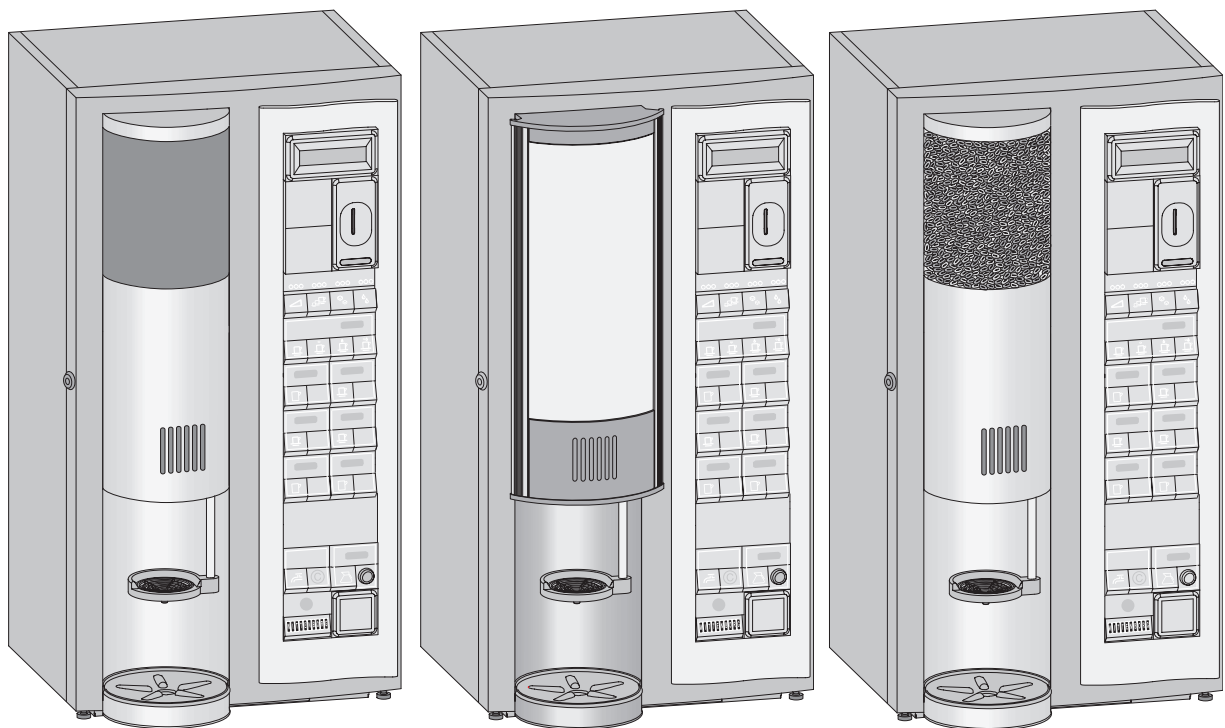


WITTENBORG

FB 5100

IN 5100

ES 5100



Service Manual



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Published by Wittenborg A/S  
Seebadsgade 1-3  
DK-5000 Odense C

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Part No: 75 40 70 00  
(Published in 2000, week 42)

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## Safety Precautions

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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.

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### 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

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- 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.
-



## RAM circuit

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**Note**

The VMC circuit board of the machine contains a RAM circuit with an internal battery backup. The RAM circuit can explode if not handled correctly. Do not disassemble, short-circuit, expose to water or to flame or temperatures in excess of 100°C. Return discharged RAM circuits to the supplier.

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## Purpose of the Manual

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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.

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- 1. Product presentation**
- 2. Installation guide**
- 3. Technical data**
- 4. Door**
- 5. Dispensing area**
- 6. Selection module**
- 7. Cabinet**
- 8. Freshbrew/instant water system**
- 9. Freshbrew unit**
- 10. Instant ingredient unit**
- 11. Dosing systems**
- 12. Espresso system**
- 13. Programming - operator settings**
- 14. Programming - service settings**
- 15. View of the menu system**
- 16. Vending machine controllers and electronic box**
- 17. Wiring diagrams**
- 18. Base cabinet and table top**
- 19. Cold drinks unit**
- 20. Spare parts list FB 5100**
- 21. Spare parts list IN 5100**
- 22. Spare parts list ES 5100**
- 23. “Release notes” and “service messages”**

WITTENBORG

**WITTENBORG**

## **Chapter 1**

WITTENBORG



## Product presentation

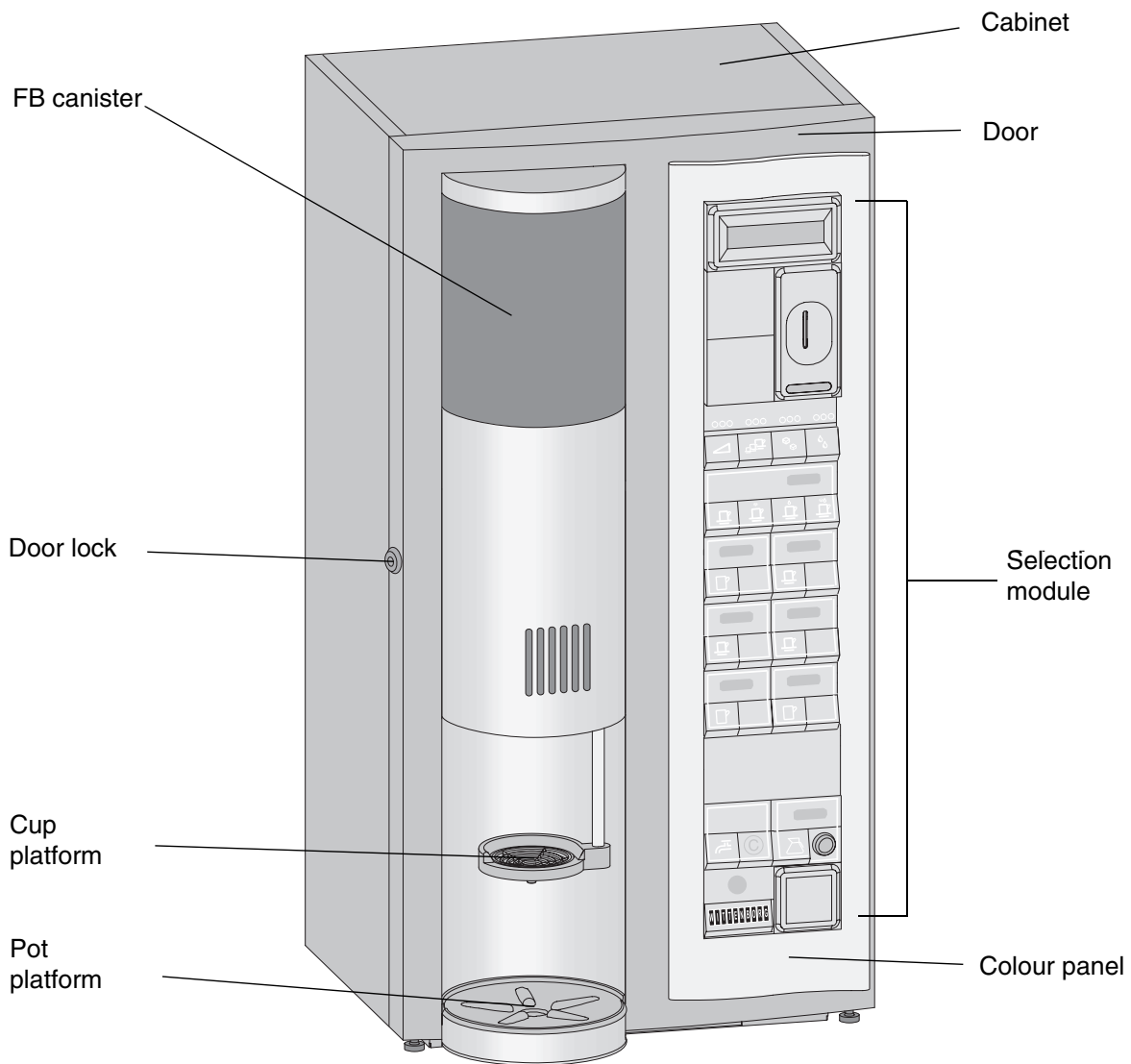
### Overview

- 
- Identifying individual parts
  - Examples of selection modules
  - Inside view of machine
  - Selection module
  - Payment panel
  - Selection panel
  - Multi-brew panel
  - Choices for drink dispensing
  - Data retrieval and/or programming
  - Maintenance and care
  - Opening the machine door
  - Quick key
-

## Identifying individual parts

Machine front

This is the fresh brew version:

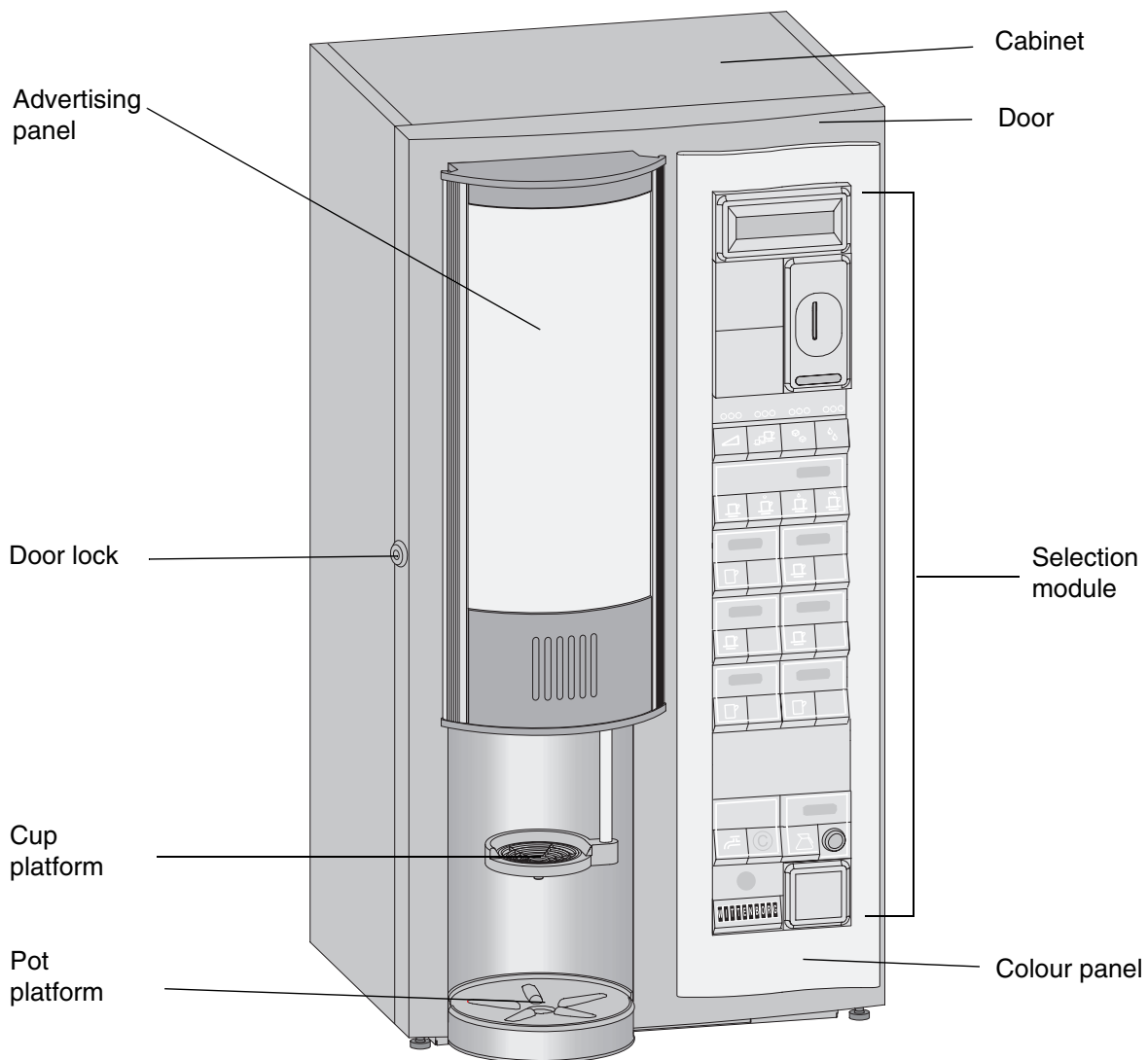




## Identifying individual parts

Machine front

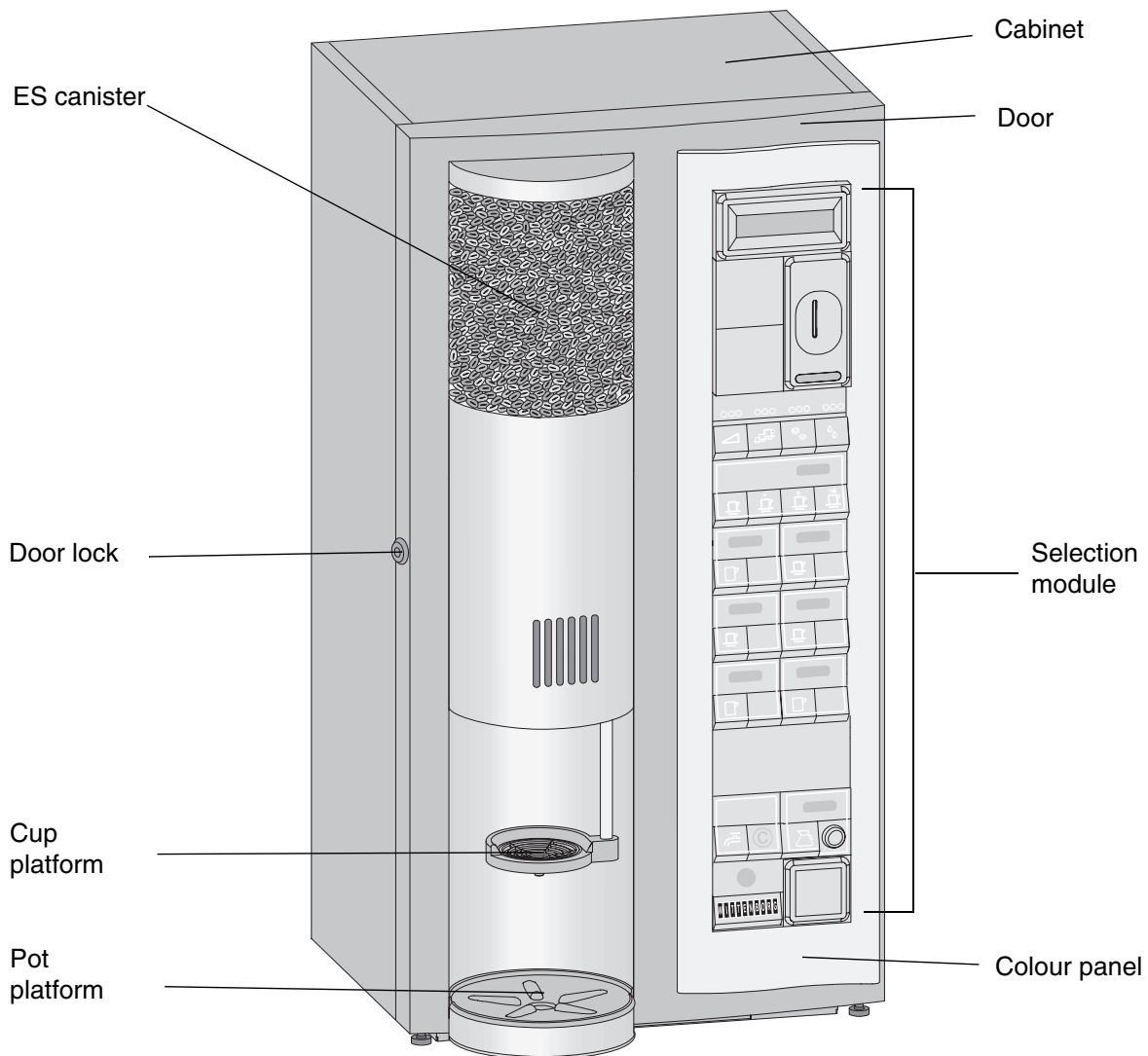
This is the instant version:



## Identifying individual parts

Machine front

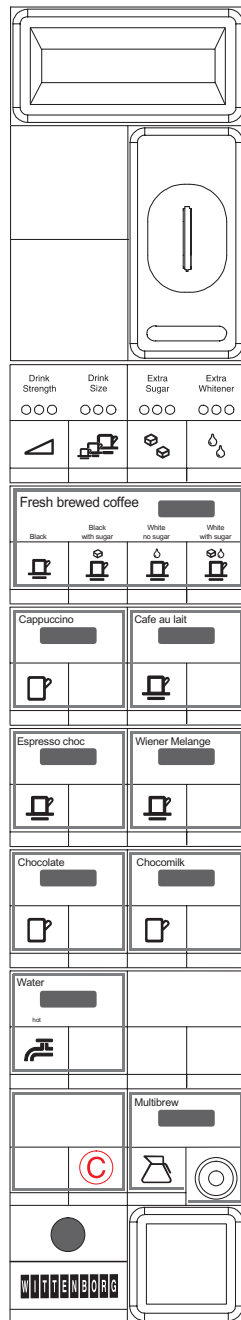
ES:



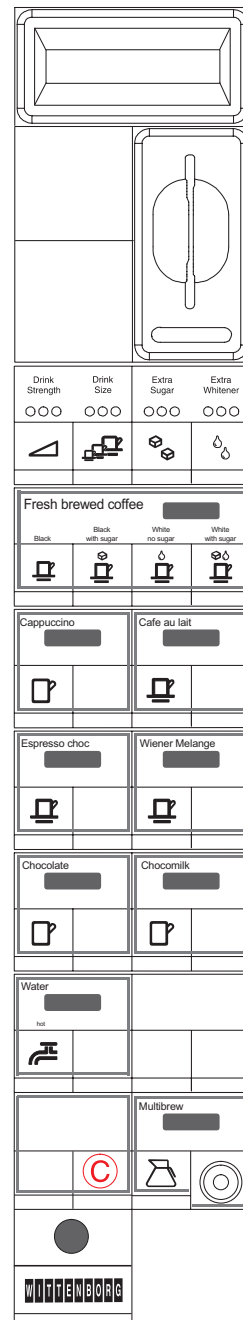
## Examples of selection modules

### Overview

#### Coin



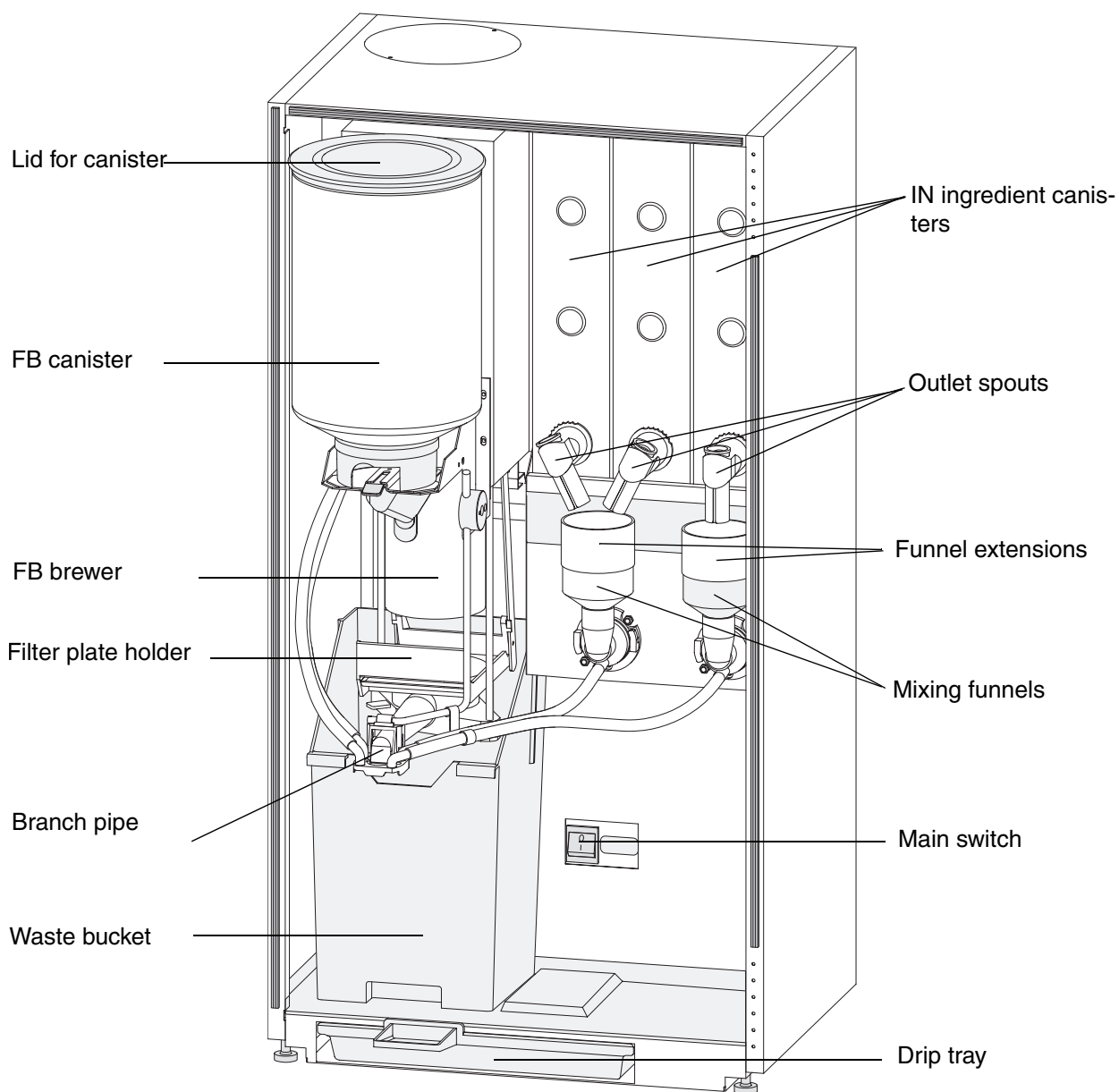
#### Card



## Inside view of machine

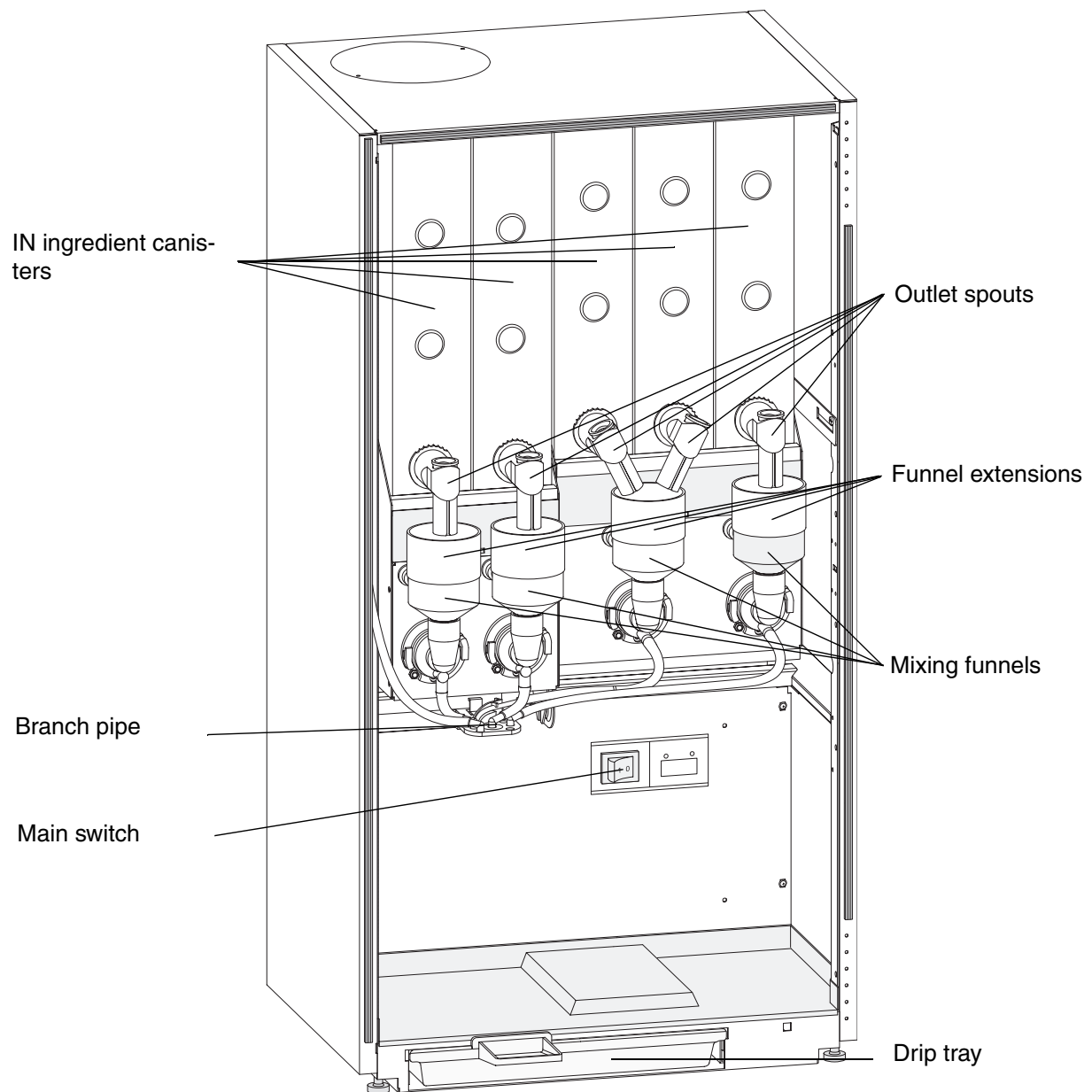
Components of  
the cabinet

FB



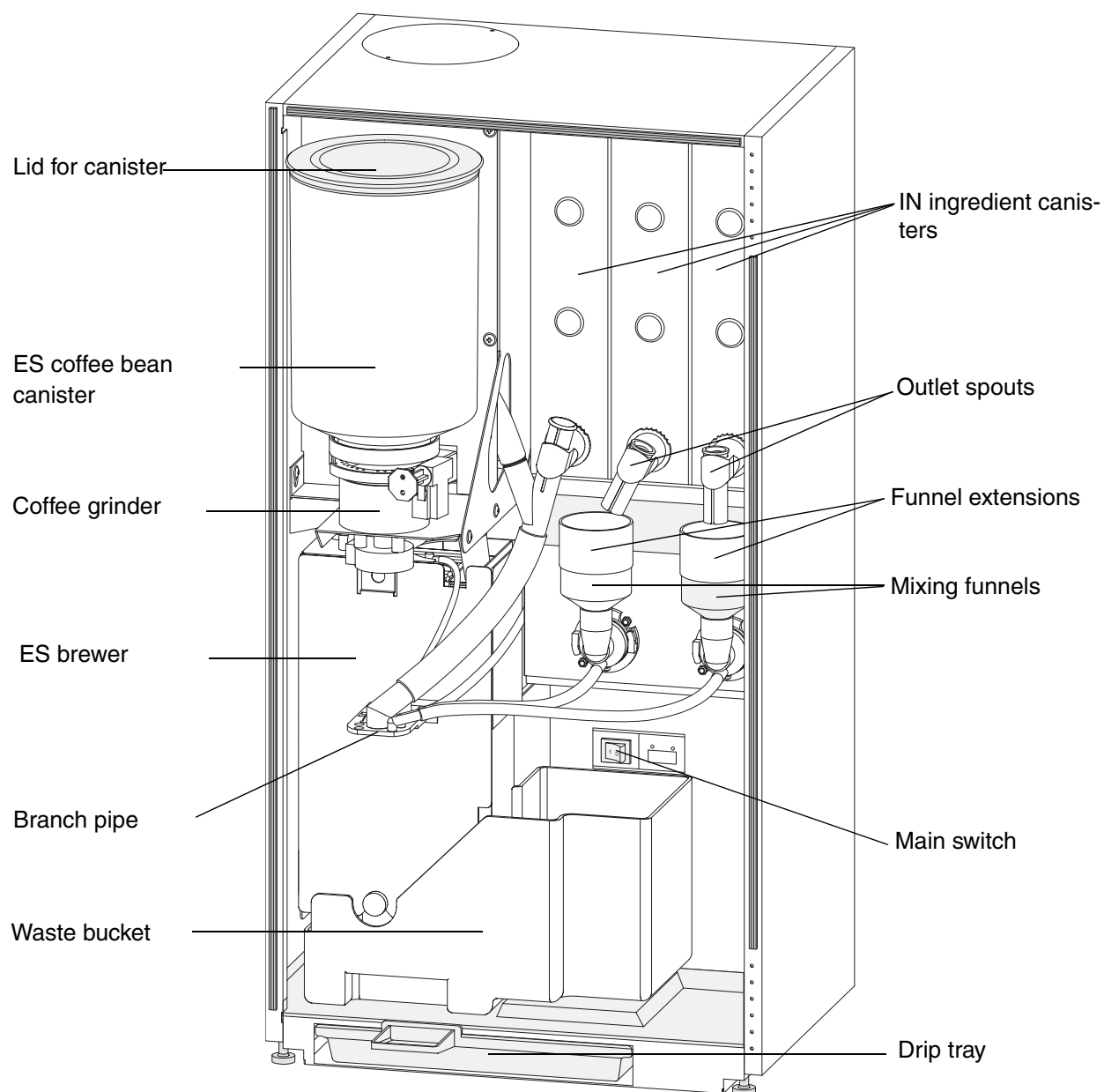
## Components of the cabinet

IN

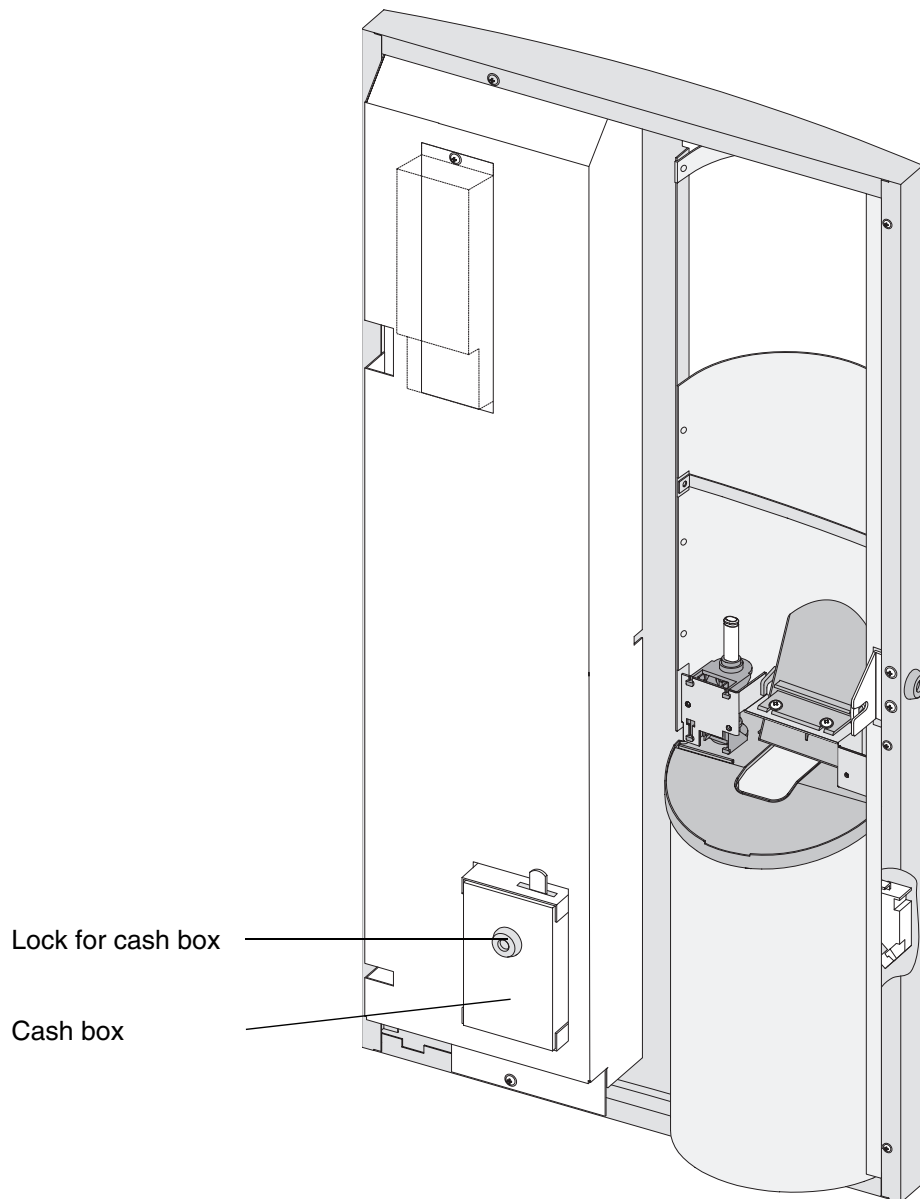


## Components of the cabinet

ES



## Components of the door



## Selection module

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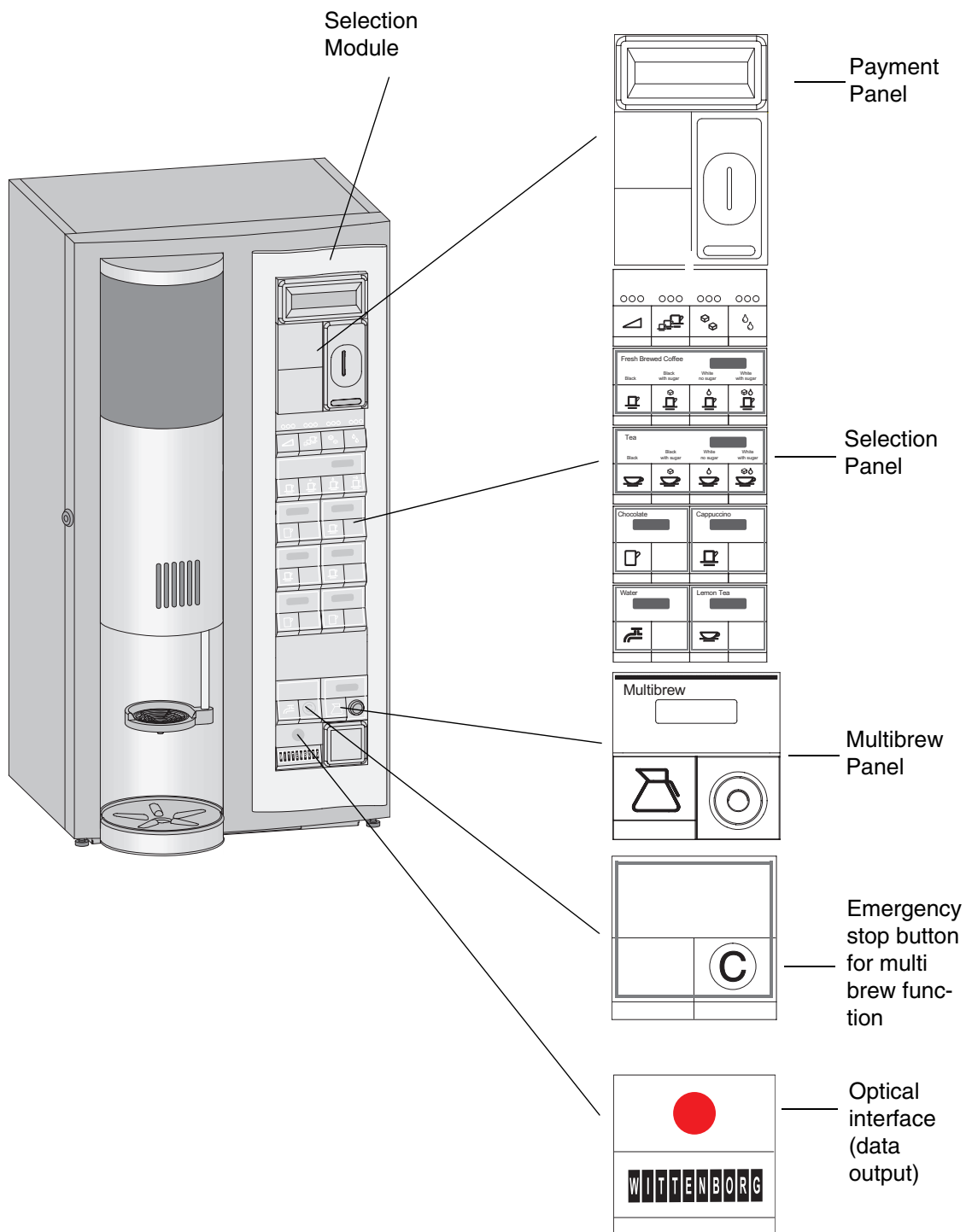
Introduction	The selection module is your means of communication with the vending machine. Through this module, you can communicate your choice of drink and your means of payment.
Description	<p>On the right hand side of the machine front, the selection module is situated. The selection module consists of:</p> <ul style="list-style-type: none"><li>• Payment panel</li><li>• Selection panel</li><li>• Multi-brew panel</li><li>• Emergency stop button for multi brew function</li><li>• Optical interface for data output</li></ul>

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## Illustrations

The illustrations below show the selection module and its components:



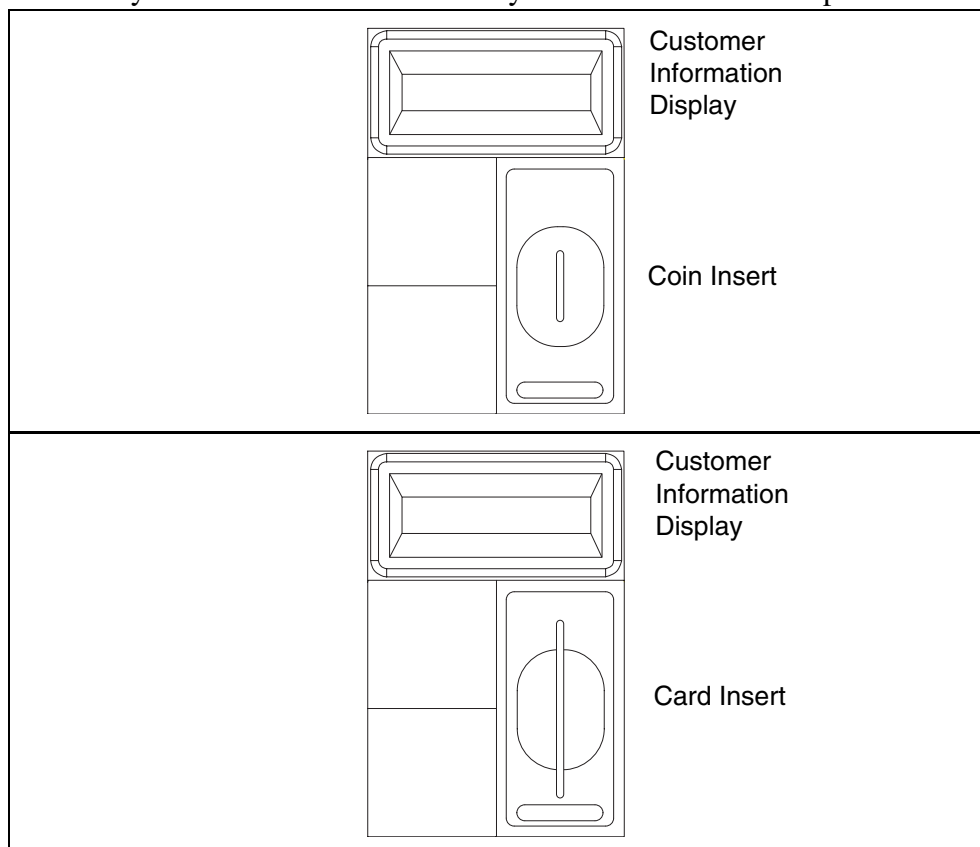
## Payment panel

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Description	<p>The Payment Panel is the part of the Selection Module where you</p> <ul style="list-style-type: none"> <li>• pay in cash,</li> <li>• pay with card,</li> <li>• receive customer information</li> </ul> <p>The Payment Panel is situated at the top in the Selection Module.</p>
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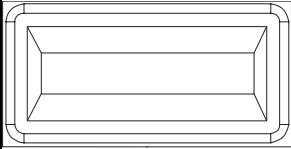
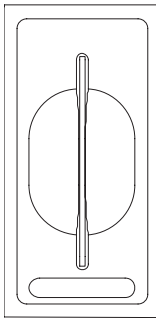
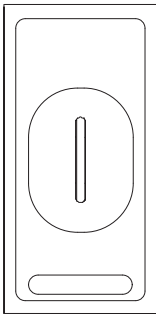
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Below you see illustrations of the Payment Panel and its components:



## Functions

The table below describes the functions of the Payment Panel:

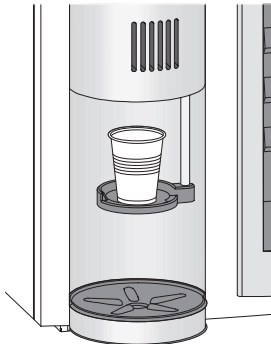
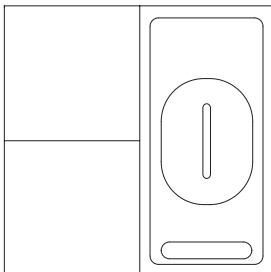
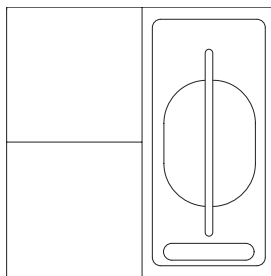
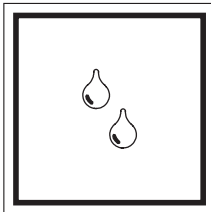
Part	Function
<b>Customer Information Display</b> 	<p>Shows</p> <ul style="list-style-type: none"> <li>• the price of the selected drink, or</li> <li>• the value of your inserted card, or</li> <li>• the amount of money you have inserted in coins</li> </ul> <p>and, shows the customer different predefined information texts.</p>
<b>Card Insert</b> 	<p>The slot into which you insert your card in order to:</p> <ul style="list-style-type: none"> <li>• pay for the selected drink with card</li> </ul>
<b>Coin Insert</b> 	<p>The slot into which you insert coins in order to:</p> <ul style="list-style-type: none"> <li>• to pay for the selected drink in cash</li> </ul>

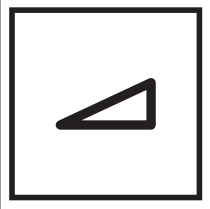

## Selection panel

Introduction	<p>The Selection Panel is where you make your choice among the vending machine beverages presented on the buttons on the Selection Panel.</p> <p>There are two different choice operations offered through the Selection Panel</p> <ul style="list-style-type: none"><li>• Pre-selection</li><li>• Selection</li></ul>
Pre-selection	<p>Pre-selection is an act which results in a modification of a drink. When you press a Pre-selection Button, a drink is not dispensed.</p>
Selection	<p>Selection is an act which results directly in the dispensing of a drink when you press a Selection Button.</p>
Remember	<p>In order to modify a beverage, you must always remember to press a Pre-selection Button before you press a Selection Button!</p>

## Example

If you want a cup of coffee of maximum strength with extra whitener, follow these steps:

Step	Action
1.	Place a cup on the cup platform. 
2.	Insert coins in coin slot:  Coin Slot or card in card slot:  Card Slot
3.	Press the Pre-selection Button for whitener 

Step	Action
4.	Press the Pre-selection Button for strength 
5.	Press the Selection Button for coffee with whitener 
6.	Take away your cup of coffee dispensed.

## Description

The Selection Panel consists of:

- Pre-selection Buttons
- Selection Buttons

The Selection Panel is situated in the middle of the Selection Module.

## Illustration

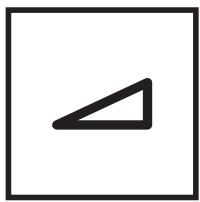









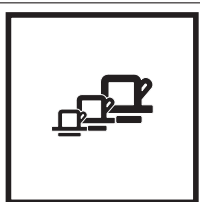









## Illustration of different Selection Panels:

○○○ ○○○ ○○○ ○○○			
Fresh Brewed Coffee			
Black	Black with sugar	White no sugar	White with sugar
Tea			
Black	Black with sugar	White no sugar	White with sugar
Chocolate		Cappuccino	
Water		Lemon Tea	

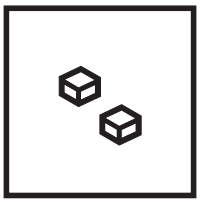









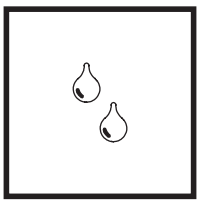









Strength	Sugar	Whitener	
○○○	○○○	○○○	
Coffee			
Black	Black with sugar	White no sugar	White with sugar
Espresso			
Black	Black with sugar	White no sugar	White with sugar
Tea			
Plain	with sugar	White	White with sugar
Coffee Specialities			
Cappuccino	Wiener Melange	Cafe au lait	Choco-cafe
Chocolate		Soup Hot water	
Chocolate	Choco-de-lux		

## Pre-selection buttons

This table describes the functions of the Pre-selection Buttons:

Button	Function								
<p>Strength</p> 	<p>The three small lights (LEDs) above the strength button determine the strength of the drink dispensed. Press the button until the appropriate LED lights up:</p> <table> <tr> <th>LEDs above button</th><th>Function</th></tr> <tr> <td></td><td>minimum strength</td></tr> <tr> <td></td><td>normal strength</td></tr> <tr> <td></td><td>maximum strength</td></tr> </table> <p><b>Note:</b> In stand-by position, the strength is always normal.</p>	LEDs above button	Function		minimum strength		normal strength		maximum strength
LEDs above button	Function								
	minimum strength								
	normal strength								
	maximum strength								
<p>Size</p> 	<p>The three small lights (LEDs) above the size button determine the size of the drink dispensed. Press the button until the appropriate LED lights up:</p> <table> <tr> <th>LEDs above button</th><th>Function</th></tr> <tr> <td></td><td>small size</td></tr> <tr> <td></td><td>normal size</td></tr> <tr> <td></td><td>large size</td></tr> </table> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>If you select the small cup size, you get a small cup of extra strong coffee.</li> <li>In stand-by position, the cup size is always normal.</li> </ul>	LEDs above button	Function		small size		normal size		large size
LEDs above button	Function								
	small size								
	normal size								
	large size								



Button	Function								
<p>Sugar</p> 	<p>The three small lights (LEDs) above the sugar button determine the size of the sugar portion. Press the button until the appropriate LED lights up:</p> <table> <tr> <th>LEDs above button</th><th>Function</th></tr> <tr> <td></td><td>small portion</td></tr> <tr> <td></td><td>normal portion</td></tr> <tr> <td></td><td>large portion</td></tr> </table> <p><b>Note:</b> In stand-by position, the portion size is always normal.</p>	LEDs above button	Function		small portion		normal portion		large portion
LEDs above button	Function								
	small portion								
	normal portion								
	large portion								
<p>Whitener</p> 	<p>The three small lights (LEDs) above the whitener button determine the size of the whitener portion. Press the button until the appropriate LED lights up:</p> <table> <tr> <th>LEDs above button</th><th>Function</th></tr> <tr> <td></td><td>small portion</td></tr> <tr> <td></td><td>normal portion</td></tr> <tr> <td></td><td>large portion</td></tr> </table> <p><b>Note:</b> In stand-by position, the portion size is always normal.</p>	LEDs above button	Function		small portion		normal portion		large portion
LEDs above button	Function								
	small portion								
	normal portion								
	large portion								

**Note:** There is a 10 sec. time-out on Pre-selection Buttons.










## Selection Buttons

The Selection Buttons are grouped below the Pre-selection Buttons. The number of Selection Buttons varies along with the number of beverages with or without sugar or whitener.

The function of each Selection Button is clearly illustrated by means of an icon on every button.

## Example

Next you see different Selection Buttons and their functions:

Button Illustration	Function
   	<ul style="list-style-type: none"> <li>• A cup of coffee (black)</li> <li>• A cup of coffee with sugar</li> <li>• A cup of coffee with whitener</li> <li>• A cup of coffee with sugar and whitener</li> </ul>
   	<ul style="list-style-type: none"> <li>• A cup of tea (black)</li> <li>• A cup of tea with sugar</li> <li>• A cup of tea with whitener</li> <li>• A cup of tea with sugar and whitener</li> </ul>
	A cup of hot water

## Price Labels

There are Price Label situated above every Selection Button, or group of Selection Buttons. On these labels, the individual prices of the drinks in question are shown.

## Multi-brew panel

### Introduction

The main function of the Multi-brew Panel is to offer the multi-brew option. This selection gives you the opportunity to have more than one drink dispensed at a time. In other words, you can buy eg a pot of coffee for a group of people in only one procedure.

### Description

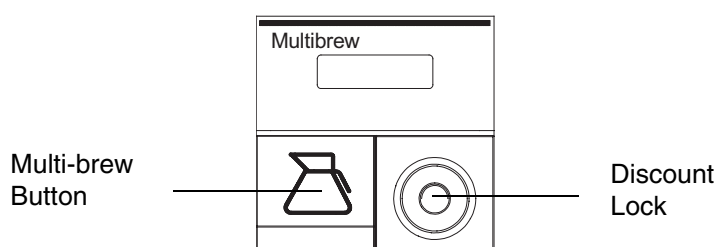
The Multi-brew Panel consists of the following parts:

- Multi-brew Button
- Discount Lock

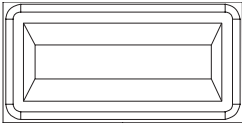

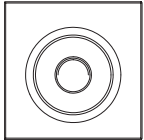
This panel is situated at the bottom of the Selection Module.

### Illustration

This is an illustration of the Multi-brew Panel:



These are the parts and functions of the Multi-brew Panel.

Part	Function
<b>Display</b> 	<ul style="list-style-type: none"> <li>• The display shows the preset number of cups to be dispensed in the pot.</li> <li>• The number in the display steps up one number each time the Multi-brew Button is pushed (max. 15 dispensings - after 15 the counter returns to 1)</li> <li>• The number at the display steps down one number each time a cup is dispensed.</li> </ul>
<b>Multi-brew Button</b> 	<ul style="list-style-type: none"> <li>• Pre-selection button; that is, before you push a Selection Button, you press the Multi-brew Button the number of times that you want dispensings in the pot.</li> </ul>
<b>Discount Lock</b> 	<p>The keyhole for the Discount key.</p> <ul style="list-style-type: none"> <li>• When the key is in the lock, beverages, both Multi-brew and single vend, are dispensed at a preset discount (0-100).</li> </ul>

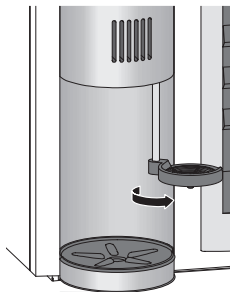
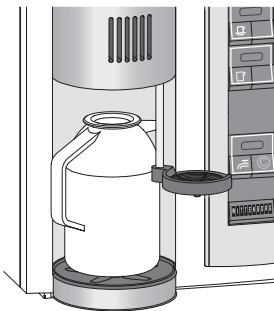
## Multi-brew

There are two different ways in which you can perform a multi-brew vend:

1. With the use of a discount key.
2. Without the use of a discount key, i.e. payment is done with card or coins.

## Procedure

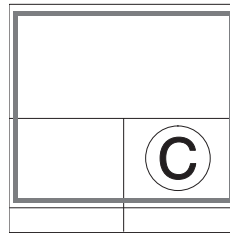
Follow this procedure to multi-brew:

Step	Action	Machine Reaction
1.	Insert the key in the Discount Lock and turn clockwise.	The rebate function is activated.
2.	Swing cup platform out. 	
3.	Place pot on pot platform. 	
4.	Press the Multi-brew Button the number of times you want cups in the pot.	The display shows the preset number of dispensings and then steps up one number each time the button is pressed.
5.	Select drink by pressing the Selection Button.	The display steps back one number after each dispensing
6.	Remove the pot when the drinks have been dispensed.	
7.	Swing cup platform back.	

Step	Action	Machine Reaction
8.	Turn and remove the key to close the rebate function.	

## Notes

- If you suddenly need to interrupt the multi-brew in progress, simply press the emergency stop button.



- The machine will not register a pot made of glass, therefore it should not be used.  
NB. If the cup sensor is deactivated a glass pot can be used.

## Choices for drink dispensing

Who?	The service technician can program the choices for drink dispensing.
Hot water	<ul style="list-style-type: none"> <li>• Continuous dispensing Hot water dispensing is done continuously and uninterrupted as long as the corresponding button is pressed (only possible as a dispensing free of charge into your own cup)</li> <li>• Portioned dispensing (see below)</li> </ul>
Drinks: (Espresso-, freshly brewed and instant drinks)	Dispensing is done in portions (the portions can be programmed by the service technician) when pressing the corresponding button.
Portion sizes	Up to 330 ml (can be programmed)
Multi-brew	Pot dispensing max. 15 cups

## Data retrieval and/or programming

### Data output

---

Data can be retrieved from the machine by using

- service mode (programming mode) of the machine using the selection buttons of the selection panel (audit and settings data can be read out)
- PC or terminal (plug connection to P12 on VMC only in VIDTS format) (settings data can be read out)
- hand-held terminal (data carrier) using a PDC in connection with the MID kit, this connection is available via the optical interface on the outside of the door (audit data can be read out)

### Data input

---

Data can be programmed into the machine by using

- service mode (programming mode) of the machine using the selection buttons of the selection panel (settings data can be read in)
  - PC or terminal (plug connection to P12 on VMC only in VIDTS format) (settings data can be read in)
-





**WITTENBORG**

## **Chapter 2**

WITTENBORG



# Installation manual

---

## Overview

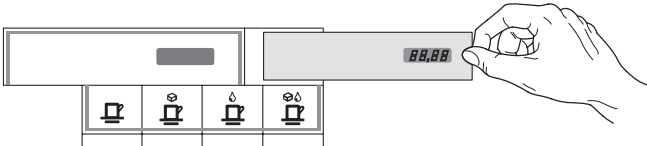
- Installation of the vending machine
  - Connections
-

## Installation of the vending machine



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

### Mounting

Step	Action
1.	Unpack the vending machine and check it for damage.
2.	Set the machine up. Adjust the horizontal and vertical position by means of the base setting screws.
3.	Open the door.
4.	Remove the instant canisters and the dosing system.
5.	Remove the mounting kits.
6.	Unpack the instant ingredient canisters.
7.	Fill the FB canister or the ES coffee bean canister.
8.	Fill the instant ingredient canisters.
9.	Unpack the waste bucket and place in position.
10.	<ul style="list-style-type: none"> <li>Remove the colour panel: Open door, loosen upper and lower screws, and lift off colour panel.</li> <li>Slide the "button panel" with the price label to the side.</li> <li>Remove the price label from the "button panel". Enter the prices according to the requirement of the customer on the label by blackening the bars that are not needed.</li> </ul>  <ul style="list-style-type: none"> <li>Reinsert the price label into the guides of the "button panel" (do not lose the transparent cover for the price label).</li> <li>Slide the "button panel" with the price label into the appropriate guides in the selection panel.</li> <li>Lift on the colour panel again and retighten screws.</li> </ul>

## Connections

### Power supply

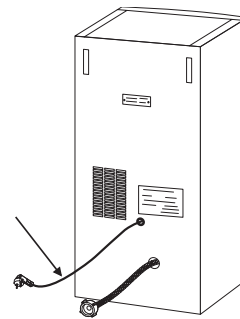
230V a.c. (UK: 240V a.c.) +10%/-15%, 50 Hz, 2300 W with a 2000 W heating element / 3000 W with a 2700 W heating element.  
Approx. 3.5 m, 3x1.5 mm<sup>2</sup> cable.  
Brown = phase, blue = neutral, green/yellow = protective earth (I.E.C. Standards).

### Electrical installation

Connect machine to power source in accordance to the relevant electrical standards of the country in which the machine is to be installed.

The socket must be equipped with an earthed conductor that is in accordance with the local regulations. The dispenser housing will be carrying voltage if no earthed conductor is connected! (mains filter). The power supply voltage must be 230 V (UK: 240 V).

- Plug in the power supply plug.
- Turn the machine on at the main switch.



### Positioning

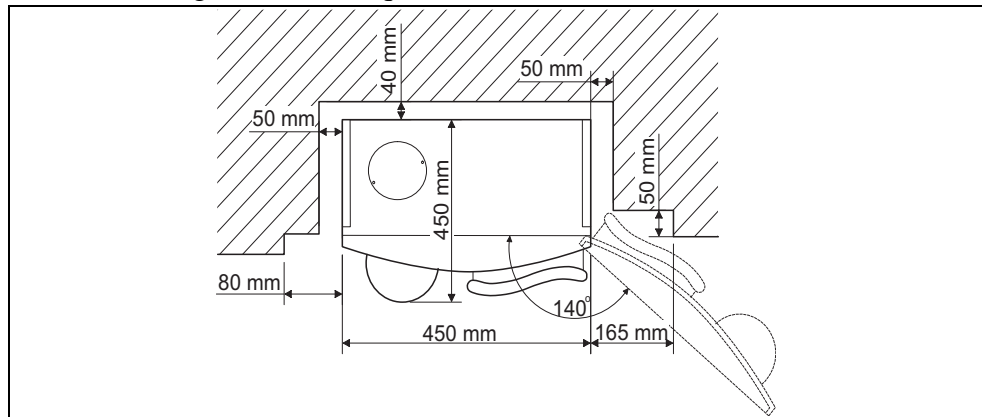
Position the vending machine. Adjust the horizontal and vertical position.

In order to ensure correct ventilation, a distance of 40 mm is required from the rear side of the machine to the wall.

Ambient temperature: 5°C to 32°C

## Dimensional drawing

This drawing shows the requisite clearances:

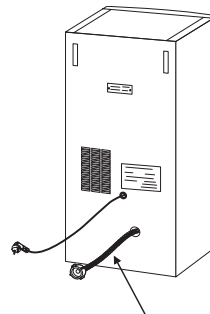


## Overflow water

The vending machine requires no connection to outlet or drain (automatically controlled drip tray installed).

## Water supply

The vending machine must be connected to a drinking water supply.



Minimum dynamic pressure must be 0.8 bar . Maximum static pressure must not exceed 10 bar. At a higher pressure (also periodically) a reduction valve must be mounted in the water pipe.

Only UK: The vending machine is fitted with flexible pipe terminating in 1/4 BSP female fitting. By means of the adapter supplied connection should be made to 15 mm copper pipe controlled by a stop cock which must be easily accessible.

Other countries: The vending machine is fitted with a connecting hose terminating in 3/4" - 3/8" reducing nipple. Connection should be made to an inlet terminating in a 3/8" P.Thr.id.

**For safety reasons install a water stop valve.**

## Data of the water tank (FB/IN)

The data of the FB/IN water tank is listed in the table below:

Description	Data
Capacity	3.5 l
Heating capacity: standard	2700W/230V (Europe)
Heating capacity: optional (for max. 10 A load)	2000W/230V
Valves	24VDC - NW 8
Inlet valves	24VDC
Boil over sensor: Triggering temperature:	80° C ± 5° C
Water tank temperature sensor: Default setting:	96° C ± 1.5° C

## Setting to work

Follow the steps below to set the machine to work:

Step	Action
1.	Ensure that the water cock has been opened and that the machine has been turned on at the main switch.
2.	<div>Check all safety elements:</div> <ul style="list-style-type: none"> <li>• Open the door - no brewer dispensing possible</li> <li>• Close the door - brewer dispensing possible</li> <li>• Check the water level sensor in the drip tray</li> </ul>
3.	Make sure that there are no leaks. Open the door and check the machine for moisture.
4.	Check the manufacturer's settings. Program the machine as required by the customer.
5.	Adjust cup platform to ensure that the cup sensor can detect the placement of a cup.  ES only: Depending on the cup size, the oblique ES coffee outlet as well as the height of the cup platform have to be adjusted to ensure the correct dispensing into the cup.
6.	If necessary adjust the machine type (adjustment of the general machine configuration).
7.	Set date and time.
8.	Check dispensing of all products and hot water dispensing by carrying out tests.







## Chapter 3

WITTENBORG



## Technical data

### Overview

- 
- Technical data
-

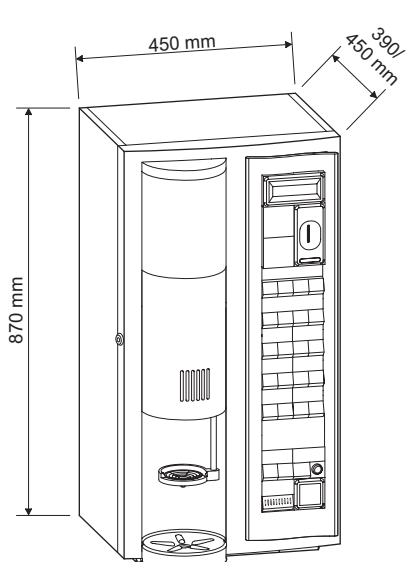
## Technical data

### Introduction

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

- dimensions
- weight
- drinking water
- electrical connection
- installation conditions
- ambient conditions
- storing temperature
- ambient temperature
- relative humidity
- water tank capacity
- drip tray capacity
- waste bucket capacity

### Dimensions

Height	870 mm	
Width	450 mm	
Depths	390/450 mm	

Wall distance	40 mm	
---------------	-------	--

## Weight

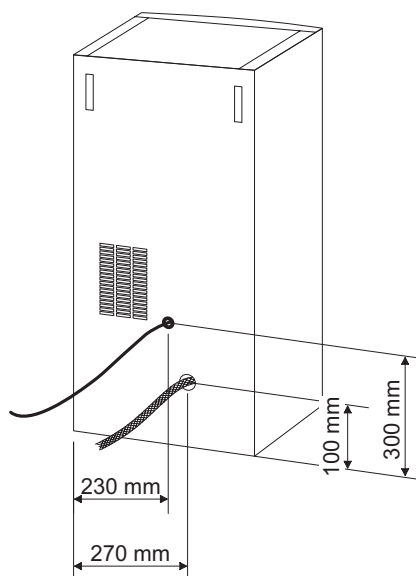
Basic machine version (without ingredients):

- FB: 62 kg
- IN: 64 kg
- ES: 68 kg

## Drinking water

Connection by a special hose (length: 1m)  
 3/4" connecting piece (an adaptor is available)  
 0.8 bar min. water pressure (dynamic)  
 10 bar max. water pressure (static)

## Illustration



Electrical connection	<p>230V AC +10%/-15%, 50Hz</p> <p><u>Power consumption - FB/IN:</u>            Small heating element, without cold unit:            Max. 2300 W            Small heating element, with cold unit:            Max. 2600 W            Large heating element, without cold unit:            Max. 3000 W            Large heating element, with cold unit:            Max. 3300 W</p> <p><u>Power consumption - ES:</u>            Standard heating element, without cold unit:            Max. 2300 W</p>
Installation conditions	Up to 2000 m above MSL (mean sea level), when installing the vending machine at higher altitudes it must be changed over by a service technician.
Ambient conditions	The vending machine is designed for indoor use only (IP 20).
Storing temperature	1°C to 60°C
Ambient temperature	5°C to 32°C
Relative humidity	max. 80% at 32°C

## FB

Ingredient	Quantity	Weight	Portions
FB coffee	approx. 4.4 l	approx. 1.6 kg	approx. 140-240
Sugar	approx. 3.0 l	approx. 2.7 kg	approx. 450
Whitener	approx. 3.0 l	approx. 1.6 kg	approx. 350
Chocolate	approx. 3.0 l	approx. 1.6 kg	approx. 80
Instant coffee	approx. 3.0 l	approx. 0.5 kg	approx. 275

## IN

Ingredient	Quantity	Weight	Portions
IN coffee	approx. 3.0 l	approx. 0.5 kg	approx. 275
Sugar	approx. 3.0 l	approx. 2.7 kg	approx. 450
Whitener	approx. 3.0 l	approx. 1.6 kg	approx. 350
Chocolate	approx. 3.0 l approx. 6.0 l	approx. 1.6 kg approx. 3.2 kg	approx. 80 approx. 160

## ES

Ingredient	Quantity	Weight	Portions
ES coffee beans	approx. 4.4 l	approx. 1.5 kg	approx. 200
Sugar	approx. 3.0 l	approx. 2.7 kg	approx. 450
Whitener	approx. 3.0 l	approx. 1.6 kg	approx. 350
Chocolate	approx. 3.0 l	approx. 1.6 kg	approx. 80
Instant coffee	approx. 3.0 l	approx. 0.5 kg	approx. 275

---

**Water tank  
capacities**

FB/IN water tank:  
Approx. 3.5 l

ES water tank:  
Approx. 0.8 l

---

**Waste capacities**

FB/IN/ES drip tray:  
Approx. 1 l

FB/IN waste bucket:  
Approx. 6.5 l

ES waste bucket:  
Approx. 100 portions

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**WITTENBORG**

## **Chapter 4**

WITTENBORG

## Door parts

### Overview

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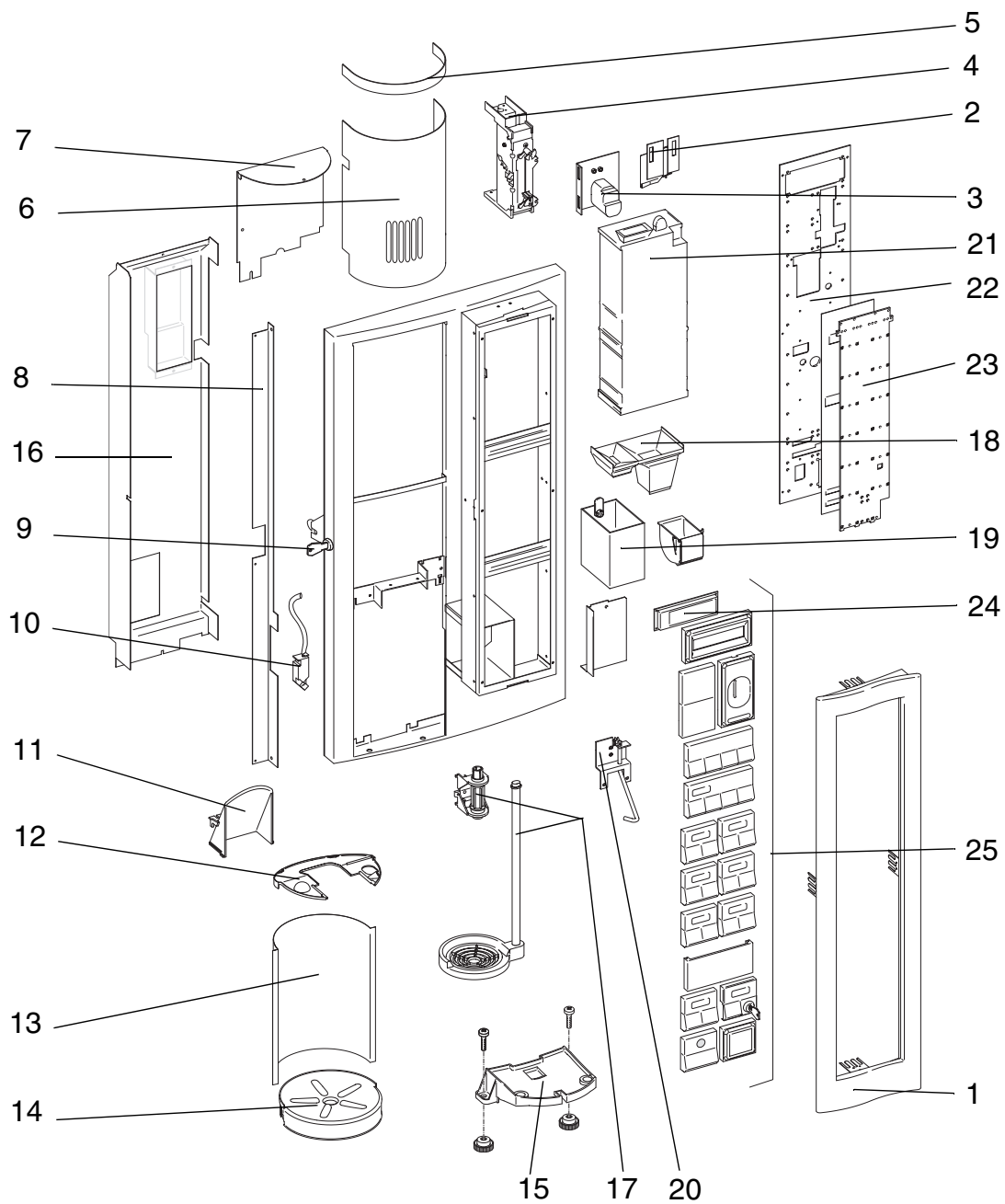
In this section you will find the following information about the door:

- Components of the door - FB
  - Components of the door - IN
  - Dismounting the door cover
  - Dismounting the colour panel
  - Replacing the fluorescent tube (IN)
  - Replacing the poster (IN)
-

## Components of the door

Parts

FB



## List of items

FB

Parts	
1.	Colour panel
2.	Coin insert
3.	Coin return motor
4.	Card reader
5.	Cover, top with adhesive tape
6.	Outer housing for FB canister
7.	Cover
8.	Trim bracket
9.	Door lock
10.	Cup sensor
11.	Cover for inspection hole
12.	Protective cover, dispensing area
13.	Inner housing, dispensing area
14.	Pot platform
15.	Pot platform guide
16.	Door cover
17.	Cup platform
18.	Coin chute
19.	Cash box
20.	Door switch
21.	Coin mechanism
22.	Reinforcement panel, SPC print board
23.	SPC print board
24.	Display
25.	Selection panel, operating unit

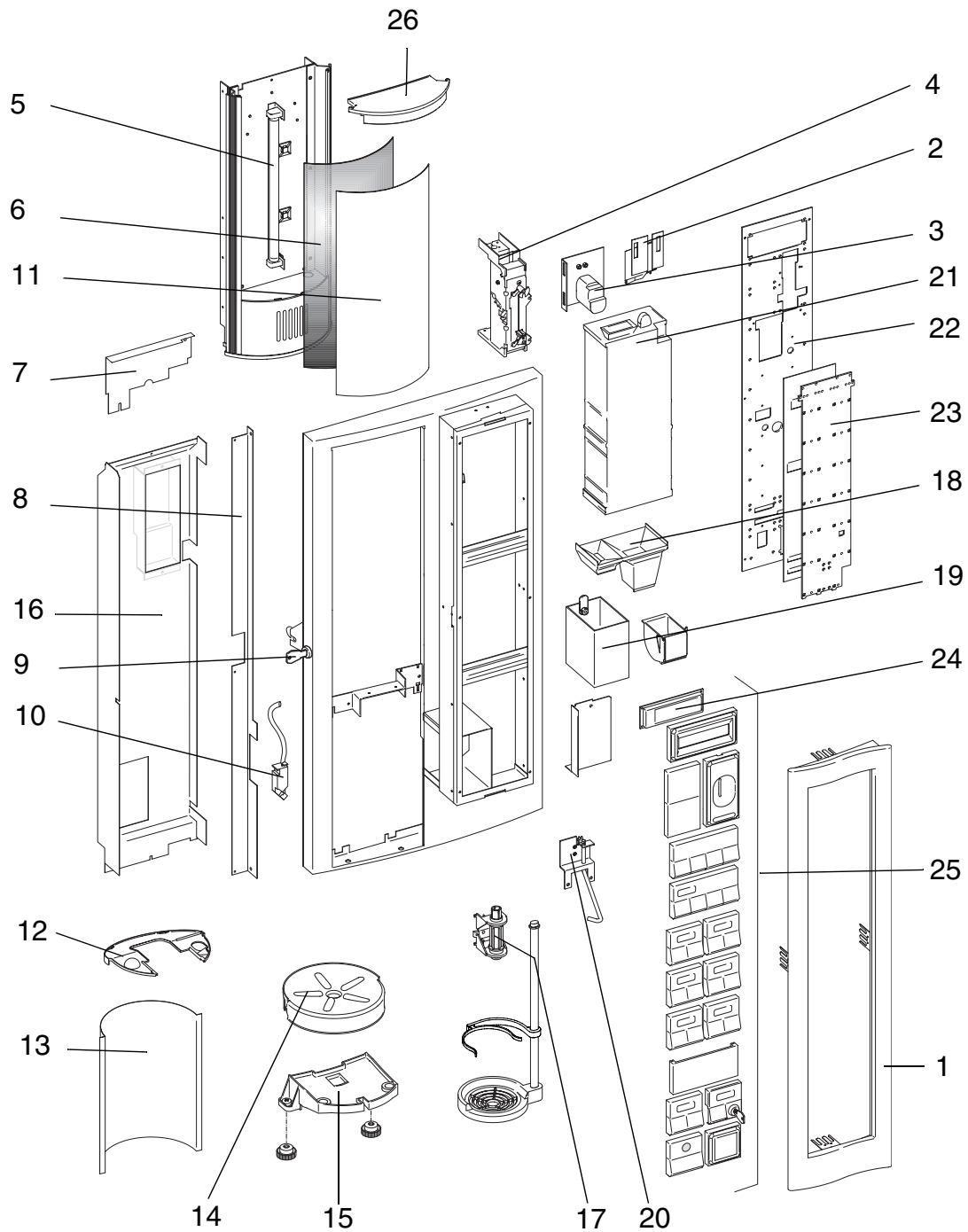
## Note

If installed with a payment system, the machine is installed with either the coin mechanism (and other coin components) or the card reader.

## Components of the door

Parts

IN



## List of items

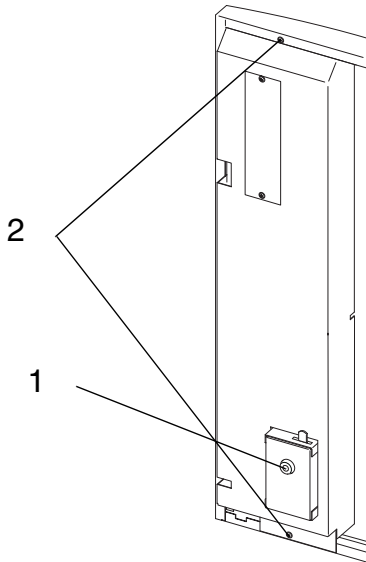
IN

Parts	
1.	Colour panel
2.	Coin insert
3.	Coin return motor
4.	Card reader
5.	Fluorescent tube
6.	Diffusor plate
7.	Cover
8.	Trim bracket
9.	Door lock
10.	Cup sensor
11.	Glass for advertising panel
12.	Protective cover, dispensing area
13.	Inner housing, dispensing area
14.	Pot platform
15.	Pot platform guide
16.	Door cover
17.	Cup platform
18.	Coin chute
19.	Cash box
20.	Door switch
21.	Coin mechanism
22.	Reinforcement panel, SPC print board
23.	SPC print board
24.	Display
25.	Selection panel, operating unit
26.	Lid for advertising panel

## Dismounting the door cover

### Procedure

Follow this procedure to dismount the door cover:

Step	Action	Illustration
1.	Open the cabinet door.	
2.	Turn off the machine (main switch), unplug the power supply plug and close the water cock.	
3.	Remove cash box (key) (1).  Remove 2 screws (2).	 <p>The diagram shows a side view of the door cover assembly. A bracket labeled '1' points to the cash box located at the bottom of the door. A bracket labeled '2' points to two screws located at the top of the door, which are used to secure the door cover to the frame.</p>
4.	Dismount door cover by gently pulling forwards.	



## Dismounting the colour panel

### Procedure

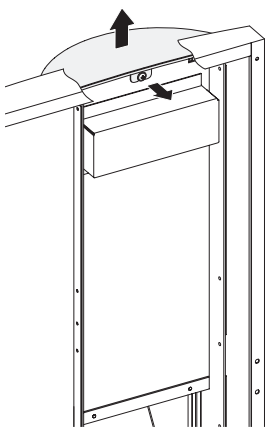
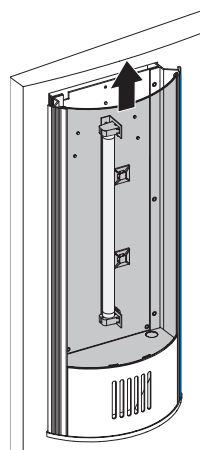
Follow this procedure to dismount the colour panel:

Step	Action	Illustration
1.	Open the door, turn off the machine (main switch), unplug the power supply plug and close the water cock.	
2.	Dismount door cover (1).	
3.	Loosen the thumbscrews (2).	
4.	Pull the colour panel (3) forwards on the front side of the door.	

## Replacing the fluorescent tube (IN)

### Replacement

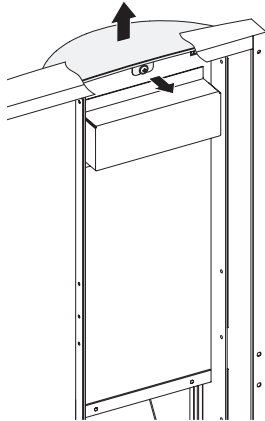
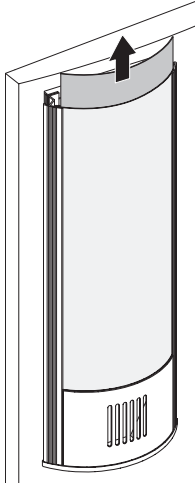
The procedure for replacing the fluorescent tube is as follows:

Step	Action	Illustration
1.	Open the door, turn off the machine (main switch), unplug the power supply plug and close the water cock.	
2.	Loosen screw on the inside of the door.	
3.	Remove the lid.	
4.	Remove the advertising panel by pushing it upwards.	
5.	Take hold of fluorescent tube and turn it 90° until poles are free in grooves and remove it.	
6.	Mount new fluorescent tube.	
7.	Relocate parts in reverse order.	

## Replacing the poster (IN)

### Replacement

The procedure for replacing the poster is as follows:

Step	Action	Illustration
1.	Open the door, turn off the machine (main switch), unplug the power supply plug and close the water cock.	
2.	Loosen screw on the inside of the door.	
3.	Remove lid.	
4.	Remove the poster by pushing it upwards without removing the outer plastic cover and inner cover.	
5.	Insert new poster by pushing it downwards between the outer plastic cover and the inner cover.	
6.	Remount the lid.	





## Chapter 5

WITTENBORG

## Dispensing area

### Overview

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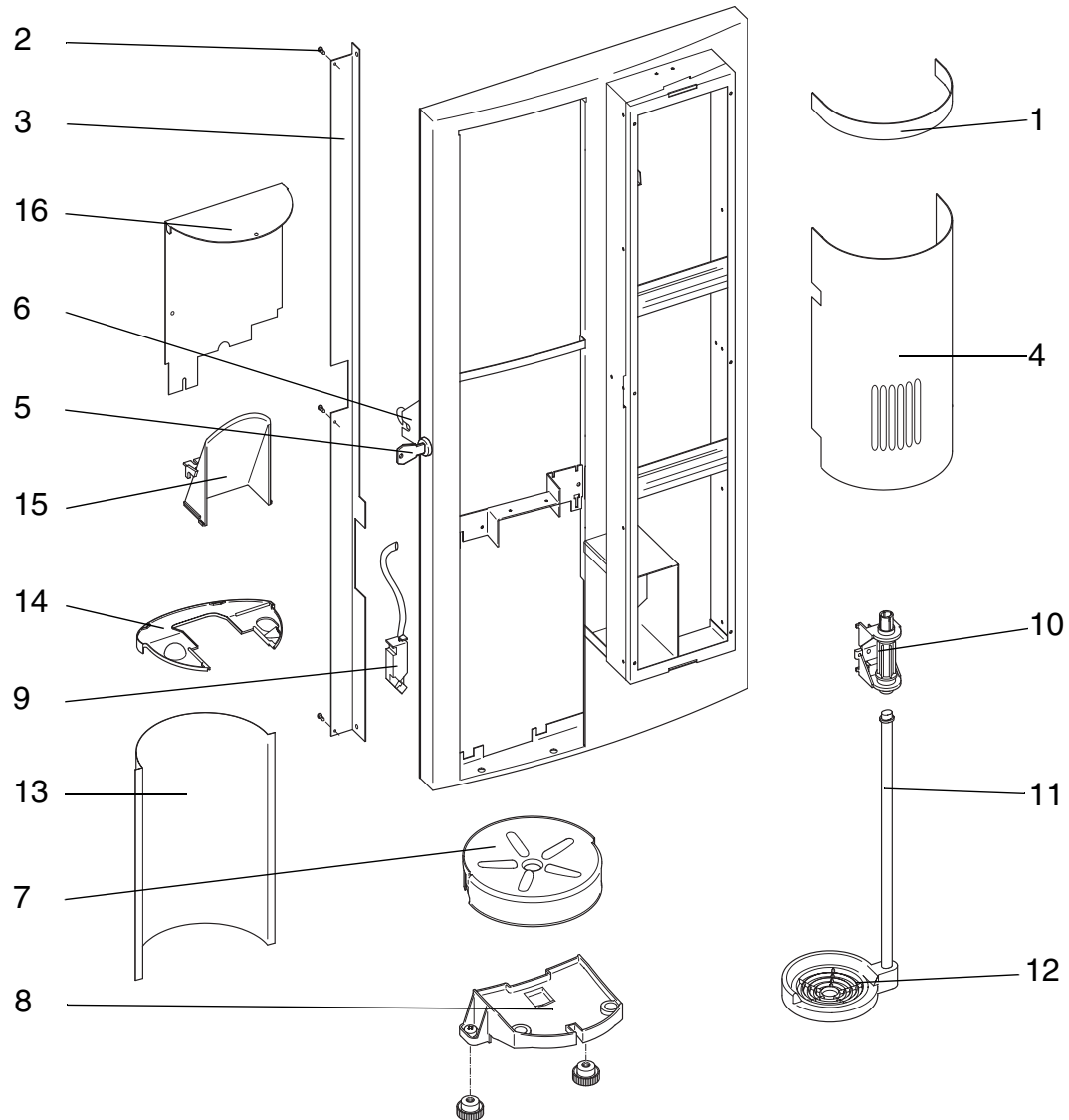
In this section you will find the following information about the dispensing area:

- Components of the dispensing area - FB
  - Components of the dispensing area - IN
  - Dismounting the cup sensor
  - Dismounting the cup platform
  - Dismounting the door lock
-

## Components of the dispensing area

Parts

FB:





## List of items

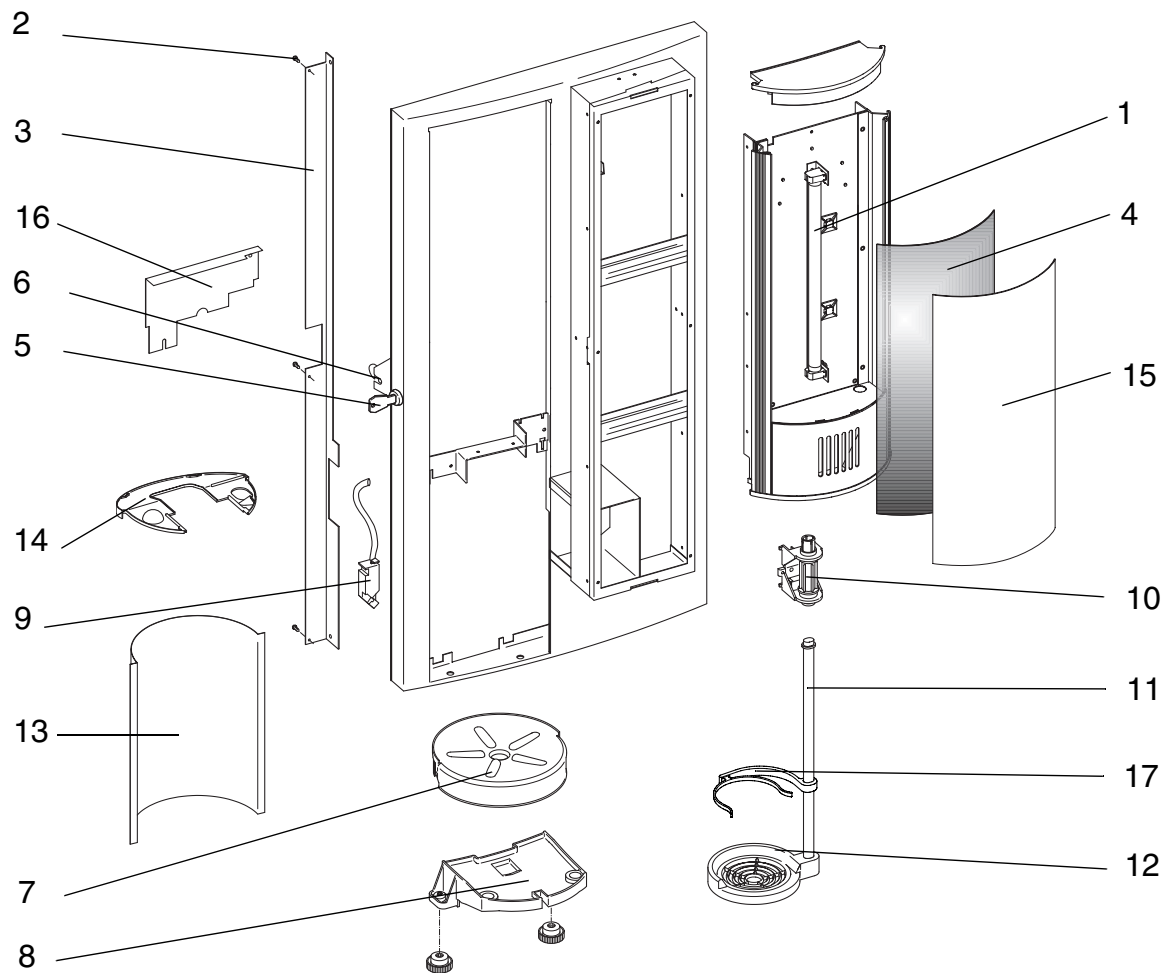
FB:

Parts	
1.	Cover, top with adhesive tape
2.	Screw, for trim bracket
3.	Trim bracket
4.	Outer housing
5.	Lock
6.	Door elevator
7.	Pot platform
8.	Pot platform guide
9.	Cup sensor
10.	Pivot bracket
11.	Arm for cup platform
12.	Cup platform
13.	Inner housing, dispensing area
14.	Protective cover, dispensing area
15.	Cover for inspection hole
16.	Cover

## Components of the dispensing area

Parts

IN:



## List of items

IN:

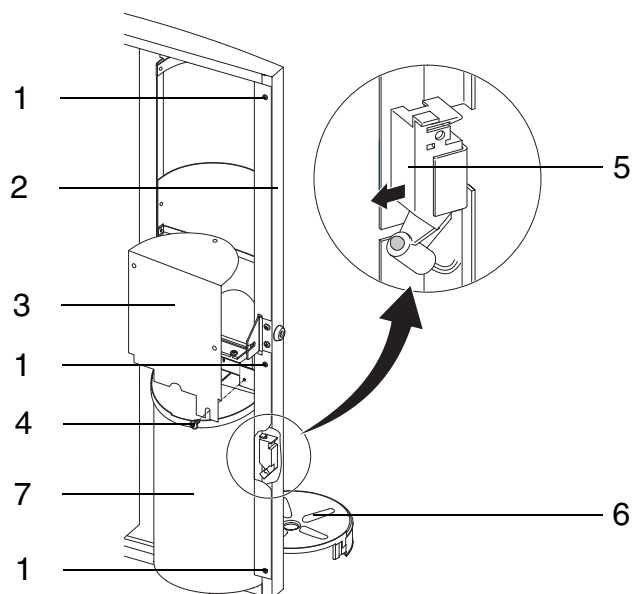
Parts	
1.	Fluorescent tube
2.	Screw, for trim bracket
3.	Trim bracket
4.	Diffusor plate
5.	Lock
6.	Door elevator
7.	Pot platform
8.	Pot platform guide
9.	Cup sensor
10.	Pivot bracket
11.	Arm for cup platform
12.	Cup platform
13.	Inner housing, dispensing area
14.	Protective cover, dispensing area
15.	Glass for advertising panel
16.	Cover
17.	Cup Guide

## Dismounting the cup sensor

### Procedure

Follow this procedure to dismount the cup sensor:

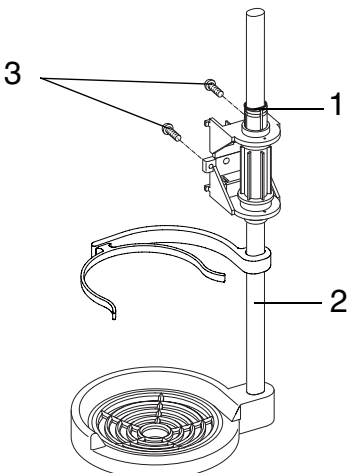
Step	Action
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.
2.	Dismount the cover (3) by loosening the screw (4)
3.	Remove the pot platform (6)
4.	Dismount the delivery area inner cover (7)
5.	Dismount the trim bracket (2) by loosening the screws (1) at the top and bottom
6.	Dismount the cup sensor (5)



## Dismounting the cup platform

### Procedure

Follow this procedure to dismount the cup platform:

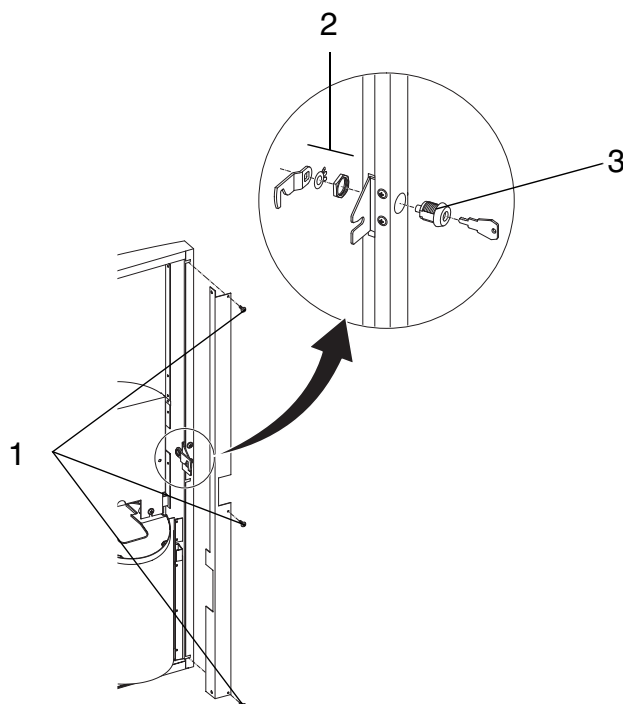
Step	Action	Illustration
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.	
2.	Remove the O-ring (1).	
3.	Pull the arm for cup platform down (2).	
4.	Remove 2 screws (3).	
5.	Remove the complete cup platform.	

## Dismounting the door lock

### Procedure

Follow this procedure to dismount the door lock:

Step	Action
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.
2.	Dismount the trim bracket by loosening the screws (1) at the top, middle and bottom.
3.	Dismount the locking latch (2).
4.	Dismount the lock (3).





## Chapter 6

WITTENBORG



## Selection module

### Overview

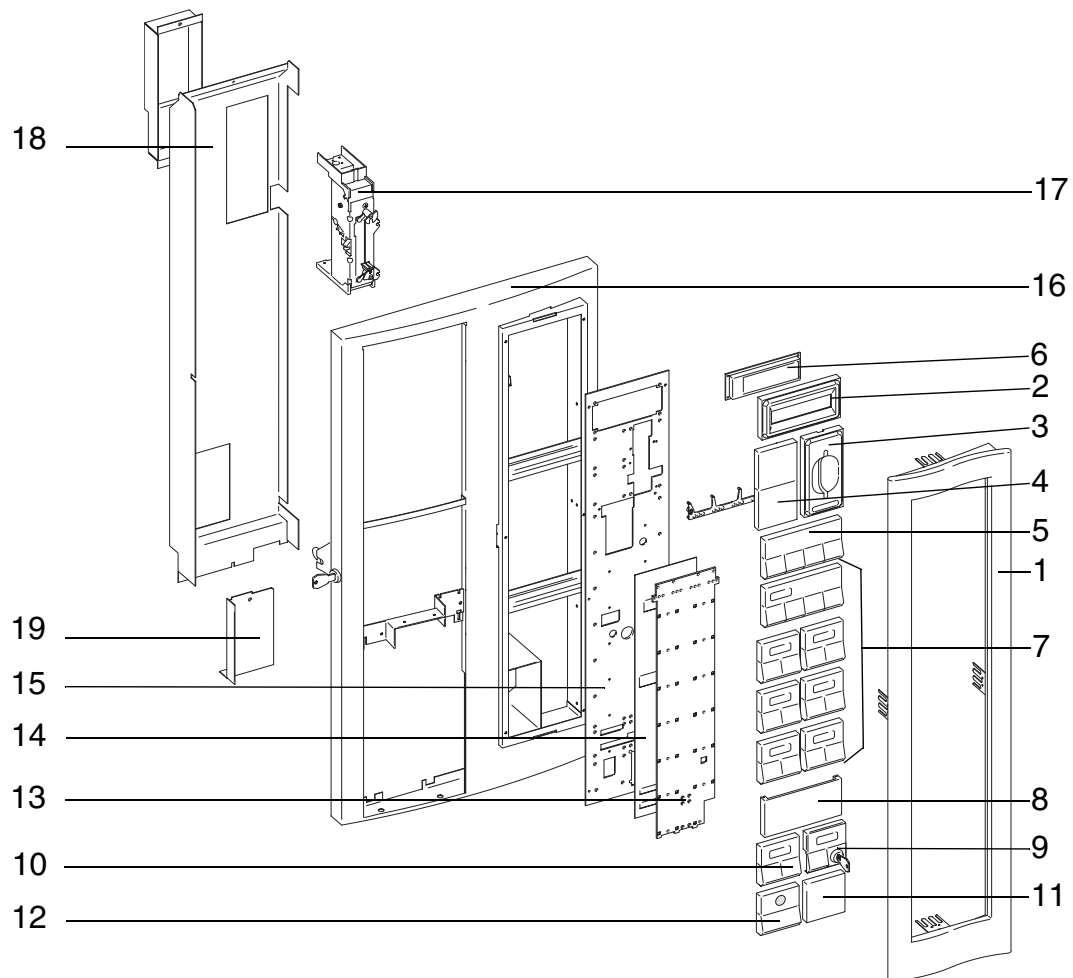
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In this section you will find the following information about the selection module:

- Components of the selection module - card version
  - Components of the selection module - coin version
  - Dismounting the coin module
  - Dismounting the card reader
  - Dismounting the SPC circuit board
  - Dismounting the info display
  - Adjusting the optical sensor for the transparency of the cups
  - Adjusting the display light
-

## Components of the selection module

Card version

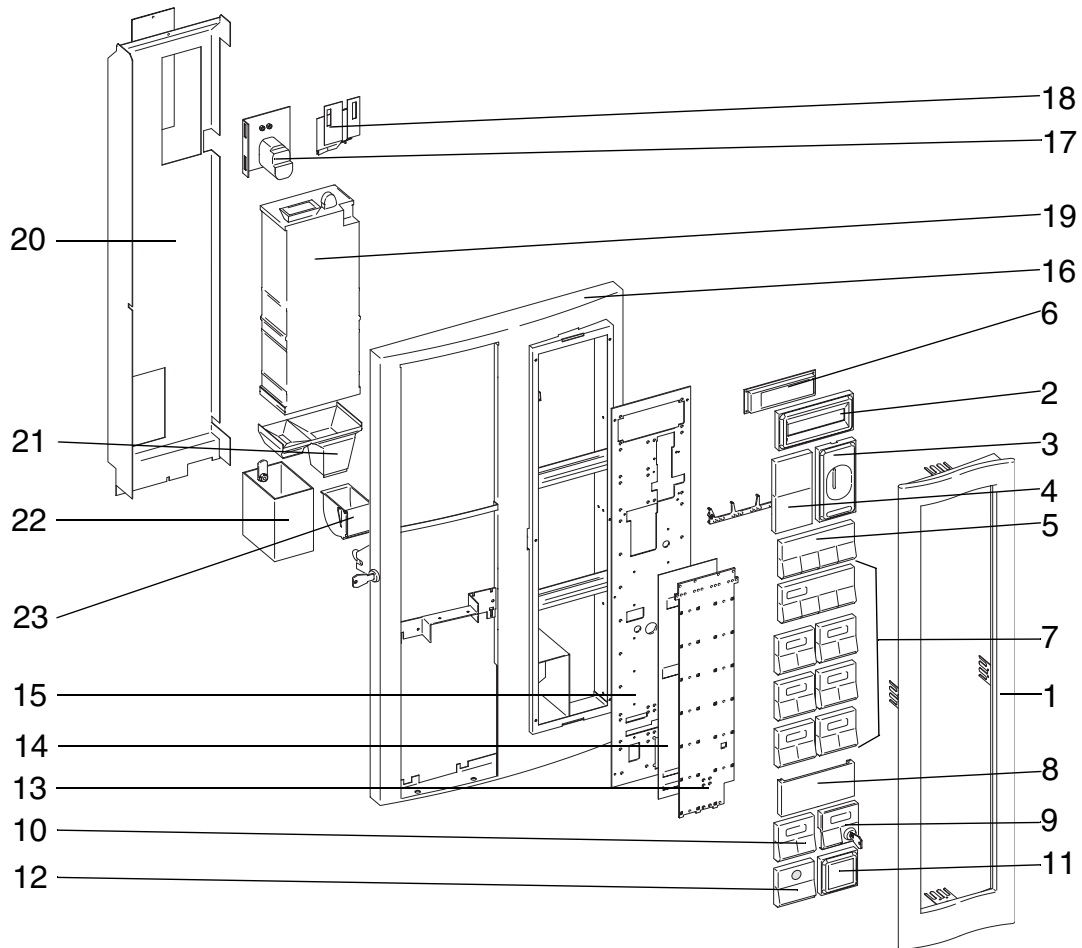


## List of items

Parts	
1.	Colour panel
2.	Info display cover
3.	Card slot and card return button
4.	Blank panel
5.	Preselector button row
6.	Info display: in the vending mode it shows all data concerning sales and malfunctions, in the service mode it shows all programming and setting data
7.	Direct selector button rows 1-4
8.	Direct selector button extension row
9.	Multibrew / Key
10.	Emergency stop button
11.	Blank panel
12.	Wittenborg Logo / Optical interface
13.	SPC circuit board
14.	Insulation foil for SPC
15.	Reinforcement plate, SPC circuit board
16.	Door frame
17.	Card reader
18.	Door cover
19.	Cover plate for cash box

## Components of the selection module

Coin version



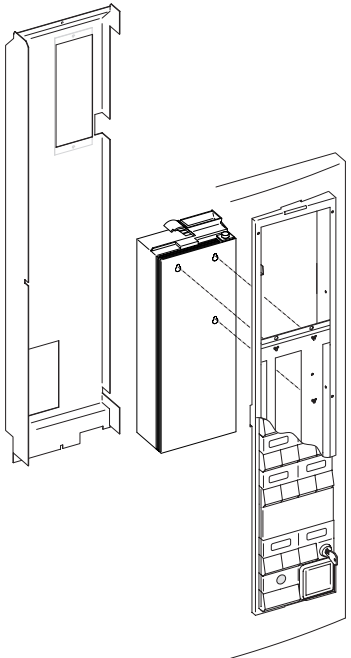
## List of items

Parts	
1.	Colour panel
2.	Info display cover
3.	Coin slot and coin return button
4.	Blank panel
5.	Preselector button row
6.	Info display: in the vending mode it shows all data concerning sales and malfunctions, in the service mode it shows all programming and setting data
7.	Direct selector button rows 1-4
8.	Direct selector button extension row
9.	Multibrew / Key
10.	Emergency stop button
11.	Coin return cup
12.	Wittenborg logo
13.	SPC circuit board
14.	Insulation foil for SPC
15.	Reinforcement plate, SPC circuit board
16.	Door frame
17.	Coin return mechanism
18.	Coin insert
19.	Coin mechanism
20.	Door cover
21.	Coin chute
22.	Cash box

## Dismounting the coin module

### Procedure

Follow this procedure to dismount the coin module:

Step	Action	Illustration
1.	Remove the cover of the coin module.	
2.	Open the door and dismount door cover.	
3.	Disconnect the electrical connection to the coin module.	
4.	Lift the coin module and remove it.	 <p>The illustration shows a side view of a vending machine with its door open. A coin module is being lifted out of the machine. The module is a rectangular unit with a coin slot on top and a coin return button on the side. The door is open, and the coin module is being removed from the machine.</p>

### Reference

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

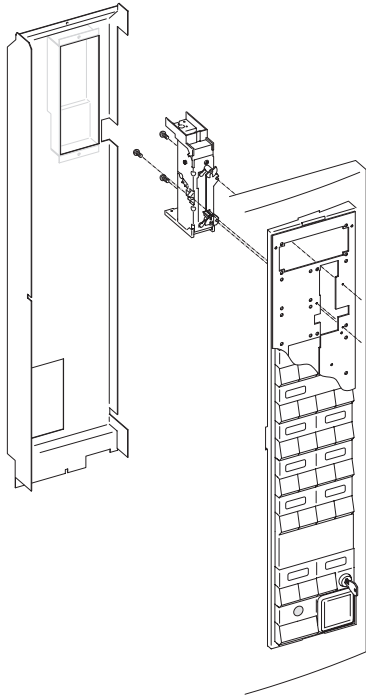
### Warning

**Never adjust the coin module or disconnect the connecting cable to the vending machine while the machine is carrying voltage.**

## Dismounting the card reader

### Procedure

Follow this procedure to dismount the card reader:

Step	Action	Illustration
1.	Open the door and dismount door cover.	
2.	Disconnect the electrical connection to the card reader.	
3.	Remove the screws and remove the card reader.	

### Warning

**Never adjust the card reader or disconnect the connecting cable while the machine is carrying voltage.**

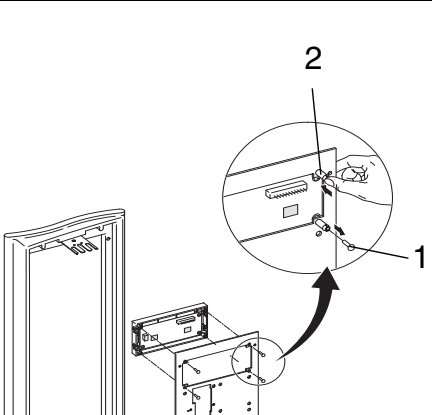
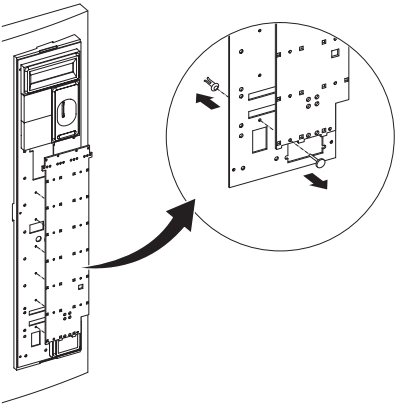
### Reference

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

## Dismounting the SPC circuit board

### Procedure

Follow this procedure to dismount the SPC circuit board:

Step	Action	Illustration
1.	Open the door and dismount the door cover.	
2.	Dismount the colour panel.	
3.	Disconnect the plugs from the SPC board.	
4.	Loosen the buttons by removing the rivets on the back side of the reinforcement plate (1).	
5.	Dismount the buttons by pushing the buttons from the back side of the reinforcement plate (2).	
6.	Dismount all button rows and buttons from the bottom row upwards.	
7.	Remove all the plastic rivets by first pushing forward from the back side of the SPC board and then removing from the front side.	
8.	Dismount the SPC circuit board.	

### Warning

**To avoid damage to the SPC circuit board, the button rows and buttons must be dismounted from the bottom row upwards and remounted from the top row downwards.**

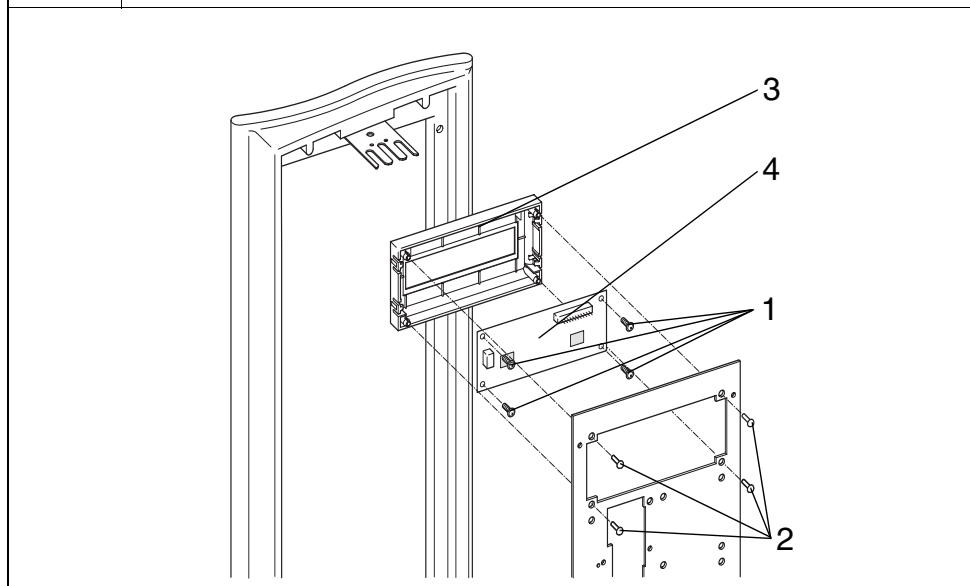


## Dismounting the info display

### Procedure

Follow this procedure to dismount the info display:

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



## Adjusting the optical sensor for the transparency of the cups

## Procedure

Follow this procedure to adjust the optical sensor:

Step	Action
1.	Open cabinet door.
2.	Remove the door cover.
3.	Empty the dispensing area and place a cup on the cup platform.  Note: You have to use a white cup.
4.	<ul style="list-style-type: none"> <li>If the light ray is interrupted by the cup, then the sensor setting is correct</li> <li>If the light ray passes through the cup, then go to the next step</li> </ul>
5.	Remove the colour panel.
6.	Remove price label (1)
7.	Adjust the potentiometer (2) on the SPC board for sensitivity <ul style="list-style-type: none"> <li>Clockwise: less light sensitivity</li> <li>Counter clockwise: higher light sensitivity</li> </ul>

Diagram illustrating the location of the price label (1) and the potentiometer (2) on the SPC board.

Detailed PCB layout diagram showing various components and their connections. Callout 1 points to the price label area, and callout 2 points to the potentiometer on the SPC board.

8.	Adjust the potentiometer counter clockwise until LD 5 on the PCB lights up, then adjust it clockwise just a little.
----	---

Step	Action
LD 5 (3) on the PCB lights up when you adjust the cup sensor.	

DBTAT.DENKJUMP, SIDE

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## Adjusting the display light

### Procedure

Follow this procedure to adjust the display light:

Step	Action
1.	Open cabinet door.
2.	Remove the door cover.
3.	Remove the colour panel.
4.	Remove price label (1)
5.	Adjust the display light by means of the potentiometer (2) on the SPC board <ul style="list-style-type: none"> <li>• Clockwise: reduced</li> <li>• Counter clockwise: higher</li> </ul>

The diagram illustrates the internal components of the display cabinet. On the left, a price label (1) is shown being removed from the display area. On the right, the SPC board is shown with various components labeled. The potentiometer (2) is located on the SPC board, and an arrow indicates its adjustment range. The SPC board also features a 'VIEWPORT HANDLE' and a 'TEST CLOCK'.



## Chapter 7

WITTENBORG

## Cabinet

### Overview

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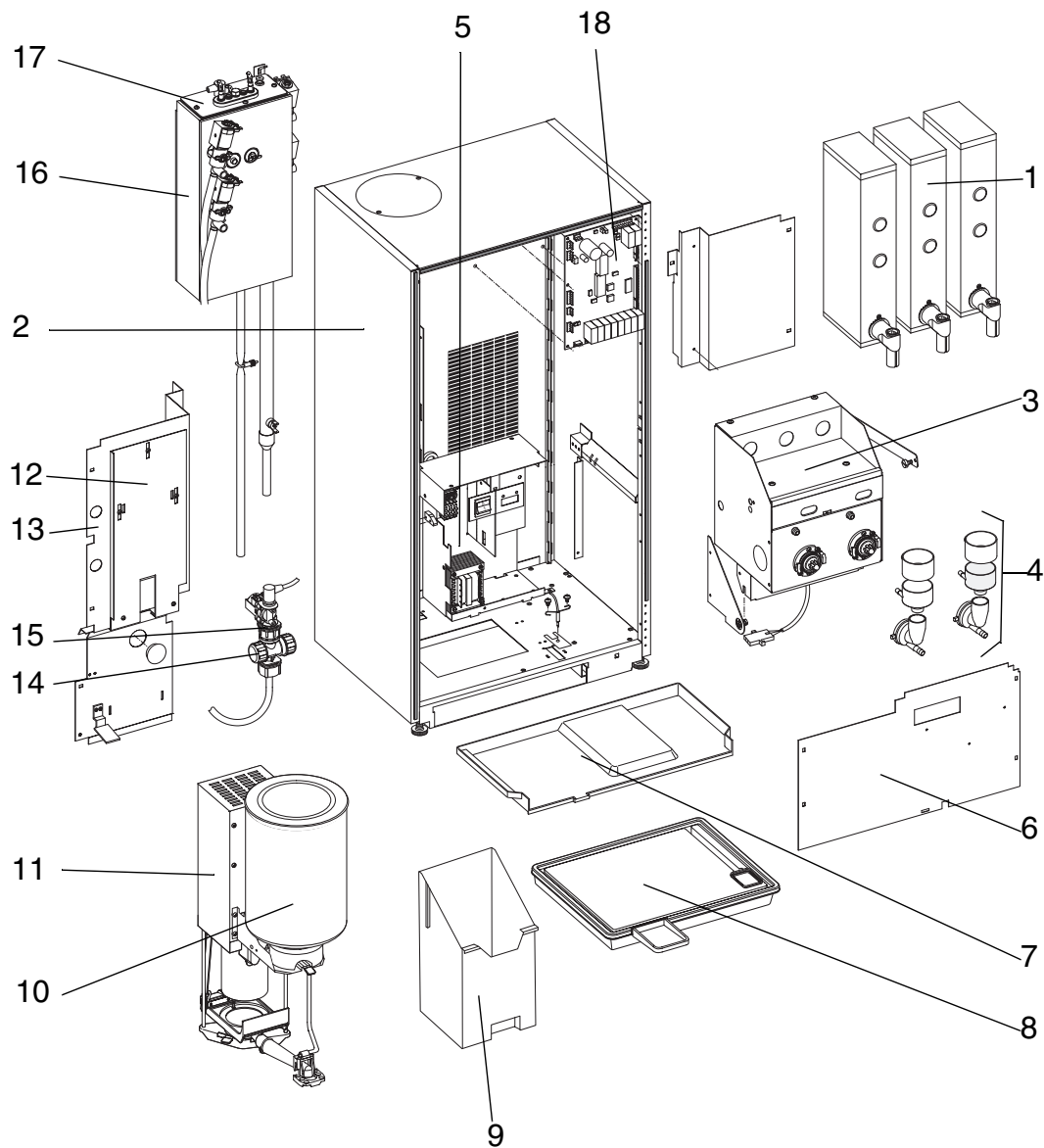
In this section you will find the following information about the cabinet:

- Components of the cabinet - FB
  - Components of the cabinet - IN
  - Components of the cabinet - ES
  - Dismounting the drip tray sensor
  - Water stop valve (if used)
-

## Components of the cabinet

Parts

FB





## List of items

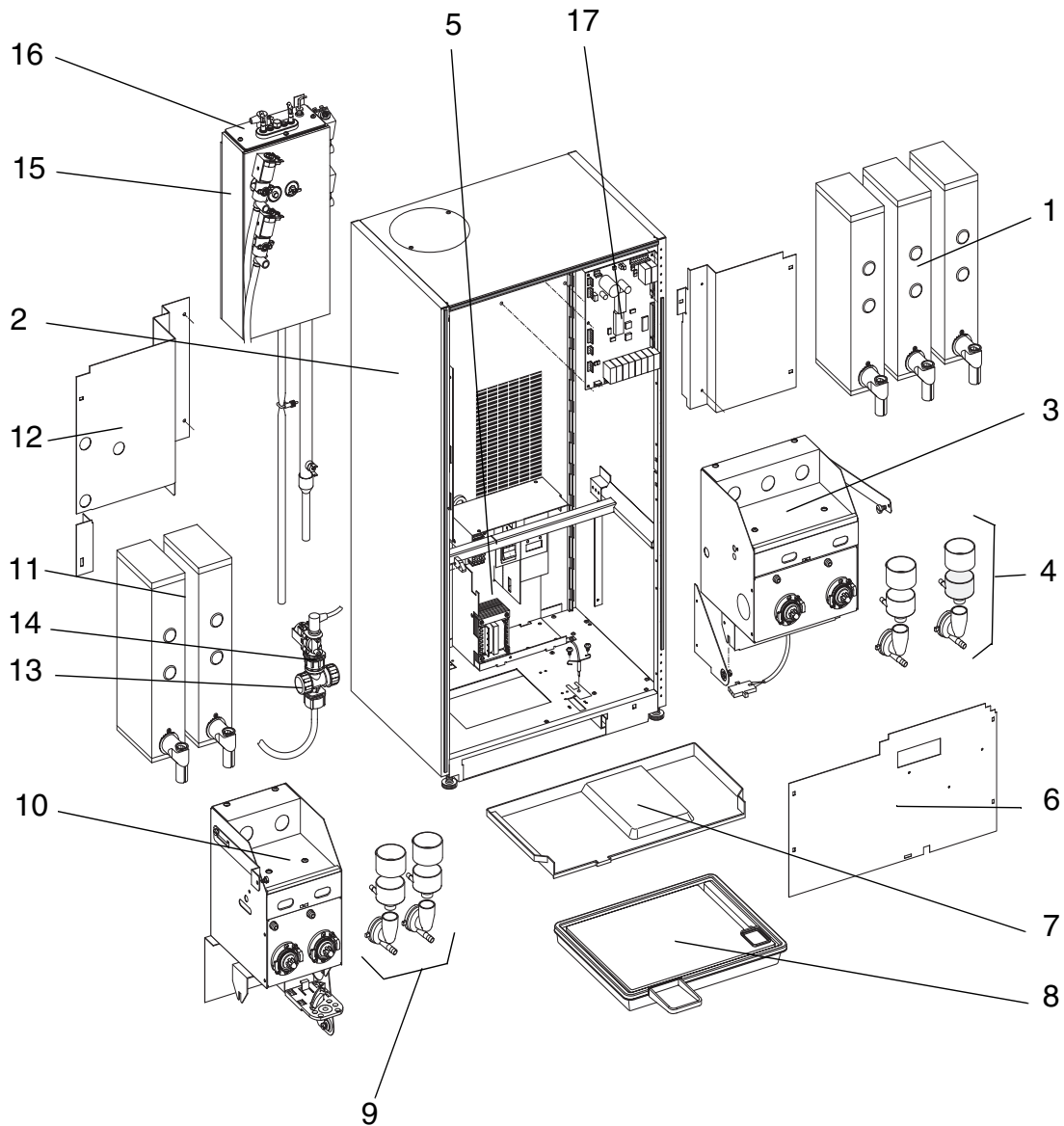
FB

Parts	
1.	Instant ingredient canisters
2.	Cabinet
3.	Ingredient motor shelf
4.	Ingredient mixing unit
5.	Electronic box
6.	Protective cover
7.	Waste tray
8.	Drip tray
9.	Waste bucket
10.	FB canister
11.	Brewer
12.	Brewer support
13.	Water tank cover
14.	Water filter
15.	Inlet valve
16.	Water tank
17.	Water tank lid
18.	Vending machine controller

## Components of the cabinet

Parts

IN



## List of items

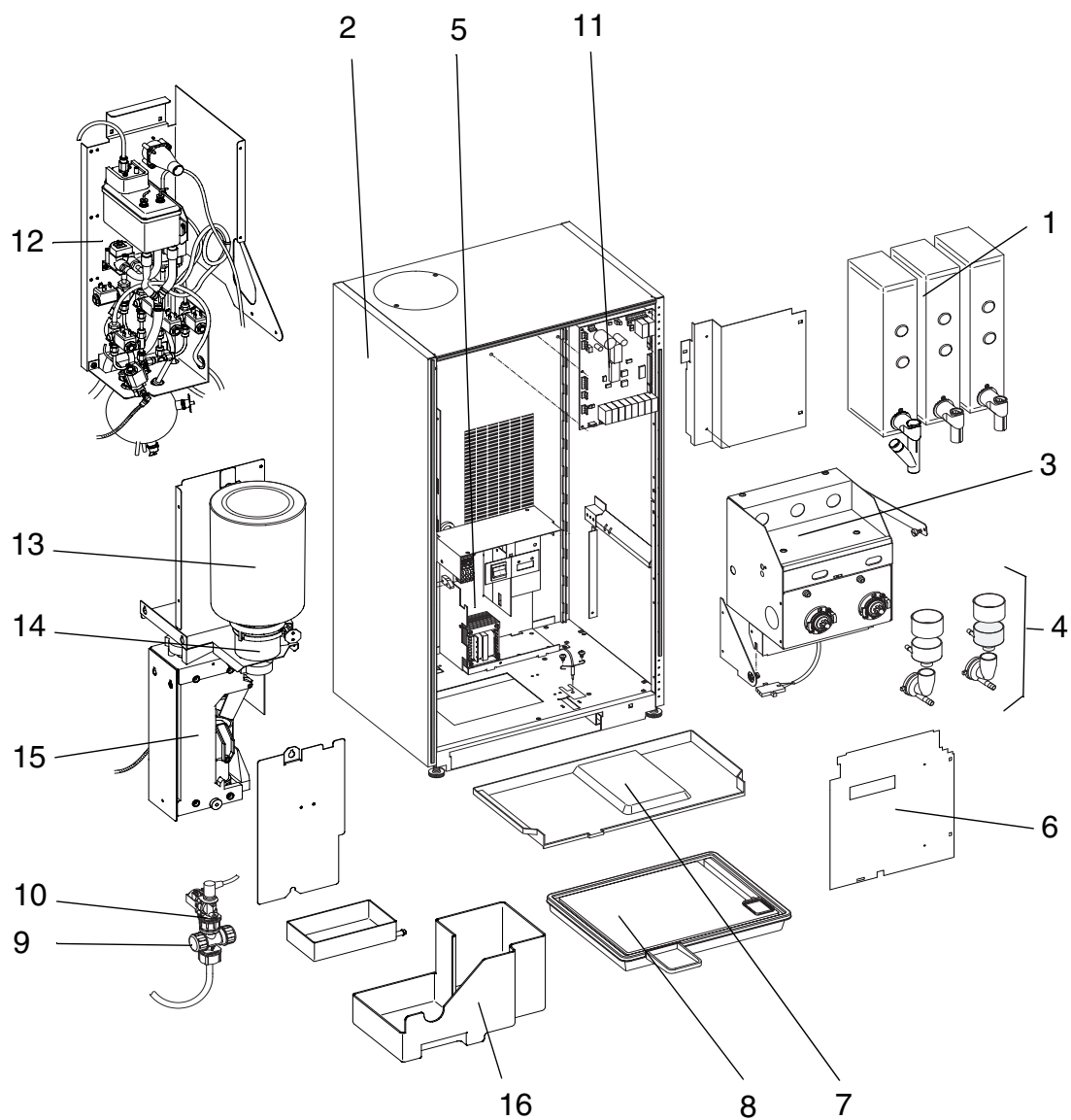
IN

Parts	
1.	Instant ingredient canisters
2.	Cabinet
3.	Ingredient motor shelf
4.	Ingredient mixing unit
5.	Electronic box
6.	Protective cover
7.	Waste tray
8.	Drip tray
9.	Ingredient mixing unit
10.	Ingredient motor shelf
11.	Instant ingredient canisters
12.	Water tank cover
13.	Water filter
14.	Inlet valve
15.	Water tank
16.	Water tank lid
17.	Vending machine controller

## Components of the cabinet

Parts

ES



## List of items

ES

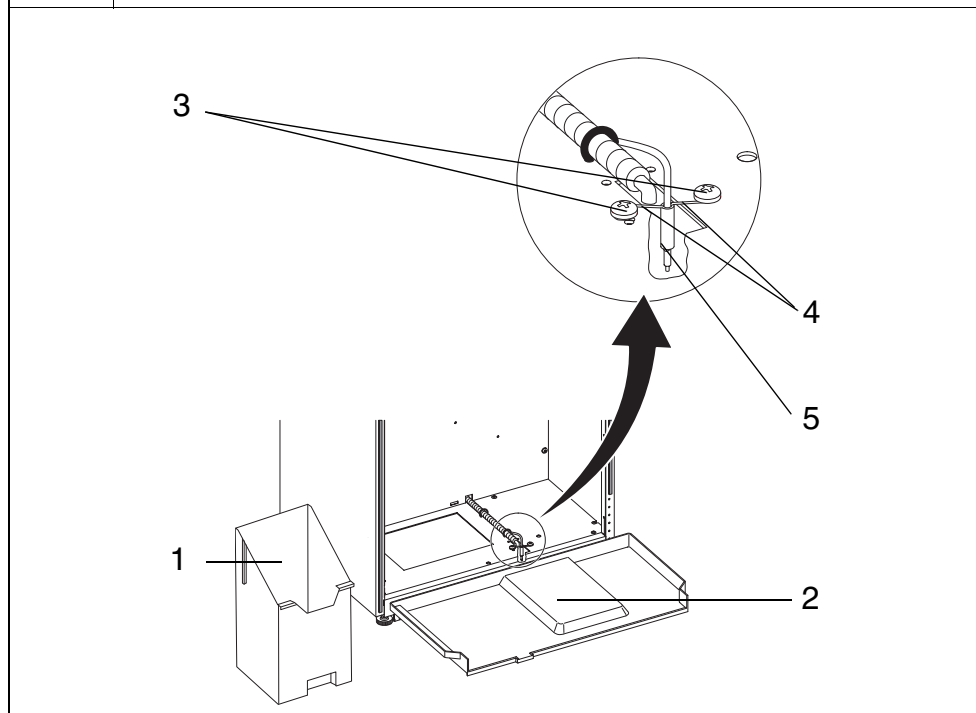
Parts	
1.	Instant ingredient canisters
2.	Cabinet
3.	Ingredient motor shelf
4.	Ingredient mixing unit
5.	Electronic box
6.	Protective cover
7.	Waste tray
8.	Drip tray
9.	Water filter
10.	Inlet valve
11.	Vending machine controllers
12.	Espresso water system
13.	ES coffee bean canister
14.	Coffee grinder
15.	Espresso brewer
16.	Waste bucket

## Dismounting the drip tray sensor

### Procedure

Follow this procedure to dismount the drip tray sensor:

Step	Action
1.	Open the door, turn off the machine (main switch), unplug the power supply plug.
2.	Remove the waste bucket (1).
3.	Remove the waste tray (2).
4.	Loosen the screws (3).
5.	Remove the wires (4) and remove the drip tray sensor (5) by gently pulling upwards.



## Water stop valve (if used)

### Maintenance

The filter sieve of the water stop valve must be rinsed under running water after 50,000 dispensings (more often when the water is hard). Replace it, if necessary.



## Chapter 8

WITTENBORG



## **Freshbrew/instant water system**

### **Overview**

---

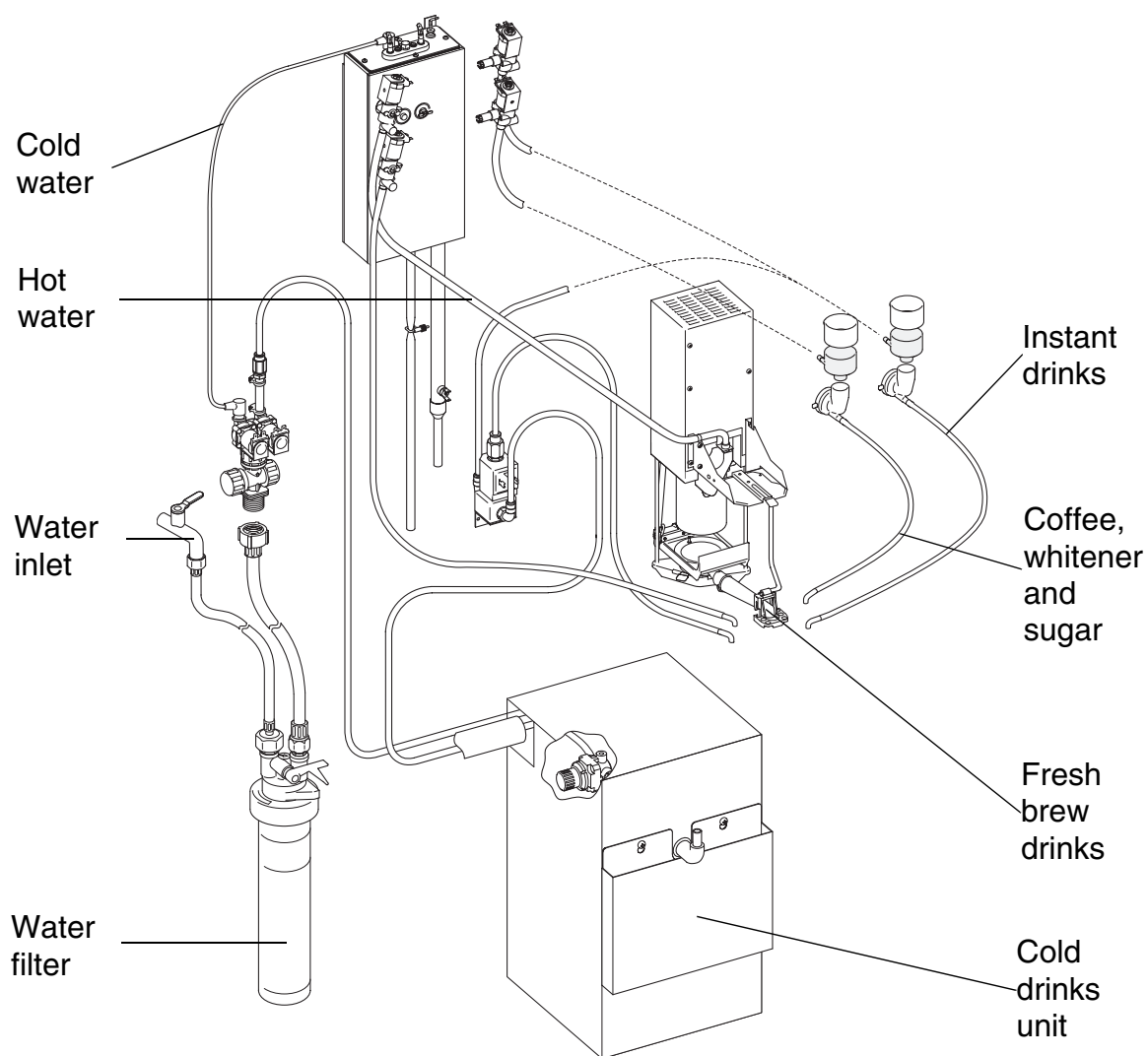
In this section you will find the following information about the freshbrew/instant water system:

- Survey of the freshbrew/instant water system
  - Components of the freshbrew/instant water tank
  - Dismounting freshbrew/instant water tank cover
  - Draining water from the freshbrew/instant water tank
  - Dismounting the valves for the brewer, instant beverages and hot water
  - Dismounting the freshbrew/instant water tank - FB
  - Dismounting the freshbrew/instant water tank - IN
  - Dismounting the freshbrew/instant water tank lid
  - Dismounting the temperature sensor
  - Dismounting the boil over sensor
  - Resetting the boil over sensor
  - Dismounting inlet valve, connecting hose and water filter
-

## Survey of the freshbrew/instant water system - FB

### Water system

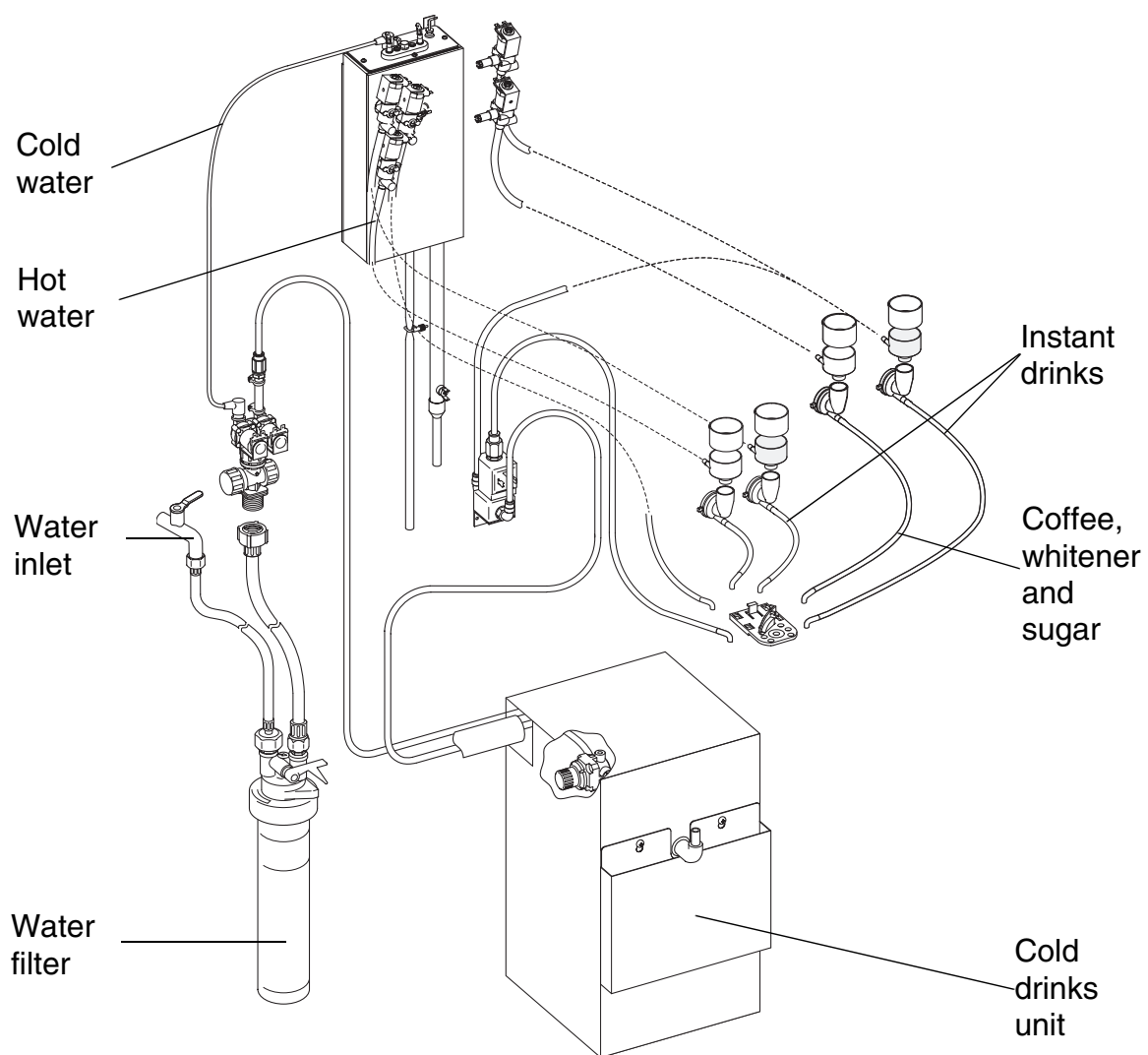
The illustration below shows the water system:



## Survey of the instant water system - IN

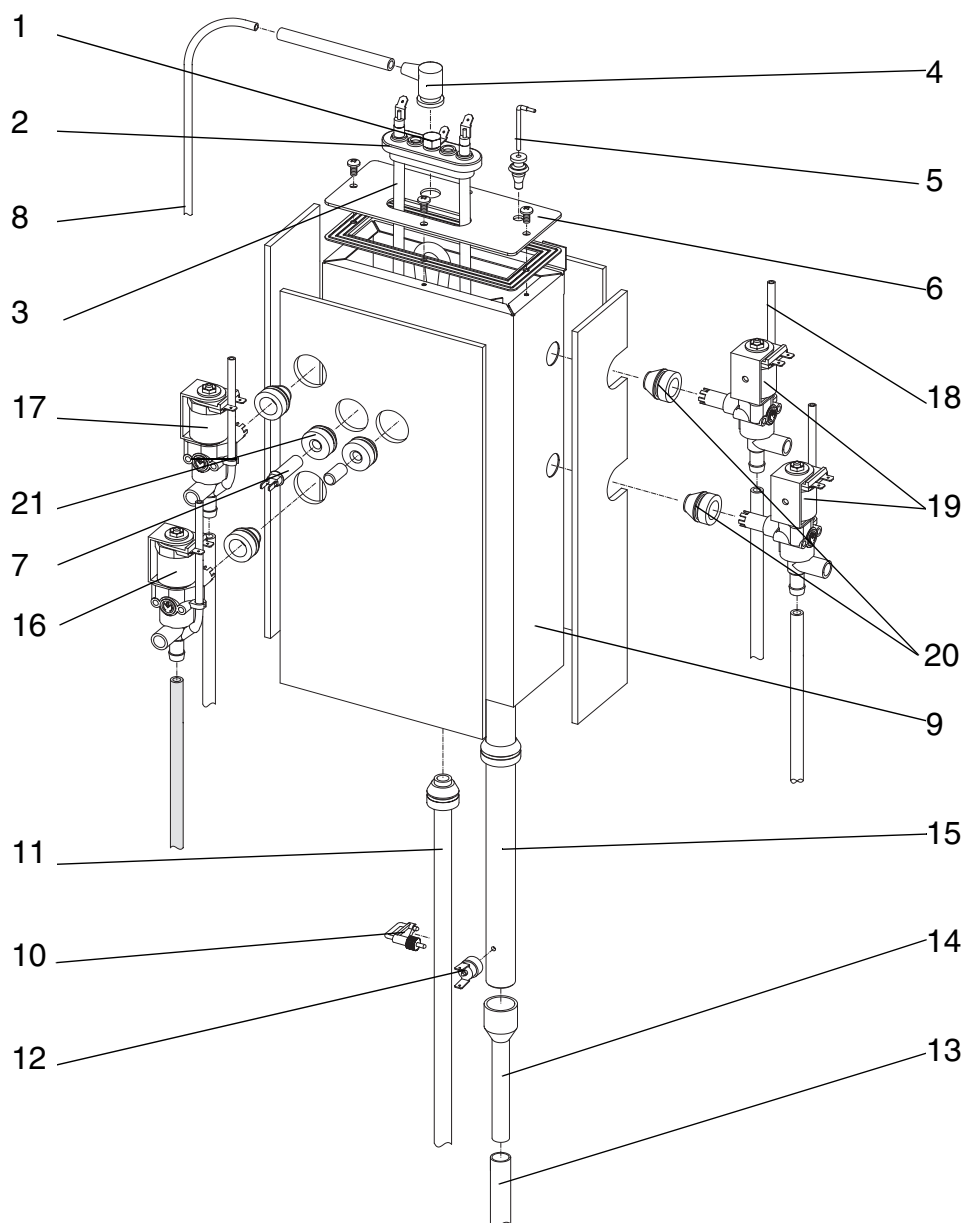
Water system

The illustration below shows the water system:



## Components of the freshbrew/instant water tank

### Parts



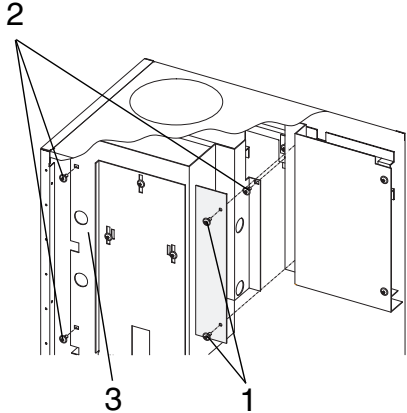
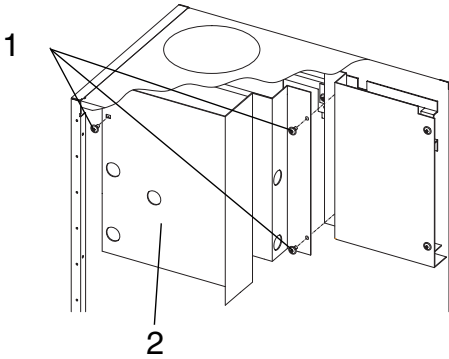
## List of items

Parts	
1.	Nut
2.	Flange
3.	Heating element
4.	Angular nozzle
5.	Water level sensor
6.	Freshbrew/instant water tank lid
7.	Temperature sensor
8.	Inlet hose
9.	Freshbrew/instant water tank housing
10.	Hose clamp
11.	Drain hose
12.	Safety thermostat
13.	Overflow hose
14.	Rubber spout
15.	Overflow tube
16.	Valve, hot water
17.	Valve, brewer
18.	Air hose
19.	Valves, for instant
20.	Silicone gaskets for valves
21.	Silicone gasket for temperature sensor

## Dismounting freshbrew/instant water tank cover

### Procedure

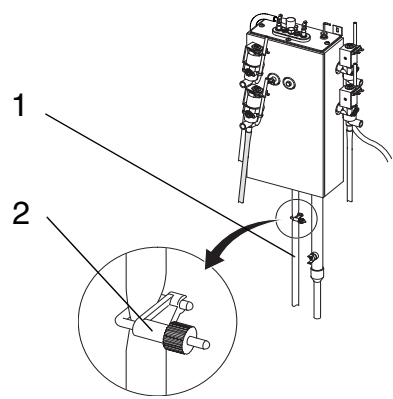
Follow this procedure to dismount the water tank cover:

Step	Action	Illustration
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.	
2.	Dismount the brewer unit.	
3.	Unscrew screws (1) then unscrew screws (2).  Dismount the water tank cover (3) by slightly turning it upwards.	<p>FB</p> 
	Unscrew screws (1).  Dismount the water tank cover (2) by slightly turning it upwards.	<p>IN</p> 

## Draining water from the freshbrew/instant water tank

### Procedure

Follow this procedure to drain water from the water tank:

Step	Action	Illustration
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.	
2.	Remove waste bucket (only FB).	
3.	Remove protective cover.	
4.	Place the drain hose (1) into a container (min. capacity 5 l).	
5.	Remove the hose clamp (2).	
6.	Drain the water from the water tank.	

### Note

Do not pull the drain hose out of the water tank.

### Warning

Hot water, there is the risk of being scalded.

## Dismounting the valves for the brewer, instant beverages and hot water

### Procedure

Follow this procedure to dismount the valves:

Step	Action	Illustration
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.	
2.	Dismount brewer unit.	
3.	Remove water tank cover.	
4.	Drain water from the water tank.	
5.	Loosen the corresponding hoses for the valves to be dismounted brewer (1), hot water (2) and instant beverages (3 and 4).	
6.	Disconnect the electrical connection and pull off the valves (5, 6, 7 and 8).	

### Note

The valves for beverages are pre-adjusted.  
 If necessary replace the gasket before installing the new valve.  
 Place the valve ventilation on the new valve during installation.  
 Valve for upper position: short valve ventilation.  
 Valve for lower position: long valve ventilation.



## Dismounting the freshbrew/instant water tank

### Introduction

The water tank only has to be dismounted, if it is going to be replaced by a new one. All other parts than the water tank can be replaced, while the water tank remains inside the machine.

### Procedure

Follow this procedure to dismount the water tank:

Step	Action	Illustration
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.	
2.	Drain water from the water tank.	
3.	Dismount the FB brewer unit (FB) or dismount left instant ingredient unit (IN)	
4.	Dismount water tank cover.	
5.	Remove valves with hoses and electrical connections (1).	
6.	Remove water inlet (2).	
7.	Remove the overflow hose (3).	

Step	Action	Illustration
8.	Remove electrical connections to the heating element, level sensor and temperature sensor.	
9.	Unscrew the water tank.	

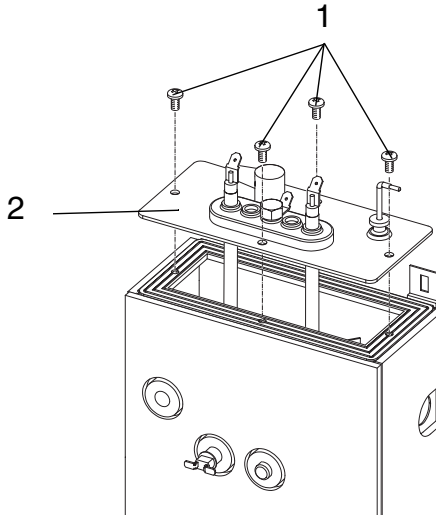
## Warning

- During reinstallation make sure that the hoses installed are tightly fastened
- Instructions for reinstallation of the freshbrew/instant water tank: When the cable and/or the plugs shows signs of brittleness (visual check) the assembly group water tank or water tank lid must be replaced as a whole (electrical safety!)

## Dismounting the freshbrew/instant water tank lid

### Procedure

Follow this procedure to dismount the water tank lid:

Step	Action	Illustration
1.	Dismount the freshbrew/instant water tank.	
2.	Remove the screws (1).	
3.	Remove the water tank lid (2) in upwards direction.	

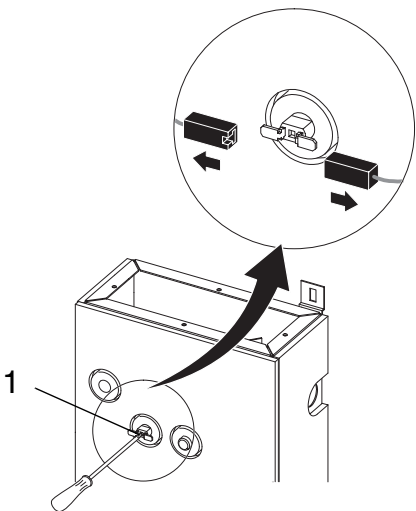
### Note

The water tank lid can also be dismounted from the top after removing the cabinet cover.

## Dismounting the temperature sensor

### Procedure

Follow this procedure to dismount the temperature sensor:

Step	Action	Illustration
1.	Dismount the water tank.	
2.	Dismount the water tank lid.	
3.	<p>Use a screw driver to hold the temperature sensor (1), then disconnect the 2 flat plugs (to keep the insulation from breaking).</p> <p>NB. The collar of the temperature sensor has to be pushed into the water tank, so the collar is situated behind the edge of the water tank.</p>	
4.	<p>Press the temperature sensor out of the water tank by turning it from the inside.</p> <p><b>Note:</b> Check the sensor bushing for tears and brittleness, replace it if necessary. Always replace silicone gaskets.</p>	

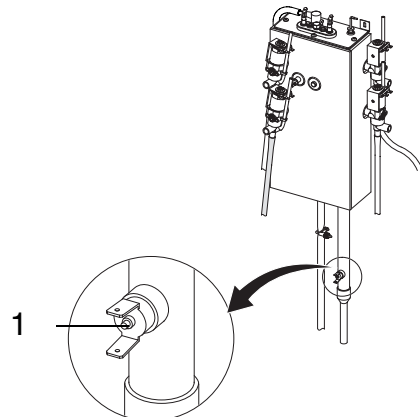
### Note

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 the boil over sensor

### Procedure

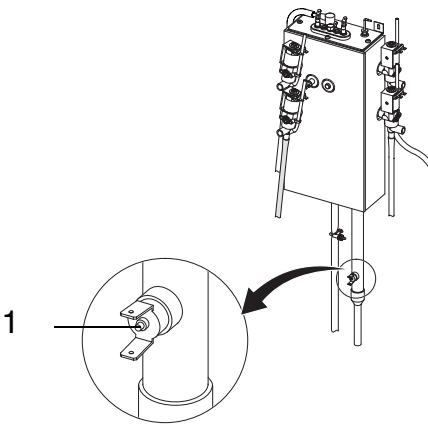
Follow this procedure to dismount the boil over sensor:

Step	Action	Illustration
1.	Open the cabinet door, turn off the machine (main switch), pull out the power supply plug and close the water cock.	
2.	Dismount the brewer.	
3.	Remove the protective cover in front of the freshbrew/instant water tank.  <b>Warning: Hot water, there is a risk of being scalded. Wait till the water has cooled down.</b>	
4.	Disconnect the electrical connection.	
5.	Unscrew the boil over sensor (1).	

## Resetting the boil over sensor

### Procedure

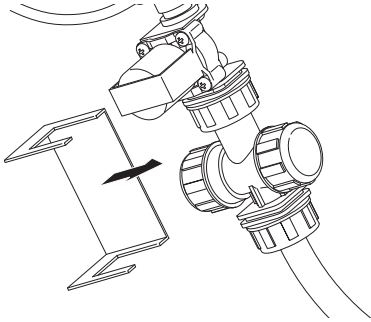
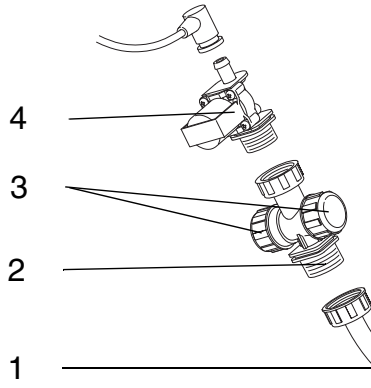
Follow this procedure to reset the boil over sensor:

Step	Action
1.	Open the cabinet door, turn off the machine (main switch), pull out the power supply plug and close the water cock.
2.	Dismount the brewer.
3.	Remove the protective cover in front of the water tank.
4.	Press the reset button (1) at the boil over sensor: 

## Dismounting inlet valve, connecting hose and water filter

### Procedure

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

Step	Action	Illustration
1.	Open the cabinet door, turn off machine (main switch), unplug the power supply plug and close the water cock.	
2.	Remove waste bucket (only FB).	
3.	Remove waste tray.	
4.	Remove protective cover.	
5.	Remove inlet valve from inlet valve holder.  NB. The inlet valve holder is mounted on the back inner wall.	
6.	<ul style="list-style-type: none"> <li>• Unscrew connecting hose (1).</li> <li>• Unscrew water filter from inlet valve (2).</li> <li>• Unscrew filter lid (3).</li> <li>• Dismount inlet valve (4).</li> </ul>	







## Chapter 9

WITTENBORG

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<b><i>Dismounting the Ejector Spring</i></b>	<b><i>2.14</i></b>
<b><i>Replacing the Gaskets of the Brewer Cylinder</i></b>	<b><i>2.15</i></b>
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# 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:

- |                               |   |
|-------------------------------|---|
| <b>1</b> 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. |
| <b>2</b> Actuator motor       | drives the actuator, controls the brewing process.  |
| <b>3</b> Dosing motor         | drives the dosing unit, controls the product quantity.  |
| <b>4</b> Brewer Closed Switch | switches as soon as the brewer cylinder and the filter plate form a chamber.  |
| <b>5</b> Actuator             | controls the functions of the filter plate, the plunger and the scraper during the brewing process.   |
| <b>6</b> Brewer At End Switch | switches on both end positions of the brewer, e. g. scraper in end position or lower plunger position.  |

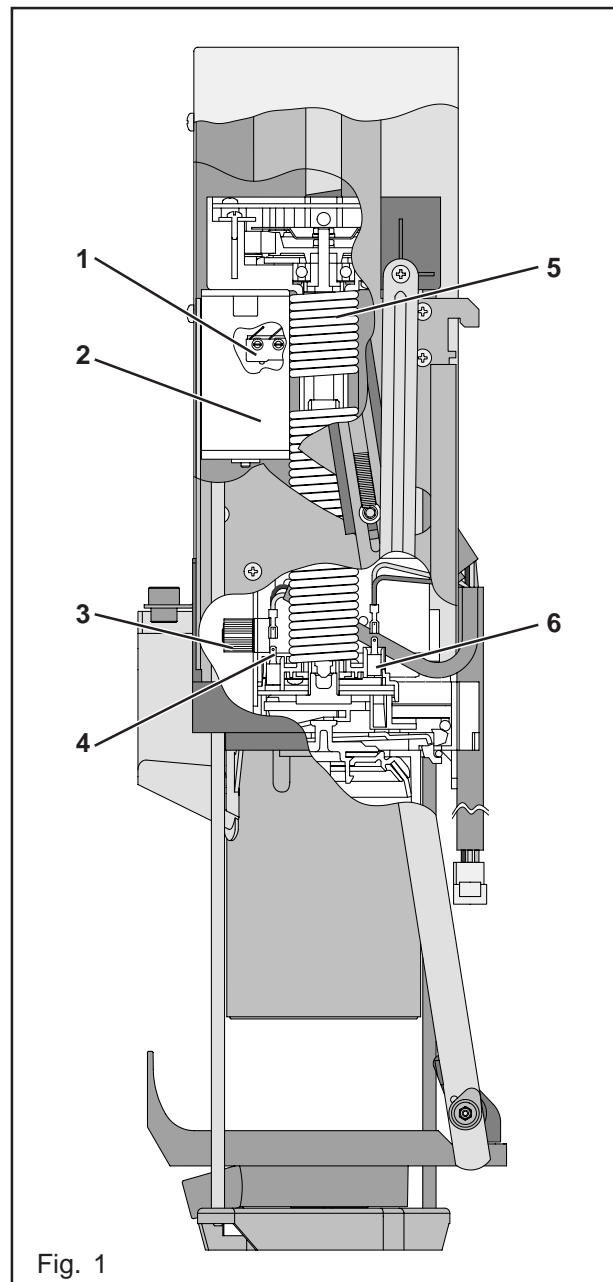


Fig. 1

## 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)

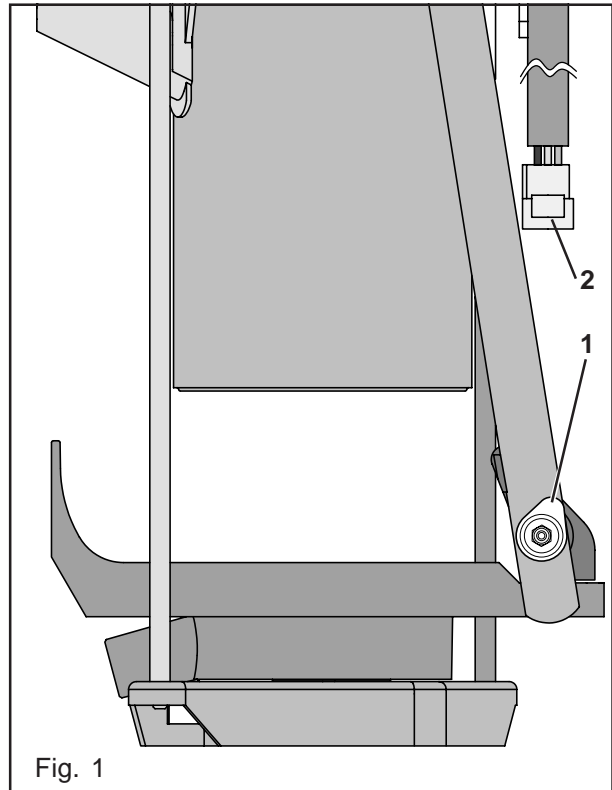


Fig. 1

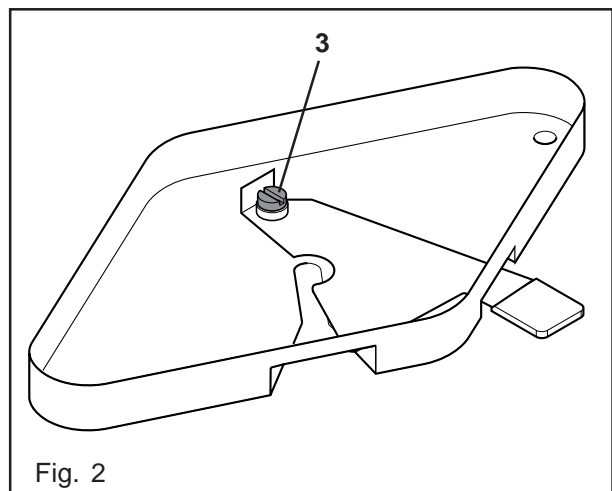


Fig. 2

## 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)

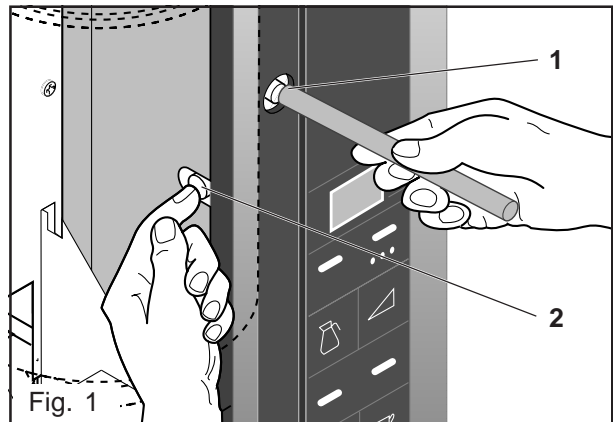


Fig. 1

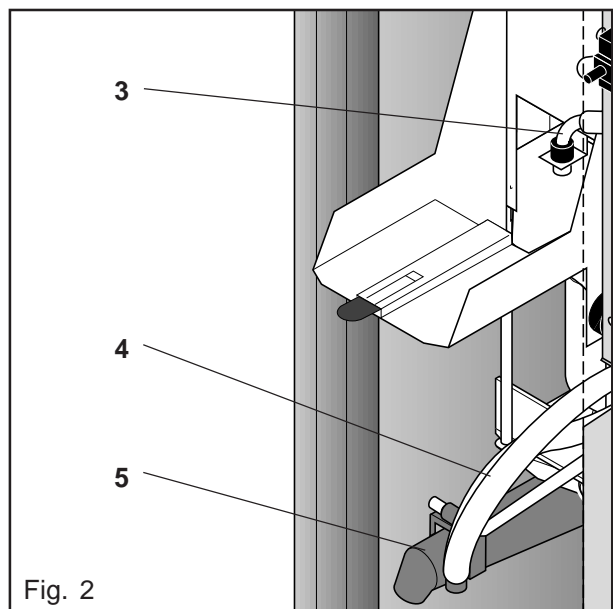


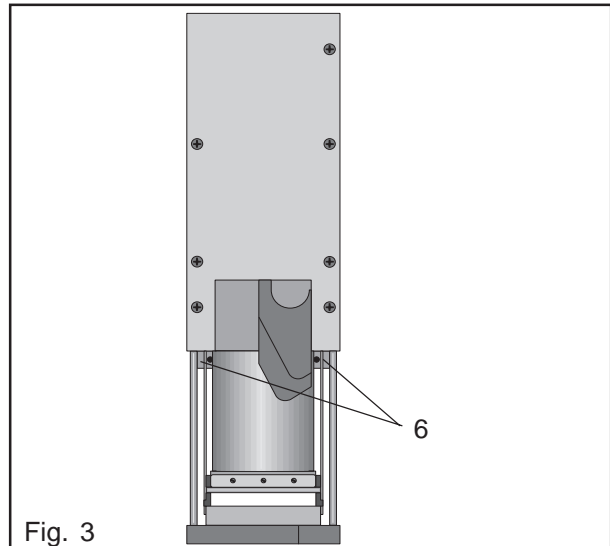
Fig. 2

- 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.





## 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.

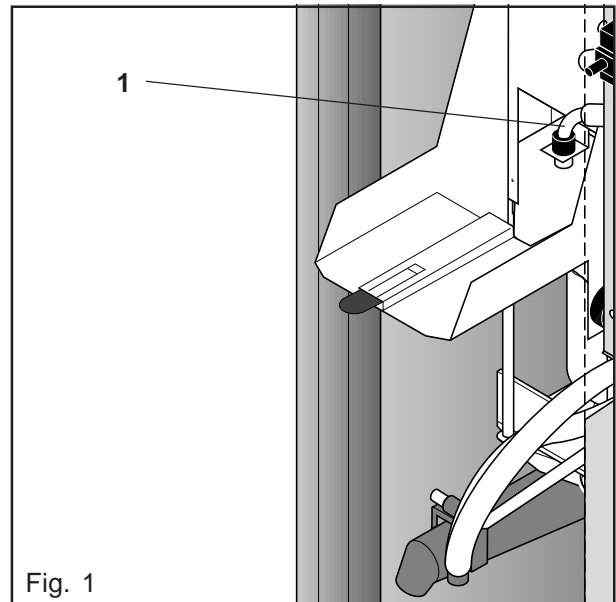


Fig. 1

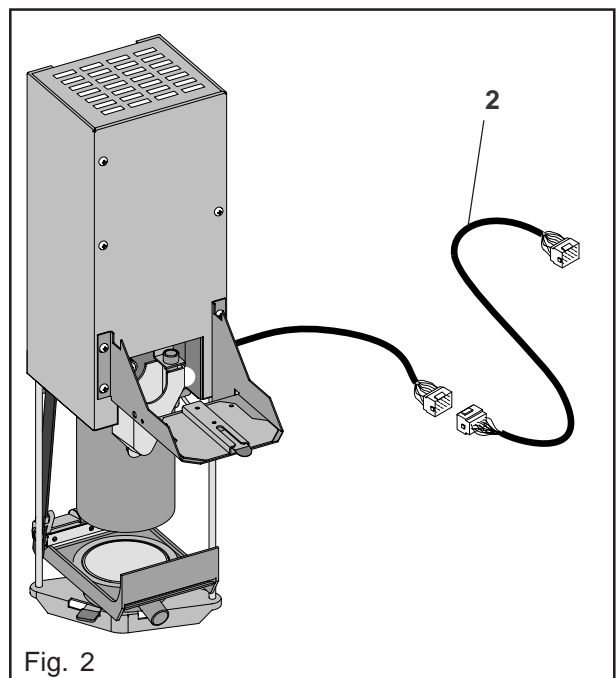
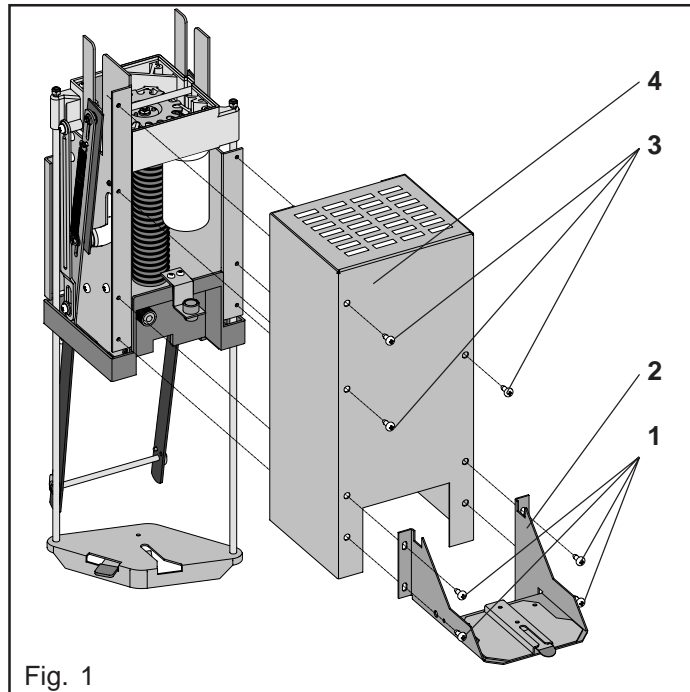


Fig. 2

## 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.

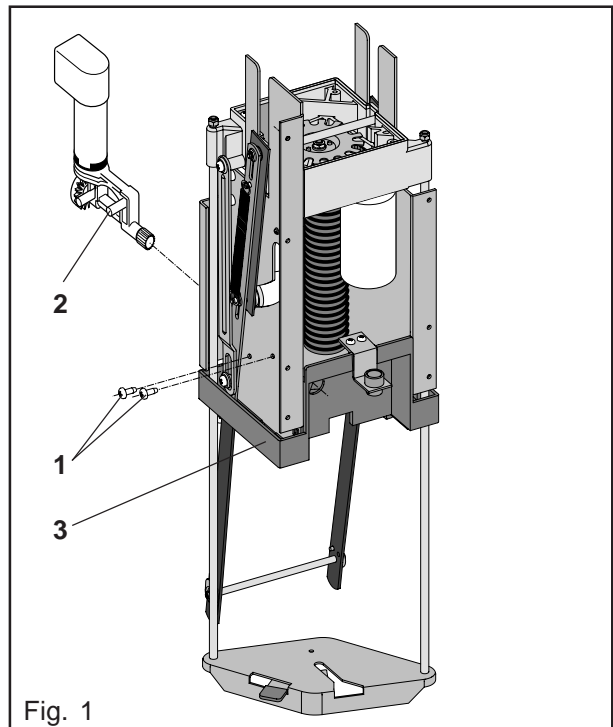


Fig. 1

## 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)

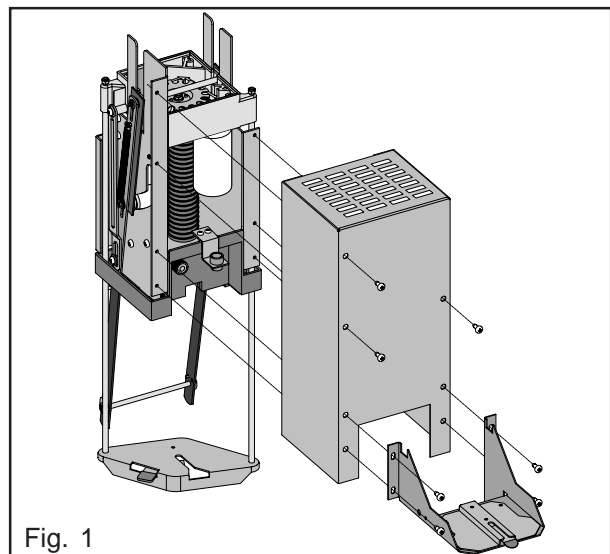


Fig. 1

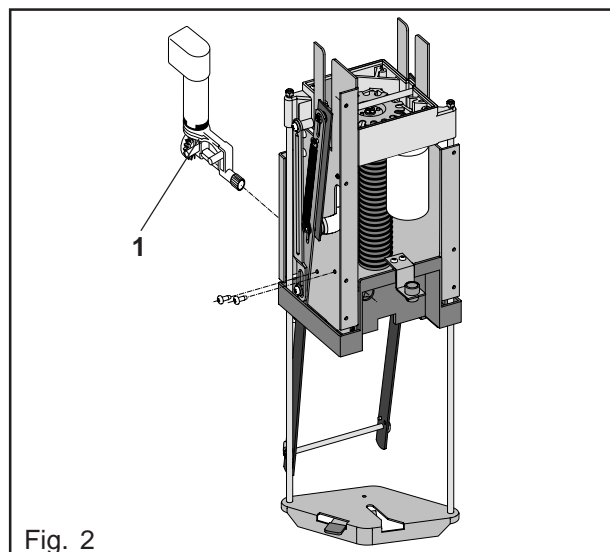


Fig. 2

- 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.**

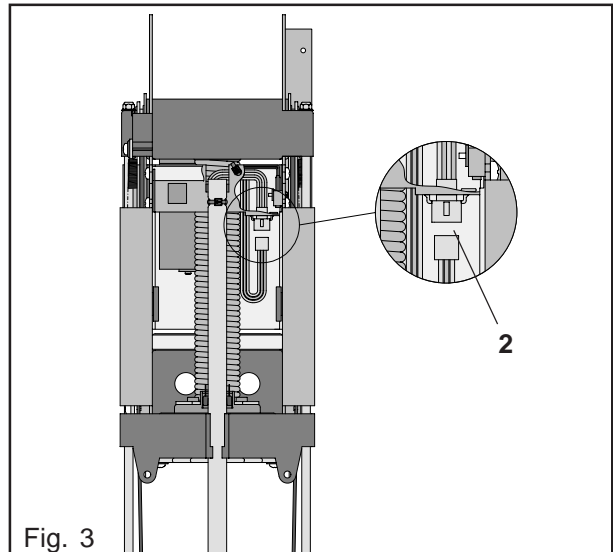


Fig. 3

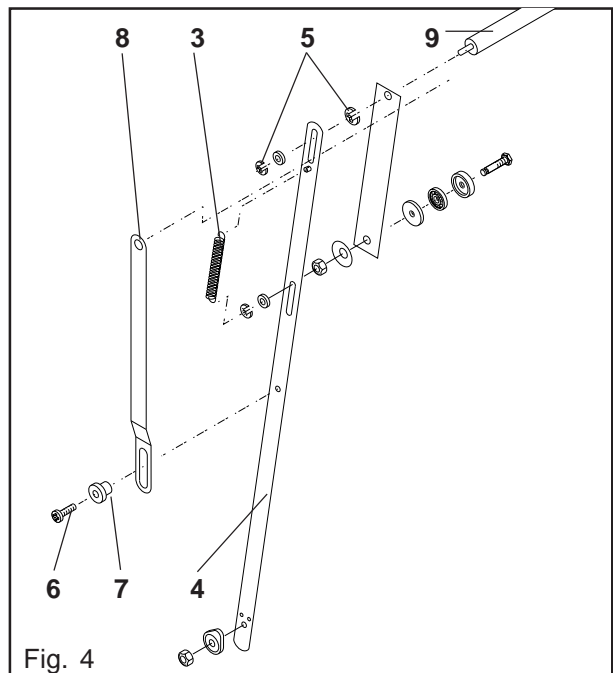


Fig. 4

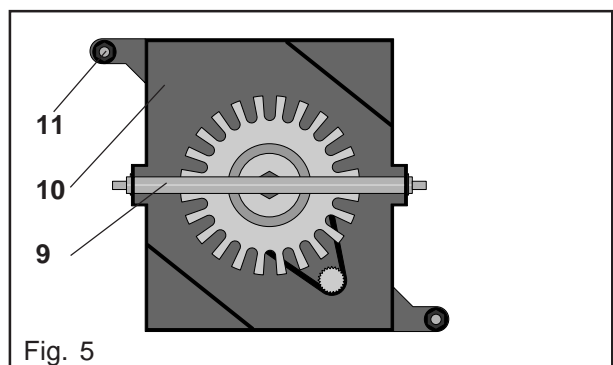


Fig. 5

- 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)

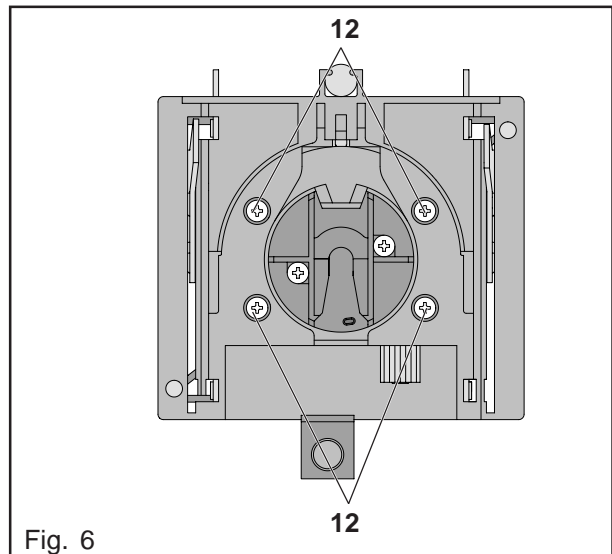


Fig. 6

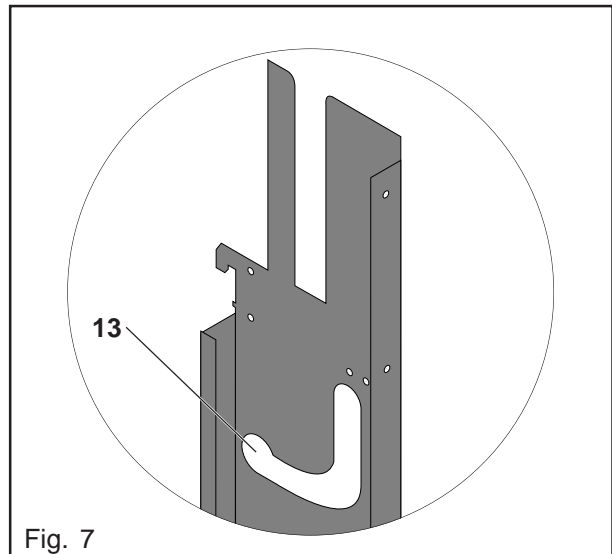


Fig. 7

## 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.**

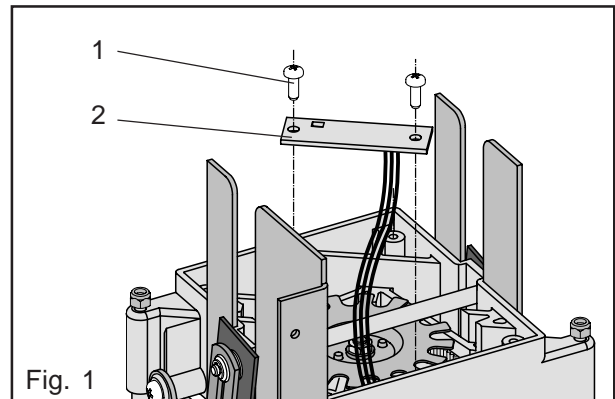


Fig. 1

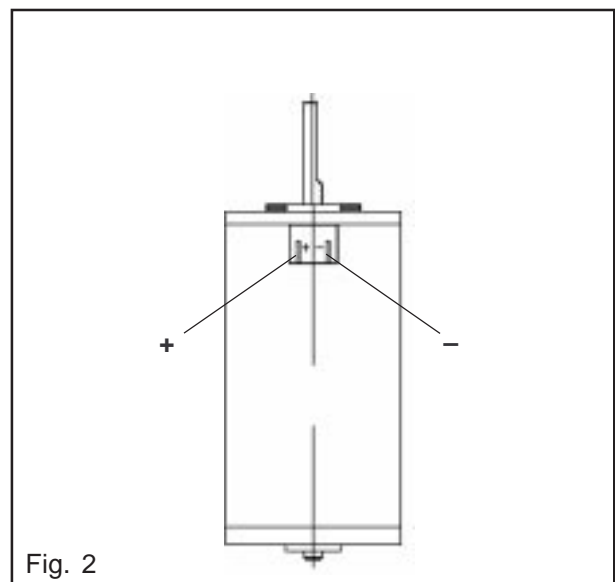


Fig. 2

## 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)

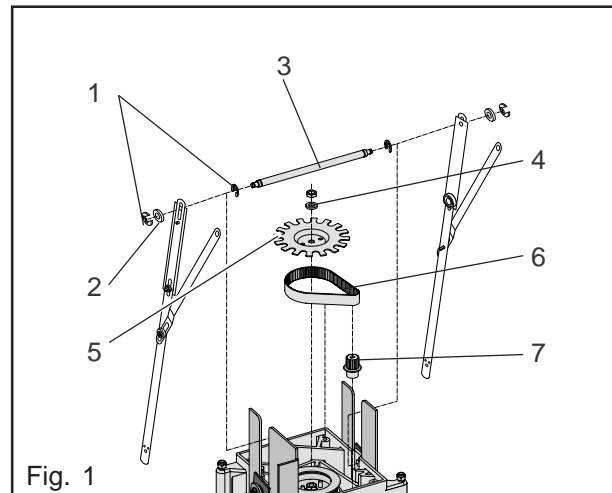


In order to replace both gears and toothed belts in one step, the actuator has to be dismounted and expanded.



### **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.

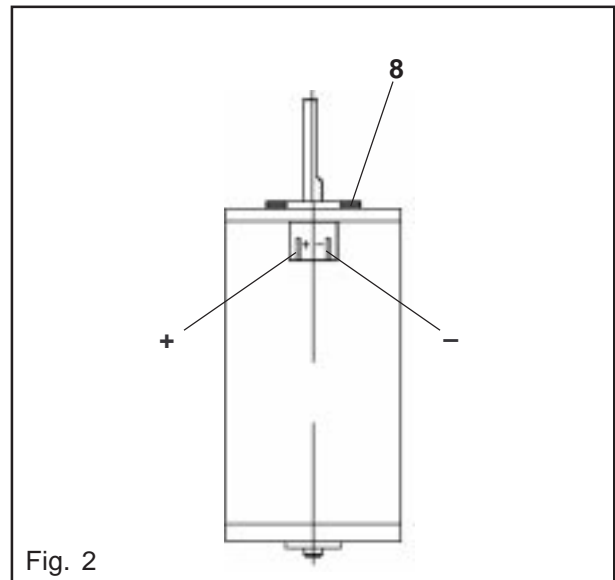


Fig. 2

## 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)

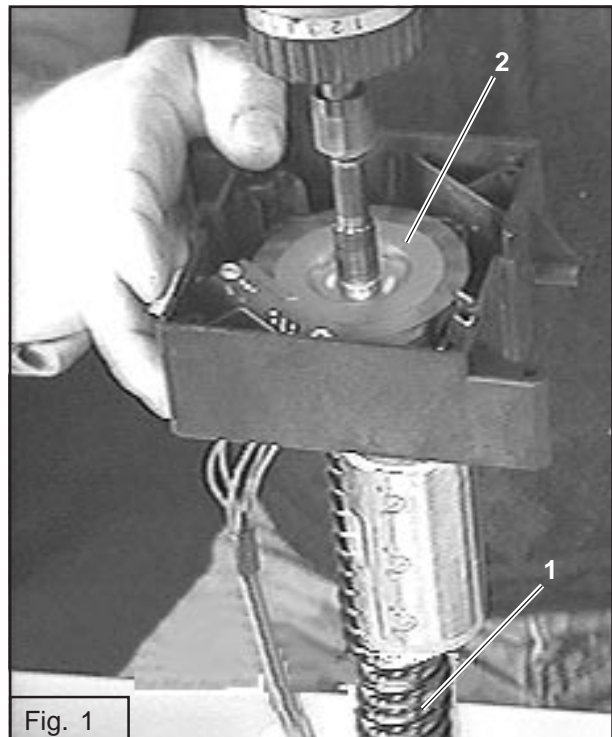


Fig. 1

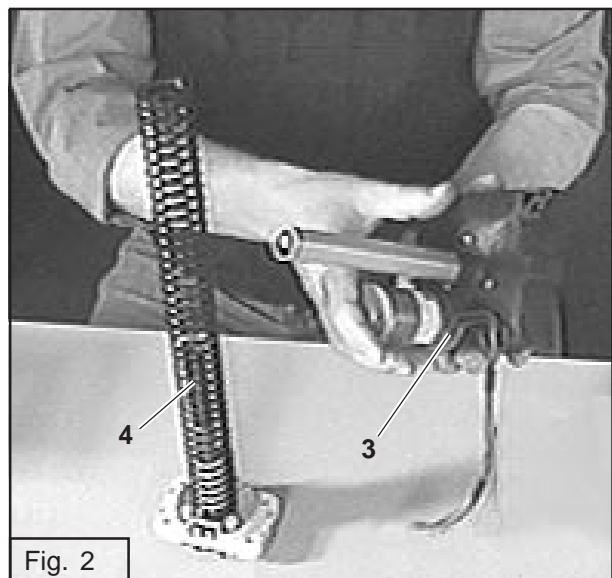


Fig. 2

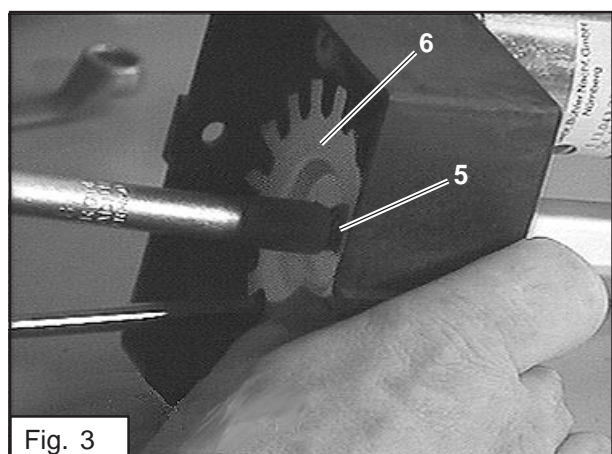
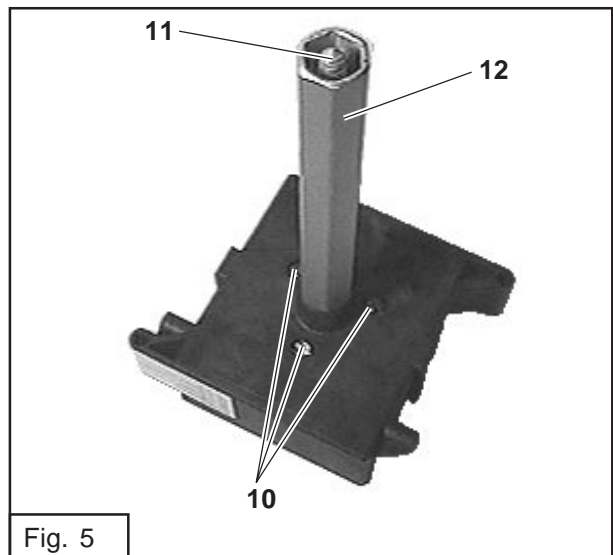
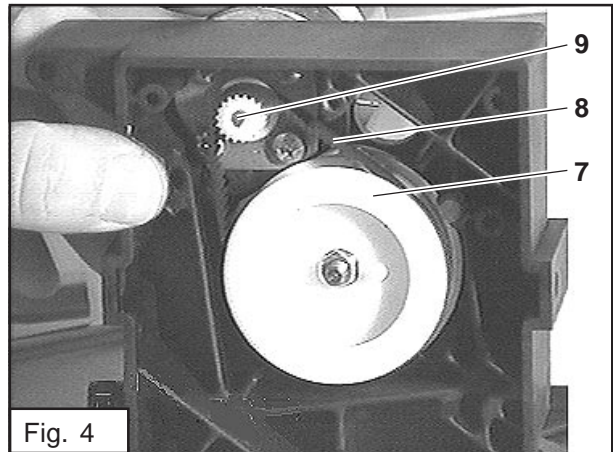


Fig. 3

- 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)



- 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.

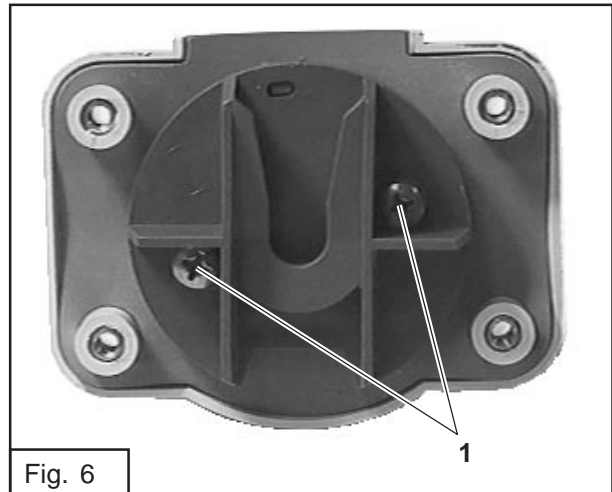


Fig. 6

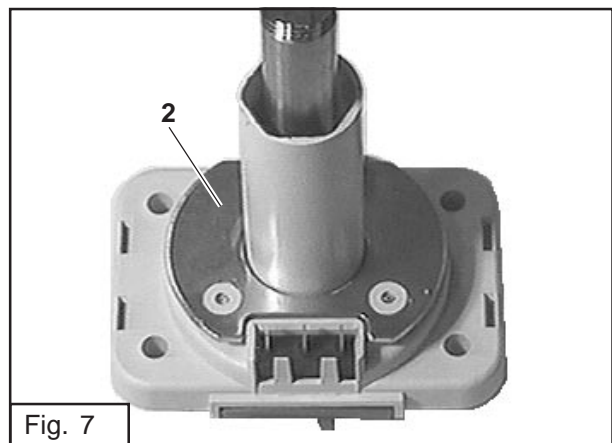


Fig. 7



Fig. 8

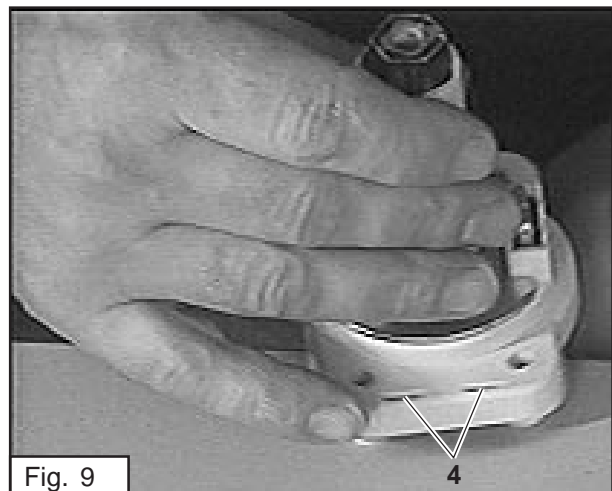


Fig. 9

## 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.

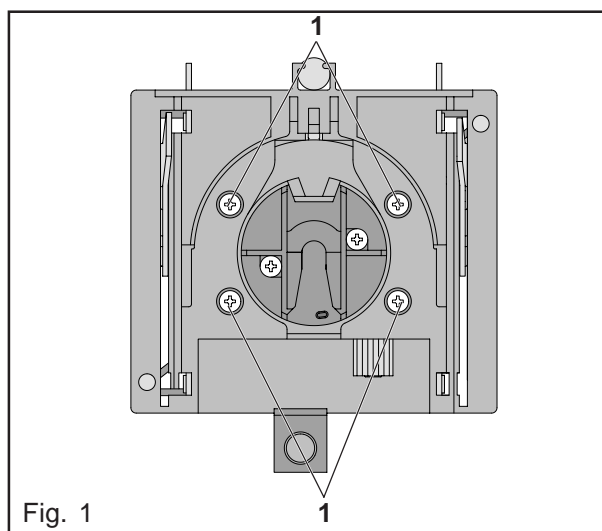


Fig. 1

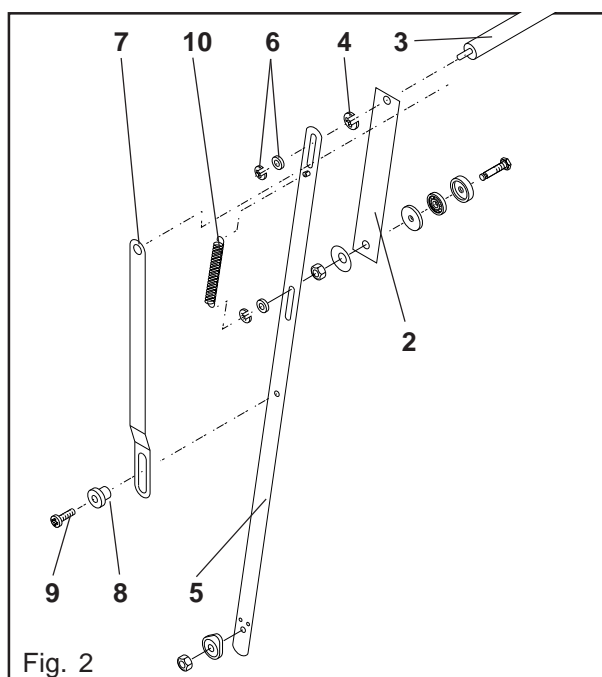


Fig. 2

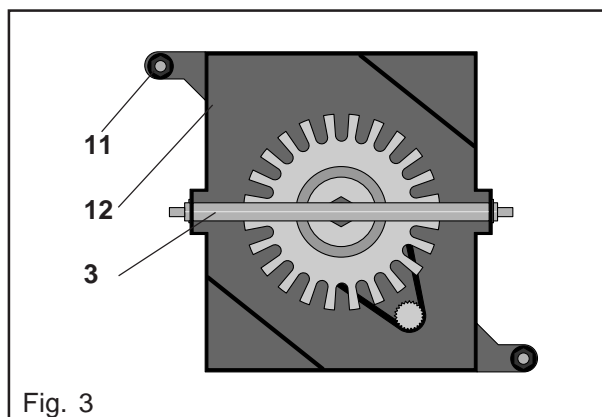
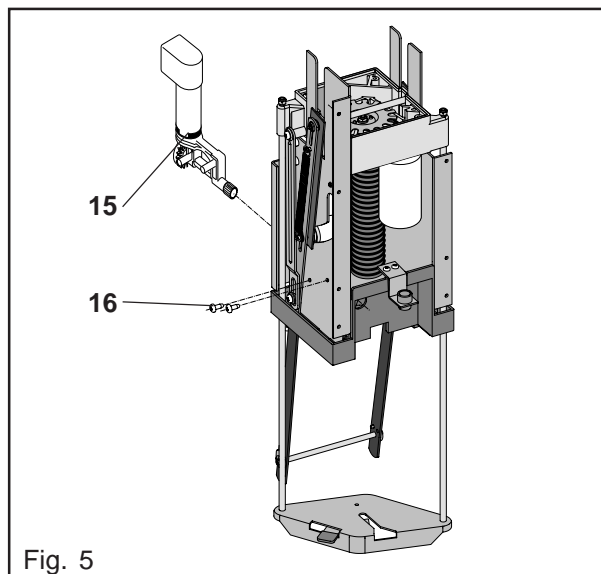
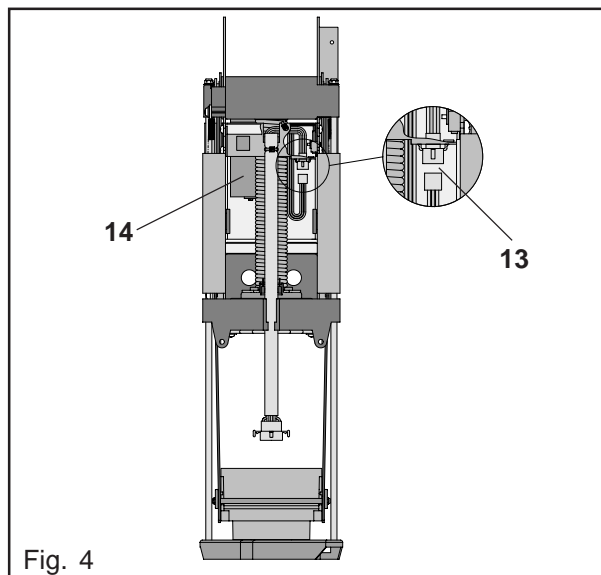


Fig. 3

- 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.

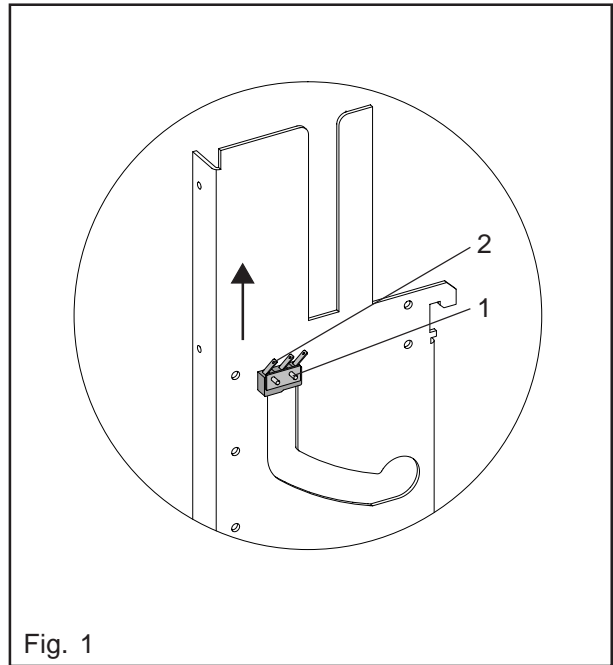


Fig. 1

### 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.

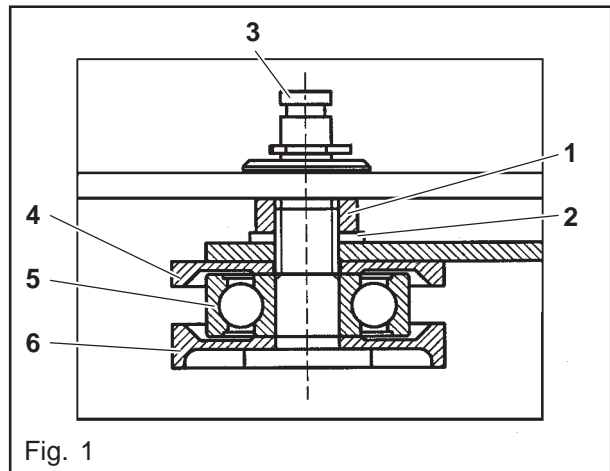


Fig. 1



## 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).

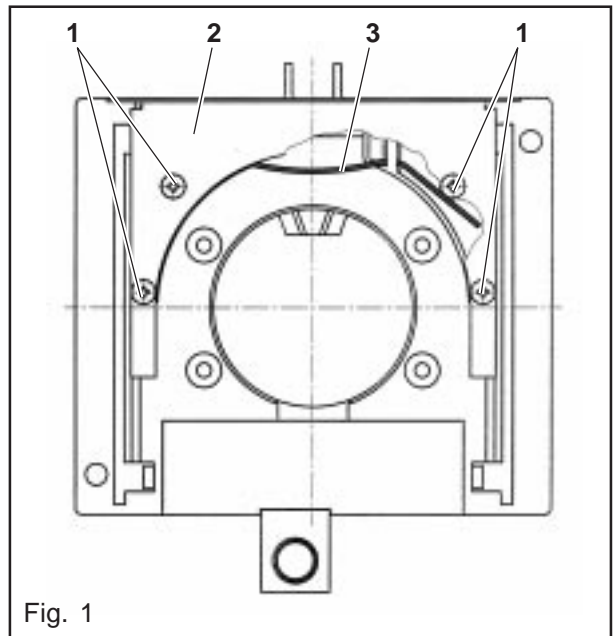


Fig. 1

## 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.

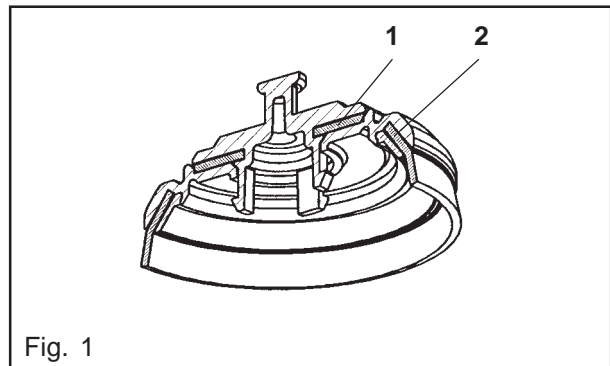


Fig. 1

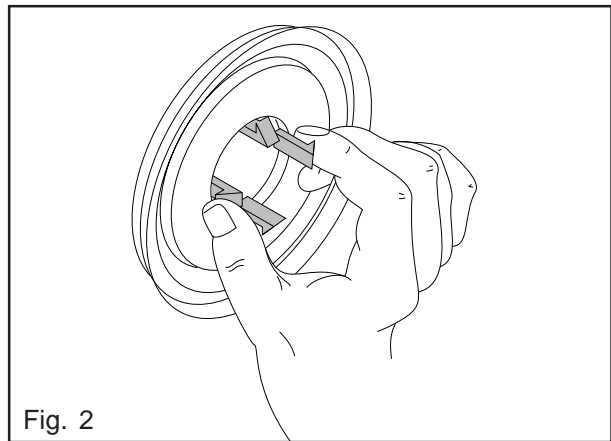


Fig. 2

## 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)

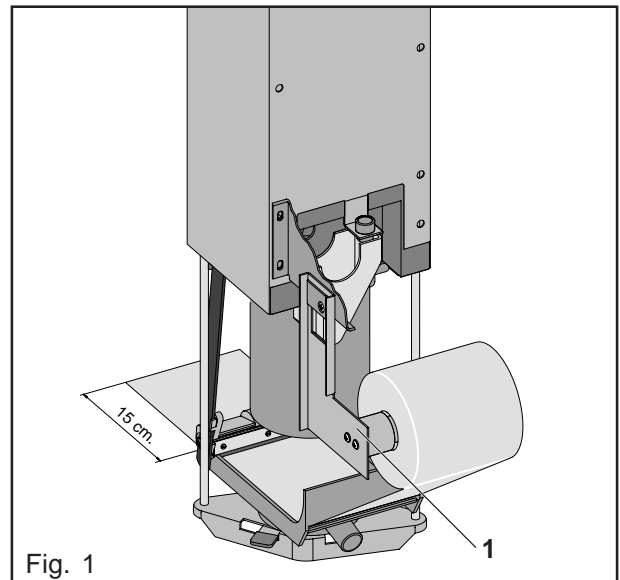


Fig. 1

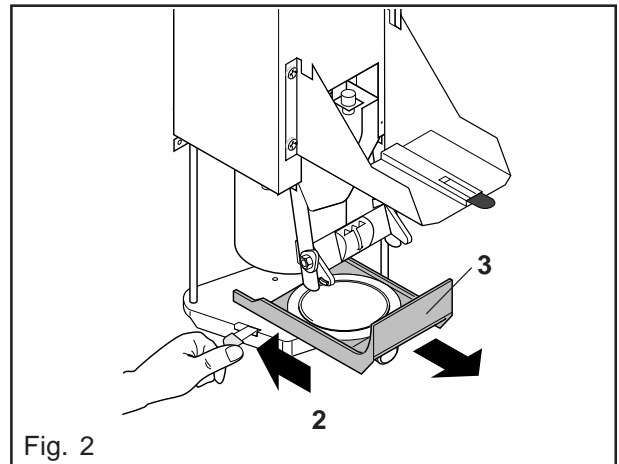


Fig. 2

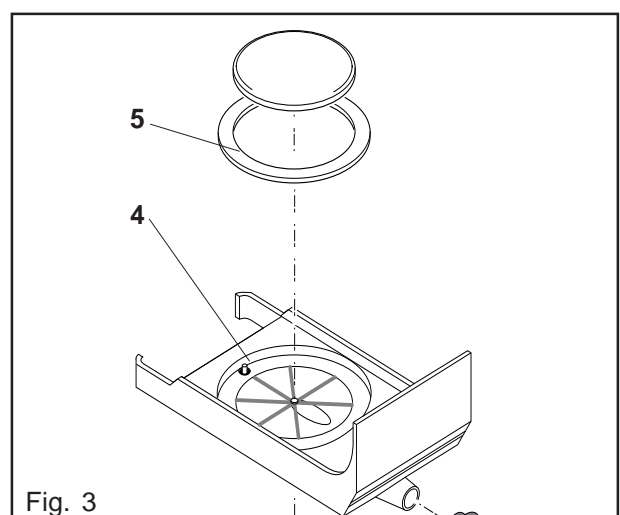
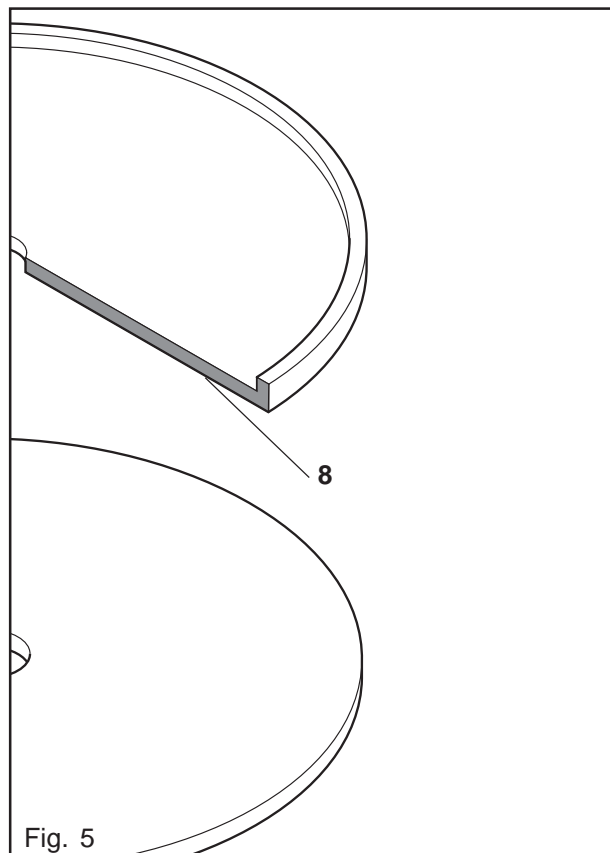
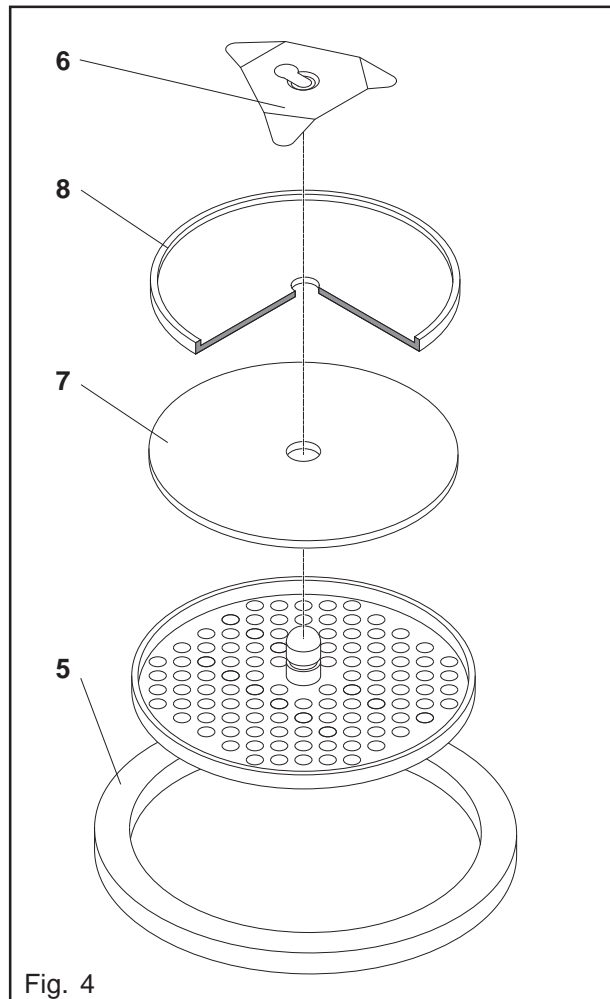


Fig. 3

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:

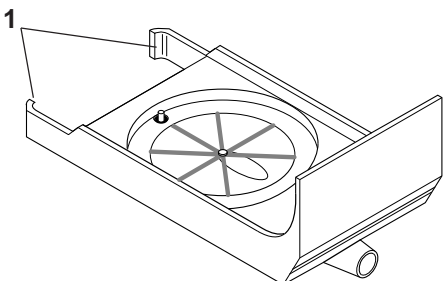
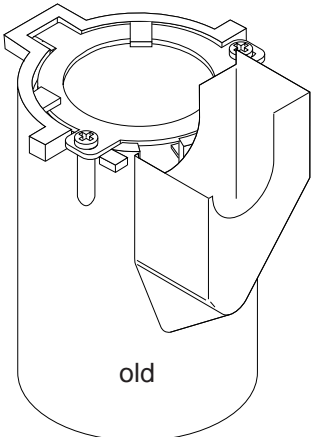
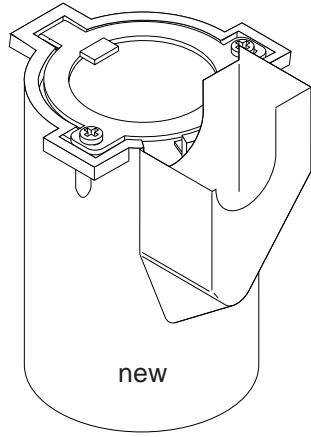
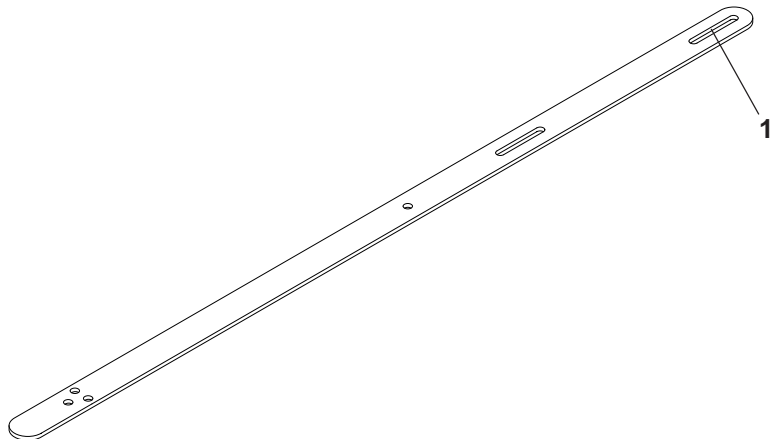
- For brewers which have been installed by the manufacturer the data for the fields MACH. TYPE (1), INSTALL.DATE (2), and COUNTER (3) are already filled in.
- In case of **replacing** brewers/actuators, the data for fields (1), (2) und (3) have to be filled in by the service technician.
- In case of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

The diagram shows a rectangular label with a rounded top-right corner. It is divided into two main sections. The left section is titled 'MACH.TYPE' and contains a list of machine types: FB50..., FB55..., 5500..., 5100..., and a blank line with a small square box next to it. The right section is divided into two horizontal rows. The top row is titled 'INSTAL.DATE.....' and the bottom row is titled 'REMOVE DATE.....'. Both rows have a 'COUNTER.....' field to their right. The label is numbered 1 through 5: 1 points to the 'MACH.TYPE' header, 2 points to the 'INSTAL.DATE.....' field, 3 points to the 'COUNTER.....' field under 'INSTAL.DATE', 4 points to the 'REMOVE DATE.....' field, and 5 points to the 'COUNTER.....' field under 'REMOVE DATE'.

Fig.1

## 2.18 Check List

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

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

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

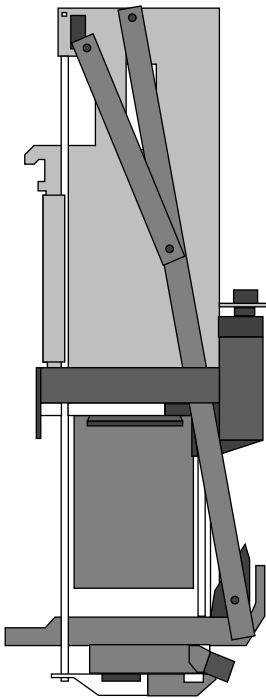


Fig. 2  
Brewer cylinder closed

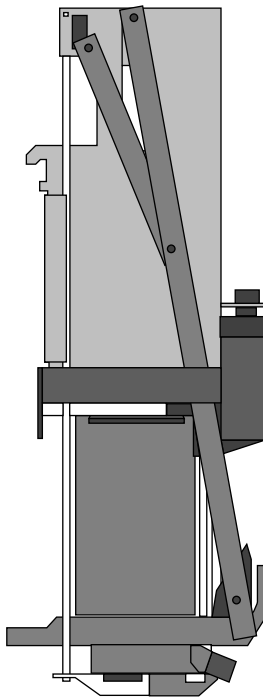


Fig. 3  
Plunger in lower position

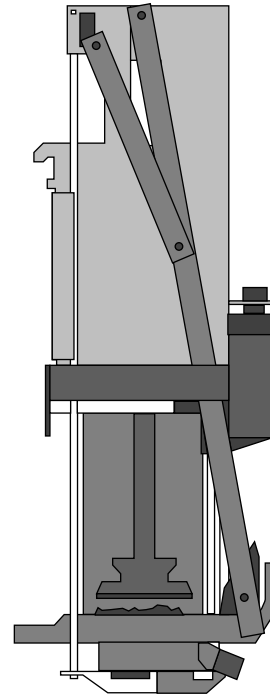


Fig. 4  
Plunger in upper position

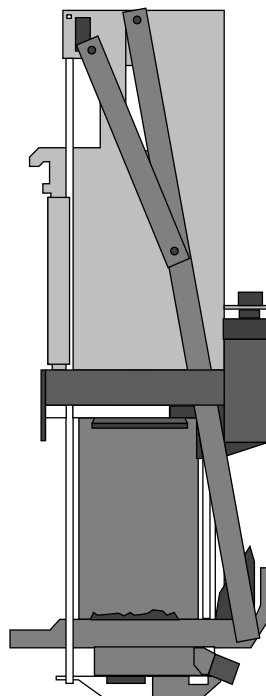


Fig. 5  
Brewer cylinder opened

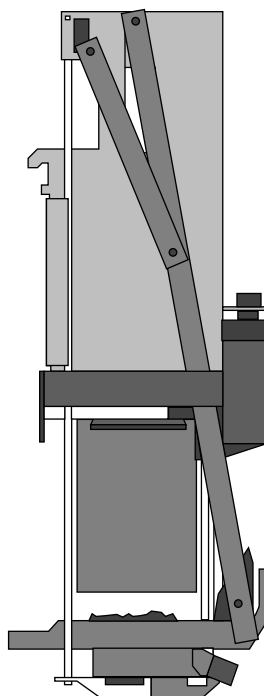
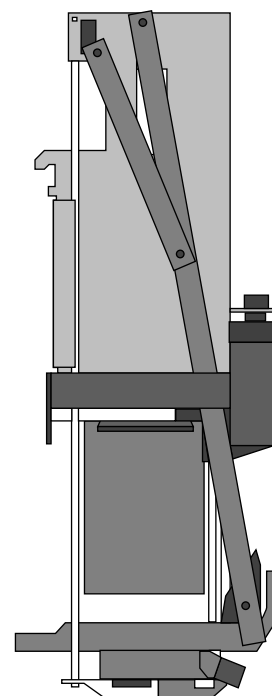


Fig. 6  
Scraper in end position





**Schematic Illustration of the Brewing Process - Starting position rear**

Fig. 1  
Brewer cylinder in start position

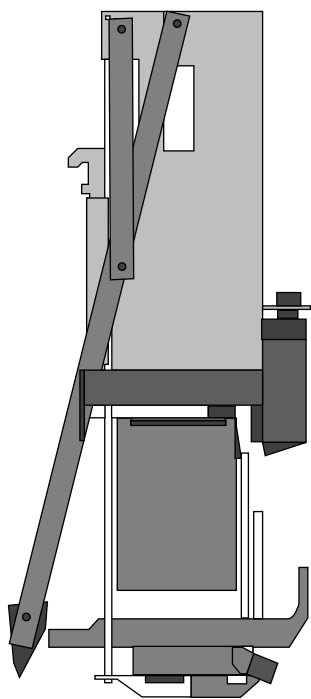


Fig. 2  
Brewer cylinder closed

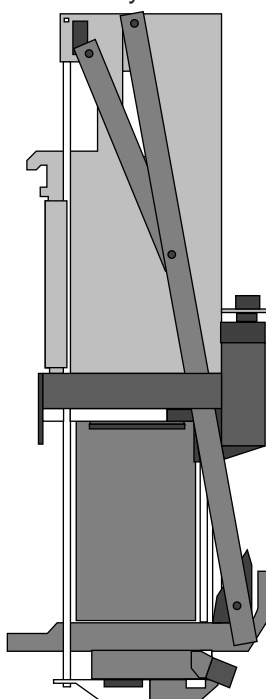


Fig. 3  
Plunger in lower position

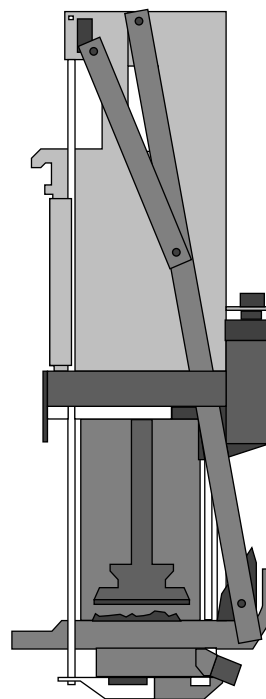


Fig. 4  
Plunger in upper position

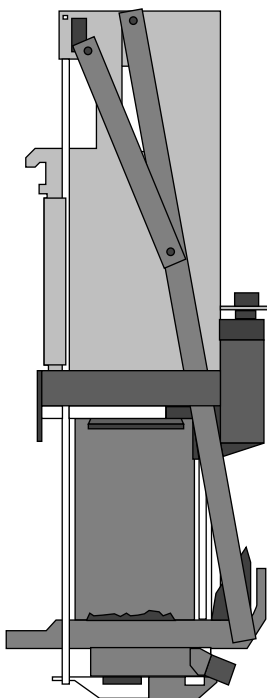


Fig. 5  
Brewer cylinder opened

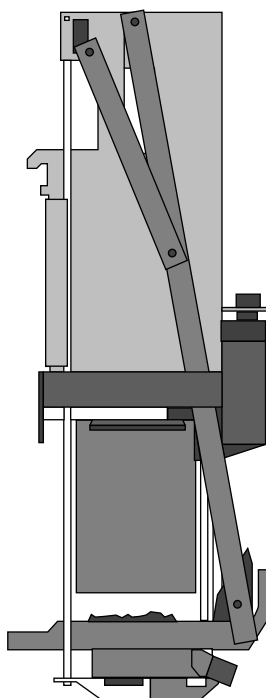
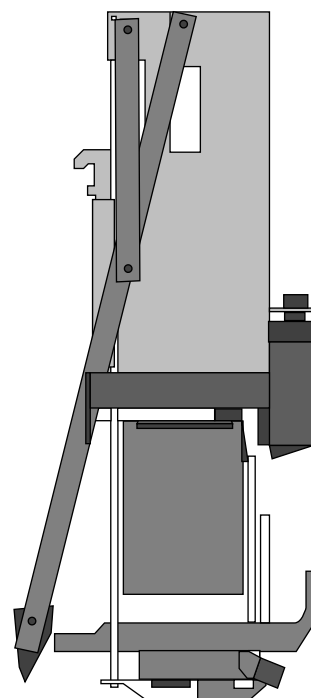


Fig. 6  
Scraper in end position



### 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

WITTENBORG

## Chapter 10

WITTENBORG

## Instant ingredient unit

### Overview

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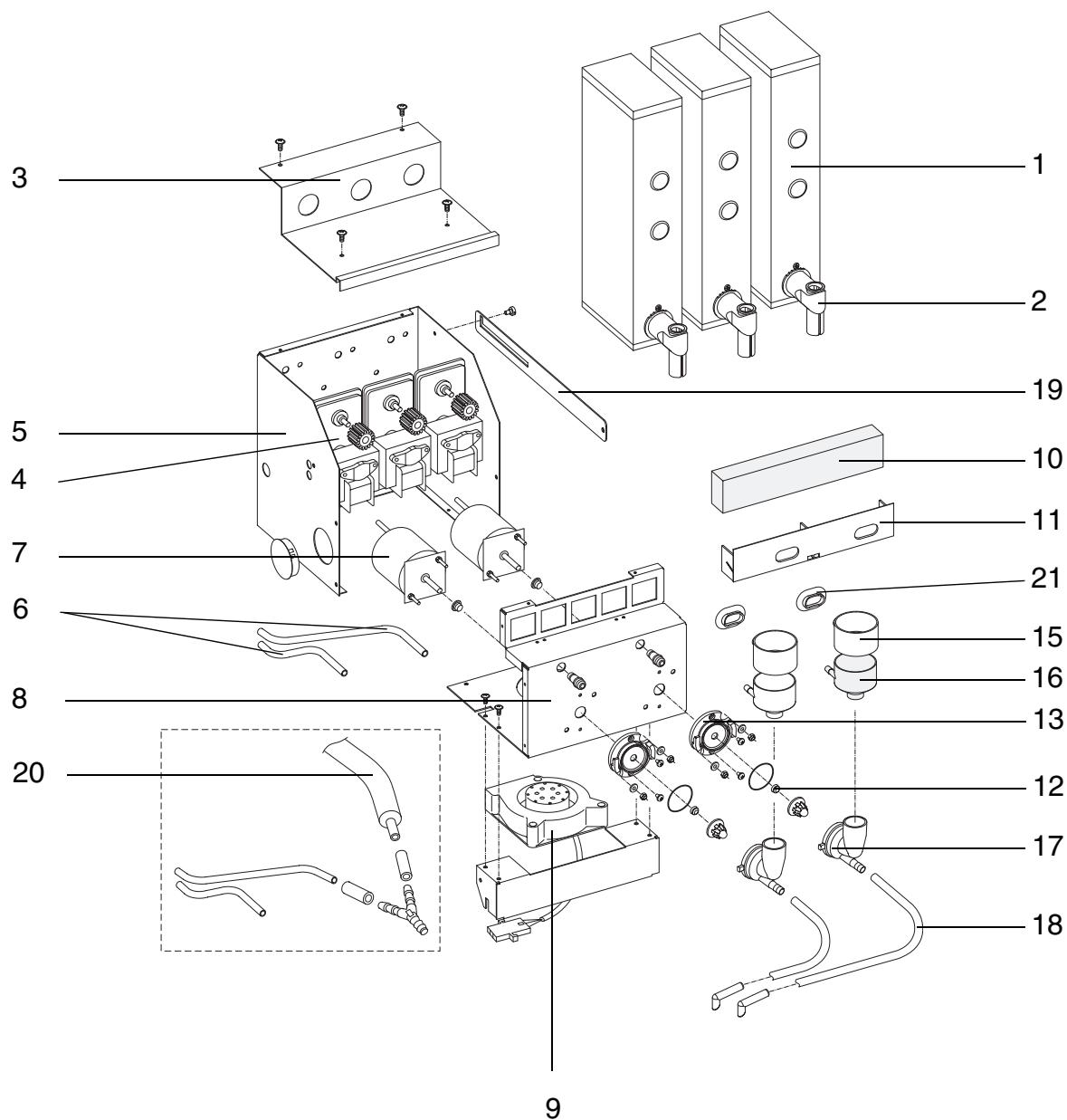
In this section you will find the following information about the instant ingredient unit:

- Components of the right instant ingredient unit - FB/IN/ES
  - Components of the left instant ingredient unit - IN
  - Dismounting the dosing motor
  - Dismounting the fan
  - Dismounting the mixer motor
  - Dismounting the water pipes
-

## Components of the right instant ingredient unit

Parts

FB/IN/ES





## List of items

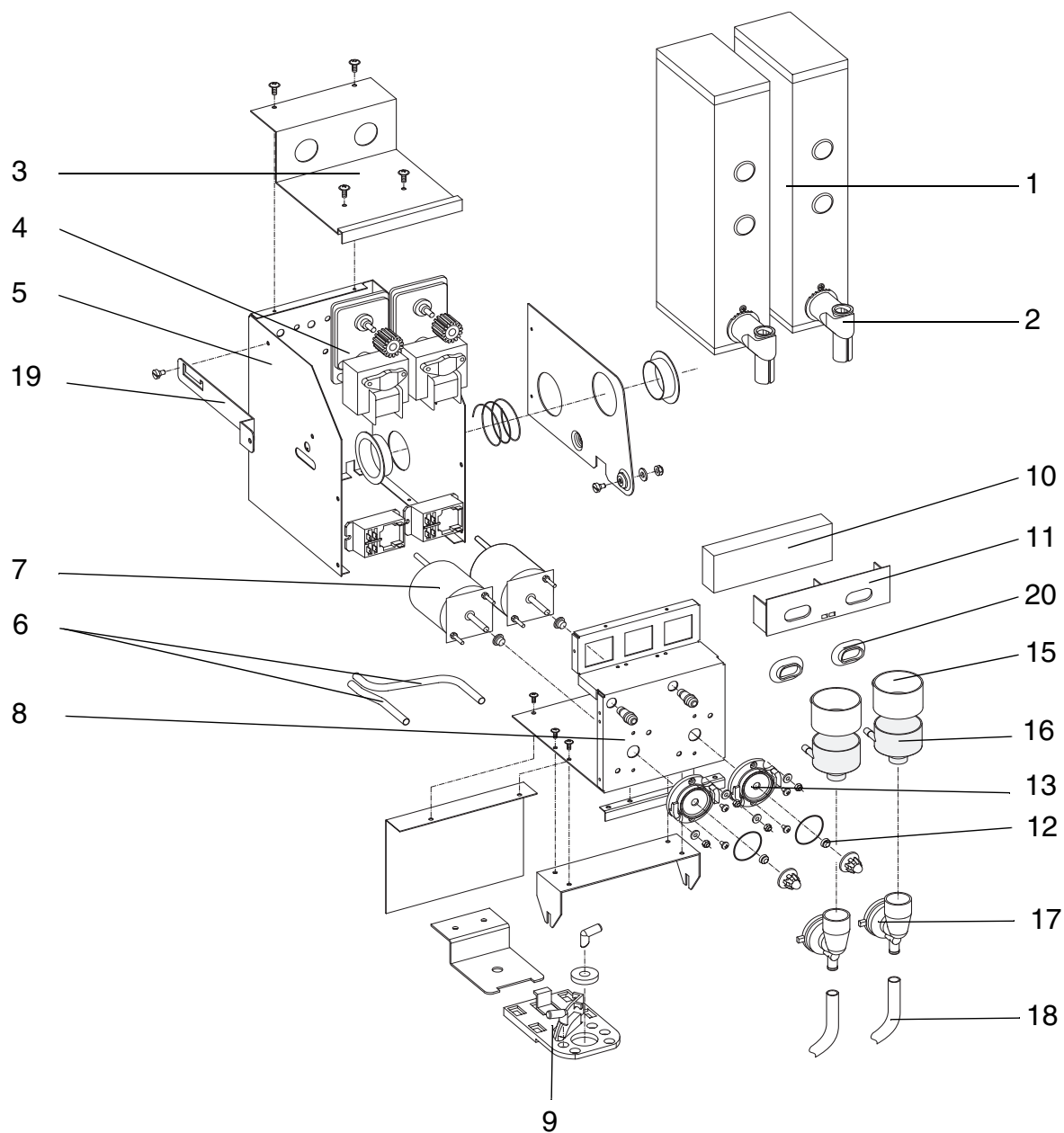
FB/IN/ES

Parts	
1.	Instant ingredient canisters
2.	Outlet spout
3.	Ingredient canister shelf
4.	Dosing motor
5.	Dosing motor bracket
6.	Water pipes
7.	Mixer motor
8.	Mixer motor bracket
9.	Fan
10.	Dust filter
11.	Filter bracket
12.	Connecting bushing
13.	Flange for mixer housing
14.	Whipper blade
15.	Funnel extension
16.	Mixing funnel
17.	Whipper housing
18.	Beverage outlet hose
19.	Securing bar
20.	Cold water from cold unit
21.	Gasket

## Components of the left instant ingredient unit

Parts

(IN only)



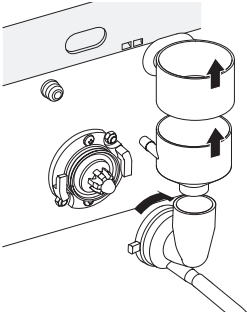
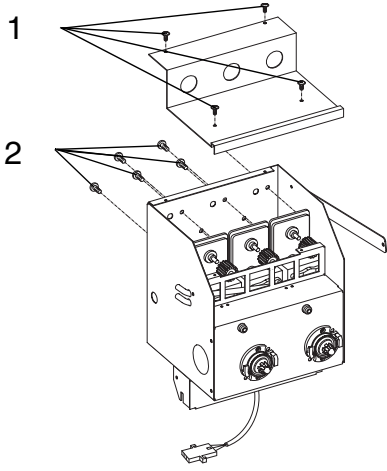
## List of items

(IN only)

Parts	
1.	Instant ingredient canisters
2.	Outlet spout
3.	Ingredient canister shelf
4.	Dosing motor
5.	Dosing motor bracket
6.	Water pipes
7.	Mixer motor
8.	Mixer motor bracket
9.	Holder for outlet
10.	Dust filter
11.	Filter bracket
12.	Connecting bushing
13.	Flange for mixer housing
14.	Whipper blade
15.	Funnel extension
16.	Mixing funnel
17.	Whipper housing
18.	Beverage outlet hose
19.	Securing bar
20.	Gasket

## Dismounting the dosing motor

### Procedure

Step	Action	Illustration
1.	Open the cabinet door.	
2.	Turn off machine (main switch), pull out the power supply plug.	
3.	Remove the ingredient canisters.	
4.	Take off the funnel extensions and remove the mixing funnels and the whipper housing.	
5.	Remove the ingredient canister shelf by loosening screws (1)	
6.	Disconnect the electrical connection.	
7.	Remove the dosing motor by loosening screws (2)	

## Dismounting the fan

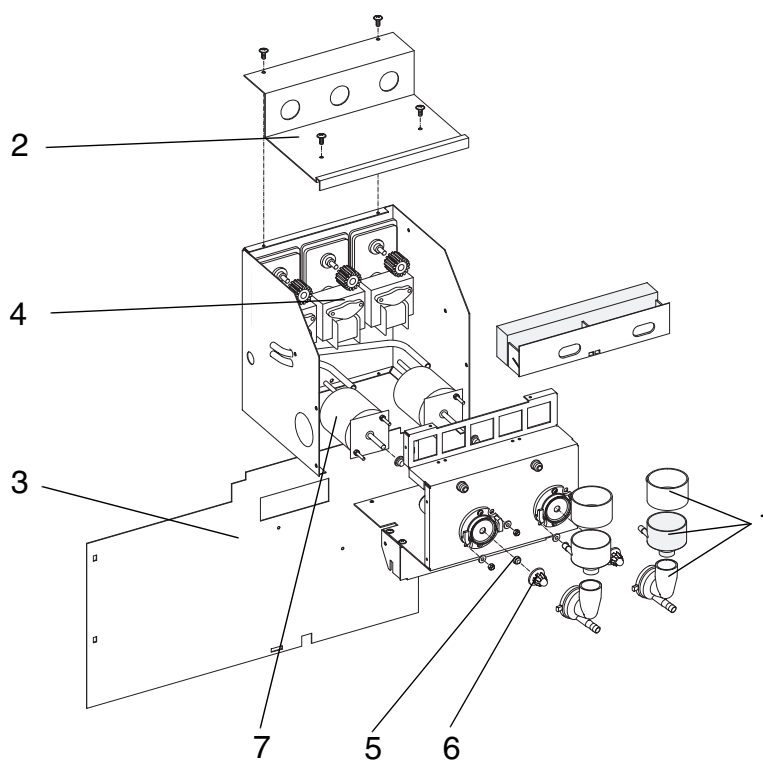
### Procedure

Step	Action	Illustration
1.	Open the cabinet door.	
2.	Turn off machine (main switch), pull out the power supply plug.	
3.	Remove protective cover (1).	
4.	Disconnect the electrical connection (2).	
5.	Remove 3 screws (3) and dismount fan (4).	

## Dismounting the mixer motor

### Procedure

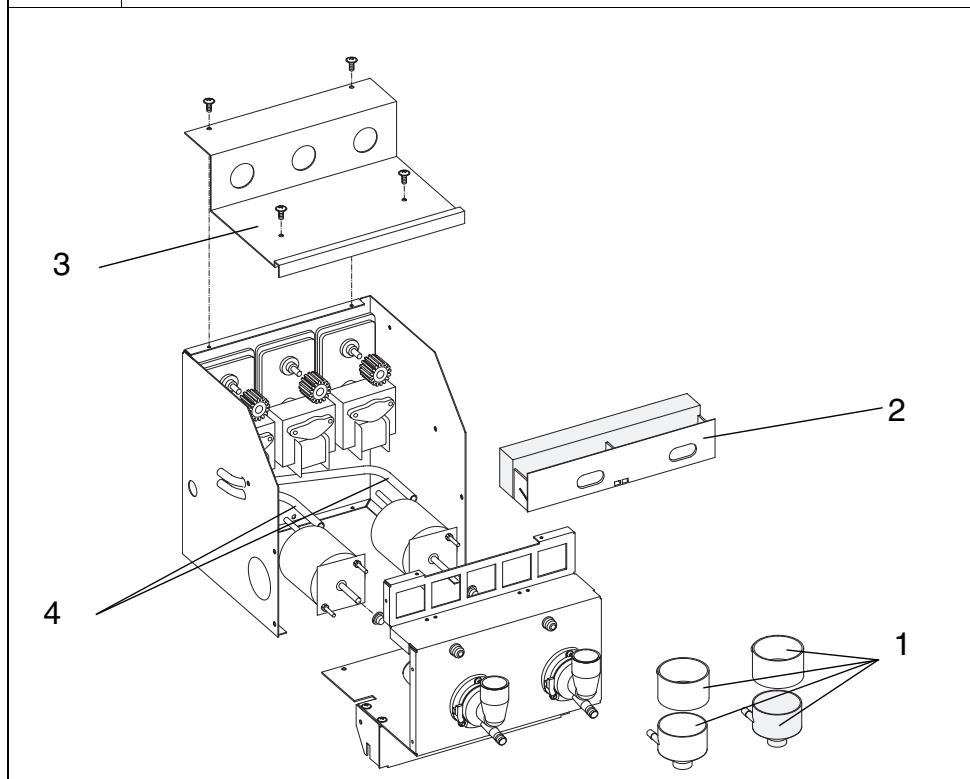
Step	Action
1.	Open the cabinet door, turn off machine (main switch), pull out the power supply plug and close the water cock.
2.	Remove the ingredient canister.
3.	Remove the funnel extension, the mixing funnel and the whipper housing (1).
4.	Remove the ingredient canister shelf (loosen 4 screws) (2).
5.	Remove the protective cover (3).
6.	Remove one of the dosing motors (4) to allow for space for dismounting mixer motor.
7.	Remove whipper blade (6) and whipper blade gasket (5).
8.	Disconnect the electrical connection for the mixer motor in question.
9.	Remove the mixer motor (7) to the back.



## Dismounting the water pipes

### Procedure

Step	Action
1.	Open the cabinet door, turn off the machine (main switch), pull out the power supply plug and close the water cock.
2.	Remove the ingredient canisters.
3.	Remove the funnel extensions and the mixing funnels (1).
4.	Remove filter bracket (2).
5.	Remove the ingredient canister shelf (loosen 4 screws) (3) (see Dismounting mixer motor).
6.	Tilt ingredient canister unit forward.
7.	Remove the water pipes (4) by pulling them out of the connecting socket from the back.



### 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 correctly to prevent the development of water pockets.





## Chapter 11

WITTENBORG

## Dosing systems

### Overview

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In this section you will find the following information about the dosing systems:

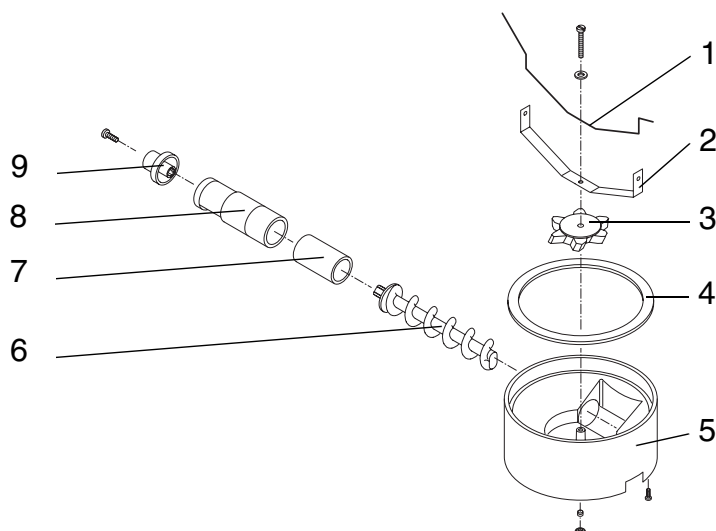
- Dosing system for the freshbrew unit
  - Dosing systems for instant ingredients and sugar
-

## Dosing systems

### Introduction

The machine is equipped with different dosing systems (among other things the ingredient augers are different from each other). Interchanging them will lead to machine malfunction. Each dosing system that has been removed must be installed in the same place as before.

### Dosing system for the FB unit



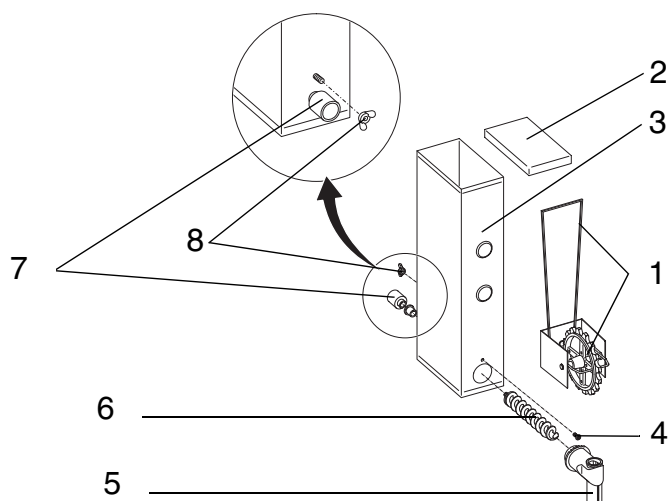
### List of items

Parts	
1.	Mixer wire
2.	Mixer
3.	Mixer wheel
4.	Seal
5.	Ingredient canisters base
6.	Auger
7.	Nozzle, rustproof
8.	Ingredient nozzle
9.	Driver

### Note

Do not damage the mixer wire during dismounting.

## Dosing systems for instant ingredi- ents and sugar



## List of items

Parts	
1.	Mixer wheel unit
2.	Ingredient canister lid
3.	Ingredient canister
4.	Screw
5.	Outlet pipe
6.	Auger
7.	Coupling
8.	Thumb screw

## Note

The dosing systems for instant ingredients and sugar can be equipped differently. Depending on the product a mixer wire, a mixer and mixer wheel can be installed.



## Chapter 12

WITTENBORG



## Espresso system

### Overview

In this section you will find the following information about the espresso system:

- Coffee grinder
  - Description
  - Components of the coffee grinder
  - Maintenance requirements
  - Dismounting the grinder
  - Replacing the grinder motor
  - Replacing the grinder knives
  - Setting the coffee grinder (coarse/fine grind)
  - Cleaning the coffee grinder
- Espresso brewer
  - Description
  - Components of the espresso brewer
  - Maintenance requirements
  - Dismounting the espresso brewer
  - Replacing the espresso brewer motor
  - Replacing the O rings
- Espresso water system
  - Survey of the espresso water system
  - Description
  - Warning
  - Components of the espresso water system
  - Dismounting the espresso water system
  - Dismounting the espresso water tank
  - Replacing valves for instant drinks and hot water, venting valve and cold water injection valve
  - Replacing valve for espresso drinks
  - Replacing the overpressure valve
  - Replacing the flowmeter
  - Replacing the water pump
  - Replacing the break tank
  - Replacing the sugar fan

### Description

The espresso system prepares and dispenses espresso coffee with or without sugar/whitener.

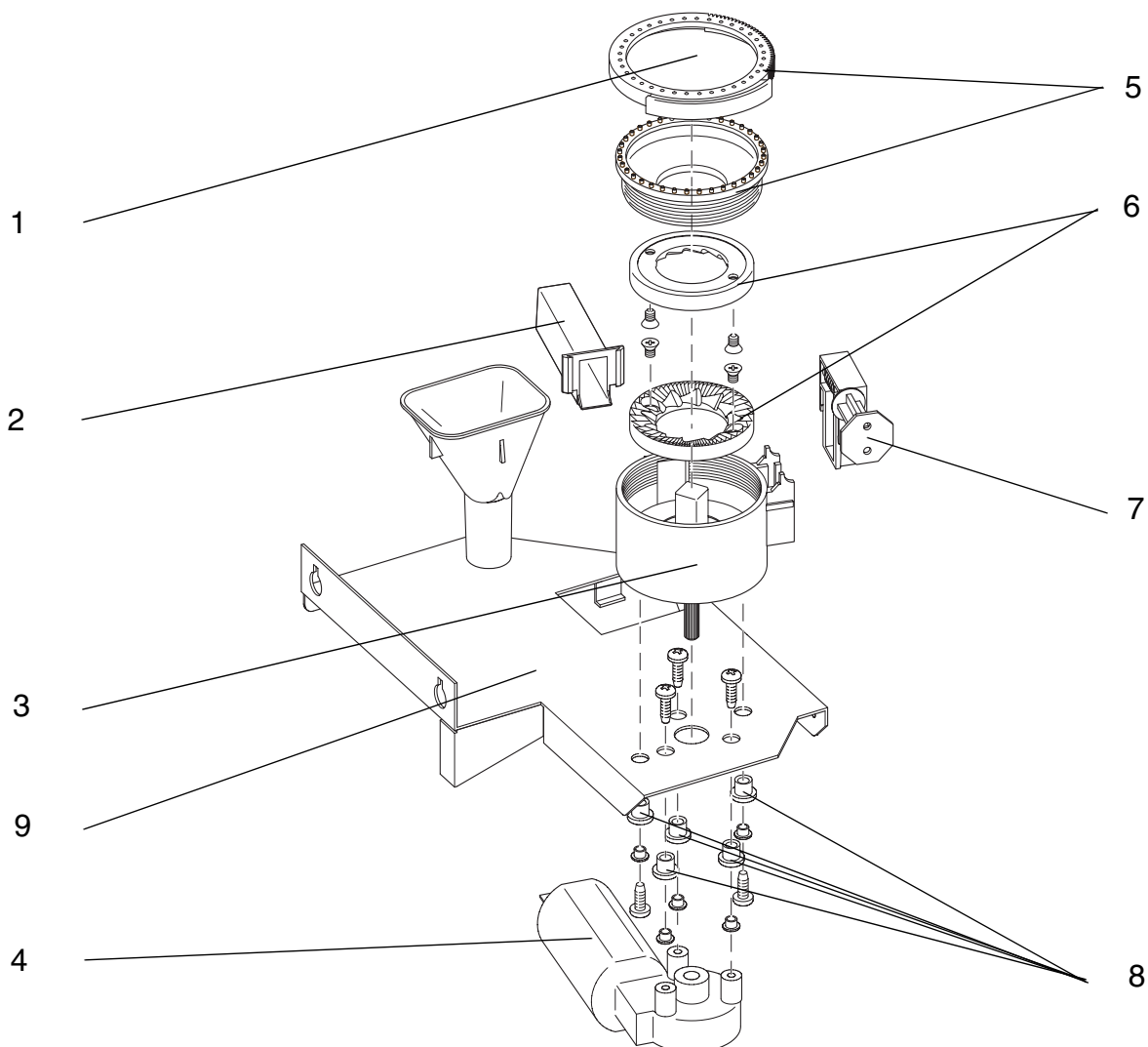
## Coffee grinder

**Description** The coffee beans are stored in the coffee beans canister from where they fall through a hole in the bottom of the canister down into the grinder.

The coffee grinder grinds right before the drink is prepared the exact amount of coffee, which falls down into the brewer.

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

**Components** The illustration below shows the location of the coffee grinder components:



These are the parts of coffee grinder:

Parts	
1.	Coffee beans inlet
2.	Ground coffee outlet
3.	Housing
4.	Grinder motor
5.	Adjustment rings
6.	Knives
7.	Adjusting wheel
8.	Shock absorbers
9.	Bracket, grinder

## Maintenance requirements

The coffee grinder is easily maintained. Simply follow these principles in order to avoid malfunctioning:

Nature	Parts	Frequency
Service consumable parts	Grinder knives	Replace after every 60,000 dispensings (8 gr.)
	Grinder motor	Replace after every 60,000 dispensings (8 gr.)

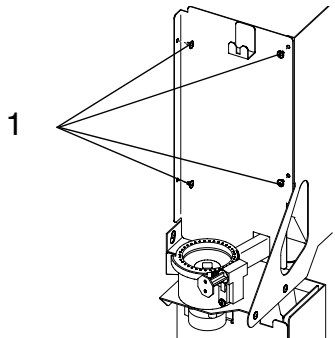
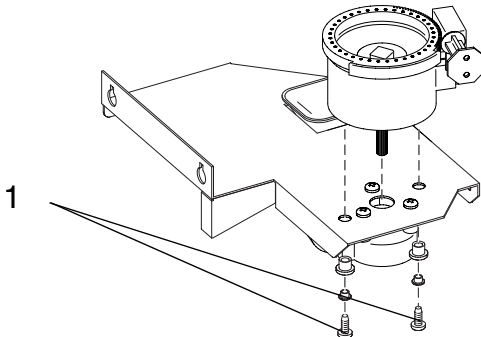
## Dismounting the coffee grinder

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to dismount the coffee grinder:

Step	Action	Illustration
1.	Remove waste bucket and coffee bean canister.	
2.	Remove water system cover by removing four screws (1).	
3.	Remove two screws (1) to dismount coffee grinder.	
4.	Install new coffee grinder and reassemble in reverse order.	

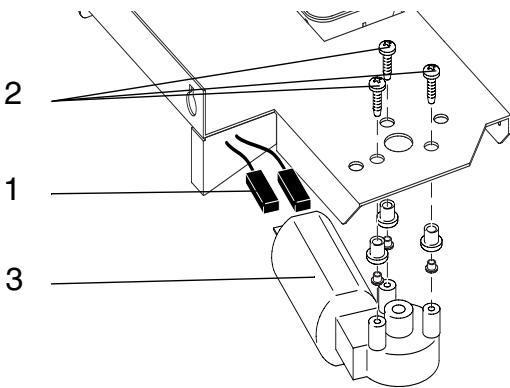
## Replacing the grinder motor

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow the procedure below to replace the grinder motor:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister, espresso brewer, water system cover and coffee grinder.	
2.	Disconnect electrical connection (1).	
3.	Remove three screws (2) to dismount grinder motor (3).	
4.	Install new grinder motor and reassemble in reverse order.	

## Replacing the grinder knives

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow the procedure below to replace the grinder knives:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister, espresso brewer, water system cover and grinder.	<p>The diagram illustrates the disassembly of the grinder head. It shows an exploded view of the components: the top lid (1), the adjusting ring (2), the metal ring (3), the grinder knives (4), and the screws (5) that hold the knives in place. The bottom part of the diagram shows the main grinder body with the knives (4) being removed.</p>
2.	Dismount adjusting wheel (1) by releasing the hooks situated under wheel.	
3.	Remove adjusting ring (2) by releasing the hooks situated under ring.	
4.	Remove metal ring (3) by turning it anti-clockwise.	
5.	Remove knives (4) by removing four screws (5).	
6.	Mount new grinder knives and reassemble in reverse order.  Note: Reposition adjusting ring in same position as it was before it was dismounted.	
7.	Always adjust the setting of the grinder when the grinder knives have been replaced. Refer to "Setting the coffee grinder (coarse/fine grind)".	

## Setting the coffee grinder (coarse/fine grind)

### Introduction

The ES model is equipped with a coffee grinder which grinds the amount of coffee required immediately before the beverage is prepared and dispensed.

The grinder can be set in the range from coarse to fine grinding.

### Note

Always adjust the setting of the grinder when the type of coffee is changed and to allow for general wear of the blades.

The blades of the grinder must always be sharp; blunt blades tend to crush the beans and produce excessive dust.

### Grinder setting

Grinder setting	
Grinder setting 1	fine
Grinder setting 6	coarse

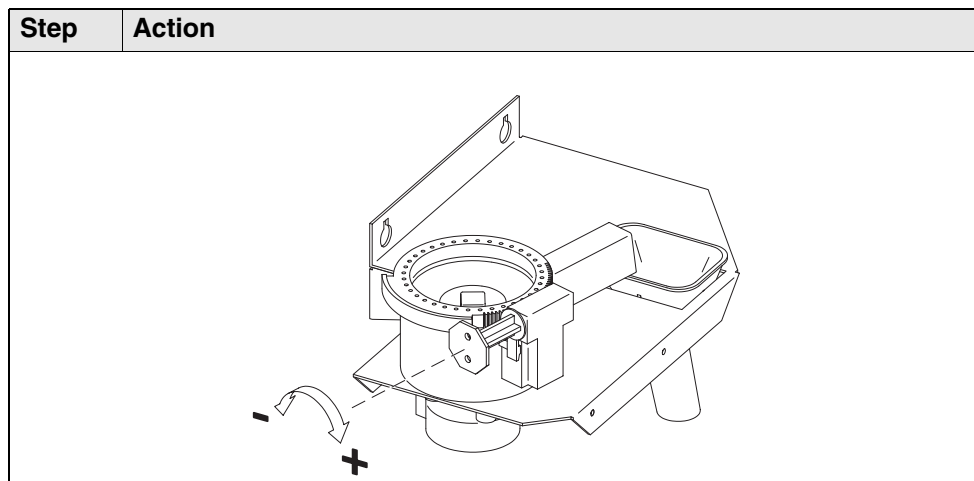
### Default

The factory default setting is 3 or 4, i.e. medium fineness.

### Adjusting the grinder

The procedure for adjusting the coffee grinder is as follows:

Step	Action						
1.	Use the special multifunctional tool to adjust the fineness setting to the required position.  NB. The pointer on the grinder shows the current setting.						
2.	<table border="1"> <tr> <th>Adjust the grinder setting as follows</th><th>Turn the knob</th></tr> <tr> <td>Fine</td><td>clockwise</td></tr> <tr> <td>Coarse</td><td>anti-clockwise</td></tr> </table>	Adjust the grinder setting as follows	Turn the knob	Fine	clockwise	Coarse	anti-clockwise
Adjust the grinder setting as follows	Turn the knob						
Fine	clockwise						
Coarse	anti-clockwise						



## Important

The grinding fineness can only be adjusted when the grinder is running. This prevents beans being compressed against the knives, which may cause the grinder to become jammed.



## Cleaning the coffee grinder

### Introduction

The grinder is normally self cleaning. It is sufficient to occasionally use a soft brush to remove build up and residues from the canister.

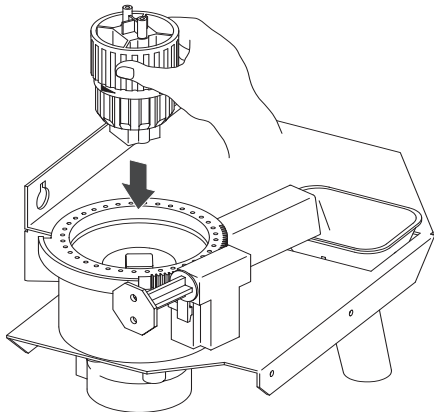
Tiny stones occasionally get mixed up with even the finest blends of coffee beans. To prevent them damaging the blades, the machine has an integral electronic stone detection function which cuts out the motor to prevent damage to the grinder.

### Warning

Never pour water into the coffee grinder as this would damage the grinding discs.

### Procedure

Follow these steps to clear the blockage:

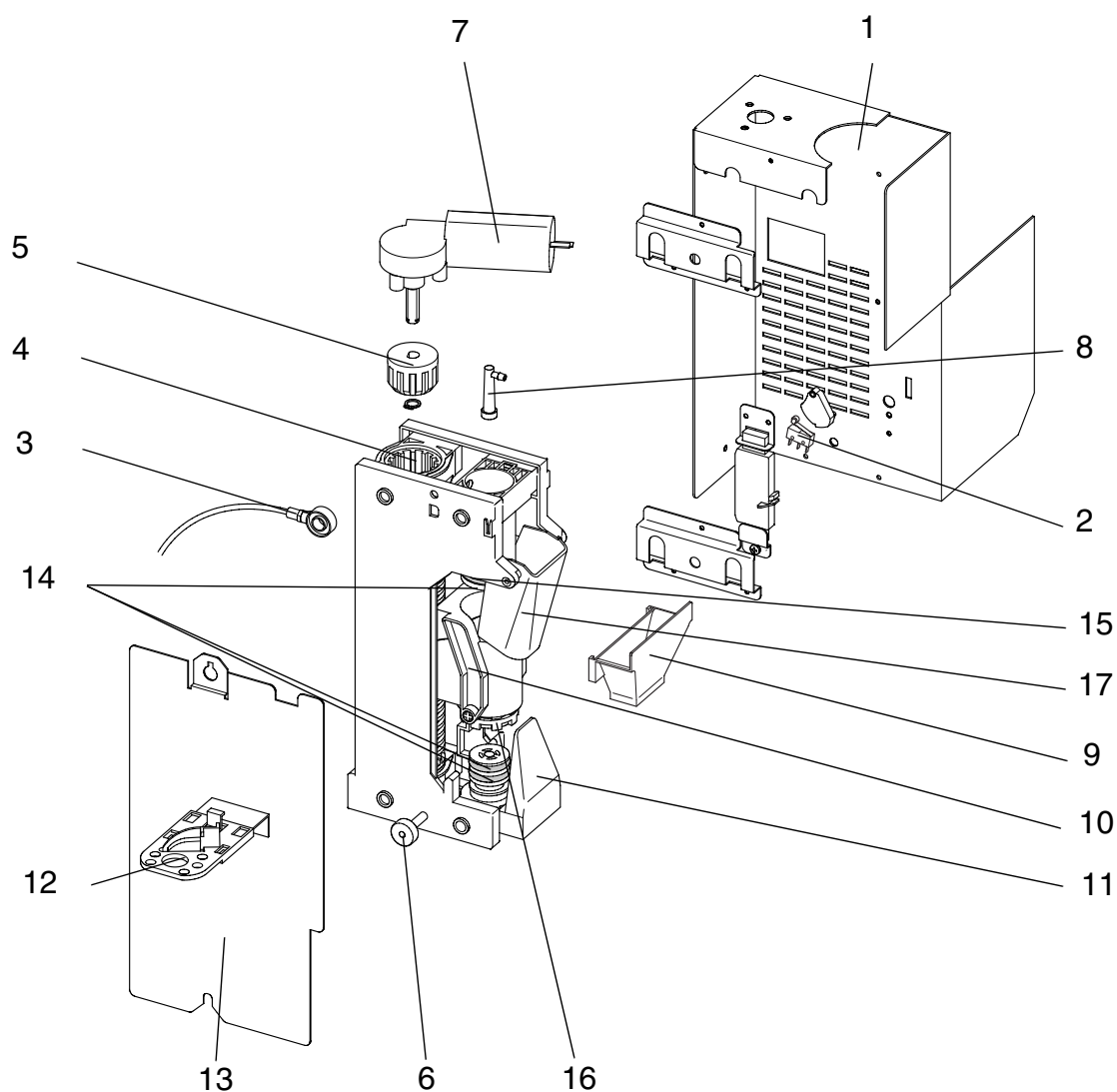
Step	Action	Illustration
1.	Turn off the machine (main switch).	
2.	Remove the coffee beans canister: <ul style="list-style-type: none"> <li>Press in the canister shutter to closed position to prevent coffee beans from falling out of the canister.</li> <li>Remove canister by releasing it from the bracket at the rear of the canister and from the hook at the bottom of the canister.</li> </ul>	
3.	Remove the remaining beans from the grinder.	
4.	Using the special multifunctional tool, grasp the square end of the grinding discs spindle and slowly turn the discs in a clockwise direction until the stone or foreign body is released and can be removed.  Note: It is a good idea to use a vacuum cleaner for removing foreign bodies.	

## Espresso brewer

**Description** Through an electronically controlled brewing process the brewer takes in a correct quantity of freshly ground beans direct from the grinder, a correct amount of water enters the brewing chamber and the brewer dispenses freshly brewed espresso coffee.

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

**Components** The illustration below shows the location of the espresso brewer components:



These are the parts of the espresso brewer:

Parts	
1.	Bracket, espresso brewer
2.	Switch
3.	Water outlet tube
4.	Spindle
5.	Gear wheel
6.	Securing pin
7.	Espresso brewer motor
8.	Coffee outlet tube
9.	Ground coffee inlet
10.	Scraper
11.	Waste guide outlet
12.	Holder for outlet
13.	Heat insulation cover
14.	O rings
15.	Filter
16.	Piston
17.	Ground coffee chute

## Maintenance Requirements

The espresso brewer is easily maintained. Simply follow these principles in order to avoid espresso brewer malfunctioning:

Nature	Parts	Frequency
Service Consumable Parts	O-rings of brewing chamber	Replace after every 20,000 dispensings
	Brewer motor	Replace after every 60,000 dispensings

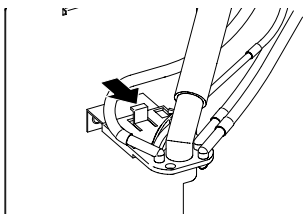
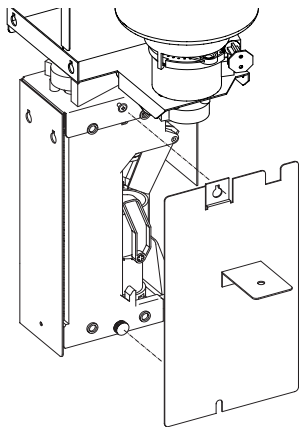
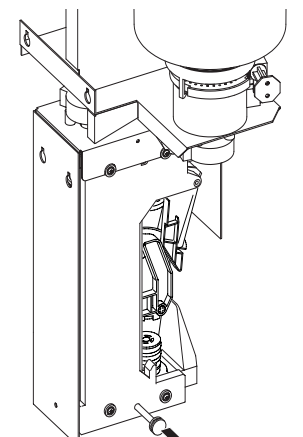
## Dismounting the espresso brewer

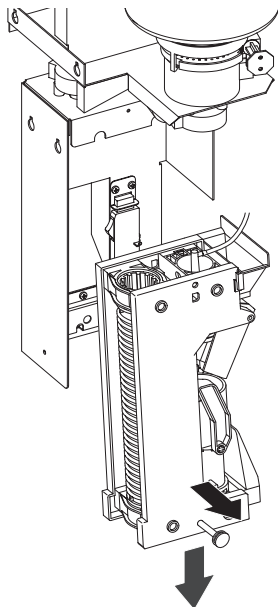
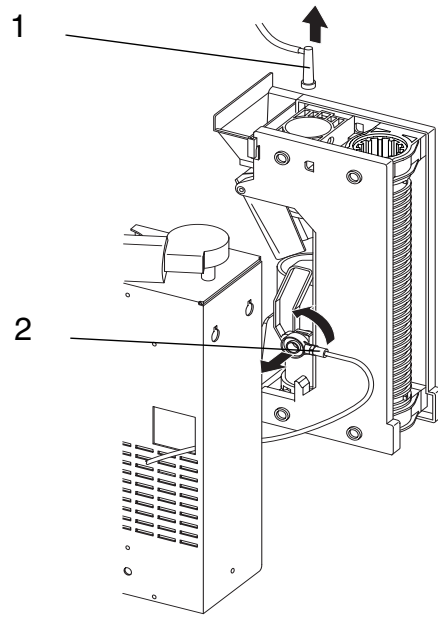
### Warnings

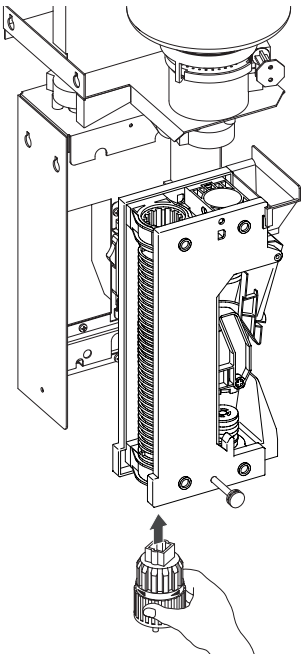
- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to dismount the espresso brewer:

Step	Action	Illustration
1.	Remove the waste bucket.	
2.	Lift the release angle of the holder to remove the branch pipe.	
3.	Remove heat insulation cover.	
4.	Pull securing pin outwards.	

Step	Action	Illustration
5.	Release brewer.	
6.	<p>Disconnect coffee outlet tube (1) by lifting it upwards.</p> <p>Disconnect water outlet tube (2) from brewer by turning it anti-clockwise.</p> <p>NB. You must be careful how you disconnect it in order not to break the pin.</p>	
7.	Tilt brewer outwards and lift it out.	
8.	<p>Reinstall brewer into machine.</p> <p>Note: Remember to fasten securing pin.</p>	

Step	Action	Illustration
9.	<p>Note: If you cannot replace the brewer correctly after cleaning, this is probably because you have moved something during cleaning. In that case you need the special multifunctional tool to restore the situation.</p>	

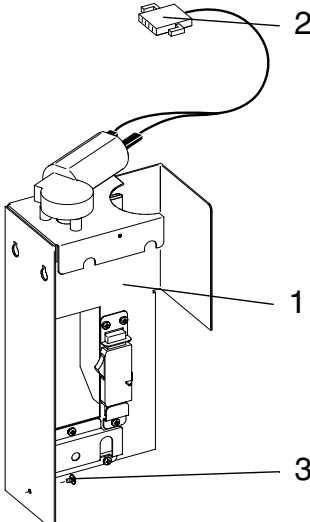
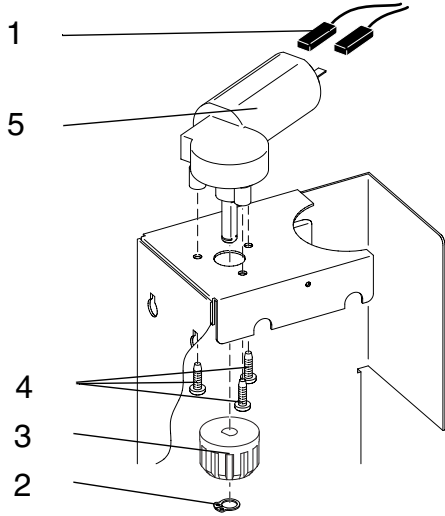
## Replacing the espresso brewer motor

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the espresso brewer motor:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Remove bracket for espresso brewer (1) by disconnecting cable connection (2) and removing one screw (3).	
3.	<ul style="list-style-type: none"> <li>• Disconnect cable connection (1) from espresso brewer motor</li> <li>• Remove retaining ring (2) to dismount gear wheel (3)</li> <li>• Remove three screws (4) to dismount espresso brewer motor (5)</li> </ul>	
4.	Install new espresso brewer motor and reassemble in reverse order.	

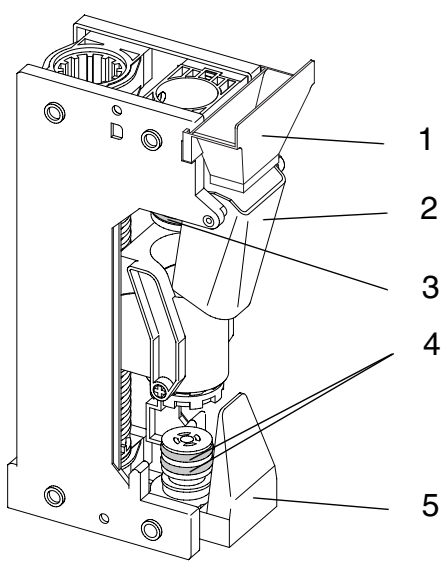
## Replacing the O rings

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the O rings:

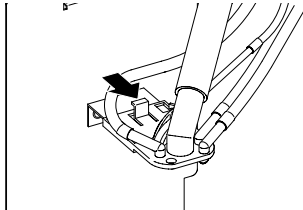
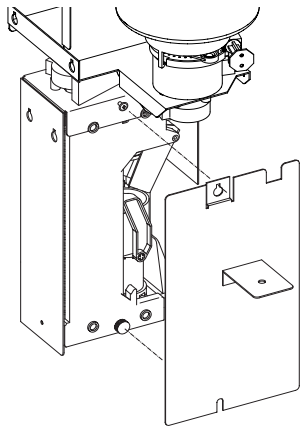
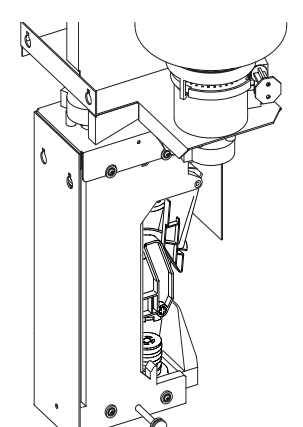
Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	<ul style="list-style-type: none"> <li>• Remove ground coffee inlet (1) and turn ground coffee chute (2) outwards while removing o-ring (3)</li> <li>• Remove waste guide outlet (5) to remove o-rings (4)</li> </ul> <p>Note: It may be necessary to use the multifunctional tool to move the cylinder into a position where it is possible to reach the o-rings.</p>	
3.	Install new O rings and reassemble in reverse order.	

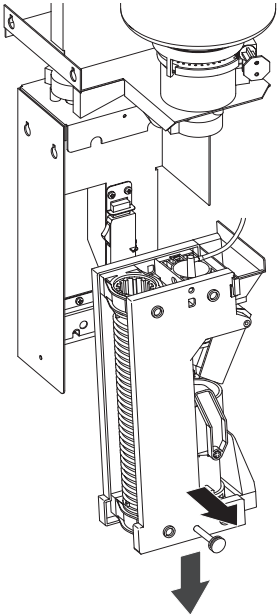
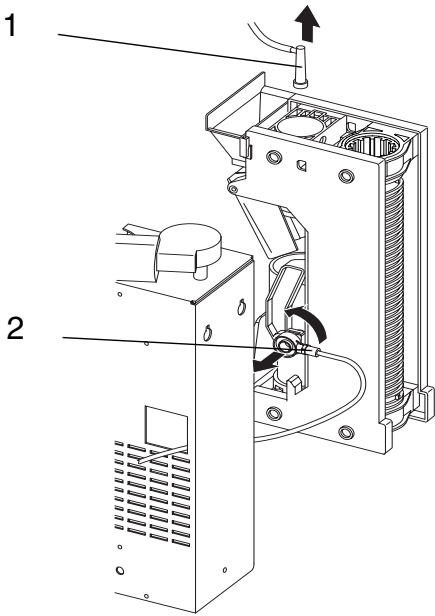


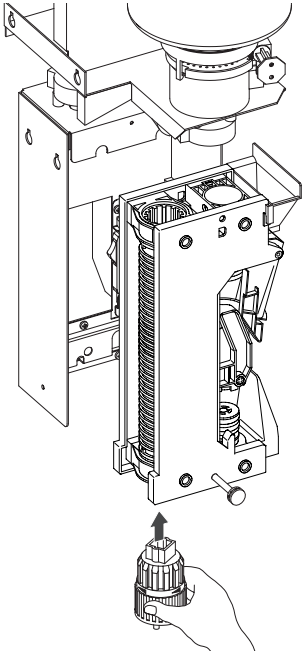
## Cleaning the espresso brewer unit

### Procedure

Follow this procedure to clean the brewer:

Step	Action	Illustration
1.	Open the cabinet door and turn off the machine (main switch).	
2.	Remove the waste bucket.	
3.	Lift the release angle of the holder to remove the branch pipe.	
4.	Remove heat insulation cover.	
5.	Pull securing pin outwards.	

Step	Action	Illustration
6.	Release brewer.	
7.	<ul style="list-style-type: none"> <li>• Disconnect coffee outlet tube (1) by lifting it upwards.</li> <li>• Disconnect water outlet tube (2) from brewer by turning it anticlockwise.</li> </ul> <p>NB. You must be careful how you disconnect it in order not to break the pin.</p>	
8.	Tilt brewer outwards and lift it out.	
9.	Rinse the brewer in warm water.	
	NB. If the brewer is very dirty, put it in a bucket of water and brush it clean.	
10.	Clean bottom of machine.	

Step	Action	Illustration
11.	Reinstall brewer into machine.  Note: Remember to fasten securing pin.	
	Note: If you cannot replace the brewer correctly after cleaning, this is probably because you have moved something during cleaning. In that case you need the special multifunctional tool to restore the situation.	

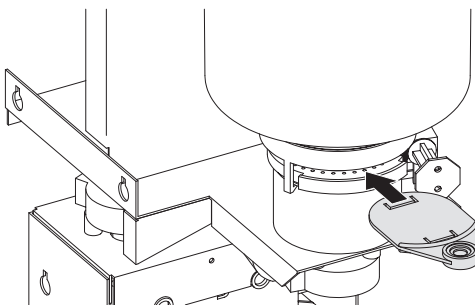
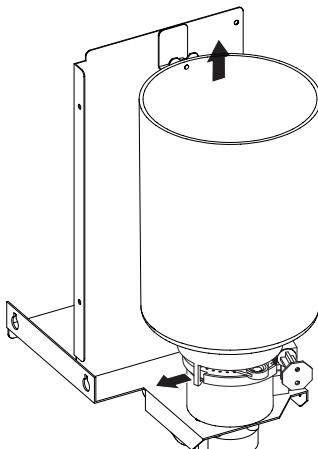
## Note

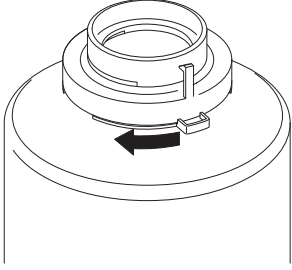
Never load the brewer into the dishwasher!

## Cleaning the ES coffee bean canister

### Procedure

Follow these steps to clean the ES coffee bean canister:

Step	Action	Illustration						
1.	Open the cabinet door and turn off the machine (main switch).							
2.	Insert shutter, bean stop to closed position to prevent coffee beans from falling out of the canister.							
3.	Remove canister lid.							
4.	Remove canister by releasing it from <ul style="list-style-type: none"><li>the bracket at the rear of canister</li><li>the hook at the bottom of canister</li></ul>							
5.	Empty the canister.							
6.	Place the canister on a table.							
7.	Wipe the inside of the canister with a clean dry cloth.							
8.	<table><tr><th>Proceed to</th><th>Go to</th></tr><tr><td>end the cleaning procedure</td><td>step 15</td></tr><tr><td>give a heavily soiled canister a more thorough clean</td><td>step 9</td></tr></table>	Proceed to	Go to	end the cleaning procedure	step 15	give a heavily soiled canister a more thorough clean	step 9	
Proceed to	Go to							
end the cleaning procedure	step 15							
give a heavily soiled canister a more thorough clean	step 9							
9.	Place the canister upside down on a table.							
10.	Remove shutter, bean stop.							

Step	Action	Illustration
11.	Loosen the adjusting ring at the handle and remove canister holder and adjusting ring.	
12.	Clean all parts in warm water and wipe them dry.	
13.	Reposition adjusting ring.	
14.	Reposition canister holder.	
15.	Insert shutter, bean stop to closed position to prevent coffee beans from falling out of the canister.	
16.	Fill and reinsert the canister.  Note: <ul style="list-style-type: none"> <li>• Make sure that canister is properly repositioned.</li> <li>• Remember to pull out shutter, bean stop to open position after canister is repositioned.</li> </ul>	

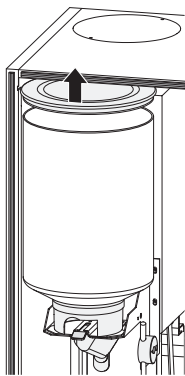
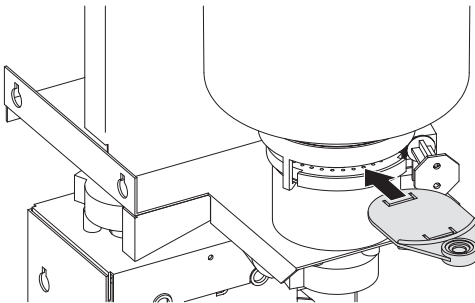
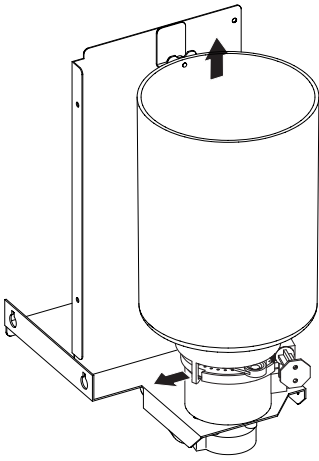
## Note

- The canister is not dishwasher safe.

## Refilling the ES coffee bean canister

### Procedure

Follow these steps to refill the ES coffee beans canister:

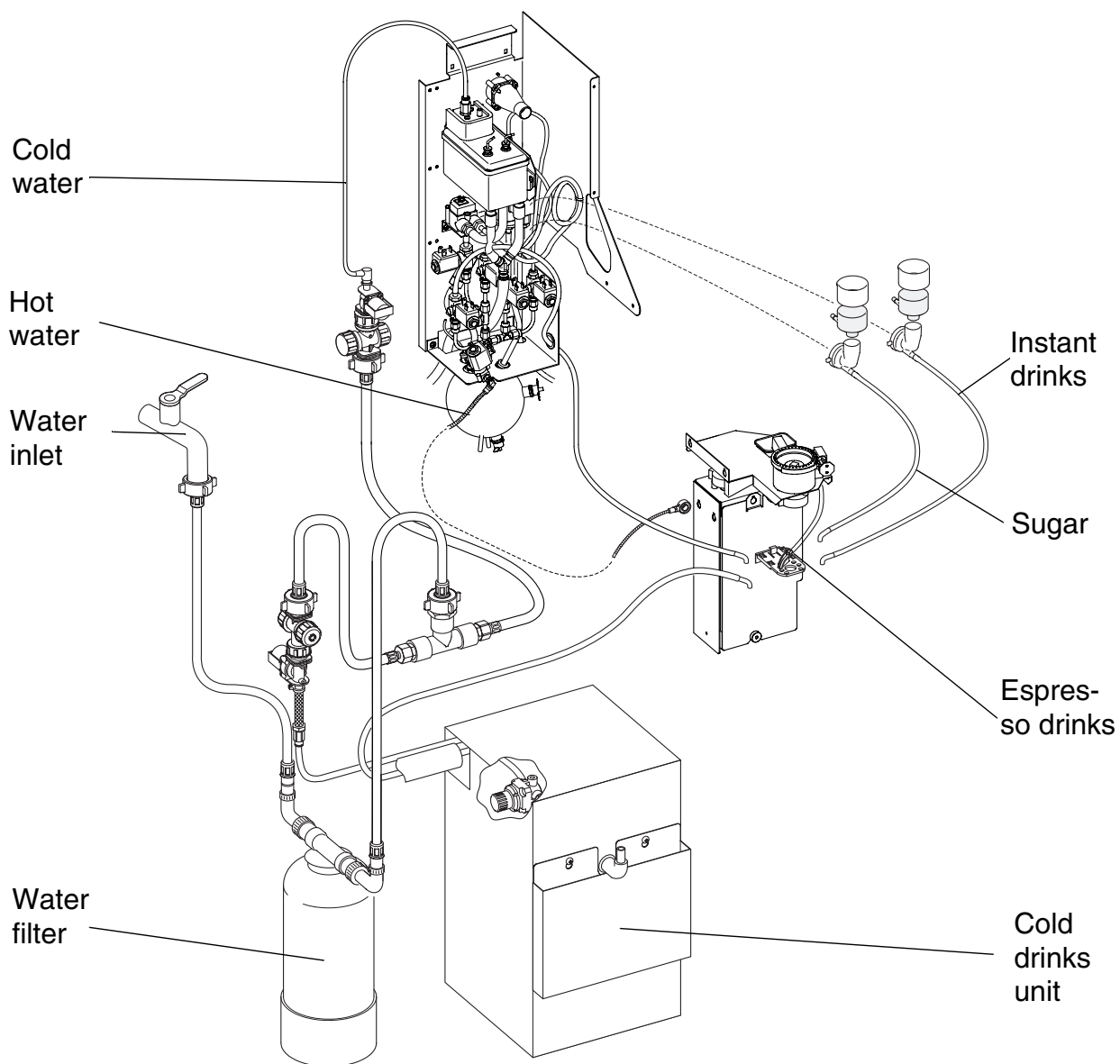
Step	Action	Illustration
1.	Open the cabinet door and turn off the machine (main switch).	
2.	Remove the lid at the top and re-fill coffee beans.	
3.	Refilling can also take place by removing the canister.	
4.	Insert shutter, bean stop to closed position to prevent coffee beans from falling out of the canister.	
5.	Remove canister lid.	
6.	Remove canister by releasing it from <ul style="list-style-type: none"> <li>the bracket at the rear of canister</li> <li>the hook at the bottom of canister</li> </ul>	
7.	Refill the ES coffee bean canister.	

Step	Action	Illustration
8.	Replace the lid.	
9.	Replace canister in the machine.  Note: <ul style="list-style-type: none"> <li>• Make sure that canister is properly repositioned.</li> <li>• Remember to pull out shutter, bean stop to open position after canister is repositioned.</li> </ul>	

## Survey of the espresso water system

### Water system

The illustration below shows the espresso water system:





## Espresso water system

---

**Description**

The espresso water system supplies hot water to the espresso brewer through the pressure water tank.

The pressure water tank is secured by a boil-over cut-out as well as a dry-boiling cut-out.

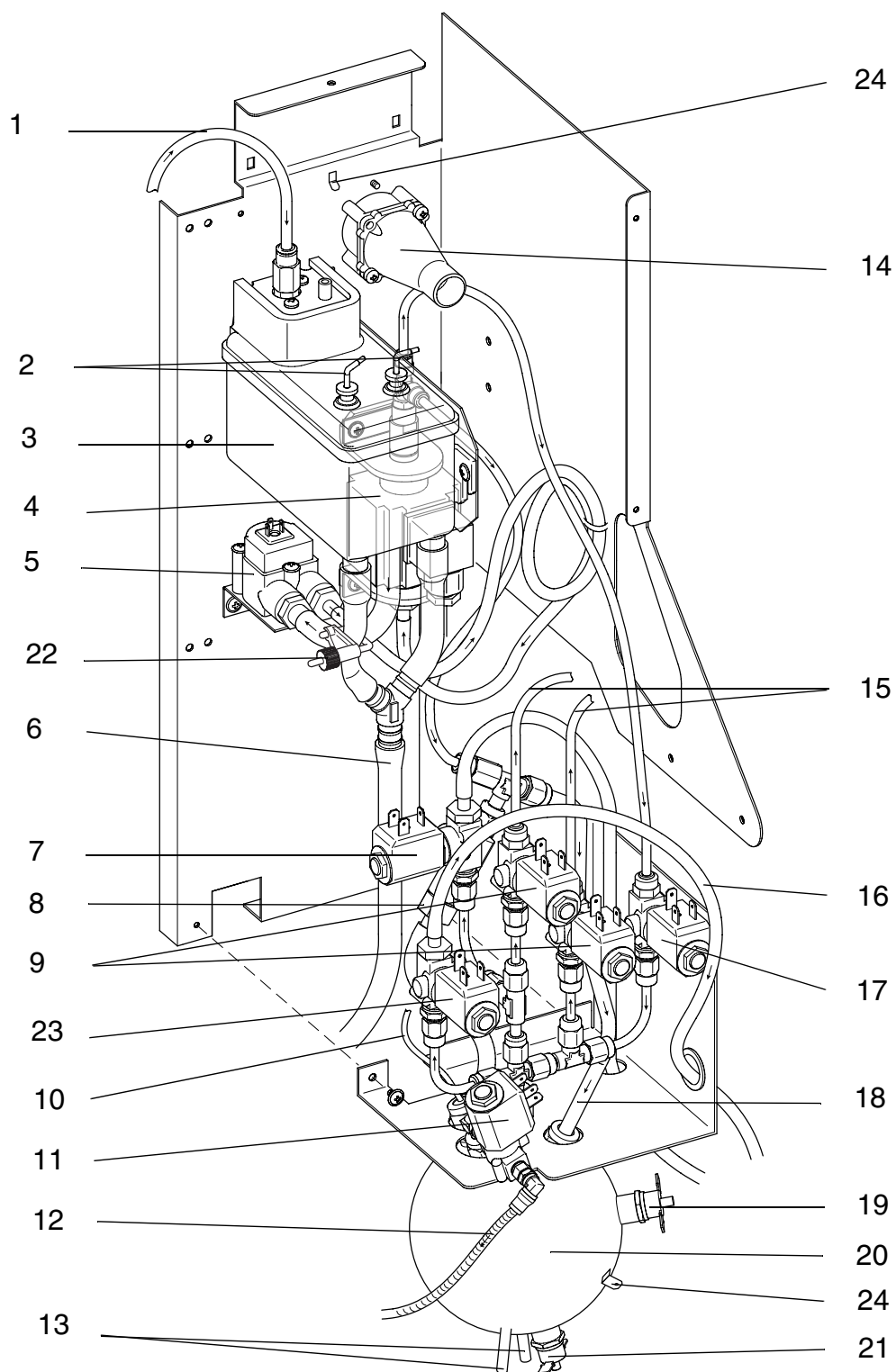
---

**Warning**

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

## Components

The illustration shows the location of the espresso water system components. The arrows indicate the water flow.



These are the components of the espresso water system:

Part	
1.	Water inlet hose
2.	Water level sensors (electrodes)
3.	Break tank
4.	Pump
5.	Flowmeter
6.	Overflow hose
7.	Venting valve
8.	Overpressure valve
9.	Valves for instant drinks
10.	Temperature sensor
11.	Valve for espresso drinks
12.	Water inlet for espresso brewer
13.	Heating element wiring
14.	Sugar fan
15.	Pipes for instant drinks
16.	Hot water outlet
17.	Valve for cold water injection
18.	Water inlet pipe
19.	Boil-over cut-out
20.	Pressure water tank
21.	Dry-boiling cut-out
22.	Hose clamp
23.	Valve for hot water
24.	Earth connections

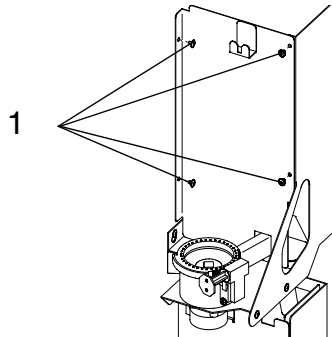
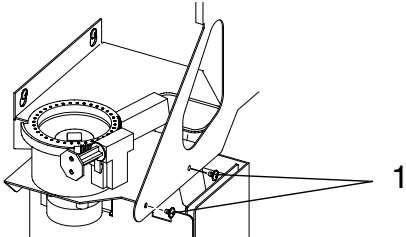
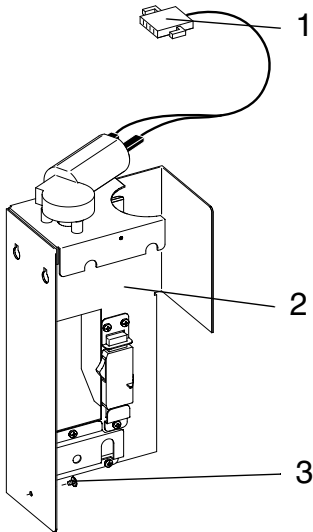
## Dismounting the espresso water system

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to dismount the espresso water system:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Remove four screws (1) to remove water system cover.	
3.	Remove two screws (1) and disconnect electrical connection to dismount bracket for grinder.	
4.	Disconnect cable connection (1) and remove screw (3) to dismount bracket for espresso brewer (2).	

Step	Action	Illustration
5.	<p>Disconnect cable connections (as shown on illustration) from the vending machine controllers.</p> <p>Reference: "Vending machine controllers and electronic box".</p>	<p>The diagram shows two electronic boxes. The left box is labeled 'ES' and has four cable connections labeled 'FAN', 'FLOWMETER', 'GRINDER', and 'ES VALVE'. The right box is labeled 'FB/IN/ES' and has a 'VENDING MACHINE CONTROLLER' and a 'PUMP' connection. A 'WATER SYSTEM' cable is also shown connected to the right box.</p>
6.	<p>Remove water inlet hose (1)</p> <ul style="list-style-type: none"> <li>Press the hose (1) downwards with one hand, then press the ring (2) downwards with the other hand and hold it there, while pulling the hose upwards.</li> </ul>	<p>The diagram shows a close-up of the water inlet hose (1) being pulled upwards. A ring (2) is shown being pressed downwards. The hose is connected to a water system.</p>
7.	<p>Empty the break tank by loosening the hose clamp (3).</p>	<p>The diagram shows a close-up of the hose clamp (3) being loosened. The hose is connected to a water system.</p>

Step	Action	Illustration
8.	Remove hoses for instant drinks (1). <ul style="list-style-type: none"> <li>Press hose downwards with one hand, then press ring downwards with the other hand and hold it there, while pulling hose upwards.</li> </ul>	<p>The diagram shows a close-up of the water system components. A line labeled '1' points to a hose connection point. Another line labeled '2' points to the cable connections on the pressure water tank.</p>
9.	Remove cable connections from pressure water tank (2).	
10.	Remove two screws (1) to dismount water system.	<p>The diagram shows the water system being dismounted from a panel. A line labeled '1' points to two screws that are being removed from the mounting bracket.</p>
11.	Reassemble water system in reverse order.	

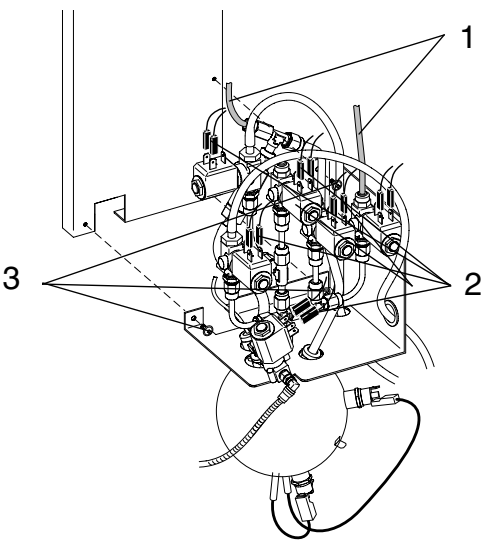
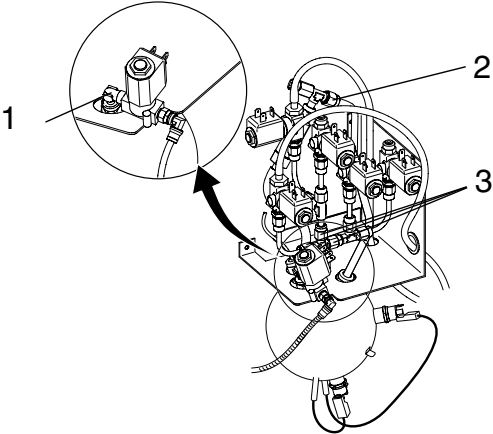
## Dismounting the pressure water tank

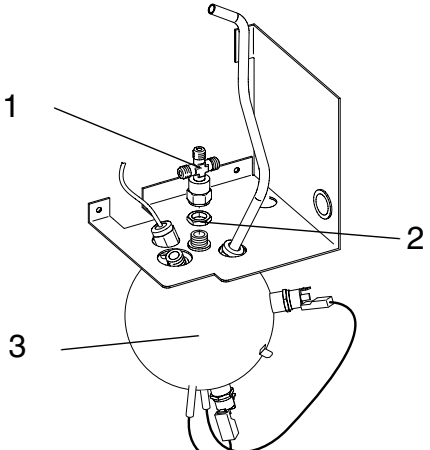
### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to dismount the pressure water tank:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Remove hoses from pump (1). <ul style="list-style-type: none"> <li>• Press hose downwards with one hand, then press ring downwards with the other hand and hold it there, while pulling hose upwards.</li> </ul>	
4.	Disconnect cable connections to valves (2).	
5.	Remove three screws (3).	
6.	Unscrew fitting (1) from valve for espresso drinks.	
7.	Unscrew fitting from over-pressure valve (2).	
8.	Unscrew three fittings (3).	

Step	Action	Illustration
9.	Unscrew cross (1) and pipe nut (2) to dismount pressure water tank (3).	
10.	Install new pressure water tank and reassemble in reverse order.	



## Replacing valves for instant drinks and hot water, venting valve and cold water injection valve

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the valves:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Disconnect electrical connection (1).	
4.	Dismount hose (2). <ul style="list-style-type: none"> <li>• Press hose downwards with one hand, then press ring downwards with the other hand and hold it there, while pulling hose upwards.</li> </ul>	
5.	Unscrew fitting (3) to dismount valve (4).	
6.	Install new valves and reassemble in reverse order.	

## Replacing valve for espresso drinks

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace valve for espresso drinks:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Disconnect electrical connection (1).	
4.	Loosen adapter (2) to dismount hose.	
5.	Unscrew fitting (3) to dismount valve for espresso drinks (4).	
6.	Install new valve and reassemble in reverse order.	

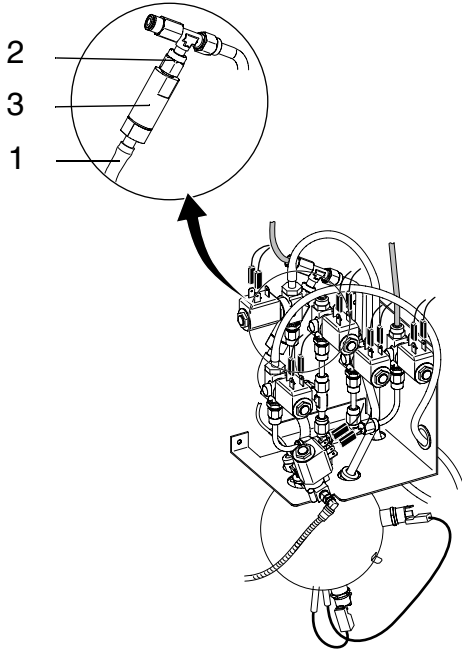
## Replacing the overpressure valve

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the overpressure valve:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Pull off hose (1) from overpressure valve.	
4.	Unscrew fitting (2) to dismount overpressure valve (3).	
5.	Install new overpressure valve and reassemble in reverse order.	

## Replacing the flowmeter

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the flowmeter:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Disconnect cable connection (1).	
4.	Pull off two hoses (2).	
5.	Unscrew hose connections (3).	
6.	Remove two screws (4).	
7.	Remove three screws (5) to dismount flowmeter.	
8.	Install new flowmeter and reassemble in reverse order.	

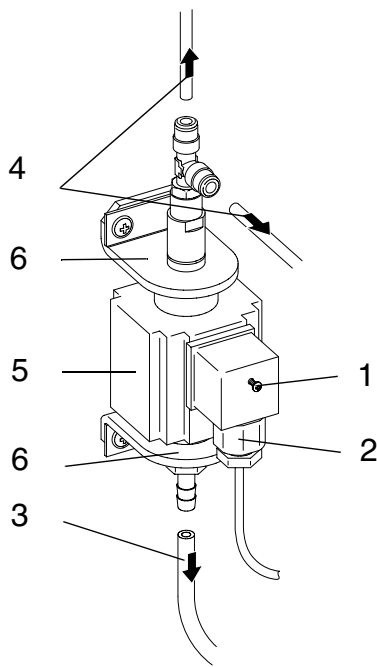
## Replacing the water pump

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the water pump:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Loosen screw (1) to disconnect cable connection (2).	
4.	Pull off hose (3).	
5.	Remove hoses (4).	
6.	Dismount pump (5) by releasing it from the rubber suspension (6).	
7.	Install new water pump and reassemble in reverse order.	

## Replacing the break tank

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the break tank:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Dismount water system.	
3.	Remove hose clamp (1) to empty break tank.	
4.	Disconnect cable connections (2).	
5.	Remove water inlet hose (3)	
6.	Remove hose from break tank to flowmeter (4).	
7.	Remove overflow hoses (5).	
8.	Loosen two screws (6).	
9.	Dismount break tank (7).	
10.	Install new break tank and reassemble in reverse order.	

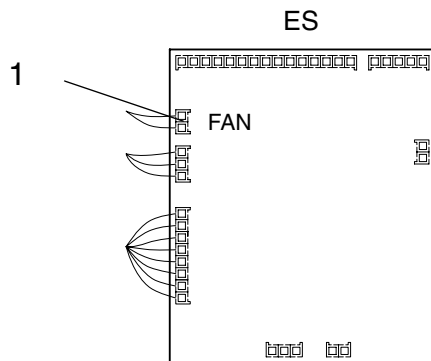
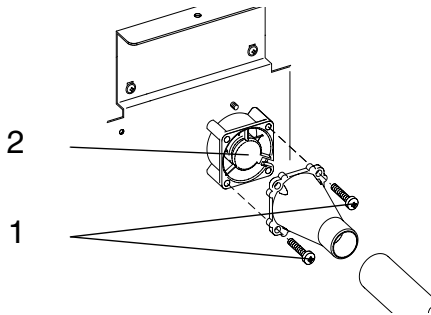
## Replacing the sugar fan

### Warnings

- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to replace the sugar fan:

Step	Action	Illustration
1.	Remove waste bucket, coffee bean canister and espresso brewer.	
2.	Disconnect cable connection (1) from the vending machine controller ES.	
3.	<ul style="list-style-type: none"> <li>• Remove two screws (1) to dismount sugar fan (2).</li> </ul>	
4.	Install new sugar fan and reassemble in reverse order.	





## Chapter 13

WITTENBORG

## **Service mode - operator settings**

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### **Overview**

- Service mode - operator settings
  - Accessing service mode menus
  - Operator setting menu system
  - Total counter menu
  - Basic operation
  - Machine setting
  - Service information
-

## Service mode - operator settings

---

**Introduction**      When the machine is in Service Mode, the direct selection buttons on the selection panel are used for retrieving data and setting.

---

**Description**      There are five general Service Mode menus which can be accessed by all users.

Service Mode Menu	Description
Total Counter	to use for: <ul style="list-style-type: none"> <li>• data retrieval regarding the total number of drinks dispensed</li> <li>• total amount of money collected</li> <li>• total number of discounts</li> </ul> and for setting handling of cash flow.
Rinse	to assist in rinsing the machine.
Basic Operation	to use for data retrieval and price and quantity setting for the individual drinks.
Machine Setting	to use for additional settings.
Service Information	to use for data retrieval and settings regarding service.

---

**Drink/Price Display**      In the Service Mode the drink/price display on the selection panel shows the needed information.

---

## Accessing Service Mode Menus

**Description**

The Service Mode menus are accessed by opening the door and pressing the direct selection buttons on the selection panel.

The Service Mode will automatically start in the Total Counter menu. This will be shown on the display.

**Selection buttons**


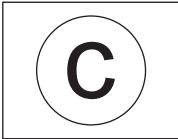


The four direct selection buttons found at the top of the selection panel are used to access and activate the menus and their options.



**Display**

The display shows which operation area the system is in and the value of the setting. To simplify operation, the lamps above the buttons which can be used, light up.

**Button function**

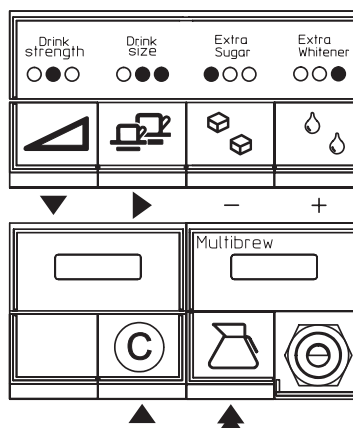
The buttons have the same function in all menus. The function of the selection buttons:

Button	Function
	<p>The indicated button is used as a "down" button. This button is used to move from one menu option to another within a menu (eg to move from the Total Counter to the Total Amount option in the Total Counter menu).</p>
	<p>The "clear" button is used as an "up" button. This button is used to move to the previous menu option eg to move from "Period 1 stop" to "Period 1 start".</p> <p>The "clear" button is also used to move from the first menu option to the last menu option (eg to move from "Rinse" to "Rinse brewer" or to move from "Machine setting" to "Happy hour disc".</p>
	<p>The indicated button is used as an "arrow" button, stepping to the right. This button is used to move from one main menu to another and from a menu field to another menu field within a menu option and from a menu option back to a main menu (eg to move from the "Reset Counters" menu to the "Reset +/-" menu and from the "Reset +/-" menu back to the "Reset Counters" menu).</p>
	<p>The indicated button is used as a "minus" button and when pushed decreases the value.</p> <p><b>Note:</b> Pressing the button once decreases the value of the setting one unit at a time. Keeping the button depressed increases the setting speed</p>

Button	Function
	<p>The indicated button is used as a "plus" button and when pushed increases the value.</p> <p><b>Note:</b> Pressing the button once increases the value of the setting one unit at a time. Keeping the button depressed increases the setting speed.</p>
	<p>The multibrew button can be pressed at any time to return to the start of the menu or to the Operating Mode. While in the Total Counter menu pressing the multibrew button results in returning to the Operating Mode. While in any menu except the Total Counter menu (eg Basic Operation), pressing the multibrew button twice results in returning to the Total Counter menu and pressing it three times results in returning to the Operating Mode.</p>

## Illustration

Short guide of the navigation buttons:



## Operator settings menu system

The following shows the Operator Settings menu system.



## Total Counter Menu

### Introduction

The Total Counter menu is used to retrieve data regarding the total number of drinks dispensed, total amount of money collected, total number of discounts, total amount of discount. It is also used to reset counters and to set handling of the cash flow.

### Options

The Total Counter options are as follows,

- Total Counter
- Total Amount
- Discount Number
- Discount Amount
- Reset Counters
- Coin Audit
- Card Audit
- Coin Action

### Accessing

Accessing the Total Counter Options

- Open the cabinet door.
- The machine will automatically be in the Total Counter menu (Total Counter option).

### Total Counter

The display will show the total number of dispensed portions (non-resettable) and the total number of dispensed portions since last resetting (deleting) the counters.

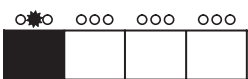
Nres tot: xxx Res tot : xx
-------------------------------

Refer to "Total counter"

### Total Amount

The Total Amount option is used to read out the total amount of money collected from the sales of all dispensed portions.

Total amount : x,xx
------------------------

Action	Function
Press: 	The display will show the total amount of money collected since last resetting (deleting) the counters.


The Total Amount option will not be shown, when the Price Mode in Service Setting is set to "Index".



## Discount Number

HH no : x  
Key no: xx


The Discount Number option is used to view the total number of happy hour sales within a period and the total number of sales with key discount.

Action	Function
Press 	The display will show the total number of dispensed drinks with discount - happy hour or key discount - since last resetting (deleting) the counters.

## Disc. Amount

HH disc : x  
Key disc: xx

The Discount Amount option is used to view the total amount of discount given from Happy Hour sales and the total amount of discount given from key discount sales.

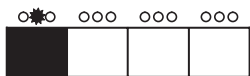

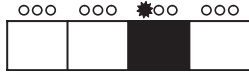

Action	Function
Press 	The display will show the total amount of discount given and the total number of drinks dispensed since last resetting (deleting) the counters.

Discount Amount option will not be shown, when Price Mode in Service Setting is set to "Index".

## Reset Counters

Reset counters  
->

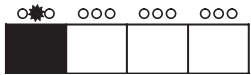
The Reset Counters option is used to reset all the counters.

Action	Function
Press 	Accesses the Reset Counter.
Press  and then Press one of the indicated buttons  	Activates the Reset Counters  Resets counters. The program will automatically return to the Reset Counter option.

## Coin Audit

The Coin Audit option calls the data counters relating to coin flow.

Coin audit ->
------------------

Button	Function
Press: 	Accesses the Coin Audit


Options: The Coin Audit options are as follows:

- Amount/No
- Money to Tubes
- Money to Cashbox
- Value Overpay
- Manual Filling
- Collected Money
- Number of Slugs
- Dispensed Change
- Manually Delivered Money

## Amount/No

This option is used to view the total value of vends and the total number of vends made by coins as a means of payment

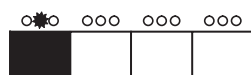
Amount xxxxxxxx No x
-------------------------

Action	Function
Press: 	The amount of the total value and the number of vends for which coins were used in payment.

## Money to Tubes

The Money to Tubes option is used to view the amount routed to the coin tubes. The counter shows the exact value of the money in the tubes


Money to tubes
----------------

Action	Function
Press: 	The number of money routed to the coin tubes is displayed.

## Money to Cash-box

Money to tubes


The Money to Cashbox option is used to view the amount routed to the cashbox

Action	Function
Press 	The number of money routed to the cash box is displayed.

## Value Overpay

Value over pay

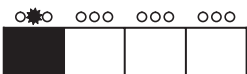
The Value Overpay option is used to view the amount which because of a lack of coins in the coin unit (eg only correct amount light on and/or rounding down in connection with a time related discount) could not be returned, if "Credit->overpay" has been chosen in "Change Mode".

Action	Function
Press 	The number of money which could not be returned is displayed.

## Manual Filling

Manual filling

The Manual Filling option is used to view the amount inserted and recorded as manually inserted change with manual filling under "Card/Coin Action".

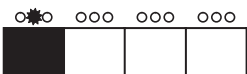
Action	Function
Press 	The number of money inserted and registered as manually inserted change is displayed.

NB: This option is not available with Executive coin unit.

## Collected Money

Collected money

The Collected Money option is used to view the amount removed from the cashbox without a reset in "Reset Counters".


Action	Function
Press 	The number of money removed from the cash box without a reset. is displayed.

The precondition is that when money is removed from the cashbox, the removal is recorded in Cash Collected.

## Number of Slugs

The Number of Slugs option is used to view the number of false coins detected in the coin mechanism.

No of slugs


Action	Function
Press 	The number of false detected coins is displayed.

NB: This option is only available with the MDB coin unit.

## Dispensed Change

The Dispensed Change option is used to view the dispensed change amount paid out to customers.



Dispensed Change

Action	Function
Press 	The amount of dispensed change to customers is displayed.

## Manually Delivered Money

The Manually Delivered Money option is used to view the amount paid out from the coin tubes with Dispense coins under Card/Coin action.

Man.del. money

Action	Function
Press 	The amount paid out from the coin tubes is displayed.
Press 	Returns to the Coin Audit option.

NB: As to Executive coin unit: Coins are paid out from the coin tubes by pressing the coin dispense button on the coin unit.

## Card Audit

The Card Audit option calls the data counter for cash flow by card.


Action	Function
<div> <div>Card audit</div> <div>-&gt;</div> </div> <div> <div>Press</div> <div> <div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> </div> <div> <div></div> <div></div> <div></div> </div> </div> </div>	<div>Accesses the Card Audit</div>

Options: The Card Audit function is as follows:

- Amount/No
- Revalued Amount

## Amount/No

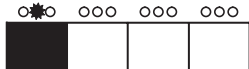

This option is used to view the total value of vends and the total number of vends made by card as a means of payment.

Amount xxxxxxxx No x	vends made by card as a means of payment.	
	<b>Action</b> Press 	<b>Function</b> The amount of the total value and the number of vends for which cards were used in payment.

NB: This option is only available with the MDB/ICP coin unit.

Revalued  
Amount

This option is used to view the total amount which has been added to the credit amount on a card.

Revalued amount No x	Action	Function
	Press 	The amount added to the credit amount on a card
	Press 	Returns to the Card Audit option.

## Coin Action

The Coin Action option is used to set the handling of the coins:

	Action	Function
<div data-bbox="194 1733 445 1756" data-label="Diagram"> </div>	<div data-bbox="445 1733 932 1756" data-label="Diagram"> </div>	<div data-bbox="932 1733 1420 1756" data-label="Text"> <p>Accesses the Card/Coin Action.</p> </div>

Options: The Coin options are as follows:


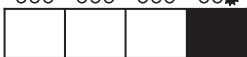
- Cash Collected
- Dispense Coins
- Manual Filling

NB: This option is not available with Executive coin unit.

## Cash Collected

Cash collected  
Press: <+>

The Cash Collected option is used to electronically confirm the amount of money which is removed physically from the cash box. This amount is then recorded in the Collected Money counter:

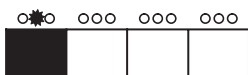

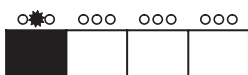
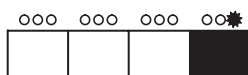


Action	Function
Press 	Access the Cash Collected option.
Press 	The amount removed from the cash box is recorded and displayed in Collected Money

## Dispense Coins

The Dispense Coins option is used to manually pay out a number of coins from the coin numbers/tubes (1-16) of the coin unit

Dispense coins  
->

Coin:      Number:  
x            0 go




Step	Action	Function										
1.	Press 	Accesses the Dispense coins option										
2.	Press 	Activates the Dispense Coins option										
3.	From the above menu you have the following options: <table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>select a specific coin number (1-16)</td><td>4</td></tr><tr><td>increase the number of coins to be paid out</td><td>5</td></tr><tr><td>decrease the number of coins to be paid out</td><td>6</td></tr><tr><td>accept specified coin number, number of coins to be paid out and to return to Dispense coins option</td><td>7</td></tr></table>		If you want to	then go to step	select a specific coin number (1-16)	4	increase the number of coins to be paid out	5	decrease the number of coins to be paid out	6	accept specified coin number, number of coins to be paid out and to return to Dispense coins option	7
If you want to	then go to step											
select a specific coin number (1-16)	4											
increase the number of coins to be paid out	5											
decrease the number of coins to be paid out	6											
accept specified coin number, number of coins to be paid out and to return to Dispense coins option	7											
4.	Press 	Switches between the various coin numbers/tubes of the coin unit.										
5.	Press 	Increases the number of coins from the chosen coin number/tube of the coin unit.										
6.	Press 	Decreases the number of coins from the chosen coin number/tube of the coin unit.										
7.	Press 	The specified coin number, number of coins to be paid out are accepted. The program automatically returns to Dispense coins option.										

NB: This option is not available with Executive coin unit: In that case coins are paid out from the coin tubes by pressing the coin dispense button on the coin unit.

## Manual Filling

Manual Filling  
Press: <+>

The Manual Filling option is used to electronically confirm the amount of money which has been paid manually into the coin unit. This amount is then recorded in the Manual Filling counter under “Coin Audit” option:

Action	Function
Press: 	Accesses the Manual Filling option.
Press: 	The amount filled into the coin unit is recorded and displayed in Manual Filling counter
Press: 	Returns to the Coin Action option.

The sum inserted from normal credit is converted from cash into change. The coins inserted are distributed to the appropriate tubes in the coin unit. If the tubes in question are filled the coins are routed into the cashbox.



## Filling

Canisters filled

Reference to the section "Canisters filled"

Filling  
<down>

Note

This field may not be shown, it's dependent on machine settings.

## Rinse

Rinse brewer/mix

Reference to the section "Rinsing - Brewer/mixer rinsing"  
Reference to the section "Rinsing - Brewer rinsing with rinsing stop"

Rinse  
brewer/mixer >

Rinse brewer

Reference to the section "Rinse brewer"

Rinse  
brewer

Manual  
rinse

Reference to the section "Manual rinsed"

Manual rinsed  
press <+>

## Basic operation

**Description** The Basic Operation options make it possible to retrieve data and set prices and quantities of all drink options available.


**Options** The Basic Operation options are as follows:

- Number of Paid Drinks
- Number of Free-Vend Drinks
- Amount
- Price
- Quantities
- Group number

**Accessing and operating**

Basic Operation  
Press sel.button

Chocolate  
No. paid: x

Action	Function
Open the cabinet door.	The machine will automatically start in the Total Counter menu.
Press twice 	
Select the drink for which setting is needed by pressing the corresponding direct selection button on the selection panel (eg press the "coffee" button for setting coffee, press the "coffee with sugar" for setting coffee with sugar, etc.).	The number of portions dispensed for the selected drink since last resetting (deleting) the counters is displayed.


While in any option it is possible by pressing another direct selection button to recall information for or make changes to the corresponding drink (eg while in the Number Paid option for coffee, pressing the coffee with sugar direct selection button will access the Number Paid information for coffee with sugar.)

## Number Paid

This option serves as a counter and is used to view the number of paid drinks dispensed for the selected drink and for the preset groups of drinks.


## Number Paid for Group

Chocolate  
Group x: x

Action	Function
Press:  <div> <div>ooo</div> <div>o*</div> <div>ooo</div> <div>ooo</div> </div> 	The number of portions dispensed for the preset group of drinks since last resetting (deleting) the counters is displayed.

The group displayed corresponds with the group in which the selected drink has been preset. To access additional groups, press the corresponding direct selection buttons.

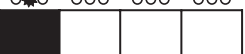
Chocolate  
No. paid: x

Action	Function
Press:  <div> <div>ooo</div> <div>o*</div> <div>ooo</div> <div>ooo</div> </div> 	Returns to the Number Paid option.

## Number Free


This option serves as a counter and is used to view the number of free drinks dispensed for the selected drink and for the preset groups of drinks.

Chocolate  
No. free: x

Action	Function
Press:  <div> <div>o*</div> <div>ooo</div> <div>ooo</div> <div>ooo</div> </div> 	The number of portions dispensed for the selected drink since last resetting (deleting) the counters is displayed.


## Number Free for Group

Chocolate  
Group x: x

Action	Function
Press: 	The number of portions dispensed for the preset group of drinks since last resetting (deleting) the counters is displayed.

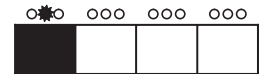
The group displayed corresponds with the group in which the selected drink has been preset. To access additional groups, press the corresponding direct selection buttons.

Chocolate  
No. free: x

Action	Function
Press: 	Returns to the Number Free option.

## Amount


Chocolate  
Amount: x,xx

Action	Function
Press: 	The total amount of money collected since last resetting (deleting) the counter is displayed.

This function will not be displayed when Price Mode in Service Setting is set to "Index".

## Price Information

Chocolate  
Price : x,xx

Action	Function
Press: 	The drink price (or price index) is displayed.

## Set or change price

Chocolate  
Set Pr: x,xx

Action	Function
Press: 	The display will read set price #.##
Press: 	Decreases the price.
Press: 	Increases the price.
Press: 	Returns to the Price Set option.


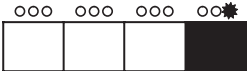

## Quantity

Chocolate  
Set quantities ->

This option is used to set water and ingredient quantities of a selected drink.

Action	Function
Press: 	Displays the name of the drink and "Set quantities ->".
Press: 	Displays a drink component.
Press: 	Displays the component (eg water, ingredient, mixing time)

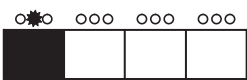


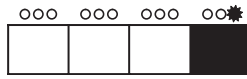

Set or change the quantity

Action	Function
Press: 	Decreases the quantity.
Press: 	Increases the quantity.
Press: 	Returns to "Quantities".


## Group Number

Chocolate  
Group : x

This option is used to set a group consisting of a selected number of drinks for which information is needed regarding the number of paid and free-vend drinks.

Action	Function
Press: 	The display reads eg "Group: 1".
Press the direct selection button corresponding to the drink to be included in a group.	To set or change the group.
Press: 	The display reads "Set Group".
Press: 	Sets the group number (decreasing numerically).
Press: 	Sets the group number (increases numerically).
Press: 	Returns to Group Number option.
Inhibiting drink	Set group = 0
Undosed hot water	Set group = 22
Undosed cold water	Set group = 23

## Machine setting

Introduction	The Machine Setting options allow for setting the machine according to individual preferences.
Machine Setting Options	<p>The Machine Setting options are as follows:</p> <ul style="list-style-type: none"> <li>• Free-Vend</li> <li>• Beep</li> <li>• Multibrew</li> <li>• Key Discount</li> <li>• Clock function</li> <li>• Clock</li> <li>• Active Period</li> <li>• Happy Hour</li> <li>• Happy Hour Discount</li> </ul>
Accessing and operating	<p>Accessing and operating the Machine Setting options</p> <ol style="list-style-type: none"> <li>1. Open the cabinet door (the machine will automatically start in the Total Counter menu).</li> <li>2. Press the  button three times.</li> </ol> <p>The display will read "Machine Setting".</p>



## Free-Vend

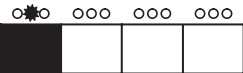


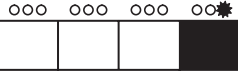

This option is used to set the machine to the free-vend mode.

The display will read "Free-Vend Status Off" or "Free-Vend Status On".

## Set or change the Free-Vend status

This option is used to set the free-vend status on the machine.

Free vend  
Status : OFF

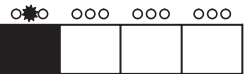




Action	Function
Press: 	Accesses the Free Vend option. Shows the status.
Press: 	Activates the Free-Vend option.
Press: 	Sets the Free-Vend to "off".
Press: 	Sets the Free-Vend to "on".
Press: 	Returns to Free-Vend option.

## Beep

This option is used to set the status of the acoustic signal to ON or OFF.

## Set or change the Beep status

Beep  
Status : ON

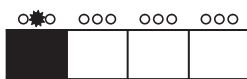


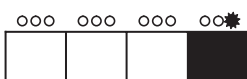

Action	Function
Press: 	Accesses the beep option.
Press: 	Activates Beep option.
Press: 	Sets the Beep status to "off".
Press: 	Sets the Beep status to "on".
Press: 	Returns to the Beep option.

## Multibrew

The Multibrew option is used to set a preset number of portions to be dispensed when the multibrew function is activated (eg a setting of 5 results in an automatic dispensing of 5 portions when the multibrew function is activated provided that this number is not changed by the user prior to activating.)

Set or change the preset number of portions to be dispensed

Multibrew  
Preset pot: x

Action	Function
Press: 	Accesses the Multibrew option.
Press: 	Activates the Preset Portion setting. The display reads "Set Portions".
Press: 	Decreases the number of portions.
Press: 	Increases the number of portions.
Press: 	Returns to Multibrew option.

## Credit lacking

If credit for paid multibrew is insufficient, the vending machine will wait 10 seconds for further credit. When the vending machine has received sufficient credit to continue, the multibrew sequence will continue. If the vending machine does not receive sufficient credit within this timeout period of 10 seconds, the multibrew function is reset.




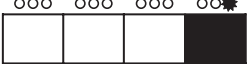

## Key Discount

This option is also used to set a percentage discount for the use of the key discount function (eg a setting of 20 results in a discount of 20% when the key discount is activated.). A setting of 100% means free vend.

When using "index" the value will be added to the "normal" price index.

## Set or change the key discount

Key discount  
xxx percent

Action	Function
Press: 	Accesses the Key Discount option.
Press: 	Activates Discount setting. The display reads "Discount Percent".
Press: 	Decreases the discount.
Press: 	Increases the discount.
Press: 	Returns to Key Discount option.

## Clock Status

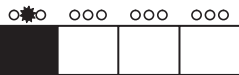




This option is used to set the clock status to on or off.

The following clock functions can only be operated when the clock status is set to on: clock, active period, happy hour, happy hour disc.

## Activate/deactivate the clock function

Clock Status : ON

Set clock mode: xx

Action	Function
Press: 	Accesses the clock status option.
Press: 	Activates the "clock status" function. The display shows "set clock mode: (on, off)".
Press: 	The "clock status" function changes to OFF. The display shows "set clock mode: off".
Press: 	Changes the "clock status" function to ON. The display shows "set clock mode: on".
Press: 	Returns to clock status option.

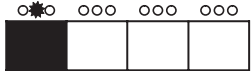


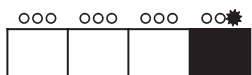


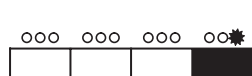


## Clock

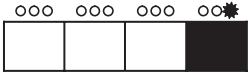


This option is used to set the date and time.

The display will show the date and time of day (year, month, date, day of week, hour and minute. To set this option, the clock status must be "on".

## Set or change the date and time

Clock : YY.MM.DD  
WW.HH.MM

Step	Action	Function
1.	Press: 	Accesses the Clock option.
2.	Press: 	Activates Date setting. (eg display = 95.01.11)
3.	Press: 	Decreases the year.
4.	Press: 	Increases the year.
5.	Press: 	Sets the month, the display will blink ## once, and then the month (eg 01)
6.	Press: 	Decreases the month.
7.	Press: 	Increases the month.
8.	Press: 	Sets the day, the display will blink ## once, and then the day (eg 11).
9.	Press: 	Decreases the day.

Step	Action	Function
10.	Press: 	Increases the day.
11.	Press: 	Accesses time setting.
12.	Repeat steps 3 through 11.	Sets the day of the week and time accordingly. <b>Note:</b> It is not necessary to set the day of the week. This is done automatically according to the date.
13.	Press: 	Returns to clock option.




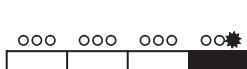



## Active Period

This option is used to set periods of time when the machine is to be used (eg during working hours). To set or change the periods, the clock function must be "on". There are seven possible periods.



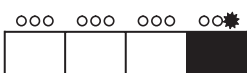



The previously set active periods are displayed.

## Set or change the active periods

Active period  
Set periods ->

Step	Action	Function
1.	Press: 	Accesses the Active Period option.
2.	Press: 	Starts setting of the first period. (Display = Period 1 start.)
3.	Press: 	Moves backward among the days.
4.	Press: 	Moves forward among the days.  <b>Note:</b> to set the Active Period for the same time every day, the display should read == for the day.
5.	Press: 	Sets the time, starting with the hour. The display will blink ## once and then show the hour.
6.	Press: 	Decreases the hour.
7.	Press: 	Increases the hour.



Step	Action	Function
8.	Press: 	Sets the minutes. The display will blink ## once and then show the minutes.
9.	Press:. 	Decreases the minutes.
10.	Press: 	Increases the minutes.
11.	Press 	Sets the stop day and time of the first period. (Display = Period 1 stop)
12.	Repeat steps 3 through 11.	
13.	Press: 	Starts setting of the next period.
14.	Press: 	Returns to the Active Period option.

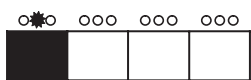
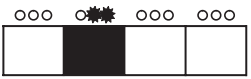

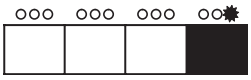
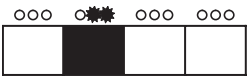

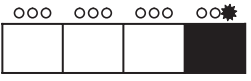
## Happy Hour



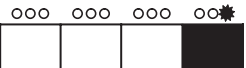
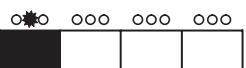


This option is used to set periods during which drinks are to be sold in the free vend mode. To set or change the periods, the clock function must be "on". There are 7 possible periods.

During the Happy Hour a certain rolling text is shown on the display. The rolling text can only be read in via the serial communication in VIDTS format.

## Set or change the happy hour periods

Happy hour  
Set periods ->

Step	Action	Function
1.	Press: 	Accesses the Happy Hour option.
2.	Press: 	Starts setting of one of the first period. (Display = Period 1 start.)
3.	Press: 	Moves backward among the days.
4.	Press: 	Moves forward among the days. <b>Note:</b> to set the Happy Hour period for the same time every day, the display should read == for the day.
5.	Press: 	Sets the time, starting with the hour. The display will blink ## once and then show the hour.
6.	Press: 	Decreases the hour.
7.	Press: 	Increases the hour.

Step	Action	Function
8.	Press: 	Sets the minutes. The display will blink ## once and then show the minutes.
9.	Press: 	Decreases the minutes.
10.	Press: 	Increases the minutes.
11.	Press: 	Sets the stop day and time of the first period. (Display = Period 1 stop)
12.	Repeat steps 3 through 11.	
13.	Press: 	Starts setting of the next period.
14.	Repeat steps 2 through 10 until all periods are set.	
15.	Press: 	Returns to happy hour option.

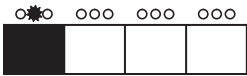

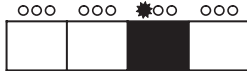
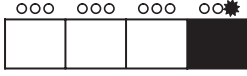

## Happy hour Discount

This option is used to set a percentage discount for selections made during a Happy Hour period (eg a setting of 20 results in a discount of 20% on the selection made during a Happy Hour period.). A setting of 100% means free vend during the period. To set or change this option the clock function must be "on".

When using "index" the value will be added to the "normal" price index.

## Set or change the happy hour discount

Happy hour disc.  
xx percent

Action	Function
Press: 	Accesses the Happy Hour Discount option.
Press: 	Activates Happy Hour Discount option.
Press: 	Decrease the discount.
Press: 	Increase the discount.
Press: 	Return to Happy Hour Discount option.



## Service information

**Introduction** The Service Information options provide information regarding the service of the machine.


**Service Information Options** The Service Information options are as follows:

- Program Version
- Log / Event book
- Reset Logbook

**Accessing** Accessing Service Information options

Action	Function
Open the cabinet door.	The machine will automatically be in the Total Counter menu).
Press four times: 	The display will read "Service Info".
Press 	Accesses the information found in the Service Information.

**Program Version** This option provides information regarding the particular version of the machine in use.

**Access Program Version** Press the  button to show the program version for VMC and SPC.

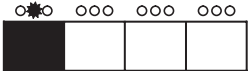



VMC V.XXXXXXXXXX SPC V.XXXXXXXXXX
--------------------------------------

**Log / Event Book** This option is used to retrieve data regarding information about the machine:

- error/event
- frequency
- first/last occurrence.




## Retrieve data

Log book  
->

Step	Action	Function
1.	Press: 	Accesses Log / Event Book option.
2.	Press: 	Retrieves event/error.
3.	Press: 	Retrieves the next event/error.
4.	Repeat step 3 until all data has been retrieved.	
5.	Press: 	Return to the Log / Event book option.

## Reset log book

Reset log book  
->

Action	Function
Press: 	Accesses "reset log-book" option.
Press: 	Activates "reset log-book" option.
Press: 	Returns to "reset log book" option.

WITTENBORG

## Chapter 14

WITTENBORG



## **Service mode - service settings**

---

### **Overview**

- Service mode - service settings
  - Accessing service mode menus
  - Operator setting menu system
  - Service menu options
-

## Service mode - service settings

**Introduction** When the machine is in the Service Mode, the preselection buttons on the selection module are used for retrieving data and setting.

**Description** There are five general Service Mode menus which can be accessed by all users.

Service Mode Menu	Description
Total Counter	to use for: <ul style="list-style-type: none"> <li>• data retrieval regarding the total number of drinks dispensed</li> <li>• total amount of money collected</li> <li>• total number of discounts</li> </ul> and for setting handling of cash flow.
Rinse	to assist in rinsing the machine
Basic Operation	to use for data retrieval and price and quantity setting for the individual drinks
Machine Setting	to use for additional settings
Service Information	to use for data retrieval and settings regarding service

**Drink/Price Display** In the Service Mode the drink/price display on the selection module shows the needed information.

**Additional Service Mode** There is an additional Service Mode menu which can only be accessed with the use of a password or a service device. This menu is used for data retrieval and setting options specifically needed for trained service technicians (see Service Menu).

## Accessing Service Mode Menus

**Description**

The Service Mode menus are accessed by opening the door and pressing the preselection buttons on the selection module.

The Service Mode will automatically start in the Total Counter menu. This will be shown on the display.

**Operation Buttons**

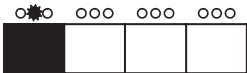
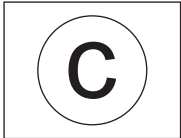

The four preselection buttons found at the top of the selection module are used to access and activate the menus and their options.




**Display**

The display shows which operation area the system is in and the value of the setting. To simplify operation, the light above the buttons which can be used light up.

**Button function**

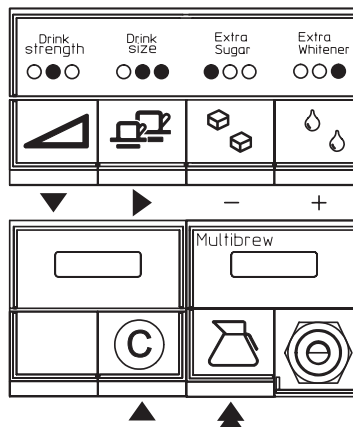
The buttons have the same function in all menus. The function of the selection buttons:

Button	Function
	<p>The indicated button is used as a "down" button. This button is used to move from one menu option to another and from within a menu option to move from a menu category to another (eg in the Total Counter menu to move from the Total Counter to the Total Amount option).</p>
	<p>The "clear" button is used as a "up" button. This button is used to move to the previous menu option eg to move from "Period 1 stop" to "Period 1 start".</p> <p>The "clear" button is also used to move from the first menu option to the last menu option (eg to move from "Rinse" to "Rinse brewer" or to move from "Machine setting" to "Happy hour disc".</p>
	<p>The indicated button is used as an "arrow" button, stepping to the right. This button is used to move from one main menu to another and from a menu field to another menu field within a menu option and from a menu option back to a main menu (eg to move from the "Reset Counters" menu to the "Reset +/-" menu and from the "Reset +/-" menu back to the "Reset Counters" menu).</p>

Button	Function
	<p>The indicated button is used as a "minus" button and when pushed decreases the value.</p> <p><b>Note:</b> Pressing this button once changes the value of the setting one unit at a time. Keeping the button depressed increases the setting speed.</p> <p>The button is used also to switch function on/off.</p>
	<p>The indicated button is used as a "plus" button and when pushed increases the value.</p> <p><b>Note:</b> Pressing this button once changes the value of the setting one unit at a time. Keeping the button depressed increases the setting speed.</p> <p>The button is used also to switch function on/off.</p>
	<p>The multibrew button can be pressed at any time to return to the start of the menu or to the Operating Mode. While in the Total Counter menu pressing the multibrew button results in returning to the Operating Mode. While in any menu except the Total Counter menu (eg Basic Operation), pressing the multibrew button twice results in returning to the Total Counter menu and pressing it three times results in returning to the Operating Mode.</p>

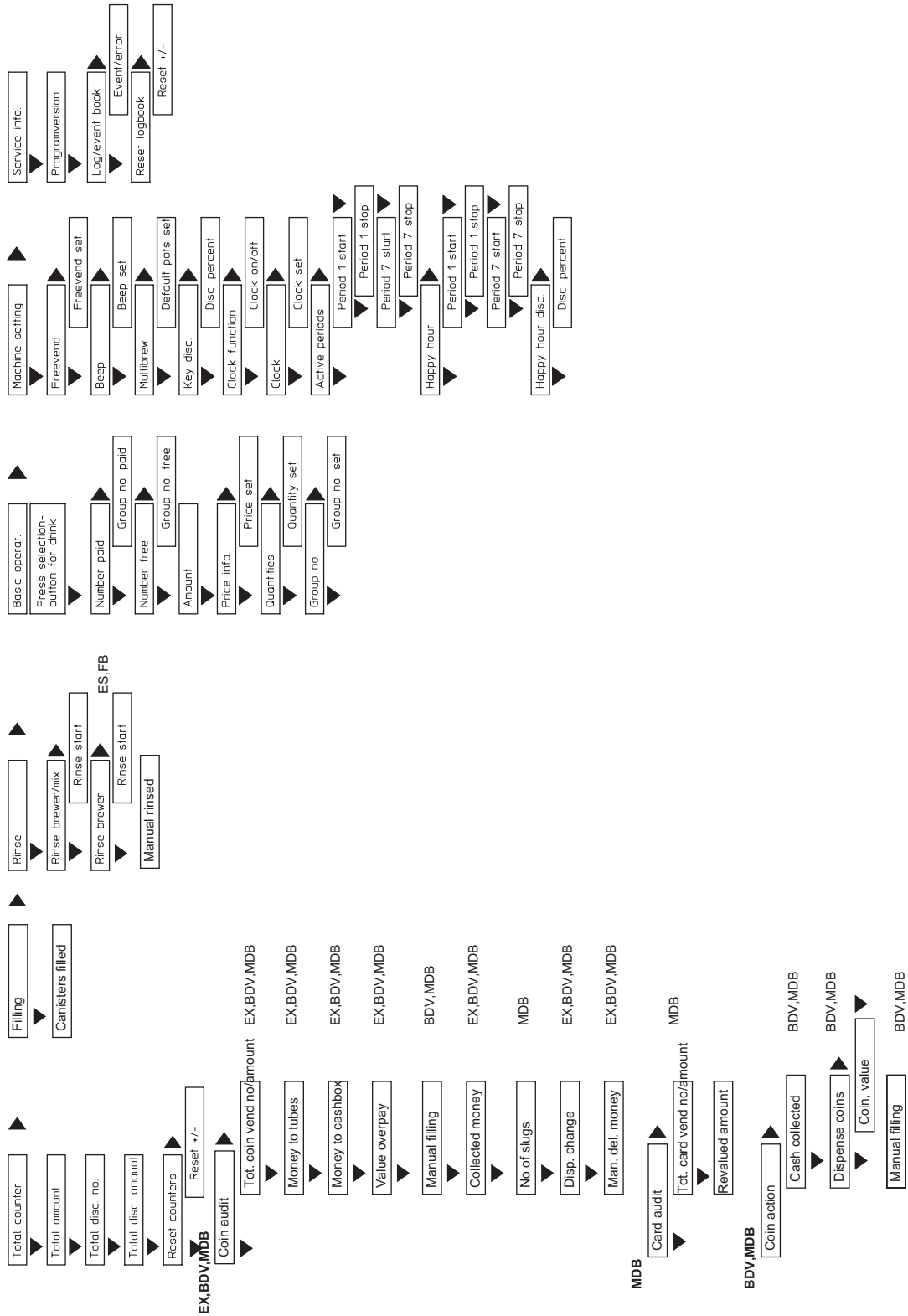
## Illustration

Short guide of the navigation buttons:



# Operator Setting Menu System

The following shows the Operator Setting menu system.



## Service Menu Options

The service menu is used for data retrieval and setting options necessary for a trained service technician.

---

### Service options

- Accessing and operating the Service options
- Enter password
- Change password
- Product counter
- Reset counter
- System setting options
- Canister setting
- Rinse message setting
- Calibrating valves
- Calibrating a valve
- Calibrating ingredients
- Temperature calibration
- Operator setting
- Quantities option
- Boiler setting option
- Setting cup sensor
- Setting payment
- Vend/change mode option
- Max. change setting
- Max credit setting
- Obligation to buy setting
- Revaluating option
- Coin inhibit setting
- Low change inhibit setting
- Exact change equation setting
- Exact change offset setting
- Keypad inhibit setting

The Service Setting menu system is shown on the following page.

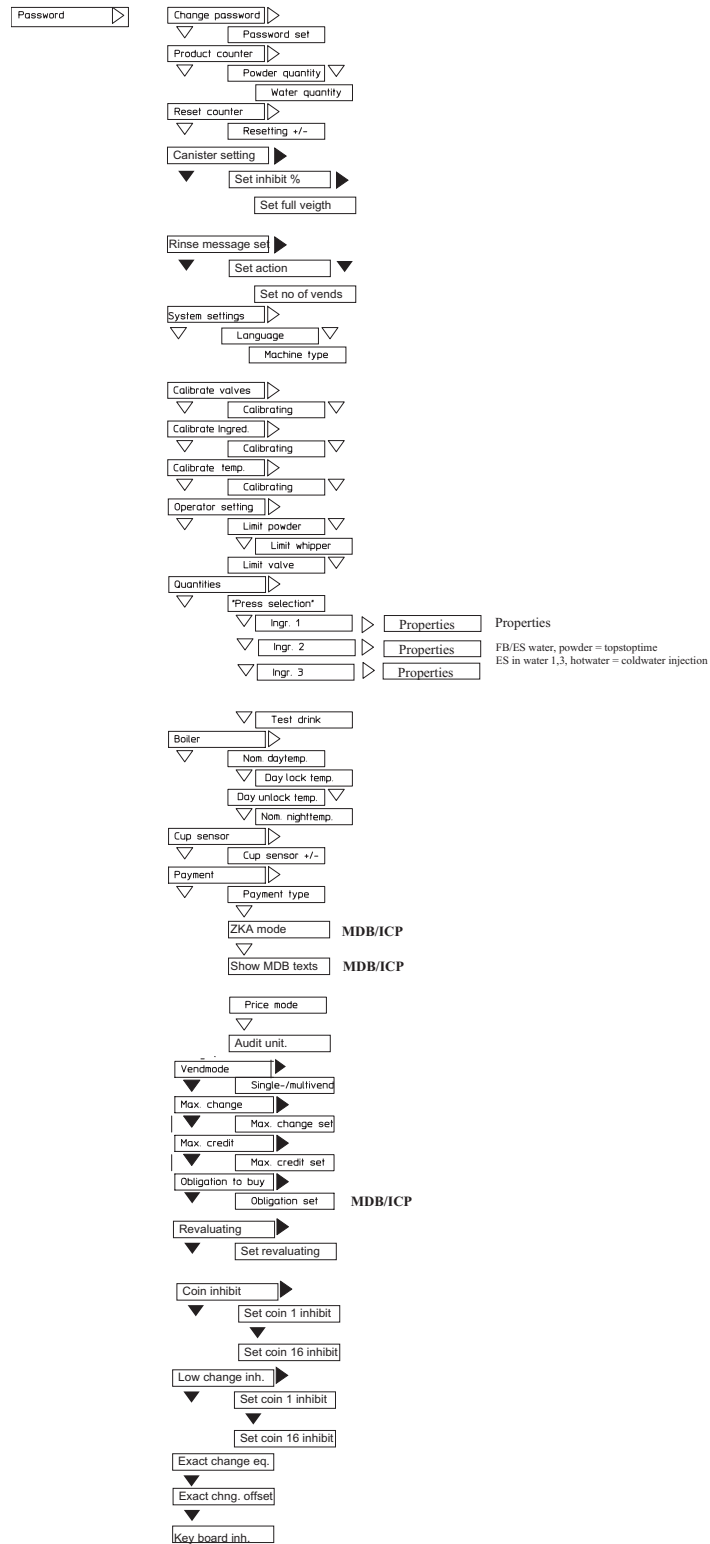
The service options may only be accessed by entering a password.

Accessing the various menu options are shown in succession from the starting point "password", i.e. you cannot access an option directly, you have to start from "password" and by means of the preselection buttons to guide yourself down the system considering the texts in the display.

---

## Service Setting Menu System



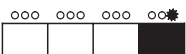
The service setting menu system is shown below.



## Accessing and operating the service options

Open the cabinet door (the machine will automatically start in the Total Counter menu).

Press the following buttons in the stated order:

-  button once
-  button twice
-  button once


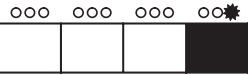
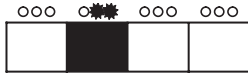
The display will read "Password".

Enter your password.

The program will automatically be in the Change Password option.

## Enter password

Enter Password  
0000 <Down>


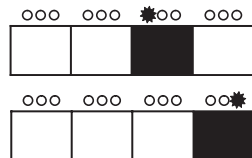


Step	Action	Function
1.	Press:  	Sets the character.
2.	Press the indicated button to go to the next character or after the fourth character to go to the next field. 	Enter your password. The display will blink # in the position of the character to be changed.
3.	Repeat steps 1 and 2 until all characters are set.	



## Change password

Change password  
->

This option is used to set a new password.

Step	Action	Function
1.	Press: 	Activates the New Password option.
2.	Press: 	Sets the character.
3.	Press the indicated button to go to the next character or after the fourth character to go to the next field. 	Sets the new password. The display will blink # in the position of the character to be changed.
4.	Repeat steps 2 and 3 until all characters are set.	
5.	Press: 	Accesses the next function "Product counter".


## Default password

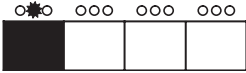


To ensure that you can always enter the system, even if the password has been changed, a default password exists which is 5101.

## Product counter

Product counter  
->

The Product Counter option is used to retrieve data regarding the quantities of powder and water dispensed. There are four powder options.


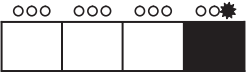

Step	Action	Function
1.	Press: 	Activates Product Counter option. The display will show the quantity of powder dispensed for powder 1. The quantity will be displayed in grams.

Step	Action	Function
2.	Press:  This button switches between all products in succession.	Accesses powder quantities and water quantity for the remaining ingredients  NB: The water quantity will be displayed in millilitres.
3.	Press: 	Returns to the Product Counter Option.
4.	Press: 	Accesses the next function "Reset product counters".

## Reset counter

Reset product counters ->


This option is used to reset the product counters.





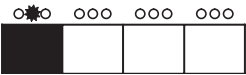
Step	Action	Function
1.	Press: 	Activates Reset Counter option.
2.	Press: 	Resets all counters. Returns to Reset Counter Option.
3.	Press: 	Accesses the next function "System Settings".

## System setting options

System Settings ->

The System Setting option is used to set the language and display machine type.

Step	Action	Function
1.	Press: 	Activates Language setting. Showing the actual language

Step	Action	Function
2.	Press: 	Moves backward among the language options.  NL → UK
3.	Press: 	Moves forward among the language options.  UK → NL
4.	Press: 	Switches between Language Setting or Machine Type Display.
5.	Press: 	Returns to the System Setting option.
6.	Press: 	Accesses the next function "Canister setting".

## Canister setting facility

Each ingredient canister is provided with an empty feeler facility.

To activate this facility the following have to be set:

- an ingredient limit in the container in question (1-99), expressed in percent, and
- the total weight of the contents of the full canister.

**Note:** The limit and total weight of the ingredient in a canister should be checked and adjusted each time you change the brand or type of the ingredient in question.

Each ingredient is set separately.

When the ingredient level in the canister reaches the minimum level, set in this facility, the display will show "sold out", if the relevant selection button is pushed.


A limit set to "0" will deactivate this option, and the corresponding menus in "operator setting menus" will not be displayed.

## Canister setting options

Canister settings  
->

This option is used to set the Canister Settings:

Step	Action	Function														
1.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Activates Canister Setting options														
2.	From the above menu you have the following options: <table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>switch between between "Inh.if x% full" or "Full weight; x.x Kg"</td><td>3</td></tr><tr><td>switch between the various ingredients</td><td>4</td></tr><tr><td>decrease the value</td><td>5</td></tr><tr><td>increase the value</td><td>6</td></tr><tr><td>leave the decrease or increase option</td><td>7</td></tr><tr><td>access the next function</td><td>7-8</td></tr></table>		If you want to	then go to step	switch between between "Inh.if x% full" or "Full weight; x.x Kg"	3	switch between the various ingredients	4	decrease the value	5	increase the value	6	leave the decrease or increase option	7	access the next function	7-8
If you want to	then go to step															
switch between between "Inh.if x% full" or "Full weight; x.x Kg"	3															
switch between the various ingredients	4															
decrease the value	5															
increase the value	6															
leave the decrease or increase option	7															
access the next function	7-8															
3.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Switches between "Inh.if x% full" or "Full weight: x.xKg".														
4.	Press: <div><div>o*o</div><div>ooo</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Switches between the various ingredients.														
5.	Press: <div><div>ooo</div><div>ooo</div><div>*oo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Decreases the value.														
6.	Press: <div><div>ooo</div><div>ooo</div><div>ooo</div><div>oo*</div><div><div></div><div></div><div></div><div></div></div></div>	Increases the value.														
7.	Press: <div><div><div><div></div></div></div></div>	Returns to the Canister Setting option.														

Step	Action	Function
8.	Press: 	Accesses the next function "Rinse Message Setting"

## Rinse message setting facility

After a certain preset dispensing interval, the machine will indicate that it needs cleaning. The rinse message setting facility can make the machine react in various ways:

Options	Description
Function off	This option will be inactive and the corresponding menus in "Operator setting menus" will not be displayed.
Display only	The display will show a rinse request when the number of drink dispensings exceeds the number set in "rinse interval". The machine will still be able to vend drinks. When the cleaning has been carried out, the interval must be reset, see Operator setting menus, "Rinse".
Stop vending	The machine will stop any vending from the machine when the number of drink dispensings exceeds the number set in "rinse interval". When the cleaning has been carried out, the interval must be reset, see Operator setting menus, "Rinse".


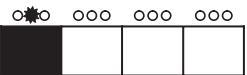
In this option, it is defined how the machine must react on a rinse request, as well as the required intervals.

## Rinse message setting options

Rinse message set  
->

This option is used to set the Rinse Message Setting:

Step	Action	Function														
1.	From the above menu you have the following options:															
	<table><tr><th>If you want</th><th>then go to step</th></tr><tr><td>to access "action"</td><td>2</td></tr><tr><td><ul style="list-style-type: none"><li>to move bottom up in the selections in "action"</li><li>to decrease values in "Rinse interval"</li></ul></td><td>3</td></tr><tr><td><ul style="list-style-type: none"><li>to move bottom up in the selections in "Action"</li><li>to increase the value in "Rinse interval"</li></ul></td><td>4</td></tr><tr><td>to switch between "Action" or "Rinse interval"</td><td>5</td></tr><tr><td>to leave "action" and revert to "Rinse message set"</td><td>6</td></tr><tr><td>to access the next function</td><td>6-7</td></tr></table>	If you want	then go to step	to access "action"	2	<ul style="list-style-type: none"><li>to move bottom up in the selections in "action"</li><li>to decrease values in "Rinse interval"</li></ul>	3	<ul style="list-style-type: none"><li>to move bottom up in the selections in "Action"</li><li>to increase the value in "Rinse interval"</li></ul>	4	to switch between "Action" or "Rinse interval"	5	to leave "action" and revert to "Rinse message set"	6	to access the next function	6-7	
If you want	then go to step															
to access "action"	2															
<ul style="list-style-type: none"><li>to move bottom up in the selections in "action"</li><li>to decrease values in "Rinse interval"</li></ul>	3															
<ul style="list-style-type: none"><li>to move bottom up in the selections in "Action"</li><li>to increase the value in "Rinse interval"</li></ul>	4															
to switch between "Action" or "Rinse interval"	5															
to leave "action" and revert to "Rinse message set"	6															
to access the next function	6-7															
2.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div></div> <div><div></div><div></div><div></div><div></div></div>	Accesses "Action"														
3.	Press: <div><div>ooo</div><div>ooo</div><div>*oo</div><div>ooo</div></div> <div><div></div><div></div><div></div><div></div></div>	In "Action" you can select one of the setting possibilities top down: <ul style="list-style-type: none"><li>Stop vending</li><li>Display only</li><li>Function off</li></ul> In "Rinse interval" you can decrease the value.														
4.	Press <div><div>ooo</div><div>ooo</div><div>ooo</div><div>oo*</div></div> <div><div></div><div></div><div></div><div></div></div>	In "Action" you can select one of the setting possibilities bottom up: <ul style="list-style-type: none"><li>Function off</li><li>Display only</li><li>Stop vending</li></ul> In "Rinse interval" you can increase the value.														
5.	Press: <div><div>o*o</div><div>ooo</div><div>ooo</div><div>ooo</div></div> <div><div></div><div></div><div></div><div></div></div>	Switches between "Action" or "Rinse intervals".  In "Rinse intervals" key in the number of vends to be delivered in the rinse interval.														

Step	Action	Function
6.	Press: 	From "Action" accesses "Rinse message set"
7.	Press: 	From "Rinse message" accesses the next function "Calibrate valves"


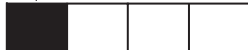

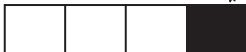
## Calibrating valves (FB/IN)

This option is used to calibrate the individual valves (FB/IN).

Note: The ES valves cannot be calibrated.

## Selecting valve to calibrate

Calibrate valves ->

Step	Action	Function								
1.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div></div> 	Activates the valve calibration (water flow is shown in ml per second).								
2.	From the above menu you have the following options: <table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>select a specific valve</td><td>3</td></tr><tr><td>decrease the water flow</td><td>4</td></tr><tr><td>increase the water flow</td><td>5</td></tr></table>		If you want to	then go to step	select a specific valve	3	decrease the water flow	4	increase the water flow	5
If you want to	then go to step									
select a specific valve	3									
decrease the water flow	4									
increase the water flow	5									
3.	Press: <div><div>o***</div><div>ooo</div><div>ooo</div><div>ooo</div></div> 	Switches between the valves in succession								
4.	Press: <div><div>ooo</div><div>ooo</div><div>*ooo</div><div>ooo</div></div> 	Decreases the water flow in ml per second.								
5.	Press: <div><div>ooo</div><div>ooo</div><div>ooo</div><div>oo**</div></div> 	Increases the water flow in ml per second.								
6.	Proceed with calibrating a valve									





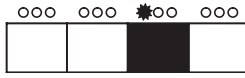
Prerequisite for  
calibrating valve

Have a beaker, graduated in ml, ready for measuring liquids from valves.



Calibrating a  
valve

Having selected valve to calibrate (see above procedure) proceed as follows:

FB1 Valve  
25 ml/s ->

Step	Action	Function				
1.	Press: 	Shows the total volume dispensed in ml +/-5. (The valve is open for 5 sec.)				
2.	<table><tr><th>If FB valve, then</th><th>If IN valve, then</th></tr><tr><td>remove the tube behind the FB canister and place tube in a container.</td><td>place a container in the cup holder.</td></tr></table>	If FB valve, then	If IN valve, then	remove the tube behind the FB canister and place tube in a container.	place a container in the cup holder.	
If FB valve, then	If IN valve, then					
remove the tube behind the FB canister and place tube in a container.	place a container in the cup holder.					
3.	Press: 	Starts calibration. The display will read "Delivering, Please Wait".				
4.	Measure the water dispensed from valve in question.					
5.	<table><tr><th>If quantity OK, or you want to quit calibration, then</th><th>If quantity not OK, then</th></tr><tr><td>Proceed to step 7.</td><td>Adjust valve mechanically and proceed to step 6</td></tr></table>	If quantity OK, or you want to quit calibration, then	If quantity not OK, then	Proceed to step 7.	Adjust valve mechanically and proceed to step 6	
If quantity OK, or you want to quit calibration, then	If quantity not OK, then					
Proceed to step 7.	Adjust valve mechanically and proceed to step 6					
6.	Press the indicated button and repeat steps 2 through 5 					
7.	Press: 	Quits the process. You can now enter the precise value for the quantity of water. This will fine adjust the delivery calibration.				
8.	Press: 	Decreases the water flow in ml per second.				



Step	Action	Function
9.	Press: 	Increases the water flow in ml per second.
10.	Repeat all steps until all valves have been calibrated.	
11.	Press: 	Accesses the next function "Calibrate ingredients".

## Calibrating ingredients




This option is used to calibrate the ingredients.



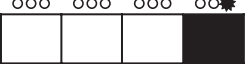

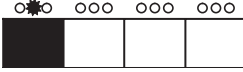
## Prerequisite for calibrating ingredients

Have a cup and a pair of scales ready for measuring ingredients dispensed.

## Selecting and calibrating ingredients

Calibrate ingredients ->



Step	Action	Function						
1.	Press: 	Activates the Ingredient Calibration.						
2.	Press: 	Switches between the ingredients in succession.						
3.	Press: 	Accepts calibration for the selected ingredient.						
4.	<table border="1"> <thead> <tr> <th>If FB ingredient, then</th><th>If IN ingredient, then</th><th>If ES ingredient, then</th></tr> </thead> <tbody> <tr> <td>Remove the brewing cylinder of FB unit and hold a cup under the outlet of the coffee canister while performing next step.</td><td>Place a cup on the cup platform while performing next step.</td><td>Remove the bean canister of ES unit and hold a cup under the ground coffee outlet while performing next step.</td></tr> </tbody> </table>		If FB ingredient, then	If IN ingredient, then	If ES ingredient, then	Remove the brewing cylinder of FB unit and hold a cup under the outlet of the coffee canister while performing next step.	Place a cup on the cup platform while performing next step.	Remove the bean canister of ES unit and hold a cup under the ground coffee outlet while performing next step.
If FB ingredient, then	If IN ingredient, then	If ES ingredient, then						
Remove the brewing cylinder of FB unit and hold a cup under the outlet of the coffee canister while performing next step.	Place a cup on the cup platform while performing next step.	Remove the bean canister of ES unit and hold a cup under the ground coffee outlet while performing next step.						

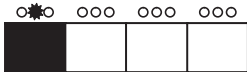
Step	Action	Function
5.	Press: 	Start calibration. The display will read "Delivering, Please Wait".
6.	Enter the value of the delivered powder quantity in grams.	
7.	Press: 	Decreases the powder quantity value in grams.
8.	Press: 	Increases the powder quantity value in grams.
9.	Press: 	Exits the ingredient calibration.
10.	Repeat the process until all ingredients have been calibrated.	
11.	Press: 	Accesses the next function "Calibrate temperature".

## Temperature calibration (FB/IN)

Calibrate temperature ->

This option is used to calibrate the temperature sensor:

Step	Action	Function
1.	Press: 	Activates temperature calibration.
2.	Press: 	Activates Temperature Calibration option. The display will read "Heating! Please wait" - until the boil over switch switches off.
3.	Reset boil over switch.  <b>Note :</b> Wait till text in display has finally switched back to "Calibrate Temperature" and then reset the boil over switch, located on the overflow hose from water tank.	

Step	Action	Function
4.	Press: 	Accesses the next function "Operator setting".

Note: It is not necessary to calibrate ES temperature.

## Operator setting




The Operator Setting option is used to set limits for the operator's staff, i.e. the operator can define in percent to which extent his staff may perform settings deviating from the settings already made in the service setting menu.

This limitation can only be omitted if you know the appropriate password.

## Operator setting -Limits

Operator setting ->

Step	Action	Function												
1.	Press: <div><div>ooo</div><div><div>o</div><div>☼</div><div>o</div></div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Activates the Setting Limits option (Limit powder is shown).												
2.	From the above menu you have the following options: <table><tr><th>If you want to select</th><th>then go to step</th></tr><tr><td>a specific limit setting (powder, whipper or valve)</td><td>3</td></tr><tr><td>decrease the limit type</td><td>4</td></tr><tr><td>increase the limit type</td><td>5</td></tr><tr><td>leave the decrease or increase option</td><td>6</td></tr><tr><td>access the next function</td><td>6-7</td></tr></table>	If you want to select	then go to step	a specific limit setting (powder, whipper or valve)	3	decrease the limit type	4	increase the limit type	5	leave the decrease or increase option	6	access the next function	6-7	
If you want to select	then go to step													
a specific limit setting (powder, whipper or valve)	3													
decrease the limit type	4													
increase the limit type	5													
leave the decrease or increase option	6													
access the next function	6-7													
3.	Press: <div><div><div>o</div><div>☼</div><div>o</div></div><div>ooo</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Switches between "limit powder", "limit whipper", and "limit valve"												
4.	Press: <div><div>ooo</div><div>ooo</div><div><div>☼</div><div>o</div><div>o</div></div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Decreases the selected limit type.												

Step	Action	Function
5.	Press: 	Increases the selected limit type.
6.	Press: 	Returns to the Operator Setting option
7.	Press: 	Accesses the next function "Quantities".

## Quantities option

This option is used to set the ingredients of a drink - i.e. water and ingredients, to set topstop in connection with FB and ES drinks and finally to test the selected drink.

**Note :** This option is only functioning if the machine is ready for a vend, i.e. no errors in dispensing or payment have occurred since the machine was put into service mode.

The ingredient quantities can be defined as follows:


Ingredients	0.1 - 99.9 g
Water	1 - 999 ml
Whipper	0.1 - 99.9 sec

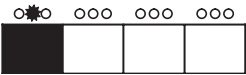

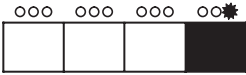

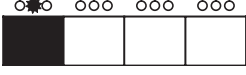
Note: If very large water quantities are defined, then the dispensed water volume may be less than the defined water quantity. This is because the water pressure (flow) is lowered, while the water level in the water tank is getting lower.

## Setting quantities

Quantities

->

Step	Action	Function												
1.	Press: 	The display reads "Press Selection".												
2.	Press the selection button of the drink, for which the ingredients are to be set.	The display reads 1. component.												
3.	From the above menu you have the following options:													
	<table><tr><th>If you want to select</th><th>then go to step</th></tr><tr><td>a specific setting (ingredient, topstop time or test drink)</td><td>4</td></tr><tr><td>decrease the quantity or value</td><td>5</td></tr><tr><td>increase the quantity or value or in "Test drink" to activate the test.</td><td>6</td></tr><tr><td>return to the Quantities option.</td><td>7</td></tr><tr><td>access the next function</td><td>7 and 9</td></tr></table>	If you want to select	then go to step	a specific setting (ingredient, topstop time or test drink)	4	decrease the quantity or value	5	increase the quantity or value or in "Test drink" to activate the test.	6	return to the Quantities option.	7	access the next function	7 and 9	
If you want to select	then go to step													
a specific setting (ingredient, topstop time or test drink)	4													
decrease the quantity or value	5													
increase the quantity or value or in "Test drink" to activate the test.	6													
return to the Quantities option.	7													
access the next function	7 and 9													

Step	Action	Function
4.	Press: 	Switches between the various ingredients of the drink, topstop time and test in succession. <b>Note</b> : Topstop is not applicable to Instant drinks.
5.	Press: 	Decreases the quantity or value (ingredient/topstop).
6.	Press: 	Increases the quantity or value (ingredient/topstop), or dispenses the drink in question in the "Test Drink" option.
7.	Press: 	Returns to the Quanties option.
8.	Repeat steps 1-7 until components of relevant drinks have been adjusted/set.	
9.	Press: 	Accesses the next function "Boiler".

## Boiler Setting Option

The Boiler setting option is used to set the various functions of the water tank, i.e. nominal temperature, temperature lock, temperature unlock and energy saving temperature.

## Default temperatures

The default temperatures are as follows:

FB: 94°

IN: 80°



ES: 96°

The above temperatures are recommended.

## Setting boiler

Boiler  
->



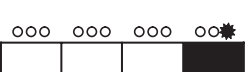


Step	Action	Function												
1.	Press: <div>ooo o*** ooo ooo</div> <div><div></div><div></div><div></div><div></div></div>	Activates the Boiler setting option. (The first field shown is nominal temperature setting).												
2.	From the above menu you have the following options:													
	<table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>select one of the functions of the water tank</td><td>3</td></tr><tr><td>decrease the temperature</td><td>4</td></tr><tr><td>increase the temperature</td><td>5</td></tr><tr><td>return to the boiler option</td><td>6</td></tr><tr><td>access the next function</td><td>6-7</td></tr></table>	If you want to	then go to step	select one of the functions of the water tank	3	decrease the temperature	4	increase the temperature	5	return to the boiler option	6	access the next function	6-7	
If you want to	then go to step													
select one of the functions of the water tank	3													
decrease the temperature	4													
increase the temperature	5													
return to the boiler option	6													
access the next function	6-7													
3.	Press: <div>o*o ooo ooo ooo</div> <div><div></div><div></div><div></div><div></div></div>	Switches between the functions "nominal temperature", "temperature lock", "unlock temperature", and "energy save temperature" (65°)												
4.	Press: <div>ooo ooo *oo ooo</div> <div><div></div><div></div><div></div><div></div></div>	Decreases the temperature.												
5.	Press: <div>ooo ooo ooo oo*</div> <div><div></div><div></div><div></div><div></div></div>	Increases the temperature.												

Step	Action	Function
6.	Press: 	Returns to the Boiler setting option.
7.	Press: 	Accesses the next function "Cup sensor Status".

## Setting cup sensor

This option is used to set the Cup Sensor to ON or OFF.

Cup sensor  
Status : ON

Step	Action	Function
1.	Press: 	Activates the Cup Sensor setting option.
2.	Press: 	Turns the status to "off".
3.	Press: 	Turns the status to "on".
4.	Press: 	Returns to the Cup Sensor Status.
5.	Press: 	Accesses the next function "Setting payment" .



## Payment

The payment option is used to set the *"Payment Type"* - type of coin mechanism - and the *"Price Mode"* - "real", i.e. the actual price is entered in the price menu of the drink in question - or "Index", i.e. the price number to which the drink is relating in the coin mechanism is entered in the price menu of the drink in question.

In the option *"Audit Unit"* you can choose between internal audit unit or external audit unit. If you have mounted a box to take care of the audit, you have to select external audit unit.

If you choose MDB under *"Payment Type"*, then the options *"ZKA Mode"* and *"Show MDB Texts"* are available.

MDB ZKA Mode	
ON	Allowing MDB/ICP to handle credit values up to 9999.99
OFF	The credit values handled by MDB/ICP cannot exceed 999.99

Show MDB texts	
ON	You are able to see both texts from the machine as well as MDB/ICP texts from the card reader.
OFF	You are only able to see texts from the machine.






MDB (Multi-Drop Bus) / ICP (Internal Communication Protocol).  
ZKA (Zentraler Kreditausschuss).

## Setting payment

This option is used to set the payment options

Set payment  
Status : BDV

Step	Action	Function												
1.	Press: <div><div>ooo o*** ooo ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Activates the Setting Payment option (The first field shown is payment type)												
2.	From the above menu you have the following options:													
	<table><tr><th>If you want to select</th><th>then go to step</th></tr><tr><td>"payment type", "MDB ZKA mode", "Show MDB texts", "price mode" or "audit unit"</td><td>3</td></tr><tr><td>Selects the options of "payment type" or "price mode" moving backward</td><td>4</td></tr><tr><td>Selects the options of "payment type" or "price mode" moving forward</td><td>5</td></tr><tr><td>return to Payment option</td><td>6</td></tr><tr><td>access the next function</td><td>6-7</td></tr></table>	If you want to select	then go to step	"payment type", "MDB ZKA mode", "Show MDB texts", "price mode" or "audit unit"	3	Selects the options of "payment type" or "price mode" moving backward	4	Selects the options of "payment type" or "price mode" moving forward	5	return to Payment option	6	access the next function	6-7	
If you want to select	then go to step													
"payment type", "MDB ZKA mode", "Show MDB texts", "price mode" or "audit unit"	3													
Selects the options of "payment type" or "price mode" moving backward	4													
Selects the options of "payment type" or "price mode" moving forward	5													
return to Payment option	6													
access the next function	6-7													

Step	Action	Function
3.	Press: 	Switches between "payment type", "MDB ZKA mode", "Show MDB texts" "Price Mode" or "Audit Unit"  NB. "MDB ZKA Mode" and "Show MDB Texts" are only available, if MDB has been chosen under "Payment Type".
4.	Press: 	Moves backward among the options in "payment type": MDB -> 2-price -> BDV -> Exec. -> None, among the options in "price mode": real or index, among the options in "audit unit": internal or external, among the options in "MDB ZKA mode": on or off or among the options in "Show MDB texts": on or off.
5.	Press: 	Moves forward among the options in "pay- ment type": MDB -> 2-price -> BDV -> Exec. -> None, among the options in "price mode": real or index, among the options in "audit unit": internal or external, among the options in "MDB ZKA mode": on or off or among the options in "Show MDB texts": on or off.
6.	Press: 	Returns to the Set payment option.
7.	Press: 	Accesses the next function "Vend mode".

## Vend/Change Mode

### Vend mode:

Multi vend: Several articles may be purchased one after the other from one coin or cash payment as long as sufficient credit is available.

Single vend: The change is returned or the card is released automatically after each vend.

### Change mode:

Credit-> overpay: If an excessive amount has been inserted in connection with payment of a drink, and the coin mechanism cannot pay out the correct return amount, the amount is transferred to "Value Overpay, ie the amount is being lost for the customer.




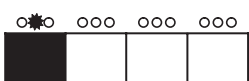
Keep credit: If an excessive amount has been inserted in connection with payment of a drink, and the coin mechanism cannot pay out the correct return amount, the excessive amount is shown in the credit display. The customer can insert an additional amount for vend of another drink or leave the amount for the next customer, who will then get the amount shown in the display added to his inserts.

## Vend mode

Vend mode  
Status : Single

This option is used to set the Vend mode and the Change mode:

Step	Action	Function												
1.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Activates the Vend Mode setting option.												
2.	From the above menu you have the following options: <table><tr><th>If you want</th><th>then go to step</th></tr><tr><td>to chose vend mode or change mode</td><td>3</td></tr><tr><td>in Vend mode to chose "Multi" or in Change mode to chose "Credit-&gt;overpay"</td><td>4</td></tr><tr><td>In Vend mode to chose "Single" or in Change mode to chose "Keep credit"</td><td>5</td></tr><tr><td>to return to the Vend mode option</td><td>6</td></tr><tr><td>to access the next function</td><td>6-7</td></tr></table>		If you want	then go to step	to chose vend mode or change mode	3	in Vend mode to chose "Multi" or in Change mode to chose "Credit->overpay"	4	In Vend mode to chose "Single" or in Change mode to chose "Keep credit"	5	to return to the Vend mode option	6	to access the next function	6-7
If you want	then go to step													
to chose vend mode or change mode	3													
in Vend mode to chose "Multi" or in Change mode to chose "Credit->overpay"	4													
In Vend mode to chose "Single" or in Change mode to chose "Keep credit"	5													
to return to the Vend mode option	6													
to access the next function	6-7													
3.	Press: <div><div>o*o</div><div>ooo</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	Switches between the Vend mode or the Change mode.												

Step	Action	Function
4.	Press: 	In Vend mode: Turns the status to "Multi". In Change mode: Turns the status to "Credit-> over-pay".
5.	Press: 	In Vend mode: Turns the status to "Single". In Change mode: Turns the status to "Keep credit".
6.	Press: 	Returns to the Vend Mode setting option.
7.	Press: 	Accesses the next function "Max change".



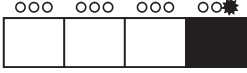


## Max. Change Setting

The maximum amount which the coin mechanism can return after a vend when multi-vend is specified. If the coin credit remaining following a Multi-vend is greater than this programmed value, no change will be paid out. The full credit will be retained until further vends are made reducing the credit below this "Maximum Change" level.

## Max Change

This option is used to set the max. change allowed:



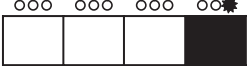


Max Change  
Status : 0.00

Step	Action	Function
1.	Press: 	Activates the Max Change option.
2.	Press: 	Decreases the amount.
3.	Press: 	Increases the amount
4.	Press: 	Returns to the Max Change option.
5.	Press: 	Accesses the next function "Max credit".

**Max Credit Setting**      The maximum amount which can be inserted when the system is set to multi-vend. The amount must be a multiple of the smallest coin value. The function has no effect on single vend. When the machine is set to single vend coins can only be inserted until credit equals the highest price on an article.

**Max Credit**      This option is used to set the maximum credit allowed to be inserted:

Max credit  
Status : 0.00



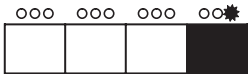
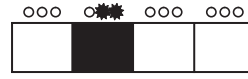

Step	Action	Function
1.	Press: 	Activates the Max credit option.
2.	Press: 	Decreases the amount.
3.	Press: 	Increases the amount
4.	Press: 	Returns to the Max credit option.
5.	Press: 	Accesses the next function "Oblig. to buy".

## Obligation to Buy Setting

At least one vend has to be made after coin insert before the coin mechanism returns the change. This option is to prevent the vending machine from being used as a change giver.

## Obligation to Buy

This option is used to activate the obligation to buy option or not:

<div>Oblig. to buy Status : ON</div>	Step	Action	Function
	1.	Press: 	Activates the Obligation to buy option.
	2.	Press: 	Turns the status to "off"..
	3.	Press: 	Turns the status to "on".
	4.	Press: 	Returns to the Obligation to buy option.
	5.	Press: 	Accesses the next function "Revaluating".


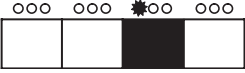
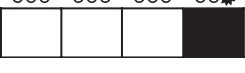

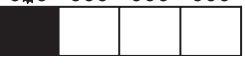
## Revaluating Option

This option makes it possible to let the customer add value to the credit amount on his/her card.

## Revaluating

Sets the option to allow the coin unit to reevaluate the cards of the customers or not:

Revaluating  
Status: OFF

Step	Action	Function
1.	Press: 	Activates the Revaluating option.
2.	Press: 	Turns the status to "off"..
3.	Press: 	Turns the status to "on".
4.	Press: 	Returns to the Revaluating option.
5.	Press: 	Accesses the next function "Coin inhibit".



## Coin Inhibit Setting

Sets the coin unit to reject coins which it normally accepts. The lowest-value coin is coin No 1. The option goes from coin No 1 to coin No 16.

## Coin Inhibit

This option is used to set the Coin Inhibit status for the various coin values in the coin unit:

Coin inhibit  
->

Step	Action	Function												
1.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Activates the Coin inhibit setting option.												
2.	From the above menu you have the following options: <table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>select a specific coin value</td><td>3</td></tr><tr><td>set the status to "off"</td><td>4</td></tr><tr><td>set the status to "on"</td><td>5</td></tr><tr><td>return to the coin inhibit option</td><td>6</td></tr><tr><td>access the next function</td><td>6-7</td></tr></table>	If you want to	then go to step	select a specific coin value	3	set the status to "off"	4	set the status to "on"	5	return to the coin inhibit option	6	access the next function	6-7	
If you want to	then go to step													
select a specific coin value	3													
set the status to "off"	4													
set the status to "on"	5													
return to the coin inhibit option	6													
access the next function	6-7													
3.	Press: <div><div>o*o</div><div>ooo</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Switches between the various coin values (1-16).												
4.	Press: <div><div>ooo</div><div>ooo</div><div>*oo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Turns the status to "off".												
5.	Press: <div><div>ooo</div><div>ooo</div><div>ooo</div><div>ooo*</div><div></div><div></div><div></div><div></div></div>	Turns the status to "on".												
6.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Returns to the Coin inhibit option.												
7.	Press: <div><div>o*o</div><div>ooo</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Accesses the next function "Low change inh.".												

## Low Change Inhibit Setting

When the "Insert correct amount" is displayed, the coin unit can be set to reject coins which it normally accepts.

## Low Change Inhibit

This option is used to set the Low change inhibit status for the various coin values in the coin unit:

Low change inh.  
->

Step	Action	Function												
1.	Press: <div><div>ooo</div><div>***</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Activates the Low change inhibit setting option.												
2.	From the above menu you have the following options: <table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>select a specific coin value</td><td>3</td></tr><tr><td>set the status to "off"</td><td>4</td></tr><tr><td>set the status to "on"</td><td>5</td></tr><tr><td>return to the Low change inhibit option</td><td>6</td></tr><tr><td>access the next function</td><td>6-7</td></tr></table>		If you want to	then go to step	select a specific coin value	3	set the status to "off"	4	set the status to "on"	5	return to the Low change inhibit option	6	access the next function	6-7
If you want to	then go to step													
select a specific coin value	3													
set the status to "off"	4													
set the status to "on"	5													
return to the Low change inhibit option	6													
access the next function	6-7													
3.	Press: <div><div>***o</div><div>ooo</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Switches between the various coin values (1-16).												
4.	Press: <div><div>ooo</div><div>ooo</div><div>***o</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Turns the status to "off".												
5.	Press: <div><div>ooo</div><div>ooo</div><div>ooo</div><div>ooo*</div><div></div><div></div><div></div><div></div></div>	Turns the status to "on".												
6.	Press: <div><div>ooo</div><div>***</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Returns to the Low change inhibit option.												
7.	Press: <div><div>***o</div><div>ooo</div><div>ooo</div><div>ooo</div><div></div><div></div><div></div><div></div></div>	Accesses the next function "Exact change eq.".												






## Exact Change Equation Setting

A number between 0 and 15 with the desired parameter as described in the manual of the coin unit to define precisely when the coin unit switches to "Coin tubes empty" mode and the vending machine display "Insert correct amount".

## Exact Change Equation

Exact change eq  
Status: 0

This option is used to set the Exact change equation:

Step	Action	Function
1.	Press: 	Activates the Exact change equation option.
2.	Press:  	Switches between the options 0-13.
3.	Press: 	Returns to the Exact change equation option.
4.	Press: 	Accesses the next function "Exact chg offset".






## Exact Change Offset Setting

This option renders the possibility of adding a number between 0 and 15 to the preprogrammed empty numbers selected in Exact Change Equation in order that the customer is warned before the coin unit switches to "Coin tubes empty" mode.

## Exact Change Offset

This option is used to set the Exact change offset:

Exact Chg offset  
Status: 0

Step	Action	Function
1.	Press: 	Activates the Exact change offset option.
2.	Press:  	Switches between the options 0-13.
3.	Press: 	Returns to the Exact change offset option.
4.	Press: 	Accesses the next function "Key-board inhibit".



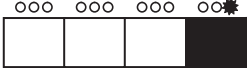


## Keyboard Inhibit Setting

Activates or deactivates the possible keypad/board of a coin unit.

## Keyboard Inhibit

This option is used to set the Keyboard inhibit:

Keyboard inhibit  
Status: OFF

Step	Action	Function
1.	Press: 	Activates the Keyboard inhibit option.
2.	Press: 	Turns the status to "off"..
3.	Press: 	Turns the status to "on".
4.	Press: 	Returns to the Keyboard inhibit option.
5.	Press: 	Returns to the "Product counter".



## Chapter 15

WITTENBORG





## Menu system

### Overview

---

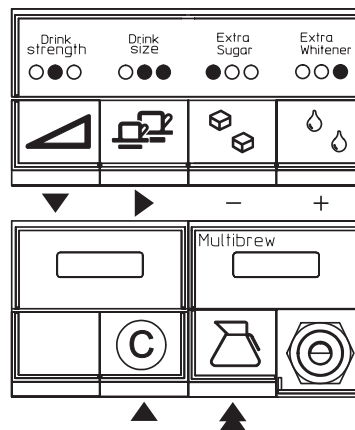
In this section you will find a view of the menu system:

- Navigation buttons
  - Operator settings
  - Service settings
-

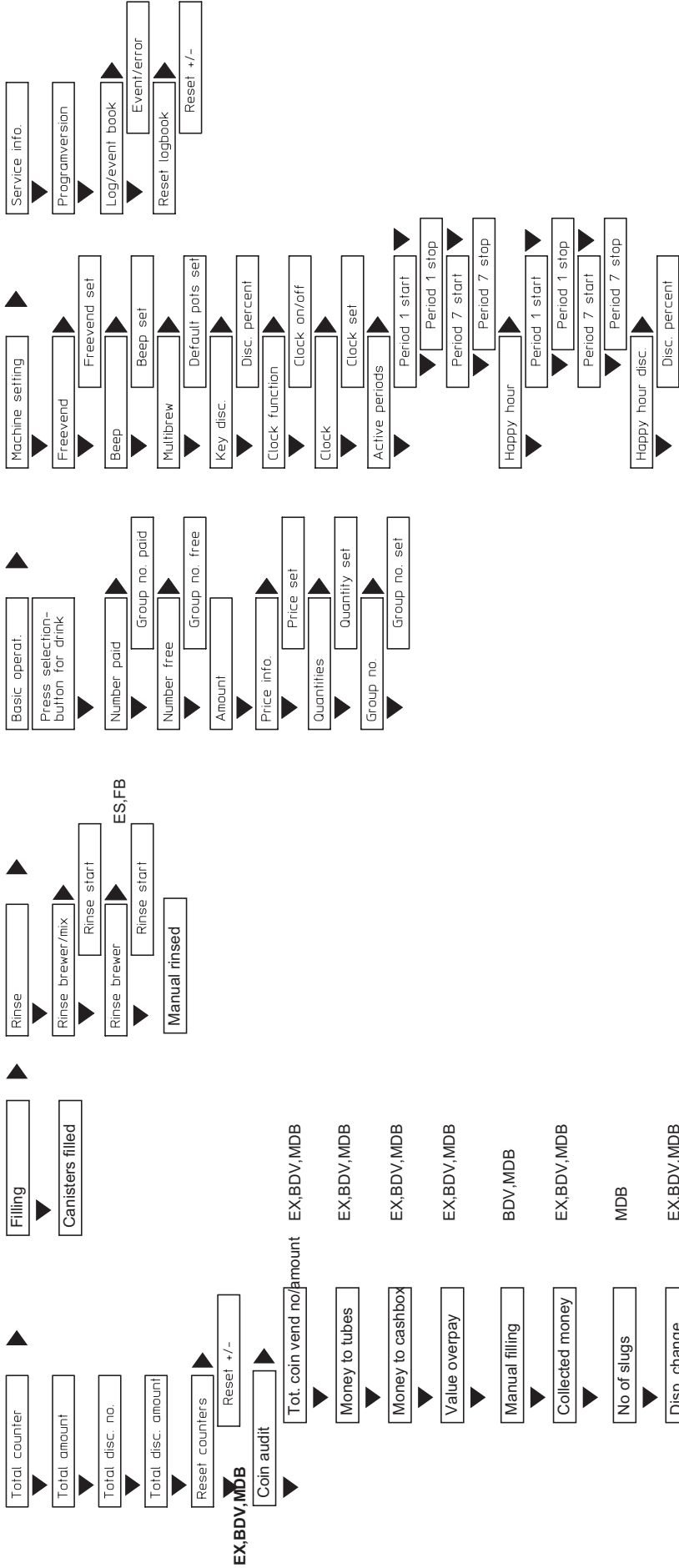
## Menu system

---

Navigation buttons    Short guide of the navigation buttons:



# Menu system - operator settings



## Menu system - service settings

```

graph TD
    Password[Password] --> ChangePassword[Change password]
    Password --> ProductCounter[Product counter]
    Password --> ResetCounter[Reset counter]
    Password --> CanisterSetting[Canister setting]
    Password --> RinseMessageSet[Rinse message set]
    Password --> SystemSettings[System settings]
    Password --> CalibrateValves[Calibrate valves]
    Password --> CalibrateIngrid[Calibrate Ingrid.]
    Password --> CalibrateTemp[Calibrate temp.]
    Password --> OperatorSetting[Operator setting]
    Password --> Quantities[Quantities]
    Password --> TestDrink[Test drink]
    Password --> Boiler[Boiler]
    Password --> CupSensor[Cup sensor]
    Password --> Payment[Payment]
    Password --> ZKA[ZKA mode]
    Password --> ShowMDBTexts[Show MDB texts]
    Password --> PriceMode[Price mode]
    Password --> AuditUnit[Audit unit]
    Password --> Vendmode[Vendmode]
    Password --> MaxChange[Max. change]
    Password --> MaxCredit[Max. credit]
    Password --> ObligationToBuy[Obligation to buy]
    Password --> Revaluating[Revaluating]
    Password --> CoinInhibit[Coin inhibit]
    Password --> LowChangeInh[Low change inh.]
    Password --> ExactChangeEq[Exact change eq.]
    Password --> ExactChngOffset[Exact chng. offset]
    Password --> KeyBoardInh[Key board inh.]

    ChangePassword --> PasswordSet[Password set]
    ProductCounter --> PowderQuantity[Powder quantity]
    ProductCounter --> WaterQuantity[Water quantity]
    ResetCounter --> Resetting[Resetting +/-]
    CanisterSetting --> SetInhibit[Set inhibit %]
    CanisterSetting --> SetFullVeigh[Set full veigh]
    RinseMessageSet --> SetAction[Set action]
    RinseMessageSet --> SetNoOfVends[Set no of vends]
    SystemSettings --> Language[Language]
    SystemSettings --> MachineType[Machine type]
    CalibrateValves --> Calibrating[Calibrating]
    CalibrateIngrid --> Calibrating
    CalibrateTemp --> Calibrating
    OperatorSetting --> LimitPowder[Limit powder]
    OperatorSetting --> LimitWhipper[Limit whipper]
    OperatorSetting --> LimitValve[Limit valve]
    Quantities --> PressSelection["Press selection"]
    PressSelection --> Ingr1[Ingr. 1]
    PressSelection --> Ingr2[Ingr. 2]
    PressSelection --> Ingr3[Ingr. 3]
    Ingr1 --> Properties1[Properties]
    Ingr2 --> Properties2[Properties]
    Ingr3 --> Properties3[Properties]
    TestDrink --> TestDrinkSub[Test drink]
    Boiler --> NomDayTemp[Nom. daytemp]
    Boiler --> DayLockTemp[Day lock temp.]
    Boiler --> DayUnlockTemp[Day unlock temp.]
    Boiler --> NomNightTemp[Nom. nighttemp.]
    CupSensor --> CupSensorPlusMinus[Cup sensor +/-]
    Payment --> PaymentType[Payment type]
    ZKA --> ZKAMode[ZKA mode]
    ShowMDBTexts --> ShowMDBTextsSub[Show MDB texts]
    PriceMode --> PriceModeSub[Price mode]
    AuditUnit --> AuditUnitSub[Audit unit]
    Vendmode --> SingleMultivend[Single-/multivend]
    MaxChange --> MaxChangeSet[Max. change set]
    MaxCredit --> MaxCreditSet[Max. credit set]
    ObligationToBuy --> ObligationSet[Obligation set]
    Revaluating --> SetRevaluating[Set revaluating]
    CoinInhibit --> SetCoin1Inhibit[Set coin 1 inhibit]
    CoinInhibit --> SetCoin16Inhibit[Set coin 16 inhibit]
    LowChangeInh --> SetCoin1Inhibit
    LowChangeInh --> SetCoin16Inhibit
    ExactChangeEq --> ExactChangeEqSub[Exact change eq.]
    ExactChngOffset --> ExactChngOffsetSub[Exact chng. offset]
    KeyBoardInh --> KeyBoardInhSub[Key board inh.]
  
```

The flowchart illustrates the menu structure for the MDB/ICP system. The main menu items are listed on the left, and their sub-menus are listed on the right. The 'MDB/ICP' label is placed next to several menu items, indicating their category.

- Password
  - Change password
    - Password set
  - Product counter
    - Powder quantity
    - Water quantity
  - Reset counter
    - Resetting +/-
  - Canister setting
    - Set inhibit %
    - Set full veigh
  - Rinse message set
    - Set action
    - Set no of vends
  - System settings
    - Language
    - Machine type
  - Calibrate valves
    - Calibrating
  - Calibrate Ingrid.
    - Calibrating
  - Calibrate temp.
    - Calibrating
  - Operator setting
    - Limit powder
    - Limit whipper
    - Limit valve
  - Quantities
    - "Press selection"
      - Ingr. 1
        - Properties
      - Ingr. 2
        - Properties
      - Ingr. 3
        - Properties
  - Test drink
    - Test drink
  - Boiler
    - Nom. daytemp
    - Day lock temp.
    - Day unlock temp.
    - Nom. nighttemp.
  - Cup sensor
    - Cup sensor +/-
  - Payment
    - Payment type
  - ZKA mode
    - ZKA mode
  - Show MDB texts
    - Show MDB texts
  - Price mode
    - Price mode
  - Audit unit
    - Audit unit
  - Vendmode
    - Single-/multivend
  - Max. change
    - Max. change set
  - Max. credit
    - Max. credit set
  - Obligation to buy
    - Obligation set
  - Revaluating
    - Set revaluating
  - Coin inhibit
    - Set coin 1 inhibit
    - Set coin 16 inhibit
  - Low change inh.
    - Set coin 1 inhibit
    - Set coin 16 inhibit
  - Exact change eq.
    - Exact change eq.
  - Exact chng. offset
    - Exact chng. offset
  - Key board inh.
    - Key board inh.

WITTENBORG

## Chapter 16

WITTENBORG

## Vending machine controllers and electronic box

### Overview

In this section you will find the following information:

- Components of the vending machine controllers
- Components of the electronic box
- Dismounting the vending machine controllers
- Disconnecting plugs from the vending machine controllers
- Replacing the EPROM
- Replacing the NOVRAM with built-in lithium battery
- Dismounting the power supply cable
- Accessing the electronic box

### Warning



**Be extremely careful, your life can be endangered!**

**The vending machine controllers are carrying the mains voltage if the machine is connected to the power supply.**

**Make sure that no splashes of the product or water get onto the vending machine controllers.**

### Note

**The vending machine controllers of the machine contains a RAM circuit with an internal battery (lithium) backup (NOVRAM). The RAM circuit can explode if not handled correctly. Do not disassemble, short-circuit, expose to water or to flame or temperatures in excess of 100°C. Return discharged NOVRAM circuits to the supplier.**

### Attention

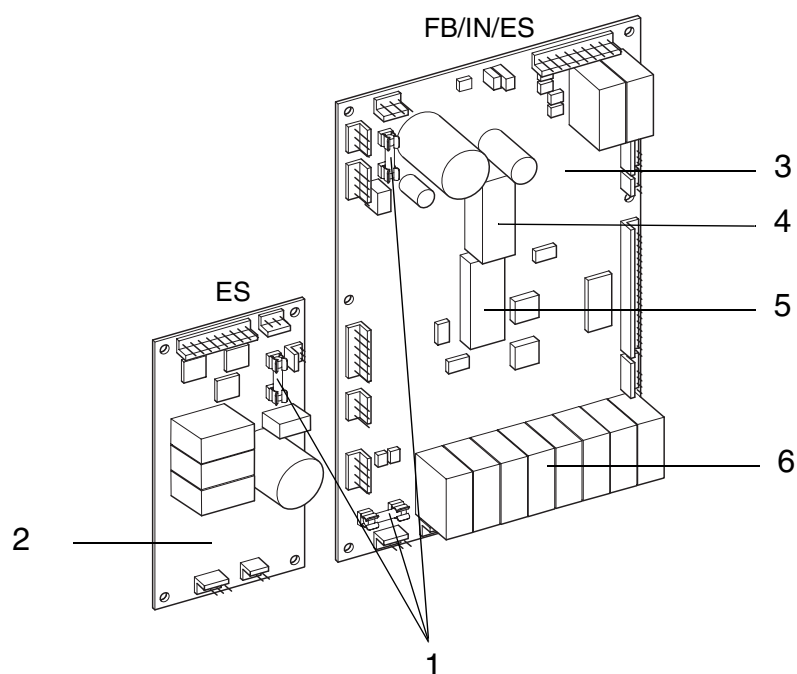


**Observe precautions for handling electrostatic discharge sensitive devices:**

- To protect the PCBs, VMC, SPC etc. and sensitive devices, EPROM, NOVRAM etc. against damage from static electricity, you have to make sure that you are discharged, before touching sensitive devices. Always remember to touch one of your hands to the cabinet and hold the device with the other hand.

## Components of the vending machine controllers

### Parts

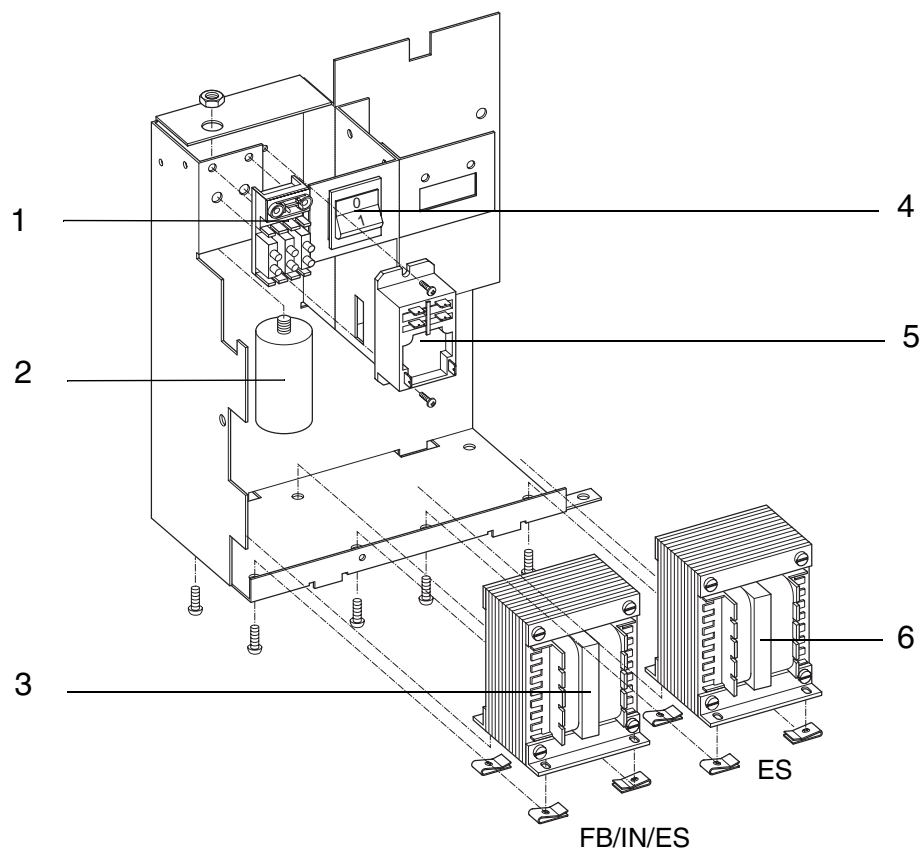


Parts	
1.	Fuses
2.	Vending machine controller (ES)
3.	Vending machine controller (FB/IN/ES)
4.	RAM circuit with an internal battery backup
5.	EPROM
6.	Relays (carrying the mains voltage)



## Components of the electronic box

### Parts

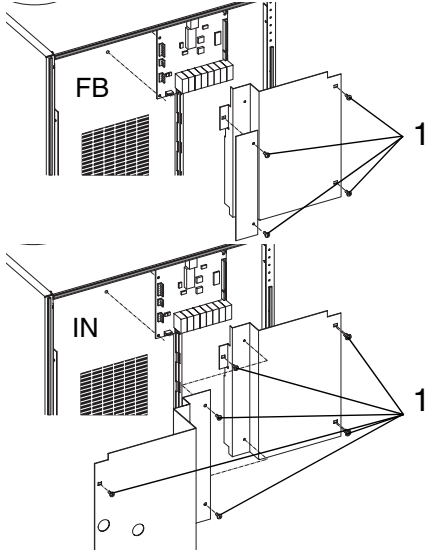
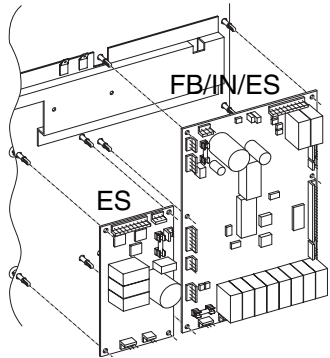


Parts	
1.	Terminal strip for connection of the power supply cable
2.	Electrical noise filter
3.	Transformer (carrying the mains voltage)
4.	Main switch
5.	Heating relay
6.	ES transformer (only on ES machines) (carrying the mains voltage)

## Dismounting the vending machine controllers

### Procedure

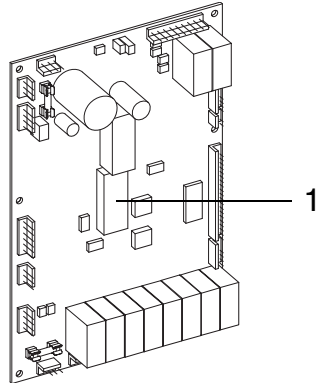
Follow this procedure to dismount the vending machine controllers:

Step	Action	Illustration
1.	Open the door.	
2.	Switch off the main switch, disconnect the power supply plug and close the water cock.	
3.	Remove all canisters.	
4.	Remove cover plates by loosening screws (1).	
5.	Disconnect all cable connections.	
6.	Press the fastening clips together.	
7.	Remove the vending machine controllers to the front.	
8.	Mount the boards in reverse order.	
9.	Remount cover plates.	

## Replacing the EPROM

### Procedure

Follow this procedure to replace the EPROM:

Step	Action	Illustration
1.	Remove cover plates.	
2.	Remove the EPROM (1) with the appropriate tool. NB. Be careful not to use force.	
3.	Install the new EPROM.  NB. Ensure that the EPROM is correctly positioned (i.e. the notch of the EPROM matches with the position of the notch on the socket).  NB. Ensure that the pins of the EPROM are not deformed and that they are well inserted into the holes of the socket.	
4.	Remount cover plates.	

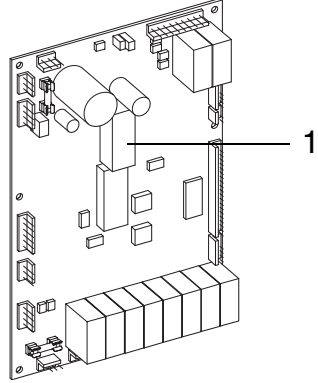
## Replacing the NOVRAM with built-in lithium battery

### Purpose

The NOVRAM (non-volatile RAM) stores audit and settings data, even if the power is turned off.

### Procedure

Follow this procedure to replace the NOVRAM:

Step	Action	Illustration
1.	Remove cover plates.	
2.	<ul style="list-style-type: none"> <li>Remove the NOVRAM (1).</li> <li>Install a new NOVRAM.</li> </ul>	
3.	Remount cover plates.	

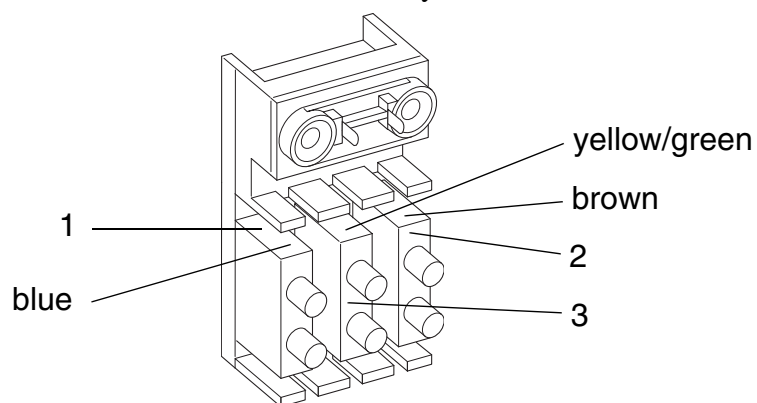
## Dismounting the power supply cable

### Procedure

Step	Action
1.	Loosen the tension relief screw at the power supply cable lead-through.
2.	Disconnect the cable connection at the terminal strip.
3.	Remove the power supply cable to the back.

Note for reconnection

Make sure the connection is made correctly:

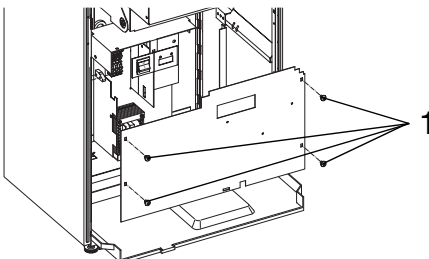


Parts	
1.	1L (blue)
2.	2L (brown)
3.	protective earth (yellow/green)

## Accessing the E-box

### Procedure

Follow this procedure to get access to the E-box:

Step	Action	Illustration
1.	Open the door.	
2.	Switch off the main switch, disconnect the power supply plug and close the water cock.	
3.	Remove the waste bucket and bottom plate.	
4.	Remove cover plate by loosening 4 screws (1).	



## Chapter 17

WITTENBORG



## Wiring diagrams

### Overview

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In this section you will find the following information:

- FB main diagram
  - IN main diagram
  - ES main diagram
  - Diagram for payment systems
-



## Chapter 18

WITTENBORG



Underskabstilbehør

Unterschrankoptionen

Base cabinet options

Meuble de rangement options

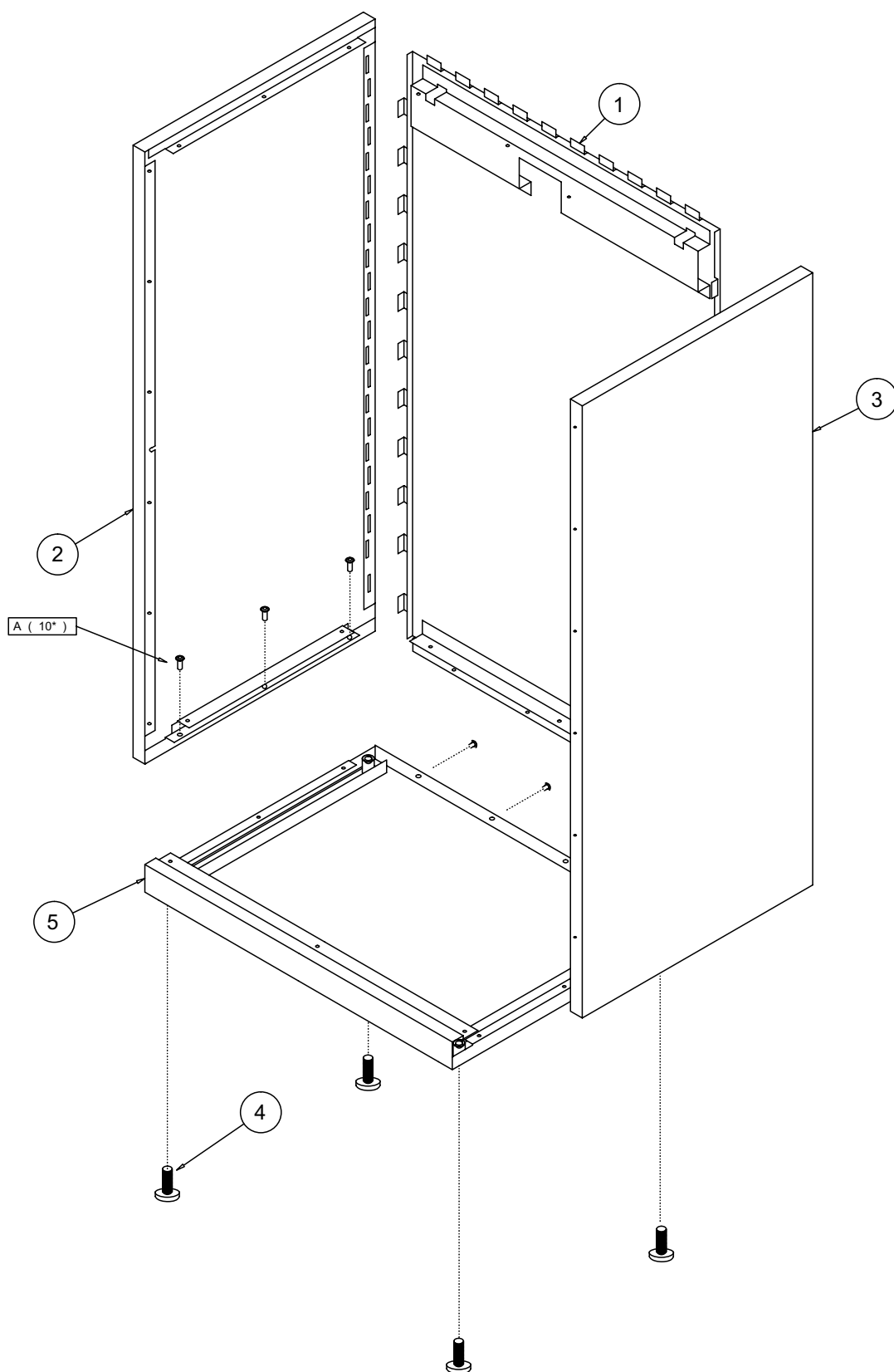
FB 5100

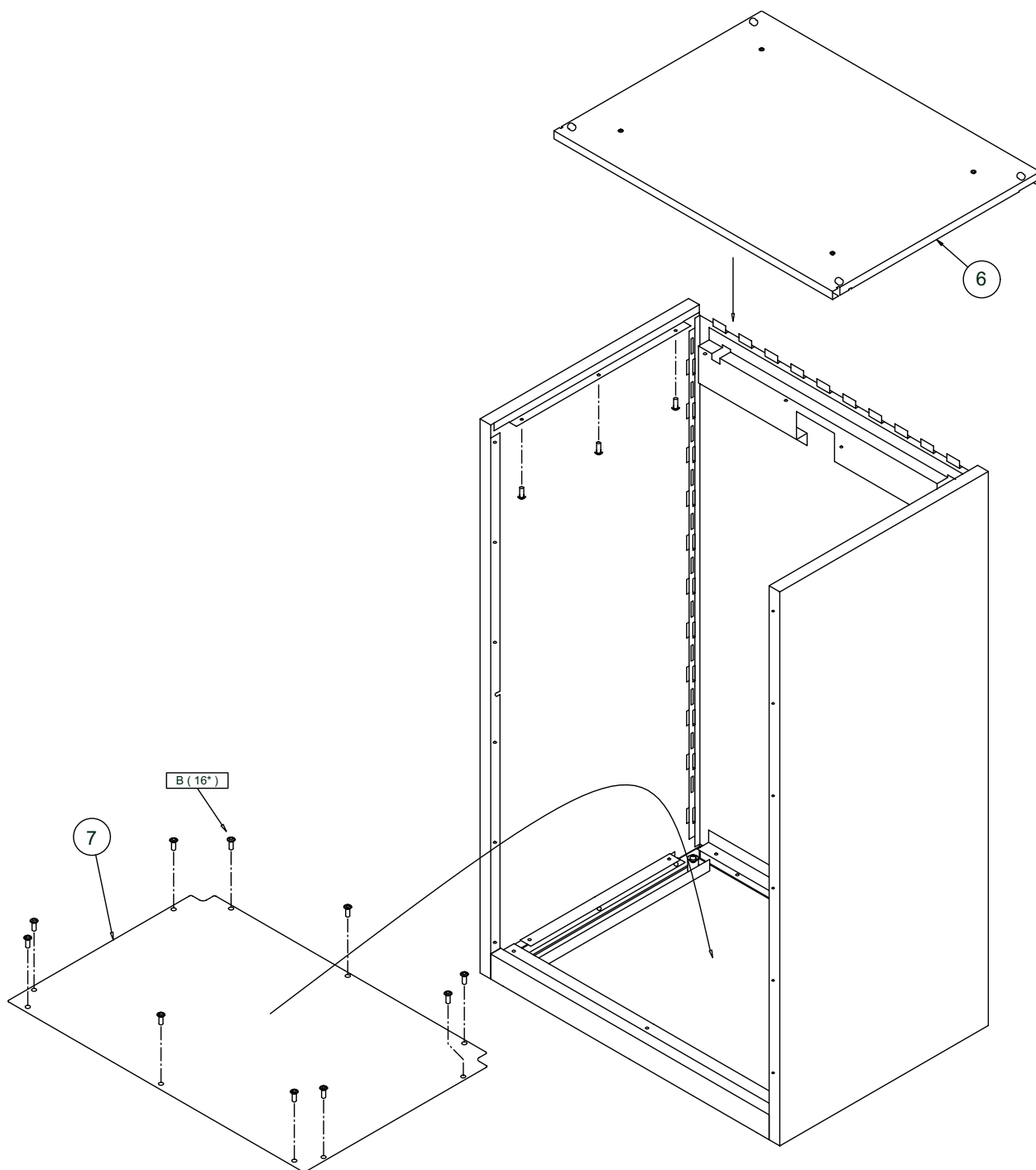
IN 5100

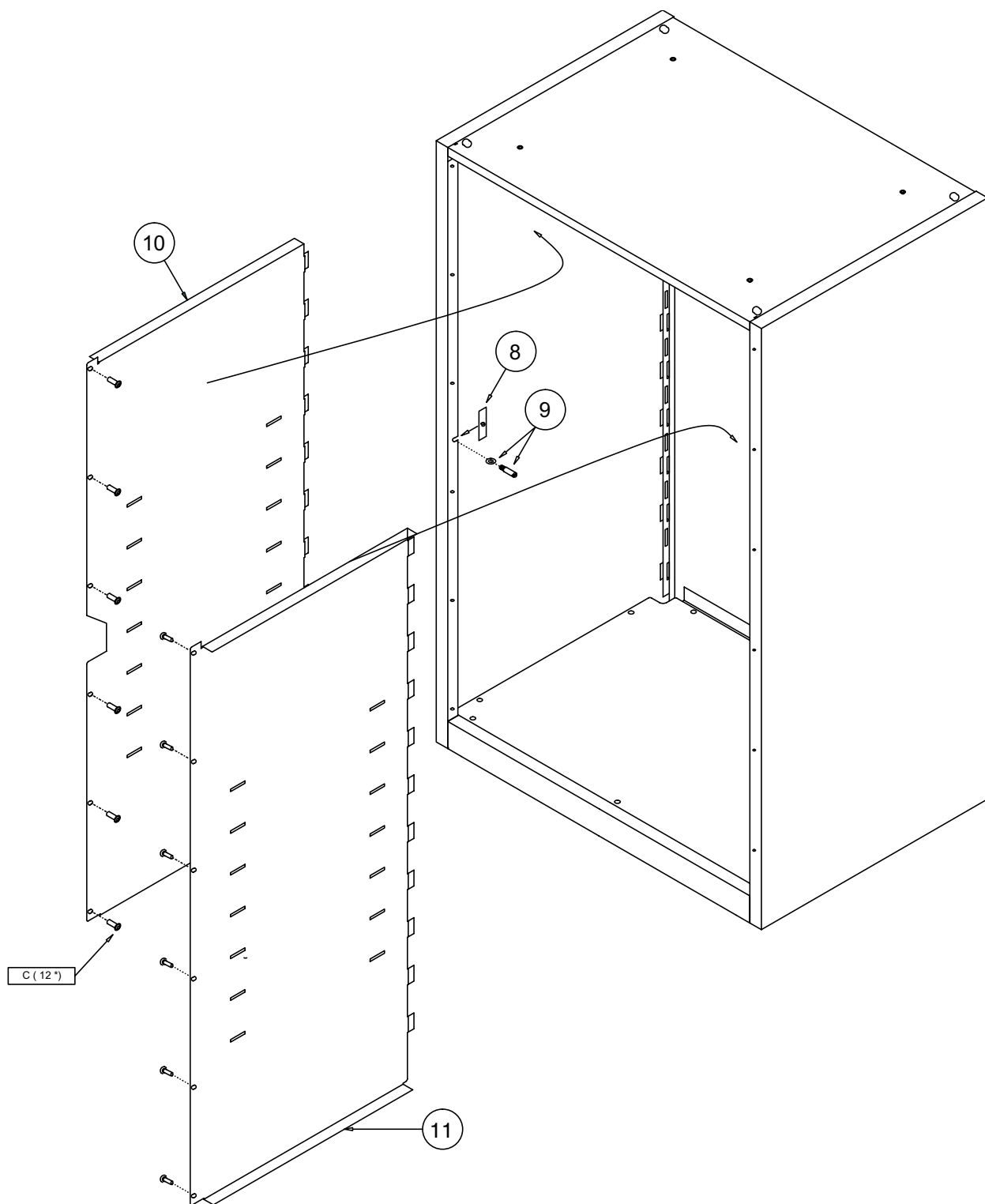
ES 5100

Gallery 200

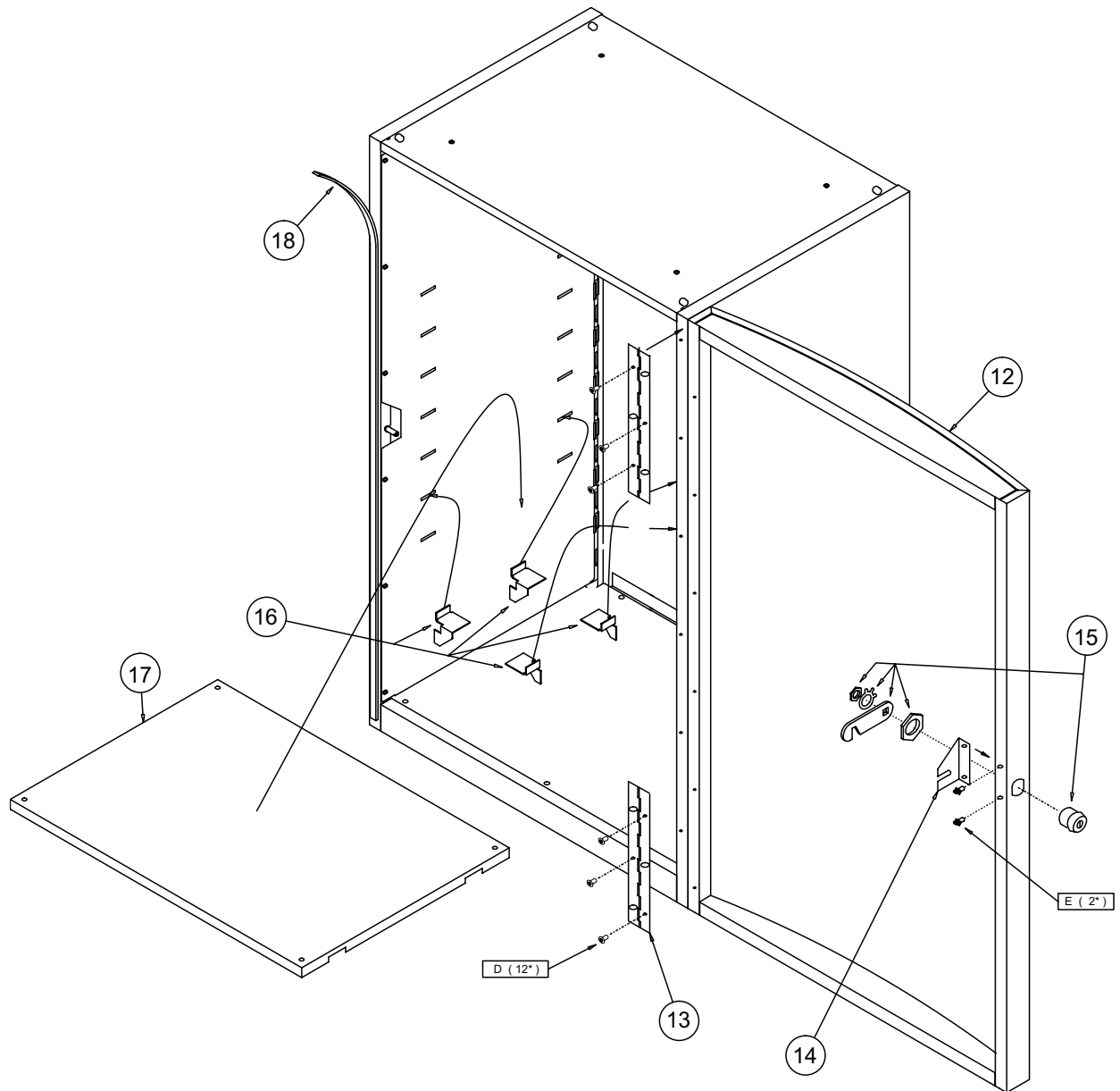
75206500

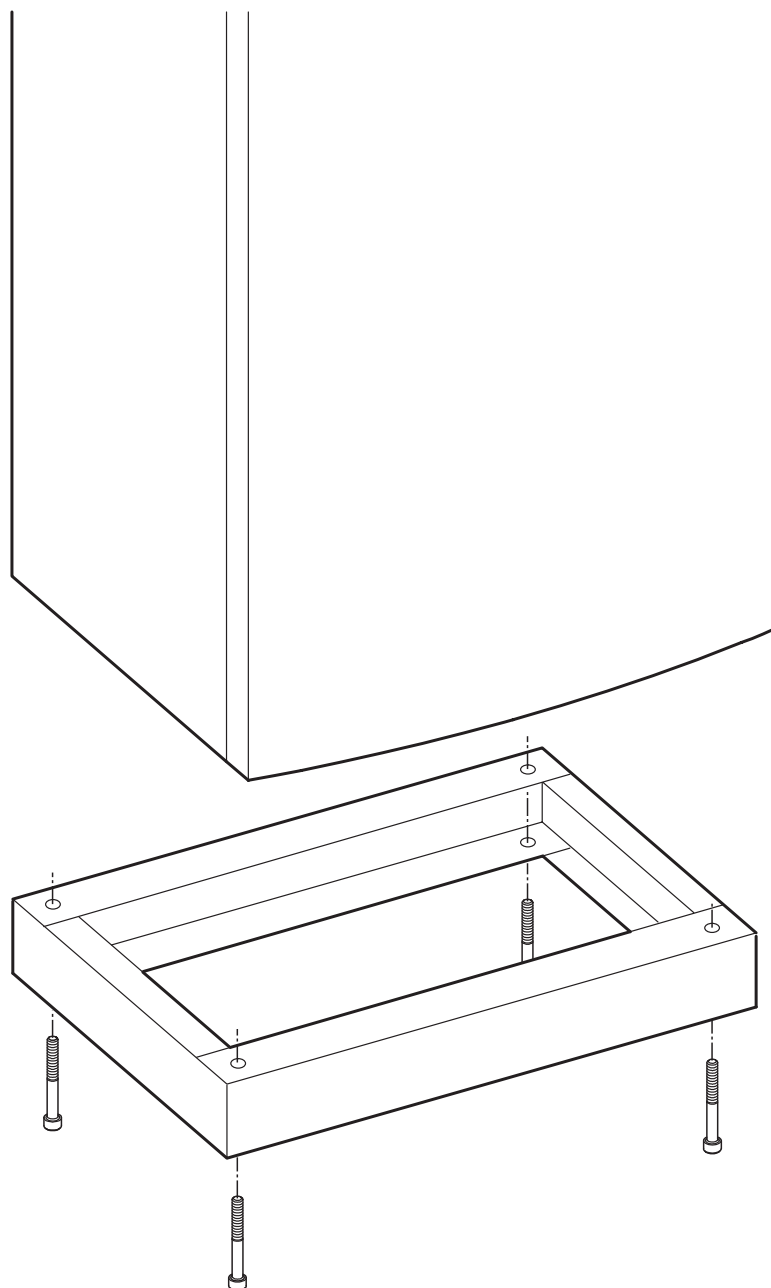


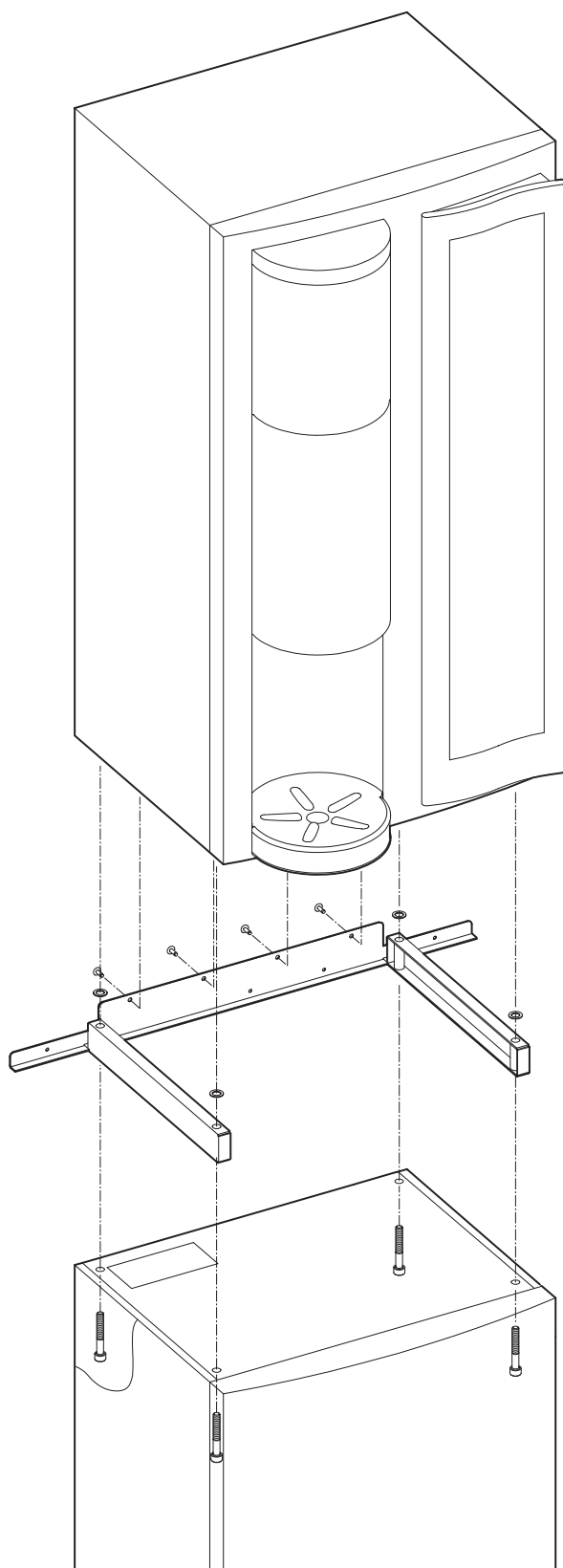


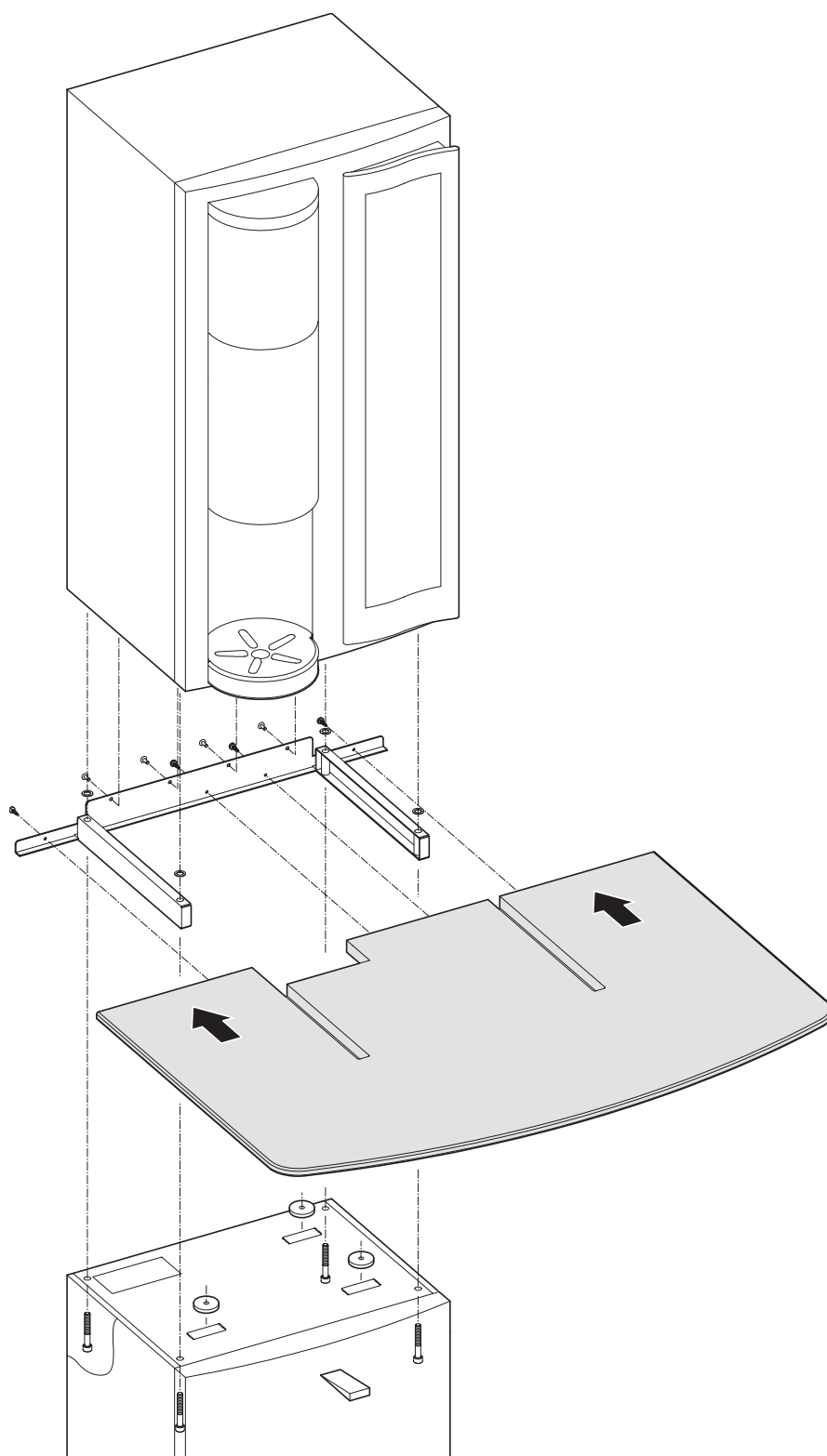












WITTENBORG

## Chapter 19

WITTENBORG



## Chapter 20

WITTENBORG



## Chapter 21

WITTENBORG



## Chapter 22

WITTENBORG



## Chapter 23

WITTENBORG

# TECHNICAL INFORMATION

TYPE NO <b>FB 50,55,5100, 5500</b>	NAME <b>Freshbrewer</b>	T.I.-NO <b>FB all 01/ 00</b>
SERIES <b>week 11</b>	DIAGRAM	ISSUED BY <b>T.I. Department</b>
SUBJECT <b>Screws Brewer Cylinder</b>	T.I.-GROUP <b>Development</b>	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 : _____
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## TECHNICAL INFORMATION

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

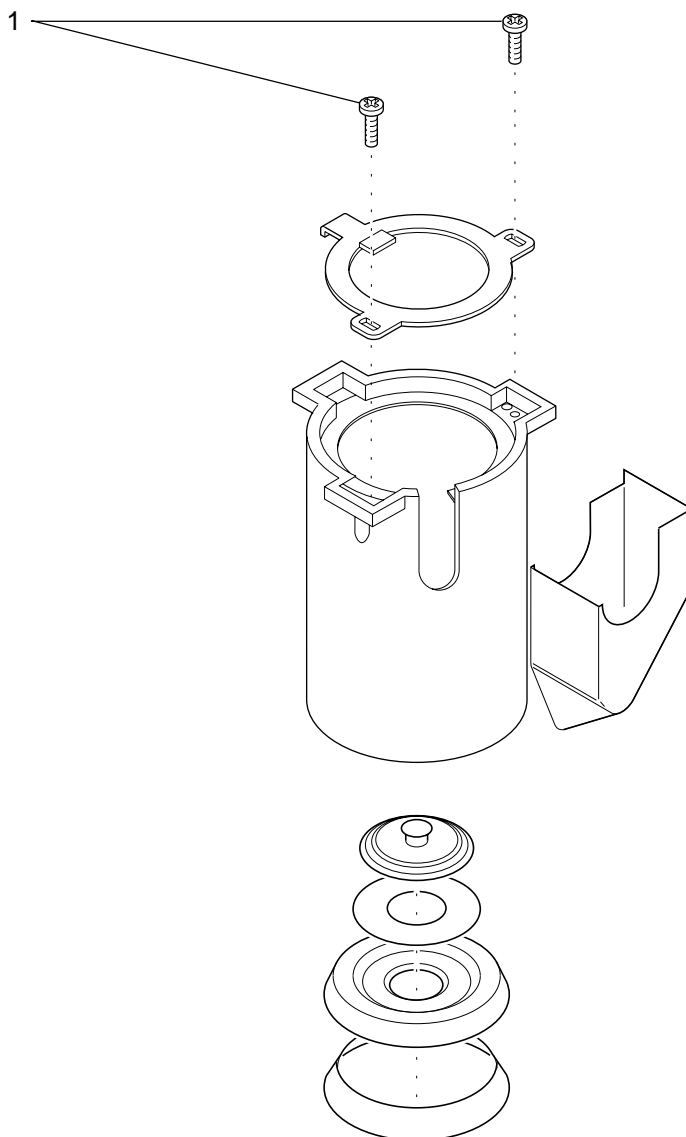


Fig. 1

DATE : _____	PRODUCED BY : _____	DATE : _____	CHECKED BY : _____
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# Service Message

***Dear Colleagues***

I hereby send you Service Message regarding model 5100 change of fan.

If you have any comments please do not hesitate to contact either me or the reference persons listed.

***Production Start:*** week 11-2000

***First Machine No. 481.538***

Best Regards  
Wittenborg A/S

Jan Sørensen  
Product Line Manager

CONTENTS	PAGE
New Fan	1-2

## New FAN

***We have introduced a new fan in the ingredient table.***

- *Faster changing of fan servicetime decreased with 75 %*
- *Noise level is 25 % lower*
- *Airflow increased with 25 CFM*

Today the fan is mounted horisontal under the ingredient table. The new fan is mounted vertical on the back of the ingredient table.

To change the new fan is simple – tilt the ingredient table forward and pull out the fan from behind the ingredient table.

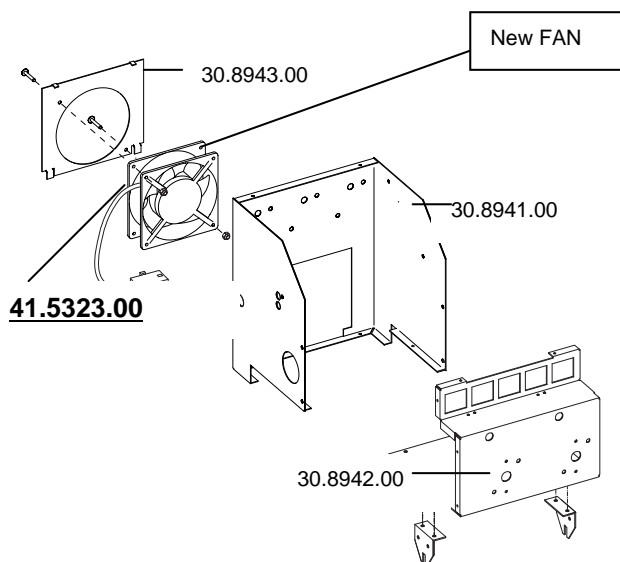
The fan is mounted to a sheetmetal plate with 2 screws, the sheet metal plate fits in 2 recesses and 2 holes on the back of the ingredient table.

***Backwards Compatible:***

No

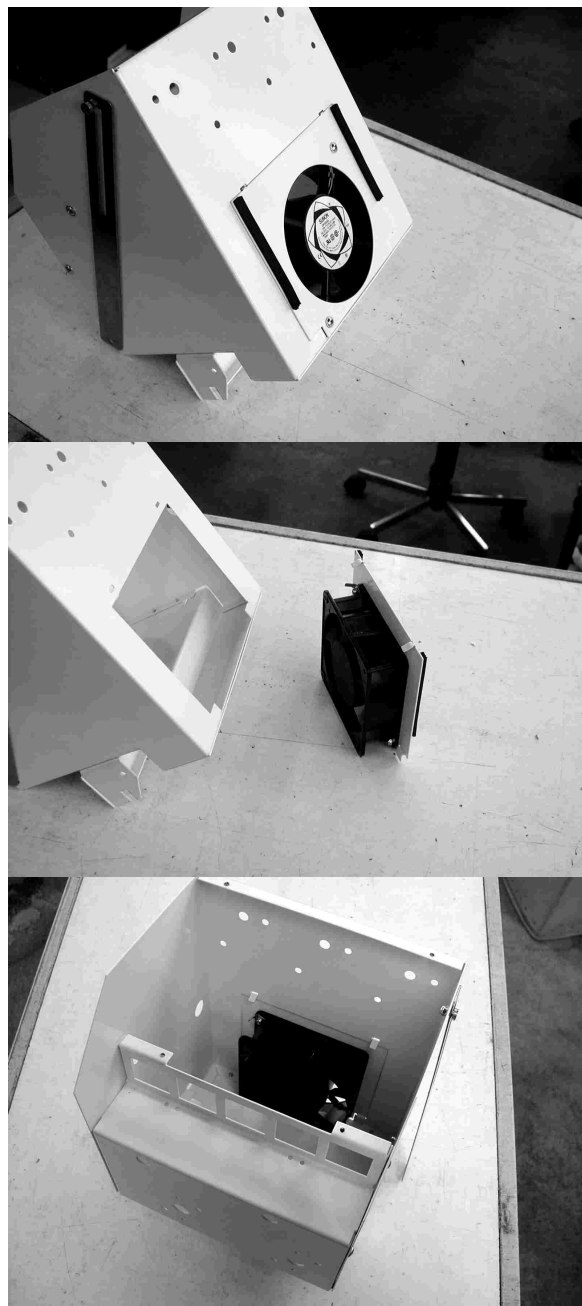
Old fan can still be ordered as sparepart  
42.2032.00

### Drawing:



Mounting plate for fan	30.8943.00
2x M4x12	09 0267.13
2x M4	09.0840.10
Fan	41.5323.00
Harness	42.3821.00
Frame for powder board	30.8941.00
Front part motorboard	30.8942.00
2x hindge	30.6901.00

**Contactperson:** *Kasper I. Soerensen*





## TECHNICAL INFORMATION

TYPE NO <b>ES5100</b>	TYPE <b>Espresso Brewer</b>	T.I.-NO <b>ES 01/00</b>
SERIAL NUMBERS AFFECTED <b>From machine No 485427</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>	
SUBJECT <b>New EPROM for ES5100</b>	ISSUED FOR (X):	
	Action	<b>X</b>
	Information	<b>X</b>

### COMPONENTS CONCERNED

Omitted: **48001504 EPROM**

New: **48001505 EPROM**

#### MODIFICATION:

- EPROM 48001504 - still used in FB and IN models - will be replaced by EPROM 48001505.

#### REASON:

- Energy save function and calculating amount of cold water for IN products, using cold water injection have been corrected. Error handling routines have been updated.

#### CONTACT PERSON:

- Kim Dalgaard Andersen

31.05.00 DATE :	PRODUCED BY :	31.05.00 DATE :	CHECKED BY :
--------------------	---------------	--------------------	--------------

Dear Sir

We have released new software for ES5100. The release includes a new version of the following program(s):

<b>Program Type</b>	<b>Version</b>	<b>Check Sum</b>
VMC-5100	ES400180	5418

If the release includes more than one program type, all the program types in the release must be replaced when replacing programs in installed machines.

The below procedure must be followed when making copies.

1. The check sum of the master E-prom must be checked before copies are made.
2. For each set of copies which is programmed at a time, the check sum for at least one of the copies must be checked.

---

**Compared with the earlier version, the following changes have been made:**

## Changes to the software

### Cold water injection

In the previous version the amount of cold water for IN products, using cold water injection was not correctly calculated. This would lead to too low temperatures for IN products. This has now been corrected.

The guidelines for setting the IN temperatures:

Cold water injection setting (amount of cold water added to the hot water dispensing)	App. Temperature in the mixing bowls	Best for:
LOW	82-87 °C	IN coffee
MEDIUM	78-82 °C	Tea water
HIGH	75-80 °C	Chocolate, whitener
OFF	>85 °C	None temperature unpredictable, but the hottest possible.

NOTE! These temperatures are guidelines and not guaranteed. They may change slightly as scaling grows within the tank.

### Energy save

The energy save function has been corrected; it was not working properly in previous version.

### Error handling

Generally all error-handling routines have been updated and tuned to give the machine the optimal safety performance. In the previous version several "false" error conditions were generated.

All error messages known from the IN and FB 5100 are valid to the ES machine.

The new error messages for the ES 5100 are

Error	Description
Temp too high	Due to an error condition, the tank temperature has been >120 °C
No water flow	The water flow has been < 1 ml./sec. This may be caused by a blocked ES brewer or a defective valve not able to open
Grinder error	The current limit of the grinder has been exceeded. This can be caused by a blocked grinder or a defective motor.

**General information on the heater control algorithm**

Due to an advanced energy controlled technology, the boiler temperature will continuously change in order to adapt the use of the machine. This assures a very accurate brew temperature of 90 C in the centre of coffee cake. The instant water temperature can be set in 3 temperature ranges by adjusting the amount of cold water injection (see the above description). Therefore the setting of a boiler temperature is not an issue on this machine. By means on a VIDTS record, a complete set of parameters can be changed in order to achieve a different brew temperature, if required. Changes to these parameters requires an in depth knowledge of the algorithm and the heat/energy physics. Changes to these parameters must always be confirmed and tested by Tech. Ops. at Wittenborg.

The water tank temperature control algorithm is self-calibrating. It will automaticautomatically compensate for fluctuations of the main power supply voltage and inlet water temperatures. By sudden and big fluctuations 1-2 beverages too cold or too hot may be expected, but the machine quickly recovers from this condition by it self. Supply voltage fluctuations of 30-50 V and Inlet water temperature fluctuations of 10-20 C° is considered BIG fluctuations. Fluctuations below these limits should give no problems.

By installing a new machine correct temperatures can be expected after 30-45 minutes and 10 to 20 dispensed beverages.

Yours sincerely  
Wittenborg A/S

Kim Dalgaard Andersen

**Corrections to Chapter 14**  
**Programming - service settings**  
**of Service Manual for**  
**5100**

## Quantities option

This option is used to set the options of a drink - i.e. water and ingredients, to set topstop time in connection with FBoR ES drinks, cold water injection in connection with IN drinks in ES-machines, beep delay, and finally to test the selected drink.

**Note:** All drinks do not necessarily include all options.

**Note:** This option is only functioning if the machine is ready for a vend, i.e. no errors in dispensing or payment have occurred since the machine was put into service mode.


The ingredient quantities can be defined as follows:

Ingredients	0.1 - 99.9 g
Water	1 - 999 ml
Whipper	0.1 - 99.9 sec




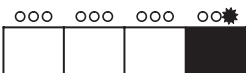


**Note:** If very large water quantities are defined, then the dispensed water volume may be less than the defined water quantity. This is because the water pressure (flow) is lowered, while the water level in the water tank is getting lower.

## Setting quantities (FB/IN-Machines only)

Quantities  
->

Step	Action	Function														
1.	Press: 	The display reads "Press Selection".														
2.	Press the selection button of the drink, for which the ingredients are to be set.	The display reads first component.														
3.	From the above menu you have the following options: <table><tr><th>If you want to select</th><th>then go to step</th></tr><tr><td>to select a specific drinks option</td><td>4</td></tr><tr><td>to enter the specific drinks option:</td><td>5</td></tr><tr><td>decrease the quantity or value</td><td>6</td></tr><tr><td>increase the quantity or value or in "Test drink" to activate the test.</td><td>7</td></tr><tr><td>return to the Quantities option.</td><td>8</td></tr><tr><td>access the next function</td><td>9 and 10</td></tr></table>		If you want to select	then go to step	to select a specific drinks option	4	to enter the specific drinks option:	5	decrease the quantity or value	6	increase the quantity or value or in "Test drink" to activate the test.	7	return to the Quantities option.	8	access the next function	9 and 10
If you want to select	then go to step															
to select a specific drinks option	4															
to enter the specific drinks option:	5															
decrease the quantity or value	6															
increase the quantity or value or in "Test drink" to activate the test.	7															
return to the Quantities option.	8															
access the next function	9 and 10															



Step	Action	Function
4.	Press: 	Toggles between the various options for the drink <ul style="list-style-type: none"> <li>• Powder</li> <li>• Water</li> <li>• Whipper</li> <li>• Beep Delay</li> <li>• Test Drink</li> </ul> in succession.
5.	Press: 	Enters the specific ingredient options: <ul style="list-style-type: none"> <li>• from "FBcoffee" into Topstop time</li> <li>• from "FBwater" into Topstop time</li> </ul> <b>Note</b> : Topstop is not applicable to Instant drinks.
6.	Press: 	Decreases the quantity or value (ingredient/topstop time).
7.	Press: 	Increases the quantity or value (ingredient/topstop time), or dispenses the drink in question in the "Test Drink" option.
8.	In step 4 toggle to "test drink", then press: 	Returns to the Quanties option.
9.	Repeat steps 1-7 until components of relevant drinks have been adjusted/set.	
10.	Press: 	Accesses the next function "Boiler".

## Cold water injection (ES machines only)

This option is used to set the amount of cold water for IN products, using cold water injection. (ES machines only).

The settings options are as follows







Cold water injection setting (amount of cold water added to the hot water dispensing)	Approximate temperature in mixing bowl	Best suited for:
HIGH	75°C - 80°C	Chocolate, whitener
MEDIUM	78°C - 82°C	Tea water
LOW	82°C - 87°C	IN coffee
OFF	>85°C	None (Temperature is unpredictable, but the

NOTE: These temperatures settings are only intended as a guide; they may change slightly as scaling grows inside the tank.

## Setting quantities (ES-machines only)

Quantities  
->

Step	Action	Function														
1.	Press: <div><div>ooo</div><div>o***</div><div>ooo</div><div>ooo</div><div><div></div><div></div><div></div><div></div></div></div>	The display reads "Press Selection".														
2.	Press the selection button of the drink, for which the ingredients are to be set.	The display reads first component.														
3.	From the above menu you have the following options:															
	<table><tr><th>If you want</th><th>then go to step</th></tr><tr><td>to select a specific drinks option</td><td>4</td></tr><tr><td>to enter the specific drinks option:</td><td>5</td></tr><tr><td><ul style="list-style-type: none"><li>to decrease the quantity or value</li><li>to toggle between the options in cold water injection</li></ul></td><td>6</td></tr><tr><td><ul style="list-style-type: none"><li>to increase the quantity or value</li><li>to toggle between the options in cold water injection, or</li><li>in "Test drink" to activate the test.</li></ul></td><td>7</td></tr><tr><td>to return to the Quantities option.</td><td>8</td></tr><tr><td>to access the next function</td><td>9 and 10</td></tr></table>	If you want	then go to step	to select a specific drinks option	4	to enter the specific drinks option:	5	<ul style="list-style-type: none"><li>to decrease the quantity or value</li><li>to toggle between the options in cold water injection</li></ul>	6	<ul style="list-style-type: none"><li>to increase the quantity or value</li><li>to toggle between the options in cold water injection, or</li><li>in "Test drink" to activate the test.</li></ul>	7	to return to the Quantities option.	8	to access the next function	9 and 10	
If you want	then go to step															
to select a specific drinks option	4															
to enter the specific drinks option:	5															
<ul style="list-style-type: none"><li>to decrease the quantity or value</li><li>to toggle between the options in cold water injection</li></ul>	6															
<ul style="list-style-type: none"><li>to increase the quantity or value</li><li>to toggle between the options in cold water injection, or</li><li>in "Test drink" to activate the test.</li></ul>	7															
to return to the Quantities option.	8															
to access the next function	9 and 10															

Step	Action	Function
4.	Press: 	Toggles between the various options for the drink <ul style="list-style-type: none"> <li>• Powder</li> <li>• Water</li> <li>• Mixer</li> <li>• Beep Delay</li> <li>• Test Drink</li> </ul> in succession.
5.	Press: 	Enters the specific ingredient options: <ul style="list-style-type: none"> <li>• from "EScoffee" into Topstop time</li> <li>• from "ESwater" into Topstop time</li> <li>• from "INwater" into cold water injection</li> </ul> in succession. <b>Note</b> : Topstop time is not applicable to Instant drinks. Cold water injection is only applicable to Instant drinks.
6.	Press: 	<ul style="list-style-type: none"> <li>• Decreases the quantity or value (ingredient/topstop time), or</li> <li>• toggles between the options (cold water injection).</li> </ul>
7.	Press: 	<ul style="list-style-type: none"> <li>• Increases the quantity or value (ingredient/top stop time)</li> <li>• toggles between the options (cold water injection), or</li> <li>• dispenses the drink in question in the "Test Drink" option.</li> </ul>
8.	In step 4 toggle to "test drink", then press: 	Returns to the Quanties option.
9.	Repeat steps 1-7 until components of relevant drinks have been adjusted/set.	
10.	Press: 	Accesses the next function "Boiler".

## Boiler Setting Option

The Boiler setting option is used to set the various functions of the water tank, i.e. nominal temperature, temperature lock, temperature unlock and energy saving temperature.

Note: "Boiler setting option" is not possible in ES-machines.

## Default temperatures

The default temperatures are as follows:

FB: 94°

IN: 80°

ES: 96°



The above temperatures are recommended.

## Setting boiler (FB/IN-Machines only)

Boiler

->



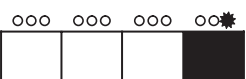

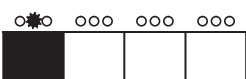
Step	Action	Function												
1.	Press: <div>ooo o*** ooo ooo</div> <div><div></div><div></div><div></div><div></div></div>	Activates the Boiler setting option. (The first field shown is nominal temperature setting).												
2.	From the above menu you have the following options:													
	<table><tr><th>If you want to</th><th>then go to step</th></tr><tr><td>select one of the functions of the water tank</td><td>3</td></tr><tr><td>decrease the temperature</td><td>4</td></tr><tr><td>increase the temperature</td><td>5</td></tr><tr><td>return to the boiler option</td><td>6</td></tr><tr><td>access the next function</td><td>6-7</td></tr></table>	If you want to	then go to step	select one of the functions of the water tank	3	decrease the temperature	4	increase the temperature	5	return to the boiler option	6	access the next function	6-7	
If you want to	then go to step													
select one of the functions of the water tank	3													
decrease the temperature	4													
increase the temperature	5													
return to the boiler option	6													
access the next function	6-7													
3.	Press: <div>o*o ooo ooo ooo</div> <div><div></div><div></div><div></div><div></div></div>	Toggles between the functions <ul style="list-style-type: none"><li>"nominal temperature",</li><li>"temperature lock",</li><li>"unlock temperature", and</li><li>"energy save temperature" (65°)</li></ul>												
4.	Press: <div>ooo ooo *oo ooo</div> <div><div></div><div></div><div></div><div></div></div>	Decreases the temperature.												
5.	Press: <div>ooo ooo ooo oo*</div> <div><div></div><div></div><div></div><div></div></div>	Increases the temperature.												

Step	Action	Function
6.	Press: 	Returns to the Boiler setting option.
7.	Press: 	Accesses the next function "Cup sensor Status".

## Setting cup sensor

This option is used to set the Cup Sensor to ON or OFF.

Cup sensor  
Status : ON

Step	Action	Function
1.	Press: 	Activates the Cup Sensor setting option.
2.	Press: 	Turns the status to "off".
3.	Press: 	Turns the status to "on".
4.	Press: 	Returns to the Cup Sensor Status.
5.	Press: 	Accesses the next function "Setting payment" .

**New Chapter**

**"Faults"**

**to be inserted after chapter 16**

**of Service Manual for**

**5100**

# Faults

## *Fault Diagnosis*

The list of possible faults and the appropriate trouble shooting is divided into two main groups:

- Faults which are not indicated in Display
- Faults which are indicated as messages in Display

### Errors not indicated in Display

Fault	Possible cause	Remedy
No function, no display	<ul style="list-style-type: none"><li>• Main switch defective</li><li>• Power supply interrupted</li><li>• Cable harness defective</li><li>• Electronic control defective</li><li>• Plug contact fault</li><li>• Fuse defective</li></ul>	<ul style="list-style-type: none"><li>• Check the main switch, replace it if necessary</li><li>• Check the power supply</li><li>• Check the fuse in the power supply unit, replace it if necessary</li><li>• Check the power supply cable, replace it if necessary</li><li>• Replace the cable harness</li><li>• Replace the electronic control</li><li>• Check contacts, replace if necessary</li><li>• Check the power supply, replace the fuse if necessary</li></ul>
Noise from the brewer	<ul style="list-style-type: none"><li>• Brewer tachometer defective</li><li>• Contact fault</li><li>• Cable harness defective</li><li>• Mechanical defect</li></ul>	<ul style="list-style-type: none"><li>• Check the brewer tachometer, replace it if necessary</li><li>• Check the contacts (check cable harness for conductivity)</li><li>• Check the cable harness, replace it if necessary</li><li>• Check actuator, replace it if necessary</li></ul>
Drinks too cold	<ul style="list-style-type: none"><li>• Water supply too cold</li><li>• Temperature sensor is maladjusted</li></ul>	<ul style="list-style-type: none"><li>• Raise temperature</li><li>• Check and adjust temperature setting.</li></ul>

### Error messages in Display

Fault	Possible cause	Remedy
<b>Door open !</b>	<ul style="list-style-type: none"><li>• Door not closed properly</li><li>• Door switch defective</li><li>• Door harness defective</li></ul>	<ul style="list-style-type: none"><li>• Close door properly</li><li>• Check, replace if necessary</li><li>• Check, replace if necessary</li></ul>
<b>Insert cup</b>	<ul style="list-style-type: none"><li>• No cup located on cup platform</li><li>• Defective cup sensor</li></ul>	<ul style="list-style-type: none"><li>• Place cup on cup platform</li><li>• Check, replace if necessary</li></ul>

<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
<b>Water l. low</b>	<ul style="list-style-type: none"> <li>Water tank is not filled within 3 minutes</li> <li>Inlet valve defective</li> <li>Blocked water filter</li> <li>Water supply connection blocked</li> </ul>	<ul style="list-style-type: none"> <li>Switch machine off, open water cock, check water connection and hoses</li> <li>Check, replace if necessary</li> <li>Remove impurities and clean / replace, if necessary.</li> <li>Remove impurities.</li> </ul>
<b>Temp. low</b>	<ul style="list-style-type: none"> <li>Water temperature is too low</li> <li>Heating element defective</li> <li>Harness for heating element defective</li> <li>Machine has just been switched on</li> <li>Harness for temperature sensor defective</li> </ul>	<ul style="list-style-type: none"> <li>Wait until the water is heated sufficiently (approximately 15 minutes)</li> <li>Check the heating element, replace it if necessary.</li> <li>Check harness, replace if necessary.</li> <li>The display is automatically cleared when the water in the tank reaches the correct temperature.</li> <li>Check, replace if necessary.</li> </ul>
<b>Heater error (IN, FB only)</b>	<ul style="list-style-type: none"> <li>Over boil thermostat has triggered</li> <li>Over boil thermostat is defective</li> <li>Harness for overboil thermostat is defective</li> <li>Temperature sensor is defective</li> <li>Harness for temperature sensor defective</li> </ul>	<ul style="list-style-type: none"> <li>Press the reset button</li> <li>Check the boil over switch, replace it if necessary</li> <li>Check, replace it if necessary</li> <li>Check, replace it if necessary</li> <li>Check, replace it if necessary.</li> </ul>
<b>Energy save</b>	<ul style="list-style-type: none"> <li>Energy save period is on</li> </ul>	<ul style="list-style-type: none"> <li>Change energy save period</li> <li>Check the clock, make sure that the time is correct.</li> </ul>
<b>Bucket full</b>	<ul style="list-style-type: none"> <li>Drip tray full</li> <li>Drip tray sensor defective</li> <li>Harness for drip tray sensor defective</li> <li>Leak in machine</li> <li>Waste bucket full</li> <li>Waste bucket sensor defective</li> <li>Harness for waste bucket sensor defective</li> </ul>	<ul style="list-style-type: none"> <li>Switch machine off, empty drip tray and dry the water level sensor</li> <li>Check, replace it if necessary</li> <li>Check, replace it if necessary</li> <li>Check and repair it</li> <li>Switch machine off, empty waste bucket and dry the sensor</li> <li>Check, replace it if necessary</li> <li>Check, replace it if necessary</li> </ul>
<b>Brewer error</b>	<ul style="list-style-type: none"> <li>Brewer blockage</li> <li>Brewer defective</li> <li>Brewer motor defective</li> <li>Harness for brewer motor defective</li> <li>Defective harness between MC and switches</li> <li>Micro switches maladjusted</li> </ul>	<ul style="list-style-type: none"> <li>Empty waste bucket</li> <li>Switch machine off/on</li> <li>Check brewer and brewer connections, adjust, repair or replace defective part if necessary.</li> </ul>



<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
<b>FB assembly</b>	<ul style="list-style-type: none"> <li>• Filter plate or cylinder mounted incorrectly</li> <li>• Brewer motor defective</li> <li>• Harness for brewer motor defective</li> <li>• Defective harness between MC and switches</li> <li>• Micro switches maladjusted</li> </ul>	<ul style="list-style-type: none"> <li>• Mount filter plate and brewer cylinder correctly</li> <li>• Check brewer and brewer connections, adjust, repair or replace defective part if necessary.</li> </ul>
<b>Filterplate!</b>	<ul style="list-style-type: none"> <li>• Filter plate blocked up</li> <li>• Defective brewer motor</li> </ul>	<ul style="list-style-type: none"> <li>• Clean/decalcify filter</li> <li>• Switch machine off/on</li> <li>• Check brewer motor, replace if necessary.</li> </ul>
<b>Exact change</b>	<ul style="list-style-type: none"> <li>• Coin tubes of coin mechanism are empty</li> <li>• Coin return switch defective or incorrectly adjusted</li> </ul>	<ul style="list-style-type: none"> <li>• Fill Coin tubes</li> <li>• Check, adjust or replace it if necessary</li> </ul>
<b>Valve leak!</b>	<ul style="list-style-type: none"> <li>• Leaky valve</li> <li>• Leak in water tank</li> </ul>	<ul style="list-style-type: none"> <li>• Switch machine off/on</li> <li>• Check valves, replace if necessary.</li> <li>• Check and repair it.</li> </ul>
<b>UnknownError</b>	<ul style="list-style-type: none"> <li>• Unknown error</li> </ul>	<ul style="list-style-type: none"> <li>• Switch machine off/on</li> </ul>
<b>Internal err</b>	<ul style="list-style-type: none"> <li>• Internal error</li> </ul>	<ul style="list-style-type: none"> <li>• Switch machine off/on</li> </ul>
<b>GrinderError (ES only)</b>	<ul style="list-style-type: none"> <li>• The grinder is blocked by a foreign body, e.g. stone</li> <li>• Grinder motor is damaged</li> <li>• Harness for grinder motor defective</li> </ul>	<ul style="list-style-type: none"> <li>• Clean grinder</li> <li>• Check grinder motor, replace if necessary</li> <li>• Check, replace it if necessary</li> </ul>
<b>HighTemp.! (ES only)</b>	<ul style="list-style-type: none"> <li>• Due to an error condition, the water temperature in the tank has been &gt;120°C.</li> <li>• Temperature Sensor defective</li> <li>• Harness for temperature sensor defective</li> </ul>	<ul style="list-style-type: none"> <li>• Check boil over thermostat, replace if necessary</li> <li>• Check, replace it if necessary</li> <li>• Check, replace it if necessary</li> </ul>
<b>No flow!</b>	<ul style="list-style-type: none"> <li>• Grinder setting is too fine</li> <li>• Water pump damaged</li> <li>• Outlet valve defective</li> <li>• Harness for outlet valve defective</li> <li>• Break tank has no water</li> </ul>	<ul style="list-style-type: none"> <li>• Set grinder to a coarser grind</li> <li>• Check pump, replace if necessary</li> <li>• Check replace it if necessary</li> <li>• Check replace it if necessary</li> <li>• Check electrodes to break tank, switch connections/replace if necessary</li> </ul>
<b>Sold out</b>	<ul style="list-style-type: none"> <li>• Minimum level, set in “canister facility” has been reached.</li> </ul>	<ul style="list-style-type: none"> <li>• Refill canisters</li> <li>• Check and readjust if brand or type of ingredient in question has been changed, cf. Service mode - service settings, Canister setting facility.</li> </ul>

Fault	Possible cause	Remedy
<b>Rinse now!</b>	<ul style="list-style-type: none"> <li>• If set, the rinse message facility has reacted to the relevant setting</li> </ul>	<ul style="list-style-type: none"> <li>• Change setting</li> <li>• Perform cleaning/rinse in accordance with instruction to “remedy” the rinse message facility, cf. Service settings - Service rinse message setting facility.</li> </ul>



# TECHNICAL INFORMATION

TYPE NO <b>FB/IN/ES 5100</b>	TYPE <b>Freshbrewer/Instant/Espresso Brewer</b>	T.I.-NO <b>02/00</b>				
SERIAL NUMBERS AFFECTED		ISSUED BY <b>Documentation/ Wittenborg Odense</b>				
SUBJECT <b>New Manuals</b>		ISSUED FOR (X): <table><tr><td>Action</td><td></td></tr><tr><td>Information</td><td><b>x</b></td></tr></table>	Action		Information	<b>x</b>
Action						
Information	<b>x</b>					

## 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 5100	Quick Reference Guide (available from week 25 - 2000)	GB	75504200
FB 5100	Operator Manual (available from week 25 - 2000)	GB	75500000
FB/IN/ES 5100	Operator Manual (incl. Installation Guide) (available from week 5 - 2000)	GB	75406000
FB/IN/ES 5100	Service Manual (incl. Spare Parts List) (available from week 10 - 2000)	GB	75407000
FB 5100	Kurzanleitung (available from week 25 - 2000)	D	75504500
FB 5100	Bedienungsanleitung (available from week 25 - 2000)	D	75500300
FB/IN/ES 5100	Bedienungsanleitung (inkl. Installationsanleitung) (available from week 5 - 2000)	D	75406100

08.06.00	08.06.00
DATE : _____	DATE : _____
PRODUCED BY : _____	CHECKED BY : _____



## TECHNICAL INFORMATION

TYPE NO <b>FB/IN/ES 5100</b>	TYPE <b>Freshbrewer/Instant/Espresso Brewer</b>	T.I.-NO <b>02/00</b>
FB/IN/ES 5100	Service-Handbuch (inkl. Ersatzteilliiste) (available from week 11 - 2000) D 75407100	
FB 5100	Fiches pratiques (available from week 25 - 2000) F 75504800	
FB 5100	Manuel d'utilisation (available from week 25 - 2000) F 75500600	
FB/IN/ES 5100	Manuel d'utilisation (incl. Guide d'Installation) (available from week 5 - 2000) F 75406200	
FB/IN/ES 5100	Manuel Technique (incl. Catalogue de Pièces détachées) (available from week 14 - 2000) F 75407200	
FB/IN/ES 5100	Betjeningsvejledning (inkl. installationsvejledning) (available from week 6 - 2000) DK 75406300	
FB/IN/ES 5100	Servicemanual (inkl. installationsvejledning) (available from week 26) DK 75407300	
FB/IN/ES 5100	Bruksanvisning (inkl. Installationsvejledning) (available from week 5 - 2000) S 75406400	
FB/IN/ES 5100	Service Handboek (inkl. Spare Parts Lijst) (available from week 15 - 2000) NL 75407500	
FB 5100	Spare Parts List (available from March - 2000) GB 75405200	
IN 5100	Spare Parts List (available from March - 2000) GB 75405500	
ES 5100	Spare Parts List (available from March - 2000) GB 75405800	



## TECHNICAL INFORMATION

TYPE NO <b>FB/IN/ES 5100</b>		TYPE <b>Freshbrewer/Instant/Espresso Brewer</b>		T.I.-NO <b>02/00</b>
FB 5100	Ersatzteilliste (available from March - 2000)	D	75405300	
IN 5100	Ersatzteilliste (available from March - 2000)	D	75405600	
ES 5100	Ersatzteilliste (available from March - 2000)	D	75405900	
FB 5100	Reservedelsliste (available from March - 2000)	DK	75405100	
IN 5100	Reservedelsliste (available from March - 2000)	DK	75405400	
ES 5100	Reservedelsliste (available from March - 2000)	DK	75405700	
FB 5100	Danish Quick Reference Guide (available from July)	DK	75505100	
FB 5100	Danish Operator Manual (available from July)	DK	75500900	
FB 5100	Swedish Quick Reference Guide (available from July)	S	75505400	
FB 5100	Swedish Operator Manual (available from July)	S	75501200	
 <b>CONTACT PERSON:</b> <ul style="list-style-type: none"><li>Charlotte Schreiner</li></ul>				



## TECHNICAL INFORMATION

TYPE NO <b>Gallery 200</b>	TYPE <b>Freshbrewer</b>	T.I.-NO <b>02/00</b>				
SERIAL NUMBERS AFFECTED		ISSUED BY <b>Documentation/ Wittenborg Odense</b>				
SUBJECT <b>New Manuals</b>		ISSUED FOR (X): <table><tr><td>Action</td><td></td></tr><tr><td>Information</td><td><b>x</b></td></tr></table>	Action		Information	<b>x</b>
Action						
Information	<b>x</b>					

**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 200	Fiches pratiques (available from week 25 - 2000)	F	75506300
Gallery 200	Manuel d'utilisation (available from week 25 - 2000)	F	75502100
Gallery 200	Beknopte instructies (available from week 25 - 2000)	NL	75505700
Gallery 200	Gerbuiksaanwijzing (available from week 25 - 2000)	NL	75501500

**CONTACT PERSON:**

- Charlotte Schreiner

08.06.00	08.06.00
DATE : _____	DATE : _____
PRODUCED BY : _____	CHECKED BY : _____

# TECHNICAL INFORMATION

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

## COMPONENTS CONCERNED

39615502 Actuator ass.

omitted: **A-0026 Cheese head screw M4x10mm**  
**09116005 Washer 8x4,3x0,5**

new: **35217400 Screw M4x10mm (1) (Fig.1)**

## MODIFICATION:

- The screws A-0026 and the washers 09116005 will be replaced by the screws 35217400 (see Fig.1 ).

## REASON:

- Product improvement / Assembly will be easier

## CONTACT PERSON:

- Technical questions:  
Nils Stöwahse

Spare Part Ordering:  
Tanja Lange

ÄÄ 4681

1/2

07.07.2000 DATE :	REIMERS PRODUCED BY :	07.07.2000 DATE :	STÖWAHSE CHECKED BY :
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## TECHNICAL INFORMATION

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

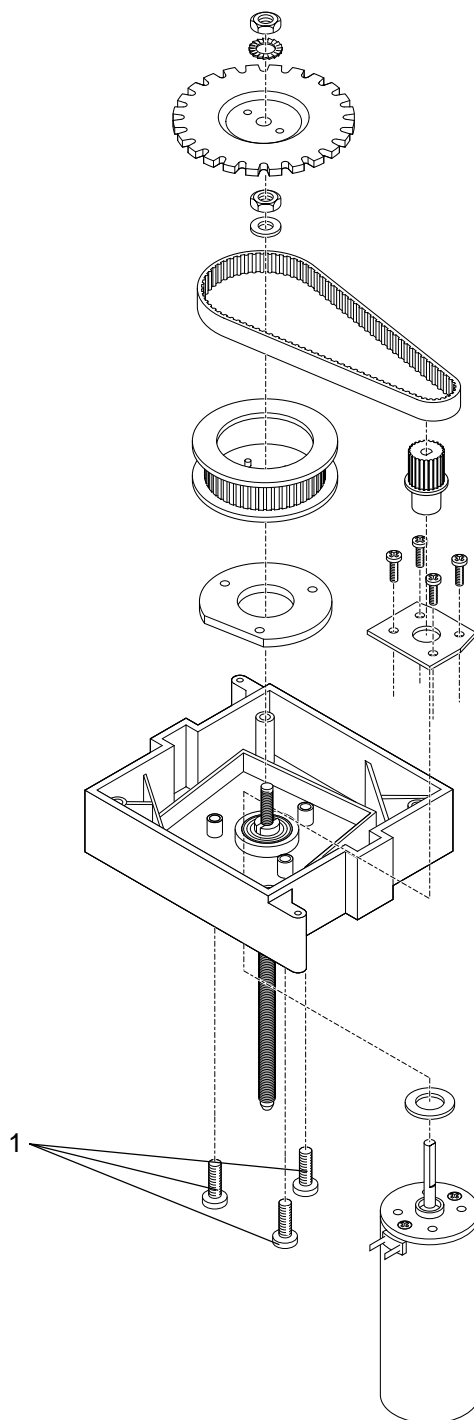


Fig. 1

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





## TECHNICAL INFORMATION

TYPE NO <b>ES 5100</b>	TYPE <b>Espresso</b>	T.I.-NO <b>ES 03/00</b>				
SERIAL NUMBERS AFFECTED <b>From week 31</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>					
SUBJECT <b>New spare parts for the espresso brewer 061199</b>		ISSUED FOR (X): <table><tr><td>Action</td><td><b>X</b></td></tr><tr><td>Information</td><td><b>X</b></td></tr></table>	Action	<b>X</b>	Information	<b>X</b>
Action	<b>X</b>					
Information	<b>X</b>					

### COMPONENTS CONCERNED

New:      **061013**      **Teflon tube Ø4/Ø2, 5x1 (Teflon-Rohr Ø4/Ø2, 5x1)**  
              **062685**      **O-ring turning part (O-Ring Drehteil)**  
              **062686**      **Turning part (Drehteil)**  
              **061012**      **Turning part assembly (Drehteil-Set)**

### MODIFICATION:

- It is now possible to order the above spare parts for the water inlet of the espresso brewer 061199.

### REASON:

- Customer wish.

### INSTRUCTION:

- Please see the attached files on how to dismount the espresso brewer.

### CONTACT PERSON:

- Marianne Kristiansen.

1.08.00	1.08.00
DATE :                      PRODUCED BY :	DATE :                      CHECKED BY :

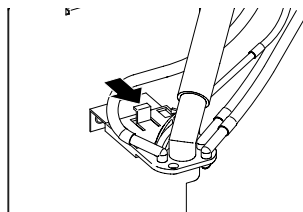
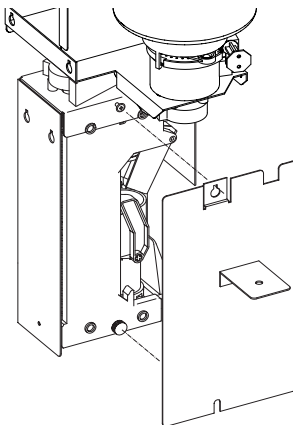
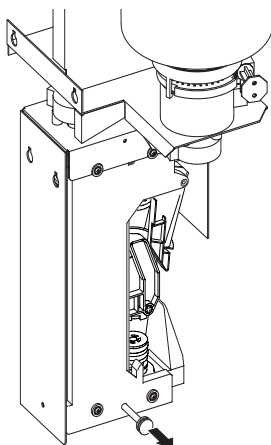
## Dismounting the espresso brewer

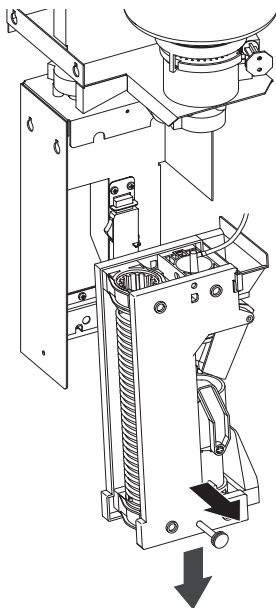
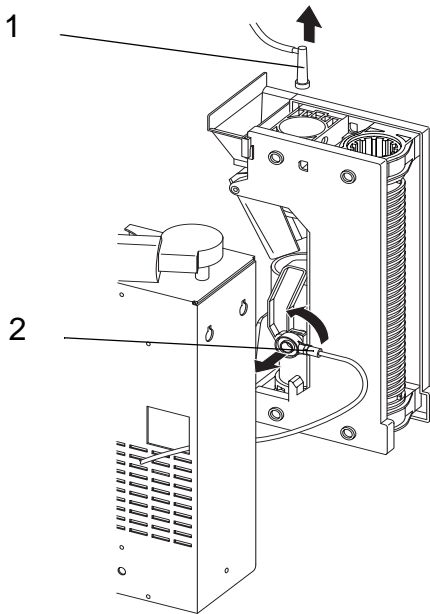
### Warnings

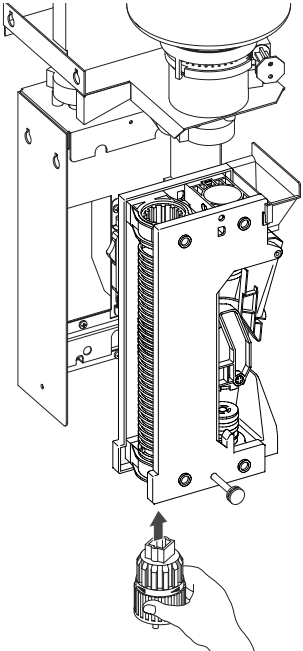
- Before any repair is carried out, the main plug must be withdrawn from the main supply!
- Only carry out this repair when the machine has cooled down!

### Procedure

Follow these steps to dismount the espresso brewer:

Step	Action	Illustration
1.	Remove the waste bucket.	
2.	Lift the release angle of the holder to remove the branch pipe.	
3.	Remove heat insulation cover.	
4.	Pull securing pin outwards.	

Step	Action	Illustration
5.	Release brewer.	
6.	<p>Disconnect coffee outlet tube (1) by lifting it upwards.</p> <p>Disconnect water outlet tube (2) from brewer by turning it anti-clockwise.</p> <p>NB. You must be careful how you disconnect it in order not to break the pin.</p>	
7.	Tilt brewer outwards and lift it out.	
8.	<p>Reinstall brewer into machine.</p> <p>Note: Remember to fasten securing pin.</p>	

Step	Action	Illustration
9.	<p>Note: If you cannot replace the brewer correctly after cleaning, this is probably because you have moved something during cleaning. In that case you need the special multifunctional tool to restore the situation.</p>	



# TECHNICAL INFORMATION

TYPE NO <b>ES 5100</b>	TYPE <b>Espresso</b>	T.I.-NO <b>ES 04/00</b>				
SERIAL NUMBERS AFFECTED <b>From week 37</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>					
SUBJECT <b>Latest version of the descriptions of the espresso brewer and grinder</b>	ISSUED FOR (X): <table border="1"><tr><td>Action</td><td><b>X</b></td></tr><tr><td>Information</td><td><b>X</b></td></tr></table>		Action	<b>X</b>	Information	<b>X</b>
Action	<b>X</b>					
Information	<b>X</b>					
<p><b>COMPONENTS CONCERNED</b></p> <p>Existing:</p> <ul style="list-style-type: none"><li><b>75407000 English Service Manual - FB/IN/ES 5100</b></li><li><b>75407100 German Service Manual - FB/IN/ES 5100</b></li><li><b>75407200 French Service Manual - FB/IN/ES 5100</b></li><li><b>75407300 Danish Service Manual - FB/IN/ES 5100</b></li><li><b>75407500 Dutch Service Manual - FB/IN/ES 5100</b></li></ul> <p><b>MODIFICATION:</b></p> <ul style="list-style-type: none"><li>Please add the attached documents, containing the latest descriptions of the espresso brewer and grinder, as an appendix to the above mentioned service manuals.</li></ul> <p><b>REASON:</b></p> <ul style="list-style-type: none"><li>Documentation update.</li></ul> <p><b>CONTACT PERSON:</b></p> <ul style="list-style-type: none"><li>Charlotte Schreiner.</li></ul>						
13.09.00 DATE : _____ PRODUCED BY : _____		13.09.00 DATE : _____ CHECKED BY : _____				

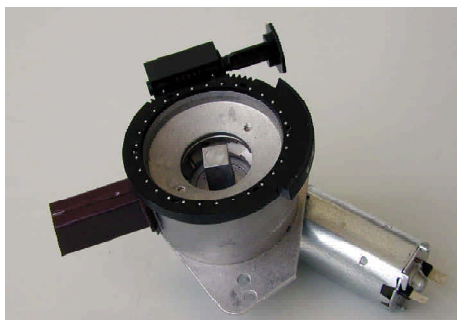
## D.1 Replacing grinder components

- Remove the grinder
- Clean the grinder to be able to repair it better (e.g. with a suitable vacuum cleaner)

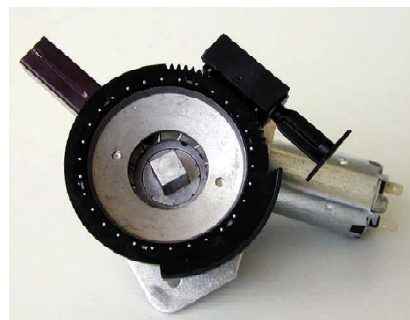


The work steps described in the following apply to the grinders: 062400, 063120, 063295 (used for display here), 063296, 063897, 063898, 065318 and 065050.

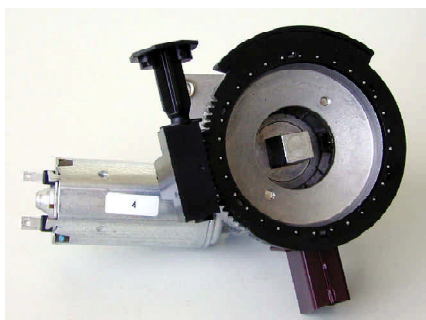
The corresponding spare parts numbers can be found in the spare parts catalogue.



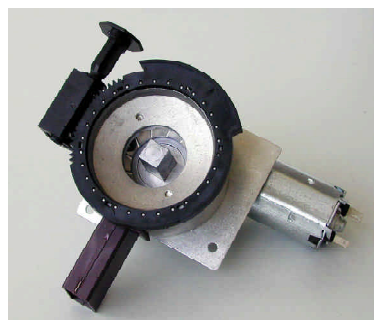
063295



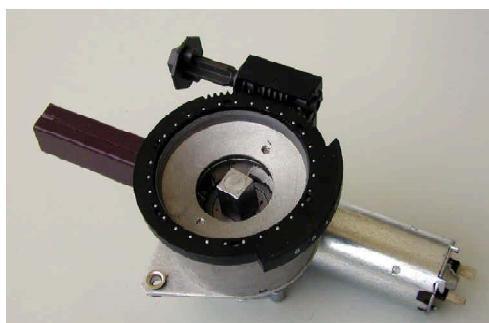
063296



062400



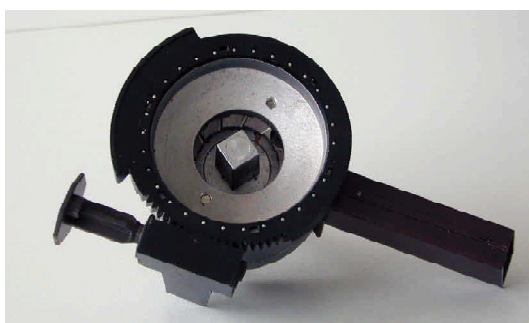
063120



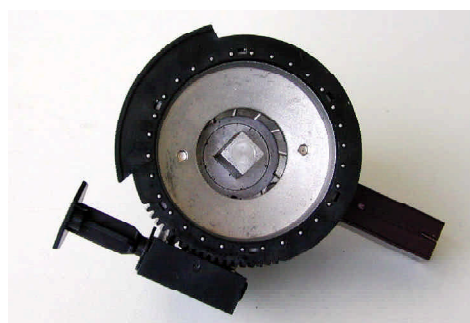
063897



063898



065318

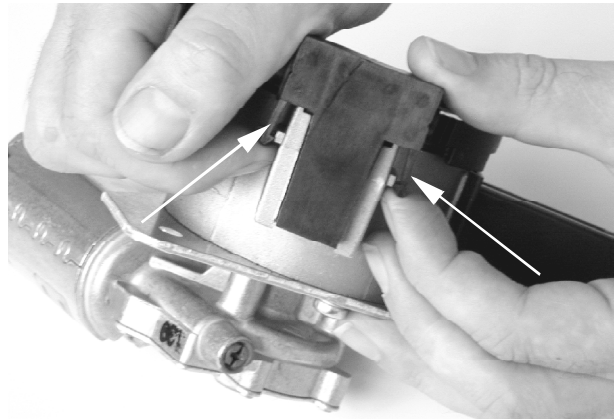


065050

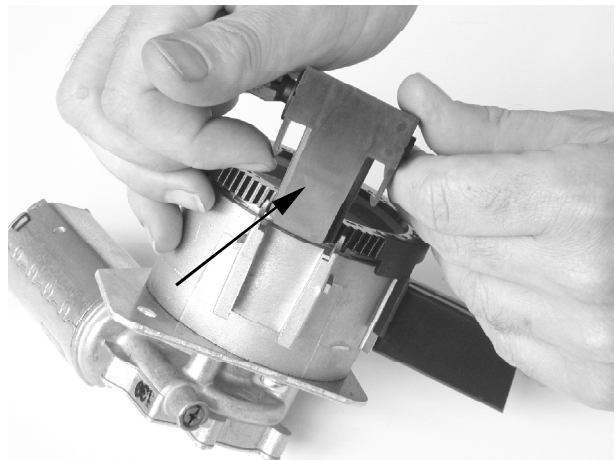
### D.1.1 Remove the shaft bearing and the screw-shaped shaft

- Carefully pull the fastening clips of the shaft bearing outward until they slide over the retaining bars.

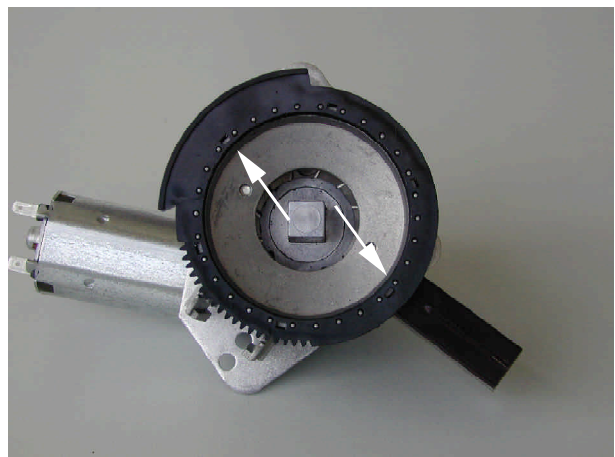
**Attention:**      **Danger of damage to the fastening clips.**  
**Make sure that you do not pull the fastening clips too strongly since they can otherwise break off.**



- Pull off the shaft bearing together with the screw-shaped shaft in an upward direction.

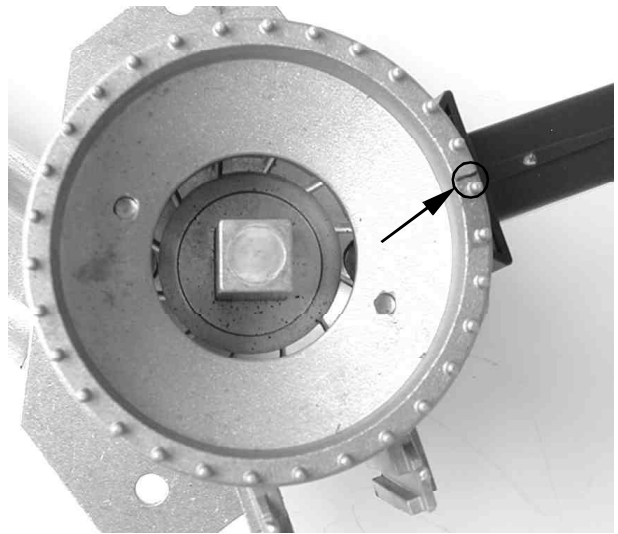


- Turn the grinding degree disk until the two square cut-outs (see illustration) are in line with the powder spout.
- Put on the shaft bearing together with the screw-shaped shaft and slowly push them downwards until the fastening clips lock into place with a clearly audible "click".
- If present, the display 3 and 4 of the scale on the grinding degree disk must be visible in the housing window after the grinder has been installed.

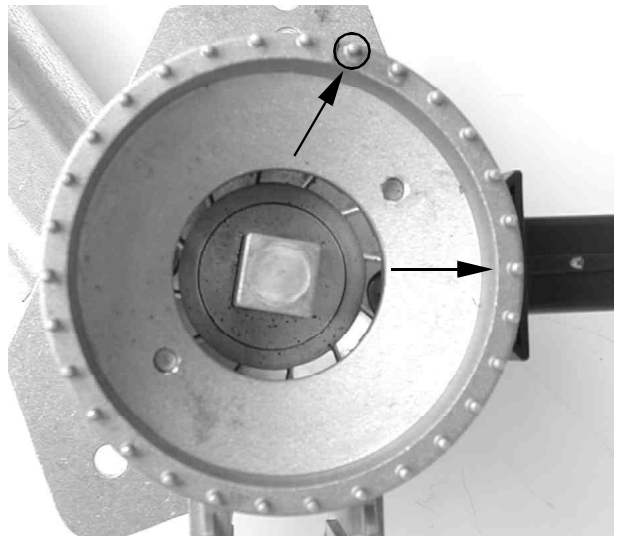


### D.1.2 Adjusting the grinding degree disk and the setting ring

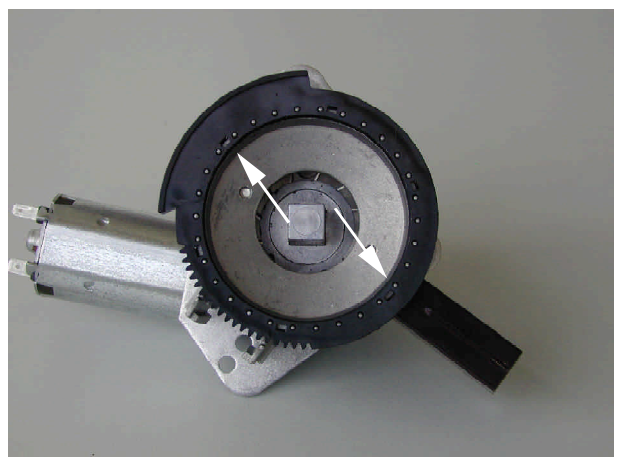
- Fasten the setting ring in the grinder housing tightly by hand.
- Mark the position of the middle line of the powder spout on the setting ring.



- Turn back the setting ring by xx teeth depending on the grinder model.
  - 6 teeth 062400
  - 5 teeth 063120, 063295, 063296
  - 3 to 4 teeth 063897, 063898, 065050, 065318



- Turn the grinding degree disk until the two square cut-outs (see illustration) are in line with the powder spout.
- Put on the shaft bearing together with the screw-shaped shaft and slowly push them downwards until the fastening clips lock into place with a clearly audible "click".
- If present, the display 3 and 4 of the scale of the grinding degree disk must be visible in the housing window after the grinder has been installed.





### D.1.3 Replacing the grinding degree disk

- Remove the shaft bearing together with the screw-shaped shaft.
- Carefully lift all the fastening clips of the grinding degree disk over the edge of the setting rings.

**Attention:**      **Danger of damage to the grinding degree disk. Make sure that you do not bend the fastening clips of the grinding degree disk too strongly, since they can otherwise break off.**



- Remove the grinding degree disk.
- Readjust the setting ring and put on a new grinding degree disk, see the chapter "Adjusting the grinding degree disk and the setting ring".
- Refit the shaft bearing together with the screw-shaped shaft

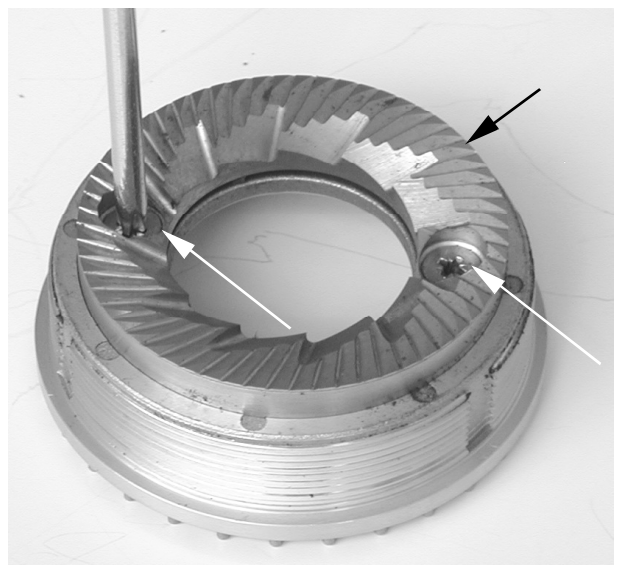


### D.1.4 Replacing grinding disks

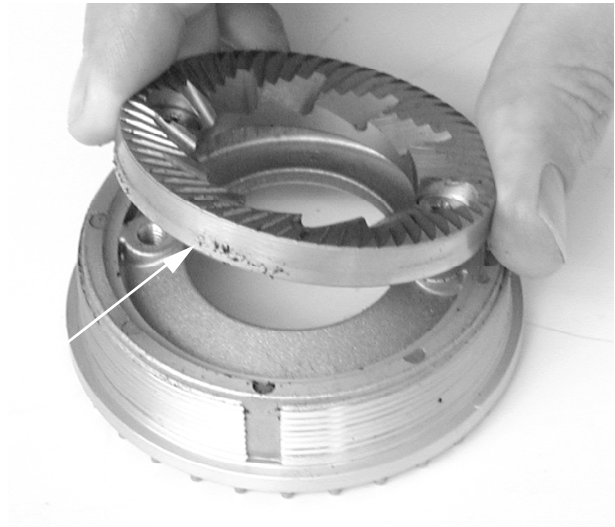
- Remove the shaft bearing together with the screw-shaped shaft.
- Remove the grinding degree disk.
- Remove the entire setting ring together with the "fixed grinding disk".



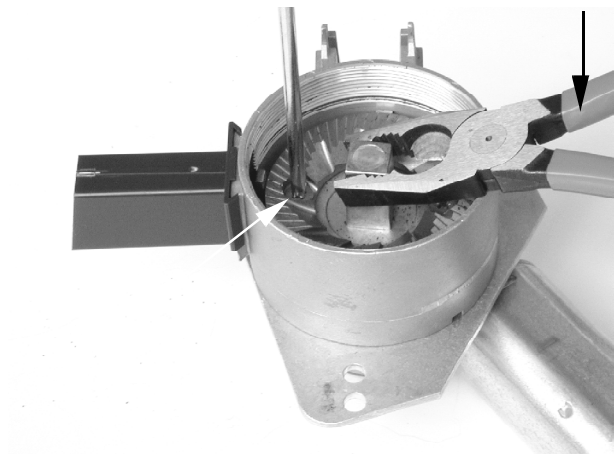
- Loosen both screws of the "fixed grinding disk" with a crosstip screwdriver.



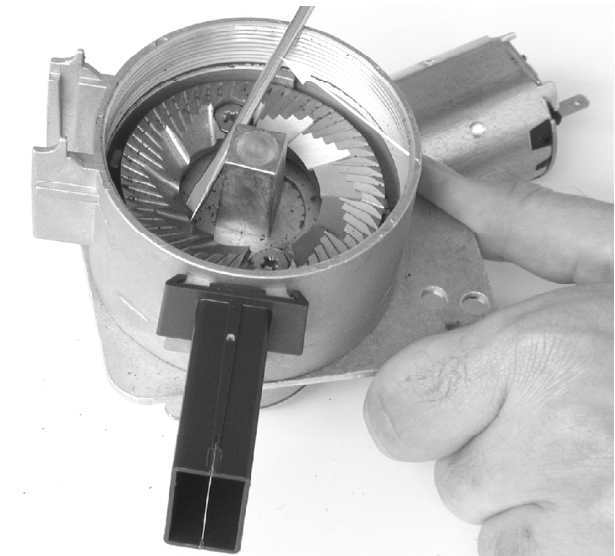
- Remove the "fixed grinding disk" together with the screws.
- Place a new "fixed grinding disk" on the setting ring and fasten tightly with the screws.



- Hold the star-shaped shaft in place with a pair of combined pliers and loosen the screws of the "rotating grinding disk" with a crosstip screwdriver.



- Lift up the "rotating grinding disk" from the star-shaped shaft with a small screwdriver.
- Withdraw the "rotating grinding disk" together with the screws.
- Place a new "rotating grinding disk" on the star-shaped shaft and fasten it tightly with the screws.
- Clean the grinder housing and the thread and lubricate them slightly with a food-safe grease.



**Attention:**      **Danger of damage to the grinding disk.**  
Clean the grinder with a vacuum cleaner and remove clinging particles with a brush.

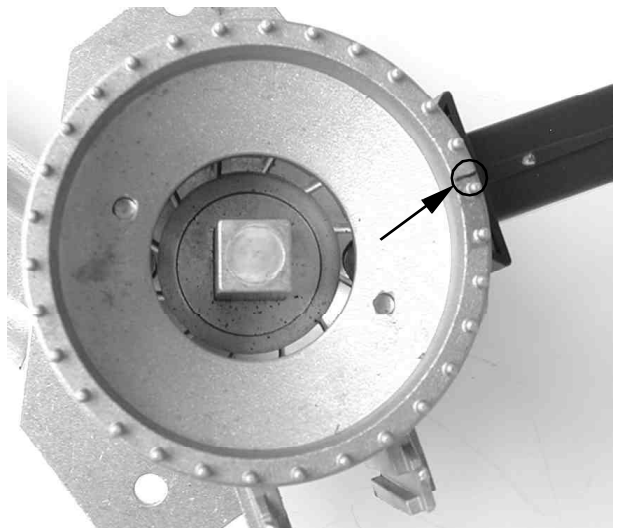
- Clean the thread of the setting ring and lubricate it lightly with a food-safe grease.

**Attention:**      **Danger of damage to the thread.**  
Clean the thread with a vacuum cleaner and remove clinging particles with a brush.

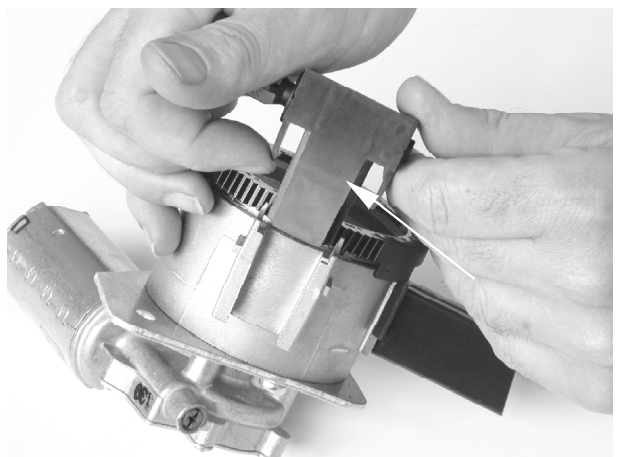
- Screw the setting ring into the grinder housing and fasten tightly by hand.



- Mark the position of the middle line of the powder spout on the setting ring.
- Readjust the setting ring and put on a new grinding degree disk, see the chapter "Adjusting the grinding degree disk and the setting ring".



- Refit the shaft bearing together with the screw-shaped shaft.



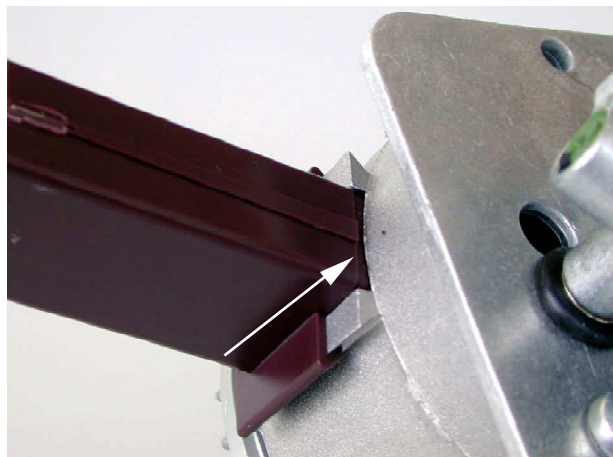
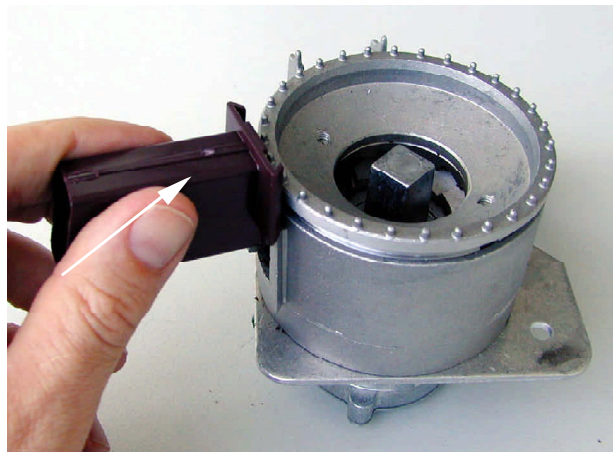
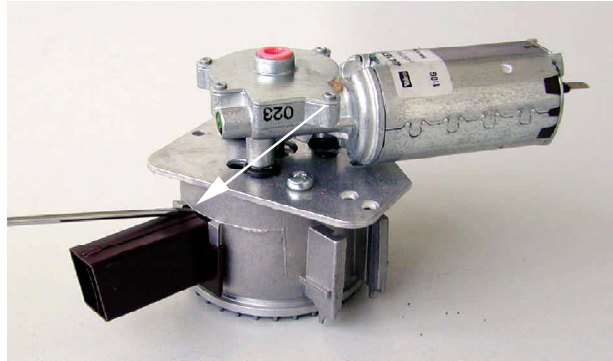
### D.1.5 Replacing the powder spout

- Remove the shaft bearing together with the screw-shaped shaft.
- Remove the grinding degree disk
- Carefully loosen the powder spout with a small screwdriver
- Pull off the damaged powder spout by hand.
- Place the new powder spout on the guide and push downwards until it stops.

**Attention:**      **Danger of damage to the powder spout.**  
Make sure that you do not fit the powder spout askew.

**Attention:**      **Danger of malfunction during operation.**  
Make sure that you push the powder spout all the way to the bottom. The powder spout and the housing must close without a gap.

- Refit the assemblies that were removed and adjust them accordingly, see the chapter "Adjusting the grinding degree disk and the setting ring".



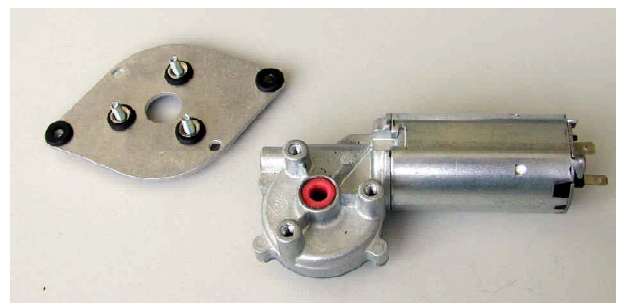
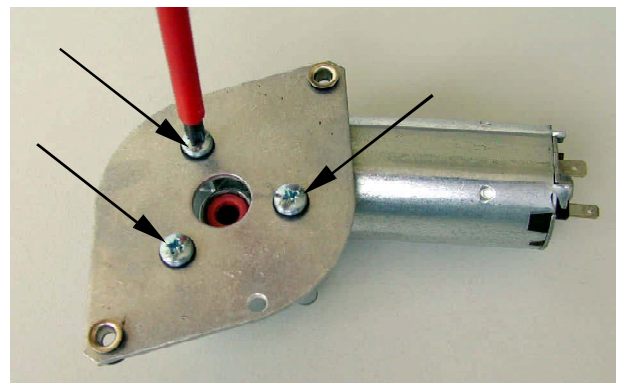
### D.1.6 Replacing the motor

- Loosen the screws between the motor plate and the grinder housing.
- Remove the motor together with the motor plate.

**Attention:**      **Danger of malfunction during operation.**  
Use a felt pen to mark the side of the motor plate that faces the grinder housing.



- Remove the screws between the motor and the motor plate and take out the faulty motor.
- Place a new motor on the motor plate and fasten it with the screws.
- Fasten the screws between the motor and the motor plate.
- Place the motor plate together with the motor on the grinder housing and connect them with the screws.
- Tightly fasten the screws between the motor plate and the grinder housing.



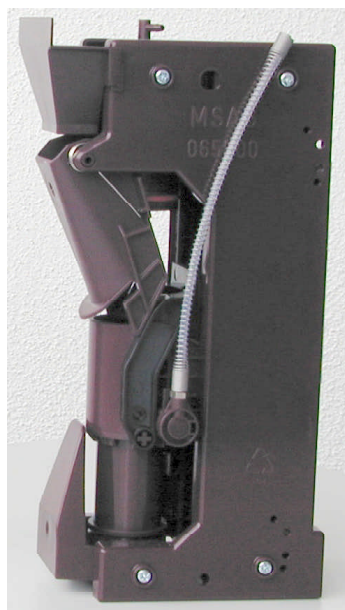


## B.1 Replacing brewer components

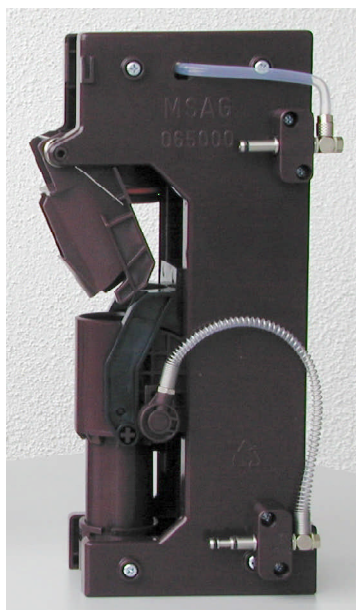
- Remove the brewer as described in the operating instructions.
- Clean the brewer to be able to repair it better.



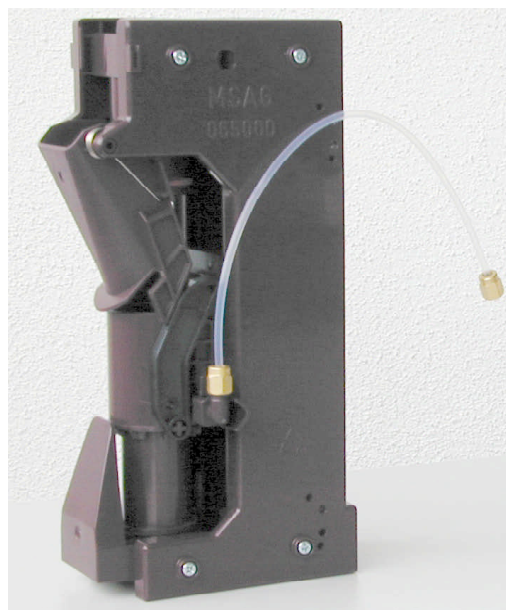
This chapter describes various brewers. At the beginning of each description, you are told which brewers the description applies to. See the spare parts list for the number of your brewer.



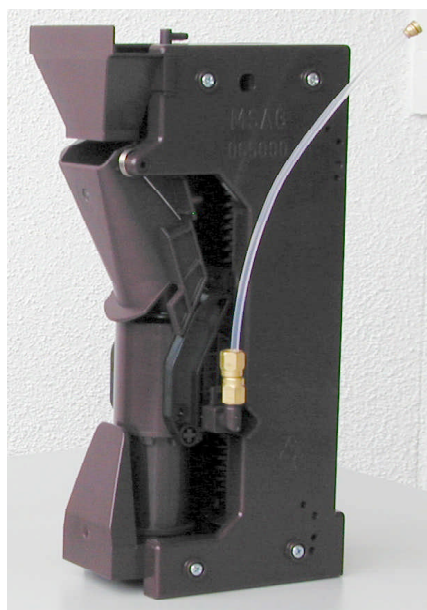
061199



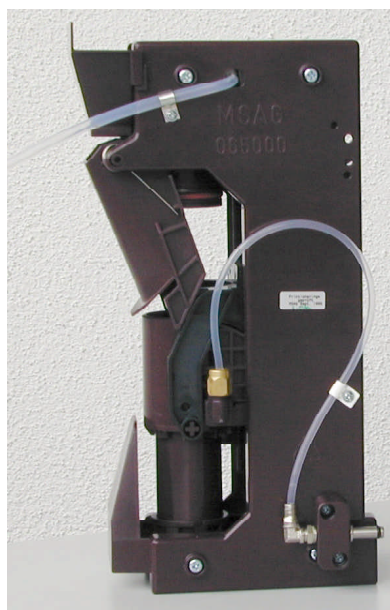
062675



061107



061203



063732



065000

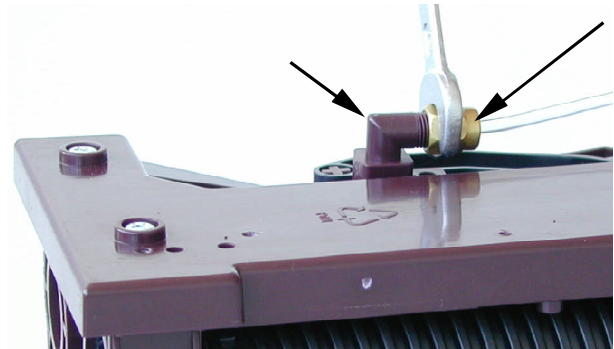
### B.1.1 Replacing the tube



Applies to brewers 061107, 061203,  
063732, 065000

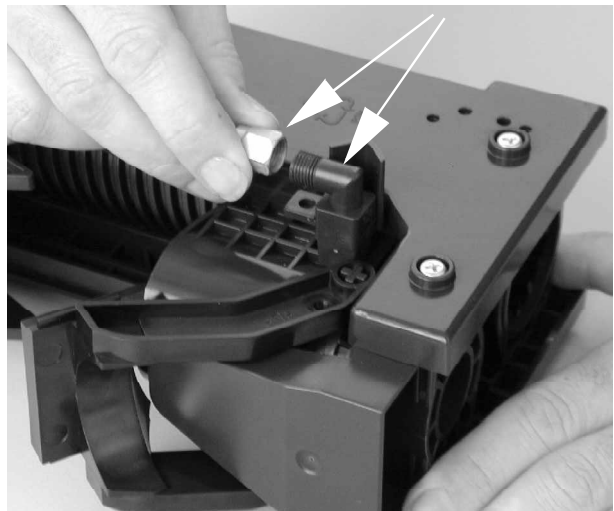
- Carefully loosen the brass bush with a spanner.

**Attention:** The elbow can be damaged.  
Make sure that you turn the  
brass bush slowly, since the  
elbow can otherwise break off.



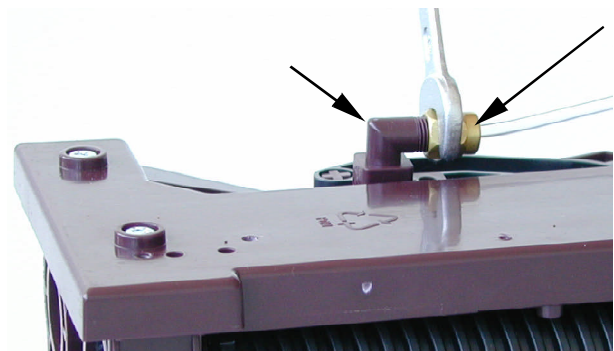
- Loosen the brass bush by hand and remove the tube.
- Manually screw the brass bush of the new tube onto the elbow as far as possible.

**Attention:** The thread of the elbow can be  
damaged.  
Make sure that you screw the  
brass bush onto the elbow  
slowly without damaging the  
thread.



- Tighten the brass bush by 1/4 of a turn with a spanner.

**Attention:** The elbow can be damaged.  
Make sure that you do not  
tighten the brass bush of the  
elbow too hard, since the  
elbow can otherwise break off.





### B.1.2 Replacing the complete tube (063831)

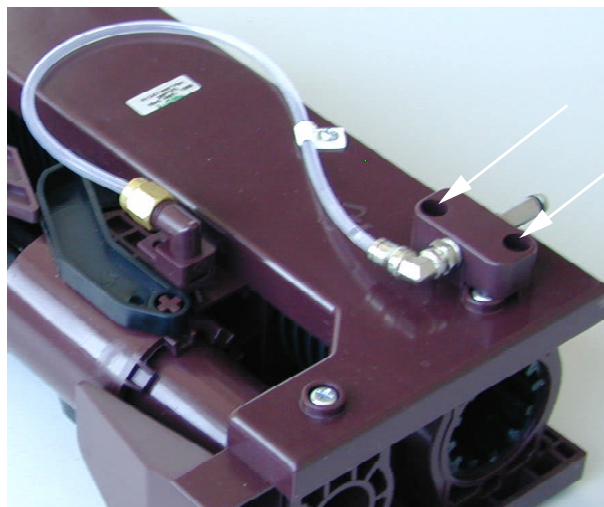


Applies to brewer 063732

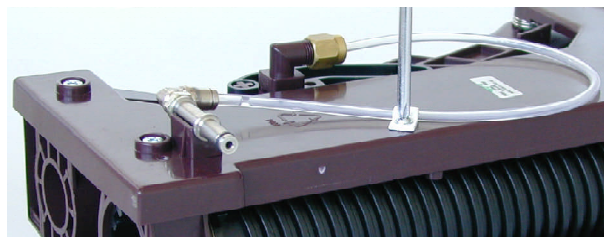
- Remove both screws of the holder.
- Remove the holder together with the screws.
- Remove the counter-holder.



This is only necessary when you dismantle the brewer.

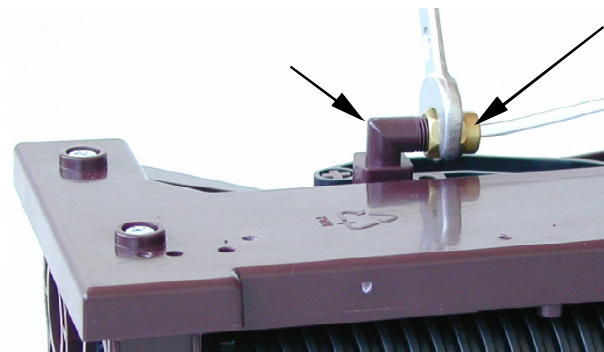


- Loosen the screws of the cable strap and remove them together with the cable strap.



- Carefully loosen the brass bush with a spanner.

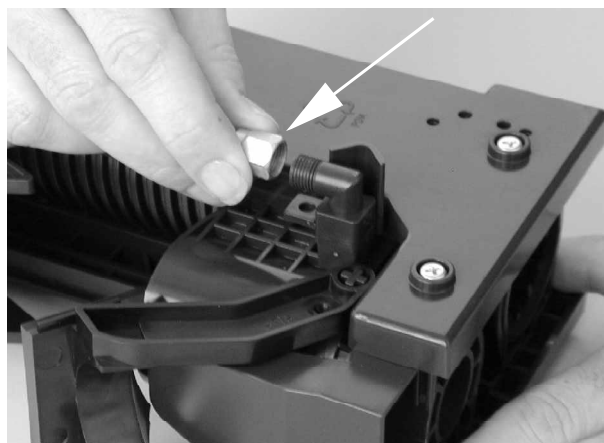
**Attention:** The elbow can be damaged. Make sure that you turn the brass bush slowly, since the elbow can otherwise break off.



- Loosen the brass bush by hand and remove the tube.
- Place the dismantled assemblies aside.

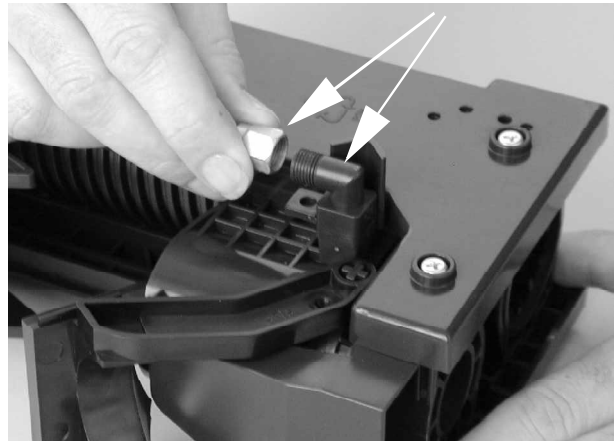


This is only necessary when you dismantle the brewing unit.



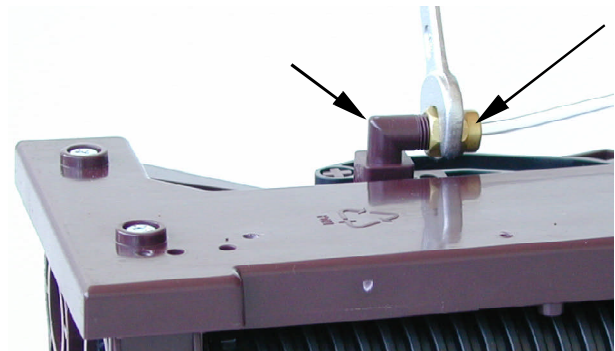
- Manually screw the brass bush of the new tube onto the elbow as far as possible.

**Attention:** The thread of the elbow can be damaged.  
Make sure that you screw the brass bush onto the elbow slowly without damaging the thread.



- Tighten the brass bush by 1/4 of a turn with a spanner.

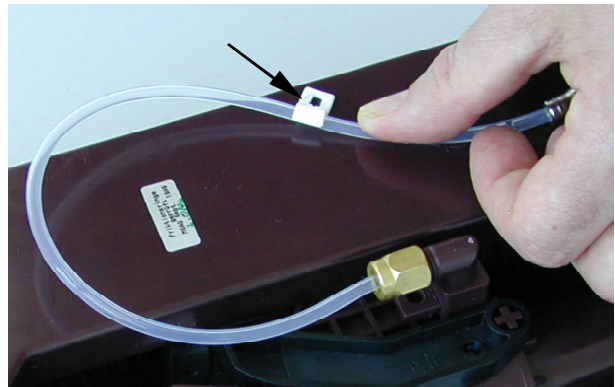
**Attention:** The elbow can be damaged.  
Make sure that you do not tighten the brass bush of the elbow too hard, since the elbow can otherwise break off.



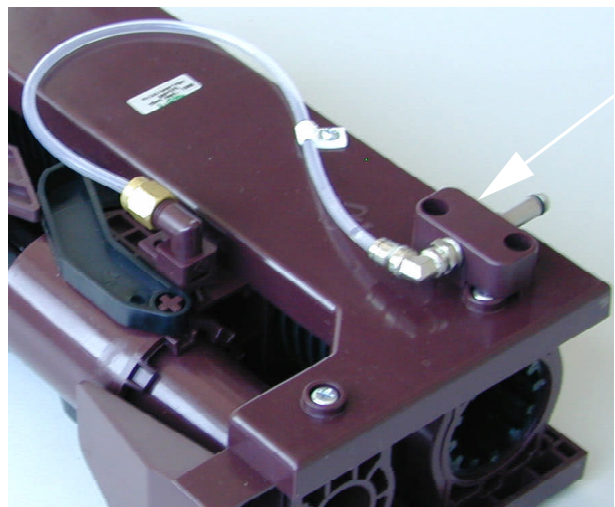
- Attach the cable straps and fasten with the screws.



If necessary, replace the cable strap.



- Attach the counter-holder and the holder, and tighten the screws.



### B.1.3 Replacing the swivel-part set

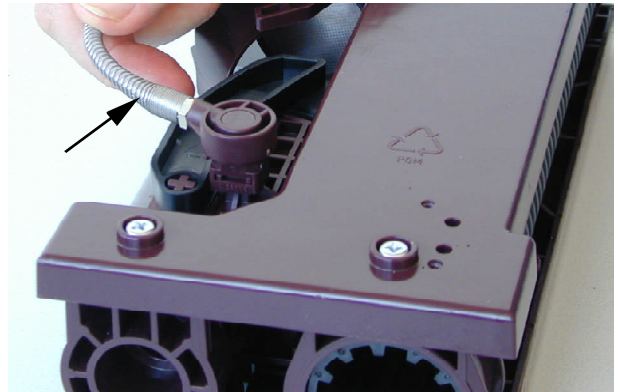


Applies to brewer 061199

- Turn the swivel-part set until the plastic nose comes to rest on the lock.
- Carefully remove the swivel-part set and place it aside.

**Attention:**      **Danger of damage to the swivel-part set.**  
                         **Make sure that you do not break off the stop nose of the swivel-part set during removal.**

- Place the new swivel-part set in the appropriate position on the valve spout.
- Turn the swivel-part set to the correct position.

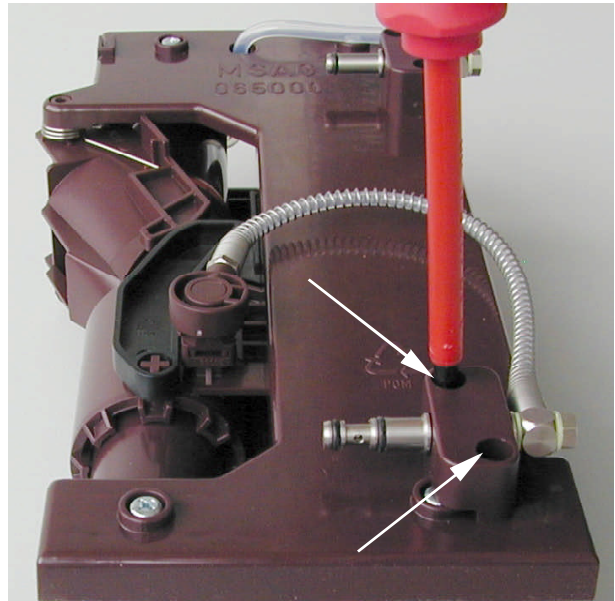


### B.1.4 Replacing the complete tube (062606)



Applies to brewer 062675

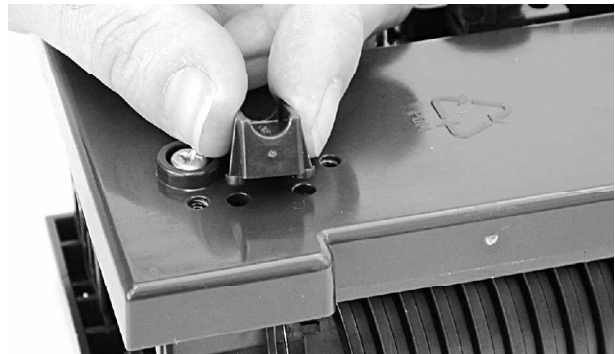
- Remove both screws of the holder.



- Remove the holder together with the screws.

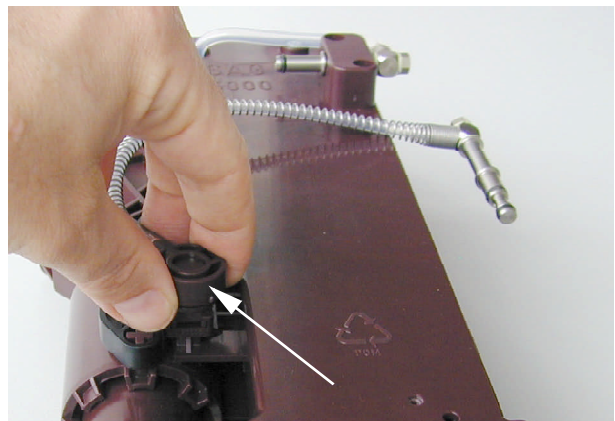


- Remove the counter-holder.



- Turn the complete tube until the stop nose of the swivel-part comes to rest on the lock.
- Carefully remove the complete tube and place it aside.

**Attention:**      **Danger of damage to the complete tube.**  
**Make sure that you do not break off the stop nose of the complete tube during removal.**



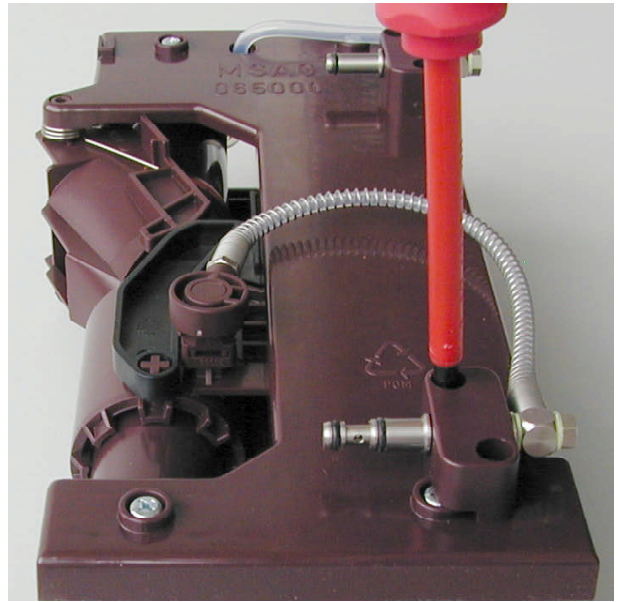


- Place the dismantled assemblies aside.



This is only necessary when you dismantle the brewer.

- Place a new complete tube in the appropriate position on the valve spout.
- Turn the complete tube to the correct position.
- Attach the counter-holder correctly.
- Attach the holder and tighten the screws.

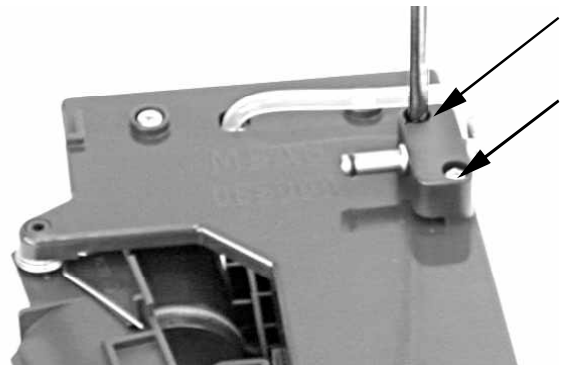


### B.1.5 Replacing the form tube (062026)

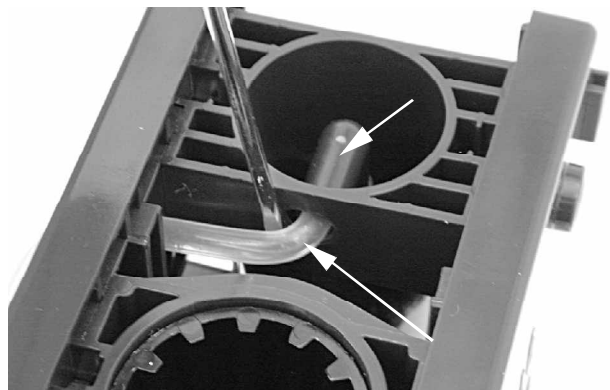


Applies to brewer 062675.

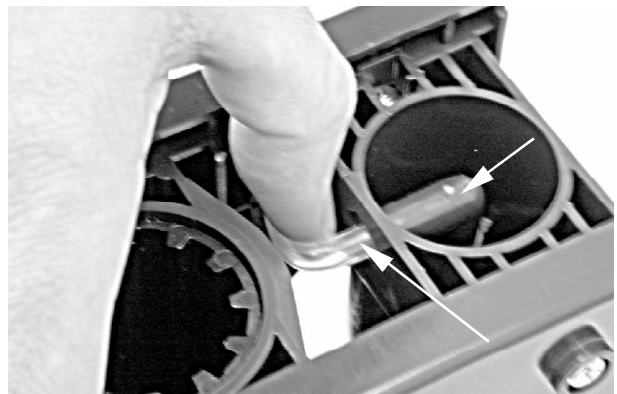
- Completely remove both screws.
- Remove the holder and counter-holder.



- Press the form tube out of the elbow with a screwdriver.



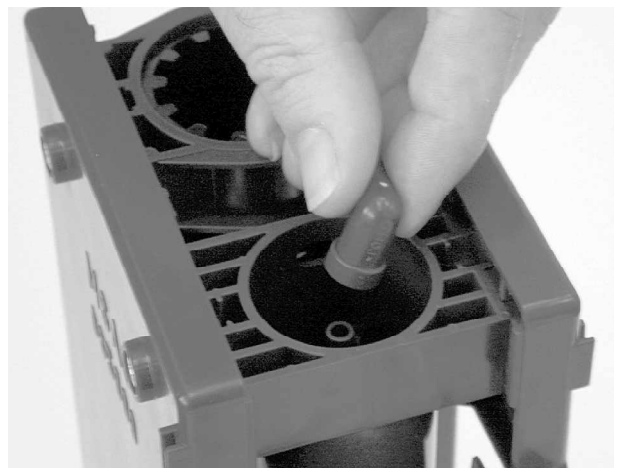
- Pull the tube completely out of the elbow.



- Remove the elbow from the central pipe.



This is only necessary when you dismantle the brewer or replace the O-rings.



- Pull off the O-ring from the central pipe.



Only necessary when you replace the O-rings.

- Place the dismantled assemblies aside.



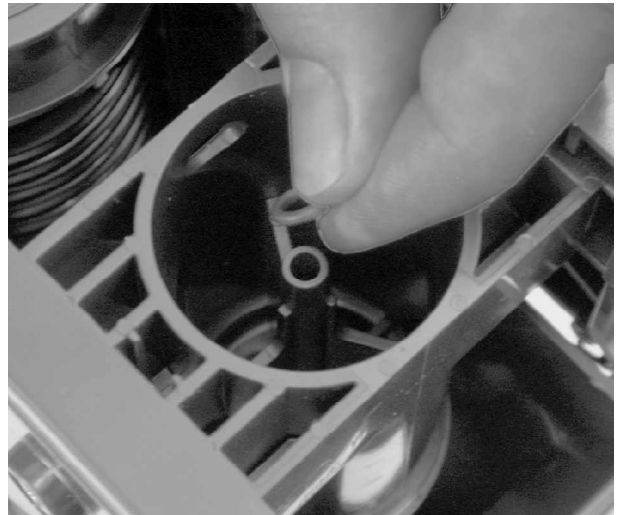
This is only necessary when you dismantle the brewer or replace the O-rings.

- Push the O-ring back onto the central pipe and attach the elbow.

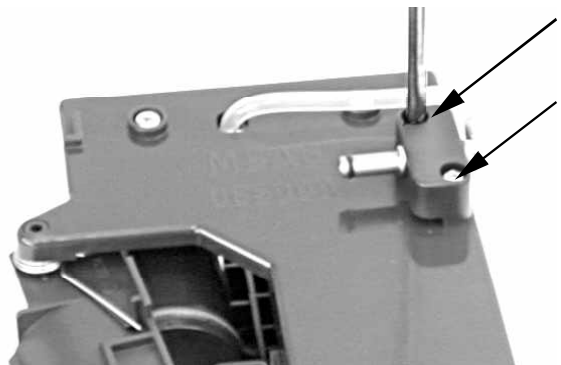
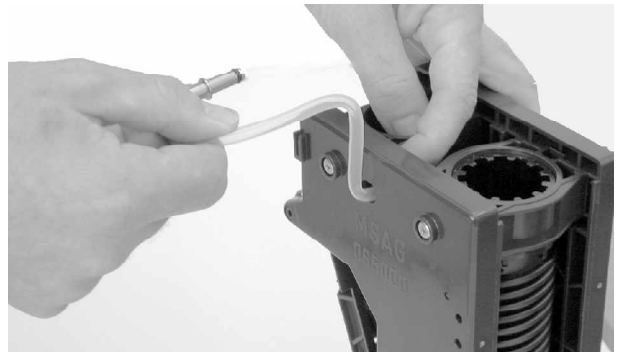


This is only necessary when you have dismantled the brewer or replaced the O-rings.

- Thread in a new form tube.
- Carefully push the new form tube into the elbow until it fits tightly.



- Place a new form tube on the counter-holder.
- Attach the holder and tighten the screws.

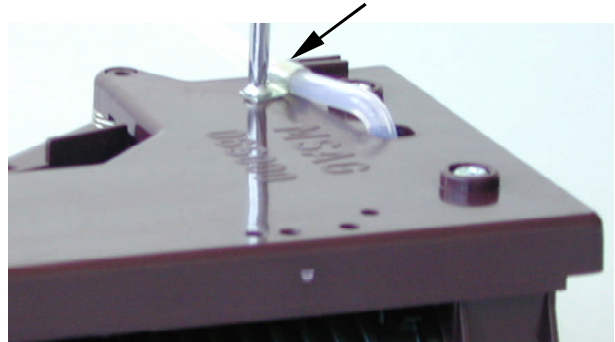


### B.1.6 Replacing the form tube

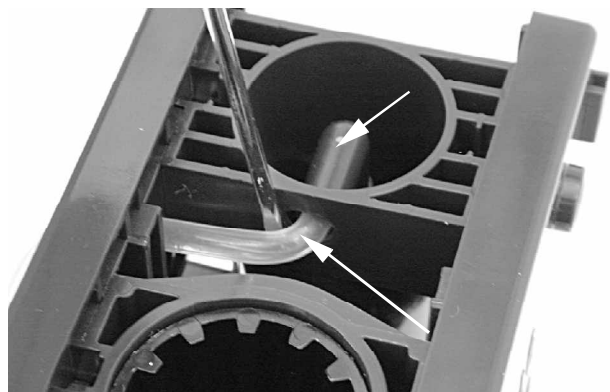


Applies to brewer 063732

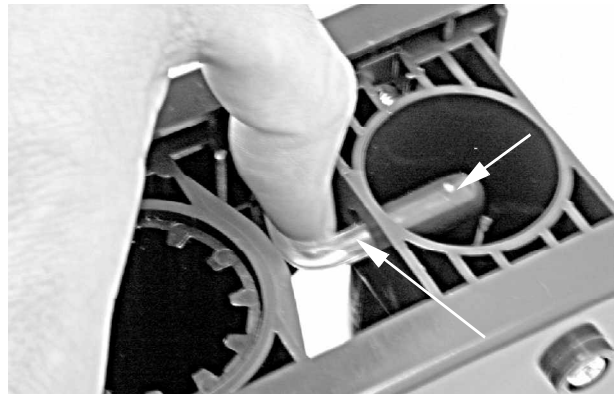
- Loosen the screws of the cable strap and remove them together with the cable strap.



- Press the form tube out of the elbow with a screwdriver.



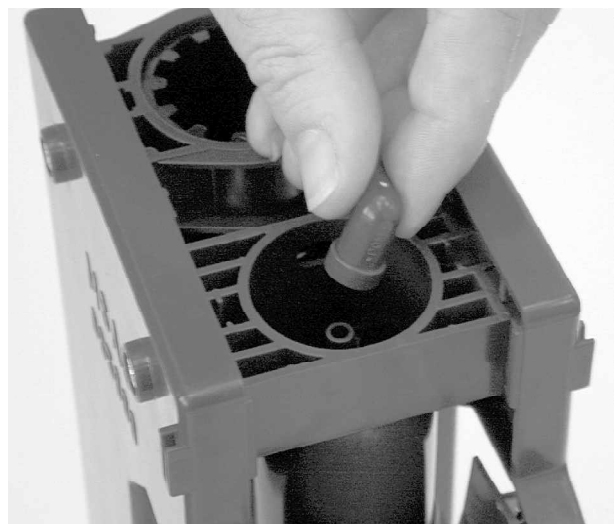
- Pull the form tube completely out of the elbow.



- Remove the elbow from the central pipe.



This is only necessary when you dismantle the brewer or replace the O-rings.





- Pull off the O-ring from the central pipe.



Only necessary when you replace the O-rings.

- Place the dismantled assemblies aside.



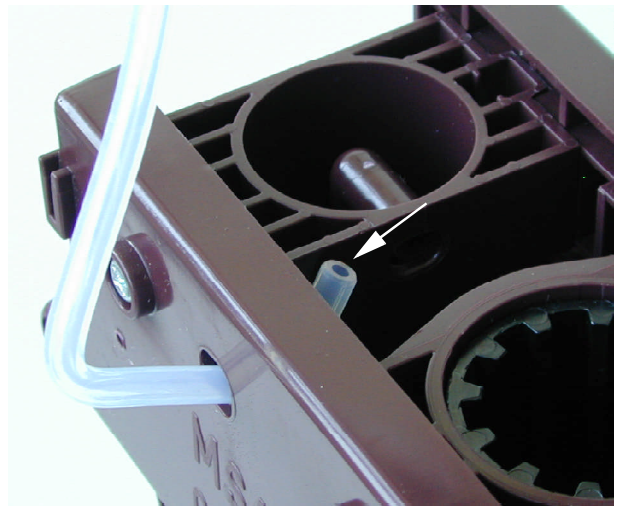
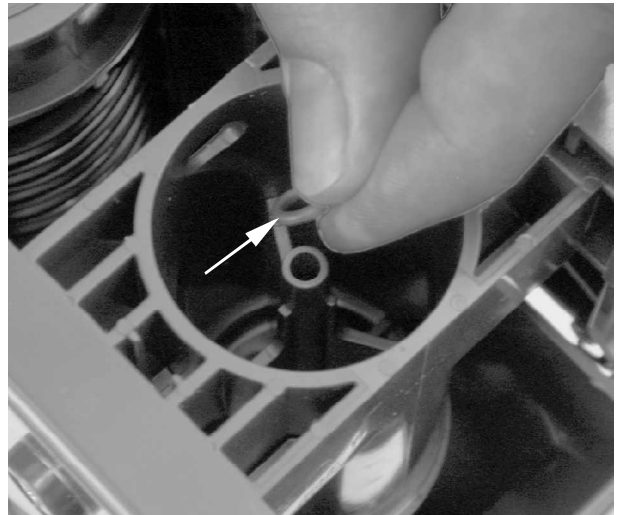
This is only necessary when you dismantle the brewer or replace the O-rings.

- Push the O-ring back onto the central pipe and attach the elbow.



This is only necessary when you have dismantled the brewer or replaced the O-rings.

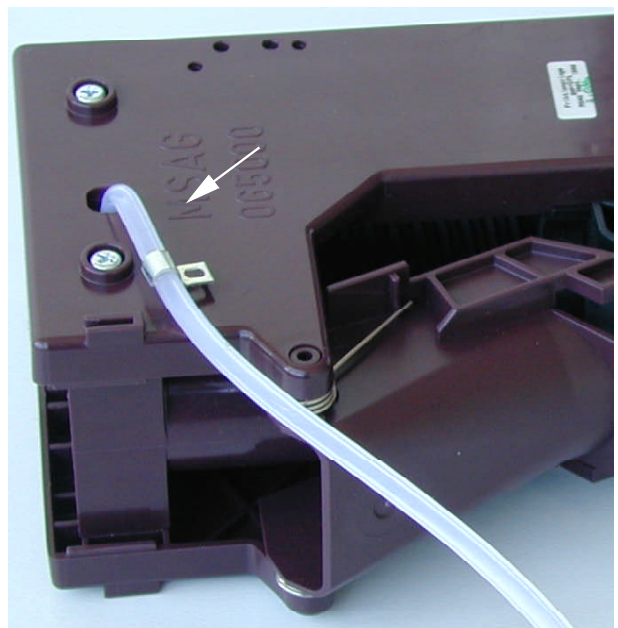
- Thread in a new form tube.
- Carefully push the new form tube into the elbow until it fits tightly.



- Attach the cable straps and fasten them with the screws.



If necessary, replace damaged cable straps.

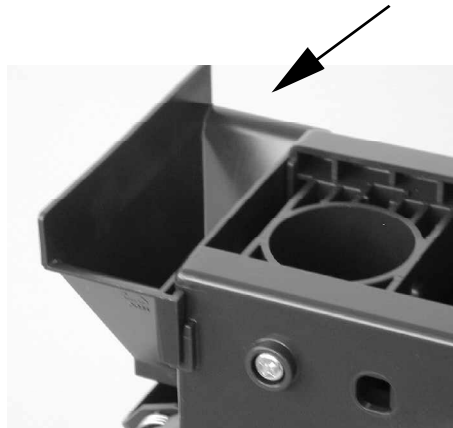


### B.1.7 Replacing the funnel tube



Applies to brewers 061199, 061203,  
063732

- Remove the faulty funnel tube and replace it with a new one.



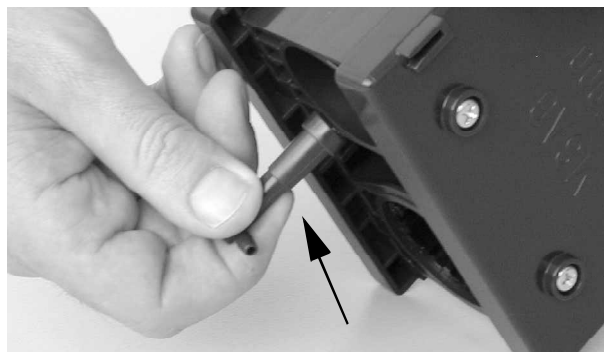
### B.1.8 Replacing the tube connection and ball



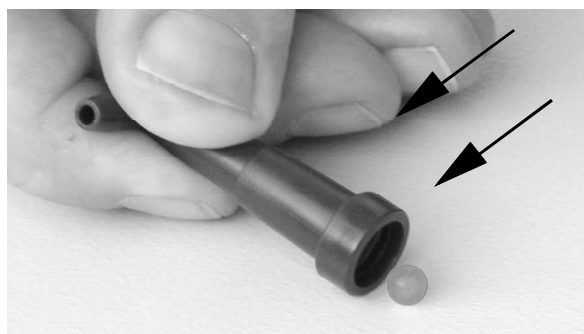
Applies to brewers 061199, 061107,  
061203, 065000

- Hold the tube connection in place and turn the brewer around.
- Remove the tube connection.

**Attention:**      **Loss of ball possible.**  
                         **Make sure that you do not lose**  
                         **the ball in the tube connection.**



- If necessary, replace the tube connection and ball.



- Pull off the O-ring from the central pipe.



Only necessary when you replace the  
O-rings.

- Place the dismantled assemblies aside.

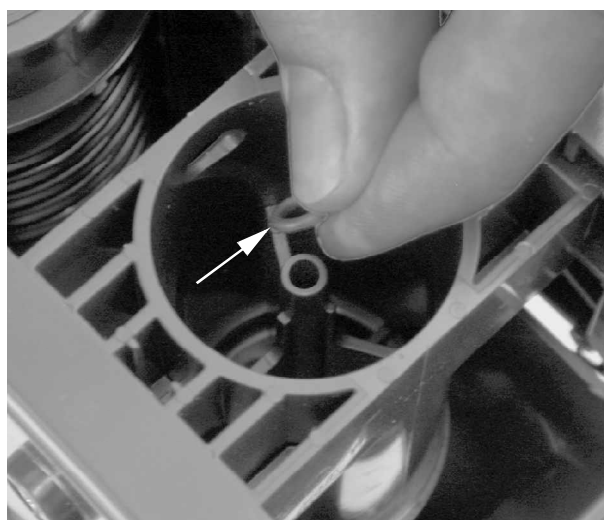


This is only necessary when you  
dismantle the brewer or replace the  
O-rings.

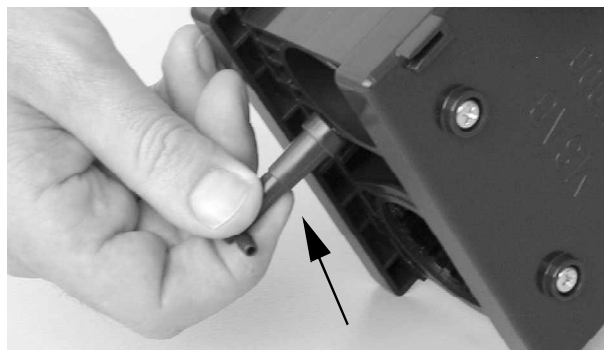
- Push the O-ring back onto the central pipe.



This is only necessary when you have  
dismantled the brewer or replaced the  
O-rings.



- Remount the tube connection with the ball.

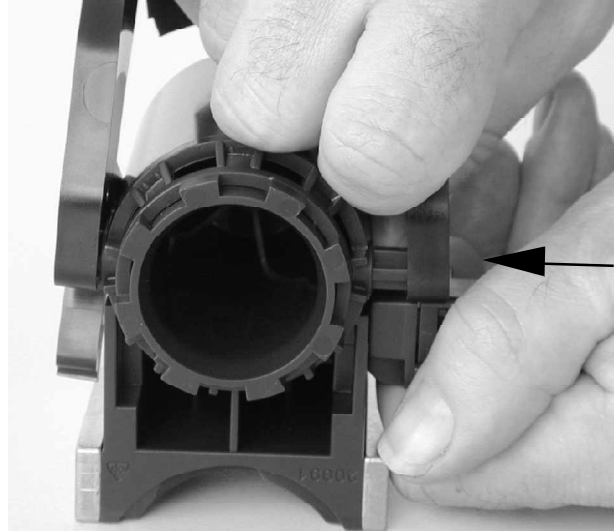


### B.1.9 Replacing scrapers

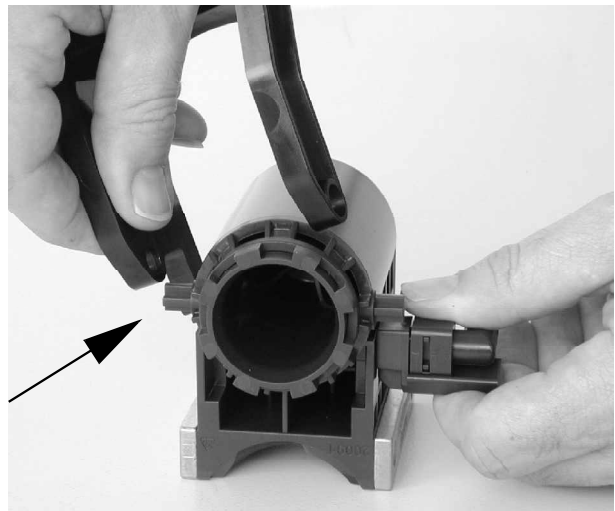


Applies to brewers 061199, 062675, 061107, 061203, 063732 and 065000

- Dismantle the brewer, see the chapter "Dismantling the main brewer unit".
- Carefully push the left scraper arm from the axle on the brewer cylinder.



- Carefully push the right scraper arm from the axle on the brewer cylinder.
- Remove the faulty scraper and mount the new scraper in reverse order.
- Remount the brewer, see the chapter "Mounting the main brewer unit".



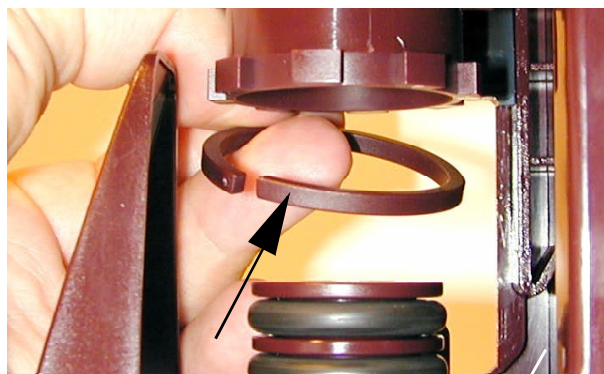
### B.1.10 Replacing the complete lower piston



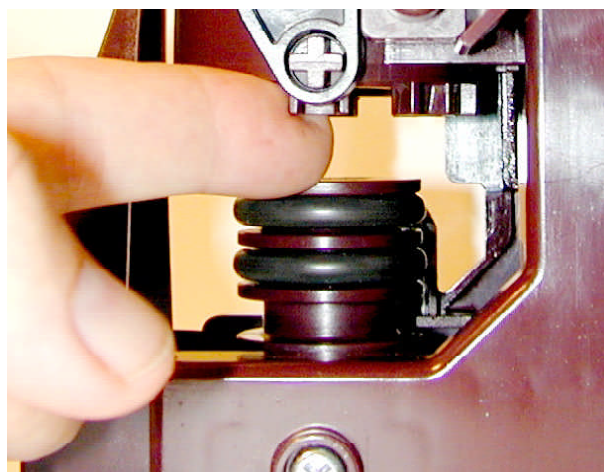
Applies to brewers 061199, 062675, 061107, 061203, 063732 and 065000.

- Carefully lift the plastic retaining ring over the fastening segments of the lower piston and remove it.

**Attention:**      **Danger of damage to the plastic retaining ring.**  
Make sure that you do not stretch the plastic retaining ring too far, since it can tear.



- Push up the complete lower piston and push the fastening segments through those of the brewer cylinder.



- Push up the complete lower piston through the brewer cylinder.
- Remove the complete lower piston.
- Slightly grease the O-ring of the new complete lower piston with a food-safe grease (067399) and insert the complete lower piston.
- Push the fastening segments of the complete lower piston through those of the brewer cylinder.
- Carefully pull the plastic retaining ring over the fastening segments.

**Attention:**      **Danger of damage to the plastic retaining ring.**  
Make sure that you do not stretch the plastic retaining ring too far, since it can tear.





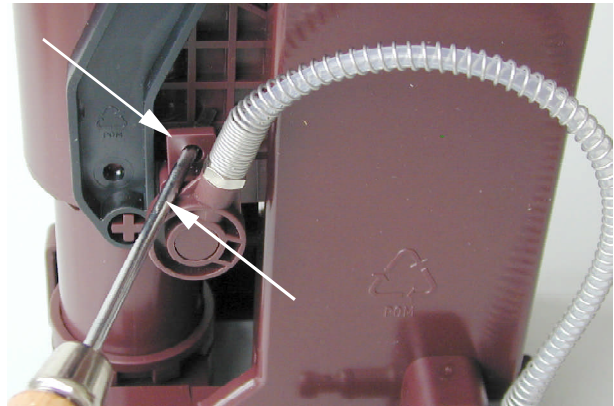
### B.1.11 Replacing the connecting piece and the lock



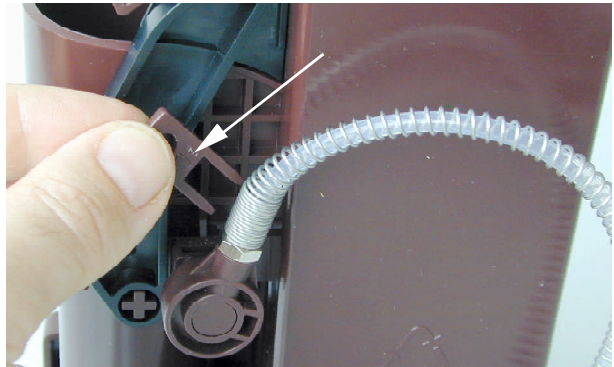
Applies to brewers 061199 and 062675.

- Press a small screwdriver through the opening in the lock, press against the brewer cylinder, and carefully lift out the lock upwards.

**Attention:**      **Danger of damage to the lock.**  
**Make sure that you do not damage the lock during removal.**



- Pull the lock out of the connecting piece and remove it.



- Remove the connecting piece with the O-ring and swivel-part set / complete tube.
- Remove the connecting piece with the O-ring from the swivel-part set / complete tube.

**Attention:**      **Danger of damage to the O-ring.**  
**When you use a new connecting piece, you must grease the O-ring slightly with a food-safe grease (067399).**

- Place a new connecting piece onto the swivel-part set / complete tube and carefully push it onto the guide.
- Place the lock into the connecting piece and carefully push it in.



**Attention:**      **Danger of damage to the lock.**  
**Make sure that you do not damage the lock when you push it in.**

### B.1.12 Replacing the elbow and the lock

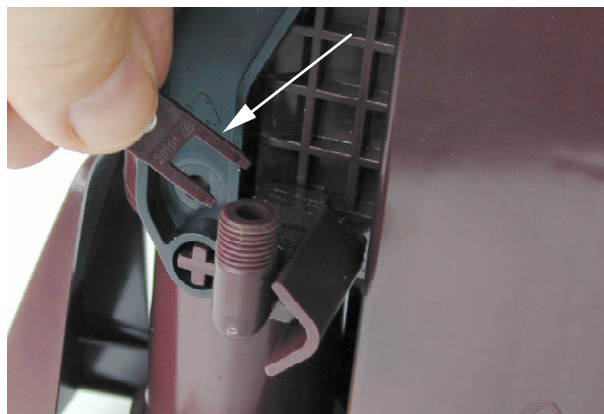
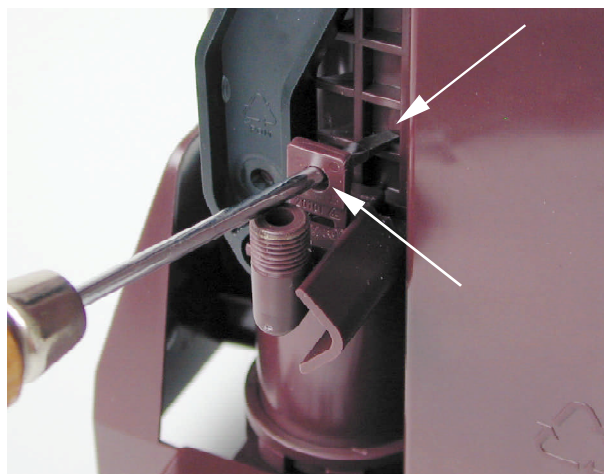


Applies to brewers 061107, 061203, 063732 and 065000

- Remove the complete tube / tube.
- Press a small screwdriver through the opening in the lock, press against the brewer cylinder, and carefully lift out the lock upwards.

**Attention:**      **Danger of damage to the lock.**  
                      **Make sure that you do not**  
                      **damage the lock during re-**  
                      **moval.**

- Pull the lock out of the elbow and remove it.

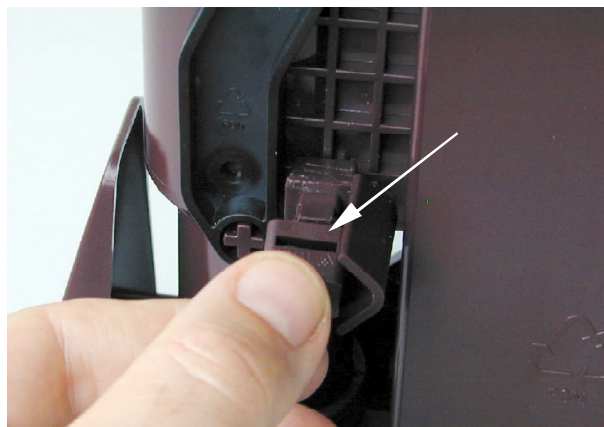


- Remove the elbow together with the O-ring and replace it with a new one.

**Attention:**      **Danger of damage to the O-**  
                      **ring.**  
                      **When you use a new angle,**  
                      **you must grease the O-ring**  
                      **slightly with a food-safe grease**  
                      **(067399).**

- Place the lock into the angle and carefully push it in.

**Attention:**      **Danger of damage to the lock.**  
                      **Make sure that you do not**  
                      **damage the lock when you**  
                      **push it in.**



- Insert the complete tube / tube.

### B.1.13 Replacing the switch cam



Applies to brewers 061107, 061203 and 065000.

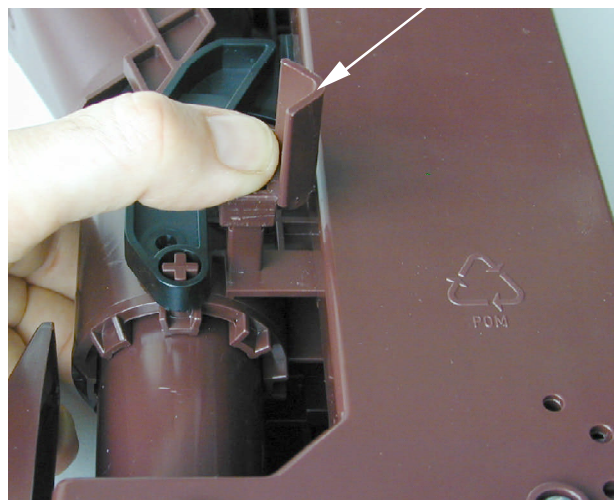
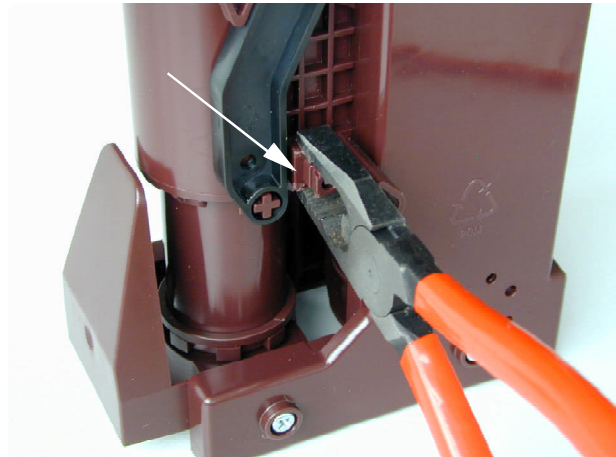
- Remove the complete tube / tube.
- Remove the elbow and the lock.
- Carefully pull the defective switch cam from the guide with a pair of flat pliers.

**Attention:**      **Danger of damage to the guide.**  
**Make sure that you do not**  
**damage the guide while pulling**  
**off the cam.**

- Check the lock and the elbow for damage and replace them as well if necessary.
- Warm up the new switch cam in a cup of warm / hot water for a few minutes.
- Put the new switch cam into the correct position and push it onto the holder as far as possible.
- Place the elbow without the O-ring onto the switch cam and push them onto the guide.
- Remove the elbow again, insert the O-ring, and attach them together.
- Place the lock into the elbow and carefully push it in.

**Attention:**      **Danger of damage to the lock.**  
**Make sure that you do not**  
**damage the lock when you**  
**push it in.**

- Insert the complete tube / tube.





## B.2 Dismantling and assembling brewers

### B.2.1 Dismantling the main brewer unit

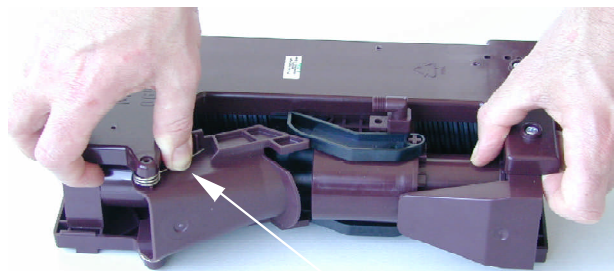


The activities described in the following apply in principle to all brewer models. Depending on the model, you may have to remove several of the following assemblies:

- Funnel tube
  - Tube connection with ball
  - Swivel-part set
  - Tube
  - Complete tube incl. fastening elements
  - Form tube incl. fastening elements
- Completely remove all four screws on the right side panel.



- Hold the spring in place with your thumb and remove the right side panel.
- Remove the funnel SCM (Small Coffee Maker) together with the two springs.



**Attention:**      **Danger of confusing the two springs.**  
**Make sure that you do not mix up the two springs.**  
**It is best to place them aside with the funnel SCM.**

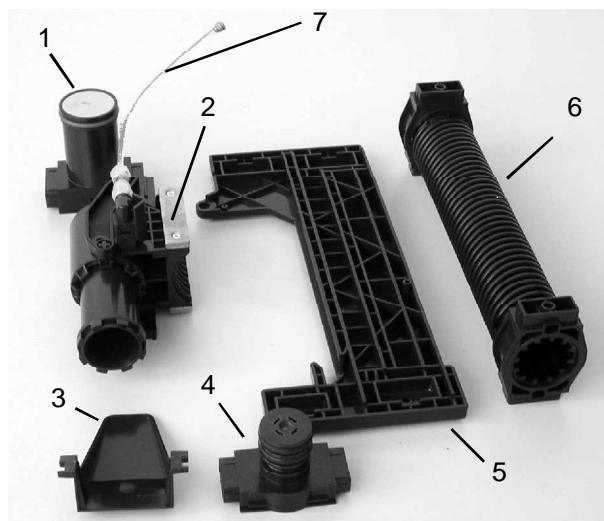
- Completely remove all four screws on the left side panel.



- Place the dismantled assemblies aside (the right side panel is not shown):
  - 1 Complete outlet piston incl. O-ring
  - 2 Brewer cylinder unit with tube
  - 3 Protection plate for the friction piston
  - 4 Complete friction piston
  - 5 Left side panel
  - 6 Complete spindle
  - 7 Tube



Depending on the used brewer model, the components may be different, components may be missing, or additional components may be present that are not shown here or not shown correctly.

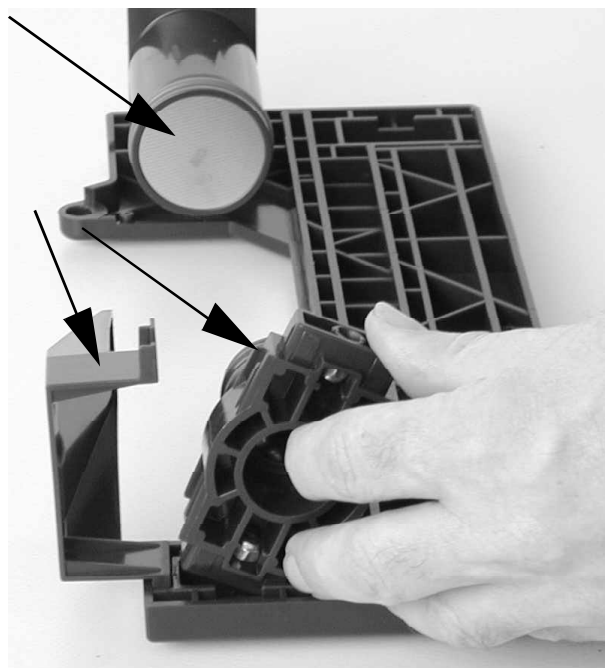


## B.2.2 Mounting the main brewer unit



The activities described in the following apply in principle to all brewer models. Depending on the model and its state, you may have to remove some of the following assemblies:

- Funnel tube
  - Tube connection with ball
  - Swivel-part set
  - Tube
  - Complete tube
  - Form tube
  - Complete outlet piston
  - Scraper
  - Complete lower piston
  - O-rings, see the chapter "Replacing O-rings"
  - Grease the spindle bearing with a synthetic grease (065303)
- Place the complete outlet piston onto the left panel and fasten it.
- Attention:**      **Danger of malfunction during operation.**  
With the brewer 061203 you may only use the outlet piston 061011 for a replacement.
- Place the protection plate for the friction piston onto the left side panel and fasten it together with the complete friction piston.



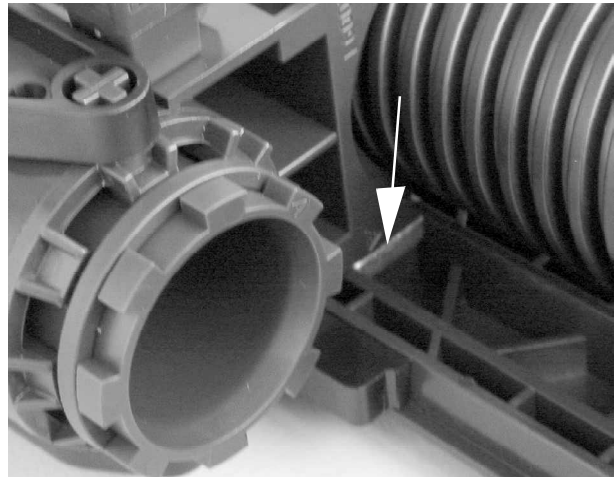
- Place the left side panel onto the spindle and fasten it with two screws.

**Attention:**      **The spindle can be damaged during operation.**  
Make sure that the side of the spindle is fastened to the sleeve ring.



- **Slightly grease** both aluminum guides of the brewer cylinder unit with a synthetic grease (065303).
- Place the brewer cylinder unit onto the spindle and tighten the two screws on the left side panel.

**Attention:**      **The spindle can be damaged. Make sure that the aluminum guide is correctly situated in the left side panel**



- Tighten all four screws of the left side panel until the parts are placed correctly, but still have some play.
- Turn the brewer around.
- Attach the right side panel and fasten it with the screws.



- Place the springs on the funnel.

**Attention:**      **Danger of funnel malfunction during operation. Make sure that the springs are placed on the correct sides (see illustration for position).**



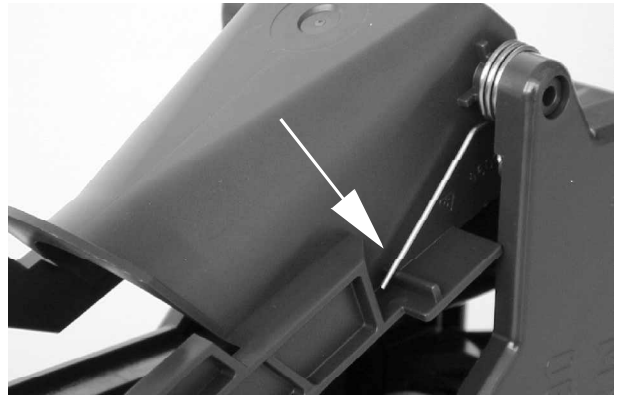
- Place the funnel together with the springs in the support of the side panels.

**Attention:**      **The side panels can be damaged. Make sure that you only pull the side panels so far apart that the funnel barely slides into the side-panel bearing.**

- Tip up the funnel and place the springs into the counter-holder of the side panels.



- Tip down the funnel and secure the springs on the corresponding bar.

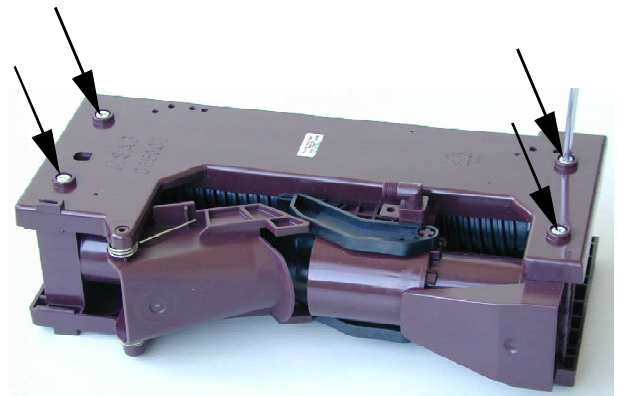


- Tighten all the screws of the two side panels and check for correct fit.



Depending on the model, remount the following assemblies:

- Funnel tube
- Tube connection with ball
- Swivel-part set
- Tube
- Complete tube
- Form tube



- Perform the mechanical function test.

### B.2.3 Performing the mechanical function test

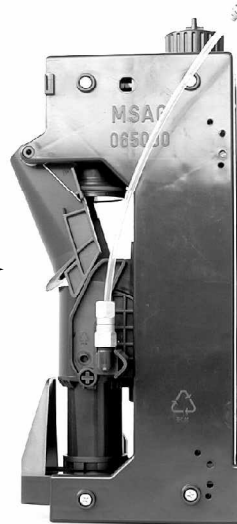


The function test is shown using brewer 061203 as an example.

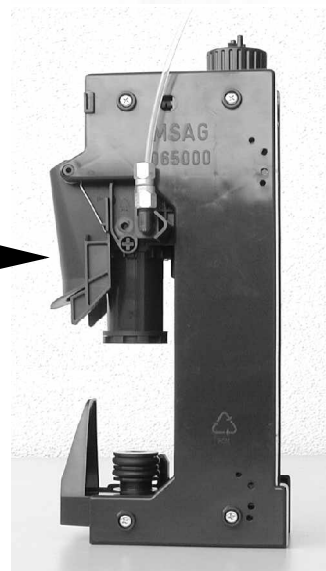
- Place the multitool on the brewer and move the piston all the way down.
- End position bottom, scraper fully swung out.



- Middle position, funnel swung in (filling position).



- End position top, end position of the brewer cylinder unit.



## B.3 Replacing the O-rings of the brewer



Individual O-rings are only replaced if they appear to be defective when you replace a brewer component.



Normally, all the O-rings of the brewer are replaced at the same time. For this purpose, the brewer must not necessarily be removed.



Normally, new O-rings are slightly greased with a food-safe grease (067399). Exceptions are marked accordingly.

### B.3.1 Replacing the O-ring of the complete outlet piston



Applies to all brewer models



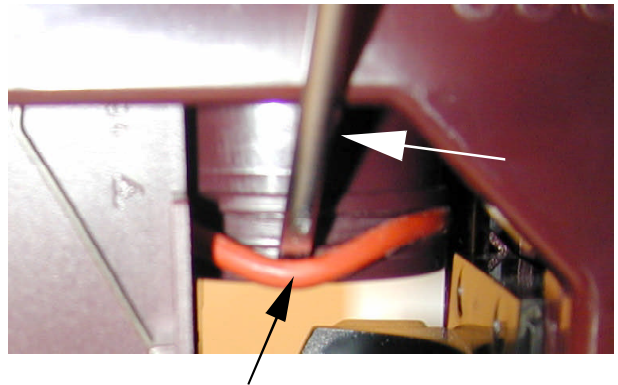
The procedure described in the following for the outlet piston can be used as the standard procedure.

- Press the O-ring together hard on both sides and push it towards the screwdriver at the same time.
- Carefully slide the screwdriver under the resulting arch of the O-ring.

**Attention:**      **Danger of damage to the new O-ring.**  
**Make sure that the screwdriver that you use does not have any sharp edges that could damage the new O-ring.**

- Lift out the O-ring from the groove with the screwdriver.
- Remove the entire O-ring.
- Grease the O-ring slightly with a food-safe grease (067399) and tighten it.

**Attention:**      **Danger of malfunction during operation.**  
**Make sure that the O-ring is correctly situated in the groove.**





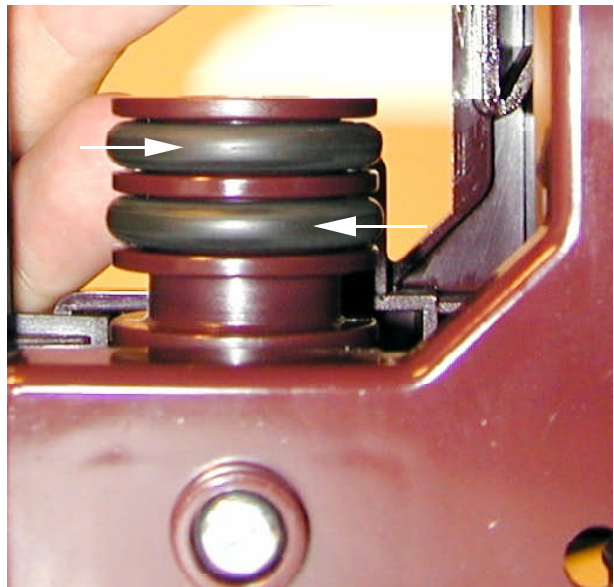
### B.3.2 Replacing the O-rings of the complete friction piston



Applies to all brewer models

- Remove both O-rings according to the standard procedure.
- Put on the new O-ring.

**Attention:**      **Danger of malfunction during operation.**  
Make sure that the O-ring is correctly situated in the groove.



### B.3.3 Replacing the O-ring of complete lower piston



Applies to all brewer models

- Remove the complete lower piston (see corresponding chapter).
- Remove the O-ring according to the standard procedure.
- Grease the new O-ring with a food-safe grease (067399) and push it on.


**Attention:**      **Danger of malfunction during operation.**  
Make sure that the O-ring is correctly situated in the groove.

- Remount the complete lower piston (see corresponding chapter).





### B.3.4 Replacing the O-rings of the connecting piece

 Applies to brewers: 061199 and 062675

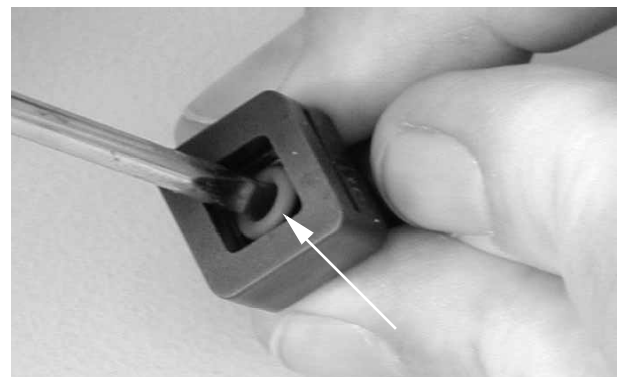
- Press the O-rings together and lift them out of the groove with a screwdriver.
- Lift out the second O-ring as well.
- Slightly grease the new O-ring with a food-safe grease (067399) and push it on.

**Attention:**      **Danger of malfunction during operation.**  
**Make sure that the O-rings are correctly situated in the groove.**



- Lift out the O-rings between the connecting piece and the guide with a small screwdriver.
- Slightly grease the new O-ring with a food-safe grease (067399), place it in the connecting piece.

**Attention:**      **Danger of malfunction during operation.**  
**Make sure that the O-ring is correctly situated in the connecting piece.**



- Place the connecting piece on the guide and secure it with the lock, see also the chapter "Replacing the connecting piece with the lock".

### B.3.5 Replacing the O-ring of the elbow

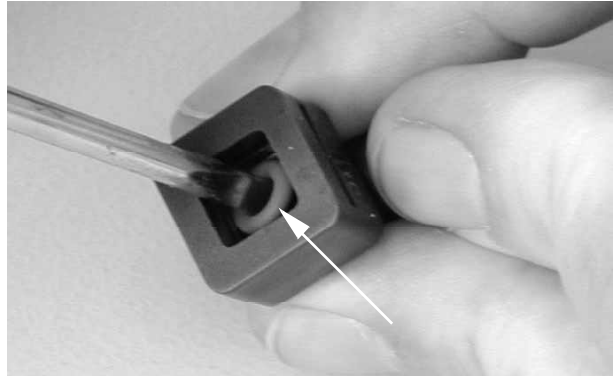


Applies to brewers: 061107, 061203 and 063732

- Lift out the O-rings between the elbow and the guide with a small screwdriver.
- Slightly grease the new O-ring with a food-safe grease (067399) and place it in the elbow.

**Attention:**      **Danger of malfunction during operation.**  
                         **Make sure that the O-ring is correctly situated in the angle.**

- Place the elbow on the guide and secure it with the lock, see also the chapter "Replacing the elbow with the lock".



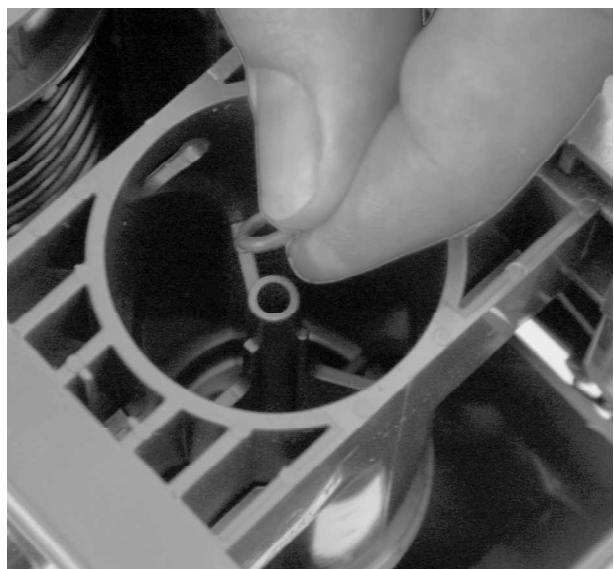
### B.3.6 Replacing the O-ring of the complete outlet piston (central pipe)



Applies to brewers: 061199, 062675, 061203 and 063732

- Pull off the O-ring from the central pipe.
- Grease the new O-ring with a food-safe grease (067399) and push it on.

**Attention:**      **Danger of malfunction during operation.**  
                         **Make sure that the O-ring is correctly situated on the central pipe.**



### B.3.7 Replacing the O-ring of the elbow



Applies to brewers: 062675 and 061203

- Remove the locking ring from the elbow.



- Remove the O-ring from the elbow with a small screwdriver
- Grease the new O-ring with a food-safe grease (067399) and push it into the elbow.
- Place the locking ring back onto the elbow.



### B.3.8 Replacing the O-rings of the complete tube (062606)



Applies to brewer 062675

- Press the O-ring together and lift it out of the groove with a blunt needle or a scribing needle.
- Remove the second O-ring as well.
- Grease the new O-rings with a food-safe grease (067399) and place them in the corresponding groove.

**Attention:**      **Danger of malfunction during operation.**  
                         **Make sure that the O-rings are correctly situated in the groove.**



### B.3.9 Replacing the O-ring of the complete form tube (062026)



Applies to brewer 062675

- Press the O-ring together and lift it out of the groove with a blunt needle or a scribing needle.
- Grease the new O-ring with a food-safe grease (067399) and place it in the corresponding groove.

**Attention:**      **Danger of malfunction during operation.**  
                         **Make sure that the O-ring is correctly situated in the groove.**



### B.3.10 Replacing the O-ring of the complete tube (062678)



Applies to brewer 063732

- Press the O-ring together and lift it out of the groove with a blunt needle or a scribing needle.
- Grease the new O-ring with a food-safe grease (067399) and place it in the corresponding groove.

**Attention:**      **Danger of malfunction during operation.**  
                         **Make sure that the O-ring is correctly situated in the groove.**





## TECHNICAL INFORMATION

TYPE NO <b>FB/IN 5100</b>	TYPE <b>Freshbrewer/Instant</b>	T.I.-NO <b>FB..06/00</b>				
SERIAL NUMBERS AFFECTED <b>From machine number 490296</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>					
SUBJECT <b>New insulation for hot water tanks</b>	ISSUED FOR (X): <table><tr><td>Action</td><td></td></tr><tr><td>Information</td><td><b>x</b></td></tr></table>		Action		Information	<b>x</b>
Action						
Information	<b>x</b>					

### COMPONENT CONCERNED

omitted: 39557400 Insulation  
39557500 Insulation  
39581500 Insulation  
39654300 Insulation  
+ double sided adhesive tape

new: 39581800 Insulation for 5100 water tank

### REASON:

- Mounting is easier and the quality is improved.

### CONTACT PERSON:

- Kasper L. Sørensen

31.08.00 DATE :	Charlotte Schreiner PRODUCED BY :	31.08.00 DATE :	Kasper L. Sørensen CHECKED BY :
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## TECHNICAL INFORMATION

TYPE NO <b>ES 5100</b>	TYPE <b>Espresso Machine</b>	T.I.-NO <b>ES.. 07/00</b>				
SERIAL NUMBERS AFFECTED <b>From machine no 489.134</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>					
SUBJECT <b>Improvements to ES5100</b>		ISSUED FOR (X): <table><tr><td>Action</td><td>x</td></tr><tr><td>Information</td><td>x</td></tr></table>	Action	x	Information	x
Action	x					
Information	x					

### COMPONENTS CONCERNED

Changed parts

- Software
- Outlet Pipe for Sugar - part No 39654100

New parts:

- Arm for cup carrier - part No 39274500
- Reducing plug for ES outlet - part No 39584300
- Hose from pump to flowmeter (l=750 mm) - part No 39496701

Obsolete part:

- Arm for cup carrier - part No 30742300
- Hose from pump to flowmeter (l=950 mm) - part No 39470501

### MODIFICATION:

- The software has been changed solving the problems
  1. Brewer blocking over weekend, when the machine is not in use.
  2. Rinse cycle with cleaning agent
  3. Low flow detection.
- The design of the outlet pipe for sugar has been improved
- The arm for cup carrier has been reduced by 15 mm for cup.
- A reducing plug has been mounted in the hole for the espresso outlet spout in the holder for outlet.
- The material of the hose from pump to flowmeter has been changed into a softer material to reduce the vibrations

"Release note" enclosed.

P. 01/04

28.08.00 DATE :	Grete Jensen PRODUCED BY :	28.08.00 DATE :	William Lisby CHECKED BY :
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# TECHNICAL INFORMATION

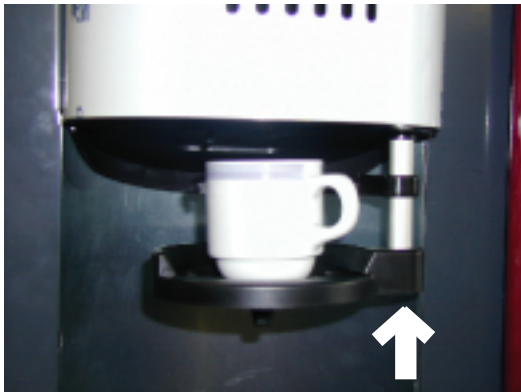
TYPE NO <b>ES 5100</b>	TYPE <b>Espresso Machine</b>	T.I.-NO <b>07/00</b>
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**REASON:**

- New software to solve problems. (see enclosed "release note").
- The outlet pipe for sugar has been provided with a collar to show how far the hose has to be mounted on the pipe. Simultaneously the angle towards the tube has been straightened a bit to prevent sugar from building up inside tube.



- When using small cups, the cup carrier can be pushed higher upwards in order to prevent sugar spillage around the cup.





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- As the dispensing angle to a small cup caused the coffee flow to be directed outside the cup, a reducing plug for the holder for outlet pipes has implemented. The plug is fitted in the hole for the espresso coffee outlet.

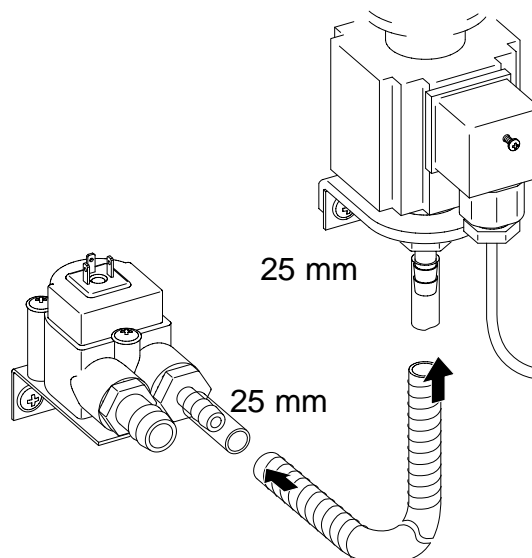
The plug straightens up the spout for the espresso outlet in such a way that the coffee is directed vertically down into the cup.



- The material of the hose from the pump to the flowmeter has been changed into a softer material in order to reduce the vibrations in relation with water dosing. This should prevent that less espresso water than the actual setting is dosed.

### REPLACEABILITY

- The reducing plug can simply be removed, if a oblique coffee outlet is wanted.
- For replacement of hose from pump to flowmeter:
  - cut old hose, leaving 25 mm in both ends to form couplings for new hose.
  - mount new hose on the 25 mm parts of the old hose left on the hose couplings.





## TECHNICAL INFORMATION

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- For existing machine a modification kit has been made.

This kit consists of:

- Arm
- Hose
- EPROM
- Reducing plug
- Outlet pipe for sugar

} Part No: 75197800

### CONTACT PERSON:

Software:

Kim Dalgaard Andersen

Technical:

William Lisby

Spare Parts

Customer Service

Dear Sir

We have released new software for ES5100. The release includes a new version of the following program(s):

<b>Program Type</b>	<b>Version</b>	<b>Check Sum</b>
VMC-5100	ES400331	3579

If the release includes more than one program type, all the program types in the release must be replaced when replacing programs in installed machines.

The below procedure must be followed when making copies.

1. The check sum of the master E-prom must be checked before copies are made.
  2. For each set of copies which is programmed at a time, the check sum for at least one of the copies must be checked.
-

**ES 5100 software:****1. Brewer blocking over weekend, when the machine is not in use.**

To solve this problem the software has been modified as follows. The brewer will run a complete brew cycle without water and coffee, when the machine has been in standby for 4 hours. This is repeated each 4 hours in standby. By doing this air will be pressed through the filter plate and the outlet restriction. This prevents that coffee is left in the filter plate and the outlet restriction to dry out and thus blocking the brewer.

The time setting of 4 hours can be changed by reading in the following VIDTS record:

**MC5\*LAST\*33@0\*\*\*\*\***(interval in hour) legal values = 0,1,2, ....

(if set to 0 the air rinse cycle runs for the first time during start up, the interval is 1 hour. The upper limit is 65000 hours, setting this value will in praxis turn the function off).

**Ex: MC5\*LAST\*33@0\*\*\*\*\*2** sets the interval to 2 hours

**2. Rinse cycle with cleaning agent**

The function "Rinse brewer with stop" has now been released for the ES 5100. It is placed in the Rinse menu, at the same place as the corresponding function in the FB 5100. If the function fails due to low or no water flow the error message "Rinse failed! restart !" is shown in the display and the function is aborted. In this case the brewer has to be cleaned manually and the rinse cycle has to be restarted in order to ensure that all the remains of the cleaning agent is flushed away from the brewer.

**3. Low flow detection**

The low flow detection has been changed in order to make it less sensitive. Low flow detection is now triggered if the flow is less than 1 ml/sec for 5 seconds. In the previous version it was less than 1 ml/sec for 1 sec.

Yours sincerely  
Wittenborg A/S

Kim Dalgaard Andersen



# TECHNICAL INFORMATION

TYPE NO <b>FB 5100</b>	TYPE <b>Freshbrewer</b>	T.I.-NO <b>08/00</b>												
SERIAL NUMBERS AFFECTED		ISSUED BY <b>Documentation/ Wittenborg Odense</b>												
SUBJECT <b>New Manuals</b>		ISSUED FOR (X): <table border="1"><tr><td>Action</td><td></td></tr><tr><td>Information</td><td><b>x</b></td></tr></table>	Action		Information	<b>x</b>								
Action														
Information	<b>x</b>													
<p><b>MODIFICATION:</b></p> <ul style="list-style-type: none"><li>From the weeks mentioned below "Document" type the following manuals are available:</li></ul> <p><b>REASON:</b></p> <ul style="list-style-type: none"><li>Standardization of Manuals.</li></ul> <table border="1"><thead><tr><th>Machine Version</th><th>Document</th><th>Language</th><th>Part Number</th></tr></thead><tbody><tr><td>FB 5100</td><td>Quick Reference Guide (available from week 37 - 2000)</td><td>SF</td><td>75508000</td></tr><tr><td>FB 5100</td><td>Operator Manual (available from week 37 - 2000)</td><td>SF</td><td>75508100</td></tr></tbody></table> <p><b>CONTACT PERSON:</b></p> <ul style="list-style-type: none"><li>Charlotte Schreiner</li></ul>			Machine Version	Document	Language	Part Number	FB 5100	Quick Reference Guide (available from week 37 - 2000)	SF	75508000	FB 5100	Operator Manual (available from week 37 - 2000)	SF	75508100
Machine Version	Document	Language	Part Number											
FB 5100	Quick Reference Guide (available from week 37 - 2000)	SF	75508000											
FB 5100	Operator Manual (available from week 37 - 2000)	SF	75508100											
08.09.00 DATE : PRODUCED BY :		08.09.00 DATE : CHECKED BY :												

## TECHNICAL INFORMATION

TYPE NO <b>ES/IN 5100</b>	TYPE <b>Espresso/Instant Machine</b>	T.I.-NO <b>ES/IN.. 09/00</b>				
SERIAL NUMBERS AFFECTED <b>From machine no 489.134</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>					
SUBJECT <b>Improvements to ES/IN 5100 Crème Kit</b>	ISSUED FOR (X): <table><tr><td>Action</td><td>x</td></tr><tr><td>Information</td><td>x</td></tr></table>		Action	x	Information	x
Action	x					
Information	x					

### COMPONENTS CONCERNED

New parts:

- Reducing plug for Crème Kit outlet - part No 39583400

### MODIFICATION

- A reducing plug has been mounted in the hole for the Crème Kit outlet spout in the holder for outlet.

### REASON

- As the dispensing angle to the cup caused the coffee flow to be directed outside the cup, a reducing plug for the holder for outlet pipes has been implemented. The plug is fitted in the hole for the Crème Kit coffee outlet.



The plug straightens up the spout for the Crème Kit outlet in such a way that the coffee is directed vertically down into the cup.

### REPLACEABILITY

- The reducing plug can simply be removed, if an oblique coffee outlet is wanted.

### CONTACT PERSON

- Bettina Rasmussen

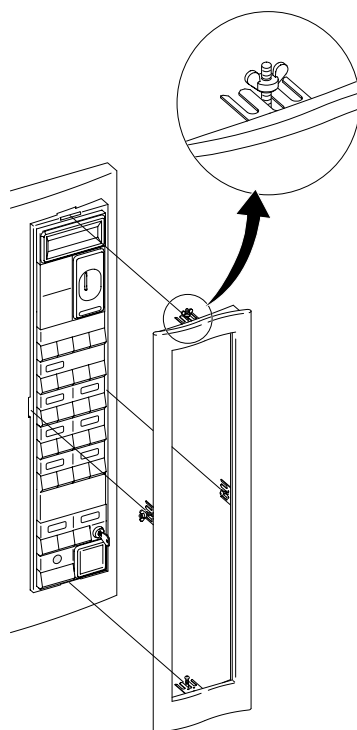
28.09.00 DATE :	Charlotte Schreiner PRODUCED BY :	28.09.00 DATE :	Bettina Rasmussen CHECKED BY :
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## TECHNICAL INFORMATION

TYPE NO <b>FB/IN/ES 5100</b>	TYPE <b>Freshbrewer/Instant/Espresso</b>	T.I.-NO <b>FB/IN/ES..10/00</b>	
SERIAL NUMBERS AFFECTED <b>From machine number 492094</b>		ISSUED BY <b>Documentation/ Wittenborg Odense</b>	
SUBJECT <b>Machines delivered without colour panel</b>		ISSUED FOR (X):	
		Action	
		Information	<b>x</b>

### COMPONENT CONCERNED

- Thumb nuts, washers and screws for fastening the colour panel.



### MODIFICATION

- For machines delivered without the colour panel, the thumb nuts, washers and screws are now packed into the waste bucket.

### REASON

- Until now the a.m. parts were mounted on the machine, but during transport the parts fell off.

### CONTACT PERSON

- Charlotte Vilmand

27.09.00	Charlotte Schreiner	27.09.00	Charlotte Vilmand
DATE :	PRODUCED BY :	DATE :	CHECKED BY :

## TECHNICAL INFORMATION

TYPE NO <b>FB 5100</b>	TYPE <b>Freshbrewer</b>	T.I.-NO <b>FB 05/00</b>
SERIAL NUMBERS AFFECTED <b>From machine No 493339</b>	ISSUED BY <b>Documentation/ Wittenborg Odense</b>	
SUBJECT <b>Suspension plate for brewer</b>	ISSUED FOR (X):	
	Action	<b>X</b>
	Information	<b>X</b>

### COMPONENTS CONCERNED

Omitted: **30693700** Suspension plate for brewer - standard model

New: **30878700** Suspension plate for brewer - standard model

### MODIFICATION

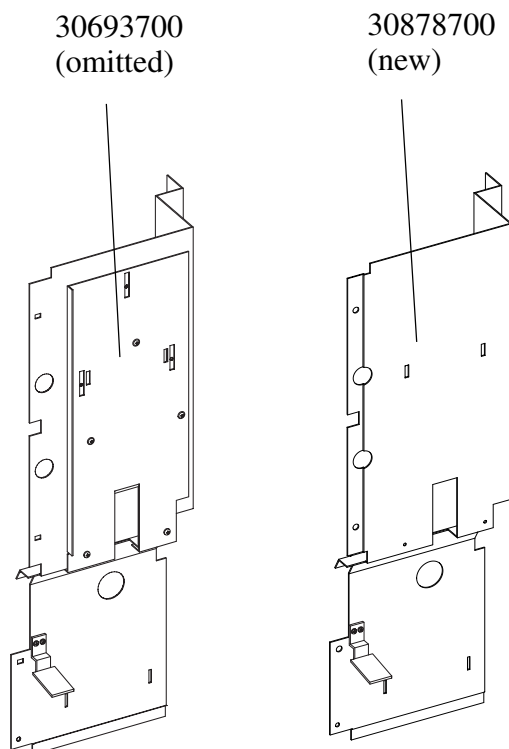
- Suspension plate for brewer **30693700 (standard)** - used in FB models - will be replaced by suspension plate for brewer **30878700 (standard)**.

### REASON

- Product improvement

### CONTACT PERSON

- Kasper Sørensen



24.10.00 DATE :	Charlotte Schreiner PRODUCED BY :	24.10.00 DATE :	Kasper L. Sørensen CHECKED BY :
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