

# o cino

xm 180 bono

Operating manual

Version 4 10/2004

Software version XMED 1D onwards / 29.10.2003







# A

## A wide variety of coffee specialities

Hot drink systems without Cappuccino are today almost unthinkable. First of all the site and taste of wide variety of coffee specialities cheer up of the consumers and thus revs up the turnover. In the A.R.T. system you can find the following range :

- Cappuccino
- Cappuccino Extra
- MoccaCino
- Café Au lait
- Espresso
- etc.

# R

## Recipe step program

The high quality of drinks produced with the A.R.T. system can be achieved only with the aid of finely tuned step production program. Coffee, topping/whitener, chocolate and fine filtered hot water are step by step transformed into creamy drinks. Each speciality of coffee has its independent step-by-step production.

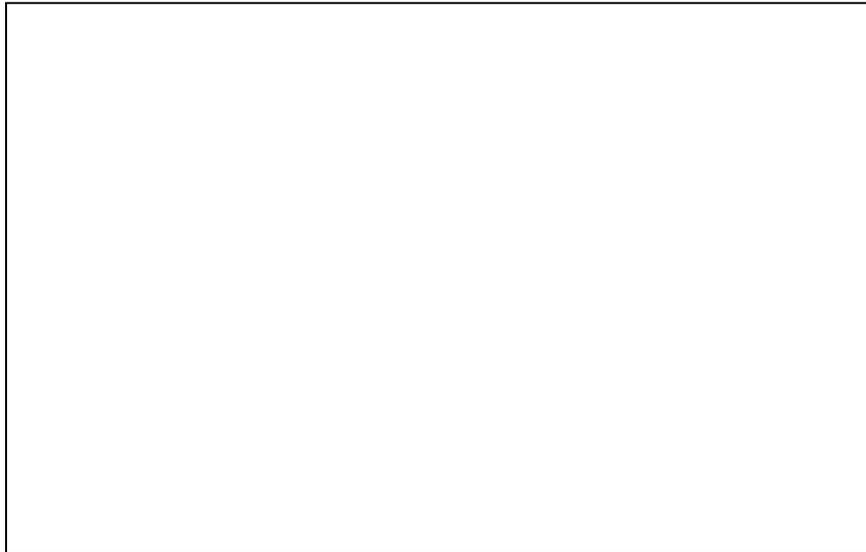
# T

## Technical quality control

Our electronic module "E-Prom" guards A+R. The service agent can adjust the feed for some more/less water/product depending upon the customer's the hearts requirement. He however does not have any access to R – recipe step production.

Conclusion:  
The A.R.T. program guarantees a consistent quality of drinks, the level of which is simply determined by the quality of products used.

**This operating manual is meant for the following machine**



**Identification label of your machine**

**This manual is an integral part of the machine and must always be available in the vicinity of the machine for reference, till such time as the machine gets disposed off**

If the manual gets misplaced or damaged, for reordering you must provide the identification data given on the rating plate of the machine to the manufacturer.

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## 1. Important notes

### 1.1

#### Details concerning the quality

	<ul style="list-style-type: none"> <li>◦ <b>The quality</b> of the machine is intended only for production with coffee, cocoa, tee or other such drinks the machine is meant for.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>The typical application</b> is as vending machine for customers, guests and employees.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>The installation, filling-up and cleaning</b> must be done according to the specifications given in this manual, by our technical partner's staff properly trained by servomat steigler.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>For changing the quality of coffee, or the product quality</b>, a readjustment by servomat's technical partner is a necessary prerequisite.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>The machine must be installed</b> in a dry, closed room free of any external environmental effects (e.g. strong vibration).</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>The size and capacity</b>, and the associated filling-up/cleaning and servicing costs of XM model are intended for up to 60 portions per day, maximum 43200 portions in 24 months.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ If the machine is filled up and cleaned by <b>untrained staff</b> an extensive induction by technical partner of servomat is absolutely necessary.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ The manufacturer will not bear any liability for damage caused by <b>acts of vandalism</b> or improper handling (e.g. manipulation attempts with coins, tokens, cashless means of payment ).</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>Wear parts</b> are those parts which undergo a natural wear and tear or have a normally limited serviceable life. These parts can fail during the statutory period of limitation applicable for claims, i.e. 24 months. However, in legal terms this is not to be seen as a defect. Following parts are covered here:  O-rings/lighting devices/V-rings/grinding disk/mixing motors/valves and water heating elements in case of calcification.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>The use of water softeners/ filters</b>, such as BRITA-water filter is strongly recommended at installation sites where water hardness is more than 9° degree according to German standards. Considerable functions of our coffee machine are directly linked to the water conveying parts, such as valves, boiler, heating elements.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>Regular servicing</b> must be done according to the enclosed checklist (minimum twice a year, however, after every 6000 portions). During servicing wear parts must be replaced according to the enclosed list in order to ensure overall functioning.</li> </ul>	
	<ul style="list-style-type: none"> <li>◦ <b>The guidelines for cleaning and hygiene</b> given this manual must be followed in order to ensure flawless functioning of our machine.</li> </ul>	
	<p>Beimerstetten, 01.01.2002 Text contents are protected by copyright.</p>	

# 1. Important notes

## Servicing checklist

**1.2**

Following jobs must be performed within the purview of maintenance guidelines:		
Which parts?	What must be done?	
<b>Hard water supply</b>	<ul style="list-style-type: none"> <li>- Check inlet valve and connections</li> <li>- Replace the water filter cartridge for hard water</li> </ul>	
<b>Boiler</b>	<ul style="list-style-type: none"> <li>- Dismantle and clean the boiler, decalcify if necessary</li> <li>- Replace boiler cover gaskets</li> <li>- Clean temperature sensor, decalcify if necessary</li> </ul>	
<b>Valve block</b>	<ul style="list-style-type: none"> <li>- Dismantle and clean the valve block, decalcify if necessary</li> <li>- Replace plungers of all outlet valves</li> </ul>	
<b>Grinder and portioning unit</b>	<ul style="list-style-type: none"> <li>- Clean grinder and replace grinding disks</li> <li>- Clean and check the portioning unit</li> </ul>	
<b>Brewer</b>	<ul style="list-style-type: none"> <li>- Remove and clean the brewer</li> <li>- Replace sieve and plunger O-rings</li> </ul>	
<b>Mixing units</b>	<ul style="list-style-type: none"> <li>- Replace and clean the bowls</li> <li>- Replace the mixer flange O-rings</li> <li>- Replace the mixer motor V-rings</li> <li>- Replace the O-rings of mixing bowl bush</li> <li>- Replace the mixer disks</li> <li>- Inspect mixer motors, replace if necessary</li> </ul>	
<b>Tumbler station and tumbler dispensing area</b>	<ul style="list-style-type: none"> <li>- Clean photoelectric barrier in the tumbler station</li> <li>- Clean the photoelectric barrier for cup detection (if present)</li> <li>- Test the functioning of the tumbler station</li> <li>- Clean tumbler arm and tumbler dispensing area</li> </ul>	
<b>Fan</b>	<ul style="list-style-type: none"> <li>- Dismantle the fan and clean</li> <li>- Dismantle the fan channel and clean</li> <li>- Dismantle the fan duct and clean</li> </ul>	
<b>Product container</b>	<ul style="list-style-type: none"> <li>- Inspect the products, clean the product containers if necessary</li> <li>- Clean the product chutes</li> </ul>	
<b>Drip pan and coffee set container</b>	<ul style="list-style-type: none"> <li>- Empty the drip pan and clean</li> <li>- Check float function</li> <li>- Clean coffee set container</li> </ul>	
<b>Payment / coin acceptor unit</b>	<ul style="list-style-type: none"> <li>- Inspect and clean the payment system/ coin acceptor</li> </ul>	
<b>Water and electrical plug connections</b>	<ul style="list-style-type: none"> <li>- Inspect all water and electrical plug connections</li> </ul>	
<b>Portioning, temperature and functioning</b>	<ul style="list-style-type: none"> <li>- Check portioning of water and product</li> <li>- Check degree of grinding of coffee, adjust if necessary</li> <li>- Check the temperature</li> <li>- Final inspection and test run, coin acceptance if necessary</li> </ul>	

## 2. Cleaning instructions

### 2.1

#### General cleaning instructions

You can broaden the scope of cleaning the machine with the help of these cleaning instructions. These cleaning instructions constitute instructions for daily, weekly and monthly cleaning. Please follow the cleaning instructions. This would ensure more hygiene and lesser malfunctions.

### 2.2

#### Daily cleaning

**1. Fill up the products:** First of all check the level of all existing products in the machine. Close the red shut-off flap of the product container in advance. Now fill the product given on the product container. Then again open the red shut-off flap of the product container.

**2. Carry out the rinsing program:** (Chapter 8.7)

Press the program button on the inner side of the machine door. A program menu is shown on the display. Now press button 4 on the keyboard to get to the rinsing program. Another menu is shown on the display. Now place a large vessel under the outlet. For cleaning the brewer press button 1. Place a large vessel under the outlet. For the mixing bowl 1 press button 2. Now rinse this mixing bowl thoroughly in multiple rinsing cycles. Now for the mixing bowl 2 press button 3. Press the individual keys several times until around 3 litre water has been used for rinsing. After that press the service key for the rinsing program to re-enter the sales mode.

**3. Clean the water drip pan:** With the door open, remove the drip pan as follows: lightly press downwards and pull out. Remove the grid from the drip pan and clean both parts under warm running water. After that again set the drip pan properly in place.

**4. Clean the doors in the product dispensing area:** Clean the doors in the product dispensing area from inside as well as outside. There could be deposits here due to the splashing of the product. Use a damp sponge or cloth to clean these parts.

### 2.3

#### Weekly cleaning

This cleaning process includes the daily cleaning from item 1 to item 4.

**5. Clean the mixing bowls:** Remove the mixing bowls as follows: Turn the red locking clamp to left. Now you can pull out the mixing bowl. Take out the mixing bowls completely with pipe and discharge angle. Clean these parts using the rinsing solution meant for the purpose. Again dry up these parts carefully and reinstall them.

**6. Clean the product chutes:** Remove the product chutes from the product container as described below: Press the product chute lightly against the product container and turn it anticlockwise. Clean these product chutes using the rinsing solution meant for the purpose. Again dry up these products properly before reinstallation. Product chutes get clogged if they are wet.

## 2. Cleaning instructions

### Monthly cleaning

This cleaning process includes the daily and weekly cleaning from item 1 to item 6.

**7. Clean the product container:** First of all close the red shut-off flaps on the product containers. Take out the product containers by lifting these slightly at the front and then pulling them out. Drain out the remaining product. Remove the product chutes from the product containers. Put the product containers and chutes in a rinsing solution meant for them. Wipe the product containers clean with the help of a sponge. Dry out the product containers properly. Preferably leave them to dry out overnight and install them again next day and fill up.

**8. Clean fan duct:** When you have taken out the product containers and the mixing bowls, you can pull out the plastic drawer above the mixing bowls and below the product containers. This is meant to be the suction channel for water vapour suction. Here it is possible that the product also gets sucked along. Clean the fan duct using the rinsing solution meant for the purpose and dry it up properly before reinstallation.

### Cleaning aids

Use the Clean Set specially prepared for the machine . (Clean Set for XM 180 E/4)

The Clean SET allows quick and easy cleaning of the machine.

**Das Clean-Set besteht aus:**

- Pre-assembled mixing bowl and outlet pipe for cocoa
- Pre-assembled mixing bowl and outlet pipe for tee
- Product chute for milk
- Product chute for cocoa
- Product chute for tea/soup
- 6 mm cleaning brush for discharge angle
- 10 mm cleaning brush for outlet pipe 9 x 6
- 5 Litre cleaning bucket
- Yellow sponge cloth
- Scratch-free sponge
- HACCP cleaner, diluted and ready for use.

**Procedure**

Perform steps as in case of daily, weekly and monthly cleaning. Using the Clean Set you can immediately replace these parts placed in a rinsing solution. The machine again becomes readily operational. The replaced parts should then be sprayed with the HACCP cleaner and must be placed in a rinsing solution diluted with the HCCP. After reaction time of approximately 45 minutes you can rub off these parts with a sponge cloth, rinse them under clear water and allow to dry up well.

### 2.4

### 2.5



**Remember that:**

**Cleaning with our Clean Set is**

- **quicker and simpler**
- **fresher and more appetizing**
- **more hygienic, and causes lesser malfunctions**



**With the aid of Clean Set you can easily replace fouled parts. The machine again becomes readily operational.**

### 3. Technical data

#### 3.1

#### Technical data sheet

<b>Dimensions</b>	Height without / with top part Width Depth without / with doors	770 mm / 870 mm 410 mm 495 mm / 575 mm
<b>Weight</b>	Empty Full	51 Kg 59 Kg
<b>Electrical values</b>	Voltage supply Max. power consumption Consumption with approx. 50 cups per day (150 ml)	230 Volt 50 Hz 16 A 1250 Watt 2,4 Kw/h
<b>Transformer</b>	<b>Primary</b> 230 V (black) <b>Secondary</b> 24 V (lilac) 15VA – 150VA 8.5 V (red) 135VA	230 Volt 50 Hz 8,5 V / 26 V / 30 V
<b>Grinder</b>	Voltage supply Output Fuse	24 V DC 50 W / 2600 rpm 5,0 A time-lag
<b>Pressure boiler</b>	Heating element power Capacity Heating –up time	1250 W 1 litre approx. 2 minutes
<b>Pump</b>	Voltage supply Output (Model 1106) Electromagnetic heavy-duty pump	220 V 50 Hz 70 W max. 15 bar
<b>Product motor</b>	Voltage supply Running speed	24 V DC 85 rpm
<b>Mixermotor</b>	Voltage supply Running speed	24 V DC 2400 rpm bis 16000 rpm
<b>Valves</b>	Voltage supply at inlet valve	24 V DC
<b>Water supply</b>	Water pressure Water supply	1 – 8 Bar 3 / 8" oder 3 / 4" außen
<b>Coffee portioning unit</b>	Voltage supply Min/ max coffee portion	24 V DC 5,5 – 7,5 Gr.
<b>Miscellaneous</b>	Can switch Master function for slave devices (Snack) GSM useful via external modem FLASH CARD programming with PC software	
<b>Tumbler station</b>	Capacity of the tumbler station	180 pieces (150 ccm)
<b>Coffee container</b>	Capacity	approx. 1,5 Kg
<b>Cocoa container</b>	Capacity	approx. 1,5 Kg
<b>Milk container</b>	Capacity	approx. 0,7 Kg
<b>Sugar container</b>	Capacity	approx. 2,0 Kg
<b>Individual</b>	Capacity	approx. 2,0 Kg

## 4. General information concerning the machine

### Rating plate

4.1

The rating plate is an important label meant for information. Please always mention the model and machine number for any spare part order placement.

The rating plate is located inside on the right side of machine. The rating plate is defined as follows:



Manufacturer's data

Machine data

Machine number

Definition of machine data

<b>XM</b>	Machine type	XM
<b>E / 4</b>	Model - Design	E = Presso Bean 4 = Number of instant product containers

### Kindly note

4.2

You can take good care of following parts by proper operation, and avoid breakdowns:

<b>Pump:</b>	Idle run and dynamic pressure can damage the pump.	- Grind not too fine
		- The sieves of the brewer must not be blocked
		- Do not fill up any hot water in the water tank
<b>Grinder:</b>	There is blockage or sticking.	- Grind not too fine
		- Clean periodically
<b>Brewer:</b>	There is blockage as the cleaning program is not carried out	- Carry out the cleaning program daily
		- Clean the sieve carefully

## 4. General information concerning the machine

### 4.3

### Safety notes



This machine is manufactured keeping in mind the safety aspects. Nevertheless, independent installation and operation of the machine may only be entrusted to those persons who have completed 18 years of age. Only a person, who is qualified to handle such equipment on account of his training and experience, and familiar with the relevant safety and accident prevention regulations, and thus in a position to identify and avert danger, is suitable for the job.

Before start-up this operating manual must be read in its entirety in order to ensure safe a start-up and a flawless operation.

**Caution:** Pull out the mains plug  
before all maintenance jobs!



The machine was manufactured in compliance with the following European safety regulations:

- EN 60 335 - 1

" Safety of electrical household appliances and similar products".

### 4.4

### Warning notes



- **Caution:** there are hot parts on this machine. The temperature can be more than 90°C at specific locations on the machine.



- Never operate the machine with a defective power supply.



- Never immerse the machine in water.



- Before cleaning the machine without the cleaning program always ensure that the mains plug is pulled out.



- Never allow children to work on the machine unsupervised.

## 4. General information concerning the machine

### Safety devices

**4.5**

- Door contact switch 
- Manually connected safety thermostat for the boiler 
- Time controlled protection for the pump 
- Time controlled protection for the geared motor of the coffee brewer set 
- Time controlled protection for the coffee grinder 
- Brewer water inlet protection exists 
- Brewer protection not correctly installed or does not exist 

### Accessories

**4.6**

A wide range of accessories and special parts are available to derive additional benefits from the machine: The installation kits are delivered along with the installation instructions that must be followed to ensure the safety of the machine.



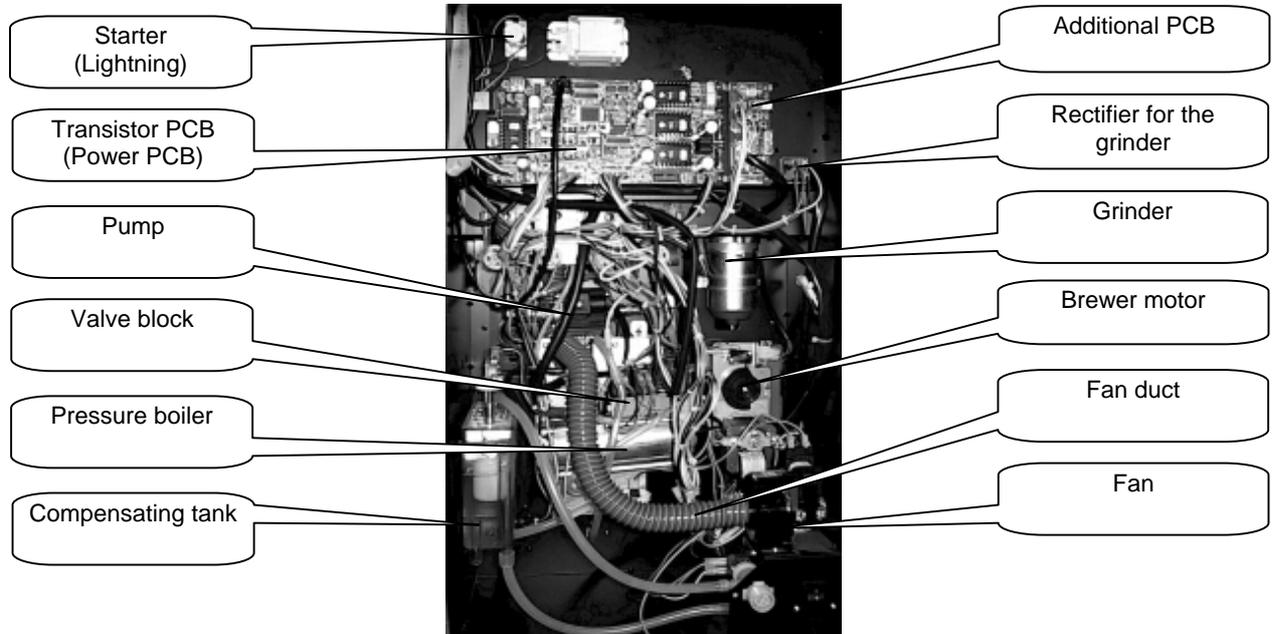
- XM-Slave KIT
- XM Cash Card KIT
- XM AQUA Module
- XM Bottom Cabinet
- XM Flash Card
- XM Software Editor
- XM Front Panel (various designs)
- XM accessories (cups, pots, spoons, tablets, sugar candy, cup warmer)
- XM Bono Basic Spare Parts Set (all necessary parts)
- XM Bono CLEAN-SET
- XM Bono Cup Sensor KIT

## 5. Overview of machine parts

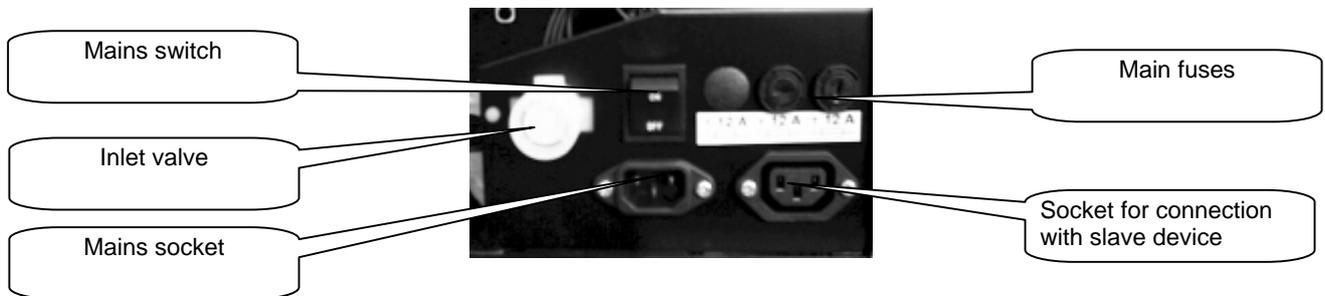
### 5.1

#### Rear panel view

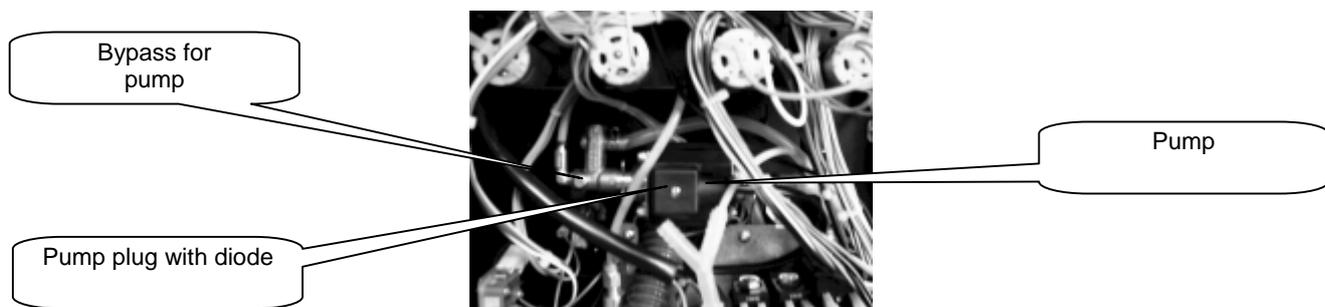
##### Rear casing



##### Rear casing (power module)



##### Rear casing (pump)



## 5. Overview of machine parts

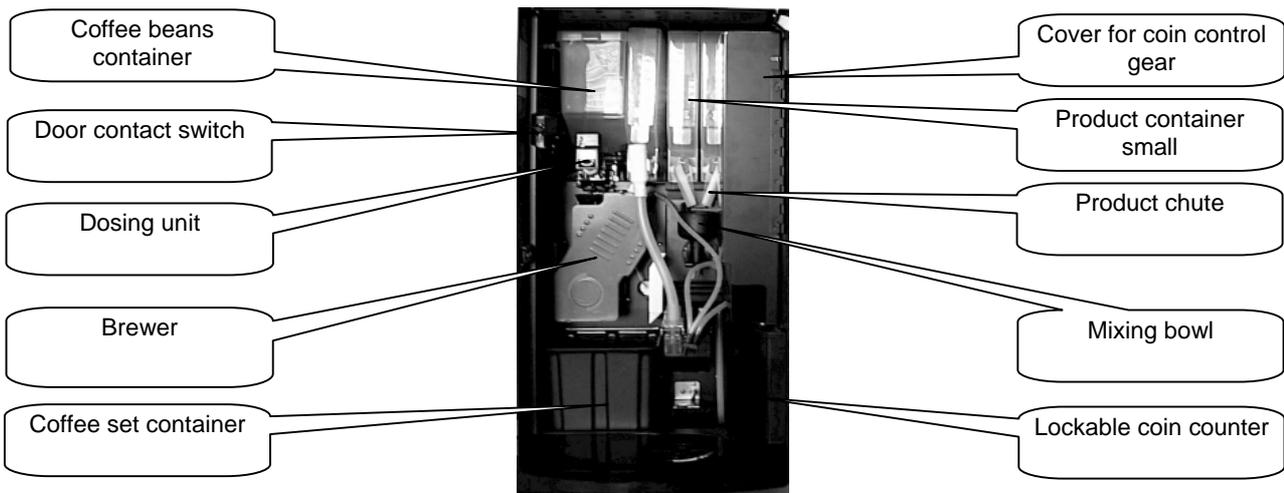
### 5.2

#### Front view

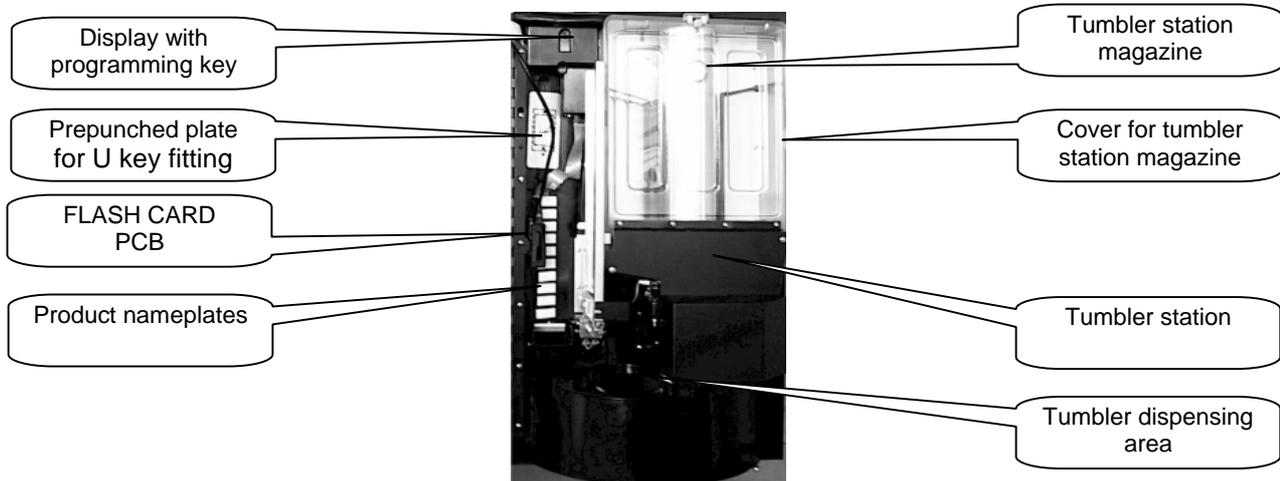
#### Outer casing



#### Inner casing



#### Inner casing (doors)



## 6. Unpacking and installation

### 6.1

#### Instructions for installation



Flawless operation of the machine is guaranteed in closed rooms with a room temperature not less 5°C. The machine should not be used in rooms where there is splash water.

#### Caution:

Da einige Füllprodukte hitze- und feuchtigkeitsempfindlich sind, kann es zu Störungen beim Betriebsablauf des Gerätes kommen, falls die Raumtemperatur 30°C oder die Luftfeuchtigkeit 80% überschreitet.

If such conditions prevail, the parts which come in direct contact with the products must be cleaned daily.

### 6.2

#### Selection of installation site



While selecting the place of installation please bear in mind that easy access must be ensured for operating, servicing and loading the machine.

### 6.3

#### Installation

- After carefully removing the packing check whether the machine is in a flawless condition. Check whether all parts of the machine are installed properly. ✓
- The machine keys are tied firmly to the drip pan ✓
- While selecting the place of installation ensure that a flat, vibration-free base is available and there is sufficient place for operation ✓
- The machine must be installed with proper vertical and horizontal alignment so that the door closes flawlessly. ✓
- The machine must neither be exposed to frost and humidity, nor to the direct solar radiations ✓
- Basically a minimum distance of 10 cm must be maintained between the wall and the rear panel of the machine. ✓
- The machine comes with a mains cable having a shockproof plug. A 220V A.C. VDE shockproof socket with 16A fuse is required. ✓

## 7. Water and filter

### Quality of water

The German Coffee Association e.V. has compiled the following basics for the optimisation of safety and quality .

Among other things, following criteria form a prerequisite for highly aromatic coffee content (naturally with proper use of high-grade roasted coffee):

- Water fresh in taste = oxygenous
- ph – value of 6.5 – 7.5
- Total hardness between 7 – 12° hardness (dH) according to German standards
- Carbonate hardness between 3 – 4° kH

7.1



### Water filter

**As a matter of rule we always recommend that a water filter be used for decalcination of water.**

7.2



**\* Aforementioned materials are food grade. Germination in the filter system can be inhibited by impregnating the active charcoal with silver.**

Our water filter systems perform twofold work:

1. **The activated charcoal** removes substances that cause smell and spoil taste, e.g. chlorine and chloride compounds as well as their residues
2. **The ion exchanger** \* reduces, among other things, lime deposits (Carbonate hardness) and specific heavy metals which could appear depending upon the place of installation.



Espresso systems function at specially high temperature and high water pressure. Therefore, our mobile machines with tank systems are normally fitted with tank filter.

Conclusion: More aroma, less lime deposit, reduced servicing and operating costs, minimum downtime.

### Capacity of a filter cartridge BC 06

Procedure for the replacement of Aqua-Aroma filter cartridge:

1. Turn the filter cartridge to take it out.
2. Put the new filter cartridge by turning it in and tighten only slightly.
3. Check the filter system for leakage points.

Carbonate hardness	Capacity	Number of cups/ tumblers *	
		130 ml	150 ml
Carbonate hardness in degrees	In litre		
6° kH	700	5300	4600
8° kH	520	4000	3400
10° kH	420	3200	2800
12° kH	350	2600	2300
14° kH	300	2300	2000
16° kH	260	2000	1700
18° kH	240	1800	1600

\* Capacity data does not include any rinsing and cleaning cycles

Instructions concerning the use of filter cartridge:

**Recommended maximum usage period 6 months or refer to table Capacity.**

For order placements:

1 pc BRITA connecting head for 06 BC article no. 799 051  
 1 pc BRITA AquaQuell filter for 06 BC article no. 799 052



## 7. Water and filter

### 7.3

### Hard water supply with water filter



**As a matter of rule we always recommend that a water filter be used for decalcination of water.**

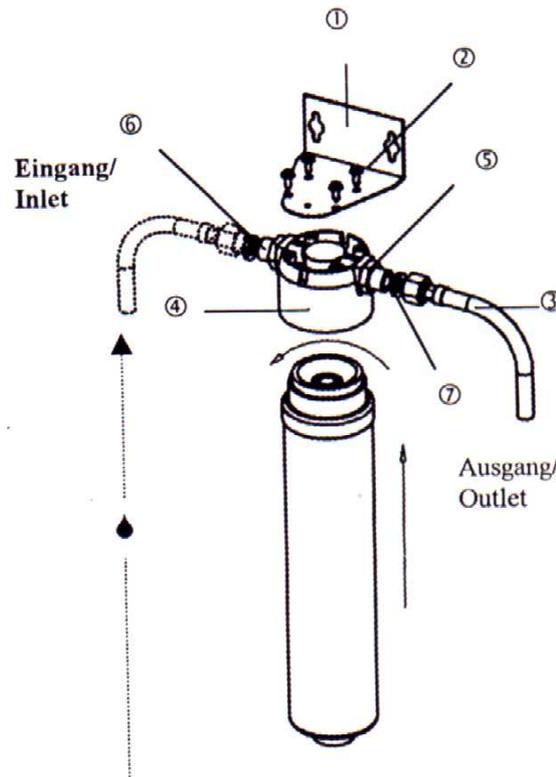
For the hard water supply, a minimum water pressure of 1 bar is absolutely necessary. If this is not the case, you must then connect a pump before it.

Kindly note !

### Instructions for installing water filter BC 06

#### Installation:

1. Disconnect machine!  
Block water supply.
2. Mount wall bracket (1) with screws (2) on filter head (3).  
**Important:** Pay attention to the direction of flow. See top end of filter head: IN – Inlet  
OUT – Outlet.
3. Mount wall bracket (1) with filter head (4) at the planned location.
4. Now connect the pipes at the inlet and outlet.
5. Align and screw in new cartridge with filter head (4).
6. Open water supply and check for leakage.
7. Switch on the machine.



#### Important note:

1. The filter system must not be installed in the direct sunlight.
2. Do not use any corrosive cleaning mediums.
3. The filter system must be installed outside all danger zones.
4. Do not use any pointed objects during installation or replacement of cartridges.
5. Do not install in the vicinity of open fire or heat sources.

#### Technical data:

**Dimensions:** Height: 40.60 cm  
Diameter: 6.35 cm  
**Max. throughput:** 3.0 litre / min  
**Max. Temperature:** 35° C  
**Capacity:** 420 litre with 10° kWh  
**Filter head connections:** 3/8" external thread  
**Max. water pressure:** 8.0 bar

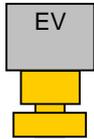


1 pc BRITA connecting head for 06 BC article no. 799 051  
1 pc BRITA AquaQuell filter for 06 BC article no. 799 052

## 7. Water and filter

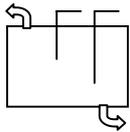
### Water system

#### 7.4



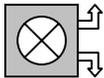
#### Inlet valve:

The inlet valve for the water tank is suitable only for depressurised area. The inlet valve is a sensitive part when the water is not being filtered. Due to dust in the non-filtered water the valve may no more open or close. It can very quickly lead to malfunctions.



#### Compensating tank:

Here in the cold water section the water level is refilled with the aid of sensors (probes). On dispensation of a drink the inlet valve is opened immediately and the compensating tank is refilled up to the short probe. The long probe is used only as an antipole. In case of non-filtered water the probes can get dirty and as a result it can lead to malfunctions.



#### Flowmeter (water counter):

The water counter keeps track of water for all coffee based drinks. The instant water (cocoa and milk) is measured only through the time entry. The water counter registers turns via 2 magnets located in the impeller. In the controls these impulses are converted into ccm.



#### Pump with bypass:

The pump feeds between 9 and 12 bar. A pressure compensation via the bypass takes place to ensure that always the same water pressure of 10 bar exists at the pressure boiler. This bypass can be adjusted with a setting screw (only when absolutely necessary). In the works this is set at 10 bar.



**Take care that the bypass pressure is not adjusted**



#### Pressure boiler:

In the pressure boiler there is a heating element and a sensor. There is no water level probe in the boiler. Therefore, the boiler, when it gets empty, must be filled up manually using the rinsing program of a mixing bowl. On the boiler there still a pressure relief valve which opens at 18 bar and diverts the excess pressure via overflow pipe. The boiler can be emptied via the drain plug at the bottom of the machine base.



#### Discharge valves:

The discharge valves consist of a measuring block and 3 valves. The valve block is fixed with 2 screws on the pressure boiler. The valves of the mixing bowl 1 and 2 are identical. The coil of the coffee valve is somewhat larger and it is equipped with a excess pressure function. If the counter pressure of the brewer is too large the pressure is diverted to the overflow pipe.

## 8.1

## 8. Start-up

## Initial Start-up

## 1.

Open the machine door. Now you can open the top casing cover upwards. Remove the document folder lying above the product containers.

This includes:

- 1 piece operating manual
- 1 piece circuit diagram legend
- 1 piece product nameplates
- 2 pieces signboards for coin insertion slots

Read the operating manuals. The circuit diagram legend helps you to understand connections and the electrical scheme.

Attach the product nameplates as in chapter 8.5.



## 2.

Inside of the machine are the water connecting units consisting of:

- 1 piece PE-connection tube (approx. 3 metres)
- 2 pieces of manometer screw connection 3/8"
- 1 piece of reduction from brass on 3/8"
- 1 piece of angle brackets

The inlet valve is on the rear side of the machine. Turn the brass reduction on the inlet valve. Here no additional sealing is necessary. Seal now the angle bracket with 2-3 layers teflon band and turn this on the reduction. Seal now the other side of the angle bracket with teflon and untwist here a manometer screw connection. Attach the PE pipe at the inlet valve and at the angle valve with the manometer screw connections. Seal thereby the threads with teflon. Open the water. Examine the connections for tightness.



## 3.

Furthermore is in the inner of the machine:

- 1 piece power lead
- 1 piece adapter for executive payment systems

Extract the power lead and put it into the socket on the back of the machine. Take now the other end of the power lead and put it into the power socket. Make sure that the power switch stands on "0". Do not switch on the machine yet.



**Do not switch on the machine yet.**

## 4.

Before switching on the power first fill up the tumbler in the tumbler station. If you wish to install the payment system, we recommend that this be done before initial start-up. On the next page we will explain you how to go about it. Otherwise, you will get the following error message on the machine display:

**OUT OF SERVICE  
OFF 01**

## 5.

First extract the coffee bean container and open the slider, then put the container back into the machine. Now you can fill in the coffee beans. Without coffee beans you will get the following error message on the machine display.

**OUT OF SERVICE  
OFF 09**

# 8. Start-up

## Fill-up the tumbler

### 8.2

The tumbler station has a capacity of 180 tumblers. To the person responsible for filling-up demonstrate the correct method of filling up the tumbler station as shown below.

1. Press this clip upwards.

2. Pull forward the tumbler station flap.

3. First fill the "middle" column in the tumbler tower. Pay attention to the filling height.

4. Press the check rails on the side. so that you can fill up the tumbler.

5. Fill up the tumbler.

6. Fill up the tumbler on the other side. Again close the flap.

### 8.3

## Explanation for the functioning of tumbler station

On the tumbler dispenser there exists a photocell. This photocell has two functions. Its first function is to detect whether tumblers are present in the tumbler station. The photocell reacts to the white border on the tumbler. If there are no tumblers in the tumbler station, the tumbler station is given half rotation. On the tumbler station there is a toothed wheel with switching lugs. These switching lugs run through the second photoelectric barrier (Opto-coupler). If no tumblers are filled within one rotation, the machine shows: OFF 1.



## 8. Start-up

### 8.4

### Tip for the first thorough cleaning

Before filling up the products ensure that the product containers are clean. There could be packaging dust. If this is so proceed as follows:



Remove all product containers from the machine.



Remove the cover.

Remove the product chute.



Remove the clamp for the portioning spiral.

Remove the product portioning spiral.



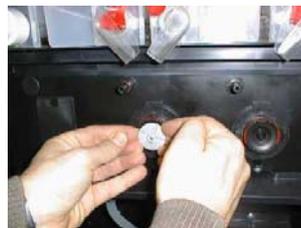
Remove the stirring wheel.

Loosen the mixing bowls.



Remove the mixing bowls.

Remove the product outlet pipes.



Remove the mixer disks.

## 8. Start-up

### Filling the product

**8.5**



Now fill the products as described on the product containers. First of all close the red shut-off flaps on the product containers. Open the red shut-off flaps again after fill-up.

Red shut-off flap opened.



Red shut-off flap closed.



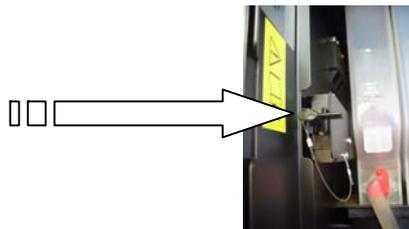
Now begin the automatic rinsing of the machine so that the product, that trickled into the mixing bowls, is rinsed away. To prevent clogging follow this procedure each time the machine is filled up.

For this proceed as follows:

**8.6**

### Switching on the machine

Take the door contact key and turning it anticlockwise insert it into the door contact switch.



**XM- E4 180**  
**XMED 1D 29-10-03**

The machine starts. The display shows the software version of the machine in the first 3 seconds.

**switching on...**  
**please wait**

After this the display shows:  
During this period the machine checks whether everything is ok.

**refilling water**  
**wait**

After this the machine automatically goes into the installation mode and the display shows:  
The compensating container is filled up with water.

**Installation** - - -  
**taste 1=STOP**

After this the display shows:  
The pressure boiler is filled up with water and the temperature is automatically set at 90 deg.

**Ende**  
**Installation**

This step is stopped by pressing button 1.

After the successful installation, for approx. 3 seconds the display shows:

**wait**  
**temperature**

After the fill-up phase the machine goes into heat-up phase. The set value is 90° C. The machine is ready for operation once this value is reached.

**rheavendors**  
**XM**

Then the display shows:

Look at chapter 17.9  
Miscellaneous Settings!



Is the water supply turned on?

## 8. Start-up

### 8.7

### Cleaning with the rinsing program



Press the programming button on the inner side of the door.  
The display alternately shows:

1=PROGR  
3=FREE

2=DATI 4=CLEAN  
5=MAINT.

cleaning  
sel 1 – 2 – 3

Press selection button 4 on the keyboard.  
The display shows:

#### Brewer cleaning with cleaning tablets

Now for the brewer press key 1.  
The display shows:

cleaning 1

The lower brewer stamp runs on the highest point, so that it's concise with the surface of the brewerchamber. Then approx. 20 ccm water get rinsed. The coffee remainders in the brewer chamber and on the lower sieve will be rinsed away and the water runs into the coffee grounds container. This procedure will be repeated again. The brewer runs now again into its end position (open position) and the brewer chamber will be filled with approx. 35 ccm water.

The display shows:

put pastille  
and push P8



You are now requested to throw in the cleaning pill. **Daily cleaning with the cleaning pill is absolutely necessary.** Throw the cleaning pill in the brewer funnel and press button 8.

- Remove the drip pan and put a large vessel under the outlet.

- Carry out multiple rinsing cycles for each selection.

- The rinsing program must be carried out daily.

The display shows:

cleaning 1

Now the dissolving time of the cleaning pill runs. This time amounts to approx. 90 sec.. After the dissolving time the brewer runs again into its end position. That means, the upper brewer stamp immersed briefly into the water of the brewer chamber. After that, the water with the dissolved pill runs off into the coffee grounds container. This procedure is repeated, so that the brewer chamber will be rinsed out again. The cleaning-program for the brewer is now finished and the display shows:

**This cleaning must be done daily.**

cleaning  
sel 1 – 2 – 3

#### Rinsing of the mixing bowl/ daily care

Now for the mixing bowl 1 press button 2.  
The display shows:

Now the mixing bowl is put through a rinsing cycle.  
After this the menu of the rinsing program again reappears.

cleaning 2

Now for the mixing bowl 2 press key 3.  
The display shows:

Now the mixing bowl is put through a rinsing cycle.  
After this the menu of the rinsing program again reappears.

cleaning 3

To again exit the rinsing program press the programming key on the inner side of the door.

## 9. Lighting

### Replacing tube lights

9.1

**Caution 220V power supply. Pull out the mains plug before replacing tube lights.**



Press the locking clip from the sides.



Pull out the locking clip.



Tilt the tumbler pipe forward and remove it by pulling it up vertically.



Loosen screws.



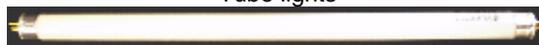
Tilt the holder forward and turn sideways.



Remove the tube lights from the holder by turning them.



Tube lights



Length 300 mm  
Diameter 16 mm  
**Power 8W**

## 10. Installing a payment system

### 10.1

#### Installing a coin changer

To install a coin changer, proceed as follows:

MSG holder



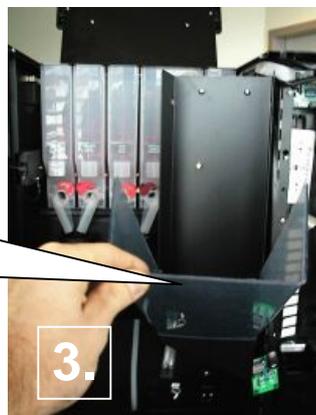
1.

Turn the MSG holder towards front.



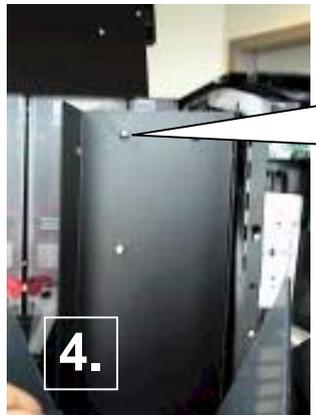
2.

Pull off the plastic protection.



3.

Tighten the screws if needed to suspend the MSG.



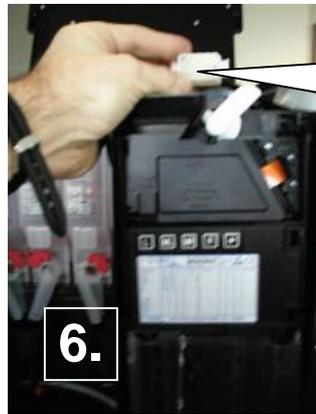
4.

Suspend the MSG in the attachment meant for the purpose.



5.

Connect the MSG to the interface meant for the purpose. (MDB or EXE).



6.

Again fit the plastic protection and turn the MSG holder inwards.



7.

Pay attention to the correct positioning of the cash counter.



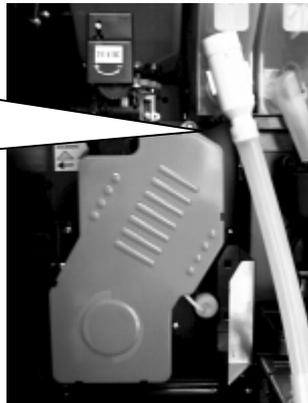
8.

# 11. Brewer

## Enlarge the brewer

### 11.1

Untwist the outlet pipe against the clockwise direction and pull it out.



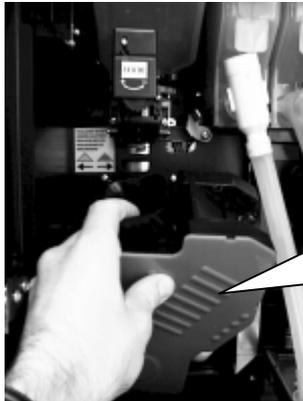
Untwist the inlet pipe against the clockwise direction and pull it out.



Press locking angle upwards until you can loosen the brewer.



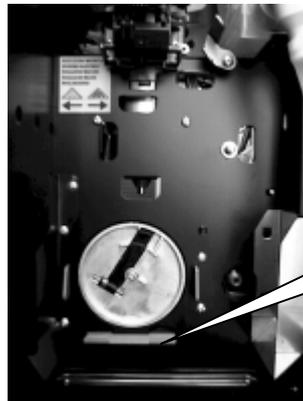
Tilt brewer forward.



Take brewer upward from the mounting plate



Brewer mounting plate



## 11.2

## 11. Brewer

### Brewer adjustment

The dosage of the coffee quantity is limited by the size of the brewer chamber. The brewer chamber will be increased by increasing the distance between the upper and the lower brewer stamp.

Change the distance by attaching the adjustment plates at the brewer casing in such a way, that the pressed in letters A, B and C stand to each other.

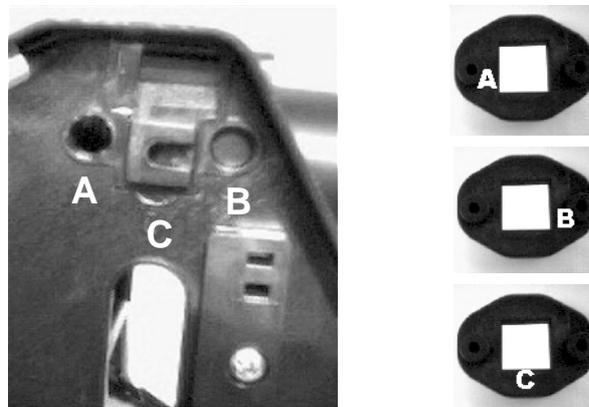


That means:

**A** : **A** smallest distance, max. coffee quantity 6,0 g.

**B** : **B** middle distance, max. coffee quantity 6,5 g.

**C** : **C** largest distance, max. coffee quantity 7,0 g.



## 11. Brewer

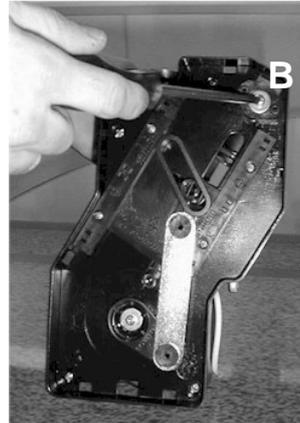
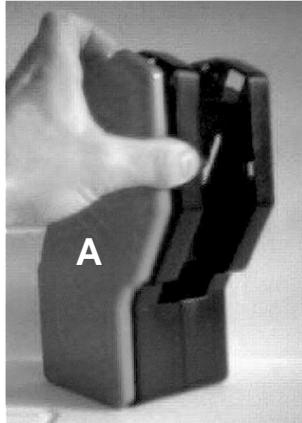
### Brewer cleaning

11.3

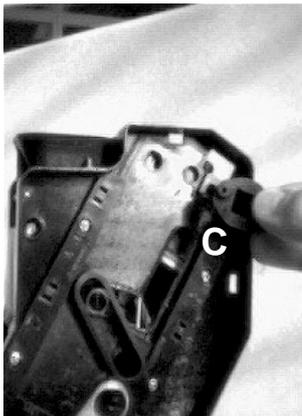


Raw coffee contains approx. 10-15% fat and coffee wax. Even if most disappears with the roasting process, so with the time fat, wax and small coffee particles can settle on the sieves of the brewer. If the brewer is not regularly cleaned then these deposits can impair taste and flavour very soon. For cleaning the brewer you proceed as follows:

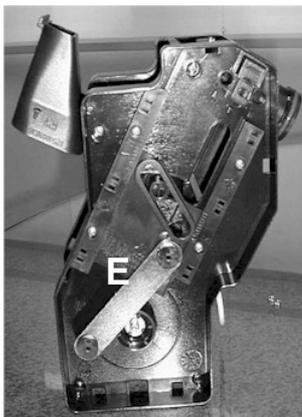
Remove cover **A** from the brewer casing. Unscrew screws **B** double-sided with a screwdriver.



Remove adjustment plates **C** double-sided and turn the upper brewer stamp **D** in position. See picture.



Turn shaft **E** so far till the lower brewer stamp **F** reaches the highest position. Loosen the sieves with a screwdriver and remove the deposits with hot water.



## 12. Machine specifications

### 12.1

### Arrangement of product containers

**Product details:**

**Product 1**

- Narrow portioning spiral
- Portioning motor 85 rpm

**Product 2**

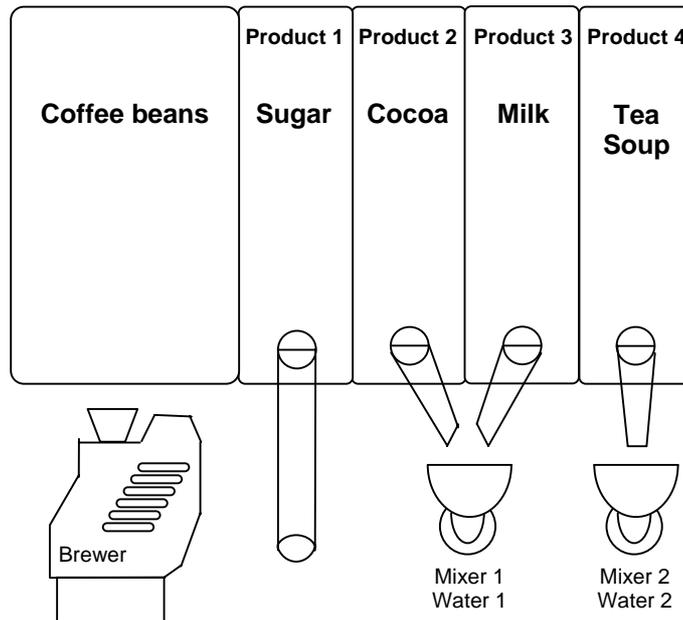
- Wide portioning spiral
- Portioning motor 85 rpm

**Product 3**

- Narrow portioning spiral
- Portioning motor 85 rpm

**Product 4**

- Wide portioning spiral
- Portioning motor 85 rpm



### 12.2

### Options

The options are fixed.



Take care that the labels and the product containers are installed properly.

<b>Preselection sugar / Z1 / Z2</b>
<b>Cappuccino</b>
<b>CreMoca</b>
<b>MoccaCino</b>
<b>Café au Lait</b>
<b>Black coffee</b>
<b>Latte Macchiato</b>
<b>Cocoa</b>
<b>Individual : Soup / Tea</b>
<b>Cup stop / preselection</b>

# 13. Basic programming functions

## 13.1

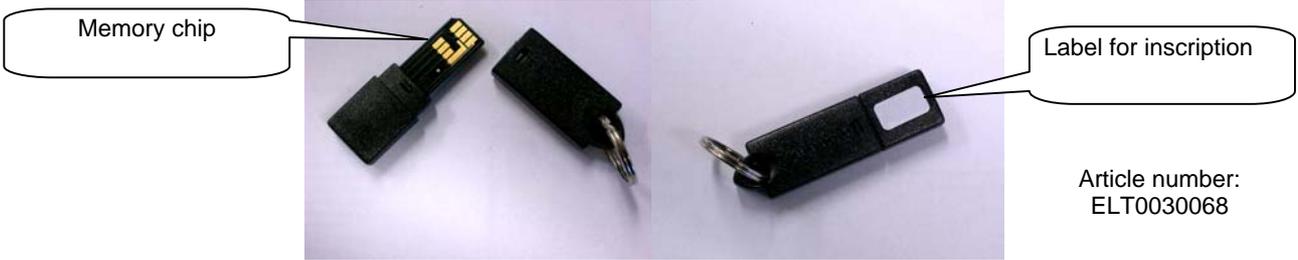
### Flash Card controls



No EPROM is installed in this control system. Updates are done via a "FLASH CARD". The Flash Card controls have an internal Flash memory.

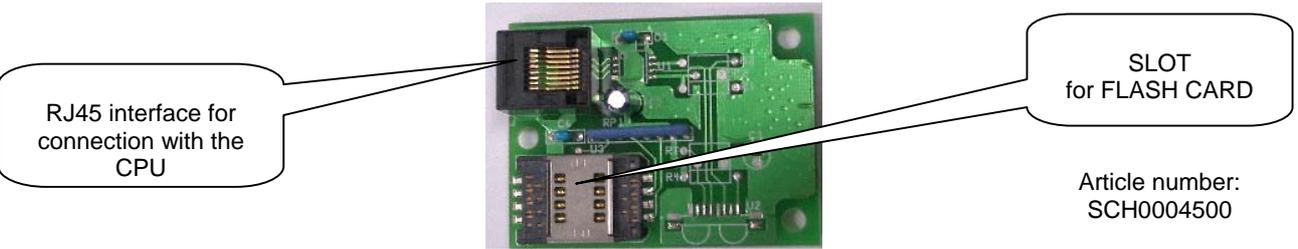
### FlashCard

The Flash Card is a storage medium with a 1 MB memory chip. **TIP** If you program a Flash Card, you must fix a label on it so that there is no room for confusion.



### Flash Card Interface

The Flash Card interface is an optional accessory.



### Flash Card Interface Box

With the box you have the option to keep the Flash Card interface box mobile. But you also have the option of fixing the interface on the door.



### Flash Card Editor

With the aid of the Flash Card editor you can transfer your data from the machine to the PC and administer, or you can even download software updates from our internet site and transfer them on to the Flash Card. In addition to this, sales data can be transferred from the machine to the Flash Card and using the editor it can be converted into an Excel file.

We have put together a SET for you. The Flash Card SET consists of:

- 1 x Software Editor RHEAction
- 1 x Flash Card Reader
- 2 x Flash Card 1 MB



**13.2**

### 13. Basic programming functions

#### What do I use the Flash Card for?

You can use the Flash Card for several functions:

You can program new software updates with a Flash Card on the machine.

You can save your set data on a FLASH CARD on the machine and program another machine.

You can save your set data on a FLASH CARD on the machine and save them on the PC.

With the editor you can configure your Flash Card as sales card and read the sales data from the machine. With the editor you can save this data into an Excel file and have a look at it.

**13.3**

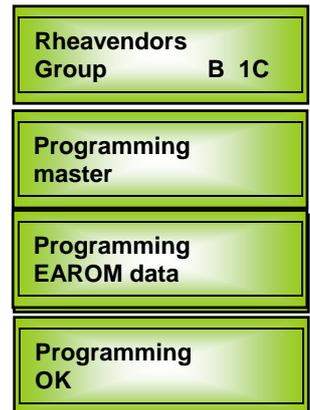
#### How do I carry out an update?

**A prerequisite for an update is that the master and configuration files of the relevant machine type must be available on the FLASH CARD.**

**For this you need a Flash Card with the associated data and a Flash Card interface box.**



1. Open the doors.
2. Insert the Flash Card in the SLOT meant for it on the Flash Card interface box.
3. Switch on the machine from the door contact key. The boot software version is displayed.
4. The display shows: "PROGRAM MASTER".
6. After 15 sec. appears the following flashing message: "PROGRAM DATA EA ROM".
7. After 15 sec. appears the following message: "PROGRAMMING CORRECT"
8. Switch off the machine from the door contact and remove Flash Card.
9. Restore power to the system. Check the parameters prices, temperature and fan operating time.



**13.4**

#### Saving the machine data

**Prerequisite for downloading is that the configuration file for the respective machine be available on the FLASH CARD.**

**For this you need a Flash Card with the associated data and a Flash Card interface box.**



1. While the machine is in operating state insert the Flash Card in the SLOT meant for it on the Flash Card interface box.
2. Press the programming button twice in succession. The display shows:
3. After a few seconds the display shows:
4. The download is now over. Remove Flash Card and switch the machine off and on.

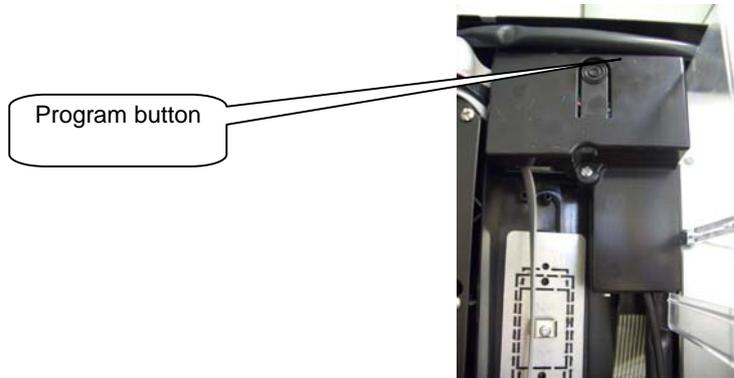


## 13. Basic programming functions

### General functions

**13.5**

On pressing the programming button on the display PCB on the inner side of the door you reach the machine program.  
See sketch:



1=PROGR	
3=FREE	

2=DATI	4=CLEAN
5=MAINT.	

On pressing the programming button following information alternately appears on the display:

Using the selection button you can now select the desired program item. The program points are defined as follows.



**1=PROGRAMMING** On pressing button -1- you reach the programming module by entering codes 8 - 7 - 6 .

**2=COUNTER** On pressing button -2- you reach the sales counter. Here you can read the sales data. The counters are automatically shown in continuation.

- Cumulative counter - Time counter - Euro counter
- Test counter - Price 1 counter - Price 2 counter
- Price 3 counter - Price 4 counter - Price 5 counter
- Price 6 counter - Price 7 counter - Price 8 counter
- Price 9 counter - Price 10 counter - Can option 1
- Can option 2 - Can option 3 - Can option 4
- Can option 5 - Can option 6 - Can option 7
- Can option 8 - Can option 9 - Can option 10

For terminating the counter status query, press programming button.

**3= FREE SALE** On pressing button -3- you reach the free sale. You can again exit the free sale by pressing the programming key.

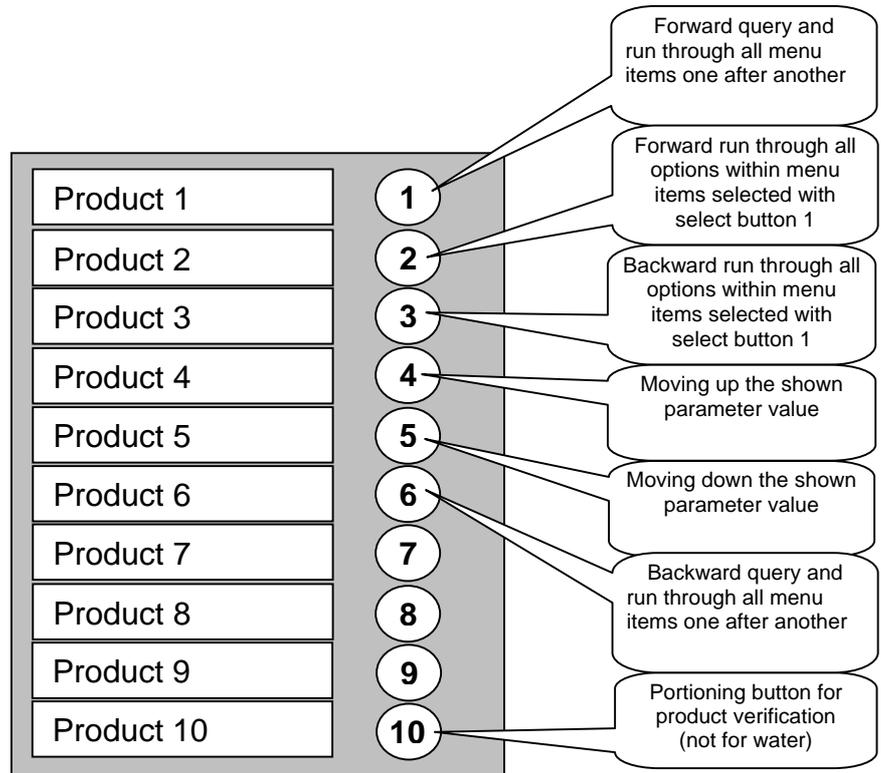
**4=RINSING** On pressing button -4- you reach the cleaning program. Using buttons 1 -2 - 3 you can specifically start the cleaning program for the brewer and/ or mixing unit and the pipes. You can exit the cleaning program by pressing the programming button.

**5=SERVICE COUNTER** On pressing button 5 you reach the service counter. In this regard read section 24. On pressing the programming button you go back to the sales mode.

**13.6**

**13. Basic programming functions**

Functioning of selection keys in programming mode



## 13. Basic programming functions

### Program overview

**13.4**

On pressing the programming button and then entering the code you get into programming mode. Using the selection buttons – 1 - and – 2 – you can go to the individual menus.



Selection button 1	Selection button 2	See chapter no.
Programming button 1	For settings see portioning sheet	15.2
..... to		
Programming button 10	For settings see portioning sheet	15.2
Prices	Setting the sales price	16.2
Coin	Value of coin A to coin F (only pulse generator)	16.3
Temperature	Temperature boiler Temperature first coffee Free Definition first coffee	17.1 17.2 without function 17.3
Miscellaneous	Machine no. A Machine no. B Information no.. Payment system Free Fan operating time Time signal Decimal position Language Grinder mode First installation active snac Stirring rod	18.1 18.1 18.2 18.3 without function 18.4 18.5 18.6 18.7 18.8 18.9 18.10 18.11
Diagnostics	Display temperature Voltage Test QTY coffee Tumbler test Stirring rod test Tumbler arm test Sugar test	19.1 19.2 19.3 19.4 19.5 19.6 19.7
Sales data	Cumulative counter Time counter Money counter Test counter Price 1 to price 10 counter Can counter option 1 to option 10	20.1 20.2 20.3 20.4 20.5 20.6
MDB	Coin key 7 – 8 – 9 – 10 EE C max. credit R max. remaining cash SS Token CIN a0 to CIN p0 CH a0 to CH p0 MDB channel capacity	21.1 21.1 21.1 21.1 21.1 21.1 21.1 21.1 21.1
Time	On Off Rinsing Time Day Month Year	22.2 22.3 22.4 22.5 22.6 22.7 22.8
Error messages XM	No. 1 to no. 20	23.1
Service counter	Counter filter H <sub>2</sub> O Counter brewer coffee Counter coffee ground	24.2 24.2 24.2

**14.1**

**14. Portioning**  
**Programming the quantity of product and water**

For altering the portioning proceed as follows:

Press the programming button. The display shows alternately the program menu:



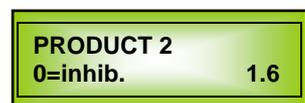
Press button 1. Now you are requested to enter the program CODE.  
 Press buttons **8 - 7 - 6** in succession



After successful entry the display shows:



Press button - 2 -. The display shows:  
 Here set the portioning for product 1.  
 The display "Operating time Product 2" corresponds to the product code explained in detail on the portioning sheet. The display "3.0" corresponds to the operating time for this product in terms of time units (corresponds to around 3.0 seconds).



**i**  
**Remove the mixing bowl, so that you can place a measuring vessel underneath**

To change the quantity of the product proceed as follows:

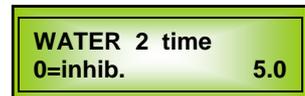
Button 4 – Change of time value upwards (higher)

Button 5 – Change of time value downwards (lower)

To check your settings press button " 10 " to draw a test portion of the selected product.

**Ensure sufficient after-run time (subsequent rinsing) of water.**

On pressing button – 2 –. The display shows:  
 Here you can set the quantity of water for product 2.



On pressing button – 2 –. The display shows:  
 Here you can set the operating time for mixer motor 2.



Subsequently press button – 2 – and repeat this process for the other controlled products.

When you have programmed button 1 press button 1. The display shows:



Now repeat the process as described earlier up to button 10.

## 14. Portioning

### Can mode

14.2

Now with the new option "Can mode" in XM 180 you can refer to each product as a can. For programming the portions proceed as explained earlier in section 14.1.



POT portion  
Quantity 00

Press button -2- several times until the display shows:

Press buttons 4 or 5. Enter the number of portions (depending upon the size of cans. (max. value 9).

Now as explained earlier repeat the procedure up to button 10.

### Exiting the programming mode

14.3



END PROGRAMMING  
wait.....

You are in the program and have set all options according to your wish. Now press button 1. After this the program button to switch from the programming mode to the sales program. The display then shows END OF PROGRAMMING.

**14.4**

**14. Portioning**

**Portioning of coffee**

The portion of coffee is manually set though the portioning unit. You have the option to set the portion from 5.5 gr. to approx. 8.0 gr. To check the portioning kindly proceed as follows:



**TIP:**

You must not dismantle the brewer completely. Leave the water supply pipe connection.

- Remove the drip pan
- Loosen the brewer from the clamp and put it on the machine base so that you have sufficient place to put a vessel underneath.



- Press the programming button. The display shows alternately the program menu:
- Press button 1 for programming.
- Now you are requested to enter the program CODE. Press buttons **8 - 7 - 6** in succession
- Press button 1 till the display shows the following:

1=PROGR  
3=FREE

2=DATI      4=CLEAN  
5=MAINT.

insert code

DIAGNOSTICS - - - -  
- - - - -

TEST QTY COFFEE  
SEL 4

**TIP:**

During the initial start-up the portioning unit is filled up. Therefore, before pressing key 4 place a vessel under the portioning unit.

- Press button 2 till the following menu item appears on the display:
- Under this option you can draw out a sample portion of coffee by pressing button 4. The grinder starts and fills up the portioning unit. The portioning unit then automatically dispenses coffee.
- Weigh out the product.
- Too little? Too much? Change the portioning by shifting the regulator towards + or – and again press button 4. till you have the desired figure in grams.

You are in the program and have set all options according to your wish. Now press button 1, after this the program button to switch from the programming mode to the sales program. The display then shows:

END PROGRAMMING  
wait.....

## 14. Portioning

### Setting for the degree of grinding of coffee

14.5

You can vary the gap between the grinding disks by turning the adjusting rings, it determines the degree of grinding of coffee.



For new setting please proceed as follows:

Close the slide of the coffee container. Remove the coffee container. Remove the rest of the beans in the grinder using the portioning mode or a suction unit, so that no more beans are left in the grinder. The setting of the degree of grinding is done in grid pitches. To find an orientation point during the initial start-up, please turn the grinder in the clockwise direction up to the limit stop. Now again turn the grinder approx. 30 grid pitches in the anticlockwise direction. Now you have set a coarse grinding. Draw out a black coffee from the installed brewer. The optimum degree of grinding can be worked out on the basis of brewing time. Here measure the brewing period. The optimum brewing period for a black coffee with 130 ccm is approx. 25 – 30 seconds. The brewing period is calculated from the pump start to the end. If the brewing period is longer the grinding is too fine. If the brewing period is shorter the grinding is too coarse. With that you can change the setting ring of the grinder in respective direction. Make changes only in fine steps. Only after 3 test portioning steps does the actual degree of grinding become active.

Clockwise rotation:  
(in clockwise direction)

Distance becomes smaller = fine grinding



**TIP**

To start with always make the setting for a coarse grinding. Very fine grinding could block the brewer.

Anticlockwise rotation:  
(in anticlockwise direction)

Gap gets larger = coarser grinding



**TIP**

Only after approx. 3 test portioning steps does the actual degree of grinding in the brewer become active.

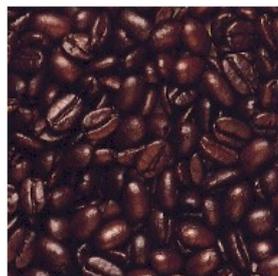
Be in mind that the portioning must be checked again when the degree of grinding is changed. Therefore, after setting the degree of grinding check the portioning once again.

### Which coffee beans?

14.6

**TIP**

Espresso beans = dark beans. In this case the following setting applies: Brewing period for black coffee approx. 30 seconds  
Brewing period *espresso* approx. 10 – 15 seconds



**TIP**

Light beans = German quality of coffee beans. In this case the following setting applies: Brewing period for black coffee approx. 20 seconds

15.1

# 15. Portioning list

## Explanation on portioning list

For each button you have the option to change the portioning of the time of the product motor, mixer motor and valve required and controlled for the purpose.



You can use button 4 and 5 to change this value

**Button active:**

Here you can activate or deactivate the selected button. Normally the button is always **active**.

**Button deactivated:**

You have the option to deactivate the individual buttons. With this option no drink is dispensed in the sales mode.



You can use button 4 and 5 to change this value

**Programming partial:**

Programming partial means: Only those parameters that have a function are visible.



**Programming total:**

Programming total means: All functions, even those that do not have a function, are visible.



**What can you do with programming partial or total?:**

With programming partial option, if you set a parameter to "0" and then exit programming, this parameter is not visible when the "programming partial" option is selected the next time.

You can again access the parameter by selecting the programming total option for this button. Now again enter a value for this parameter. Again set the programming partial option to see whether this value is visible.

**Mixer RPM:**

You have the option to influence the speed of the mixer motors. Standard setting of the mixer motor speed can be found in the portioning list. Setting options from 00 to 05.

**Mixer RPM ... 00:**

The mixer limiting is deactivated, which means that the motor is running on full power.



**Explanation regarding the setting of the mixer speed:**

The voltage supply is reduced, which means that the motor runs slower. Thus the speed is reduced. The given speeds are based on measurements without load.

Setting	00	01	02	03	04	05
Voltage Volt DC	24 V	21 V	18 V	15 V	12 V	9 V
Speed rpm	16000	13500	11000	8000	5800	3200



These are approximate values.

These are approximate values.

## 15. Portioning list

### Portioning list XMED 1D – 29-10-03 with can mode option

**15.2**

	Standard data		Your Data	Your Data	Recommended portioning	
	Product 3 = Whitener				Produkt 3 = Topping	
	Time	Gram	Time	Gram	Time	Gram
<b>Button 1 Preselection Sugar</b>						
QUANTITY WITH SUGAR Z2 (Extra sugar setting)	1,0	3,0 g				
<b>Button 2 Cappuccino / Cappuccino extra</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
COFFEE WATER	4,0					
PRODUCT 1 Z1	1,9	6,0 g				
PRODUCT 3	2,6	6,0 g			3,0	6,0 g
WATER 1 TIME	6,0					
MIXER 1	9,0					
MIXER SPEED 1	00				00	
NUMBER OF CAN PORTIONS	00				00	
<b>Button 3 CreMoca / Espresso</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
COFFEE WATER	3,0					
PRODUCT 1 Z1	1,3	4,0 g				
PRODUCT 3	1,3	3,0 g			1,7	3,0 g
WATER 1 TIME	3,0					
MIXER 1	5,0					
MIXER SPEED 1	00				00	
NUMBER OF CAN PORTIONS	00				00	
<b>Button 4 MoccaCino</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
COFFEE WATER	4,0					
PRODUCT 2	1,8	10,0 g				
PRODUCT 3	2,6	6,0 g			3,5	6,0 g
WATER 1 TIME	5,5					
MIXER 1	8,5					
MIXER SPEED 1	00				00	
NUMBER OF CAN PORTIONS	00				00	
<b>Button 5 Cafe au Lait / White Coffee</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
COFFEE WATER	5,0					
PRODUCT 1 Z1	1,9	6,0 g				
PRODUCT 3	2,0	5,0 g			2,8	5,0 g
WATER 1 TIME	4,0					
MIXER 1	7,0					
MIXER SPEED 1	00				00	
NUMBER OF CAN PORTIONS	00				00	

## 15.2

## 15. Portioning list

### Portioning list XMED 1D – 29-10-03 with can mode option

	Standard data		Your Data	Your Data	Dosiervorschlag	
	Product 3 = Whitener				Product 3 = Topping	
	Time	Gram	Time	Gram	Time	Gram
<b>Button 6 Black Coffee</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
COFFEE WATER	9,0					
PRODUCT 1 Z1	1,9	6,0 g				
NUMBER OF CAN PORTIONS	00				00	
<b>Button 7 Latte Macchiato / White Coffee</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
COFFEE WATER	2,0					
PRODUCT 1 Z1	1,9	6,0 g				
PRODUCT 3	5,5	11,0 g			7,0	11,0 g
WATER 1 TIME	8,0					
MIXER 1	6,0					
MIXER SPEED 1	00				00	
NUMBER OF CAN PORTIONS	00				00	
<b>Button 8 Choco / ChocoCreme</b>						
BUTTON Functioning/ Inhibited	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
PRODUCT 2	4,5	20,0 g				
WATER 1 TIME	9,0					
MIXER 1	12,0					
MIXER SPEED 1	00				00	
NUMBER OF CAN PORTIONS	00				00	
<b>Button 9 Tea / Soup</b>						
Taste Aktiv / Gesperrt	Functioning				Functioning	
Programming Partial / Total	Partial				Partial	
PRODUCT 4	3,0					
WATER 2 TIME	9,0					
MIXER 2	12,0					
MIXER SPEED 2	00				00	
NUMBER OF CAN PORTIONS	00				00	
<b>Button 10 Cup Cancellation</b>						
Preselection / Inhibited	Preselection				Preselection	
Tumbler detection 1=Active	0				0	

**IMPORTANT NOTE:**

**This portioning list lists all menu items that can be changed.**

In programming mode REDUCED, even those parameters that cannot be changed but have a function, are also visible. These parameters are fixed for the product recipe.

In programming mode OPEN all parameters are visible. For programming each button you have over 40 set points available to you. Which means that with 10 selection buttons you have over 400 parameters that can be taken into account for programming a machine. To make the programming clearer to you we have integrated the program item Programming REDUCED.

## 16. Setting the sales price

### Price allocation

16.1

The machine allows 10 price allocations which are assigned permanently to 10 selection buttons. You can sell at 10 different prices.

- Price 1 - Button 1 preselection sugar – no price setting
- Price 2 - Button 2
- Price 3 - Button 3
- Price 4 - Button 4
- Price 5 - Button 5
- Price 6 - Button 6
- Price 7 - Button 7
- Price 8 - Button 8
- Price 9 - Button 9
- Price 10 - Button 10

### Setting the sales price

16.2

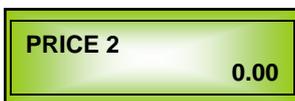


In programming using button 1 select the list "Programming prices". The display shows:



Now, press button -2-. The display shows:

Set the desired price with the buttons – 4 – and – 5 – .



Press button 2 after you have set price 1. The display shows:

Repeat the procedure as described earlier up to Price 10.

**The sales price must be adjusted according to the smallest coin value used in the coin acceptor unit**

**Price setting "0" implies free sales. If a coin acceptor unit is connected no coin collection takes place**

### Fix the value of the coins

16.3



In programming using button 1 select the list "Programming coins". The display shows:



Now, press button -2-. The display shows:

The basic setting for the coin set is programmed as follows:

- Coin A = 0.05 €
- Coin B = 0.10 €
- Coin C = 0.20 €
- Coin D = 0.50 €
- Coin E = 1.00 €
- Coin F = 1,00 € (desired value of the token)

**This function is supported only in connection with the pulse generators.**

**On pressing buttons 4 and 5 you can increase or decrease the value of the coin.**

## 17.1

## 17. Setting the temperature

## Boiler temperature

In programming using button -1 select the list "Programming temperature".  
The display shows:

PROGRAMMING - - - -  
-TEMPERATURE - - - -

Now, press button -2-. The display shows:

TEMPERATURE  
boiler 90

Using selection buttons 4 and 5 you can set the heating temperature of the boiler. The set-point should not exceed the basic value of 92 °C.

## 17.2

## Temperature increase °C

Press button -2-. The display shows:

TEMPERATURE  
first coffee 0

With this parameter you can set the temperature level for the heating cycle set in the temperature increase.  
Optimum set-point: **98°C**. Standard setting: 0°C

**TIP:**

The temperature increase activated when for a long time no coffee is drawn out. This could calcify the brewer parts and take away the heat. Due to this the drink would appear not to be quite hot.

## 17.3

## Time for temperature increase

Press button -2-. The display shows:

DEFINITION  
first coffee 0

With this parameter you can set a heating cycle of 0 – 90 minutes for the temporary temperature for every first coffee. Optimum set-point: **20 minutes**  
Standard value: 0 minutes **0 – 90 minutes**

## Solution for temperature problems



If product is dispensed in "thick-walled" porcelain or earthenware cups, it is possible that the drink appears to be somewhat "cold". If the cups are not pre-heated, they draw out heat from the drink and lower its temperature. In this regard we recommend a cup warmer to heat the cups.



Cup warmer

Article number:  
119 054

## 18. Miscellaneous settings

### Machine number

18.1

PROGRAMMING - - - -  
- MISCELLANEOUS -

In programming select button –1- select the list “Miscellaneous programming”. The display shows:

machine code  
A 00

Press button –2-. The display shows:  
Here you can enter the machine number.

machine code  
B 00

If a second machine is connected to the XS, you can give an additional machine number.

### Information

18.2

message number  
0

You have the option to select from multiple fonts in the display.

Now, press button -2-. The display shows:

take a relax  
moment

With button – 4 – and – 5 – you can set your desired display information.

rheavendors  
XM

- 0 = rheavendors XM
- 1 = take a relax moment - rheavendors XM
- 2 = enjoy a break time - rheavendors XM
- 3 = **Freely programmable**
- 4 = enjoy a break time - rheavendors XM
- 5 = rheavendors at your service – rheavendors XM
- 6 = insert coins – rheavendors XM
- 7 = message 7 – rheavendors XM

### Payment system

18.3

Coin-mech type  
PAR. SING. VEND.

Press button –2-. The display shows:

With button – 4 – and – 5 – you can set your desired payment system.

#### Payment system

##### Par. Sing. Vend.

Pulse generator (e.g. G13) for single sale

##### Par. Mult. Vend.

Pulse generator (e.g. G13) for multiple sales

##### Executive

Coin changer, cashless (e.g. cash card)

##### Exec. Price Hold

for price setting via the payment system.  
(coin changer)

##### MDB

Coin changer, cashless (e.g. cash card)



SERVICE  
OFF 2

Take care that your payment system is set correctly. In case of incorrect setting the display shows:

## 18. Miscellaneous settings

### 18.4

#### Fan after-run time

Press button –2-. The display shows:  
Here you can set the after-run time of the fan, how long should the fan run after the product has been selected. Set-point between 0 and 180 minutes.

Standard setting here is **5 Min.**

fan time min.	05
------------------	----

### 18.5

#### Time signal

Press button –2-. The display shows:  
Determine the length of the signal tone from the electronic controls of the CPU on selection of products and/ or confirmation of coin acceptance.

Beep time	0.5
-----------	-----

### 18.6

#### Decimal position

Press button –2-. The display shows:  
Setting of the decimal point according to German and/or European coin value (x . xx). **Setting = 2**

decimals number :	2
-------------------	---

### 18.7

#### Language

Press button –2-. The display shows:  
Setting the language for the menu. By pressing buttons 4 and/or 5 you can select between 3 different languages.

sprache:	deutsch
----------	---------

language:	english
-----------	---------

lingua:	italiana
---------	----------

### 18.8

#### Grinder type

**0 = Grinding after drink dispensation**  
1 = Grinding before drink dispensation (for next portion)

Standard setting here is **0**.

grinder mode 0= after 1=before	0
-----------------------------------	---

### 18.9

#### Initial installation

This function is automatically activated at the time of initial start-up (pressure boiler and compensating container are filled up with water, temperature is set at 90 degrees, error messages in the error memory are deleted). With buttons 4 and 5 you can again activate or deactivate this function.

**0 = Initial installation activated**  
**1 = Initial installation deactivated**

first install. 0 = first	1
-----------------------------	---

## 18. Miscellaneous settings

### Active Snack

18.10

habil. snack  
0 = no 1 =yes 0

Press button -2-. The display shows:

You have the option to connect our Snack Mini as a slave device to the XM 180. For this you need a snack slave-kit .

When you activate this setting additional parameters for price setting, temperature setting and error messages appear in the programming. If you have not connected any snack this setting must definitely be at "0".

### Stirring rod

18.11

abil. stirrers  
stirrers sugar

Stirring rod output  
only with preselection sugar

abil. stirrers  
stirrers no sugar

Stirring rod output  
Only with coffee products with and without preselection sugar  
(not with instant products)

abil. stirrers  
stirrers every

Stirring rod output  
with each selection

## 19. Diagnosis program

### 19.1



**These options are important and useful tools for the service engineer.**

Now, press button -2-. The display shows:

**1** = permanent temperature display on the display  
**0** = no temperature display on the display

After the test again deactivate this display so that the other display information can be shown.

**HABIL. DISPLAY  
TEMPERA. 1=YES 0**

### 19.2

#### Voltage

Now, press button -2-. The display shows:

Here you can read the output voltage from the transformer.

**VOLTAGE  
volt: 24,8**

### 19.3

#### Coffee portion

Now, press button -2-. The display shows:

Under this option you can draw out a sample portion of coffee by pressing button 4. The grinder starts and fills up the portioning unit.

The portioning unit then automatically dispenses coffee.

Also see section 14.4 portioning of coffee.

**TEST QTY COFFEE  
SEL 4**

### 19.4

#### Cup test

Now, press button -2-. The display shows:

Now, press button -4-. The cup dispenser now dispenses a cup.

**CUP TEST  
SEL. 4**

### 19.5

#### Stirring rod test

Now, press button -2-. The display shows:

To test the functioning of the stirring rod dispenser, press button -4-. The stirring rod dispenser now dispenses a stirring rod.

**STIRRER TEST  
SEL. 4**

### 19.6

#### Tumbler arm test

Now, press button -2-. The display shows:

In the tumbler dispensing area there is a tumbler dispensing arm. To test the functioning of this dispensing arm, press button -4-.

**TEST CUP STATION  
SEL. 4**

### 19.7

#### Sugar Test

Now, press button -2-. The display shows:

To test the functioning of the sugar output slider, press button -4-. The output slider drives once forward and back.

**TEST FALL  
SEL. 4**

## 20. Sales data

### Cumulative counter

20.1



Press button 2. The display shows:

This counter registers all sales in the sales mode, free sale mode and can mode.  
**This counter status cannot be reset.**



### Time counter

20.2



Press button 2. The display shows:

This intermediate counter registers all sales in terms of numbers of pieces in sales mode. This counter status can be reset by pressing button 4 for a long time.

### Money counter

20.3



Press button 2. The display shows:

This counter registers all sales in terms of coin value in sales mode. This counter status can be reset by pressing button 4 for a long time.

### Test counter

20.4



Press button 2. The display shows:

This counter registers all sales in terms of coin value Free sale mode. This counter status can be reset by pressing button 4 for a long time.

### Price 1 to price 10 counter

20.5



Press button 2. The display shows:

This counter registers all sales in terms of number of sold drinks of button 1. This counter status can be reset by pressing button 4 for a long time.

Proceed as described earlier for all other price allocations (up to price 10) to read or reset counter statuses.

### Can counter option 1 to option 10

20.6



Press button 2. The display shows:

This counter registers all portions that are covered in "CAN" mode as can sales cannot be stored with a price.

Proceed as described earlier for all other portion counters (up to can option 10) to read or reset counter statuses.

## 21. MDB settings

### MDB Parameter

# 21.1

Change the MDB settings according to the following table.

Use button 2 to move in the CODE area and with buttons 4 and 5 change the values.



CODE	Explanation	Set standard value																																																
Coin key 7 – 8 – 9 – 10	Channel payment by pressing the button 7 – 8 – 9 – 10 (7 = 0,50 € 8 = 0,20 €, 9 = 0,10 €, 10 = 0,05 €)																																																	
EE	0 = Ready for change 1 = Purchase obligation	1																																																
C MAX CREDIT	Maximum credit in Cent 0 = infinite 500 = Value in Cent = 5 €	0																																																
R MAX remaining cash	Maximum remaining cash in Cent 0 = infinite 500 = Value in Cent = 5 €	0																																																
SS	0 = Single sale (Singlesale) 1 = Multiple sale (Multisale)	0																																																
Token	Value or free sale impulse of the token Free sale impulse is = 0. Message on the display: Free sale Value of the token which is programmed in the coin acceptor unit e.g. 100 = 1 €. Message on the display: 1.00	0																																																
CIN	Blocking the individual coin channels <table border="1" style="width: 100%; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td><td>O</td><td>P</td> </tr> <tr> <td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> </table> 0 = Active 1 = Blocked	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	All coins are activated  0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0																
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P																																			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																			
CH	Receipt group with display "put in counted cash"  BLOCK EURO (€) <table border="1" style="width: 100%; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td><td>O</td><td>P</td> </tr> <tr> <td>5</td><td>10</td><td>20</td><td>50</td><td>100</td><td>200</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td> </tr> <tr> <td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> </table> 0 = Active 1 = Blocked	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	5	10	20	50	100	200	-	-	-	-	-	-	-	-	-	-	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	<b>Kindly note that:</b> While using a token, activate the corresponding channel. (TK)
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P																																			
5	10	20	50	100	200	-	-	-	-	-	-	-	-	-	-																																			
0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0																																			
MDB channel capacity	Total contents in the channels	Value in EURO																																																
	 <b>These settings are required only for coin changer.</b>																																																	

## 22. Time

### Clock functions

#### 22.1

**PROGRAMMING - - - -  
CLOCK**

Press button 1. The display shows:

The machine has an internal clock . You have the option to set various switching functions. The clock becomes active only after you have entered the time.



#### On

#### 22.2

**SWITCHING ON:  
00:00**

Press button 2. The display shows:

Here you can enter the switch-on time for the machine. (e.g. 06.00). On setting this parameter to 00.00 this setting is again deactivated.

#### Off

#### 22.3

**SWITCHING OFF:  
00:00**

Press button 2. The display shows:

Here you can enter the switch-off time for the machine. (e.g. 18.00). Drinks can be sold only between the switch ON and switch OFF time. When the switch-off time is reached the machine shows in the display: Shall again be ready for sale from 06.00 onwards.

On setting this parameter to 00.00 this setting is again deactivated.

### Rinsing

#### 22.4

Press button 2. The display shows:

**CLEANING:  
00:00**

Here you can set the switch-on time for automatic cleaning (e.g. 07.00).

**CLEANING  
PROGRAM**

When the clock reaches 7.00 the automatic cleaning starts with the following display:



**CLEANING 1**

The display changes and it shows:  
Now a cleaning cycle with approx. 60 ml water is being used for the brewer.

**CLEANING 2**

The display changes and it shows:  
Now a cleaning cycle with approx. 60 ml water is being used for the hot water pipe.

**CLEANING 3**

The display changes and it shows:  
Now a cleaning cycle with approx. 60 ml water is being used for the mixing bowl.

**CLEANING 4**

After the automatic cleaning is over the machine goes back into the sales mode.

**Automatic cleaning takes place only when minimum 5 portions are sold within 24 hours.**

The automatic cleaning can be again deactivated by setting the parameter to 00.00.

## 22. Time

### 22.5

#### Time

Press button 2. The display shows:

Here you can set the current time.



### 22.6

#### Day

Press button 2. The display shows:

Here you can enter the current date.

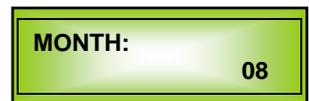


### 22.7

#### Month

Press button 2. The display shows:

Here you can enter the month.



### 22.8

#### Year

Press button 2. The display shows:

Here you can enter the current year.



## 23. Fault memory

### Error messages XM

#### 23.1

**REGISTRATION  
OUT OF SERVICE**

The machine stores the last 20 error messages. The individual error messages can be deleted by pressing button -4-.



**n. 1      OFF 31B  
07:12    16-11-2001**

Now, press button -2-. The display shows:

**n. 2      OFF 1  
12:12    10-11-2001**

#### Explanation of error messages:

The last fault is always shown as n. 1.

**n. 1**            = Error message no. 1  
**OFF 31B**       = Cause of the fault (see section 10.5)  
**07:12**         = Time of the error message  
**16-11-2001**   = Date of the error message

Press button -2- once again. The display shows the next error message: n. 2 = Error message no. 2.

On pressing button - 2 - you can retrieve all error messages up to n. 20.

If the memory is full with 20 error messages and a fresh error message appears, the error messages are shifted back by one number (n. xx) and the error message (n. 20) is deleted from the memory.

**n. 10      OFF    ===  
==:==     ==-20==**

If all locations in the fault memory are not full as yet, the display shows:

**If you want reliable values in the error messages, please ensure that the time, day, month and year are set properly.**



## 24. Service counter

### 24.1



### Service messages

The machine has service counters that help in flawless servicing and inspection of the machine. The counters are activated as follows:

### 24.2

### Service messages

Now, press button -1-. The display shows:

PROGRAMMING MAINTENANCE		
----------------------------	--	--

#### WATER FILTER COUNTER

Now, press button -2-. The display shows:

cnt.	filter	H2O
[ 00]		0

This counter is used to find out when should the water filter be replaced.

Using buttons 4 and 5 you can enter the number (depending upon the filter used) of portions. (max. value 10000). For example:

cnt.	filter	H2O
[ 00]		4800

Confirm the entry with button 8.  
The display shows:

cnt.	filter	H2O
[ 4800]		4800

The counter is now active.

The counter now registers all sales. It counts back up to value "2". As soon as the counter reaches 2 its value remains unchanged and it is still possible to sell. **It does not count back to value "0"**.

cnt.	filter	H2O
[ 02]		4800

If the value of the counter reaches below "50", in addition to the set information the display shows the following:

REPLACE WATER FILTER		
-------------------------	--	--

While replacing the water filter, as explained, again reset the counter with button 8 to the value set earlier. The display "Water filt. count" then vanishes.

cnt.	filter	H2O
[ 4800]		4800

#### BREWER COUNTER

Now, press button -2-. The display shows:

This counter is used to find out when should the brewer be cleaned.

cnt.	brewer	cof.
[ 00]		0

Using buttons 4 and 5 you can enter the number (Standard value approx. 500) of portions. (max. value 9999).

For example:

cnt.	brewer	cof.
[ 00]		500

Confirm the entry with button 8.  
The display shows:

cnt.	brewer	cof.
[ 500]		500

The counter is now active.

## 24. Service counter

### Service messages

#### 24.2

#### BREWER COUNTER

cnt.	brewer	cof.
[ 02]		500

The counter now registers all sales. It counts back up to value "2". As soon as the counter reaches 2 its value remains unchanged and it is still possible to sell. **It does not count back to value "0"**.

**CLEAN  
BREWER**

If the value of the counter reaches below "50", in addition to the set information the display shows the following:

cnt.	brewer	cof.
[ 500]		500

Now start the cleaning program of the brewer and reset the counter with button 8 as described above. The display "Brewer count." then vanishes.

#### COFFEE SET COUNTER

cnt.	cof.	ground
[ 00]		0

Now, press button -2-. The display shows:

This counter is used to find out when should the the coffee set container be emptied.

cnt.	cof.	ground
[ 00]		100

Using buttons 4 and 5 you can enter the number (Standard value approx. 100) of portions. (max. value 9999). For example:

cnt.	cof.	ground
[ 100]		100

Confirm the entry with button 8. The display shows:

The counter is now active.

cnt.	cof.	ground
[ 02]		100

The counter now registers all sales. It counts back up to value "2". As soon as the counter reaches 2 its value remains unchanged and it is still possible to sell. **It does not count back to value "0"**.

**EMPTY  
COFFEE SET**

If the value of the counter reaches below "50", in addition to the set information the display shows the following:

cnt.	cof.	ground
[ 100]		100

Empty the coffee set container and reset the counter with button 8 as described above. The display "Coffee set count." then vanishes.

## 25. First aid– (error messages)

### 25.1

### Error messages



Display CODE	Cause	Fault elimination	TIP
<b>SERVICE OFF 1</b>	No cups	Refill cups	
		Photocell defective / replace	
		Cup type not suitable	
<b>SERVICE OFF 2</b>	Payment system malfunction	Incorrect payment system	
		Defective adapter cable	
		Power breakdown in data cable from coin unit to CPU	
		Coin unit defective	
<b>SERVICE OFF 3</b>	Drip pan full	Empty the drip pan	
<b>SERVICE OFF 4</b>	Fault in the sugar output slider	Check microswitch	
		Check driving motor	
		Check cable connection	
<b>SERVICE OFF 5A</b>	The right EAROM memory on the CPU is defective.	Replace memory	
<b>SERVICE OFF 5B</b>	The left EAROM memory on the CPU is defective.	Replace memory	
<b>SERVICE OFF 6</b>	No water	Water tank empty	Pull out overflow pipe at the inlet valve, allow collected water to drain out from the pipe
		Inadequate water supply (inlet valve is defective)	
<b>SERVICE OFF 6B</b>	Water loss in the boiler, although no sales took place.	Check boiler for leakage	
		Inspect pipe joints	
<b>SERVICE OFF 7</b>	Brewer blocked	Start cleaning program for the the brewer	
		Remove and clean the brewer	
	The brewing period was exceeded	Grinding set to too fine	
		Flowmeter (water counter) is defective	

## 25. First aid– (error messages)

### Error messages

25.1

Display CODE	Cause	Fault elimination	TIP
<b>SERVICE OFF 8</b>	The brewer does not move to its end position.	Check the microswitch on the brewer motor	
		Voltage for brewer motor leakage	
<b>SERVICE OFF 8 A</b>	The micro-switch for the Brewer is blown out	The brewer is not installed or not installed properly.	
		The micro-switch is defective	
<b>KEIN KAFFEE OFF 9</b>	The time span for filling up the portioning unit was exceeded	The coffee beans container is empty	
		The slide on the beans container is closed	
		The grinding disks are blunt and must be replaced	
		The 6.3A fuse is blown out	
<b>SERVICE OFF 10</b>	Loss of programmed inputs or program memory malfunction RAM WITHOUT data.	Load data with the flash card	
		Replace EAROMS memory	
<b>SERVICE OFF 13</b>	Fault in the tumbler dispenser arm	Check microswitch	
		Check driving motor	
		Check cable connection	
<b>SERVICE OFF 14</b>	Boiler level control not ok	Check microswitch on soluble tank	
	Water loss, although no sales took place.	Check soluble tank for leakage	
<b>SERVICE OFF 15</b>	Fault in the tumbler tower	Photoelectric barrier not ok	
		Tumbler door motor not ok	
<b>SERVICE OFF 16</b>	The programming key on the display unit is stuck or defective	Check the key and replace when necessary	
<b>SERVICE OFF 17</b>	Keypad malfunction	Replace keypad	

## 25. First aid– (error messages)

### 25.1

### Error messages

Display CODE	Cause	Fault elimination	TIP
<b>SERVICE OFF 24 A</b>	24 Volt Voltage supply not available	Transformer is defective	
		Transformer plug is defective	
	Strip conductors on the CPU broken	CPU defective	
		One motor has a defect	
<b>SERVICE OFF 24 B</b>	One transistor in the power supply on the CPU is defective	Replace transistor	
		Replace CPU	
	6.3 A fuse on the CPU is blown out	CPU defective	
		One motor has a defect	
<b>SERVICE OFF 25</b>	Fault in the motor in the tumbler dispenser	Check microswitch and motor in the tumbler dispenser and replace if necessary	
<b>SERVICE OFF 31 A</b>	Boiler is too hot	CPU defective (Triac for heating element short-circuits)	
<b>SERVICE OFF 31 B</b>	Boiler is too cold	Safety temperature limiter is triggered	
		CPU defective (Transistor defective)	
<b>SERVICE OFF 31 C</b>	Temperature sensor does not measure	Temperature sensor is defective	
		Power supply to temperature sensor interrupted	

## 25. First aid– (error messages)

### Causes of malfunctions without error messages

## 25.2



For the malfunctions described here no error messages are displayed on the display unit.

Fault	Possible cause	Solution
The machine is out of operation, no part gets any power	Power supply had broken down	Check input voltage and restore when necessary
	Main fuse has blown out	Replace fuse
The machine is out of operation, nothing can be seen on the display unit but a few parts continue to get power	The fuse for 8.5 Volt on the CPU is defective	Replace fuse
	The display unit is not properly connected to the CPU	Check plug connection
The machine is on, however, neither product nor water is being dispensed	One of the 24 Volt fuses is defective. Transformer output voltage	Replace fuse
The machine is on, there is water but no product is being dispensed	Product containers are not put in place properly	Put the product container properly in place
	Product motor is defective	Replace product motor
	Plug connection is loose	Triac PCB is defective Check cable connection

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