message appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Impurities on the card. • Track 1 erased. • A cleaning card has been used.

Error	The display shows	Group	Explanation
66-14	P-TRACK PULSES	E	<p>The contact of the magnetic card with track 2 is checked during the first movement from D-switch to B-switch. There must be at least 200 pulses. If this is not the case, the card is released and this error message appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Impurities on the card. • Track 2 erased. • A cleaning card has been used.
66-15	FORMAT ERROR	E	<p>The card inserted into the card reader cannot be rewritten in the CC1000/2000 format</p> <p>The card is released with all data intact, and this error message appears.</p> <p>Possible cause:</p> <ul style="list-style-type: none"> • The card is of the old CC format, i.e. without the index digit
66-16	P-TRACK BLOCKS	E	<p>On track 2 of the card inserted into the reader there are not enough faultless digits for the card to be accepted.</p> <p>The following requirements must be met:</p> <p><i>Normal use:</i> For each digit forming part of a permanent block there must be at least two similar digits from different blocks without BCD errors.</p> <p><i>Initializing:</i> There must be 4 perfect blocks without BCD errors. If the requirements cannot be met, the card is released with all data intact and this error code appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Card destroyed.

Error	The display shows	Group	Explanation
66-17	IDCODE ERROR	E	<p>The ID-Code on the card inserted into the card reader incorrect</p> <p>The card is released with all data intact, and this error code appears.</p> <p>Possible cause:</p> <ul style="list-style-type: none"> • Card deviates from the ID-Code(s) entered and activated in the terminal.
66-18	V-TRACK ERROR	E	<p>On track 1 of the card inserted into the reader there are not enough faultless blocks for the card to be accepted. It must be possible to read at least 2 blocks without BCD errors and with the right passcode in one reading.</p> <p>Alternatively, it must be possible to read 1 block without BCD errors and with the right passcode in two readings.</p> <p>If this cannot be met, the card is released with all data intact, and this error code appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Card destroyed.
66-19	ERASE-PULS	E	<p>If track 1 is being erased, an erasing pulse will be written on track 1 for each 10 pulses on track 2.</p> <p>When erasure has been completed, there must be at least 20 erasing pulses on track 1. If this is not the case, max. 4 attempts will be made to erase the card; if these attempts are not successful, the tonehead carriage rests on the D-switch, and this error code appears.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Defective card. • Card can only be removed manually.

Error	The display shows	Group	Explanation
66-22	NO BLOCKS WRIT.	L	<p>Because of reading problems on track 2 it has not been possible to rewrite any track 1 blocks. (Track 2 blocks are used for synchronizing track 1 blocks). The tonehead carriage returns to the D-switch. A new attempt can be made by pressing the card return switch. If the card cannot be rewritten, it can only be removed manually.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Defective card. • Defective card reader.
66-23	1 BLOCK WRITTEN	E	<p>It has only been possible to rewrite 1 block on track 1.</p> <p>Possible cause:</p> <ul style="list-style-type: none"> • Reading problems on track 2
66-24	2 BLOCKS WRITTEN	E	<p>It has only been possible to rewrite 2 blocks on track 1.</p> <p>Possible cause:</p> <ul style="list-style-type: none"> • Reading problems on track 2
66-25	3 BLOCKS WRITTEN	E	<p>Because of reading problems on track 2 it has only been possible to rewrite 3 blocks on track 1.</p> <p>For errors 23-25 the following general criteria apply to the rewriting of cards.</p> <p><i>Normal:</i> The card is released if min. 1 block has been rewritten.</p> <p><i>Initializing:</i> The card is only released if all 4 blocks have been rewritten.</p> <p>No reading or writing check has been carried out, only it has been possible to read track 2 blocks allowing for the track 1 writing to become synchronized.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Card worn down. • Defective reader.

Error	The display shows	Group	Explanation
66-27	READ AFTER WRITE	E	<p>This error occurs if there are no track 1 blocks without BCD errors or with the right passcode in "read or write" checks. The card is erased, the tonehead carriage rests on the D-switch, and an attempt to rewrite can be made by pressing the card return key.</p> <p>If the card cannot be rewritten, it can only be removed manually.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Impurities on the tonehead. • Defective card. • Defective card reader.
66-30	MAX AMOUNT ERROR	E	<p>A card has been rejected</p> <p>Possible cause:</p> <p>The amount on the card exceeds the max. amount for which the terminal has been set under #254.</p>
66-50	POWER FAILURE !	E	<p>The power to the card reader has been cut off without the programming unit having been cut off at the same time.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Defective fuse F3 on the power supply. • Defective cable to card reader. • Defective card reader.
66-78	DHW COMMAND ERR.	E	<p>There has been a time-out on the communication command err. between the programming unit and the card reader.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Defective card reader. • Defective "data high way" harness. • Defective programming unit.

Error	The display shows	Group	Explanation
66-79	TEST CARD ACC.	E	<p>Indicates that an attempt has been made to use an ordinary card while the system was in test mode.</p> <p>Possible cause:</p> <ul style="list-style-type: none"> • System in test mode <p>Only cards with ID-code 0444 can be used when the system is in test mode.</p>
66-80	NO ACCESS CARD	E	This error indicates that an attempt has been made to access a menu to which there is no access with a card inserted.
66-83	USER GROUP OFF	E	This error indicates that a card belonging to a user group that has no access to the system has been rejected.
66-84	BLACKLISTED !!	E	Indicates that a "blacklisted" card has been "destroyed" and then rejected by the terminal.
66-85	TEST CARD ONLY	L	This error indicates that the system is or has been in test mode.
66-86	FORMAT ERROR	E	Indicates that an attempt has been made to use a card of a format that differs from the one for which the terminal has been set.
66-88	C-SWITCH ERROR !	E	<p>This error indicates that the C-switch has been deactivated with a card in the reader.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Payment card worn down. • C-switch incorrectly mounted. • C-switch defective. • Card reader defective.
66-89	DCR-VERSION !!	E	This error indicates that the DCR controls programme is not from 1989 week 14, or more recent.
66-90	DCR-MOTOR ERROR!	E	<p>This error indicates that there is a time-out on the card reader motor.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • Tonehead carriage blocked. • Defective reader.

Communication Errors

Important communication errors

Error	The display shows	Group	Explanation						
50-01	NO RESPONSE	E	<p>You can get this error in both the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> An attempt has been made to start communication with an external unit, but the programming unit does not receive any response. Consequently no settings have been copied.</p> <p>Possible cause: The portable data collector is not held in the right position in relation to the optical interface on the vending machine. For further information please see the manual for the respective external unit.</p>						
50-10	WRONG_IDENTITY	E	<p>You can get this error in both the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> The programming unit operator and region codes do not correspond with the ones of a portable data collector. Communication is denied. Consequently no settings have been copied.</p> <p>Corrective action:</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Cancel the relation between programming unit and a portable data collector using #32 Reset Relation in the vending machine.</td> </tr> <tr> <td>2.</td> <td>Then start copying procedures again.</td> </tr> </tbody> </table>	Step	Action	1.	Cancel the relation between programming unit and a portable data collector using #32 Reset Relation in the vending machine.	2.	Then start copying procedures again.
Step	Action								
1.	Cancel the relation between programming unit and a portable data collector using #32 Reset Relation in the vending machine.								
2.	Then start copying procedures again.								

Error	The display shows	Group	Explanation								
50-12	COMMS NOT FINISH	E	<p>You can get this error in both the MID and the VIDTS protocols.</p> <p><i>Fatal.</i> Arises when the started data transmission is not completed as a result of errors 5002 - 5008. External vending machine display will show: "HOT/COLD DRINKS NOT AVAILABLE".</p> <p>Possible cause: Wrong settings in the programming unit.</p> <p>Corrective action:</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Restart data transmission. If the data transmission cannot be completed, check all settings in the programming unit.</td> </tr> <tr> <td>2.</td> <td>Then Reset Status using #31.</td> </tr> </tbody> </table>	Step	Action	1.	Restart data transmission. If the data transmission cannot be completed, check all settings in the programming unit.	2.	Then Reset Status using #31.		
Step	Action										
1.	Restart data transmission. If the data transmission cannot be completed, check all settings in the programming unit.										
2.	Then Reset Status using #31.										
50-14	COMMS BAD FINISH	E	<p>You can get this error in the MID protocol.</p> <p><u>Fatal.</u> Arises when the started data transmission is not completed in subrecords 141, 142 and 153 as a result of errors 5002 - 5008.</p> <p>Possible causes: Wrong settings in the programming unit.</p> <p>Corrective action:</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Restart data transmission.</td> </tr> <tr> <td>2.</td> <td>If the error arises again, please contact Wittenborg.</td> </tr> <tr> <td>3.</td> <td>Reset status #31.</td> </tr> </tbody> </table>	Step	Action	1.	Restart data transmission.	2.	If the error arises again, please contact Wittenborg.	3.	Reset status #31.
Step	Action										
1.	Restart data transmission.										
2.	If the error arises again, please contact Wittenborg.										
3.	Reset status #31.										

Less important communication errors

Error	The display shows	Group	Explanation
50-02	DATA_CORRUPT	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> The data received are incorrect.</p>
50-03	NOT_STARTED	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> The programming unit has received a communication interrupt, after which the data transmission has not started.</p>
50-04	UNEXP_MESSAGE	E	<p>You can get this error in both the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> Fault in the DDCMP (Digital Data Communication Management Protocol) message header.</p>
50-05	DATA_SEQ_ERROR	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> Fault in the sequence number which is connected to each data block.</p>
50-07	BAD_ACK	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> Acknowledge message of received data incorrect.</p>
50-08	DATA_TOO_LONG	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p>The amount of data to be transmitted from the vending machine is larger than expected. (The amount of data to be transmitted is reported to the receiving unit at the beginning of the communication). The error causes an interruption of the data transmission.</p> <p>Please report the error if it arises repeatedly.</p>

Error	The display shows	Group	Explanation
50-09	START RECEIVED	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> Arises if the portable data collector does not have enough time to "reserve" room for the data received during interrogation. (The programming unit restarts data transmission.)</p>
50-13	AUDIT_PRESENT	E	<p>You can get this error both in the MID and the VIDTS protocols.</p> <p><i>Non-fatal.</i> Arises when audit data have not been read out before settings data are attempted copied into the receiving vending machine.</p>

Reference

Please also see function #247 in the Operator Manual.

WITTENBORG

Terminal Copying

Overview

In this chapter you will find the following information about Terminal Copying

- Terminal Copying/Communication.
-

Terminal Copying/Communication

What is Terminal Copying?

Terminal Copying is a software copying facility. The facility makes it possible to copy Settings Data from one vending machine (terminal) to another using a portable data collector.

Once the Settings Data has been programmed into one vending machine (using the Programming Module), Terminal Copying makes it very easy to copy Settings Data into another vending machine.

Access Level Required

Access level 5 is required to both vending machines (Programming Module).

Explanation of Terms

The terms are explained in the table below:

Term	Explanation
Terminal Copying	Copying Settings Data into a terminal, ie a vending machine, a DeskTop or the like, using a portable data collector.
Basic vending machine	The vending machine from which Settings Data is copied.
Receiving vending machine	The vending machine into which Settings Data is copied.

Before Starting up Terminal Copying

The receiving vending machine must be identical to the basic vending machine, ie configurations must be alike. For example settings from an IN machine cannot be used in a FB machine.

Preparing both Vending Machines

Follow these steps to prepare both machines:

Step	Action
1.	Remove credit from the receiving vending machine, if any (ie remove CaterCard or coins).
2.	The receiving vending machine must not be operating (carrying out at vend).
3.	Read out all audit data from both the basic and the receiving vending machines. This is done either manually or using a portable data collector. If manually: Use #30 Reset Sale Audit (access level 1).
4.	Reset relations of both the basic and the receiving vending machines using #32 Reset Relation (access level 5).
5.	The Programming Module of both the basic and the receiving vending machines must always be showing date and time (log on mode) (#0).

Carrying out Terminal Copying

You are now ready to carry out Terminal Copying consisting of the following steps:

Step	Action
1.	In #247 set "Machine copy" to ON
2.	Copy settings from the basic vending machine to a portable data collector.
3.	Copy settings from a portable data collector to the receiving vending machine.
4.	Once the copying is finished, reset relations of both vending machines using #32 Reset Relation (access level 5).

Note!

Please see the manual of the portable data collector on how to operate it.

Before starting, please read about "Vending Machine Communication Codes" and "Error Codes" described later in this chapter.



The Data Protocols MID and VIDTS

MID and VIDTS are data protocols for how to transfer data. MID is an abbreviation for "Management Information Data". VIDTS is an abbreviation for "Vending Industry Data Transfer Standard".

The vending machine can be set to the data protocols MID and VIDTS. You have to use the MID protocol when using Wittenborg portable data collectors, eg the PDC. You have to use the VIDTS protocol when using other portable data collectors, eg the MEQ.

Selecting MID or VIDTS

By using the Programming Module, follow the procedure to select the MID or the VIDTS data protocols under #247 Communication Setting in Operator Manual

Resetting the Relation Code

Each time you change from the MID protocol to the VIDTS protocol and vice versa, you have to reset the Relation Code.

When you reset the Relation Code, the Relation Code of the latest used **P**ortable **D**ata **C**ollector is deleted. Next time you use a portable data collector, the Relation Code of this unit will be stored. You can only use a portable data collector having the same Relation Code as stored in the Programming Module.

Resetting the Relation Code

By using the Programming Module, follow the procedure to reset the relation code under #32 Relation in Operator Manual

Vending Machine Communication Codes

Reading Out Audit Data This facility is available for both the MID and the VIDTS protocols.

When reading out and subsequently deleting audit data using a portable data collector, the communication status on the external display of the vending machine will show:

External Display
START
OUTxx ^a
DEL
STOP

a. ("xx" indicates the number of remaining data blocks, min. 0, max. 99).

Terminal Copying This facility is available for both the MID and the VIDTS protocols.

When carrying out Terminal Copying, the communication status on the external display of the vending machines will show:

External Display of Source Vending Machine	External Display of Receiving Vending Machine
START	START
OUTxx ^a	INPxx ^a
STOP	STOP

a. ("xx" indicates the number of remaining data blocks, min. 0, max. 99)

Error Messages If an error occurs, the external display will show one of the below error messages

- ERR
- HOT/COLD DRINKS NOT AVAILABLE

Security Read This facility can only be used when the system is set to the VIDTS protocol.

With "Security Read" you can read out Settings and Audit Data without deleting it. "Security Read" is a facility for checking Settings and Audit Data on your own computer, ie the data which has been read out.

When reading out, the communication status on the external display of the

vending machine will show:

External Display of Vending Machine
START
OUT _{xx} ^a
STOP

a. ("xx" indicates the number of remaining data blocks, min. 0, max. 99).

Error Codes

Where do errors show? (#131)

On the external display of the vending machine the messages "ERR" or "HOT/COLD DRINKS NOT AVAILABLE" show if a fatal error arises. The messages will show for a few seconds. **You must then check #131 Event Book** in the vending machine Programming Module in order to find out which type(s) of error has arisen.

Error types

Two types of Terminal Copying errors exist:

Type of Terminal Copying	
1.	Data format errors. Registered in #133 Ext. Comm. Errors (access level 5.)
2.	Communication errors (caused by the user or by a hardware error). Registered in #131 Event Book

Data Format Errors

Data format errors are registered in #133 "Ext. Comm. Errors" (access level 5).

A maximum of 10 errors can be registered, when using the MID protocol.

A maximum of 5 errors can be registered, when using the VIDTS protocol.

Note!

If errors arise in #133 "Ext. Comm. Errors", please contact Wittenborg.

Deleting Non-active Errors

To delete non-active errors in both #131 "Event Book" and #133 "Ext. Comm. Errors" use #31 "Reset status".

Note!

Please see error codes 5012 and 5014.

WITTENBORG

WITTENBORG



Functional Tests and Machine Settings via the Programming Panel

Overview

In this section you will find the following information:

- #4020 Cup Drop
 - #404 Instant Rinse
 - #4100 Adjust Valves
 - #4120 Calibration
 - #420 Actual Water Temperature
 - #4300 Pot Sens. Status
 - #4310 Valve Test
 - #4311 Dosing Motor Test
 - #4312 IN Whipper Test
 - #4320 LCD Test
-



Cup Drop

Fast step #4020 Cup Drop.

Access level 0.

Introduction This function tests the cup drop.

Introduction The procedure for testing the cup drop is as follows:

Step	Action	Display/result
1.	Enter fast step number #4020: 	<div style="border: 1px solid black; padding: 5px; text-align: center;"> CUP DROP START </div>
2.	Press the following key to trigger cup drop: 	

Tip See also Cup Unit and Cup Delivery and Error Messages.




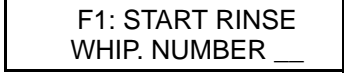



Instant rinse

Fast step #404 Instant Rinse.

Access level 0.

Introduction This function allows rinse of the individual instant dispensing units.

Introduction The procedure for rinsing a dispensing unit is as follows:

Step	Action	Display/result						
1.	Enter fast step number #404: 							
2.	Press the arrow key to go to the first field of the function: 							
3.	<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">If you want</th> <th style="width: 50%;">go to</th> </tr> </thead> <tbody> <tr> <td>to select the instant dispensing unit to be rinsed</td> <td>Step 4</td> </tr> <tr> <td>to perform the rinse of the selected instant dispensing unit</td> <td>Step 5</td> </tr> </tbody> </table>	If you want	go to	to select the instant dispensing unit to be rinsed	Step 4	to perform the rinse of the selected instant dispensing unit	Step 5	
If you want	go to							
to select the instant dispensing unit to be rinsed	Step 4							
to perform the rinse of the selected instant dispensing unit	Step 5							
4.	Enter the desired number of instant dispensing unit (1-4): Example: New value: 2 Enter 2 and press Enter 							
5.	Press the following key to perform rinse of the selected instant dispensing unit 	The corresponding instant dispensing unit is being rinsed.						

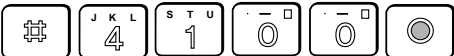

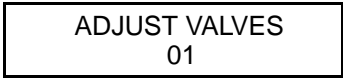

Adjust Valves

Fast step #4100 Adjust Valves.

Access level 3.

Introduction This function is used to reset the quantity of water delivered by the valves. The quantity might be changed during testing, eg after fitting a valve, can be reset using this function.

Procedure The procedure to reset the valves is as follows:

Step	Action	Display/result
1.	Enter access level 3 and appropriate password.	
2.	Enter fast step number #4100: 	
3.	Enter valve number:	
4.	Press F1 to reset the valve: 	

Calibration (Water Tank)

Fast step #4120 Calibration (Water Tank).




Access level 3.

Introduction In this menu you can calibrate the water temperature sensor in the water tank.

Note The vending machine must be operational for calibration.

Power failure or reset Calibration is interrupted if the power fails or you trigger a reset in #31 Status.

Procedure The procedure for initiating and interrupting calibration is as follows.

Step	Action	Display/result						
1.	If necessary, enter access level 3 and appropriate password.							
2.	Enter fast step number #4120: 	CALIBRATION START STOP						
3.	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">If you want</th> <th style="text-align: left;">go to</th> </tr> </thead> <tbody> <tr> <td>to start calibration</td> <td>Step 4</td> </tr> <tr> <td>to interrupt calibration</td> <td>Step 5</td> </tr> </tbody> </table>	If you want	go to	to start calibration	Step 4	to interrupt calibration	Step 5	
If you want	go to							
to start calibration	Step 4							
to interrupt calibration	Step 5							
4.	Press F1 to trigger calibration: 							
5.	Press F2 to interrupt calibration: 							

Flow The calibration flow is as follows:

Stage	Flow
1.	The heating element is switched on and heats the water.
2.	When the water boils the F2 must be depressed.

Note

**It is important to follow the procedure step by step.
Reset the heater thermostat.**


Actual Water Temperature

Fast step #420 Boiler Temperature.

Access level 3.

Introduction You can use this function to read the current temperature of the water in the water tank, if it is in the range 50 - 100°.

Procedure The procedure for reading the temperature of the water in the water tank is as follows.

Step	Action	Display/result
1.	Enter access level 3 and appropriate password.	
2.	Enter fast step number #420: 	<div style="border: 1px solid black; padding: 5px; text-align: center;"> BOILER TEMPERATURE _98 </div>
3.	Read temperature.	




Pot Sens. Status.

Fast step #4300 Pot Sens. Status.

Access level 5.

Introduction You can use this function to ascertain whether the pot sensor and the other sensors are **on** or **off**.

Procedure The procedure for testing the status of the sensors is as follows:

Step	Action	Display/result
1.	Enter access level 5 and appropriate password	
2.	Enter fast step number #4300: 	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">POT SENS STATUS</div>
3.	Press the arrow keys to switch between the different sensors, eg Pot Sensor: 	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">POT SENSOR</div>
4.	Press F1 to see the status of the sensor: 	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">POT SENSOR STATUS: <u>O</u>N</div>






Valve Test

Fast step #4310 Valve Test

Access level 3.

Introduction This function is used to test the valves.

Procedure The procedure for testing valves is as follows:

Step	Action	Display/result
1.	Enter access level 3 and appropriate password.	
2.	Enter fast step number #4310: 	
3.	Press the arrow key to go to the first field: 	
4.	Enter the number of valve to be tested.	
5.	Press F1 to start test: 	

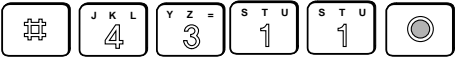




Dos. Motor Test

Fast step #4311 Dos. Motor Test

Access level 3.

Introduction This function is used to test the dosing motors.

Procedure The procedure for testing the motors is as follows:

Step	Action	Display/result
1.	Enter access level 3 and appropriate password.	
2.	Enter fast step number #4311: 	
3.	Press the arrow key to go to the first field: 	
4.	Enter the number of motor to be tested (1-5).	
5.	Press F1 to start test: 	

IN Whipper Test






Fast step #4312 IN Whipper Test

Access level 3.

Introduction This function is used to test the whipping motors.

Warning Hot water is dispensed when the motors are tested. Be careful to avoid scalding.

Procedure The procedure for testing the motors is as follows:

Step	Action	Display/result
1.	Enter access level 3 and appropriate password.	
2.	Enter fast step number #4312: 	
3.	Press the arrow key to go to the first field: 	
4.	Enter the number of whipper to be tested (1-4).	
5.	Press F1 to start test: 	

LCD Test

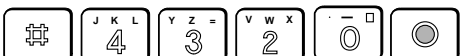

Fast step #4320 LCD Test.

Access level 5.

Introduction This function can be used to show all the matrix points of the LCD.

Interpreting the display All segments must light up.

Procedure The procedure for testing the display is as follows;

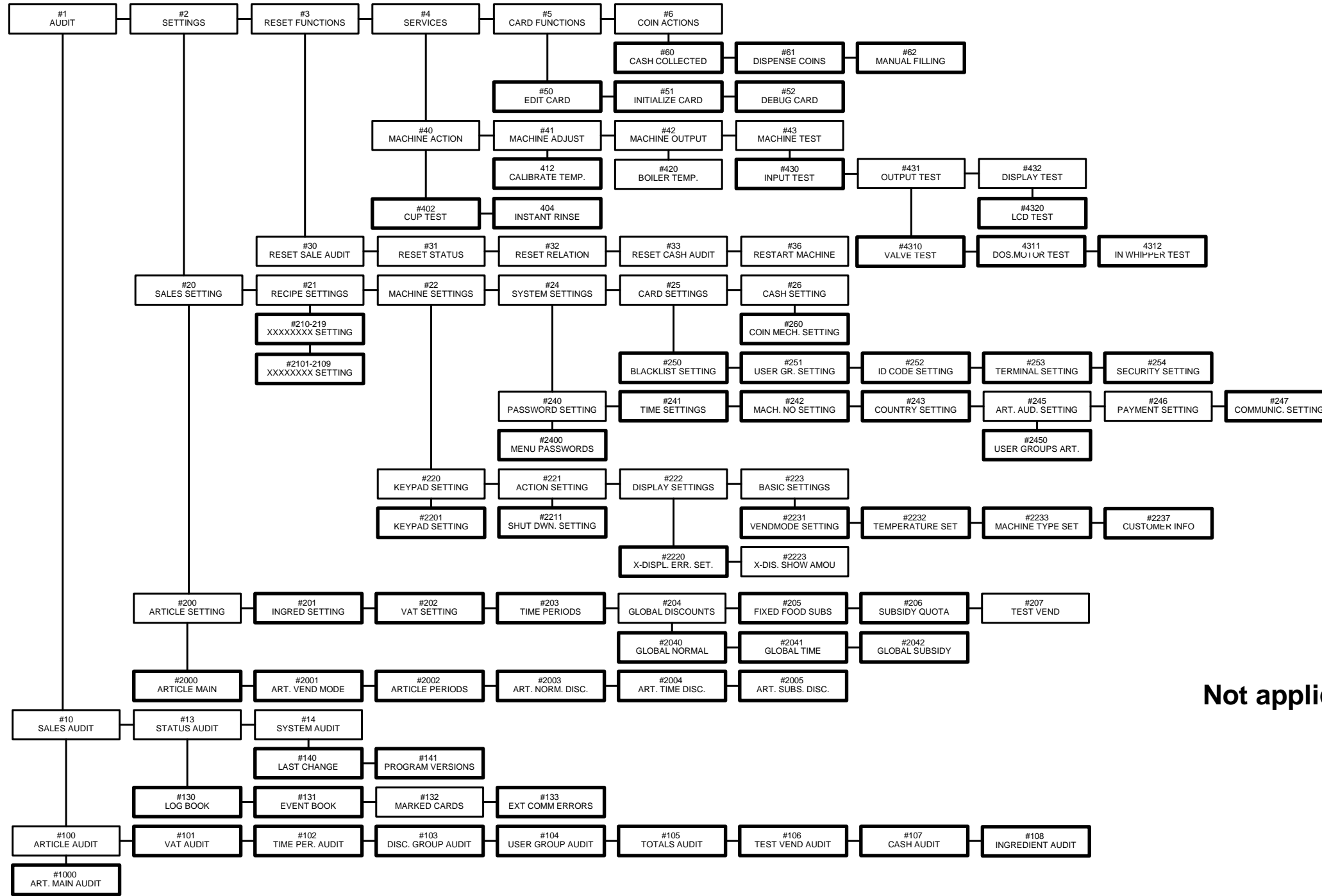
Step	Action	Display/result
1.	Enter access level 5 and corresponding password.	
2.	Enter fast step number #4320: 	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">LCD TEST</div>
3.	Press the arrow key to see test the different matrix points of the LDC: 	

View of the Menu System

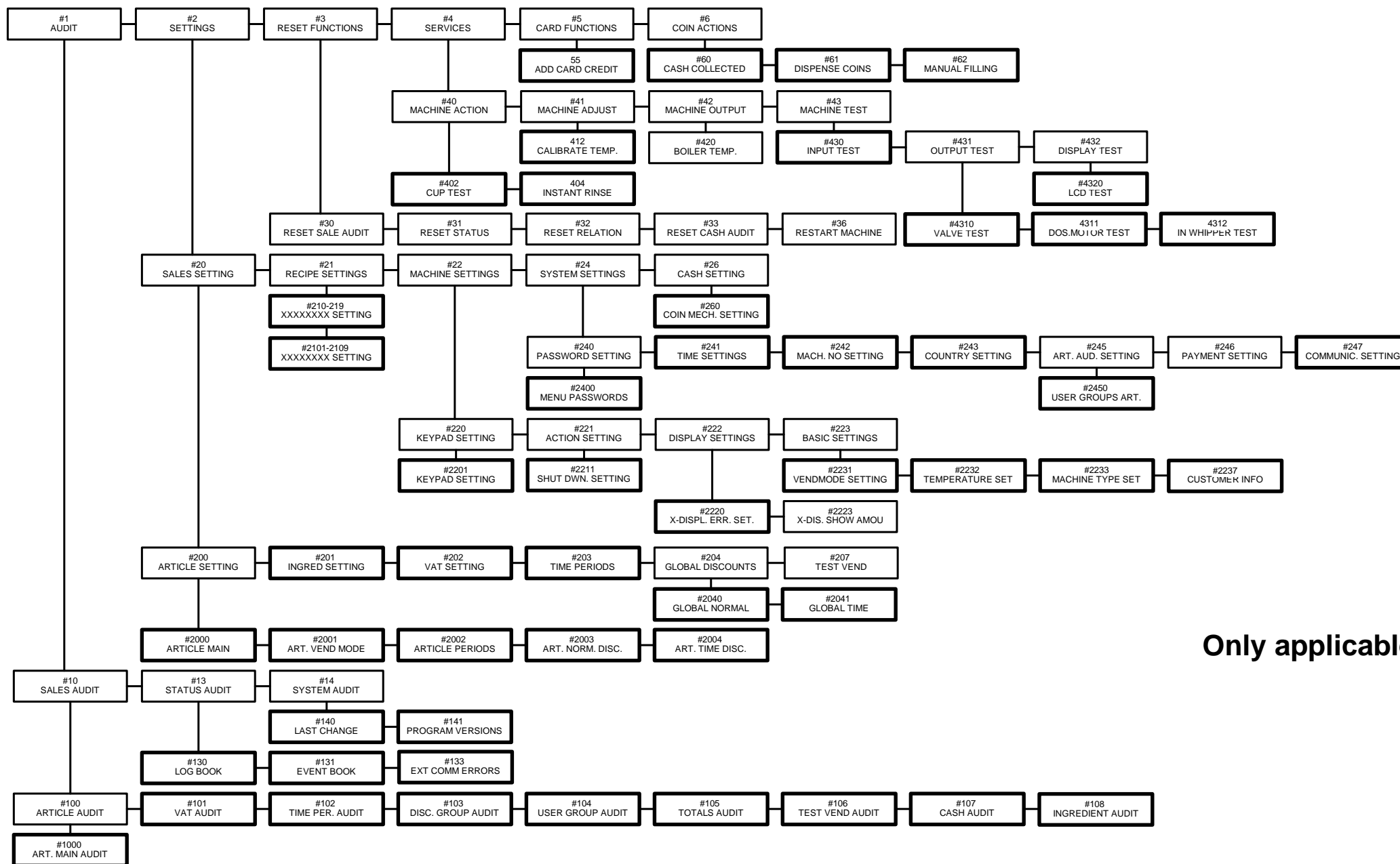
Overview

In this chapter you will find a View of the menu system.

WITTENBORG



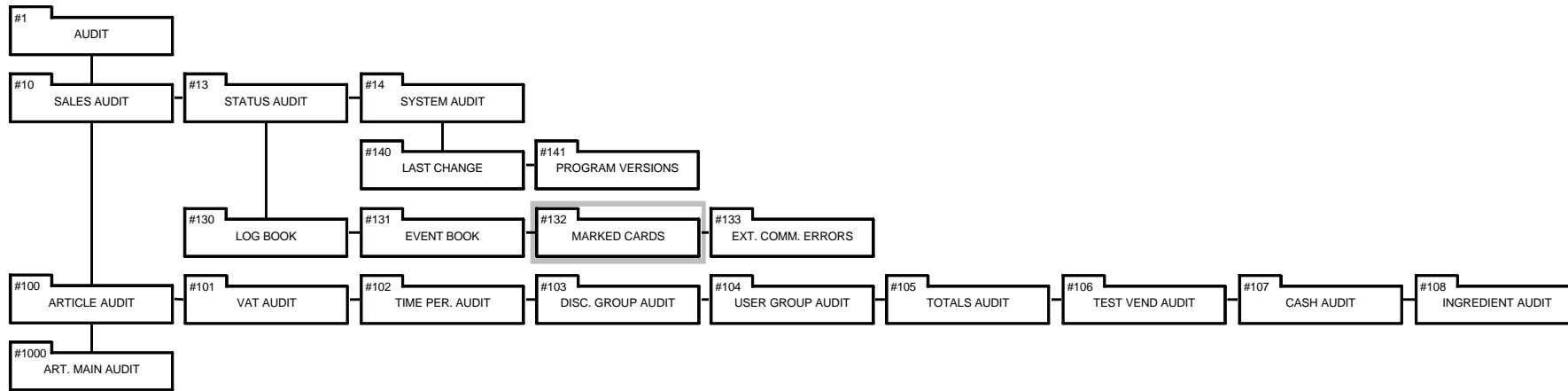
Not applicable to MDB / ICP



Only applicable to MDB / ICP

27-3-98

5500



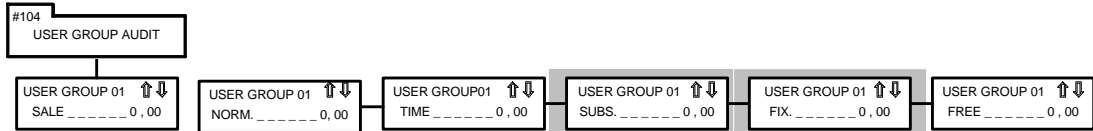
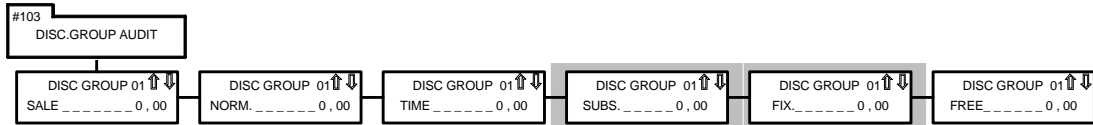
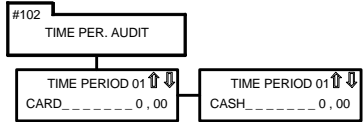
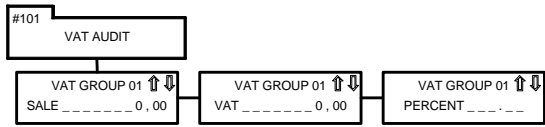
Not applicable to MDB / ICP

27-3-98

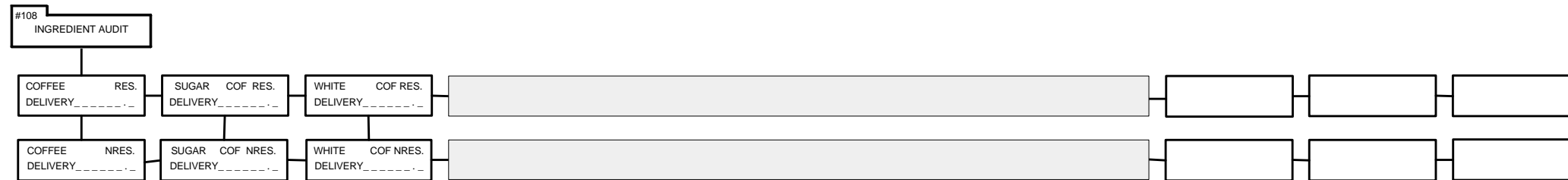
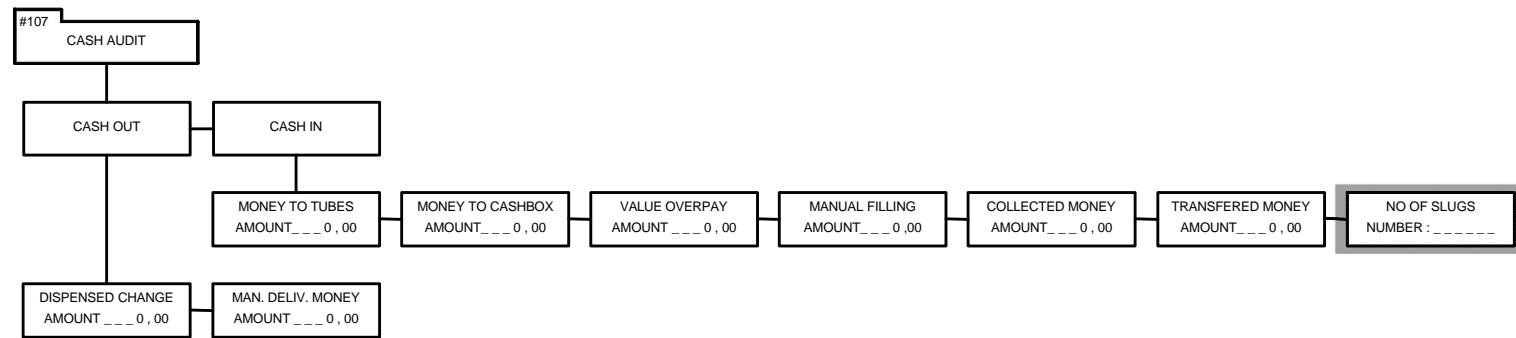
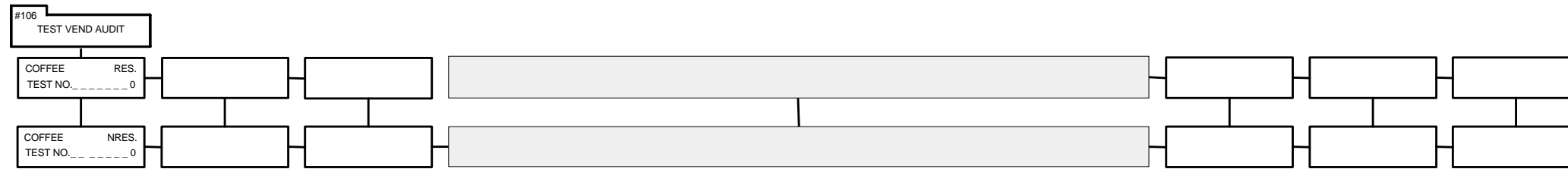
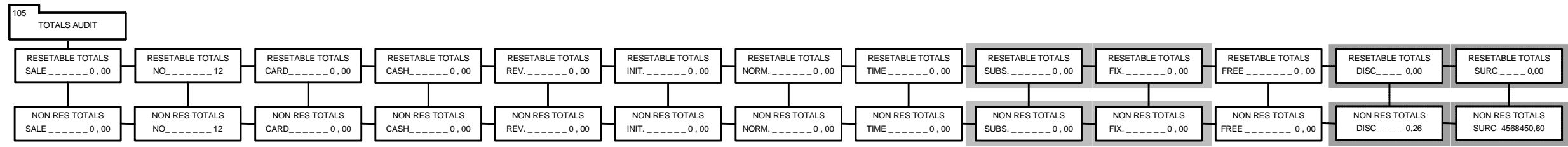
5500



Not applicable to MDB / ICP



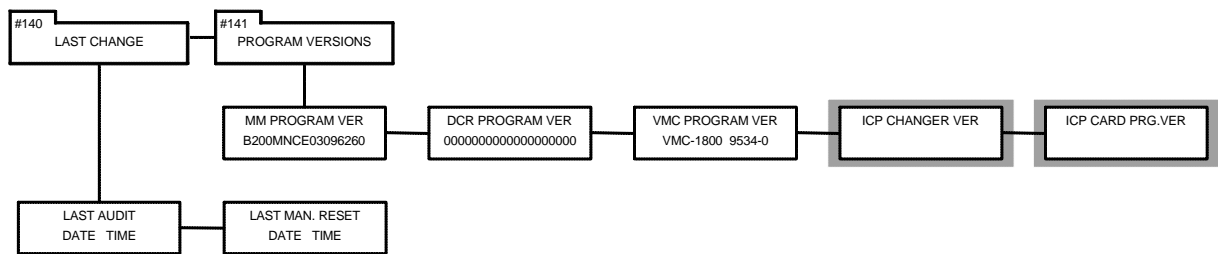
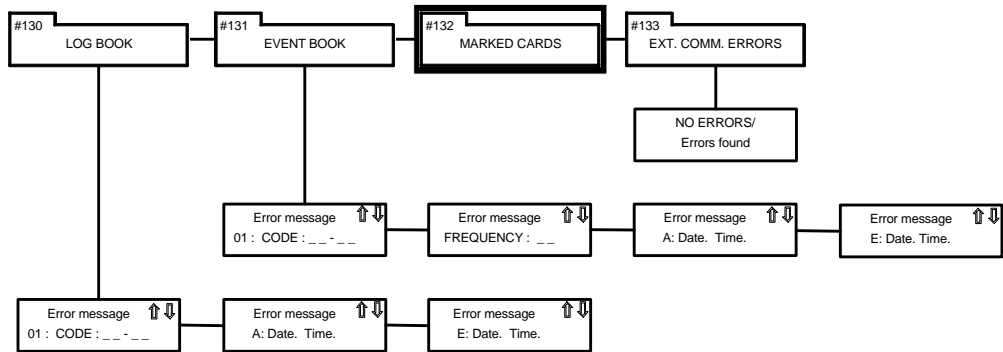
Not applicable to MDB / ICP



Not applicable to MDB / ICP

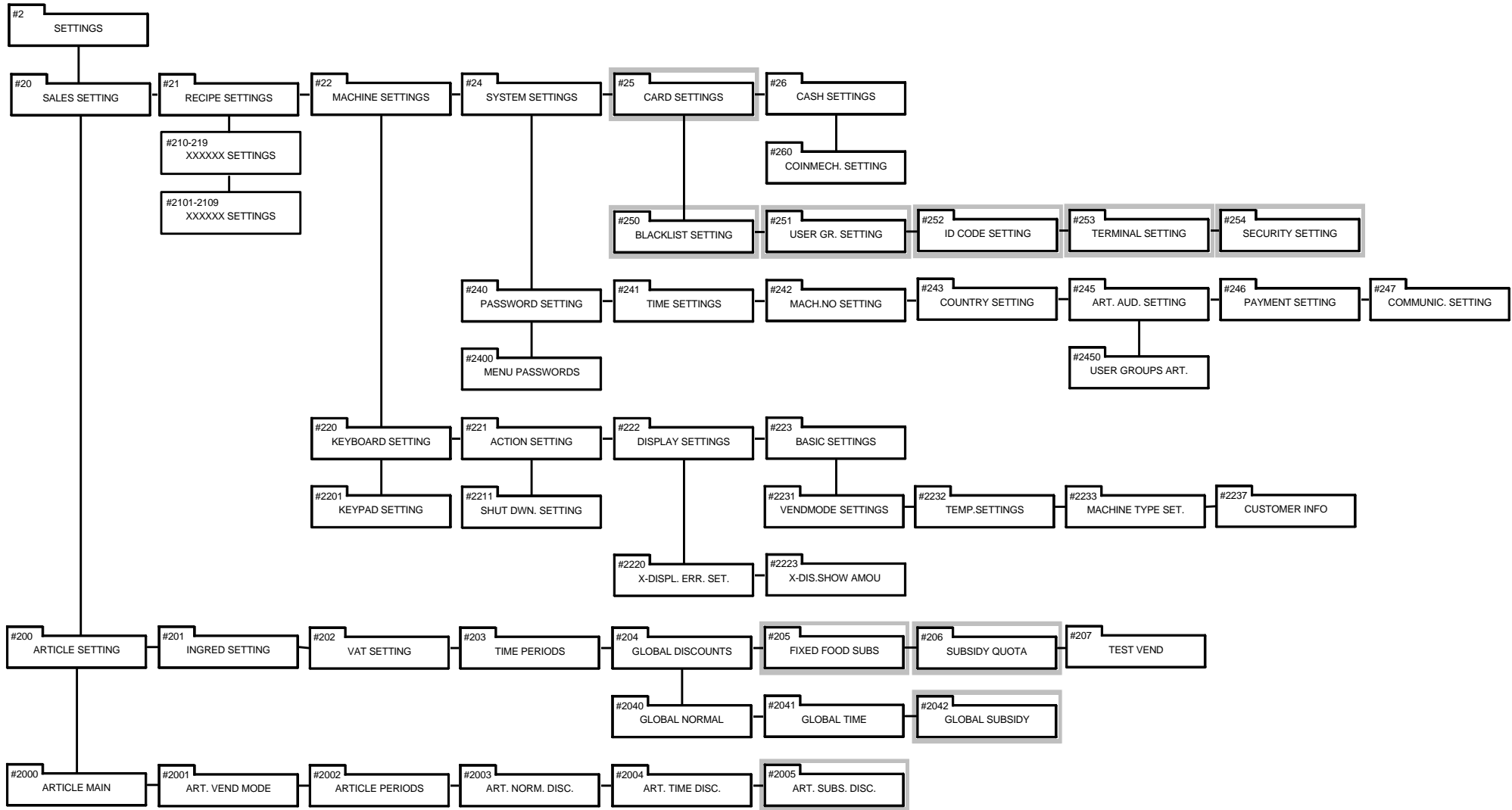
Only applicable to MDB / ICP

27-03-98
5500

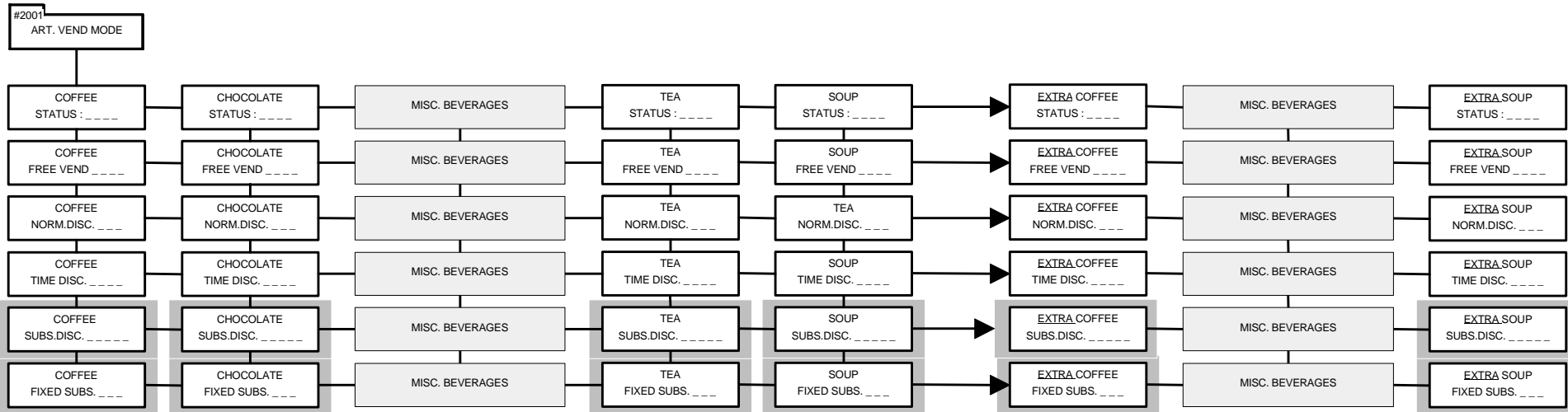
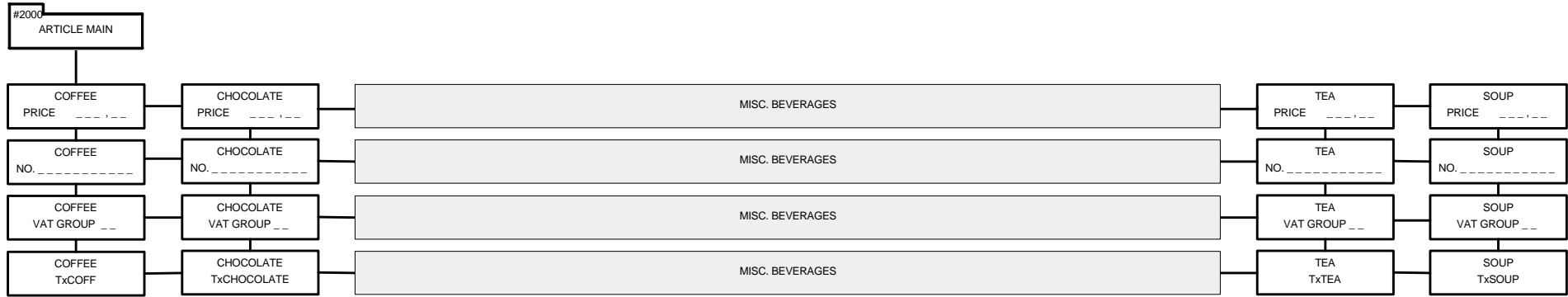


Not applicable to MDB / ICP

Only applicable to MDB / ICP

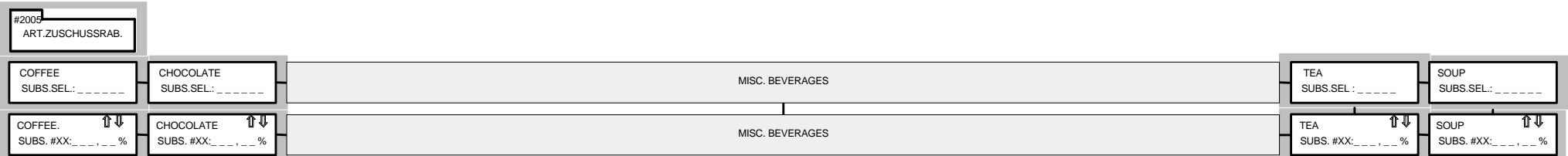
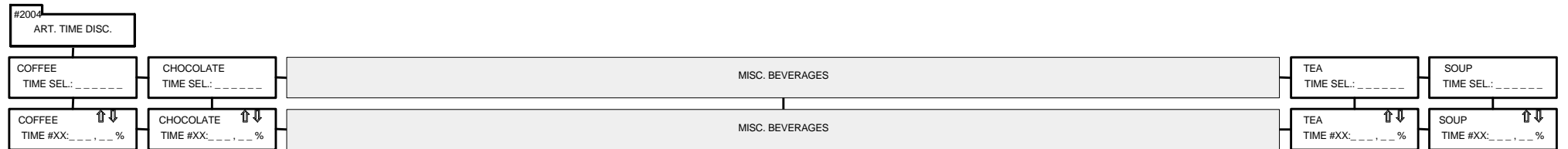
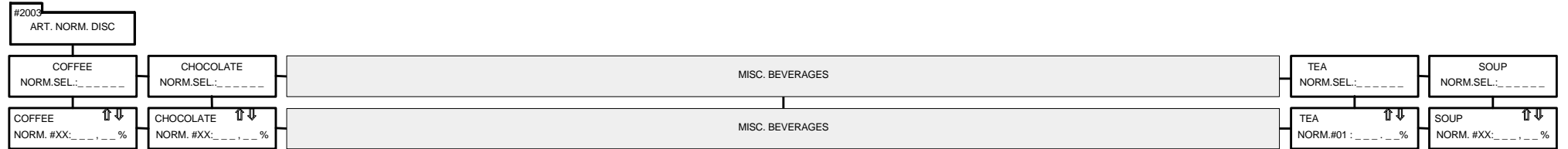
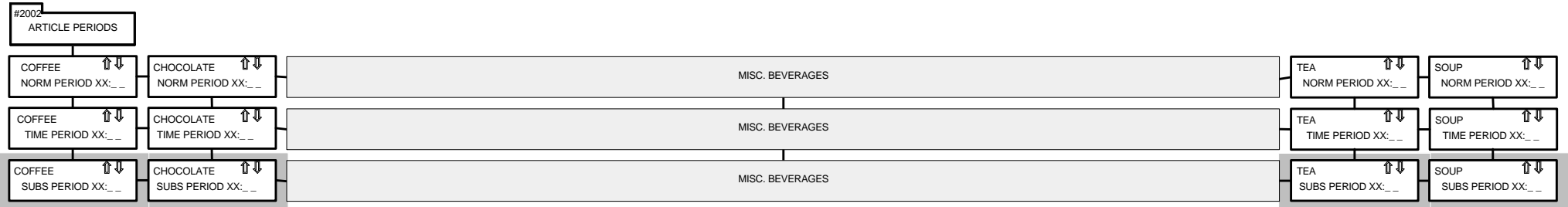


27-3-98
5500



Not applicable to MDB / ICP

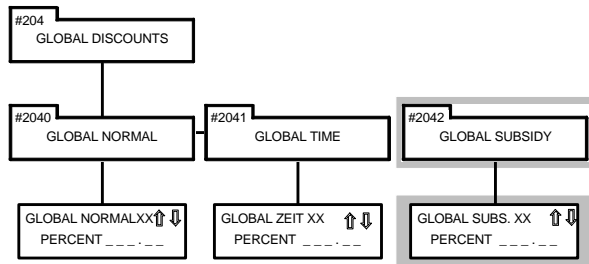
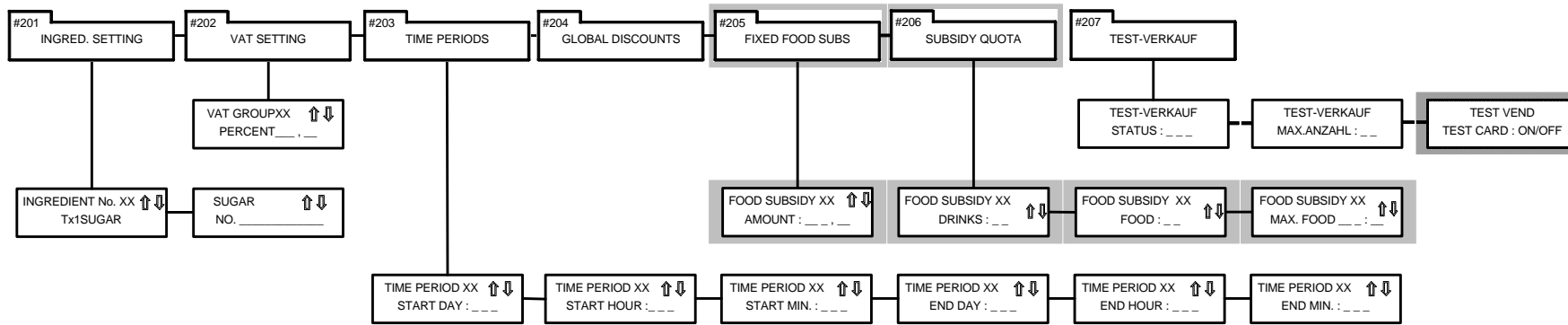
27-03-98
5500



Not applicable to MDB / ICP

27-03-98

5500

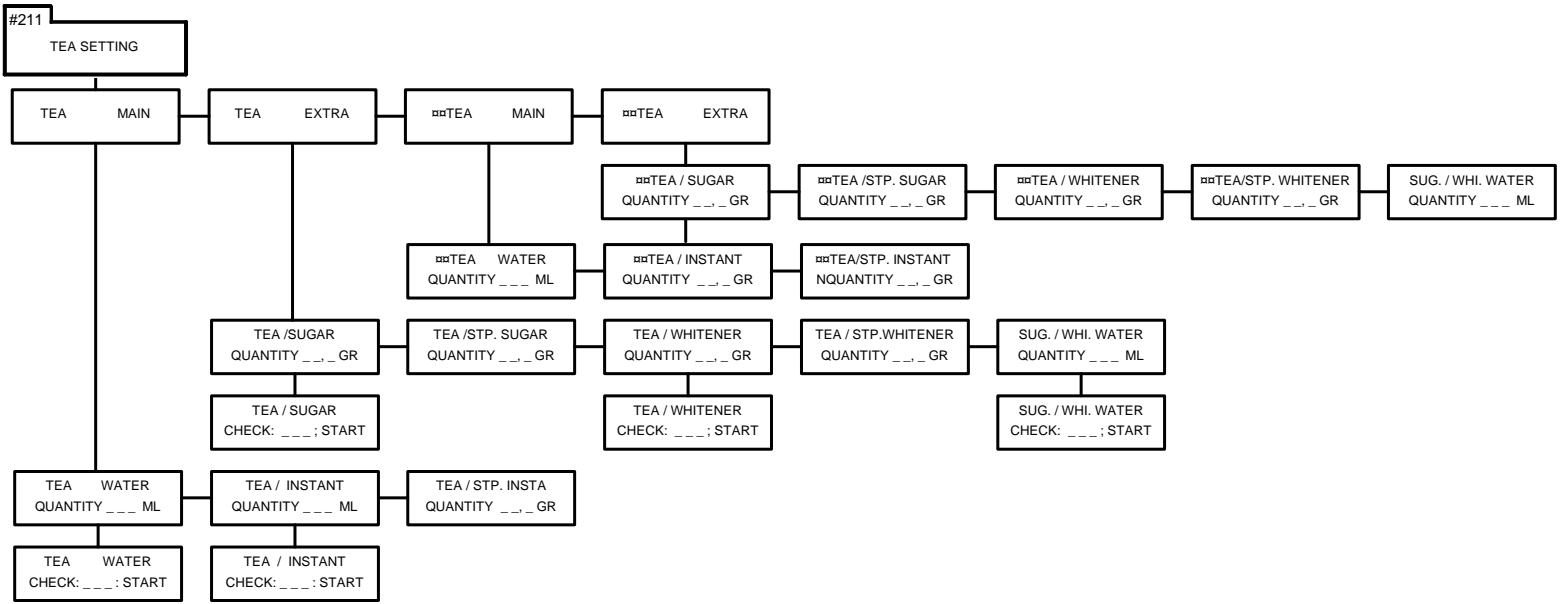
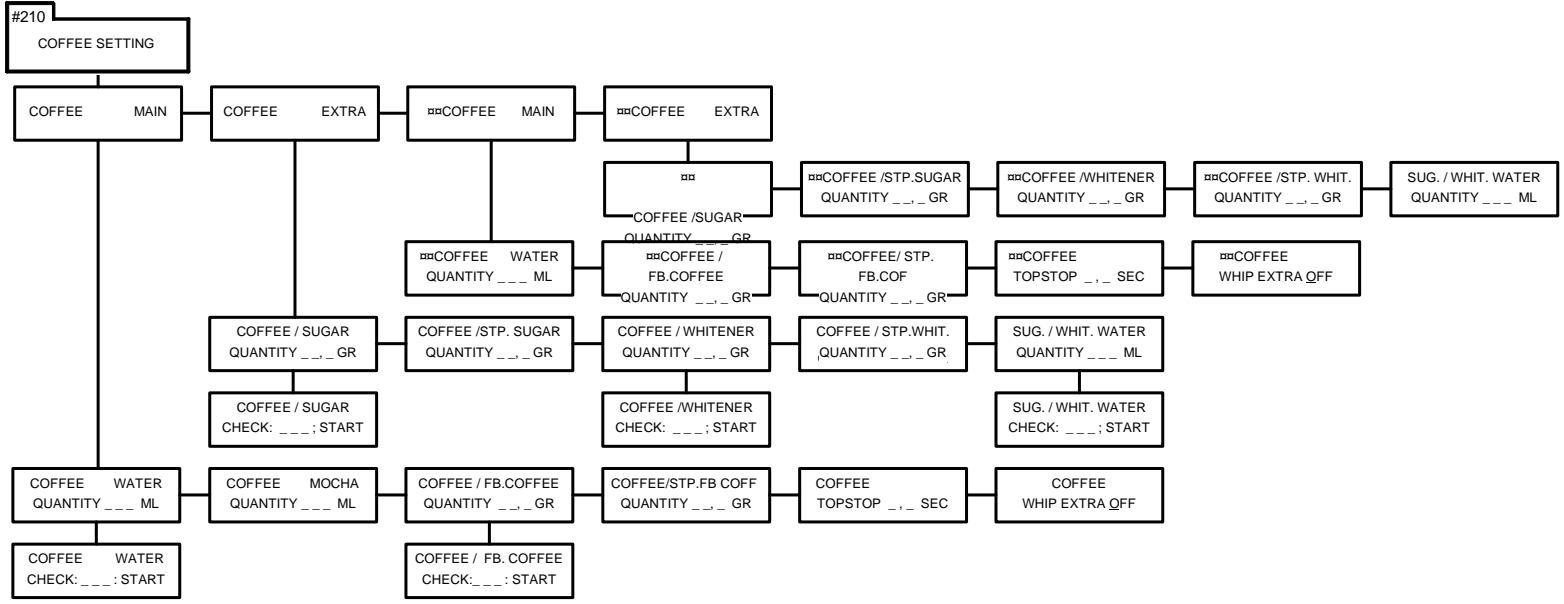


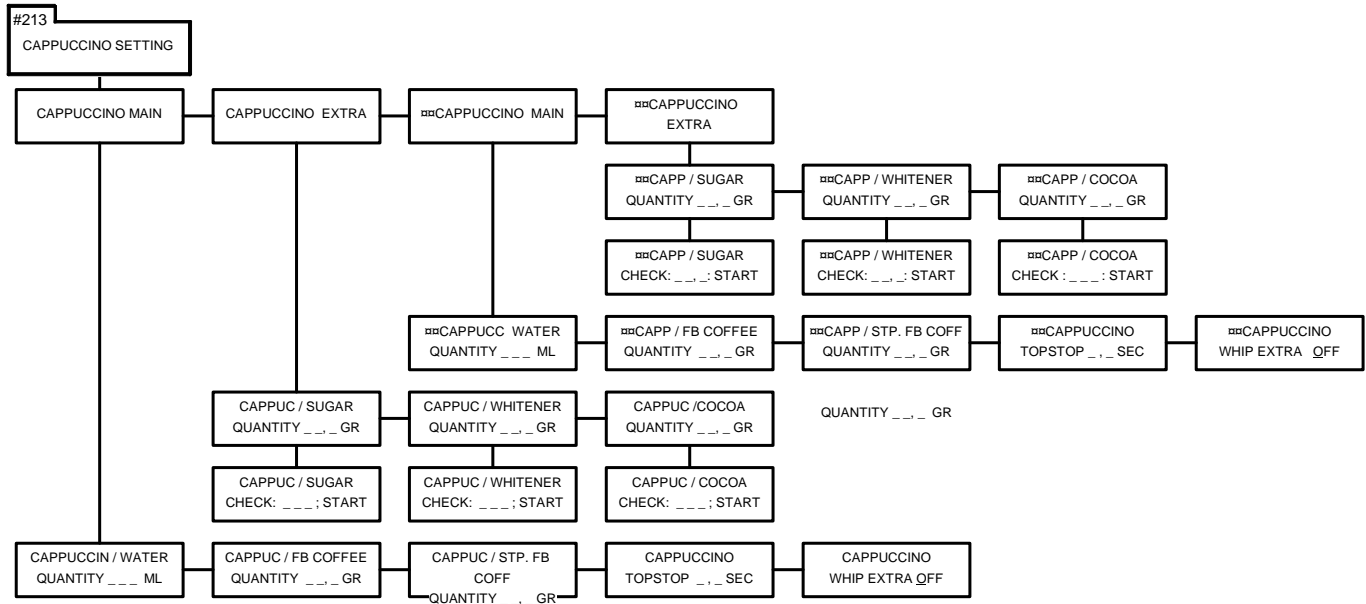
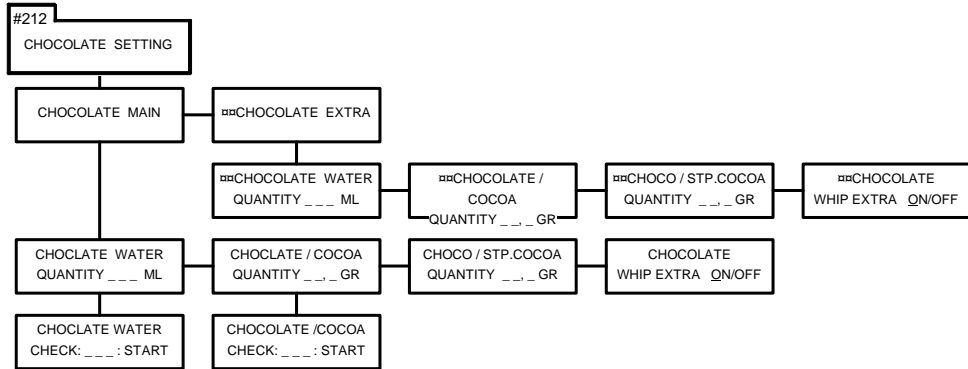
Not applicable to MDB / ICP

Only applicable to MDB / ICP

27-03-98

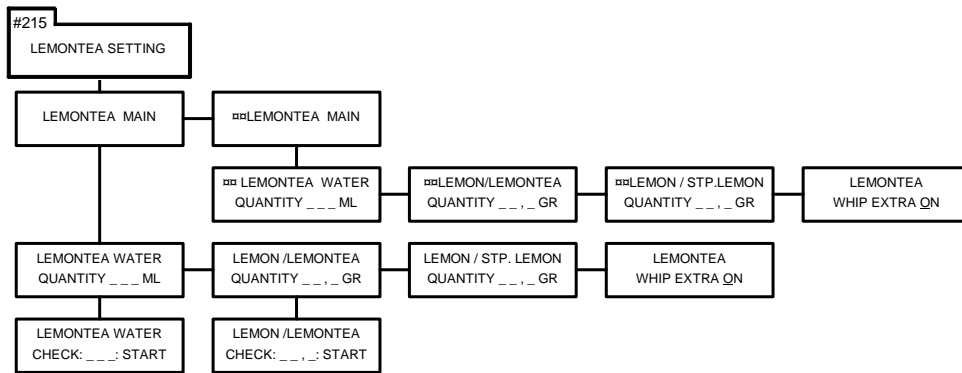
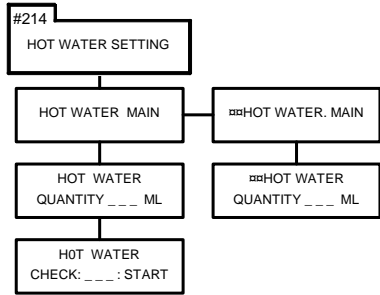
5500

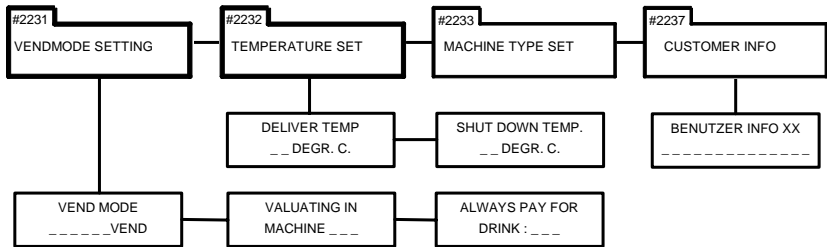
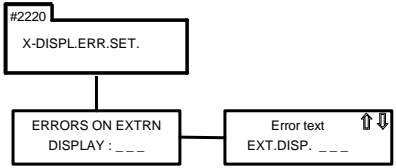
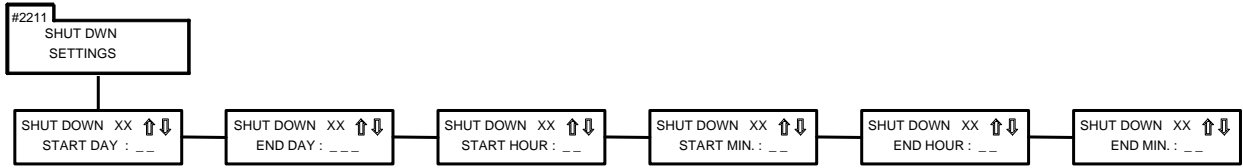
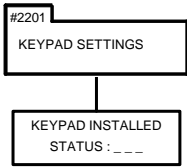


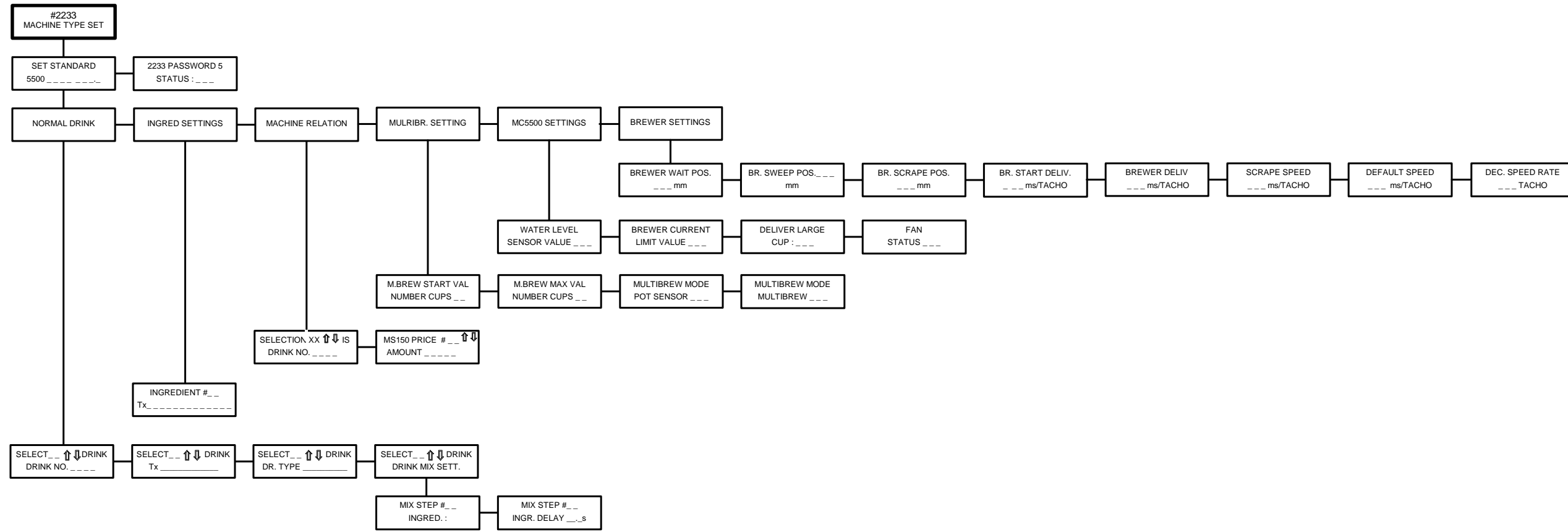


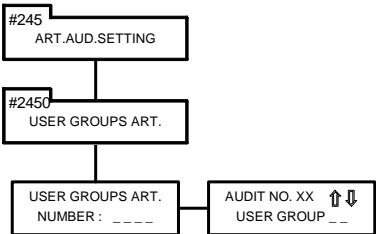
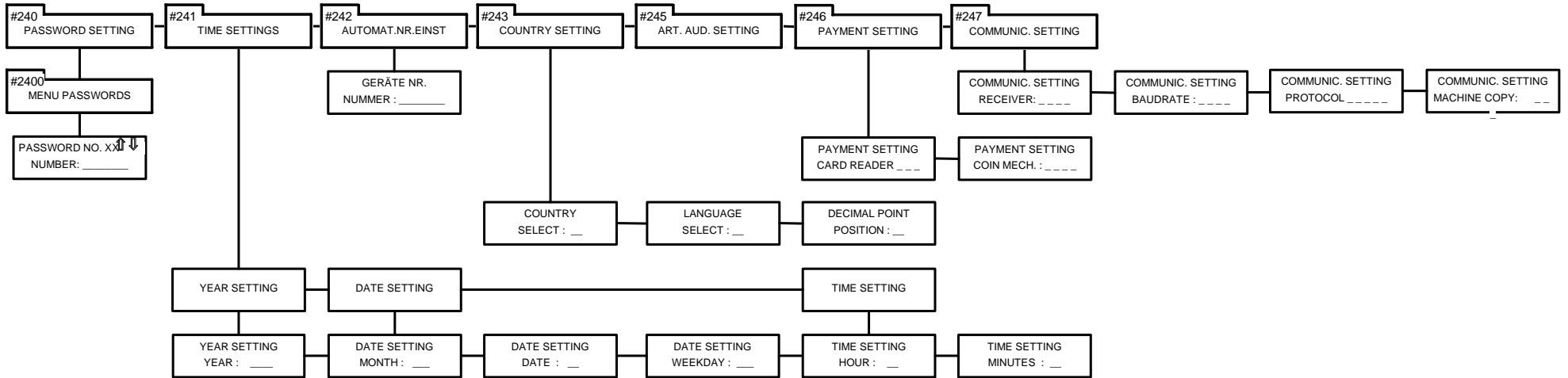
27-03-98

5500

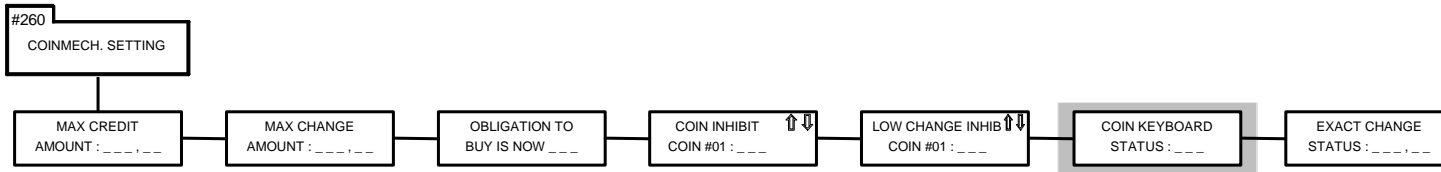
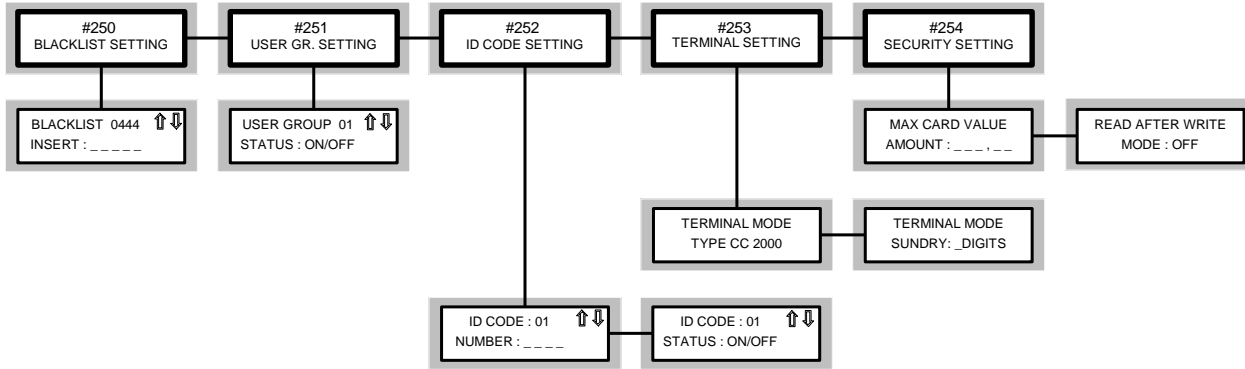




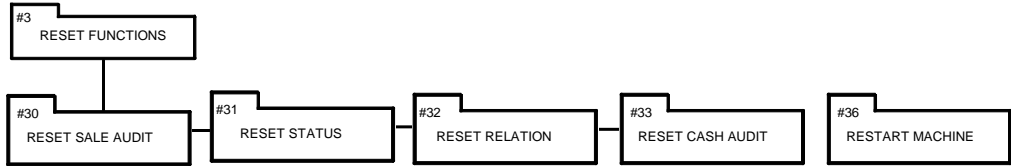




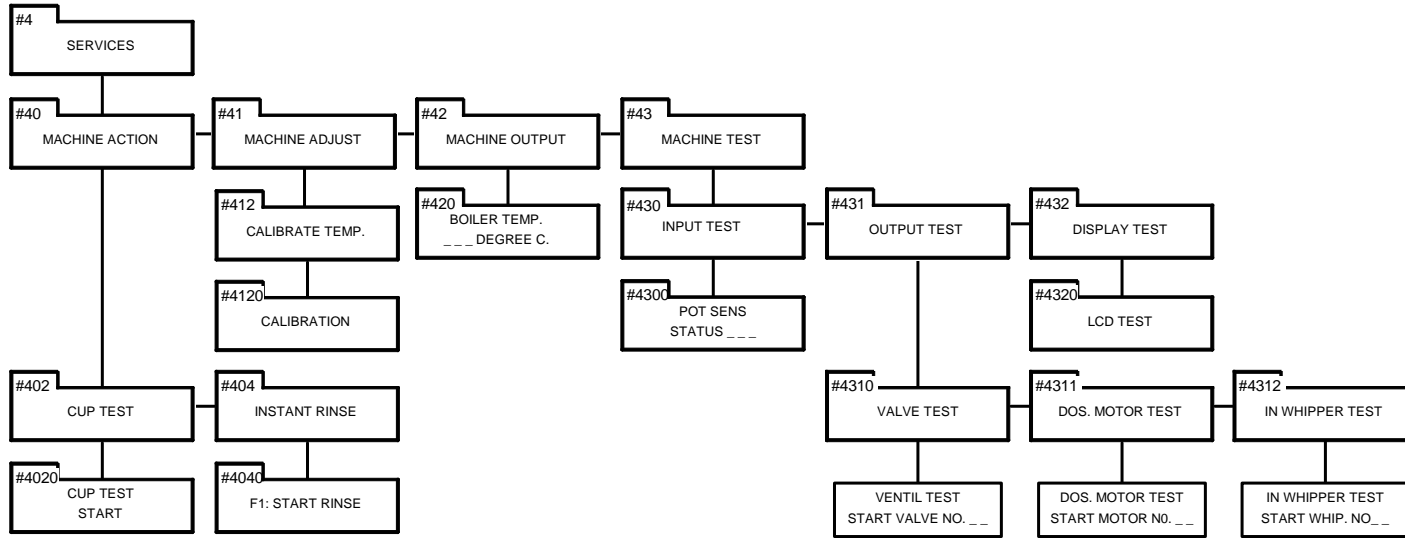
27-3-98
5500

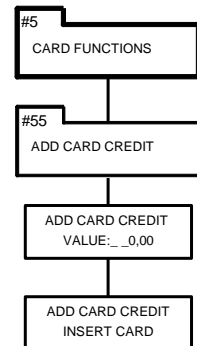
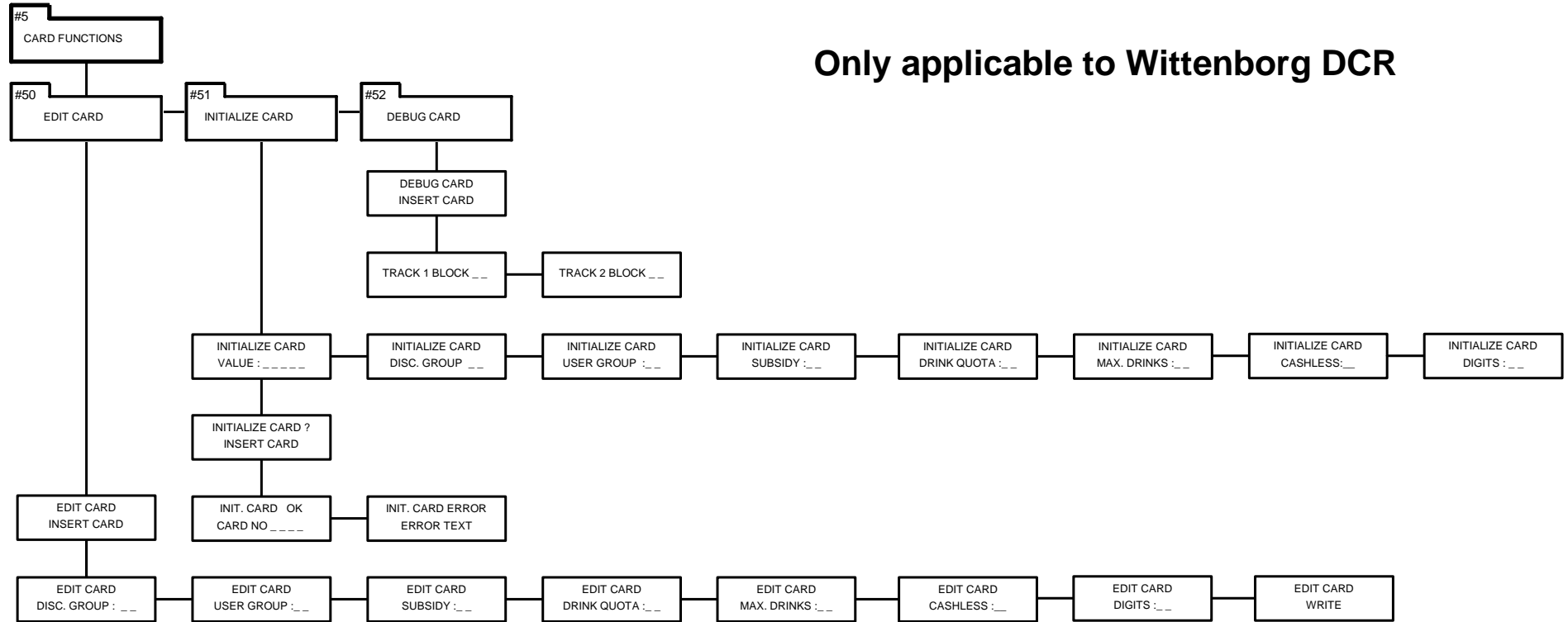


Not applicable to MDB / ICP

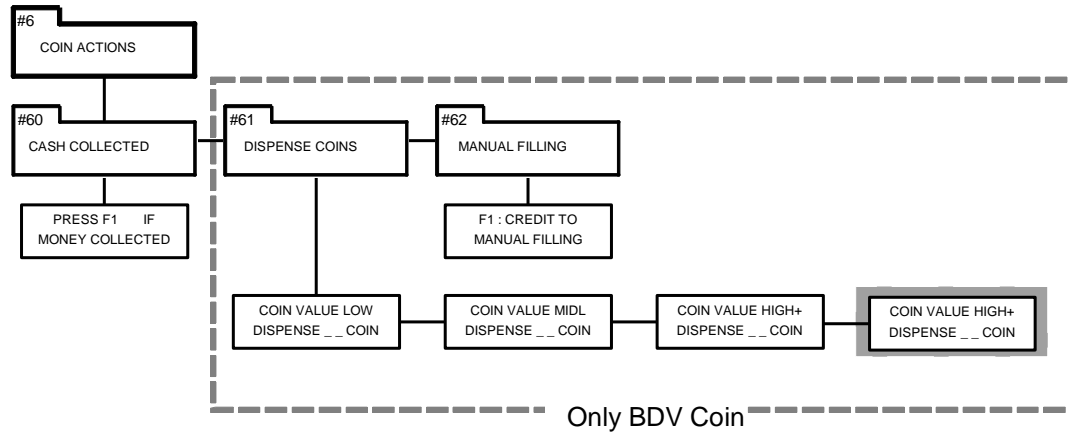


23-2-98
5500





27-03-98
5500



Only applicable to MDB / ICP



Spare Parts List 5500

WITTENBORG



Wiring Diagrams

WITTENBORG



“Release Notes” and “Service Messages”

WITTENBORG

TECHNICAL INFORMATION

TYPE NO FB 50,55,5100, 5500	NAME Freshbrewer	T.I.-NO FB all 01/ 00
SERIES week 11	DIAGRAM	ISSUED BY T.I. Department
SUBJECT Screws Brewer Cylinder		T.I.-GROUP Development
		T.I.-CATEGORY

COMPONENTS CONCERNED

35023901 Brewer cylinder, ass.

omitted: **09170516 Screws 19 x 16**

new: **36006300 Ejot-PT-screw (1) (Fig.1)**

MODIFICATION

- The screws 09170516 will be replaced by the screws 36006300 (see Fig.1).

REASON

- Product improvement

CONTACT PERSON

- Technical questions:
Nils Stöwahse

Spare Part Ordering:
Tanja Lange

ÄA 4612

DATE : _____	PRODUCED BY : _____	DATE : _____	CHECKED BY : _____
--------------	---------------------	--------------	--------------------



TECHNICAL INFORMATION

TYPE NO FB 50,55,5100, 5500	NAME Freshbrewer	T.I.-NO FB all 01/ 00
SERIES week 11	DIAGRAM	ISSUED BY T.I. Department
SUBJECT Screws Brewer Cylinder		T.I.-GROUP Development
		T.I.-CATEGORY

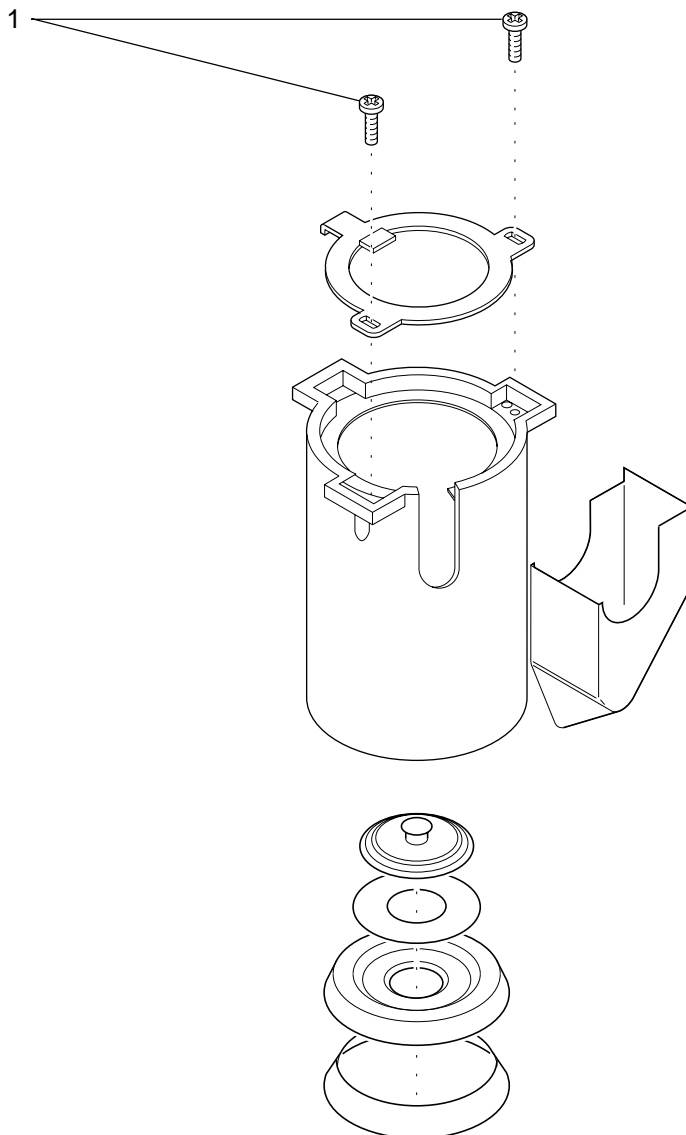


Fig. 1

DATE : _____	PRODUCED BY : _____	DATE : _____	CHECKED BY : _____
--------------	---------------------	--------------	--------------------

WITTENBORG

TECHNICAL INFORMATION

TYPE NO FB 50,55, 5100, 5500	TYPE Freshbrewer	T.I.-NO FB all 02/00				
SERIAL NUMBERS AFFECTED	from Week 29	ISSUED BY Documentation/ Wittenborg Reinfeld				
SUBJECT Actuator	ISSUED FOR (X): <table border="1"> <tr> <td>Action</td> <td></td> </tr> <tr> <td>Information</td> <td>X</td> </tr> </table>		Action		Information	X
Action						
Information	X					
<p>COMPONENTS CONCERNED</p> <p>39615502 Actuator ass.</p> <p>omitted: A-0026 Cheese head screw M4x10mm 09116005 Washer 8x4,3x0,5</p> <p>new: 35217400 Screw M4x10mm (1) (Fig.1)</p> <p>MODIFICATION:</p> <ul style="list-style-type: none"> The screws A-0026 and the washers 09116005 will be replaced by the screws 35217400 (see Fig.1). <p>REASON:</p> <ul style="list-style-type: none"> Product improvement / Assembly will be easier <p>CONTACT PERSON:</p> <ul style="list-style-type: none"> Technical questions: Nils Stöwahse <p>Spare Part Ordering: Tanja Lange</p>						
<p>ÄA 4681</p> <p>1/2</p>						

07.07.2000 DATE :	REIMERS PRODUCED BY :	07.07.2000 DATE :	STÖWAHSE CHECKED BY :
----------------------	--------------------------	----------------------	--------------------------

TECHNICAL INFORMATION

TYPE NO FB 50,55, 5100, 5500	TYPE Freshbrewer	T.I.-NO FB all 02/00				
SERIAL NUMBERS AFFECTED	from Week 29	ISSUED BY Documentation/ Wittenborg Reinfeld				
SUBJECT Actuator	ISSUED FOR (X): <table border="1"> <tr> <td>Action</td> <td></td> </tr> <tr> <td>Information</td> <td>X</td> </tr> </table>		Action		Information	X
Action						
Information	X					

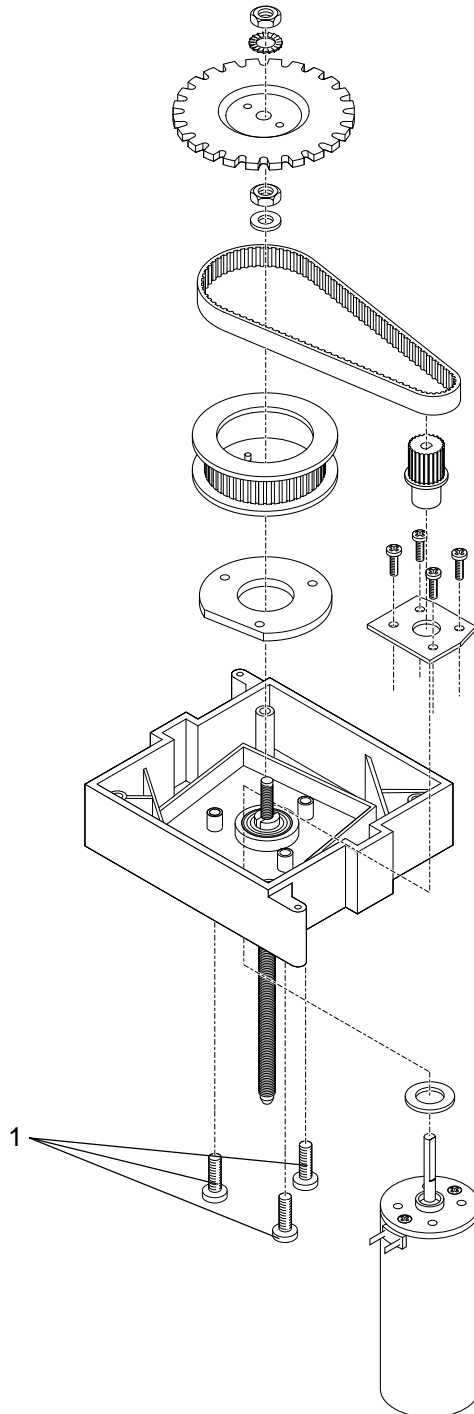


Fig. 1

07.07.2000 DATE :	REIMERS PRODUCED BY :	07.07.2000 DATE :	STÖWAHSE CHECKED BY :
----------------------	--------------------------	----------------------	--------------------------



TECHNICAL INFORMATION

TYPE NO FB 5500	TYPE Freshbrewer	T.I.-NO FB 01/00				
SERIAL NUMBERS AFFECTED 08.06.2000	ISSUED BY Documentation/ Wittenborg Odense					
SUBJECT New Manuals	ISSUED FOR (X): <table border="1"> <tr> <td>Action</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Information</td> <td><input checked="" type="checkbox"/></td> </tr> </table>		Action	<input type="checkbox"/>	Information	<input checked="" type="checkbox"/>
Action	<input type="checkbox"/>					
Information	<input checked="" type="checkbox"/>					

MODIFICATION:

- From the weeks mentioned below "Document" type the following manuals are available:

REASON:

- Standardization or updates of Manuals.

Machine Version	Document	Language	Part Number
FB 5500	Quick Reference Guide (available from January - 2000)	GB	75506600
FB 5500	Operator Guide (available from January - 2000)	GB	75507200
FB 5500	Operator Manual (incl. Installation Guide) (available from April - 2000)	GB	75400500
FB 5500	Service Manual (incl. Spare Parts List) (available from March - 2000)	GB	75401800
FB 5500	Spare Parts List (available from May - 2000)	GB	75402000
FB 5500	Kurzanleitung (available from January - 2000)	D	75506700
FB 5500	Bediener-Handbuch (available from January - 2000)	D	75507300
FB 5500	Betriebs-Handbuch (available from April - 2000)	D	75401000

08.06.00 DATE :	PRODUCED BY :	08.06.00 DATE :	CHECKED BY :
--------------------	---------------	--------------------	--------------



TECHNICAL INFORMATION

TYPE NO	TYPE	T.I.-NO
FB 5500	Freshbrewer	FB... 01/00
Machine Version	Document	Language Part Number
FB 5500	Service-Handbuch (inkl. Ersatzteilliste) (available from March - 2000)	D 75401700
FB 5500	Ersatzteilliste (available from May - 2000)	D 75402100
FB 5500	Fiches pratiques (available from January - 2000)	F 75506900
FB 5500	Guide de l'opérateur (available from January - 2000)	F 75507400
FB 5500	Manuel de l'opérateur (incl. guide d'installation) (available from April - 2000)	F 75402800
FB 5500	Kortfattet vejledning (available from January - 2000)	DK 75507000
FB 5500	Betjeningsguide (expexted to be available from mid June - 2000)	DK 75507600
FB 5500	Betjeningsvejledning (inkl. installationsvejledning) (available from June - 2000)	DK 75401600
FB 5500	Reservedelsliste (available from May - 2000)	DK 75402200
CONTACT PERSON:		
• Grete Jensen		



TECHNICAL INFORMATION

TYPE NO FB 5500/Cafitesse 3000	TYPE Freshbrew / Cafitesse	T.I.-NO FB/CAF. ...02/00
SERIAL NUMBERS AFFECTED From Machine No 486820	ISSUED BY Documentation/ Wittenborg Odense	
SUBJECT New ingredient motor	ISSUED FOR (X): Action <input type="checkbox"/> Information <input checked="" type="checkbox"/>	

COMPONENT CONCERNED

41512400 AC Gear Motor

MODIFICATION

- The number of revolutions has been changed from 200 rpm into 175 rpm on the a.m. gear motor. Simultaneously the make of the motor has been changed into a "Mellor" motor.

REASON

- The new motor offers lower power consumption, lower noise and ensures a better mixing of certain products types, as the speed of the motor is lowered, resulting in a better control of the solubility of the ingredients.

REPLACEABILITY

- The motor is directly replaceable.

CONTACT PERSON

- Bent Erik Truelsegaard

23.06.00 DATE : _____	PRODUCED BY : _____	23.06.00 DATE : _____	CHECKED BY : _____
--------------------------	---------------------	--------------------------	--------------------



TECHNICAL INFORMATION

TYPE NO Gallery 300	TYPE Freshbrewer	T.I.-NO FB 01/00				
SERIAL NUMBERS AFFECTED 08.06.2000	ISSUED BY Documentation/ Wittenborg Odense					
SUBJECT New Manuals	ISSUED FOR (X): <table border="1"> <tr> <td>Action</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Information</td> <td><input checked="" type="checkbox"/></td> </tr> </table>		Action	<input type="checkbox"/>	Information	<input checked="" type="checkbox"/>
Action	<input type="checkbox"/>					
Information	<input checked="" type="checkbox"/>					

MODIFICATION:

- From the weeks mentioned below "Document" type the following manuals are available:

REASON:

- Standardization or updates of Manuals.

Machine Version	Document	Language	Part Number
Gallery 300	Quick Reference Guide (available from January - 2000)	GB	75409900
Gallery 300	Operator Guide (available from January - 2000)	GB	75409700
Gallery 300	Operator Manual (incl. Installation Guide) (available from April - 2000)	GB	75400700
Gallery 300	Service Manual (incl. Spare Parts List) (available from March - 2000)	GB	75402600
Gallery 300	Spare Parts List (available from May - 2000)	GB	75402300
Gallery 300	Kurzanleitung (available from January - 2000)	D	75409000
Gallery 300	Bediener-Handbuch (available from January - 2000)	D	75409600
Gallery 300	Betriebs-Handbuch (available from April - 2000)	D	75401400

08.06.00 DATE :	PRODUCED BY :	08.06.00 DATE :	CHECKED BY :
--------------------	---------------	--------------------	--------------



TECHNICAL INFORMATION

TYPE NO	TYPE	T.I.-NO
Gallery 300	Freshbrewer	FB... 01/00
Machine Version	Document	Language Part Number
Gallery 300	Service-Handbuch (inkl. Ersatzteilliste) (available from March - 2000)	D 75402900
Gallery 300	Ersatzteilliste (available from May - 2000)	D 75402400
Gallery 300	Fiches pratiques (available from January - 2000)	F 75408900
Gallery 300	Guide de l'opérateur (available from January - 2000)	F 75409500
Gallery 300	Manuel de l'opérateur (incl. guide d'installation) (available from April - 2000)	F 75403100
Gallery300	Kortfattet vejledning (available from January - 2000)	DK 75507800
Gallery 300	Betjeningsguide (expexted to be available from mid June - 2000)	DK 75507700
Gallery 300	Betjeningsvejledning (inkl. installationsvejledning) (available from June - 2000)	DK 75403300
Gallery 300	Reservedelsliste (available from May - 2000)	DK 75402500
Gallery 300	Beknopte instructies (available from January - 2000)	NL 75408800
Gallery 300	Verzorgingsinstructies (available from January - 2000)	NL 75409400



TECHNICAL INFORMATION

TYPE NO Gallery 300	TYPE Freshbrewer	T.I.-NO FB... 01/00
-------------------------------	----------------------------	-------------------------------

Machine Version	Document	Language	Part Number
Gallery 300	Handleiding (available from April - 2000)	NL	75401200
Gallery 300	Service Handboek (inkl. Spare Parts Lijst) (available from March - 2000)	NL	75401900

CONTACT PERSON:

- Grete Jensen