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Notes for using the manual

Other applicable documents to supplement the manual

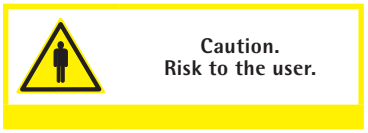
- Spare parts lists for WMF 800 (includes WMF 900 with the name E15-titan) and WMF 1000 S and 1000 pro S Piping schematics (03.0400.0021 for WMF 800/900 and 03.0510.0002 for WMF 1000 S/1000 pro S)
- Service program training documentation
- User manuals WMF 900 and WMF 1000 S / 1000 pro S

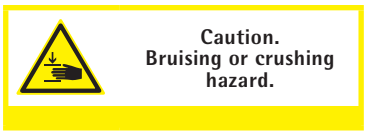
Update of the manual and associated documents

The manual and the associated documents are updated regularly, and are available for download at any time from www.servicecenter.wmf.de.
You will be informed of any updates via email, so you can keep your records up to date.

Hazard notices

Training Manual Signs and Symbols





Tip
Instructions

Cross reference

Caution.
The hazard warnings listed here must be familiar and must be followed before opening, repairing, or maintaining the coffee machine.

Shock hazard – live parts

The coffee machine is not fully disconnected from the mains if only switched off!
Prior to any associated work, be shure to disconnect power cord.

Caution.
Line voltage is present at the mains cable connection, the CPU board, the power supply, the heater relays, the boilers at the heater connections, and the Klixon thermal overloads, and their corresponding connecting lines.

Depressurize hot water boiler / steam boiler

Caution.
Hot water boiler and steam boiler and valves are under pressure and temperature!
Release pressure before carrying out maintenance or repair work and allow to cool off!

Burn hazard

Caution.
Any parts that come into contact with media present a burn hazard.

Scald hazard

Caution.
here is a risk of scalding at spouts and at disconnected or faulty connections due to egress of medium!

Handling of cleaning and descaling agents

Caution.
Health hazard through contact and swallowing.
Please familiarize yourself with the safety data sheets.

Bruising or crushing hazard

Caution. Bruising or crushing hazard exists on the following moving parts:

- Brewing unit
- Grinder
- Grounds container
- Water tank
- Drip tray
- All-in-One spout

Part 1 Technical information

1/1 Technical information WMF 800 / 900

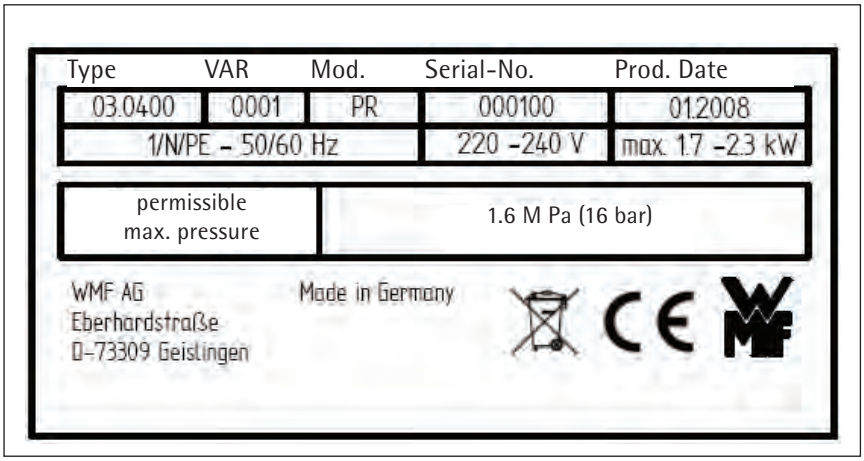
	WMF 800	WMF 900
Brewing process	Coffee specialties with and without milk.	
Pot function		Use the pot function to dispense several cups of café crème at once.
Daily / hourly performance **	Maximum 35 cups coffee specialties with and without milk and/or milk foam dispensing per day. 4-5 liters hot water total amount per hour.	
Average daily use	7 cups	
Nominal power rating *	1.7-2.3 kW	
Energy saving mode (Consumption at operating temperature, without water dispensing)		Four Eco-Modes can be selected: Eco mode 1 ▷51 W Eco-Mode 2 ▷42 W (savings of 18 %) Eco-Mode 3 ▷39 W (savings of 24 %) Eco-Mode 4 ▷22 W (savings of 57 %)
Zero Energy function	Programmable switch-on and switch-off times for individually adaptable power needs; no power is consumed when switched off.	
Mains power connection *	1/N/PE~ 50/60 Hz; 220-240 V; fused with a maximum of 16 A.	
Mains voltage tolerance range	230 V + +6 % -10 %; mains voltage interruption <50 ms no interruption of function	
Ambient temperature	+5 °C to max. +35 °C (empty the water line in case of frost)	
Maximum humidity	80 % relative humidity without condensation, no water spray, Do not use unit outdoors.	
Accessories	Multitool, cleaning brush, cleaning tablets, milk nozzle, 1.7 mm (transparent), WMF Gasket grease (5 g), milk system cleaner, filter cartridge with adapter.	
Degree of protection	IPX0	
Protection class	Protection class I	
Water tank capacity	2.2 litres	
Drip tray capacity	about 1.0 liters	
Steam jet cup warmer		At the touch of a button, hot steam slowly flows into the cup from below.
Coffee bean hopper	250 g (0.75 liters)	
Continuous sound pressure level	<70 dB	
External dimensions W/H/D	305 mm / 400 mm / 443 mm	
Weight empty	approx. 15 kg	
On-site power connection *	3 x 1.5²/via isolated ground outlet	
On-site fuses	at least 10 A	
Others	Coffee machine with dry coffee grounds ejection into the integrated grounds container	
Procedure	Drip tray without drainage.	
Installation clearances	For operating, service, and safety reasons, the machine should be installed with a clearance of not less than 50 mm at the back and sides from the building or non-WMF components. A clear height of 1100 mm from the top of the supporting surface should be ensured. Recommended height of the working surface is a minimum of 700 mm and maximum of 900 mm from floor level. A minimum of 320 mm should be planned for remove the brewer.	
Built-in electrical connection	The power cord must not come into contact with hot surfaces. No additional user is allowed to be connected to the power connection.	
Water supply and drainage	In each case, WMF-specific connection conditions should be observed for water and Power supply. For drinking water with a carbonate hardness above 5 °dH (carbon hardness), a WMF scale filter should be installed.	

1/2 Technical information WMF 1000 S / 1000 pro S

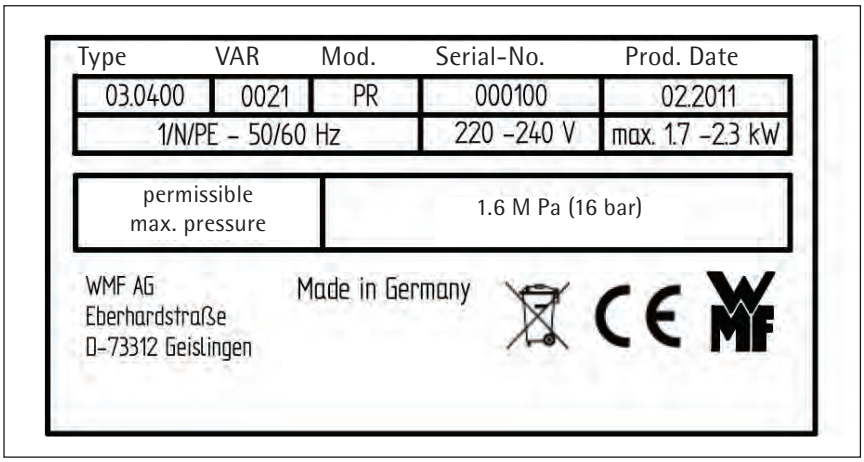
	WMF 1000 S	WMF 1000 pro S
Brewing process	Coffee specialties with and without milk.	
Pot function	Use the pot function to dispense several cups of café crème at once.	
Daily / hourly performance **	Maximum 50 cups coffee specialties with and without milk and/or milk foam dispensing per day. 4-5 liters hot water total amount per hour.	
Average daily use	10 cups	
Nominal power rating *	1.7-2.3 kW	
Energy saving mode (Consumption at operating temperature, without water dispensing)	Four Eco-Modes can be selected: Eco mode 1 ▷47 W Eco-Mode 2 ▷42 W (savings of 11 %) Eco-Mode 3 ▷39 W (savings of 17 %) Eco-Mode 4 ▷22 W (savings of 53 %)	
Zero Energy function	Programmable switch-on and switch-off times for individually adaptable power needs; no power is consumed when switched off.	
Mains power connection *	1/N/PE~ 50/60 Hz; 240 V; fused with a maximum of 16 A.	
Mains voltage tolerance range	230 V +6 % -10 %; mains voltage interruption <50 ms no interruption of function.	
Ambient temperature	+5 °C to max. +35 °C (empty the water line in case of frost)	
Maximum humidity	80 % relative humidity without condensation, no water spray, do not use unit outdoors.	
Accessories	Multitool, small cleaning brushes, cleaning tablets, gasket grease (5 g)	
	Transparent milk nozzle for unrefrigerated milk, steam nozzle (spare part), air intake pipe with cap (spare part)	Milk lance, cleaning brush for the milk lance
Degree of protection	IPX0	
Protection class	Protection class I	
Water tank capacity	2.8 litres	
Drip tray capacity	about 1.0 liters	
Steam jet cup warmer	At the touch of a button, hot steam slowly flows into the cup from below.	
Coffee bean hopper	280 g (with optional container expansion 600 g)	
Continuous sound pressure level	<70 dB	
External dimensions W/H/D	380 mm/407 mm (with optional container expansion 459 mm) /449 mm	
Weight empty	approx. 19 kg	
On-site power connection *	3 x 1.5²/via isolated ground outlet	
On-site fuses	at least 10 A	
Others	Coffee machine with dry coffee grounds ejection into the integrated grounds container	
Procedure	Drip tray without drainage.	
Installation clearances	For operating, service, and safety reasons, the machine should be installed with a clearance of not less than 50 mm at the back and sides from the building or non-WMF components. A clear height of 1,100 mm from the top of the supporting surface should be ensured. The height of the installation surface above the floor is at least 850 mm. At least 320 mm clearance must be provided above the machine in order to remove the brewing unit for maintenance and cleaning.	
Built-in electrical connection	The power cord must not come into contact with hot surfaces. No additional user is allowed to be connected to the power connection.	
Water supply and drainage	In each case, WMF-specific connection conditions should be observed for water and Power supply. For drinking water with a carbonate hardness above 5 °dH (carbon hardness), a WMF scale filter should be installed.	

* The local power supply must be constructed according to applicable national regulations (e.g. VDE 0100 for Germany). To improve safety, the coffee machine should be fitted with an FI 30 mA earth leakage current circuit breaker complying with DIN VDE 0664. If the mains connection lead for this coffee machine is damaged then it must be replaced using an original WMF spare part. No additional user is allowed to be connected to the power connection.
** The given daily / hourly performance is a STANDARD VALUE, which, among other things, is dependent upon the following factors: ground coffee quantity, type of coffee, grinding degree, brew water amount, water hardness and general operating status of the coffee machine (e.g. scaling, connection conditions, electrical power, drinking water, drainage, wear, etc.).

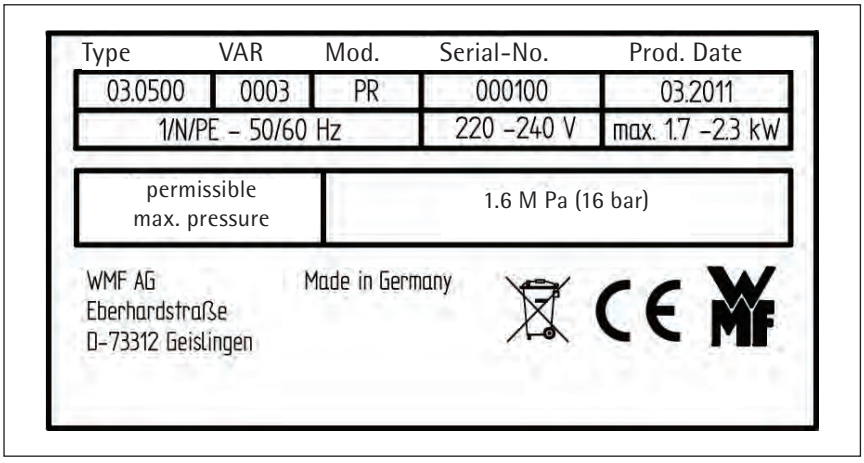
Model label WMF 800:



Model label WMF 900:

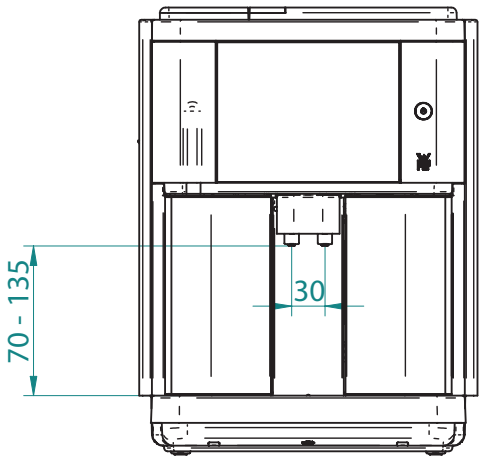


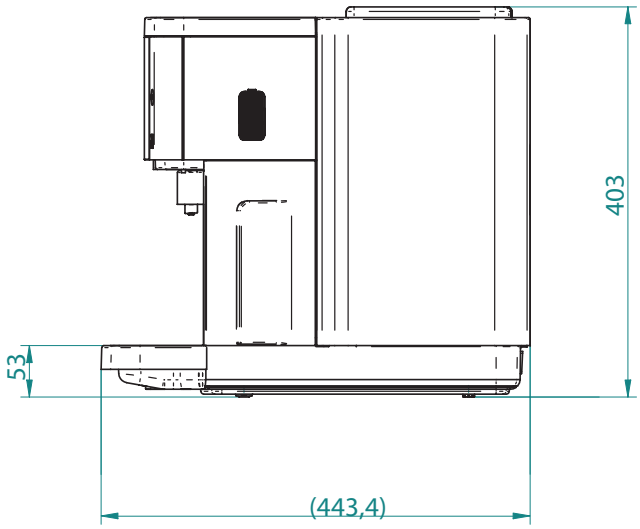
Model label WMF 1000 S / 1000 pro S:

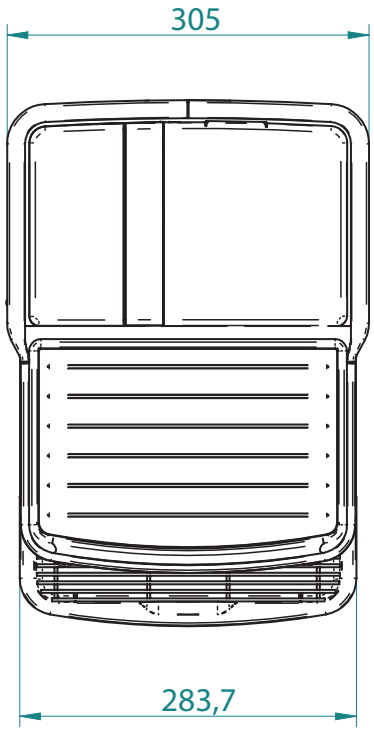


1/3 Views

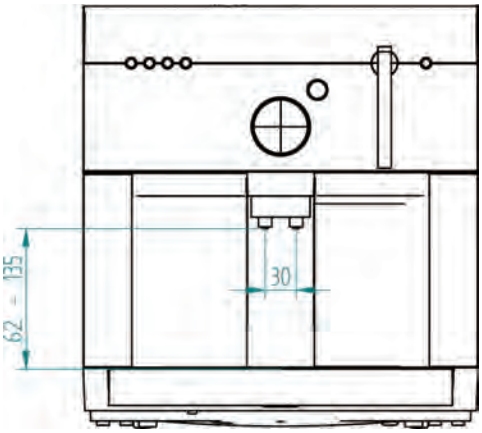
1/3.1 WMF 800 / 900

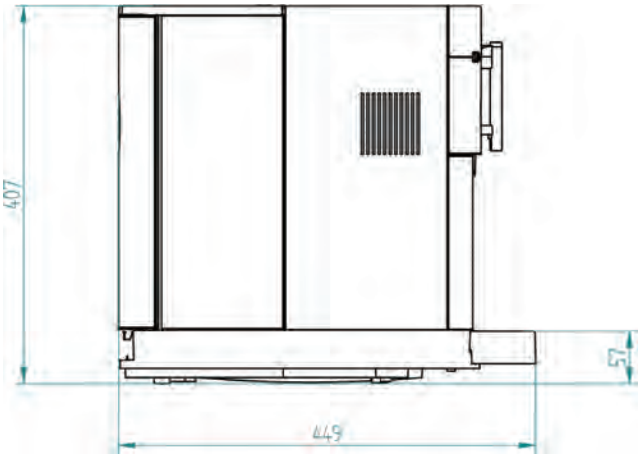


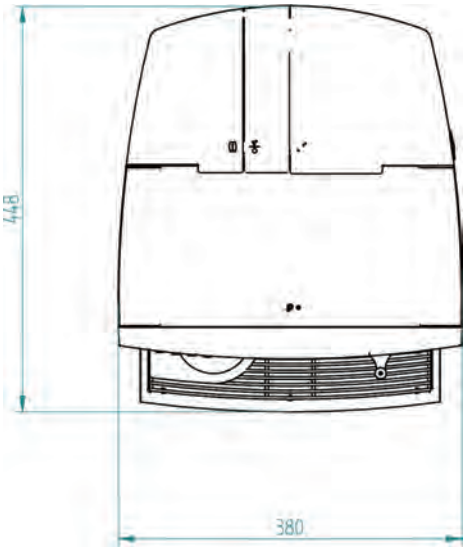




1/3.2 Views WMF 1000 S / 1000 pro S







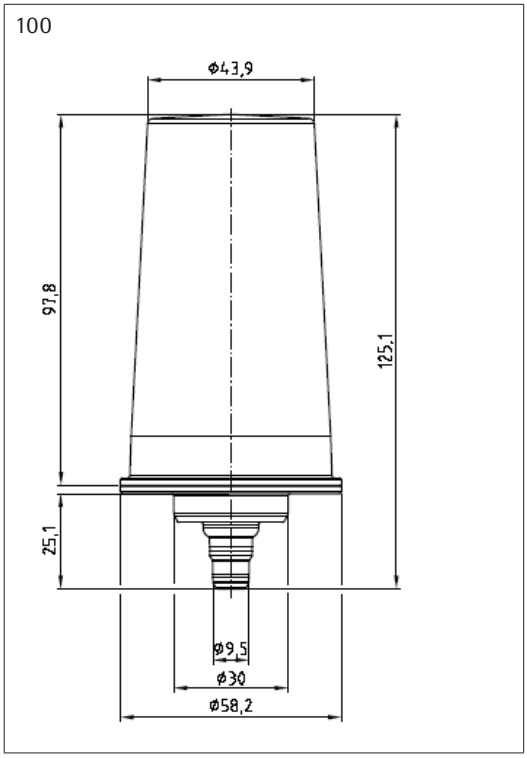
1/4 Water filter

The use of water filter 100 and 200 is recommended for using water with a carbon hardness of more than 5 °dH.

1/4.1 Water filter 100 for WMF 800 / 900 and 1000 S / 1000 pro S

Technical data and dimensions:

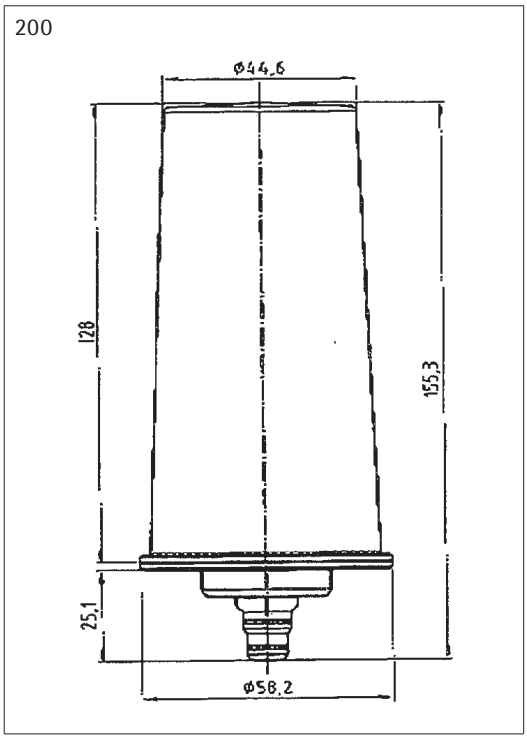
100



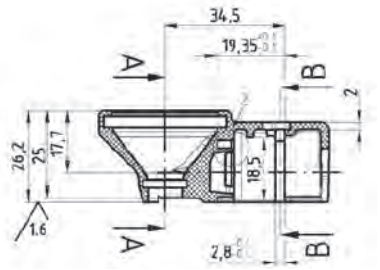
1/4.2 Water filter 200 for WMF 900 and WMF 1000 S / 1000 pro S

Technical data and dimensions:

200



1/4.3 Water filter adapter

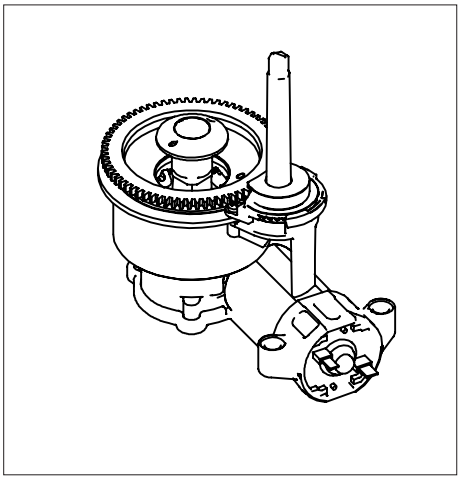


see User manuals
WMF 800 / 900 / 1000 S / 1000 pro S

If a water filter is used, an adapter must be set beforehand in the water tank.

Part 2 Engineering

2/1 Grinder with motor and adjusting rod

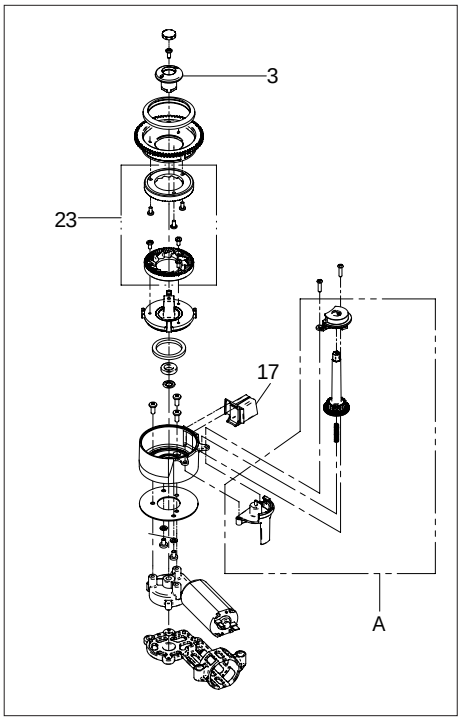


The grinder freshly grinds the coffee beans with a horizontal disk grinding mechanism for each brew. The ground coffee is transported by the ground coffee spout to the brewer. The wire at the end of the ground coffee spout ensures that the ground coffee falls into the brewing unit in a controlled way. Dispensing is time-controlled. The grinding degree can be set on the grinder. The grinder is connected to the motor with a worm gear.
If the bean hopper is empty, this is recognised by the current detection, evaluated by the software and shown on the display.
If the grinder is blocked or there is a short-circuit, this is also recognised by the current detection and shown on the display. Errors are stored in the error list.

Technical data: grinder		
Dispensing	Time-controlled: can be set on the beverage settings	Default value: approx. 1.15 g/s in default setting
Dosing accuracy	± 2 %	
Maximum metered quantities		16 g for basic grinder setting
Grinding degree	Settings: by the customer from the outside	See User Manual
Empty message	Over the idle current recognition	As of software version 2.18, the empty grinder current can be calibrated individually using the service program
Technical data: bean hopper		
Cup volume	approx. 250 g	Not removable
Technical data: grinder motor		
Voltage	24 V DC	
Idle current	acceptable: 1-2 A	
Blocking current	>7 A	
Operating current when grinding	5-6 A	

Service life: grinder	
Grinder disks	Maximum 90,000 grinding operations at 10 g/grind With hard beans, appropriately less
Complete grinder	90,000 grindings
Motor	90,000 grindings

2/1.1 Grinder



The motor makes contact with the absorber. It serves to prevent rotation and for damping out noise.
If the grinder is defective, it must be completely replaced. The adjustment rod can be removed beforehand, and reinstalled on the new grinder.

Spare parts

- Grinder disk set
- Grinder ground coffee spout
- Complete grinder
- Adjustment drive

Setting the grinding degree of the grinder

The upper grinder knife can be adjusted axially with a threaded screw. This has a take-up part with outer threads for the upper grinder knife. A setting pin grips the outside toothed gear, which attaches the multitool and can be set by turning to press down.
The setting pin is arranged in the bean hopper.

- Turn clockwise: coarser
- Turn counter-clockwise: finder
- Range of settings: 7 AM to 5 PM
- Grinding opening: 0.084 mm to 0.42 mm
- Standard setting when delivered: about 11 AM

Caution: grinding degree is set only during grinder operation.

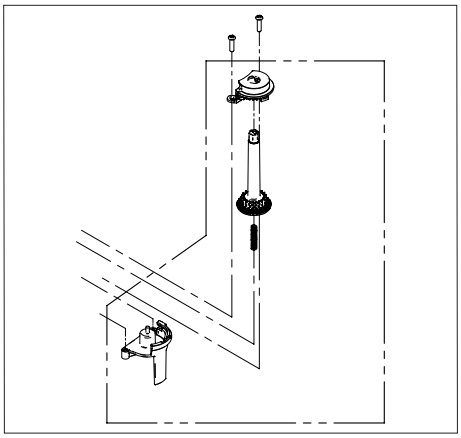
Error messages on the display

- Grinder blocked

grinder blocked

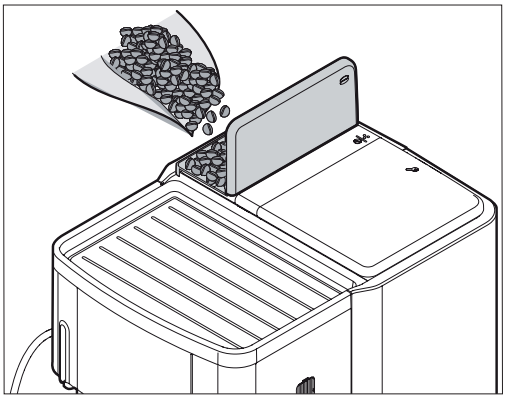
See instructions, error messages, troubleshooting, part 6.

2/1.2 Adjusting rod



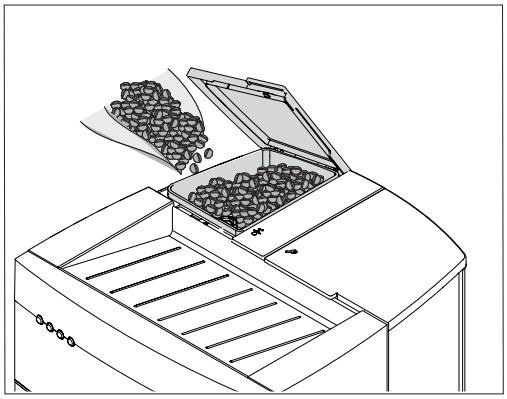
2/1.3 Bean hopper with integrated lid on top

WMF 800 / 900



Technical data: bean hopper
Fill capacity about 250 g; not removable

WMF 1000 S / 1000 pro S



Technical data: bean hopper
Fill capacity about 280 g; not removable

Spare parts

- Bean hopper lid
- Top

Error messages on the display

- Refill beans

See instructions, error messages, troubleshooting

Technician instructions

- If the grinder is faulty, the complete grinder must be replaced
- The idle current recognition must be entered in the service program if the grinder is replaced
- If the grinder disks must be replaced or the grinder opened, the grinder must be brought to the base position before putting back into operation.
- If the grinder has been replaced or new grinder disks have been installed, the counter must be set to zero using the service program.

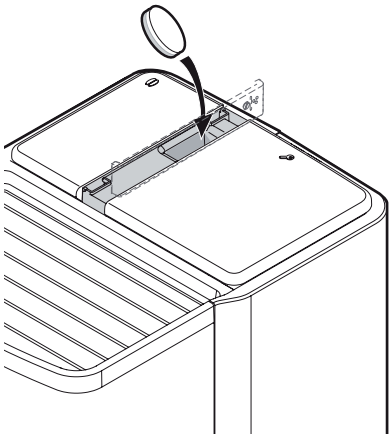
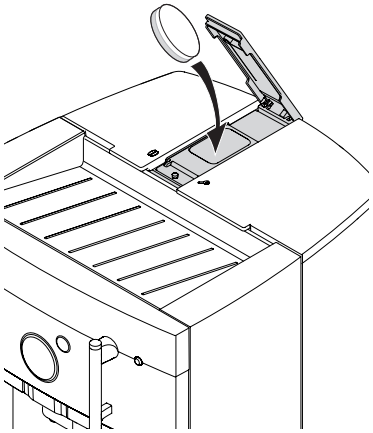
See Chapter 5/2.5.3
"Carry out Service Maintenance" part 6.

2/2 Manual insert

The coffee machine has a manual insert for ground coffee and cleaning tablets.

2/2.1 Manual insert for ground coffee and cleaning tablets

The insertion chute is closed with a lid. It is monitored by a switch.

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

Spare parts

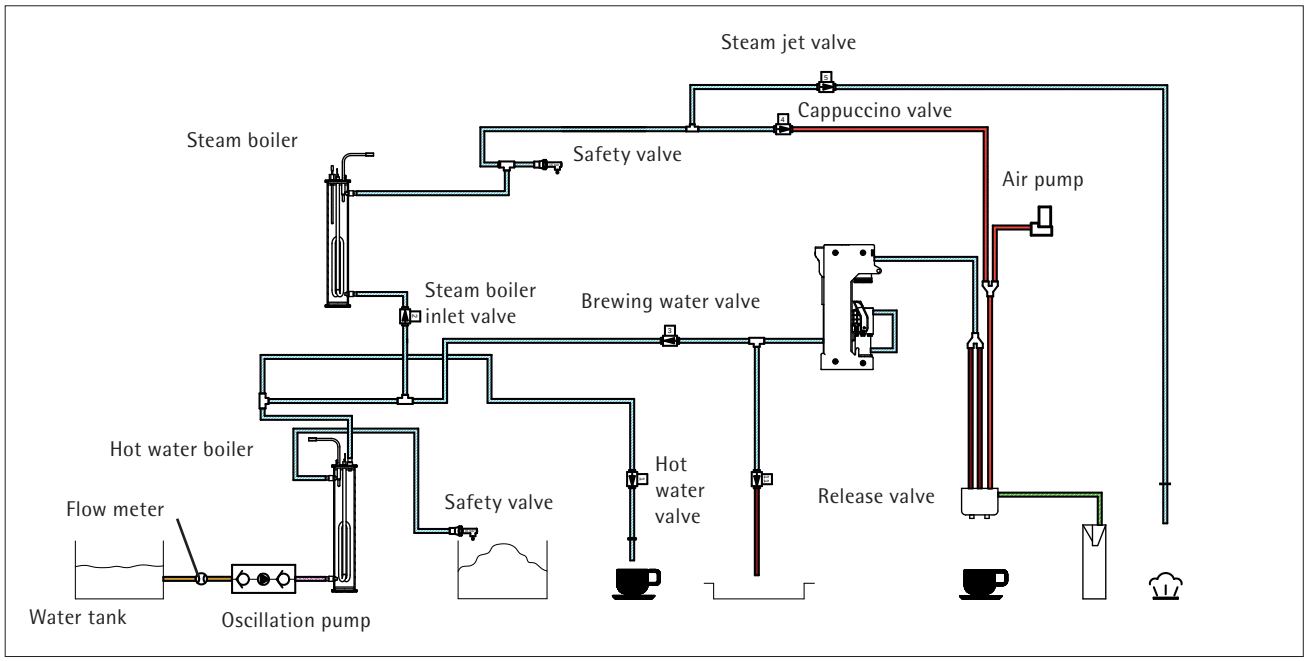
- Manual insert lid
- Top

The manual insert may only be used for inserting cleaning tablets and ground coffee. Never allow cleaning powder or coffee beans or water to be placed inside.

2/3 Boiler water system

Components:

- Water tank
- Flow meter
- Oscillation pump
- Hot water boiler
- Steam boiler
- Brewing water valve
- Hot water dispensing valve
- Safety valve
- Cappuccino valve
- Steam boiler inlet valve
- Release valve
- Steam jet valve (Steam Jet) (not for WMF 800)
- Air pump (WMF 1000 pro S only)



Functional principles of the water system

Fresh water is fed by the oscillation pump to the water tank into the hot water boiler. The required amount is specified by the flow meter.
The oscillator pump produces, depending upon flow, a pressure between 3 and 15 bar. The brewing water is brought from the hot water boiler through the brewing valve to the brewing unit for brewing. After the brewing process, pressure in the brewing unit is released through the release valve.
All amounts dispensed are monitored by the flow meter. The brew water withdrawal, hot water withdrawal and the supply of the the steam boiler are mutually locked out. While dispensing a beverage, the other beverage buttons are deactivated. The steam boiler produces the steam needed for milk and milk foam preparation, and for preheating the cups (Steam Jet.)

Before beginning work on the boiler-water system, any pressure in the system must be released.
Caution. Burning and scalding hazard.
For work on the heaters or the hot water boiler / steam boiler with its inlets and temperature limiters, the power cord must be pulled out and the coffee machine power removed.

The following error messages apply in the entire chapter for all positions resulting in too-low flow due to contamination and scaling (calcification) or too-low flow to the flow meter.

Error messages on the display

All faults associated with low flow are recognized by the flow meter. The flow malfunctions are handled in their own chapter, as the evaluation is complicated.

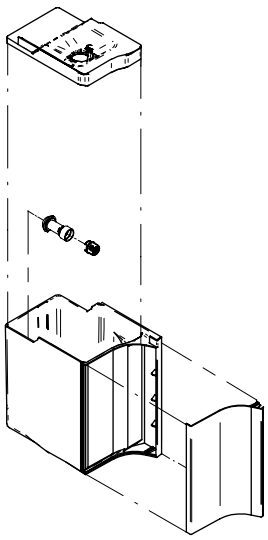
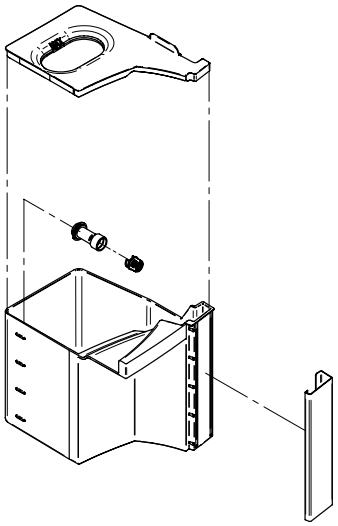
See flow errors chapter 2/3.7

Error without display message

- Hot water is spraying strongly
- Fluctuating metered quantities of hot water
- Long brewing times for coffee
- Fluctuating metered quantities of coffee
- Coffee tastes burned

See instructions, error messages, troubleshooting Part 6

2/3.1 Water tank with lid

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

Technical data: water tank		
	WMF 800 / 900	WMF 1000 S / 1000 pro S
Water tank volume	2.2 litres	2.8 litres

Technical data: microswitch for the water tank lid	
12 V input on CPU	Switch contact closed

Technician instructions

The lid allows the water tank to be filled higher.
The coffee machine cannot be operated without the lid.

Possible faults with error messages on the display

- refill water tank
- water tank missing
- Water tank lid open

beverage sel. locked
water tank missing

beverage sel. locked
lid is open

beverage sel. locked
fill the water tank

See instructions, error messages, troubleshooting Part 6

See flow errors chapter 2/3.7

Spare parts

- Water tank, complete with lid
- Water tank lid
- Water tank sieve

2/3.1.1 Water tank level sensor

The sensor works in a capacitive manner and provides the software both with the empty notification and reporting the presence of the filled water tank.
If the sensor recognizes that the amount to be dispensed is greater than the water left in the tank when it registers empty, dispensing is immediately stopped. If the sensor recognizes empty but the amount remaining to be dispensed is less than the water left in the tank, dispensing is completed and then the empty notification is given.

Technical data: water tank sensor		
Water tank sensor	Signal: 12 V NO	12 V input on CPU
Empty threshold WMF 800 / 900	75 ml	Can be changed with the service program.
Empty threshold WMF 1000 S / 1000 pro S	80 ml	Can be changed with the service program.

Technician instructions

The sensor is connected to the controller.
The sensor is attached to the base pan.

Possible error on the display

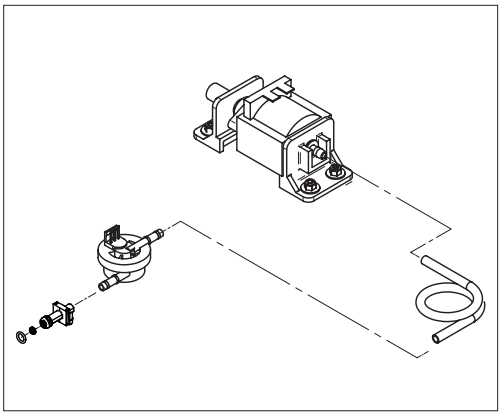
- Message “beverage sel. locked - fill the water tank,” cannot be confirmed although the tank is full.

beverage sel. locked
fill the water tank

See instructions, error messages, troubleshooting Part 6

See flow errors chapter 2/3.7

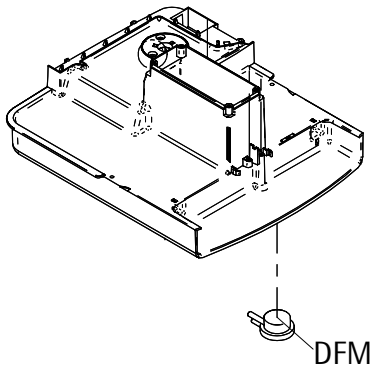
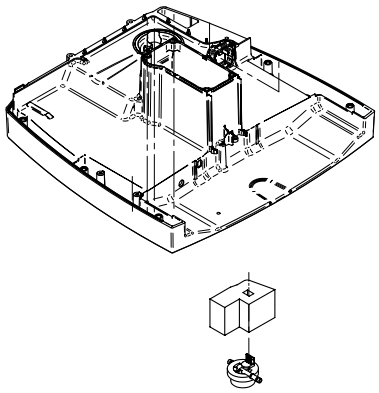
2/3.2 Water tank inlet assembly



The water is fed via the water tank coupling under no pressure and by way of the flow meter to the oscillation pump. An inline filter is installed between the water tank coupling and the flowmeter for coffee machines up to serial number 9115. This should prevent contamination clogging the flow meter cover. The hose from the flow meter to the pump is long enough to prevent oscillations from causing erroneous measurements in the flow meter.

* Starting with serial number 9116, a tank valve fitting with a screen insert is installed.

2/3.3 Flow meter

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

The flow meter is attached below on the base pan. It measures the amount of water for coffee. This measurement controls the metered quantity, or indirectly, the heating of the hot water boiler.

Technical data: flow meter	
Rated voltage	5 V
ccm / digit	about 1 ccm/1 digit
Nozzle jet	1.2 mm
Pressure range	maximum 1 bar

Service life: water tank inlet assembly	
O-ring supply union	1 year, maximum 10,000 brewing cycles
Flow meter and hoses	6 years, maximum 90,000 brewing cycles

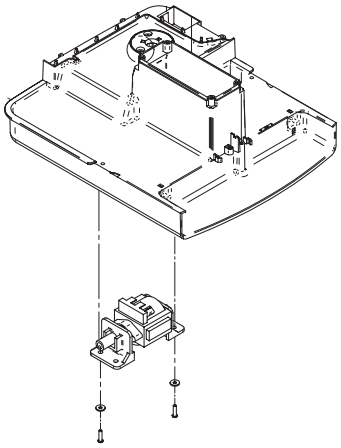
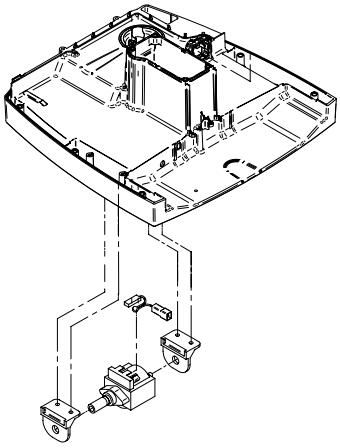
Error without display message

- Flow meter does not turn
- Flow meter not properly connected
- Hose kinked before or after flow meter
- Flow meter cover clogged

See flow errors chapter 2/3.7

See instructions, error messages, troubleshooting Part 6

2/3.4 Oscillation pump

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

The pump produces pressure for all systems in the coffee machine. It increases the fresh water pressure to brewing pressure for coffee (4-9 bar). It is in operation for all coffee operations except for the production of steam.
The pump is attached below to the base pan.

Technical data: oscillation pump	
Power supply	24 V AC 50/60 Hz
Current draw	48 W
Supply volume	0.65 l/min.
Maximum pressure	16 bar against the block

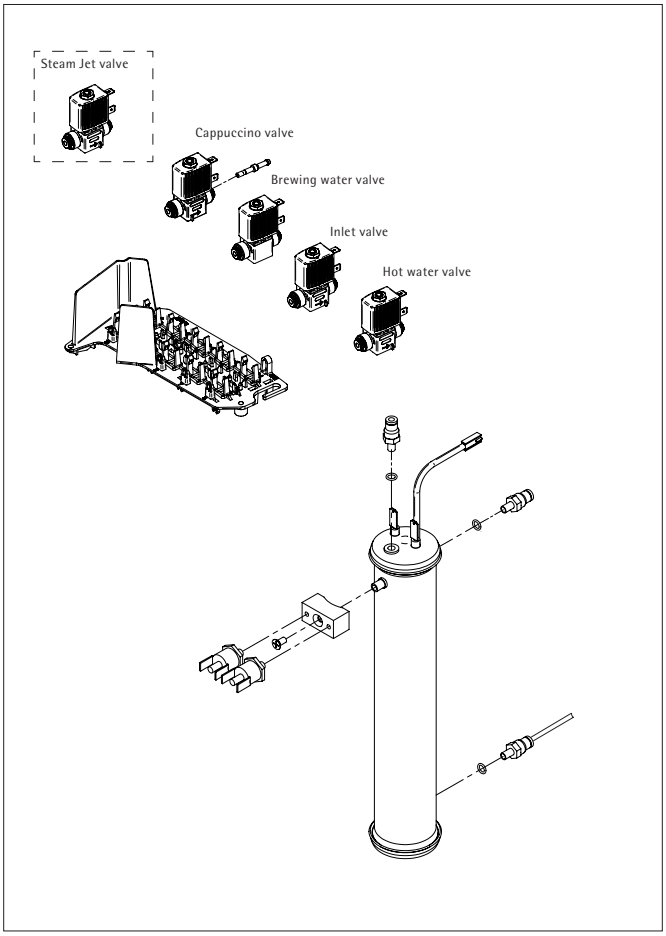
Error without display message

- Hot water is spraying strongly
- Fluctuating metered quantities of hot water
- Fluctuating metered quantities after pauses
- Fluctuating metered quantities of coffee
- Pump is very hot in normal operation
- Pump is not working and/or is not delivering pressure
- Non-return valve in pump outlet stuck after long downtime

See flow errors chapter 2/3.7

See instructions, error messages, troubleshooting Part 6

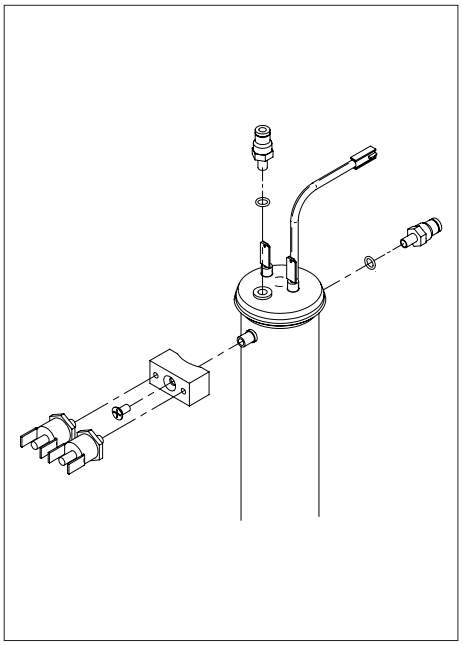
2/3.5 Hot water boiler system



The hot water boiler prepares hot water for all beverages and supplies the steam boiler. During heating, excess water is drained via the brewing water valve and the release valve (not shown).

The water is fed to the hot water boiler from the oscillation pump via the inlet hose.

2/3.5.1 Hot water boiler and temperature sensor



The heat is switched using an SSR (Solid-State Relay). The release valve is switched on every time the heater is switched on, however not during beverage dispensing or when supplying the steam boiler. The temperature is measured with an NTC resistor.
The hot water boiler is protected by the following safety systems against overheating and bursting:

- The temperature sensor switches the heater on and off depending upon the water temperature
- The safety thermostat interrupts the heating circuit if the surface temperature of the hot water boiler exceeds 130 °C.
- The safety valve opens at 16 bar and vents any excess pressure

Both heating elements (hot water and steam boiler) disable each other. If there is a change in heating control, there is a pause (flicker). The hot water boiler is insulated so that as little heat energy as possible is lost.

Technical data: hot water boiler		
Heating capacity / voltage/ power consumption	Standard: 1 kW/230 V/4.3 A	Purchaser-supplied fuse: at least 10 A
Hot water boiler volume	about 0.35 liters	
Pure heating time to heat from 20 °C to 89 °C	<2 minutes	
Operating temperature	86 °C-102 °C	Customer setting: 60 °C-95 °C
Operating pressure	12 bar / maximum 14 bar	
Test pressure	14 bar	
Technical data: safety valve		
	16 bar	See hot water boiler safety valve chapter.
Technical data: temperature sensor (NTC)		
Resistance at 20 °C	about 12.500 ohms	
Resistance at 80 °C	about 1.200 ohms	
Resistance at 90 °C	about 900 ohms	

Service life: hot water boiler and temperature sensor	
maximum 6 years	After 6 years, the hot water boiler must be replaced for safety reasons.

Descaling may only be performed with the descaling program and with the intended descaler.

Fundamental temperature controls:

During initial heating:
- ✻ Test whether the temperature <80 °C
- ✻ Test whether the level sensor is making contact
- ✻ Heat the hot water boiler and steam boiler one after the other to 90 °C
  The desired temperature can be set by the customer, from 60 °C to 95 °C
- ✻ Standby heating operation up to the desired temperature
- ✻ Heating the steam boiler up to the desired temperature 130 °C

Standby heating
- ✻ Continuous testing whether the temperature is less than the desired temperature
- ✻ Switch on the heating to 1 °K over the set regulation temperature and, if necessary, over-temperature recovery phase

Pause compensation
The set temperature is increased after pauses in order to compensate for heat loss caused by a cooled brewing system. The maximum heating is 10K after 4 minutes and 10 seconds.

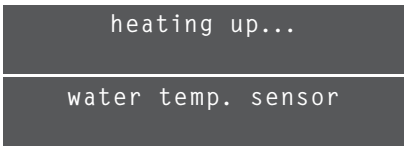
Heating while dispensing
- ✻ When beverages are dispensed, the "brewing water temperature" is set to the "brewing water temperature + over-temperature beverage dispensing" value, therefore 89 + 7 = 96 °C

Technician instructions

After being replaced, the empty hot water boiler must be filled with water. Otherwise, there is the danger that the heat could burn through the empty hot water boiler.

Error messages on the display

- Display "heating up..." does not turn off
- Display "water temp. sensor"



Errors without display message

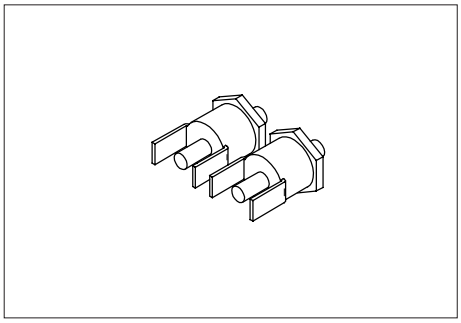
- Heating fault
- Heating short-circuit to the medium in the boiler
- NTC fault or cable break or contact resistance at the plug
- CPU

See instructions, error messages, troubleshooting Part 6

Spare parts

- Hot water boiler with heating system
- Insulation

2/3.5.2 Thermostat



The temperature limiters prevent the boiler temperature from increasing too much in the case of a malfunction. If the cut-off temperature is exceeded, the contacts open and are locked.
If there is a leak, the protective covers prevent short-circuits.
The service technician is protected from accidental contact and possible electrocution.

Technical data: thermostat		
Shut-off temperature	+130 °C ± 6.5 K	corresponds to about 3-3.5 bar

Technician instructions

After cooling down, the contact can be closed again by pressing the reset button.
The temperature limiter may be screwed in with a maximum of 100 Ncm (proper hand-tightening).

If you tighten the temperature limiter more, you will strip the threads. The sensor would then not make contact correctly and as a consequence it no longer trips due to an overtemperature condition!

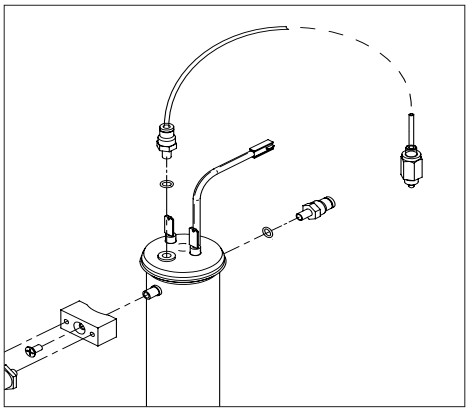
If there is mechanical damage or evidence of corrosion, the temperature sensor must be replaced for safety reasons.

Possible errors

- Tripping of the temperature limiter can be traced to faults listed in the hot water boiler chapter

See hot water boiler in chapter 2/3.5.4.2

2/3.5.3 Hot water boiler safety valve



The safety valve prevents an unallowed increase in pressure in the boiler due to faults.

Technical data: safety valve		
Opening pressure	16 bar (1.6 MPa)	

Service life: safety valve	
2 years	After 2 years, the safety valve must be replaced for safety reasons

Technician instructions

In normal operation (when heating, when dispensing beverages and steam dispensing), no water should leak out of the safety valve. Otherwise, there is a fault in the water metering system for all beverages.
A leaking safety valve must be replaced.

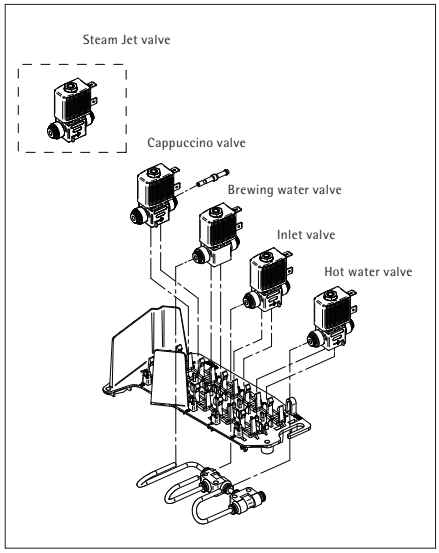
The safety valve may not be opened.
It can only be replaced as a complete unit.

Error without display message

- Fluctuating beverage amounts

See instructions, error messages, troubleshooting Part 6

2/3.5.4 Water supply assembly and valves



In the standard configuration, there are four valves in a quad valve bank. This consists of a cappuccino valve, brewing water valve, inlet valve and hot water valve.
The release valve sits in the housing floor.
An additional Steam Jet valve for preheating cups is used in WMF 900, 1000 S, and 1000 pro S coffee machines.

The hot water valve and the hot water dispenser must not be put out of operation.

The brewing valve is installed opposite to the flow direction so that the excess water can be released when the boiler is heated without the boiler pressure climbing to 16 bar (opening pressure for the safety valve).

The release valve is opened when heating in order to discharge excess water.
The oscillating pump is connected for all dispensing operations from the boiler (brewing, hot water dispensing, steam dispensing).

See the the hot water boiler in chapter 2/3.5.1 and the safety valve in chapter 2/3.5.3

Technical data: water supply assembly and solenoid valves		
Solenoid valves, general		
Power supply	Rated voltage 24 V DC	
Current draw	<500 mA	
Brewing valve		
Opening pressure for the brewing valve	0.4 MPa (4 bar)	opposite the flow direction!

Service life: valves	
Brew valve, hot water valve, release valve	maximum 2 years or 30.000 brewing cycles (hot water valve is also replaced during this maintenance)
Steam boiler inlet valve	maximum 6 years

Technician instructions

Before replacing a leaking valve, always examine the descaling and filter change counter and descale the coffee machine.

Valves may not be opened.
It must be replaced, complete with all o-rings (without the solenoid.)

Error without display message

- Fluctuating beverage amounts with valve leakage
- Defective release valve: coffee or lots of water in the drip tray

See instructions, error messages, troubleshooting Part 6

2/3.5.4.1 Operation of the brewing valve and release valve

A T-piece is built into the release valve in the brewing water inlet to the brewing unit. The release valve is controlled through the process described below.

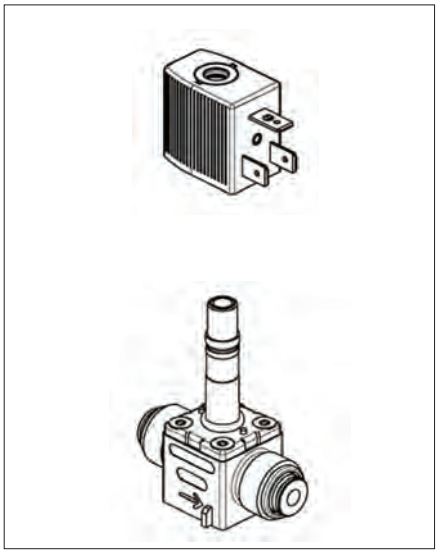
Illustration, see water supply assembly and valves chapter 2/3.5.4

When heating
The brewing valve limits the pressure in the boiler system to about 0.4 MPa/4 bar during the heating phases. The excess water is guided to the drip tray through the release valve, which is open during heating.

During the pre-infusion before the brewing cycle (prehandling of the ground coffee)
✻ The pump switches on, the brewing valve and release valve open
System pre-warms
The water exits out the release tubing into the drip tray
✻ The release valve closes
The brewing water for pre-infusion is fed to the ground coffee
✻ The pump and brewing valve remain active during the pre-infusion time

After the brewing process
After brewing, the brewing pressure is reduced via the release valve into the drip tray. During the brewing process, if the pump switches on in the lowering operation, the brewing pressure is reduced via the release valve into the drip tray.

2/3.5.4.2 Valve



If a valve is replaced, the non-wearing components of the solenoid valve remain on the coffee machine.
There are no provisions for replacing a plunger or a plunger guide.
Either the solenoid or the base can be replaced.

Technical service instructions

The flow direction is shown on the valve.
The brewing valve is installed opposite the direction of flow!

Replacing the solenoid

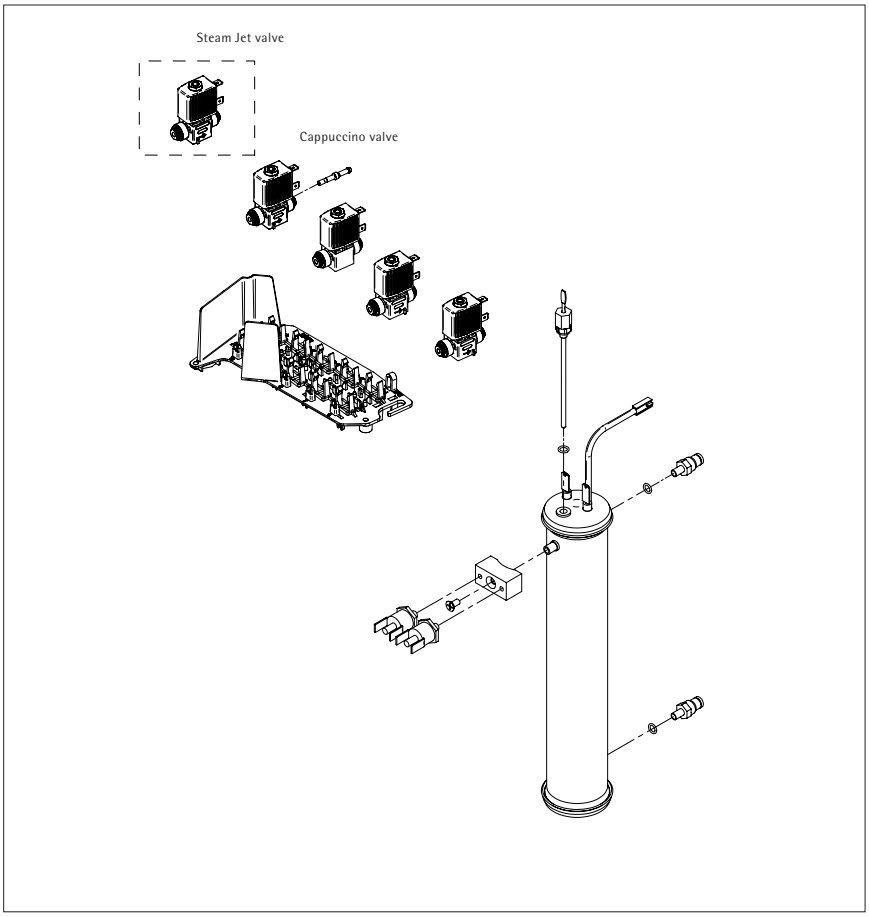
Before replacing a solenoid valve, the system pressure must be relieved.

* Unhook the spring clips from the fastening bow
* Take out the fastening bow
* Pull the solenoid out
* Detach the hoses and pull from the valve housing
* Remove the old valve
* Insert the new valve in the correct flow direction, hand-tighten the union screws
* Mount the solenoid and the fastening bow
* Mount the springs

Spare parts

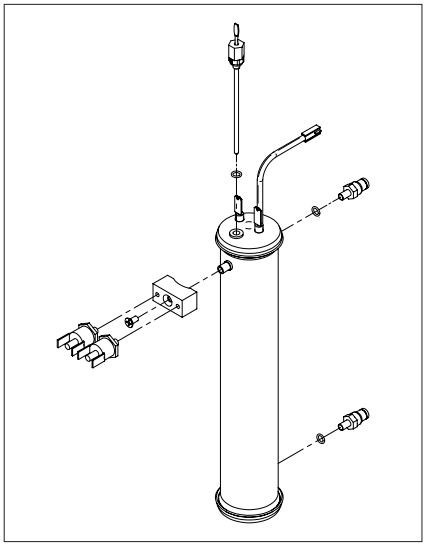
- Base (incl. O-rings on the connectors)
- Solenoid

2/3.6 Steam boiler system



Hot steam is prepared in the steam boiler to dispense steam and to use with automatic milk and milk foam dispensing.

2/3.6.1 Steam boiler with temperature sensor and electrode (level sensor)



The heat is switched using an SSR (Solid-State Relay). The temperature is measured with an NTC resistor.
The steam boiler is protected by the following safety systems against overheating and bursting:

- The temperature sensor switches the heating element on and off depending upon the steam temperature.
- The safety thermostat interrupts the heating circuit if the surface temperature of the steam boiler exceeds 155 °C.
- The safety valve opens at 16 bar and vents any excess pressure.

See safety valve chapter 2/3.5.3

Both heating elements (hot water and steam boiler) disable each other. If there is a change in heating control, there is a pause (flicker). The steam boiler is insulated so that as little heat energy as possible is lost.

Technical data: steam boiler system		
Steam boiler		
Steam boiler volume	0.35 litres	
Volume to the electrode		
Heating element		
Heating capacity / voltage/ power consumption	Standard: 1 kW/230 V	Purchaser-supplied fuse: at least 10 A
Desired temperature	130 °C	
Safety valve		
	16 bar	See steam boiler safety valve chapter.
Test pressure	(2.4 MPa)	
Temperature sensor		
Resistance at NTC at 20 °C	about 12.500 ohms	
Resistance at NTC at 95 °C	about 800 ohms	
Resistance at NTC at 125 °C	about 350 ohms	

Service life for the steam boiler and temperature sensor	
Maximum 6 years	After 6 years, the steam boiler must be replaced for safety reasons.

Descaling may only be performed with the descaling program and with the intended descaler.

Fundamental temperature controls:

If below the desired temperature, the heat turns on until the desired temperature is reached.

Error messages on the display

- "heating up..."
- "steam temp. sensor"
- "NTC steam"

heating up...

level timeout

steam temp. sensor

See instructions, error messages, troubleshooting Part 6

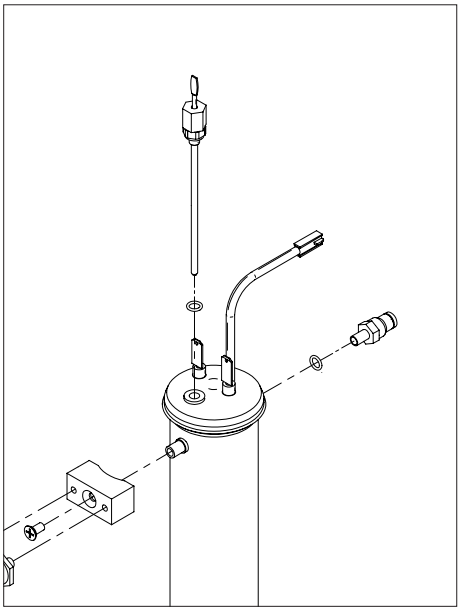
Errors without display message

- Steam boiler is not heating
- Steam boiler is heating against the medium.
- No milk or milk foam dispensing

Spare parts

- Steam boiler with heating unit and NTC
- Level probe
- Insulation

2/3.6.1.1 Level sensor



The level sensor measures the filling level of the steam boiler. The evaluation takes place using capacitance with a level control, which is integrated into the controller. Its function is not affected by an insulating layer of chalk or similar materials. The electrode should only be replaced as a preventive measure during a major inspection because the evaluation is free of wear.

Technical data: level probe		
Empty threshold	180 digits	

Service life: level probe	
Level probe	6 years, maximum 90,000 brewing cycles

Technician instructions

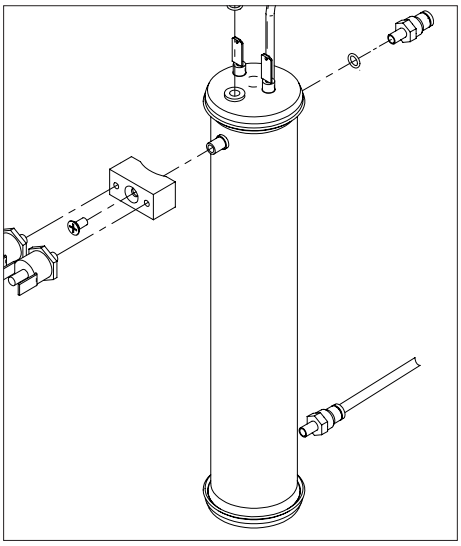
Hot water boiler and steam boiler heating are only activated if the level sensor is contacted.

Error without display message

- Level sensor does not switch, no milk or milk foam dispensing; instead, only hot water is dispensed.

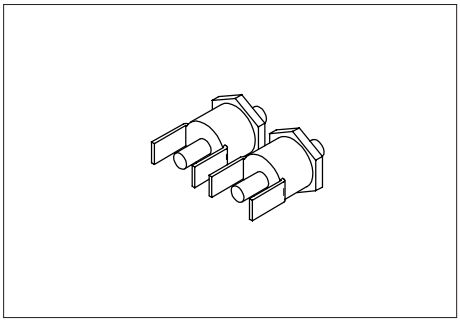
See instructions, error messages, troubleshooting Part 6

2/3.6.1.2 Inlet pipe



The inflow comes directly from the hot water boiler via the inlet valve.

2/3.6.2 Thermostat



The temperature limiters prevent the steam boiler temperature from increasing too much in the case of a malfunction. If the cut-off temperature is exceeded, the contacts open and are locked.
The protective covers prevents short-circuits if there is a leak.
The service technician is protected from accidental contact and possible electrocution.

Technical data: thermostat		
Shut-off temperature	+155 °C ± 5 K	corresponds to about 3-3.5 bar

Thermostat service life:	
Thermostat	90,000 brewing cycles or a maximum of 6 years

Technician instructions

After cooling down, the contact can be closed again by pressing the reset button.
The temperature limiter may be screwed in with a maximum of 100 Ncm (proper hand-tightening).
If tripped without an apparent reason, then the hot water boiler and the CPU must be replaced.

If there is mechanical damage or evidence of corrosion, the temperature sensor must be replaced for safety reasons.

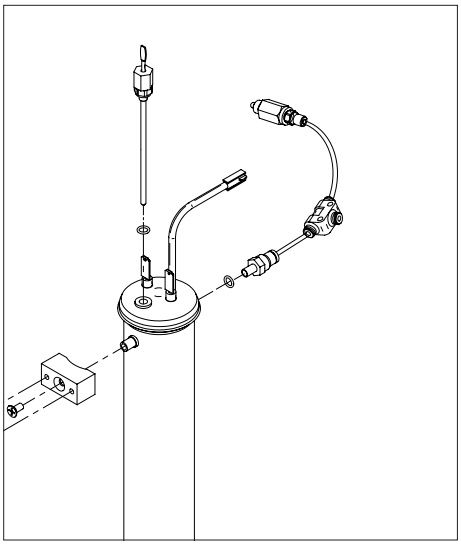
Error message on the display

- Tripping of the temperature limiter can be traced to faults listed in the steam boiler chapter
- Display "heating up..." does not turn off after being switched off and on.

heating up...

See steam boiler chapter
See instructions, error messages, troubleshooting Part 6

2/3.6.3 Steam boiler safety valve



The safety valve prevents an unallowed increase in pressure within the boiler. The safety valve is connected to the steam boiler with a T-piece.

Technical data: safety valve for the steam boiler	
Opening pressure	16 bar

Service life for the steam boiler safety valve	
2 years	After 2 years, the safety valve must be replaced for safety reasons

Technician instructions

In normal operation, no steam should issue from the safety valve.
If tripped without an apparent reason, then the hot water boiler and the CPU must be replaced.

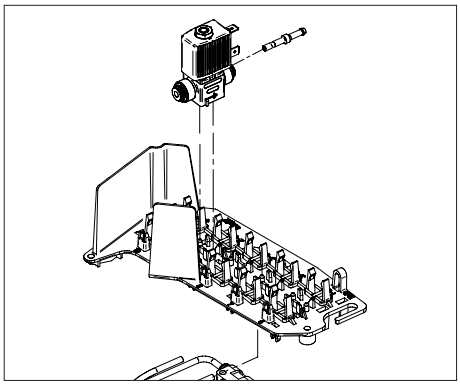
The safety valve may not be opened.
It may only be replaced as a complete unit.

Error without display message

- Safety valve leaks, steam continues to issue from the release pipe into the drip tray.

See instructions, error messages, troubleshooting Part 6

2/3.6.4 Cappuccino valve (steam boiler)



The cappuccino valve is responsible for automatic milk and milk foam dispensing.

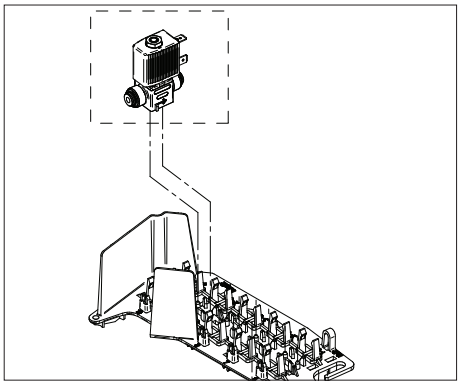
Technical data: cappucino valve		
Power supply, valves	Rated voltage 24 V DC	
Current consumption, valves	<500 mA	

Service life cappuccino valve	
Cappuccino valve	maximum 2 years, exchange during maintenance

Spare parts

- Valve without magnet 2.7 mm width, travel
- Magnet body
- Hose adapter

2/3.6.5 Steam Jet valve



The Steam Jet valve is used for preheating cups WMF 900, 1000 S, and 1000 pro S coffee machines.

Technical data: Steam Jet valve		
Power supply, valves	Rated voltage 24 V DC	
Current consumption, valves	<500 mA	

Service life: Steam Jet valve	
Steam Jet valve	maximum 2 years, exchange during maintenance

Technician instructions

Before replacing a leaking solenoid valve, always examine the descaling and filter change counter and descale the coffee machine.

Valves may not be opened.
It must be replaced, complete with all o-rings (without the solenoid.)

Error without display message

- Problems with milk and milk foam dispensing due to a leaking or defective steam valve

Spare parts

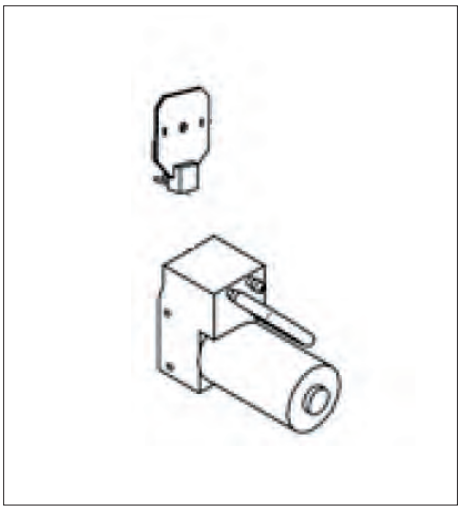
- Valve without magnet 1.5 mm width, travel
- Magnet body

See instructions, error messages, troubleshooting Part 6

2/3.6.4.1 Solenoid valves

See Chapter 2/3.5.4.2

2/3.6.4.2 Cappuccino pump (air pump) for WMF 1000 pro S only



An air pump is connected to a Y-fitting in the steam line from the cappuccino valve to the combi spout. Fresh milk is drawn into the combi spout by the mixture of air and steam, which foams the milk. If no air is added, warm milk is dispensed.

Technical data: air pump		
Power supply	Nominal voltage 24 V DC; with grid voltage regulator to 18 V	
Current draw	<0.5 A	
Fixed air aperture in intake hose	0.2 mm	
Additional run time (fixed setting)	3 s	Line is blown out after pauses of > 7 minutes

Errors without error message

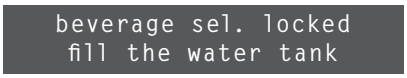
- Air pump clogged or defective; milk does not foam

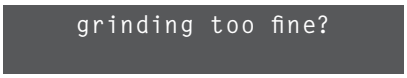
2/3.7 Flow Errors

The flow meter is the sensor that recognizes the cause of faults if the flow is too slow for any brewing operation, beverage metering and for steam boiler inflow. Pressure that is too high in the brewing system can be detected indirectly by monitoring flow. The less water pumped by the oscillating pump with low flow, the greater the pressure. This can, for example, be caused by a clogged brewing sieve, which allows the pressure to increase so much in the brewing unit that the bursting pressure could be reached. This is prevented by software.

2/3.7.1 Components and parts

The most frequent errors which the customer can fix are shown here:
- "Refill water tank"
- "Grinding too fine?"
- "Machine cleaning"





See instructions, error messages, troubleshooting Part 6

Components which can cause flow errors:
flow meter
- Hose before and after the flow meter (kinked or crimped)
- Pump
- Filter old / used up
- Water tank fine sieve clogged
- Brewing unit (inlet, hose to the brewing unit, lower piston or upper piston)
- Coffee spout Y-piece
- Flowmeter contaminated

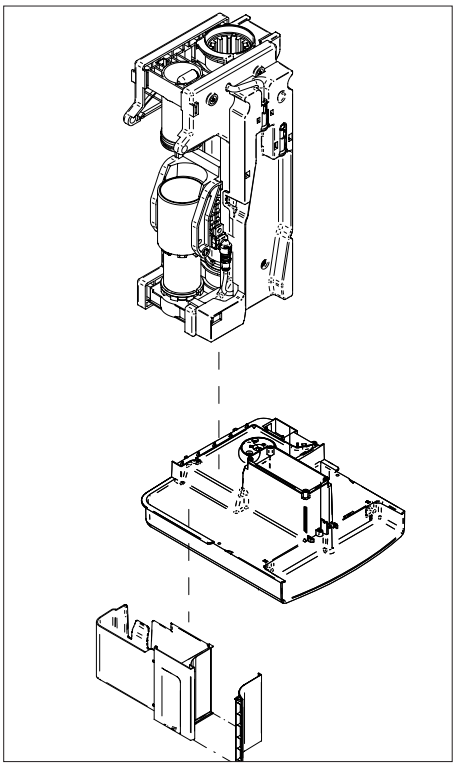
For all error messages, check the flow errors:
- is there air in the system (bleed coffee machine via hot water dispensing)

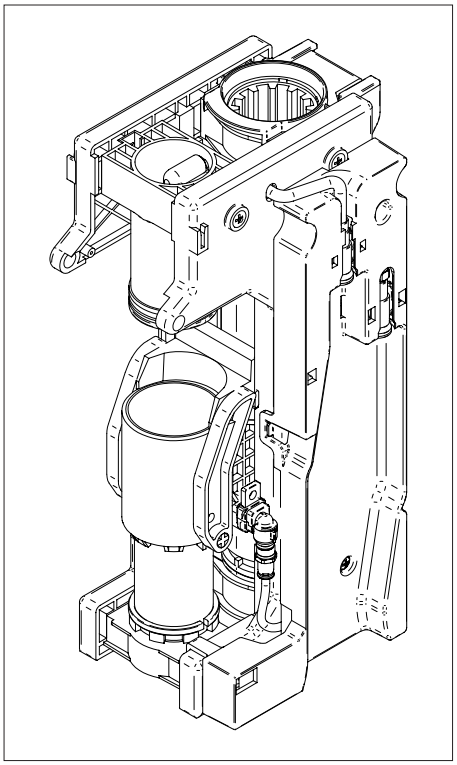
In the case of clogging on or after:
- Hot water valve
- Steam boiler inlet valve

Due to the stoppage, the brewing valve is forced open by the high pressure, and water runs into the brewing chamber.

2/4 Brew system and grounds container

The brewing unit is arranged to the right of the grounds container. The grounds container is monitored by a microswitch.

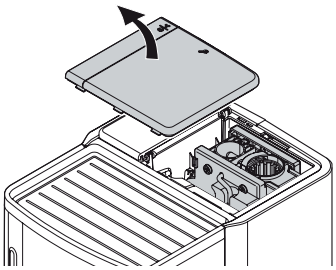
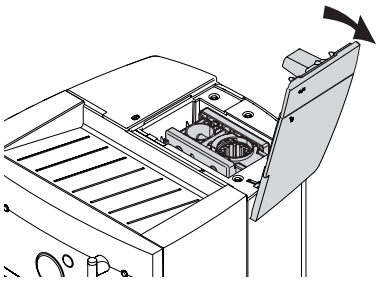




Functional principles

The brewer is a vertically mounted piston brewer with a fixed upper piston and a moving brewing chamber with lower piston. The coffee is brewed from the bottom up.
The brewing setting is started with a magnetic limit switch which registers the insertion of a cartridge. Sensors detect the basic position.
The pressing power is determined by voltage measurement. The coffee grounds is ejected using a forcibly-activated scraper. Ground coffee is added at the pivoting insertion funnel, which is attached to the coffee machine. This insertion funnel is spring-loaded and moves appropriately into the brewing position.
The brewing unit can be moved outside the coffee machine with the multitool in all positions.

2/4.1 Brewing unit lid

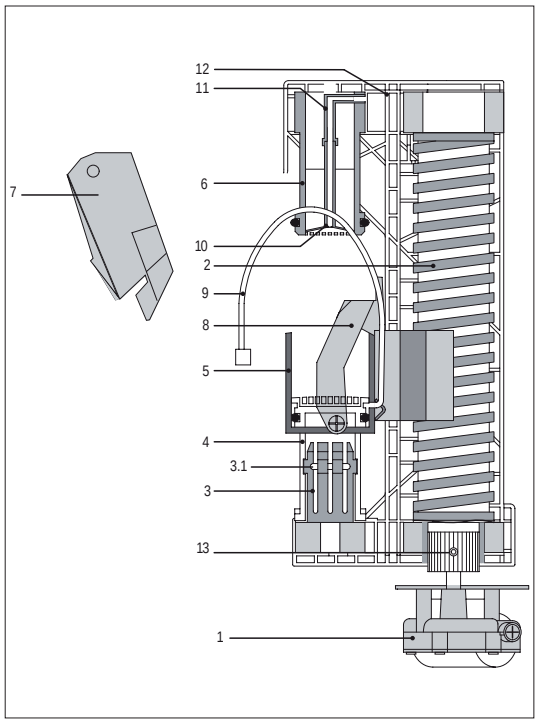
WMF 800 / 900	WMF 1000 S / 1000 pro S
	

In order to access the brewing unit, the brewing unit cover must be removed. For weekly cleaning, the brewing unit can be pulled out from the top, and the interior of the machine will be easier to clean.

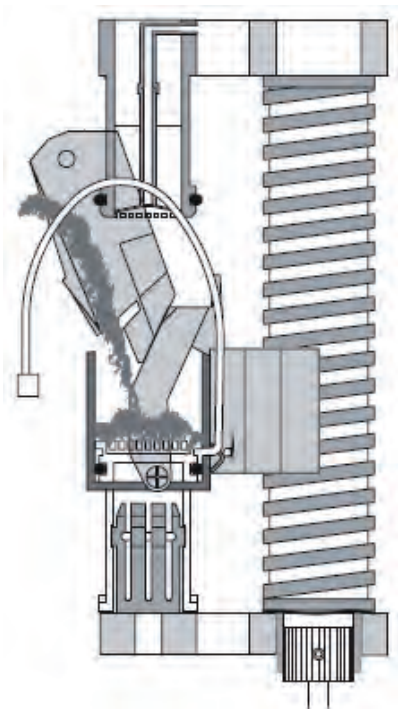
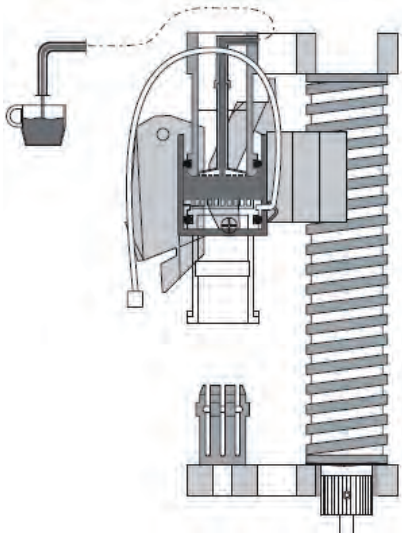
Brewing unit cleaning see User Manual

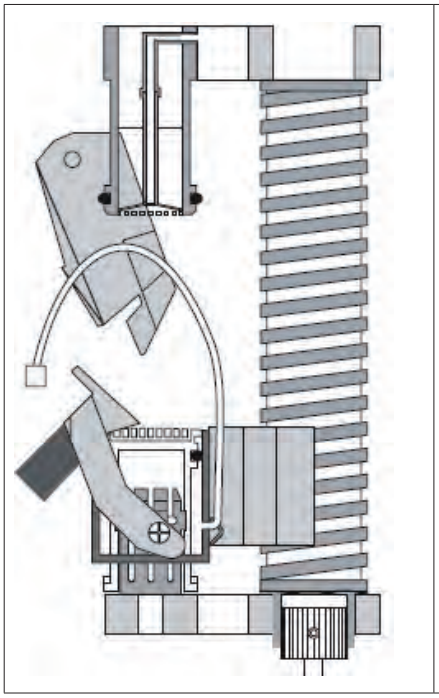
2/4.2 Brewer with drive

1. Brewing unit motor
2. Spindle
3. Friction piston
3.1 Spring for friction piston
4. Piston below (brewing water entry into the cylinder)
5. Brewing cylinder
6. Discharge piston with cover (0.6 mm opening)
7. Insertion funnel
8. Scraper
9. Brewing water inlet
10. Aperture
11. Angle
12. Side parts, left and right
13. Pinion



The ground coffee is moved from the ground coffee spout of the grinder over the funnel into the open brew chamber. Scattered ground coffee can reach the tub bottom and must be regularly cleaned out.
The drive is supplied by the brewing motor, the power is transferred over a pinion. Import bevels on the pinion can set the brewer in nearly all positions. The pinion grips against the teeth of the brewer spindle. On the other hand, the brewer spindle setting can be corrected with the multitool before replacing.

	**Basic position / filling** The brew cylinder is somewhat underneath the middle of the complete lifting area. The lower piston is at the lower end of the brewing cylinder. This makes the maximum cylinder volume available for filling with ground coffee. The ground coffee is filled by the grinder over the inlet and into the funnel.
	**Brewing** The brewing cylinder and piston are at the upper end of the lifting range when the funnel is swung away. The outlet piston closes the brewing cylinder on top and the ground coffee is pressed on it. The brewing water is pressed from underneath in the brewing cylinder and the coffee runs up through the outlet piston and the angle piece to the spout. Both positions, "open brewing cylinder" and "post-pressing" are differentiated only slightly from this position. When "Open brewing cylinder" is selected, the brewing cylinder is move downward by a few millimeters after pressing and pre-steeping the ground coffee. With post-pressing, after the brewing process the brewing cylinder is moved slightly upward and held in this position for a short period of time in order to press out the remaining water in the coffee grounds through the supply pipe and through the release valve.



Grounds disposal
The brewing cylinder and piston are at the lower end of the lifting area. The friction piston presses the lower piston through the brewing cylinder up to its upper edge. The scraper throws the pressed coffee grounds away with a swinging movement. After the grounds are discharged, the brewing cylinder and piston move back down to the base position for the next fill cycle.

Technical data: brewing unit		
Capacity	6 to 0.53 oz	
Start in the insertion position	over the reed switch	5 V input on CPU
Moves for all other positions	over current evaluation to the central power supply	analog input to the control
Brew aperture	0.6 mm	

Driving commands table:

From	After	Action
Ejection position	Insertion position	Full movement upwards until it meets the switch
Insertion position	Pressing position	Full movement upwards until reaching the press value given by the software. Only start when the reed sensor is activated
Pressing position	Brewing position	Brewing unit moves in respect to the setting of the "pre-brew of ground coffee"
Brewing position	Dry pressing position	Full movement upwards until the post-press current is reached; stop for a set post-press time (5 seconds)
Dry pressing position	Ejection position	Full movement downwards until the blocking current is reached
Unknown position (e.g. after insertion of the brewing unit, network off-on, ON/OFF, etc.)*	Insertion position	Always moves downward, over the ejection position into the insertion position

*) After power off and on, after resets and after opening the brew cover, basically it drives from the ejection position to the insertion position.

Technician instructions

- If an O-ring must be replaced due to wear, all O-rings should be replaced.
- If the grounds container is taken off, the coffee machine cannot be operated. The display shows “grounds container not present.”
- If the brewer is taken off, the coffee machine cannot be operated. The display shows: “Place brewer”.
- If the brewer lid is opened, the coffee machine cannot be operated. The display shows: “lid open”.

Error messages on the display

- Place brewer (brewer not placed).
- Brewer limit switch (base position not recognized)
- Clear flow stopped, Grinding too fine?, brewer clogged.

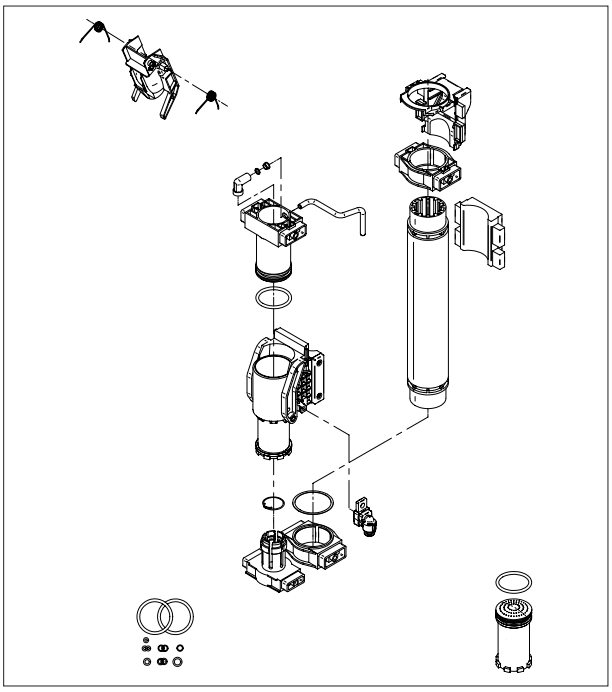
Errors without display message

- Brewer makes slight rattling sounds
- A lot of fresh ground coffee in the grounds container and on the brewing unit
- Coffee grounds not dry
- Brewer leak
- Brewing unit ripped
- Brewer cannot be placed

Spare parts

- Outlet piston *
- Lower pistons *
- Snap ring for lower piston *
- O-rings
- Friction piston *
- Spring for friction piston *
- Scraper
- Insertion funnel
- Right and left springs for the insertion funnel
- Add-on components *
- Pusher

* = *own chapter*



place brewer

brewer end switch

clear flow stopped

Error messages, instructions, troubleshooting see Part 6

For flow faults, see chapter 2/3.7 Flow faults

2/4.2.1 Outlet piston (top piston with brewing sieve)

The piston is affixed to the brewing sieve. The coffee is filtered through the brewing sieve. The brewed coffee is directed over a cover (0.6 mm) directly to the All-in-One spout.

Error without display message

If the upper piston is obstructed, an error is recognized by the flowmeter.

See flow errors chapter 2/3.7

Error messages, instructions, troubleshooting see part 6

Spare parts

- Complete outlet piston

2/4.2.2 Friction piston

The friction piston affixes the basic position for the lower piston which releases the brewing chamber. The spring assures the necessary holding power.

Technician instructions

If the spring is not present, there will be a lot of ground coffee around the brewing chamber.

Spare parts

- Complete friction piston
- Spring

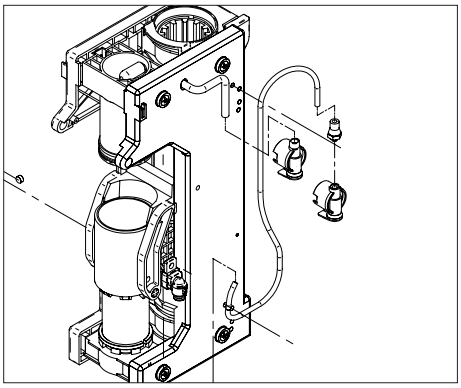
2/4.2.3 Lower piston

The lower piston serves to let in the brewing water. The brewing water reaches the brewing chamber if the lower piston lays properly on the lower stop of the brewing chamber. The lower piston is brought upon lifting the brewing unit into this position by the friction piston.
If the drill holes of the piston are obstructed, the brewing water reaches the ring gap to the outside diameter, well-distributed in the ground coffee.
After remove and replace the brewing unit, a brewing cannot run correctly if the limit switch is impacted after replacing, and the lower piston cannot reach the insertion position (lowest position in the brew chamber). This is unavoidable due to the principle.

Spare parts

- Lower piston complete
- Snap ring
- Complete brewing cylinder

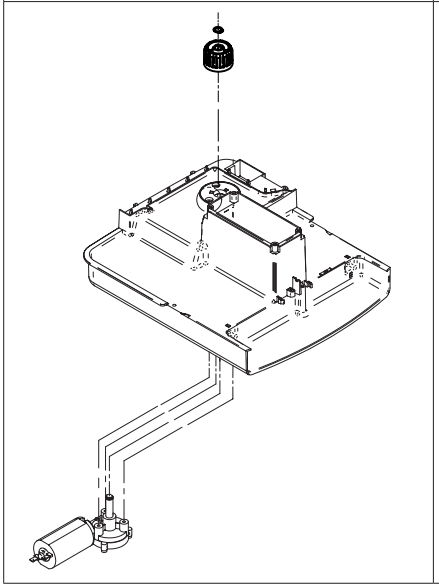
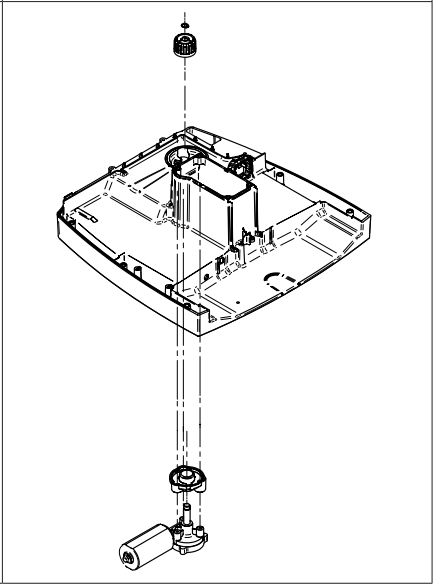
2/4.3 Brewing water connection, coffee spout connection



2/4.4 Reed switch

The insertion position is recognized by the reed switch over the magnet which sits on the side of the scraper.

2/4.5 Brewing unit motor

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

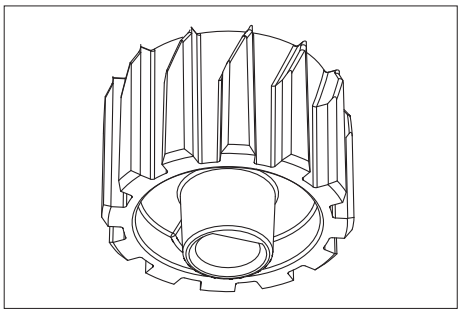
The brewer motor is screwed to the base pan with three screws. In addition, a plastic cover is glued over the screws.
There is a pinion with a D-surface which transmits power, and is secured with a snap ring.

Technical data: brewing motor and current sensor		
Brewer motor		
Power supply	24 VDC	Power supply can only be qualitatively measured with an instrument, not quantitatively, because the motor is clock-controlled.
Current sensor		
Central current sensor on the power supply		Grinder and brewer are sequentially controlled and evaluated

Technician instructions

The fastener screws are glued to the motor with Loctite 243.

2/4.5.1 Pinion

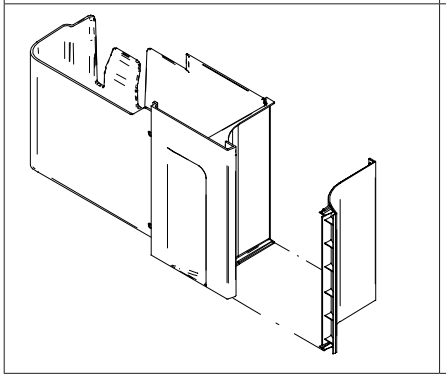
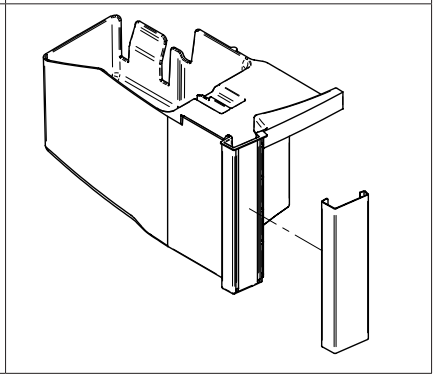


Pay attention to the insertion position of the pinion so that the brewing unit can be inserted again even if there is slight twisting.

Technician instructions:

The import bevels must point upward in the inserted position.

2/4.6 Grounds container

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

The presence of the grounds container is monitored by a microswitch. The filling status of the grounds container is counted with software.
If the grounds container is removed after full message or in operation, the message: "grounds container emptied?" is shown on the display. After confirming with yes the counter is deleted.

Fill level monitoring for the grounds container	
Fill level for the grounds container	
130 seconds dosing time in the grinder	1.30 g/second as delivered and 9 g/grind, this gives a capacity of about 21 brewings or about 189 g ground coffee.
Notification of presence	
	With removed grounds container, the micro switch is opened and the 24 V power supply is interrupted.

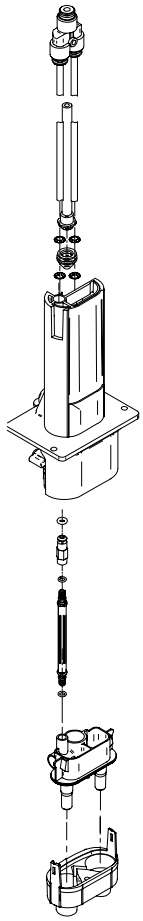
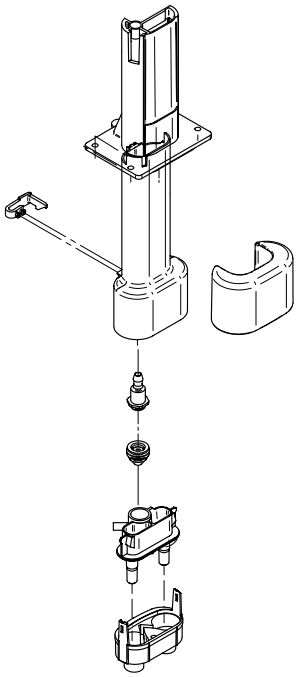
Spare parts

- Complete grounds container
- Microswitch

2/5 Dispensing devices

2/5.1 All-in-One spout

When there is a dispensing through the All-in-One spout, coffee and milk foam are distributed at the same time from two spouts. Two cups are filled at the same time.

WMF 800 / 900 / 1000 S	WMF 1000 pro S
	

Technical data: All-in-One spout	
Height adjustment WMF 800 / 900 Height adjustment WMF 1000 S Height adjustment WMF 1000 pro S	63-136 mm 63-136 mm 62-135 mm
Lock-in position	not adjustable
Dosing accuracy for coffee, right and left	+/-5 %
Dosing accuracy for coffee from brew to brew	+/-5 %
Dosing accuracy for milk foam, right and left	+/-8 %
Dosing accuracy for milk / milk foam together	+/-8 %

Service life: All-in-One spout	
All-in-One spout	maximum 6 years / 90,000 movements
Elastomer nozzle (steam nozzle)	1 year (hygiene)
Milk foamer	1 year (hygiene)
Milk system	If there is high wear / high hygiene requirements, the part must be exchanged if needed.

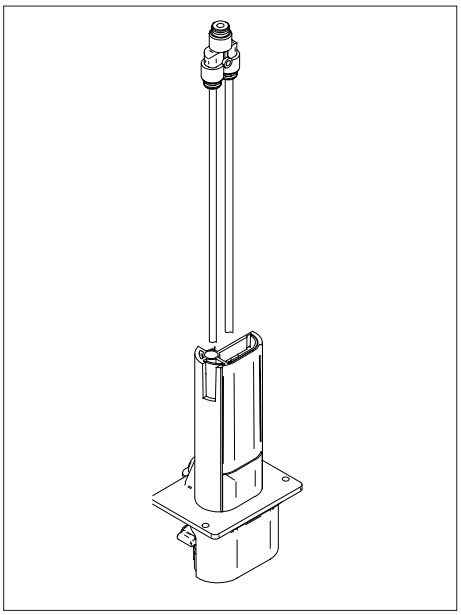
Technician instructions

If the coffee has been dispensed in an uneven way, first the Y-piece, that distributes the coffee to the two spouts, and the hoses need to be examined for contamination and may have to be replaced.
If the milk foam is dispensed in an uneven way, the All-in-One spout and the steam nozzle must be examined for contamination and, if necessary, replaced.

Spare parts

- Complete All-in-One spout
- Holder, All-in-One spout limit switch
- Milk hose assembly
- Complete milk foamer
- Y connector
- Screws
- Complete air intake cap.
- Complete air intake tube
- Ejector
- Microswitch without a roller
- Elastomer nozzle (steam nozzle)

2/5.1.1 Coffee dispensing



The coffee is guided from the brewing unit to a Y piece, which distributes the contents evenly to both spouts. Two hoses guide it further to the All-in-One spout.

Technician instructions

The Y piece must be horizontally installed and/or affixed.

Error without display message

- Uneven dosing right and left
- Coffee spout overruns
- Coffee runs too slowly
- Foamer doesn't stay (falls downward)

Error messages, instructions, troubleshooting see Part 6

2/5.1.2 Automatic milk and milk foam dispensing

After the cappuccino valve opens, an underpressure is created by a steam stream through the steam nozzle. This sucks in the milk. In the milk foamer, the steam-air mixture is combined in the milk, which heats and foams the milk.

Without additional air (All-in-One spout at top position for WMF 800, 900, and 1000 S), milk is heated and dispensed.

Technical data for milk nozzles (for WMF 800, 900, and 1000 S)	
Milk nozzle for the use of cooled milk at <12 °C	brown (Ø 1.5 mm)
Milk nozzle for the use of warm milk at >12 °C	transparent (Ø 1.7 mm)
Maximum milk foam dispensing temperature	65 °C
Maximum milk dispensing temperature	60 °C

Technical data for milk nozzles (for 1000 pro S)	
Milk nozzle for use with chilled milk 8 °C and open milk lance	black (Ø 1.3 mm)
Maximum milk foam dispensing temperature	48 °C
Milk nozzle for use with chilled milk 8 °C and closed milk lance	black (Ø 1.3 mm)
Maximum milk foam dispensing temperature	60 °C
Milk nozzle for use with warm milk 22 °C and open milk lance	black (Ø 1.3 mm)
Maximum milk foam dispensing temperature	60 °C
Milk nozzle for use with chilled milk 22 °C and closed milk lance	black (Ø 1.3 mm)
Maximum milk foam dispensing temperature	80 °C

Technician instructions

The instructions in the User Manual about dealing with the milk system must be observed.
The milk intake hose is designed for the use of a provided cooler.

See User Manual, Care chapter

Error without display message

- Uneven dosing right and left
- Milk too cold
- Milk sprays/is too hot
- Milk is not drawn in

Error messages, instructions, troubleshooting see Part 6

2/5.2 Hot water dispensing

The hot water spout is always present, because it is need for descaling in addition to dispensing hot water for tea beverages. The hot water spout must be neither closed off nor taken off.

WMF 800 / 900	WMF 1000 S / 1000 pro S
	

Error without display message

- No hot water dispensed, even though the pump is running
- Water leaks out (hot water spout is leaky)

Spare parts

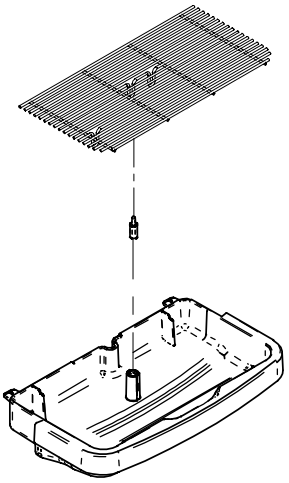
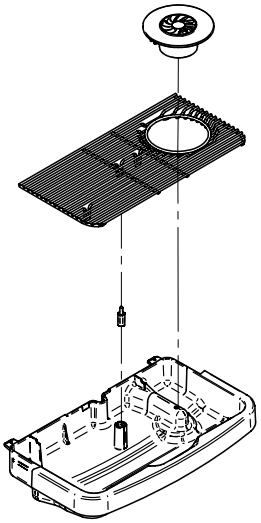
- Hose coupling

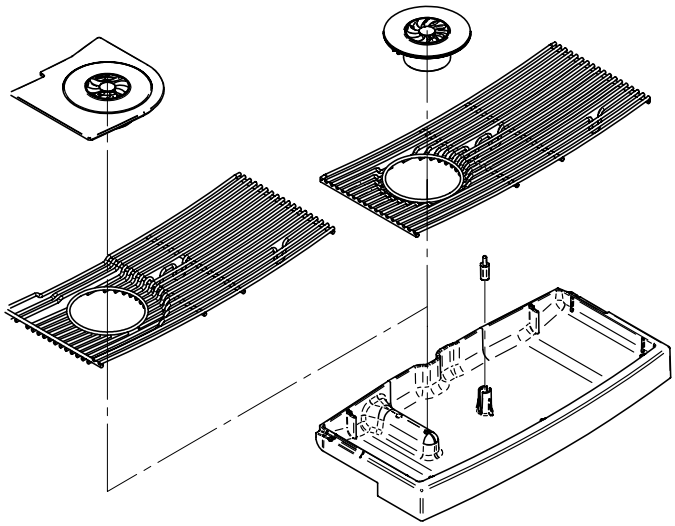
2/5.2.1 Dosing procedure hot water

When the hot water dispensing is started, the pump and the heating is switched on. The dispensing can be stopped by pressing the hot water button again.

When the hot water button is held down, water is dispensed in free flow.

2/6 Drip tray and drip tray grid

WMF 800	WMF 900
	

WMF 1000 pro S / 1000 S


The fill level of the drip tray is not monitored electronically. It can be taken out without taking out the water tank or the grounds container.
A float is integrated to indicate its level. The drip tray grid is loosely laid on the drip tray. The drip tray grid for the WMF 900, 1000 S, and 1000 pro S is equipped with a steam jet for preheating cups.
The release water is guided through the release hose into the drip tray.

Technical data: drip tray	
Drip tray capacity	1 l
Level indicator	Float

Error without display message

Water runs during the brewing in addition to warm rinsing into the drip tray
- No message when cleaning that the drip tray must be emptied
- The drip tray can quickly run over

Error messages, instructions, troubleshooting see part 6

2/7 Fan

The fan draws in cooler outside air. The steam which is produced in the dispensing of a cappuccino in the coffee machine is taken out of the machine interior due to excessive pressure. The temperature and the humidity in the coffee machine are reduced, and components conserved.

Technical data: fan	
Rated voltage	24 V DC
Capacity	2.4 W

Error without display message

- Fan is not running

Spare parts

- Fan

Error messages, instructions, troubleshooting see part 6

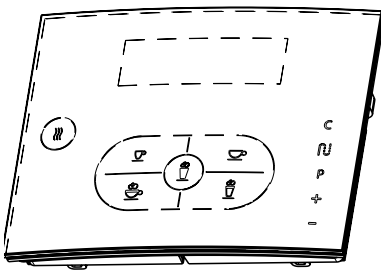
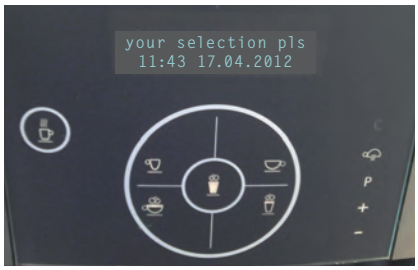
2/8 Electrical / electronics

2/8.1 Front panels

The differences between the front panels are highlighted in the following subchapters.

2/8.1.1 Front panel WMF 800 / 900

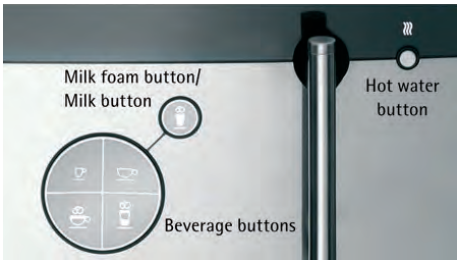
The "Front panel, complete" consists of the operator control panel and the display. The operator control panel and display cannot be individually replaced.

WMF 800 / 900	
	

Technical data: front panel	
Front panel with touch controls	
4 beverage buttons, 1 hot water button, 1 milk / milk foam button Five operator buttons (Steam Jet button for WMF 900)	Capacitative buttons under the glass panel, all with LED lighting controlled by the CPU.

2/8.1.2 Front panel WMF 1000 S / 1000 pro S

The front panel consists of the stainless steel cover, the button panel, the display, and the tinted display cover.
The front panel can only be replaced as a complete unit.

WMF 1000 S / 1000 pro S


Technical data: front panel	
Front panel	
4 beverage buttons 1 hot water button, 1 milk / milk foam button 4 control buttons	Pushbuttons on the stainless steel cover, all with LED lighting controlled by the CPU.

When working with the CPU, take appropriate ESD precautions, cut off the power supply to the coffee machine, and unplug the coffee machine. Do not touch the controller until your body is connected to the protective ground of the coffee machine.

Error without display message

- Beverage buttons do not react
- The display lighting does not function

Spare parts

- Front panel, complete

Error messages, instructions, troubleshooting see part 6

2/8.1.3 Controller

In addition to the inputs and outputs, the following interface is provided on the controller:

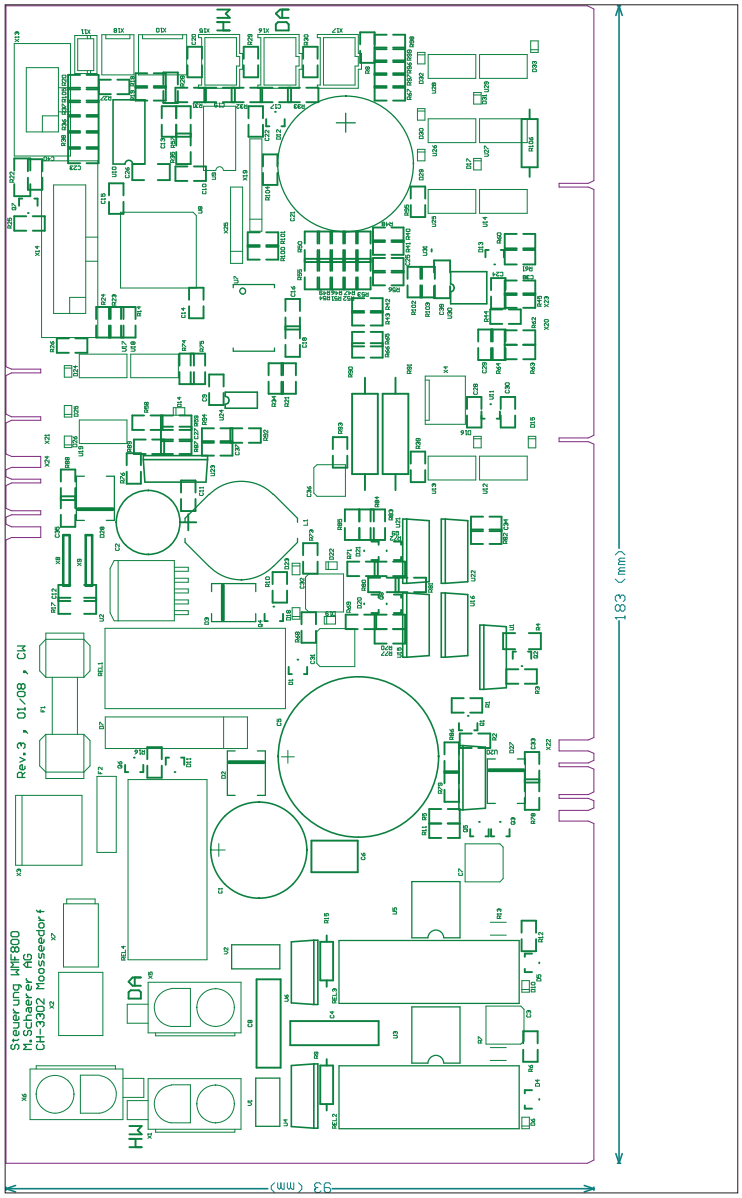
- USB (interface for the service technician)

Outputs are generally connection to ground, while the voltage (12 V or 24 V) is applies to the components (valves, motors, etc.)

Spare parts

- Programmed complete controller

2/8.1.4 Controller layout



2/8.1.5 Table

Connector	Connection
X1	Water heating
X2	Transformer primary
X3	Transformer secondary
X5	Steam heating
X6	Power line input 220 V
X7	Power line pushbutton panel
X8	Ground
X10	Flow meter
X11	Water tank sensor
X12	USB interface
X13	Front panel
X14	Front panel display
X15	NTC water
X16	NTC steam
X18	Power line pushbutton active panel
X20 direct connection lower cable harness	Lid 1 Lid 2 Drip tray Manual insert Brewer end switch Oscillation pump Release valve Brewer motor
X21	Optional air pump 1000 pro S
X22	Grinder
X23 direct connection upper cable harness	Level probe Grounds container Tank Milk foamer Fan Brewing valve Hot water valve Steam valve Inlet valve Steam jet valve (Steam Jet)
X24	Optional illumination 1000 pro S
F1	T 8 A, 250 V

2/8.2 Power supply

The power supply is connected with a plug to the controller. The controller supplies the transformer. The transformer delivers voltage for:

- A 12 V part for supplying the logic,
- A 24 V part for the 24 V loads such as, for example, the magnetic piston pump, fan, air pump, heat relay,

There are various inputs and outputs on the CPU board; see table.

Toroidal transformer

Switching on the 12/24 V supply for the coffee machine:

✻ Turn on the ON/OFF switch on the operator control panel
✻ Via the 5 V power supply input the controller switches on

Technical data: toroidal transformer	
5.1 V voltage	oadable up to 1 A
24 V voltage	oadable up to 7 A
Mains input	Nominal voltage 230 V (as delivered) or nominal voltage 120 V
maximum voltage compliance at 230 V	175-264 V
Line frequency	47-63 Hz

Technician instructions

If the 5 V supply is overloaded, the coffee machine switches off because the controller has no power.
If the internal device fuse has tripped, as a rule the power supply is defective and the power supply must be replaced.

Error without display message

- No 12 V and no 24 V available for controller
- No 5 V available

See troubleshooting chapter part 6

2/8.3 Heater relay

The heater relay has two circuits for the hot water boiler and the steam boiler heaters. The controller only powers the heaters separately. This ensures that the total heating power does not exceed 2 kW.

Technical data:	
Activation by relay	24 V
Current load	loadable up to a maximum of 25 A
Load voltage	230 V

Technician instructions

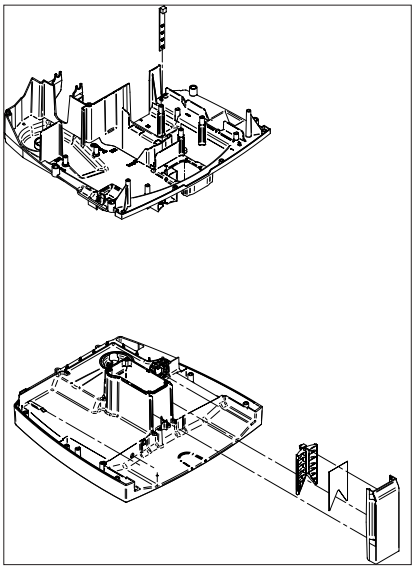
If traces of corrosion or oxidation are visible on the relay or the connections, replace the SSR, the heating cable harness or the boiler if contact resistance is suspected.

Error without display message

- Hot water boiler overtemperature
- Heating time of the hot water boiler
- Steam boiler overtemperature
- Heating time of the steam boiler

See troubleshooting chapter part 6

2/8.4 Illumination WMF 1000 pro S



The 1000 pro S coffee machines are equipped with an LED light.
It is located in the panel between the grounds container and the water tank, and illuminates the grounds container and water container.

Technical data: illumination	
Rated voltage	24 V DC
Voltage LED	3.2 V
Current	80 mA
Total LED voltage	approx. 13 V
Total LED power	about 1.0 W

2/8.5 Cable harnesses

All cable harnesses are provided in the basic configuration of the coffee machine.

Part 3 Cleaning and care

Regular cleaning is essential in order to ensure problem-free operation of the coffee machine and to ensure optimum coffee quality. Cleaning is done only every 27 days or 230 brewing cycles for the small coffee machines. In order to prevent the brewer from breaking if the brewing chamber becomes clogged, cleaning tablets with a sponge must be used.
During cleaning, the sponge swells up, thus ensuring a defined water flow rate in the brewing chamber during cleaning.

3/1 Machine cleaning using cleaning tablets (with sponge)

How often the coffee machine is cleaned depends on its use.

WMF 800: more than 25 brewing cycles within 7 days	After 230 brewing cycles or 7 days, the request for machine cleaning appears.
WMF 800: less than 25 brewing cycles within 7 days	After 230 brewing cycles or 14 days, the request for machine cleaning appears.
WMF 900 / 1000 S / 1000 pro S:	After 220 brewing cycles or 27 days, the request for machine cleaning appears.

The request for manual milk system cleaning appears weekly.
If these recommendations are not followed, the coffee machine is disabled after another 30 brew cycles or 2 days until cleaning has been properly performed.
Counting the time until the next cleaning starts with the first beverage brewed after the last cleaning.

3/2 Warm-up rinse / coffee system rinse

When switched on, a warm-up rinse is performed. The water quantity is 60 ml. If the hot water temperature in the hot water boiler is >70 °C, a warm-up rinse is not performed.
When the machine is switched off, a coffee system rinse is performed unless no beverage was brewed since being switched on.
The warm-up rinse can be started manually by means of the customer-care menu to warm up the brewing system.

3/3 Automatic milk system rinse Connect&Clean

The request to rinse the milk system is shown automatically in the display after removing a milk beverage after 20 minutes has passed.
The monitoring period begins when the last milk beverage is removed. If the preset interval of 20 minutes has passed without a milk beverage being removed again in the meantime, the request to rinse the milk system appears in the display. At the same time as the message is being displayed, the steam valve is opened twice for 0.5 seconds. This serves to clean the elastomer nozzle (steam nozzle.)

Milk system rinse
see User manual Care chapter

Waiting time: 20 minutes
Rinse water volume: 90 ml pulsed
Pulse of steam: 1 x 4 s

The request for rinsing the milk system can be postponed by pressing the C button. When the machine is switched off, the milk system is automatically rinsed. If power is lost or if the machine is switched off by a programmed timer, the milk system is automatically rinsed the next time the machine is switched on.

3/4 Manual milk foamer cleaning (milk system)

All surfaces coming into contact with milk must be thoroughly cleaned at least once per day for hygiene reasons! The milk intake hose should be replaced at regular intervals.

All parts of the milk system must be cleaned thoroughly at least once a week.

Proceed as follows:
- ✻ Remove the grounds container and water tank from the coffee machine
- ✻ Remove the hose from the milk container and the hose guide
- ✻ Operate the release on the back of the All-in-One spout
- ✻ Pull the All-in-One spout downward
- ✻ Remove the milk hose from the All-in-One spout
- ✻ Remove the milk nozzle from the milk hose
- ✻ Unscrew the air intake pipe (not for 1000 pro S)
- ✻ Unscrew air intake cap from the air intake pipe (not for 1000 pro S)
- ✻ Press the All-in-One spout on a solid surface. The top and bottom parts loosen and can then be separated
- ✻ Stir one measuring cap of WMF milk system cleaner into 200 ml of water in a container
- ✻ Place all parts of the milk system in the cleaning solution for 5 hours or overnight
- ✻ Then rinse all parts thoroughly with running warm water
- ✻ Screw air intake cap onto the air intake pipe (not for 1000 pro S)
- ✻ Screw the air intake pipe back in (not for 1000 pro S)
- ✻ Insert the milk nozzle into the milk hose
- ✻ Replace the milk hose on the All-in-One spout
- ✻ Push the All-in-One spout from below and engage the latch
- ✻ Push All-in-One spout all the way down
- ✻ Insert the milk hose into the guide

Additional recommendations:
in any case but particularly with low flow or when using milk that is not refrigerated, an intermediate cleansing should be performed after 4 to 6 hours of operating time.

3/5 Cleaning the exterior and interior of the coffee machine

Prior to front panel cleaning, switch off the coffee machine using the ON/OFF button. The interior of the coffee machine (the brewer, brewer compartment, drip tray, grounds container) and the water tank are easily accessible for cleaning. When cleaning the interior, make sure that no contamination (ground coffee) gets into the water tank coupling!

3/6 Cleaning the water tank, grounds container, drip tray, bean hopper

Before bean hopper cleaning, switch off the coffee machine and disconnect it from the power system.
Never clean the grounds container, water tank and drip tray in a dishwasher and never use any cleaner additives.

The water tank and the grounds container can easily be removed from the coffee machine. When removing the grounds container, make sure that the milk hose is not in front of the grounds container. Remove the grounds container and the water tank, empty them and rinse them under running water. Clean the grounds container thoroughly and let it dry. Then place it back into the coffee machine.
Remove the the drip tray with the drip tray grid, empty it and rinse it with water. Place the drip tray and drip tray grid.
Wipe out the bean hopper with a dry, lint-free cloth.

3/7 Brewing unit cleaning

The brewing unit and the brewer compartment must be thoroughly cleaned regularly.

Before cleaning, switch off the coffee machine and disconnect it from the power system.
Never clean the brewer in a dishwasher and never use any cleaner additives.

The brewing unit must cool off before cleaning.

- ✻ Switch off the coffee machine using the ON/OFF button, disconnect the mains plug
- ✻ Open the brewer lid
- ✻ Grip the brewing unit at the top using your thumb and forefinger
- ✻ Operate the release of the brewer using your other hand
- ✻ Lift the brewing unit up out
- ✻ Unscrew the thread on the brewing unit head counterclockwise using the multitool until the scraper folds forwards
- ✻ Clean the brewing sieve under running water with no pressure, or with a cloth
- ✻ Rinse the brewing unit under running water
- ✻ Dry the brewing unit with a cloth. Allow to dry completely before reinstalling in the coffee machine
- ✻ Take the water tank and the grounds container out of the coffee machine and remove coffee grounds left in the brewer compartment using a vacuum cleaner (do not let coffee grounds reach the water connection)
- ✻ Check the O-rings for contamination and damage
- ✻ Screw the brewing unit back on clockwise using the multitool until the scraper closes again
- ✻ Replace the brewing unit once it is dry
- ✻ Place the brewing unit until the lock engages; on the other hand, the brewer spindle setting can be corrected with the multitool
- ✻ Close the brewer lid

3/8 Descaling

Descaling is needed after the machine has processed the amount of water given in the following table but after one year at the latest.

Descaling table

Liters until descaling	Water hardness (°dH)
588	0-4
456	5-8
348	9-12
258	13-16
75	> 16

After another 25 liters, beverage brewing is disabled and a request is made for descaling.
The machine is not enabled again until it has been properly descaled.
When using a water filter, the descaling request is handled as for a water hardness of 0-4 °dH.

Rinsing amounts	
Amount of water, descaling cycle	3 x 600 ml
Descaling rinse water	1900 ml
Descaling / rinsing hot water valve	300 ml

After descaling, the coffee machine must be cleaned using a cleaning tablet. The coffee machine is rinsed again during this process.

3/9 Scale filter insert

The use of a water filter is recommended with a water hardness of more than 5 °dH. Replacing the water filter is requested in accordance with the following table or after 90 days.

Filter capacity, water filter 100 (liters)	Filter capacity, water filter 200 (liters)	Water hardness (°dH)
0	0	0-4
125	250	5-8
85	170	9-12
62	124	13-16
40	80	> 16

The 200 water filter can be used only with the WMF 1000 S and 1000 pro S in conjunction with the office function. The 200 water filter is not used with the WMF 800 and 900.

3/10 Cleaning intervals overview

Care							
Daily	*Weekly*	*Regularly*	*Required*	*Optional*	*automatically / as required*		Description, see
					x	Warm-up rinse / coffee system rinse	User Manual
x						All-in-One spout cleaning	User Manual
x			x			Milk system rinse Connect&Clean	User Manual
	x					Milk system cleaning	User Manual
		x	x			Coffee machine cleaning	User Manual
	x					Brewing unit cleaning	User Manual
x			x			Grounds container cleaning	User Manual
	x					Water tank cleaning	User Manual
x						Drip tray cleaning	User Manual
	x					Bean hopper cleaning	User Manual
	x					Casing cleaning	User Manual
			x	O		Filter change	User Manual
			x			Descaling	User Manual

Daily = Daily, at least once per day and as required
Weekly = Weekly cleaning
Regularly = Regularly as required
Required = As required
Optional = Optional (depending on the model)
(x) = Daily as required

Part 4 Software

4/1 Service program training documentation

WMF 900 S/1000 S

Training Documentation
Service Program

KMT Technical Support
Axel Klang

Edition: October 2012

1 Preamble

The coffee machines WMF 900 S / 1000 S are the two smallest coffee machines in the WMF product range. Both coffee machines come from the consumer coffee machines line which has so far only been sold through the retail business and directly to the end customer.
Save for a few differences, the following description is also valid for similar machine types such as WMF 800 / WMF 900touch / WMF 900Black etc.

At the WMF coffee machines for professional use – with the exception of WMF 1200 – all coffee machine specific settings can be carried out display-guided directly at the coffee machine. However, at the consumer coffee machines this has to be done through laptop and service program. For example, after a completed maintenance the service counter has to be deleted through the laptop as well as the grinding counter after installation of a new grinder.
A modification of the beverage button allocation is not intended due to the symbols which are embossed onto the front panel of the coffee machines; however, it would be possible in a limited way.

For repair or maintenance tasks, it is imperative for the service technician to acquire skills regarding the service program. Thus, this training documentation pursues the objective to clearly illustrate the relevant procedures to update a coffee machine or program the system configuration (coffee machine configuration) as well as further functions & setting possibilities.

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3 Basics & Overview User Interface Service Program

3.1 Start service program = establish connection to the coffee machine

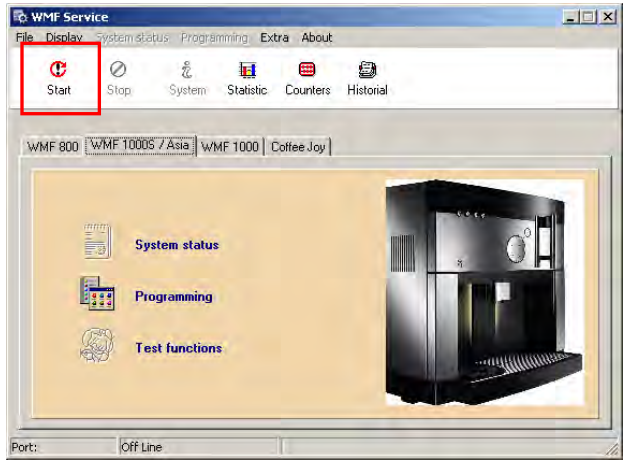
Connect the switched on coffee machine and the laptop by using a USB cable.

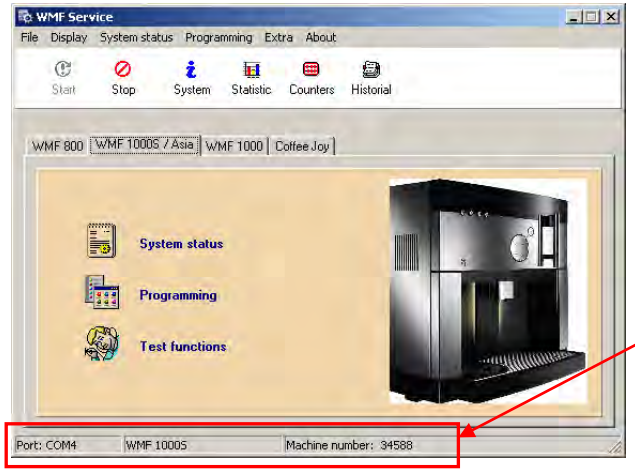
Important advice / Attention:

Please always use the USB interface which has been activated for the service program in the device manager (see chapter 10.3).

- Open the service program by double clicking on the symbol on the desktop.

- Confirm the message – service number – by clicking **„OK"**.
- Push **„Start"**key in order to establish the connection to the coffee machine.

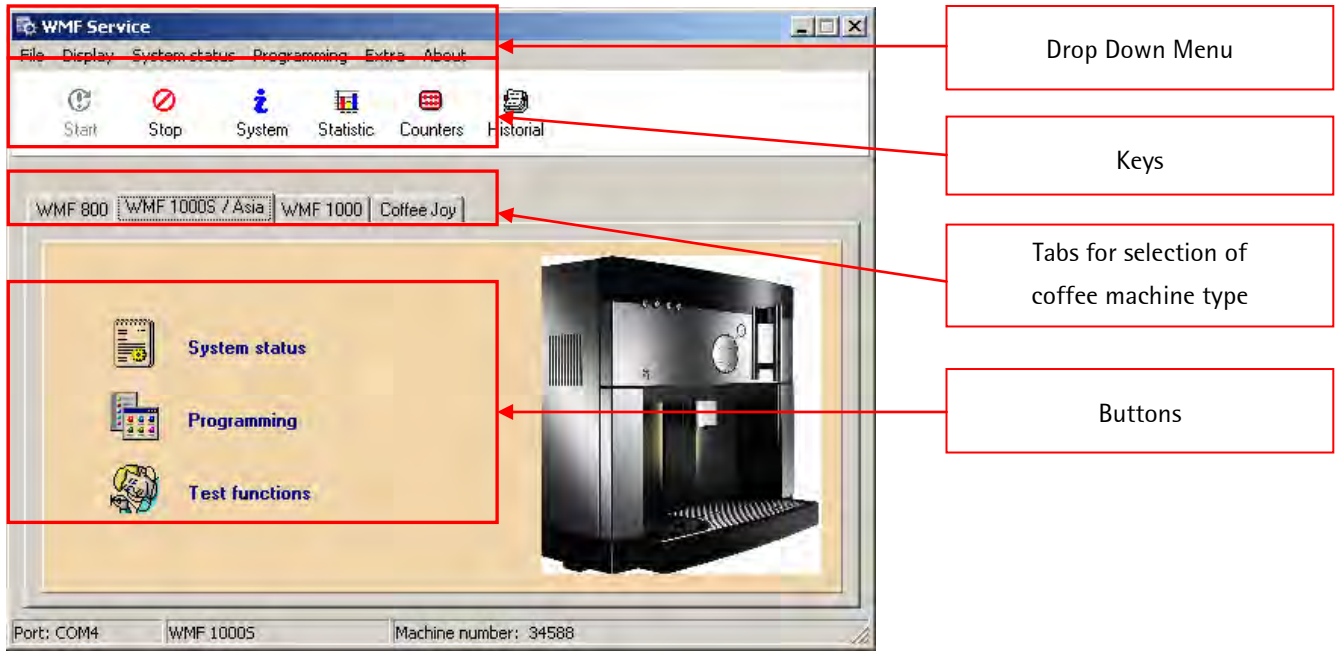




Com port, coffee machine type and machine number are displayed

3.2 Overview user interface service program

The user interface can be divided into 4 categories:

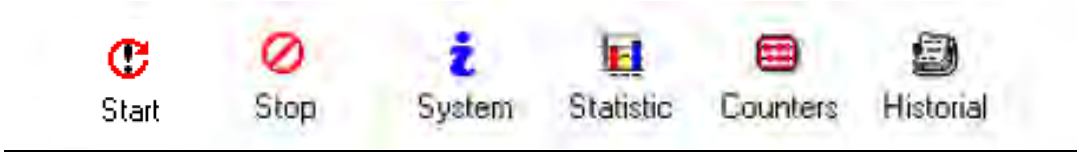


3.2.1 Drop Down Menus

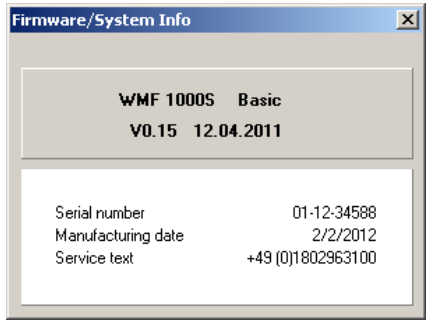
- **File:**
  Enables you to **„Start"** and **„Stop"** the communication to the coffee machine and to **„Close"** the service program.
- **Display:**
  Access to **„statistics"**, **„service history"** and **„daily counter".** Furthermore, the running time of the grinder can be deleted through **„Delete"**.
- **System status:**
  Information about current status of machine.
- **Programming:**
  Uploading and saving of a machine configuration as well as adjusting, for example, water hardness degree, Eco Mode etc. in the system configuration.
- **Extra:**
  Access to the machine software update as well as the language selection of the service program or the communication setting etc.
- **About:**
  Displays the software version of the service program

- Shows in the lower area the version of the service program and its date

3.2.2 Keys

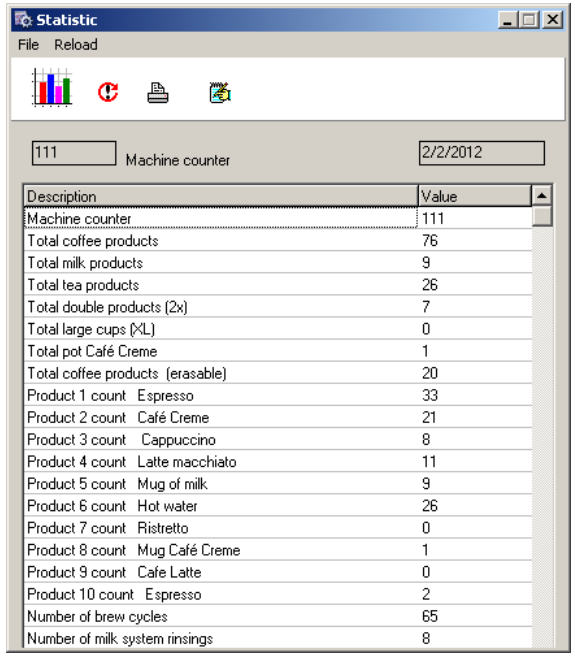


- **Start:**
  Starts communication between service program and coffee machine.
  - The buttons **– „system status“ a**nd **„test functions“ –** are now activated!
- **Stop:**
  Stops communication between service program and machine. Thus, coffee machine software update is possible.
  - Prior to updating the coffee machine software the connection to the coffee machine has to be interrupted!
- **System:**
  Shows the current software version of the coffee machine, date of version as well as manufacturing date and serial number.



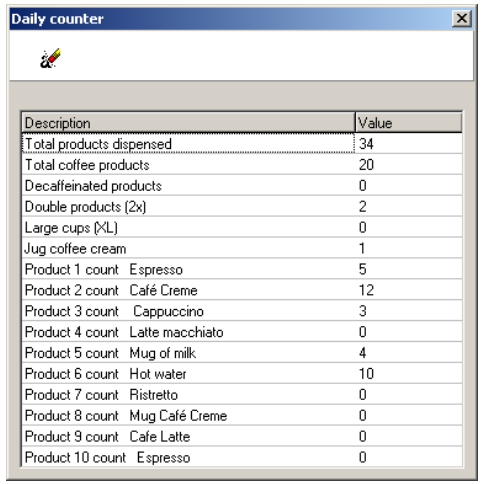
- Coffee machine type and version are displayed
- Current software version and date of version are displayed
- Serial number, manufacturing date and service text are displayed

- **Statistic**
  In the statistic, all counters, running times as well as the initial operation date can be viewed and saved.



- The statistic shows in an overview all date of the coffee machine. These counters cannot be deleted or edited.
- By clicking on the exclamation mark symbol the data can be updated.
- By clicking on the printer symbol the whole statistic can be printed.
- Through **„File“** -> **„Export“** the whole statistic can be saved in a file

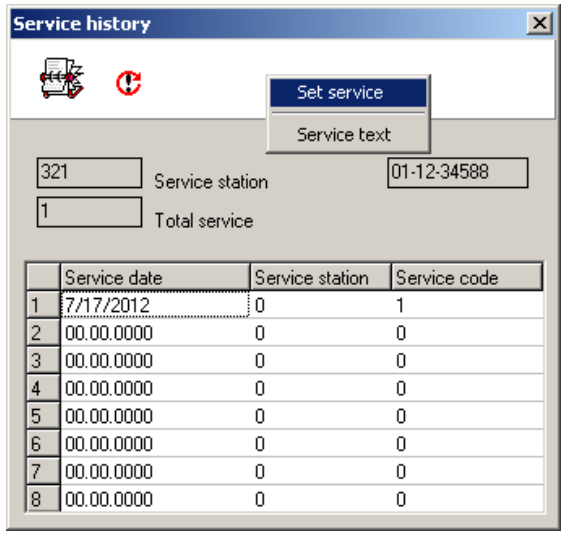
- **Counters (daily counter)**
  The daily counter contains the counters since last deletion.
  - ➢ This daily counter can be deleted by the customer at the display and through the service program.



- The daily counter shows the total no. of beverages dispensed as well as the no. of dispensing per beverage since the last deletion.
- The daily counter can be deleted by using the eraser symbol.

The counters shown here are identical to the counters which can be read out from the display of the coffee machine.

- **Historial**
  Viewing of service history as well as setting of service date after completion.
  - ➢ If the service is set, the message **„Service recommended"** disappears in the coffee machine display.



- The dates can be updated by clicking on the exclamation mark.
- By clicking with the right mouse button in the white area a window is opened to set the service. If **„Set service"** is pushed, the maintenance counter in the statistic is set to zero and the message **„Service recommended"** disappears in the display.

3.2.3 Tabs for selection of coffee machine type

- By clicking on one of these tabs the coffee machine type has to be selected to which a connection is intended to be established.

This warning message will appear if you try to establish a connection to an unsuitable machine type.

3.2.4 Buttons

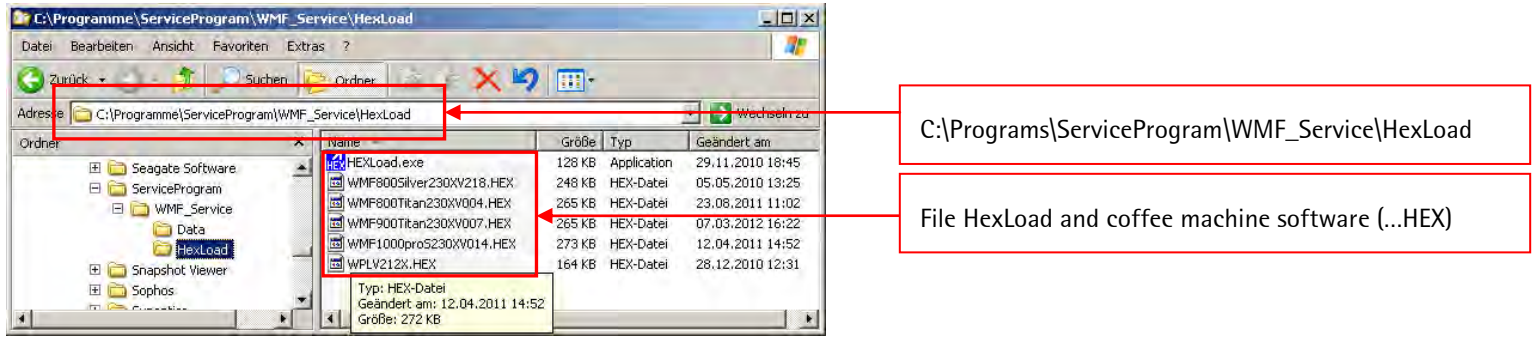
- **System status:**
  Information about current status of machine.
- **Programming:**
  Uploading and saving of a machine configuration as well as adjusting, for example, water hardness degree, Eco Mode etc. in the system configuration.
  - **„Programming“** is described in detail in chapter 5
- **Test functions:**
  Corresponds to a „component test“and „live display“, besides an error statistic is saved here.

4 Software update

Advice regarding software update

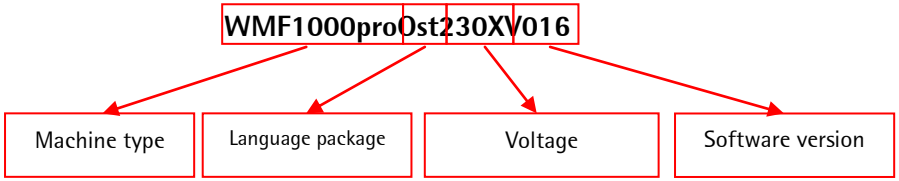
- Prior to starting a software update it has to be assured that the desired coffee machine software is saved in the following folder with exactly this path on your laptop:

  ➢ **C:\Programme\ServiceProgram\WMF_Service\HexLoad – or – C:\Program\ServiceProgram\WMF_Service\HexLoad**



- Coffee machine software incl. language package

  ➢ At the WMF consumer coffee machines software the languages are summarized in language packages (see recoding table on page 14). These packages can be recognized by their file name.



  ➢ Corresponds to the technician's software on the laptop by which access to and programming of the coffee machine is possible; please find advice for installation in chapter 10.

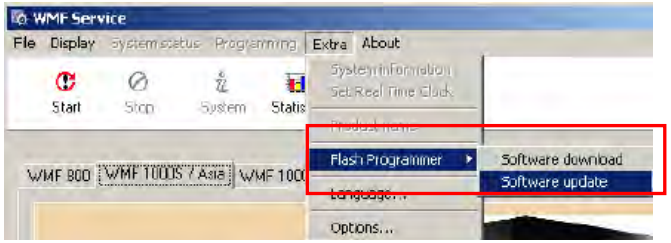
You will find the most recent software version on our WMF Service Center website: http://www.servicecenter.wmf.de

4.1 Recoding table „Language in language package“

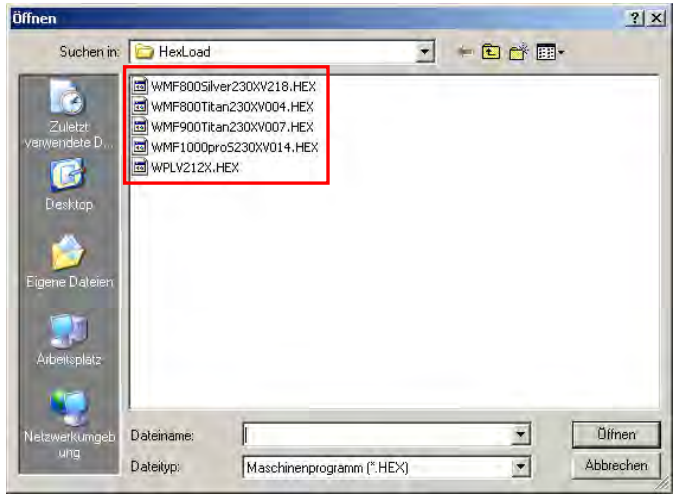
	WMF 800	WMF 800 Ost	WMF 900	WMF 900 Ost	WMF 1000S	WMF 1000S Ost	WMF 1000proS	WMF 1000proS Ost			
German	X		X		X		X				
English	X	X	X	X	X	X	X	X			
French	X		X		X		X				
Dutch	X		X		X		X				
Spanish	X		X		X		X				
Italian	X		X		X		X				
Danish	X		X		X		X				
Norwegian	X		X		X		X				
Swedish	X		X		X		X				
Russian		X		X		X		X			
Czech		X		X		X		X			
Slowakian		X		X		X		X			
Polish		X		X		X		X			

4.2 Workflow description „Software Update“

- Open service program (see chapter 3.1)
  - **Important hint –** do NOT connect service program with the coffee machine by clicking the **„Start“** key, otherwise a software update through the **„Flash Programmer“** is not possible.
- Start software update through **„Extras“** -> **„Flash Programmer“** -> **„Software update“**

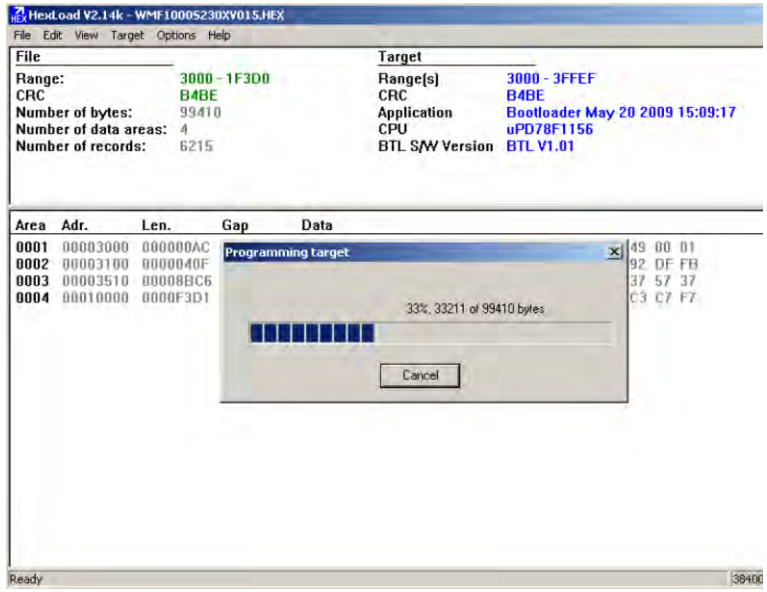


- Now the following window opens:



- Indicates the coffee machine software versions in the HexLoad folder
- Select desired coffee machine software version with the correct language package
- Push **„Open“** -> Update starts automatically

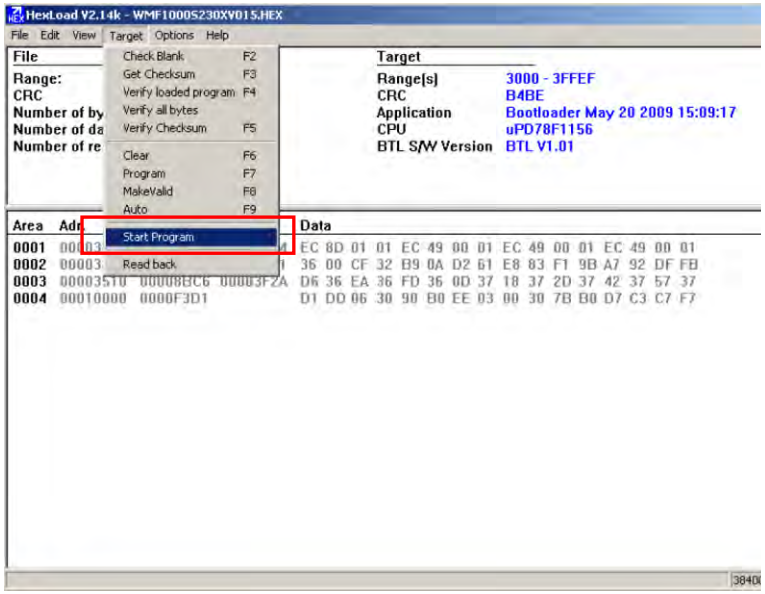
If the update does not start automatically, please eliminate the possible errors as described in chapter 11.2.



- The software is uploaded together with the language package to the coffee machine, the customer-specific settings are not yet modified by the update.
- Until the update is completed the following message is displayed on the coffee machine

Bootloader Vx.xx

38400 baud....



In order that the coffee machine is ready to operate again after the software update, there are two possibilities:

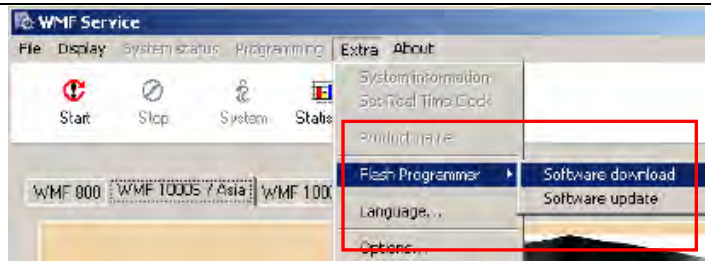
1. possibility – directly in the Hex-Load program
   - Through **„Target“ -> „Start Program“** boot coffee machine again
   - Afterwards close **„File“ -> „End“** HexLoad program
2. possibility – directly at the coffee machine
   - Switch coffee machine **OFF/ON**
     - ➢ Disadvantage: By using this method the communication between coffee machine and service program is interrupted and has to be started again.

4.3 Workflow description through „Software download“

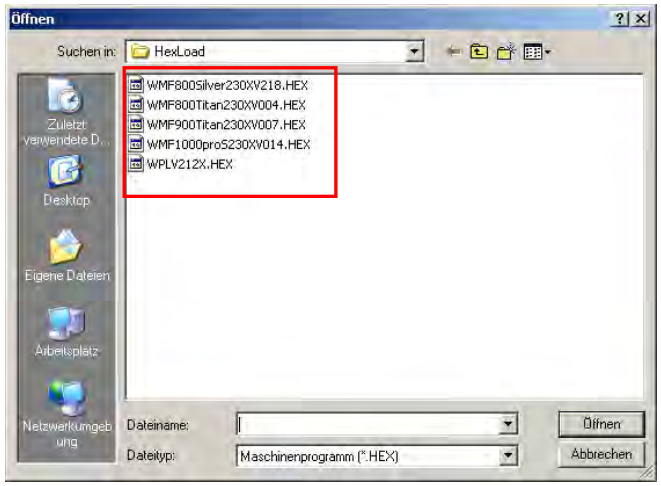
A transfer of software through **„Software download“** is only possible and necessary if:

- During the software update (chapter 4.1) an error has occurred (e.g. caused by an interrupted connection), or the coffee machine is still in the bootloader mode (see coffee machine display) despite switching it off/on as on the CPU the software is only partly available or completely unavailable.
- There is no software on the CPU

- Through **„Extras“ -> „Flash Programmer“ -> „Software download“** start downloading software again.



- The following window opens



- Indicates the coffee machine software versions in the HexLoad folder
- Select desired coffee machine software version with the correct language package
  Push **„Open"**-> now the update starts as described in **„Software update"** (chapter 4.1).
- Finish **„Software update"**, just as described in **„Software update"(**chapter 4.1).

4.4 Configuration and activation of the new software

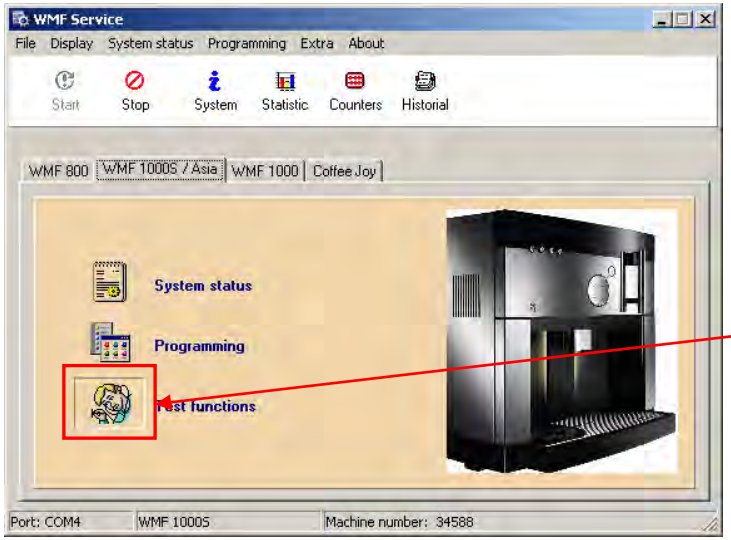
After successful upload of the new software version to the coffee machine it is still necessary to load the new configuration data of the new software in the working memory. In order to do this, the following steps have to be taken.

- Open service program and establish connection to the coffee machine by clicking the **„Start"** button (see chapter 3.1)

Attention, prior to the next step it is imperative to write down the following customer-specific settings. As described on page 22 they have to be entered again!

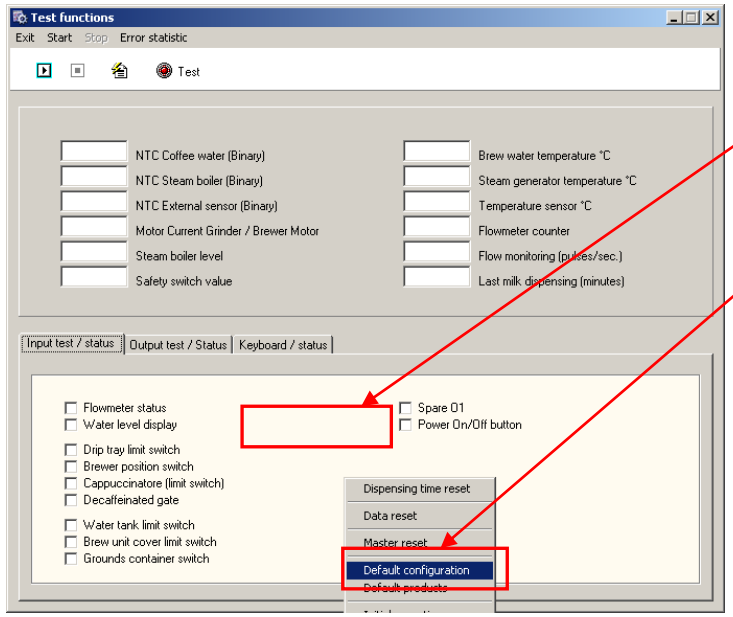
- Machine number (serial number) / Water hardness / Filter / Language / Switch-off time / brewing temperature

- Open window **„Test functions“**



Open new window through „Test functions“

- Right mouse click into the lower white area
- **„Default Configuration“** select and confirm
  - ➢ During this, all customer-specific configuration data (water hardness, language, switch-off time etc...) is deleted and overwritten by the default values of the new software.

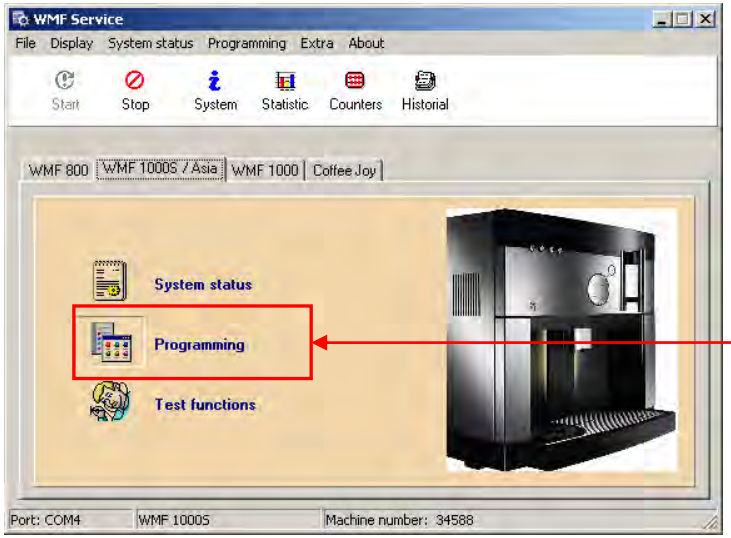


Click into the white area with the right mouse button

Select „Default configuration“ and confirm with **OK**

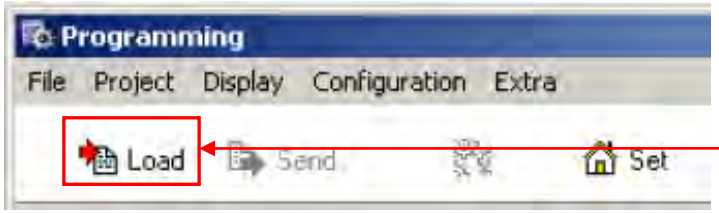
- Afterwards close window „Test functions“ again

- Call up programming functions through the button **„Programming“**.



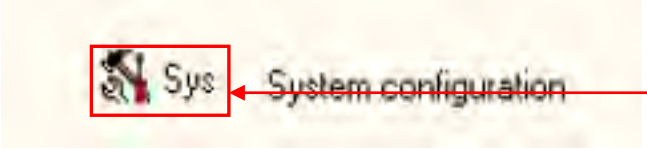
Open new window through „Programming“

- Load current coffee machine configuration into service program through **„Load“**



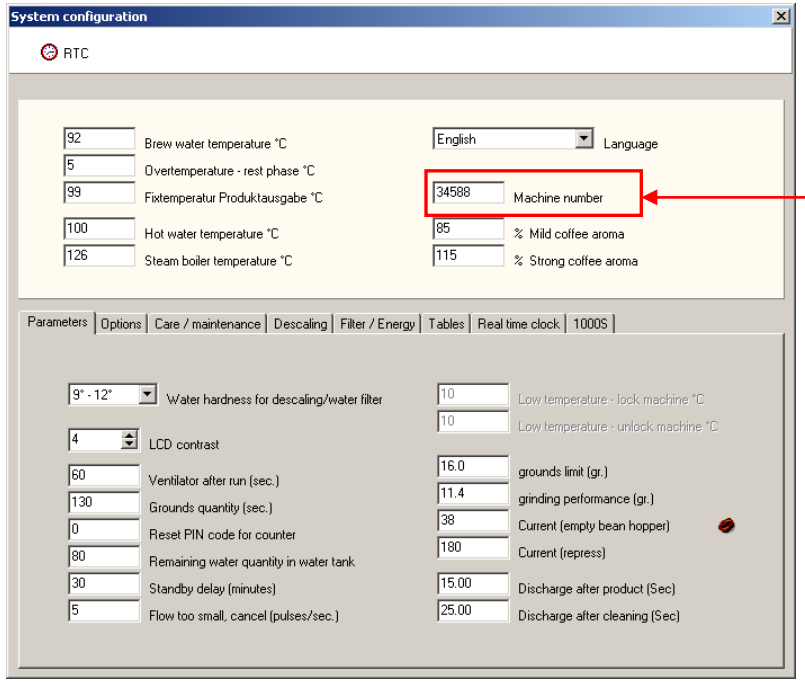
Load current coffee machine configuration through “Load”

- Open configuration window through **„Sys“** button



Open system configuration window through „Sys“

- Enter in field „Machine number“ the serial number of the coffee machine and close window.



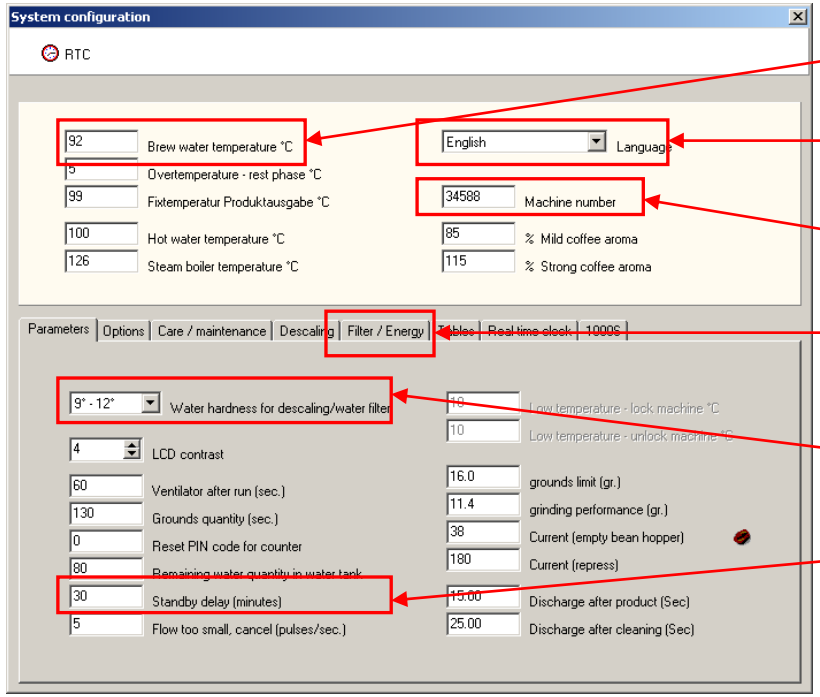
Enter machine number (serial number) of the coffee machine here.

- Transfer default configuration date (now with machine number) again through **„Set“**key (now with machine number) to the coffee machine and thus into the factory setting memory.

Transfer through „Set“the configuration data to the coffee machine

- Open configuration window again through **„Sys“**button.

- Enter the previously noted customer-specific configuration data here again and close window.



Enter the customer-specific brew water temperature here

Enter the customer-specific language here

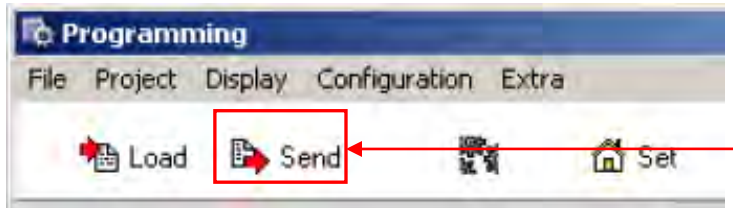
Enter the machine number of the coffee machine here

Enter the customer-specific water filter setting here

Enter the customer-specific water hardness degree here

Enter the customer-specific switch-off time here

- Transfer through **„Send“**button the customer-specific configuration data again to the coffee machine and thus to the working memory.



Transfer through „Send“ key the customer-specific configuration data to the coffee machine.

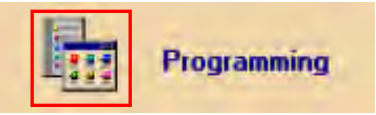
<u>After this step the software update is completed.</u>

5 Programming - System Configuration

Chapter 5 describes the most important processes of the function programming and system configuration.

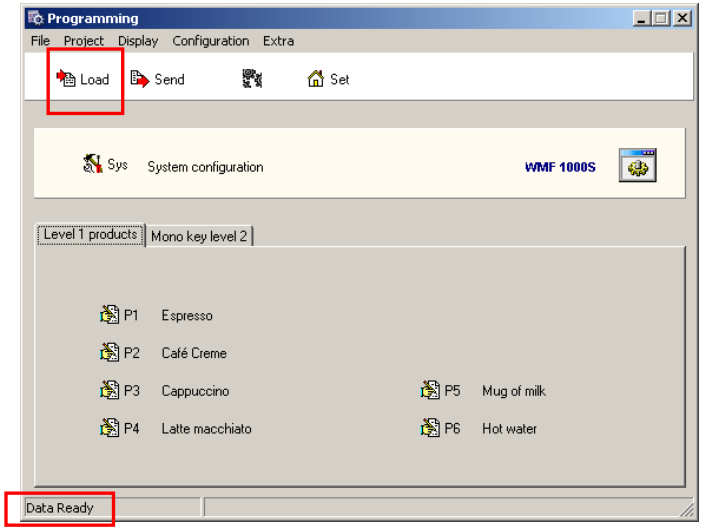
5.1 Access Programming

- Open service program and establish connection to the machine through the **„Start“** key (see chapter 3.1)
- Now open the programming window through the **„Programming“** button



The window for programming of the coffee machine opens.

- Now push the **„Load“** key



- Push „Load“– data is uploaded from the working memory of the coffee machine into the service program.

- The display „Data Ready“in the taskbar shows that the data from the coffee machine has been successfully uploaded into the service program and that there is a connection to the coffee machine.

5.2 Define and allocate beverage names

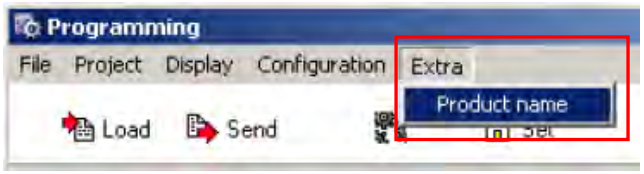
Important advice:

In contrary to the professional WMF coffee machines, a modification of the beverage button allocation is not intended for the consumer coffee machines. The reason is that the button designation is already specified by the firmly fixed beverage symbols on the front panel. However, the beverage names (appearing in the display) can be modified. If this should be necessary, please follow this description.

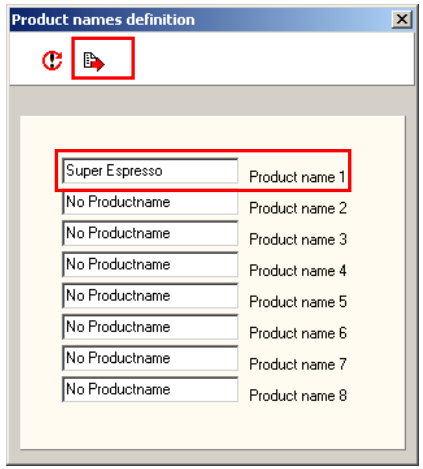
5.2.1 Customer-specific beverage names

Here, a customer-specific beverage name is saved in the program which appears in the coffee machine display after having pushed the respective button.

- Activate **„Extra" – „Product name"** in the window „Programming"



Then, the window opens in which all customer-specific beverage names can be entered.

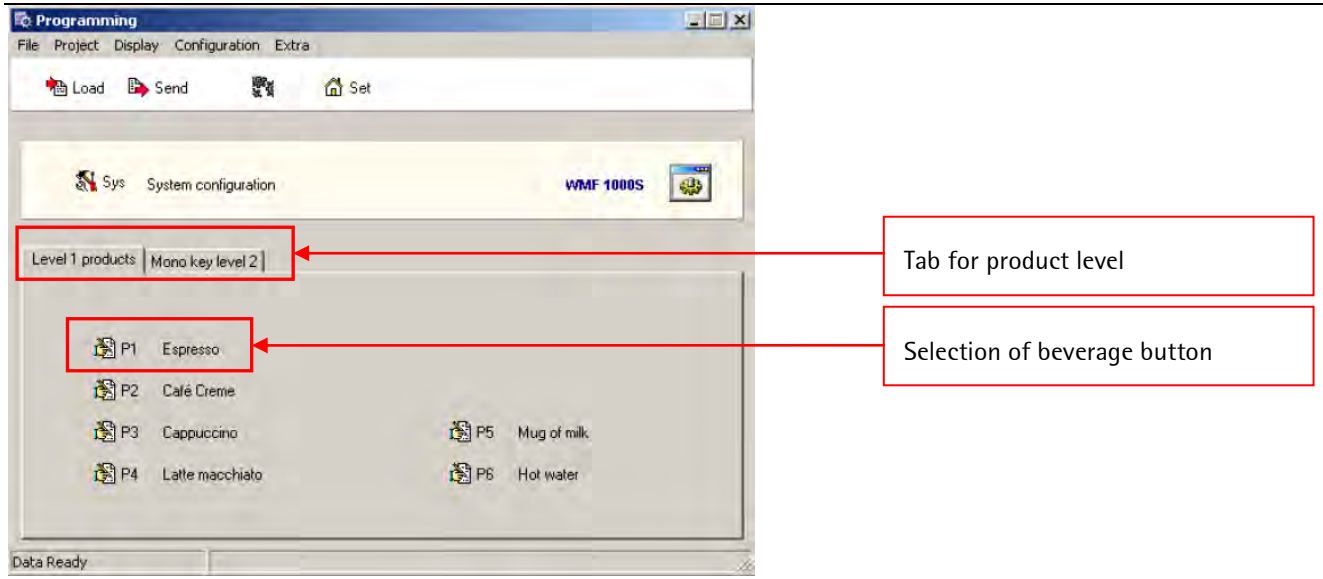


- Enter desired beverage name

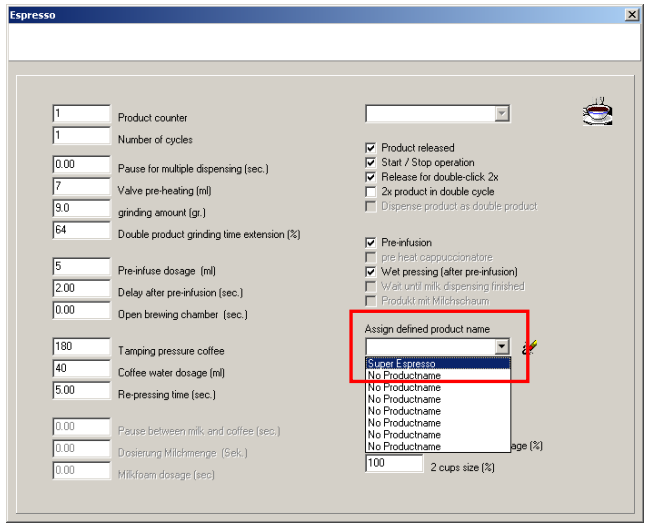
- Transfer the modified beverage names to the coffee machine by pushing the „Send"key. This beverage name now only has to be allocated to the desired beverage button.

5.2.2 Allocate beverage names to a button

- Select the desired beverage button in the window programming. Beverage buttons P1 – P4 correspond to product level 1 and 2, Beverage buttons P7 – P10 correspond to the mono button level 3.
  - ➢ **Advice** – the buttons P5 – P6 (milk foam and hot water) cannot be modified.



- Now the window with the settings for the selected beverage opens



- Left column: beverage-specific settings, this column must not be modified.
- Right column: button-specific settings
- Open drop-down menu **„Assign defined product name“** and select desired beverage name.
- Close window by X after allocation.

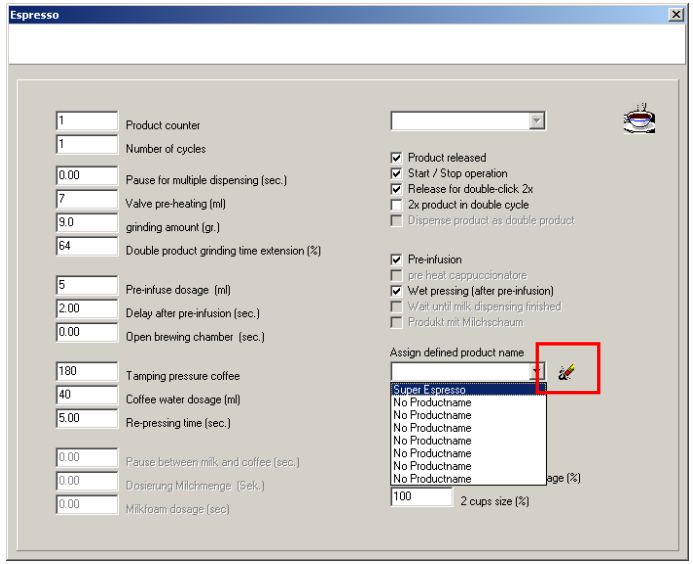
- Upload modifications to coffee machine

  Through the key **„Send“,** transfer modifications to the coffee machine.

5.2.3 Undo customer-specific beverage names

Here, it is described how the modified beverage name can be reset to the default setting in the easiest way.

- As described in chapter 5.2.2, please open the desired beverage configuration



- Left column: beverage-specific settings, this column must not be modified.
- Right column: button-specific settings
- Next to the drop-down menu **„Allocate defined product name"** there is an eraser symbol: push this and the default is set again
- Close window by X after allocation.

- Upload modifications to coffee machine

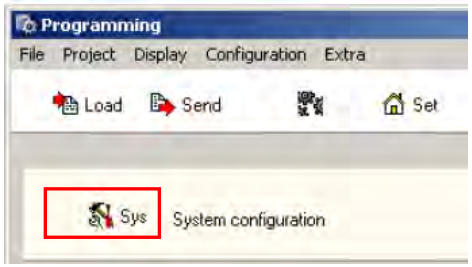
  Through the key **„Send",** transfer modifications to the coffee machine.

5.3 System configuration

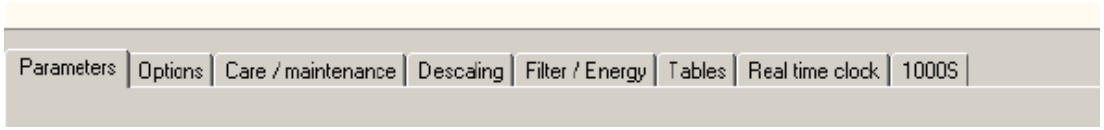
In the system configuration all machine-specific settings can be made.

Examples: grinder capacity, brewing temperature, maintenance settings etc. In chapter 7 of this description it is referred to every single setting in more detail, however, many of these values and functions must **not** be modified; if this is the case, they are marked accordingly.

- As described in chapter 5.1, open the window „**Programming**" and upload date from the coffee machine
- To open the system configuration please push the **„Sys"** button



- A window with the different tabs of the system configuration opens



- Please take a detailed description regarding the setting possibilities in the various tabs from chapter 7

5.4 Beverage-, and coffee machine configuration – save, reset & upload

The coffee machine CPU of the consumer coffee machines has two separate memories

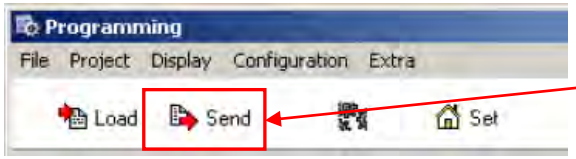
- **Working memory** – there you will find all data and settings to which the machine currently has access. This working memory corresponds to the customer memory already known from other WMF coffee machines. If the customer carries out modifications in the beverage or basic settings, these modifications are only done in the working memory.
- **Factory setting memory** – serves as data back-up and resetting and corresponds to the service memory already known from other WMF coffee machines. In this memory the last saved factory setting is saved.

5.4.1 Saving of coffee machine data

5.4.1.1 Saving in the working memory

- In the working memory, all setting parameters relevant for the coffee machine as well as customer settings are saved.
- The coffee machine exclusively works with the data and settings saved in the working memory!

  - ➢ If settings (basic settings, beverage settings etc.) are directly carried out at the coffee machine, they immediately overwrite the settings in the working memory.
  - ➢ If settings are carried out through the laptop service program, they are only written into the working memory of the coffee machine after having pushed the „Send"key.



By pushing the **„Send"**key the modified settings are transferred to the coffee machine.

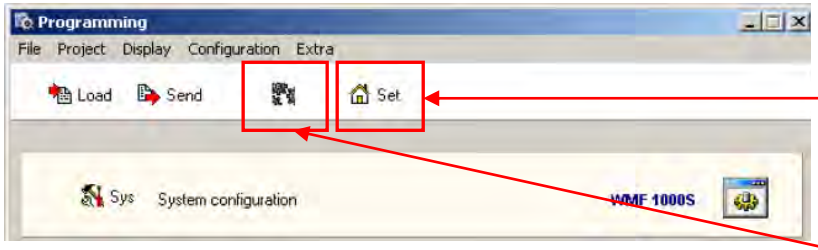
5.4.1.2 Saving into the factory setting memory

- The factory setting memory only serves for data back-up and to reset the factory settings.
- In the factory setting memory the last date save **by the technician** is saved, i.e. as long as no modifications have been carried out compared to the status of new machines as delivered, the factory data is saved.

  - ➢ If settings (basic settings, beverage settings etc.) are carried out directly at the machine, they are **NOT** written in the factory setting memory.
  - ➢ If settings are carried out through the laptop service program, they can **ONLY** be uploaded into the factory setting memory with the service program.

- Modifications by the service program are written into the factory setting memory ONLY AFTER having pushed the **„Set"** or **„Gear"** key.

  - ➢ Pushing the **„Set"**key ONLY writes the modifications into the factory setting memory!
  - ➢ Pushing the **„Gear"**key writes the modifications into the factory setting memory and ADDITIONALLY into the working memory.



By pushing the **„Set"**key modifications are only written into the factory setting memory. The working memory remains unchanged.

By pushing the **„Gear"**key the modifications are written into the factory setting memory and in the working memory.

Important advice:

The consumer coffee machines DO NOT– as known from the usual WMF coffee machines – have an unchangeable factory setting memory.

Consequently, if the existing factory setting memory is overwritten by pushing the **„Set"** or **„Gear"** key, the saved basic factory data originating from the production will be irrevocably lost!

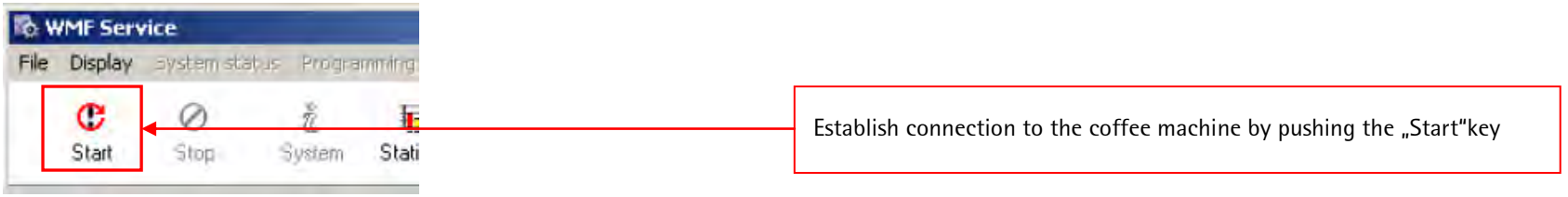
6 Test functions, coffee machine parameters, component test

The CPU of the consumer coffee machines does not offer the possibility of a component test directly at the coffee machine. However, a simple troubleshooting can be carried out here by means of two testing possibilities which are available in the service program.

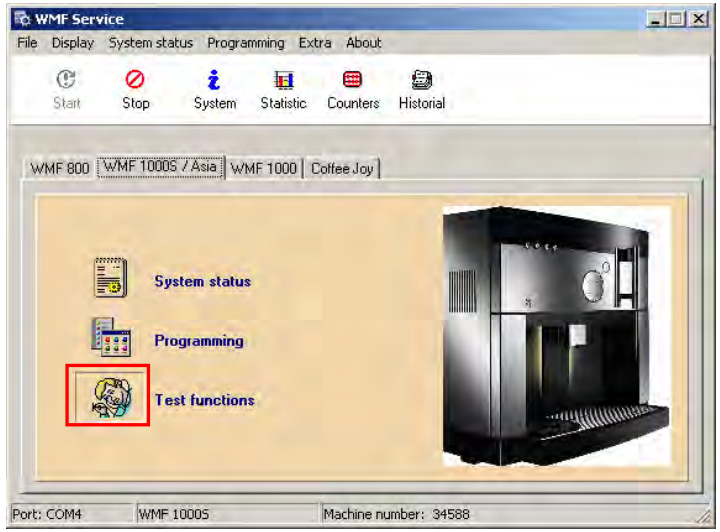
6.1 Test functions

- **Test functions - live display:**
  There, some important parameters such as for example boiler temperature or condition of the control switches are continuously displayed updated live and during beverage dispensing. In order to start the live display the **„Play"** button must be pushed; as long as this button is activated, all information is continuously displayed. In order to stop this, the **„Stop"** key must be pushed, during the live display the component test (test button) is deactivated.
- **Test functions – component test (Only to be carried out by trained specialized personnel):**
  Here, single components can be actuated specifically and thus, they can be checked regarding their function (activation yes/no). In order to start the component test the **„Test"**key must be pushed. Now the coffee machine is in the system test mode which is indicated in the display of the coffee machine by the message "system test". In this condition the desired components can be selected by ticking. If the **„test"**key is now pushed again, exactly the actions are carried out which have previously been ticked. **Please absolutely keep in mind that all other automatic functions are deactivated. This means that if for example heating is actuated, it is heated unlimited by temperature sensor and heating management as long as the „test" button is pushed again and thus the component test is finished.**

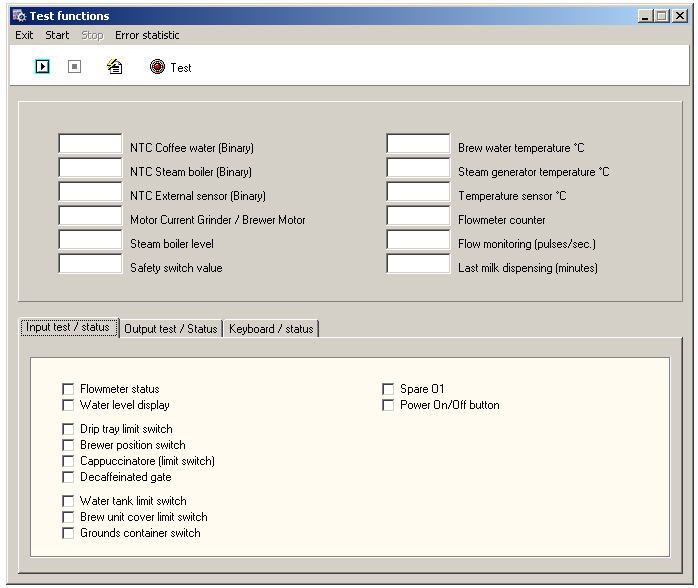
Establish connection to the coffee machine through the **„Start"**key as described in chapter 3.1.

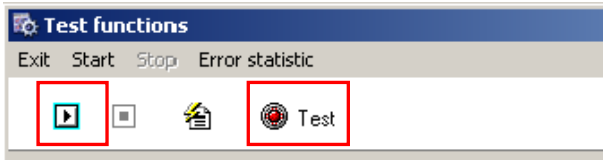


Open the window for live display & component test through **„Test functions“**.



- The following window opens:





- Pushing the **„Play“** key starts the **„Live display“**
  Pushing the **„Stop“** key stops the **„Live display“**
- Pushing the **„Test“** key starts/stops the **„component test“**

You will find a detailed description of the test functions and the single views as from chapter 9.

7 Further functions & setting possibilities – detailed description

Chapter 7 describes with screenshots all tabs, drop-down menus as well as windows together with their functions and setting possibilities.

Partly, there is the possibility to access functions as well as setting possibilities in respectively from several tabs.
Whenever this is the case, reference is made in the index on several pages in this document.

The training documentation makes no claim to be complete; rather, its aim is to show, the „quickest"way to reach a certain result.

The screenshots of the tabs change regarding their appearance – depending on pre-setting / basic configuration etc.

Screenshots are therefore to be understood as examples. Functions and setting possibilities, which are not to be activated for the chosen examples, are grayed out and therefore cannot be selected resp. modified for the chosen examples. However, as they are re-activated again after modification of pre-settings/basic configuration, the tabs are completely described anyway.

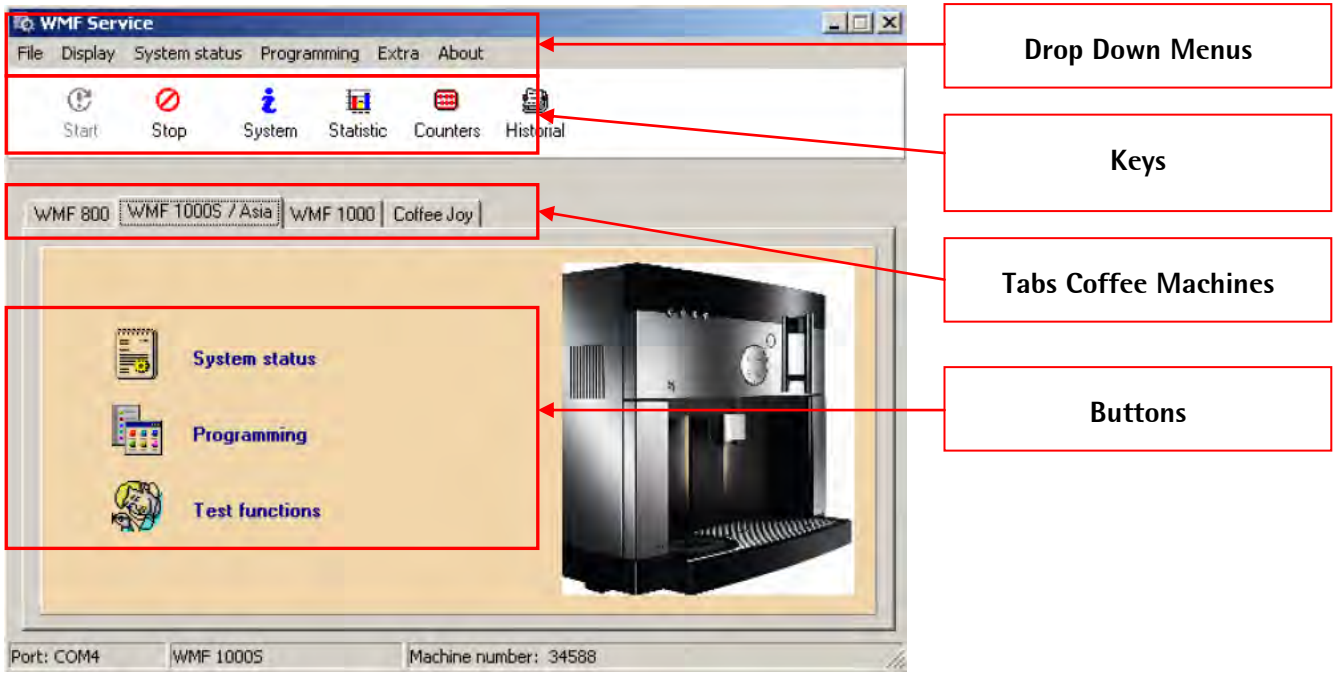
7.1 Hints for easier detection of functions & setting possibilities on the following pages

Example: You would like to modify „Current (empty bean hopper) "

- **Look in the subject index** on the following pages for the desired term, in the a. m. example:
  „Current (empty bean hopper)" > You are referred to page 40; on the following pages it is described how and where the grinder current is to be entered.

The **headline** on the respective page **describes the path resp. the clicks how to get to this user interface in the service program –** in the a.m. example
Headline: „**Button Programming > Load > Sys > Parameter**"
i.e. in the user interface of the service program you push first the button "Programming"; afterwards in the now opening window the buttons „Load"and „Sys"and then you will see the tab „Parameter".

The differentiation of **„Drop Down Menu“/ „Keys“/ „Tabs“/ „Buttons“**is consistently kept according to the below picture:



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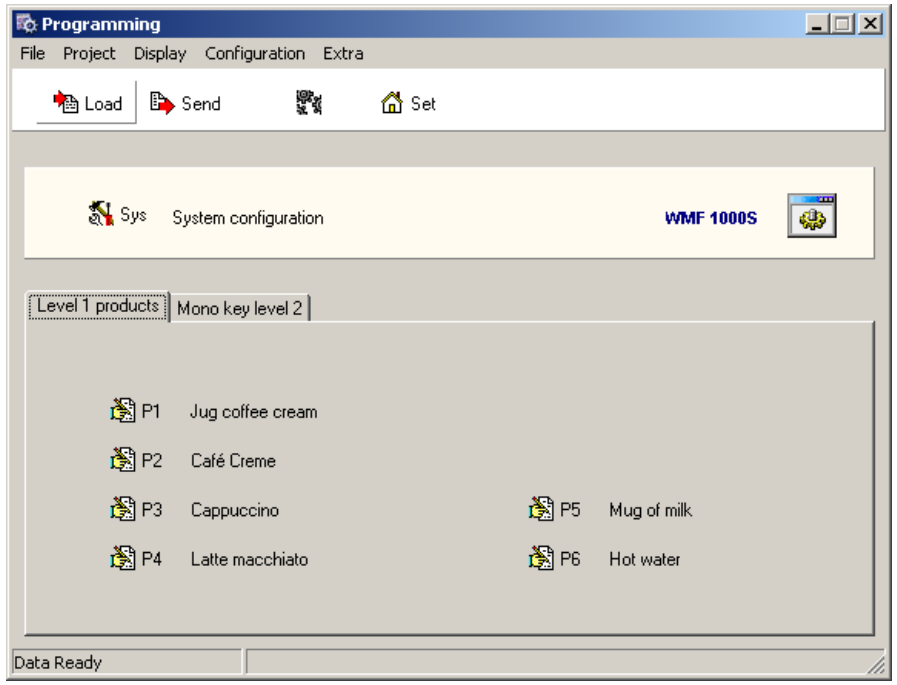
9 Button Programming > Programming



1. Programming

1 **File –** to open or save configuration files

2 **Project –** to open or save project files (same as configuration file)

3 **Display –** opens the coffee machine statistics or service history

4 **Configuration –** same as the buttons „Load" and „Send"

5 **Extra –** in order to define beverage names (chapter 3.2)

6 **Load –** in order to upload the coffee machine configuration to the PC

7 **Send –** in order to send the PC configuration data to the working memory of the coffee machine

8 **Gear –** in order to send the PC configuration data to the working memory and the factory setting memory

9 **Set –** in order to send the PC configuration data to the factory setting memory

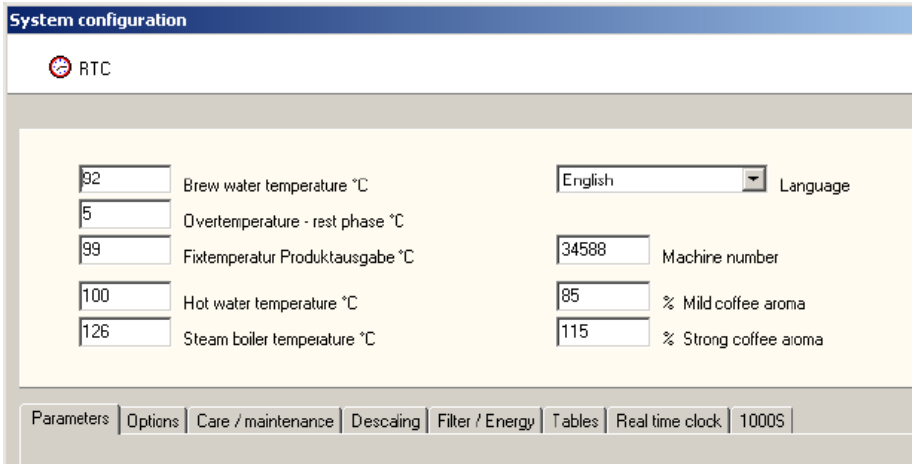
10 **Sys –** to open the system configuration window

11 **Level 1 products –** Tab for beverage settings of level 1

12 **Mono key level 2 –** Tab for beverage settings of level 2

13 **P1 – P10 –** Beverage keys to open the beverage settings of the respective beverage

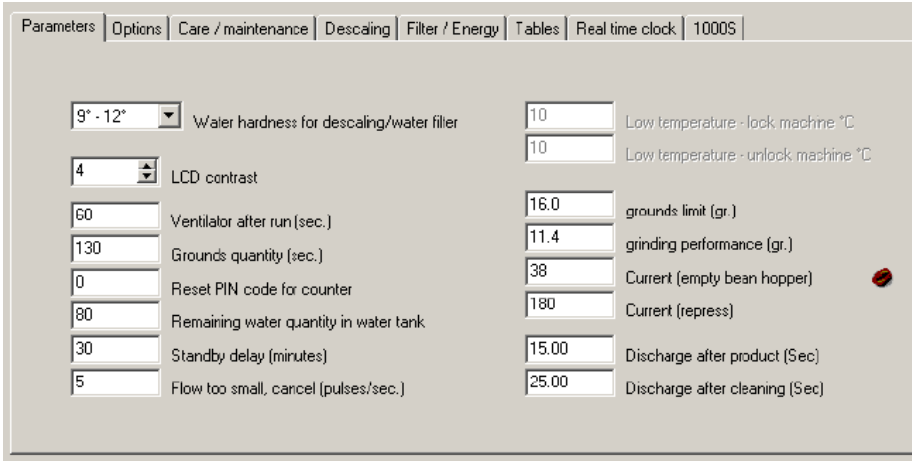
9.1 Button Programming > Load > Sys



2. System Configuration – „Sys" – upper window

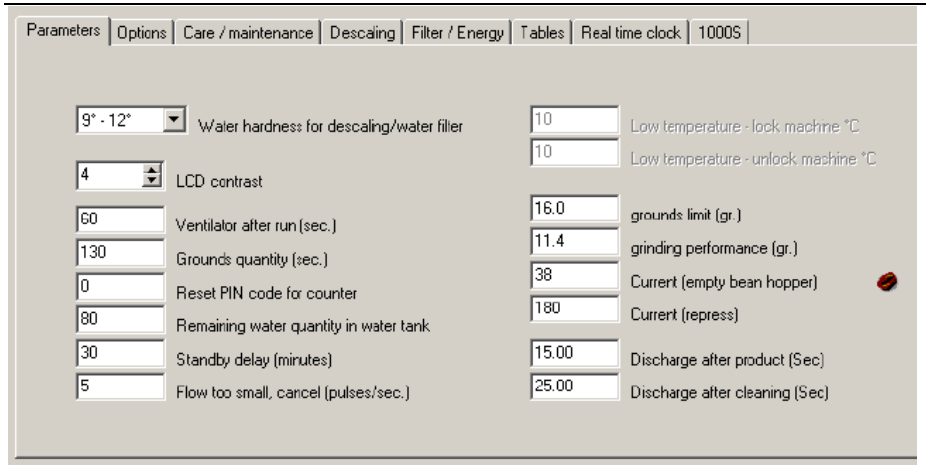
1. **RTC –** downloads the system time and date from PC to coffee machine
2. **Brew water temp. –** shows the brewing water temperature which is currently set in the basic settings, value can be modified.
3. **Overtemperature rest phase –** if the coffee machine is not in use, it is heated up in continuous intervals to the set value through the brewing water temperature, value must **not** be modified.
4. **Fixtemp. beverage dispensing –** Heating up to this value during beverage dispensing, value must **not** be modified
5. **Hot water temp. –** During hot water dispensing machine is heated up to this value, value must **not** be modified.
6. **Steam boiler temp. –** Standard temperature for the steam boiler, this value must **not** be modified.
7. **Language –** Shows the currently set language, value can be modified.
8. **Coffee machine number –** Serial number of the coffee machine must be entered here. This is shown in the system information, must **not** be modified.
9. **% Coffee aroma mild –** the coffee strength is reduced by the set value this value must **not** be modified.
10. **% Coffee aroma strong –** the coffee strength is increased by the set value this value must **not** be modified.
11. **Tab coffee machine options –** The different options can be selected here.

9.2 Button Programming > Load > Sys > Parameter



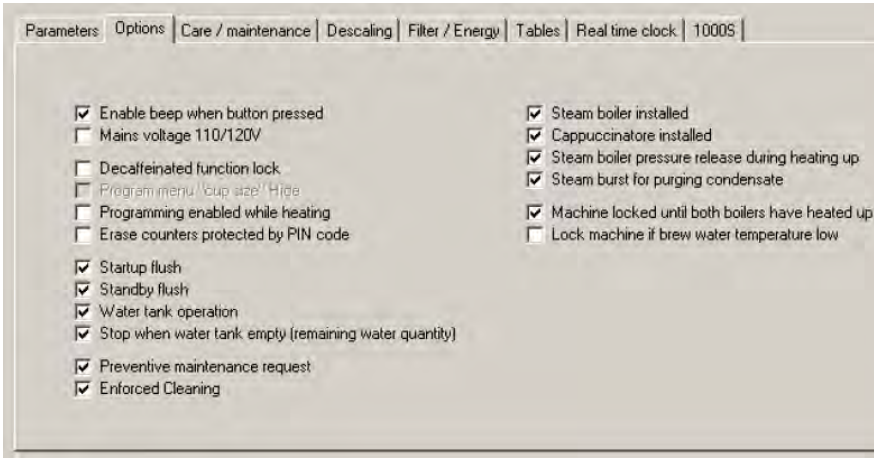
3. System configuration – „Sys" – Parameters

1. **Water hardness –** Shows the currently set water hardness, value can be modified.
2. **LCD contrast –** Shows the LCD contrast, value can be modified.
3. **Ventilator after-run –** Shows the time (sec.) how long the ventilator runs after beverage dispensing, value must **not** be modified.
4. **Grounds quantity –** Shows the grinding time (sec.), when the message „Empty grounds container" appears in the display, value must **not** be modified.
5. **PIN Code –** this function is not supported.
6. **Remaining water quantity –** If fill level sensor indicates „empty", the quantity (ml) set here can still be dispensed before „Refill water tank" is displayed, value must **not** be modified.
7. **Standby delay –** Shows the time (min.) when machine switches off after the last beverage dispensing. At „0"coffee machine is not switched off automatically, value can be modified.
8. **Flow too small –** Min. quantity of impulses per second; if less impulses are measured by the flow meter the error message „Flow stopped" is displayed, value must **not** be modified.
9. **Grounds limit –** Max. grounds quantity (gr.) which is used for one grinding, value must **not** be modified.
10. **Grinding performance –** The specific grinding value which is written on the grinder body has to be entered here. This value always has to correspond to the value on the grinder.
11. **Current (empty bean hopper) –** Shows the value at which „Refill beans"will be displayed. This value can be calibrated again through the bean symbol; bean hopper and grinder must be completely empty and the coffee machine ready for operation, value can be modified.



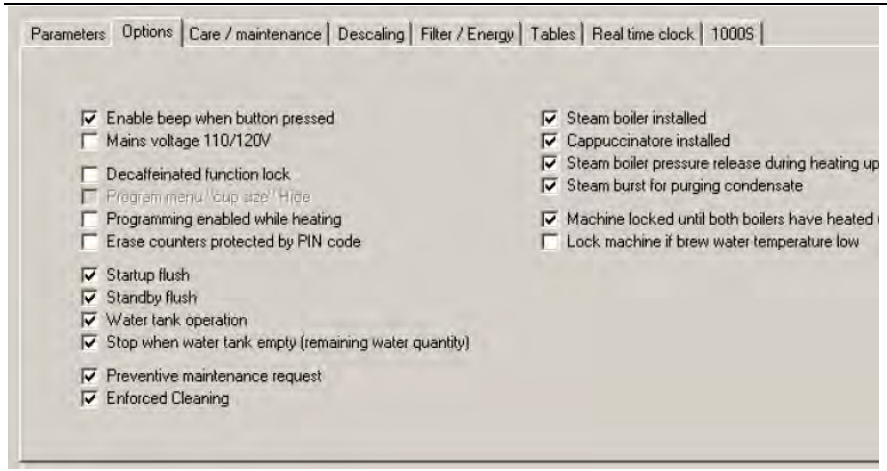
12. **Current (repress) –** Value must **not** be modified
13. **Discharge after beverage –** Shows the time during which the release valve remains open after brewing, value must **not** be modified
14. **Discharge after cleaning –** Shows the time during which the release valve remains open after cleaning, value must **not** be modified

9.2.1 Button Programming > Load > Sys > Options



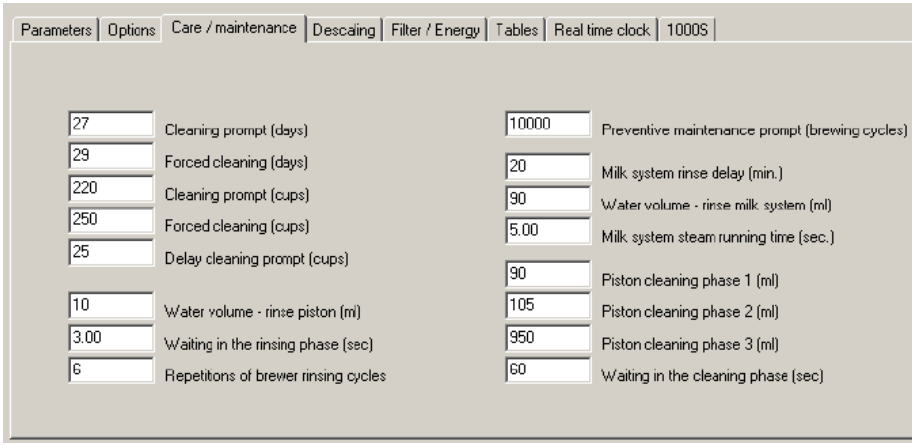
4. System configuration – „Sys" – Options

1. **Enable beep –** activates or deactivates the beep when button is pressed, value can be changed
2. **Mains voltage 110/120V –** activates the modified heating management for countries with 100 – 120 V mains voltage
3. **Decaffeinated function lock –** activates or deactivates the control of the manual insert lid, value must **not** be modified.
4. **Programming enabled while heating –** activates or deactivates the programming menu during the heating phases, value must **not** be modified.
5. **Erase counters protected by PIN Code –** this function is not supported.
6. **Startup flush –** activates or deactivates the startup flush during switching on, value must **not** be modified.



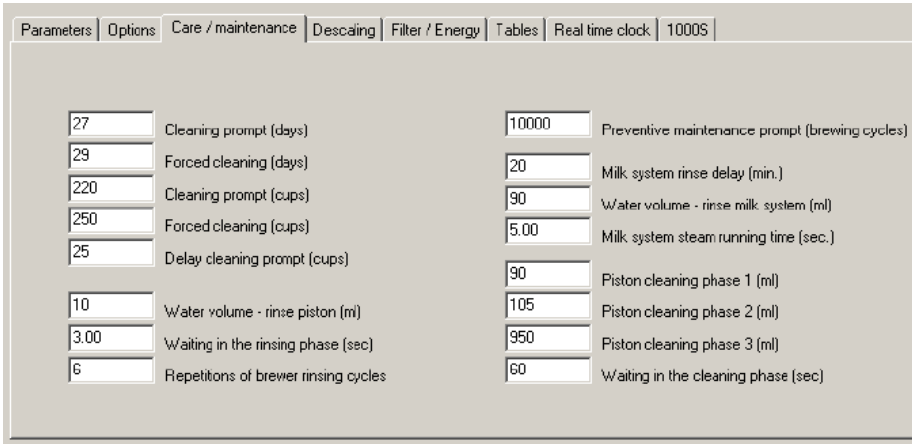
7. **Standby flush –** activates or deactivates the standby flush during switching off, value must **not** be modified.
8. **Water tank operation –** activates or deactivates the option water tank, value must **not** be modified.
9. **Stop when water tank empty –** activates or deactivates the remaining water quantity function („remaining water quantity"see tab parameters), value must **not** be modified.
10. **Preventive maintenance request –** activates or deactivates the display message „service recommended"if preventive maintenance request is reached, value must **not** be modified.
11. **Enforced cleaning –** activates or deactivates enforced cleaning; if enforced cleaning is activated the coffee machine must be cleaned after a specific enforced cleaning value has been reached; otherwise the machine will not be ready to operate. Value must **not** be modified.
12. **Steam boiler installed –** activates or deactivates the steam boiler and thus the milk / milk foam dispensing, value must **not** be modified.
13. **Cappuccinatore installed –** Must be activated if milk foamer system is in use, value must **not** be modified.
14. **Steam boiler pressure release during heating up –** Must be activated, then it is granted that the overpressure during heating up can escape from the steam boiler, value must **not** be modified.
15. **Steam burst for purging condensate –** activates or deactivates the pre-heating function of the milk system and purging of the steam hoses, value must **not** be modified**.**
16. **Machine locked until both boilers have heated up –** If this option is set the coffee machine is only ready to operate if both boilers are on temperature, value must **not** be modified**.**
17. **Lock machine if brew water temperature low –** If this **option** is set the coffee machine is always locked when the hot water boiler temperature drops below the set brew water temperature, value must **not** be modified**.**

9.2.2 Button Programming > Load > Sys > Care/maintenance



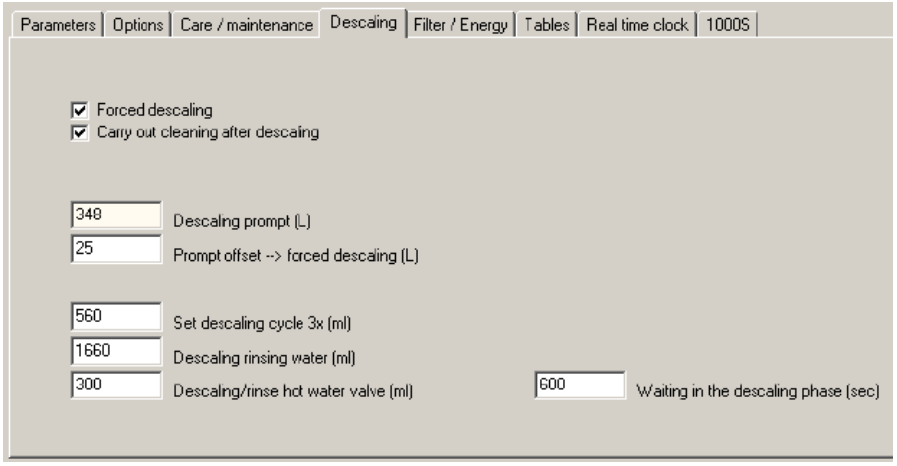
5. System configuration – „Sys" – Care / maintenance

1. **Cleaning prompt / days –** No. of days until coffee machine cleaning is required, value must **not** be modified.
2. **Forced cleaning / days –** No. of days until forced cleaning („.Forced cleaning" see tab options), value must **not** be modified.
3. **Cleaning prompt / cups –** No. of brewings until coffee machine cleaning is required, value must **not** be modified.
4. **Forced cleaning / cups –** No. of brewings until forced cleaning („Forced cleaning" see tab options), value must **not** be modified.
5. **Delay cleaning prompt / cups –** No. of cups until forced cleaning is displayed again, value must **not** be modified.
6. **Water volume rinse piston –** rinsing volume during warm rinsing, value must **not** be modified.
7. **Waiting in the rinsing phase –** waiting between rinsing intervals, value must **not** be modified.
8. **Repetition of brewer rinsing cycles –** No. of rinsing intervals, value must **not** be modified.
9. **Preventive maintenance prompt –** No. of brewings after which the message „Service recommended"is displayed, value must **not** be modified.
10. **Milk system rinse delay –** indicated the time until „Milk system rinsing"is demanded, value must **not** be modified.
11. **Water volume - rinse milk system –** rinsing volume of milk system rinsing, value must **not** be modified.



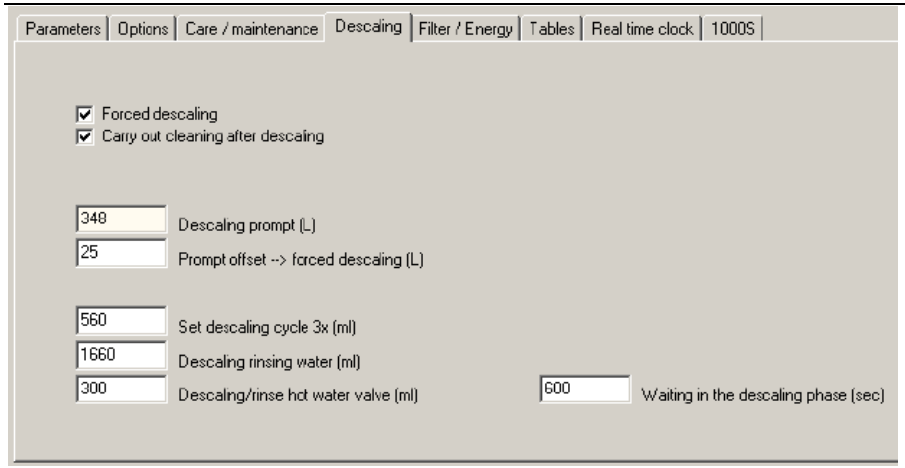
12. **Milk system steam running time –** indicates the time how long after a milk system rinsing a steam jet is dispensed, value must **not** be modified.
13. **Piston cleaning phase 1 –** indicates the volume of the 1st piston cleaning, value must **not** be modified
14. **Piston cleaning phase 2 –** indicates the volume of the 2nd piston cleaning, value must **not** be modified
15. **Piston cleaning phase 3 –** indicates the volume of the 3rd piston cleaning, value must **not** be modified
16. **Waiting in the cleaning phase –** waiting phase between the rinsing intervals, value must **not** be modified

9.2.3 Button Programming > Load > Sys > Descaling



6. System configuration – „Sys“ – Descaling

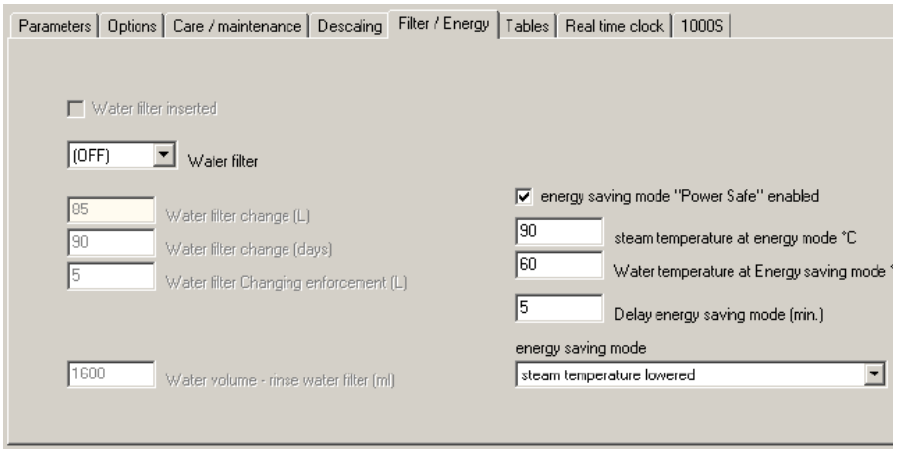
1. **Forced descaling –** activates or deactivates forced cleaning, if forced cleaning is activated the descaling has to be carried out after the descaling prompt and the offset prompt, otherwise the machine will not be ready to operate, value must **not** be modified.
2. **Carry out cleaning after descaling –** activates or deactivates forced cleaning after descaling, value must **not** be modified**.**
3. **Descaling prompt / litres –** Litres until coffee machine descaling is demanded, the entered value corresponds to the set water hardness degree and the water filter option.
4. **Prompt offset forced descaling / litres –**Litres after descaling prompt until forced descaling is activated, value must **not** be modified.
5. **Set descaling cycle 3x (ml) –** indicates volume of the single descaling rinsing cycles, value must **not** be modified
6. **Descaling rinsing water –** rinsing water volume after the 3 descaling cycles, value must



not be modified.

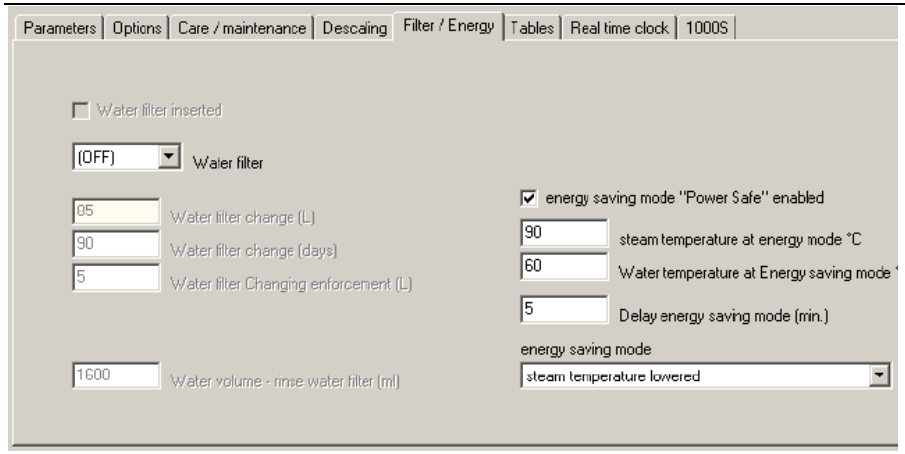
7. **Descaling / rinse hot water valve –** rinsing water volume through hot water outlet after the 3 descaling cycles and the descaling rinsing have been finished, value must **not** be modified.
8. **Waiting in the descaling phase –** waiting between the descaling cycles, value must **not** be modified

9.2.4 Button Programmierung > Load > Sys > Filter / Energy



7. System Konfiguration – „Sys" – Filter / Energy

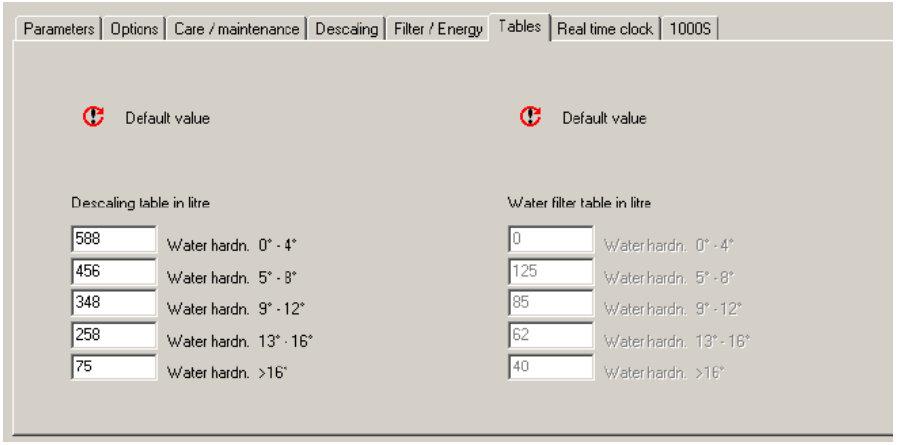
1. **Water filter inserted –** indicates whether a water filter is activated or deactivated, value must only be modified at the coffee machine.
2. **Water filter –** activates or deactivates the option water filter and offers the selection whether a 100 litres or 200 litres filter (office function) is used, value can be modified according to the filter in use.
3. **Water filter change / litres –** Litres until prompt for filter change is displayed; the entered value refers to the set water hardness degree and the water filter option.
4. **Water filter change / days –** Days until prompt for filter exchange is displayed, the entered value is fixed, value must **not** be modified.
5. **Water filter changing enforcement / litres –** Litres after prompt for filter change is displayed until forced filter change is activated, value must **not** be modified.
6. **Water quantity filter rinsing –** rinsing volume during filter rinsing through hot water



spout, value must **not** be modified.

7. **Energy saving mode enabled –** activates or deactivates the option energy saving mode, value must **not** be modified.
8. **Steam temperature at energy mode –** indicates the temperature to which the steam boiler is reduced if eco mode is activated, value must **not** be modified.
9. **Water temperature at energy saving mode –** indicates the temperature to which the hot water boiler is reduced if eco mode is activated, value must **not** be modified.
10. **Delay energy saving mode –** indicates the time after which the eco mode is activated automatically, value must **not** be modified.
11. **Energy saving mode –** the different eco modes can be selected, value can be modified

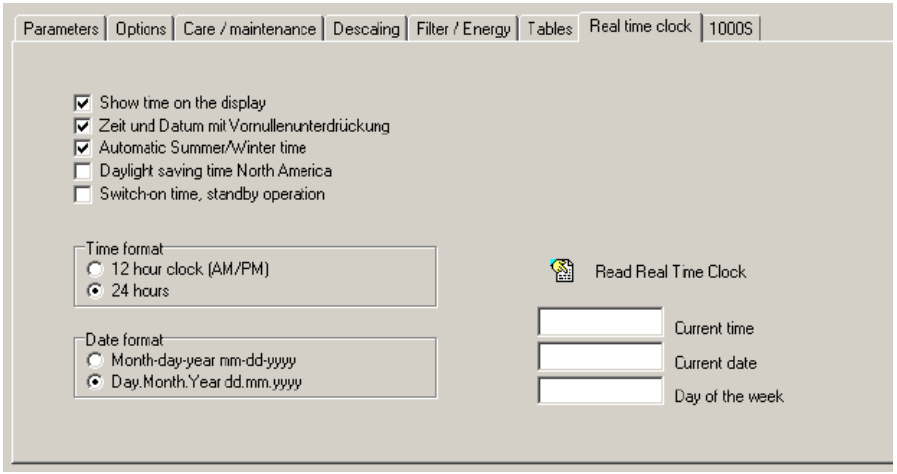
9.2.5 Button Programming > Load > Sys > Tables



8. System configuration – „Sys“ – Tables

1. **Default values –** enters the given default values into the tables.
2. **Descaling table –** the values entered here indicates when – depending on the water hardness degree – the descaling prompt is displayed, value must **not** be modified.
3. **Water filter table –** the values entered here indicate when – depending on the water hardness degree – the water filter change prompt is displayed, value must **not** be modified

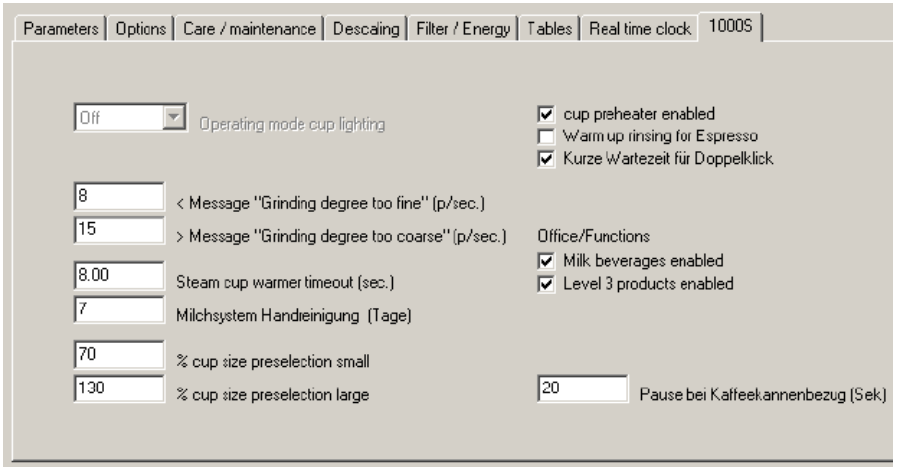
9.2.6 Button Programming > Load > Sys > Real Time Clock



9. System configuration – „Sys" – Real Time Clock

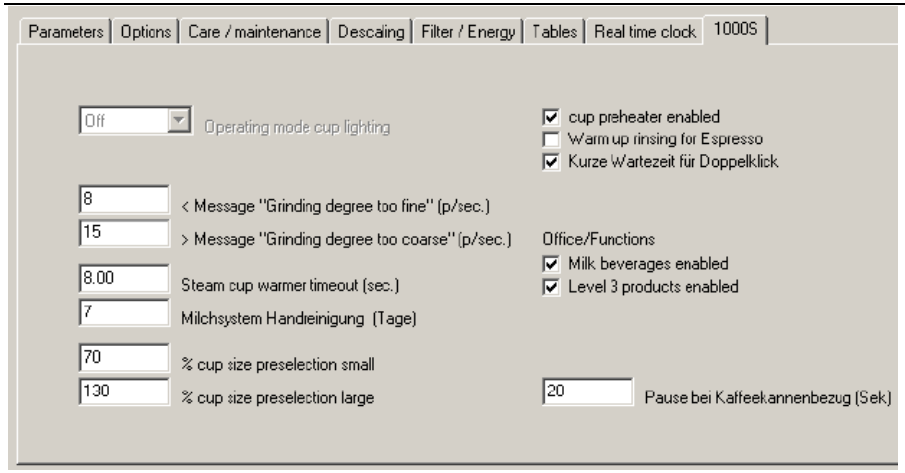
1. **Show time on the display –** activates or deactivates the display of time and date on the machine display, value can be modified.
2. **Time and date with suppression of leading zeros –** activates or deactivates the option whether the time and date are displayed with leading zero, value must **not** be modified.
3. **Automatic summer/winter time –** activates or deactivates the option whether the date is automatically adjusted to the summer or winter time, value must **not** be modified.
4. **Daylight saving time North America –** activates or deactivates the option whether the date is automatically adjusted to the summer or winter time of North America, value must **not** be modified.
5. **Switch-on time –** activates or deactivates the option whether the coffee machine is operated with timer mode (automatic switch-on time), value must **not** be modified.
6. **Time format –** time format can be set here, value can be modified.
7. **Date format –** date format can be set here, value can be modified.
8. **RTC of the coffee machine –** with this button the current time and date of the coffee machine can be uploaded to the PC, values cannot be modified

9.2.7 Button Programming > Load > Sys > 1000S



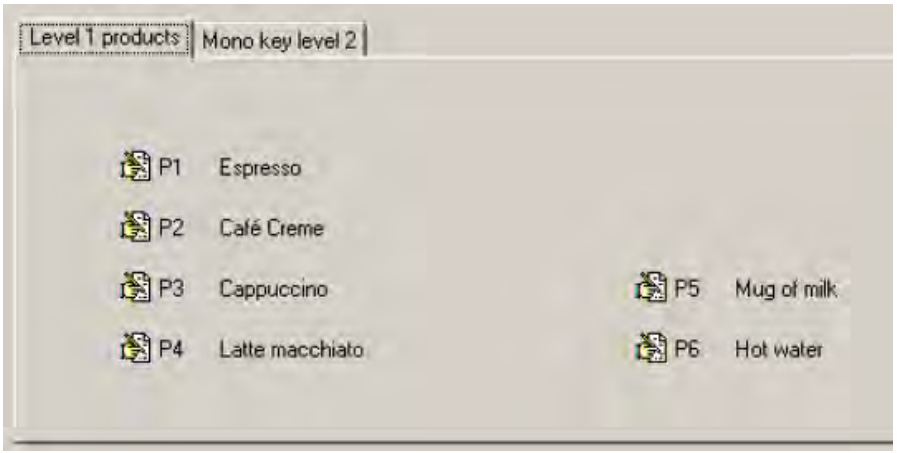
10. System configuration – „Sys" – 1000S

1. **Operating mode cup lighting –** activates or deactivates the background lighting of the central console (only WMF 1000proS), value must **not** be modified.
2. **Message „Grinding degree too fine" –** this value indicates when the message „Flow stopped – grinding degree too fine" is displayed at the function „grinding degree setting" (....max.), value must **not** be modified.
3. **Message „Grinding degree too coarse"–** this value indicates when the message „Flow stopped – grinding degree too coarse"is displayed at the function „grinding degree setting"(....min.), value must **not** be modified.
4. **Steam cup warmer timeout –** this value indicates how long (max.) the cup pre-heating function (steam jet) can be used, value must **not** be modified.
5. **% cup size pre-selection small –** this value indicates by how many percent the cup volume is reduced for „cup small", value must **not** be modified.
6. **% cup size pre-selection large –** this value indicates by how many percent the cup volume is increased for „cup large", value must **not** be modified.
7. **Cup pre-heater enabled –** activates or deactivates the steam jet function, value must **not** be modified.
8. **Warm-up rinsing for Espresso –** activates or deactivates the automatic warm-up rinsing for the 1st espresso after a longer waiting phase, value can be modified.
9. **Short delay for double click-** activates or deactivates the delay of beverage dispensing, value must **not** be modified.



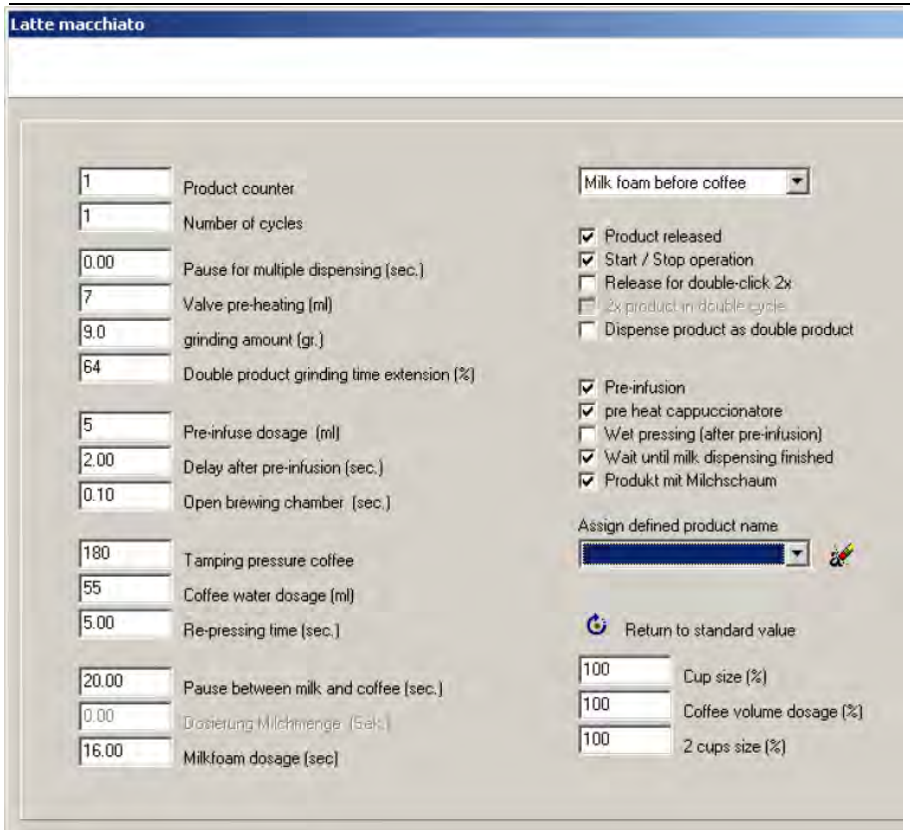
10. **Milk beverages enabled –** activates or deactivates dispensing of milk beverages in the office function, value should only be modified at the coffee machine.
11. **Pause at coffee pot dispensing –** this value indicates how long the waiting time between the single brewing single cycles is during pot dispensing, value must **not** be modified

9.3 Button Programming > Load > Level 1 products



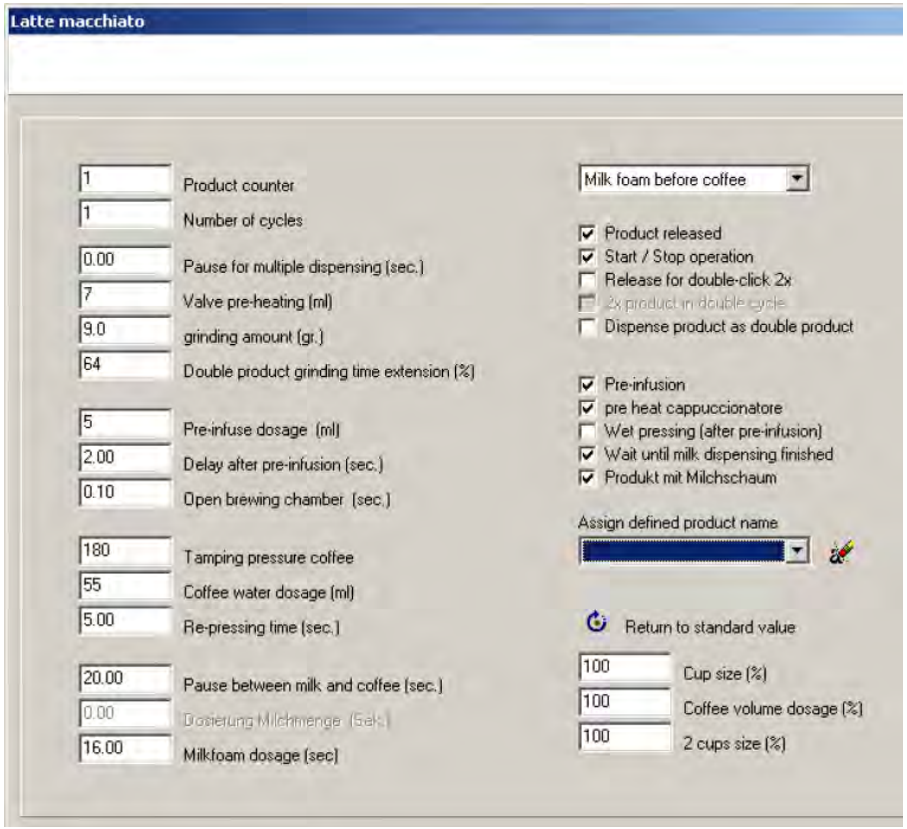
1. System Configuration – „Product level 1" – P1 – P6

1. **Level 1 products–** in this tab the beverage buttons of the 1st level are indicated
2. **Mono key / level 2 –** in this tab the beverage buttons of the 2nd level are indicated
3. **P1 – P10 –** Through these buttons the beverage settings for each beverage can be called up

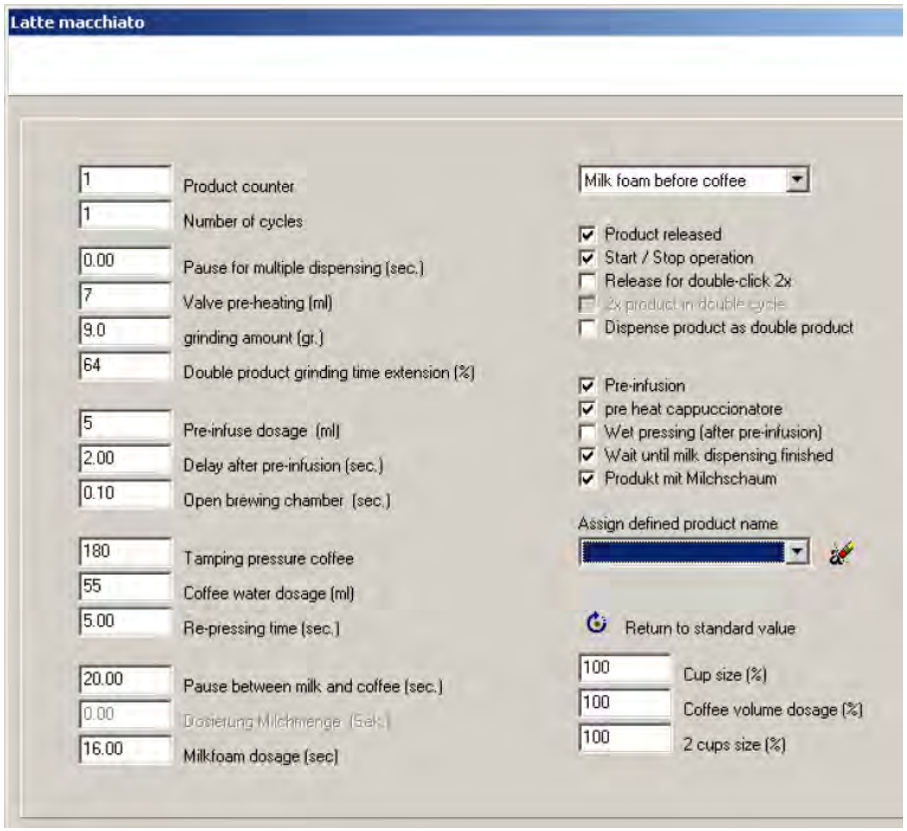


2. System Programming – P1.....P10 (in the example P3 Cappuccino)

1. **Product counter –** indicates by what number the counter is increased in the coffee machine statistics if beverage is dispensed, value must **not** be modified.
2. **Number of cycles –** this value indicates how often the beverage dispensing is repeated per touch of the beverage button, value must **not** be modified.
3. **Pause for multiple dispensing –** indicates how long the pause is between multiple dispensing (see number of cycles), value must **not** be modified.
4. **Valve pre-heating –** this value indicates how much rinsing water is used for pre-heating the coffee machine, value must **not** be modified.
5. **Grinding amount –** this value indicates how much ground coffee (gr.) is used for this beverage; value should only be modified at the coffee machine.
6. **Double product grinding time extension –** if a double beverage is dispensed in only one brewing cycle, this value indicates by how many percent (compared to the single beverage) the grinding quantity is increased, value must **not** be modified.
7. **Pre-infuse dosage –** this value indicates how much water is used for the pre-brewing function, value must **not** be modified.
8. **Delay after pre-infusion –** this value indicates, how long the brewing is delayed, value must **not** be modified.
9. **Open brewing chamber –** this value indicates how long the brewing chamber is opened for brewing in order to reach a better brewing time, value must **not** be modified.
10. **Tamping pressure coffee –** this value indicates, how much the ground coffee is pressed in the brewing chamber, value must **not** be modified.
11. **Coffee water dosage –** this value indicates how much water (ml) is used for this beverage; value should only be modified at the coffee machine.

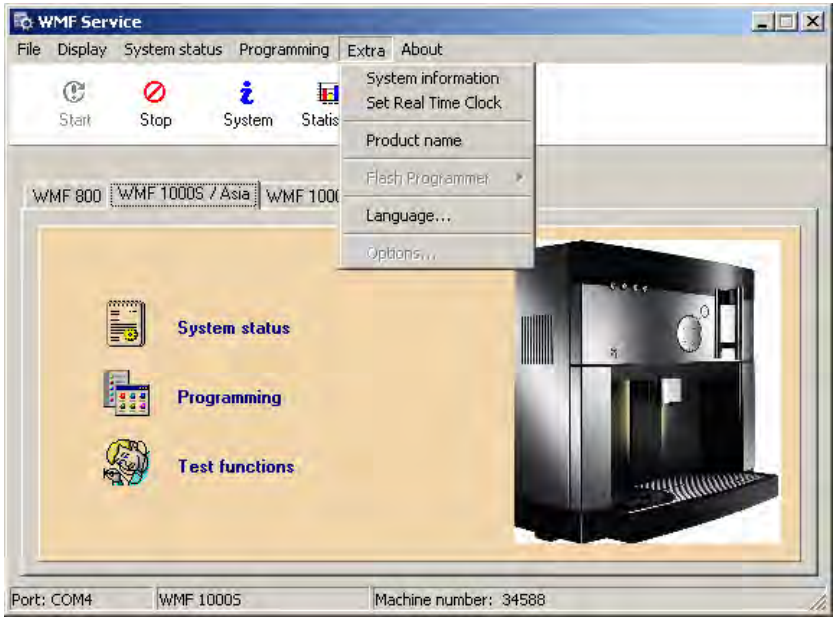


12. **Re-pressing time –** indicates how long after brewing the brewing chamber releases before it is opened again, value must **not** be modified.
13. **Pause between milk and coffee –** indicates how long the waiting phase is between milk and coffee dispensing, this setting serves to get a better Latte Macchiato separation, value should only be modified at the coffee machine.
14. **Milk dosage –** indicates how long milk is dispensed (only for coffee machines with air pump), value should only be modified at the coffee machine.
15. **Milk foam dosage –** indicates how long milk foam is dispensed, value should only be modified at the coffee machine.
16. **Milk foam before coffee –** the preparation order of coffee and milk can be modified here; value should only be modified at the coffee machine.
17. **Product released –** activates or deactivates the beverage button, value must **not** be modified.
18. **Start / Stop operation –** activates or deactivates the function whether or note the beverage dispensing can be interrupted by pushing the beverage button again, function must **not** be modified.
19. **Release for double click 2x –** activates or deactivates the 2nd button level (beverage dispensing after a short double click of the beverage button) and thus the dispensing of double beverages (only WMF 1000S/proS). Function is only available, if **„Dispense product as double product"** is deactivated, value must **not** be modified.
20. **2x product in double cycle –** indicates whether dispensing of double products is done in one or two brewing cycles, value must **not** be modified.
21. **Dispense product as double product –** activates or deactivates the double beverage dispensing in case of single click, function only available if **"Release for double click 2x"** is deactivated, value must **not** be modified.



22. **Pre-infusion –** indicates whether the ground coffee should be watered in the brewing chamber prior to the actual brewing process which makes the coffee taste more intensive, value should only be modified at the coffee machine.
23. **Pre-heat cappuccinatore –** activates or deactivates a short steam jet in order to pre-heat the milk system, value must **not** be modified.
24. **Wet pressing, after pre-infusion –** activates or deactivates the function that the tamping pressure of the brewing chamber is slightly increased after pre-infusion (see 22), value must **not** be modified.
25. **Wait until milk dispensing finished –** this function is controlled by „Milk foam before coffee" (see 16), value must **not** be modified.
26. **Beverage with milk foam –** activates or deactivates the control whether the all-in-one spout is in the upper position upon demand of milk foam dispensing, value must **not** be modified.
27. **Assign defined product name –** an earlier defined beverage name can be selected here (see chapter 3.2.1), value should not be modified.
28. **Return to standard value –**all parameters can be reset here to their original default values here (saved in the factory setting memory).
29. **Cup size – Coffee volume dosage – 2 cups size –** only indicated values in the display, these values cannot be modified

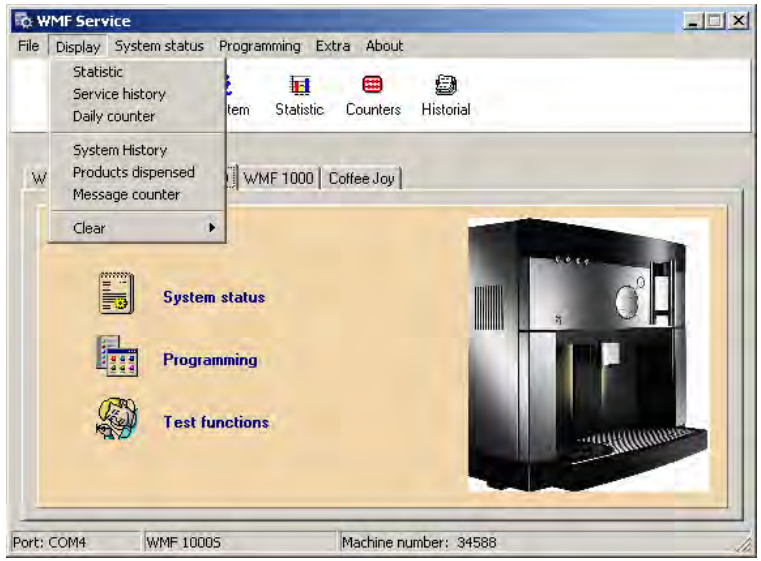
9.4 Drop Down Menu „Extra“

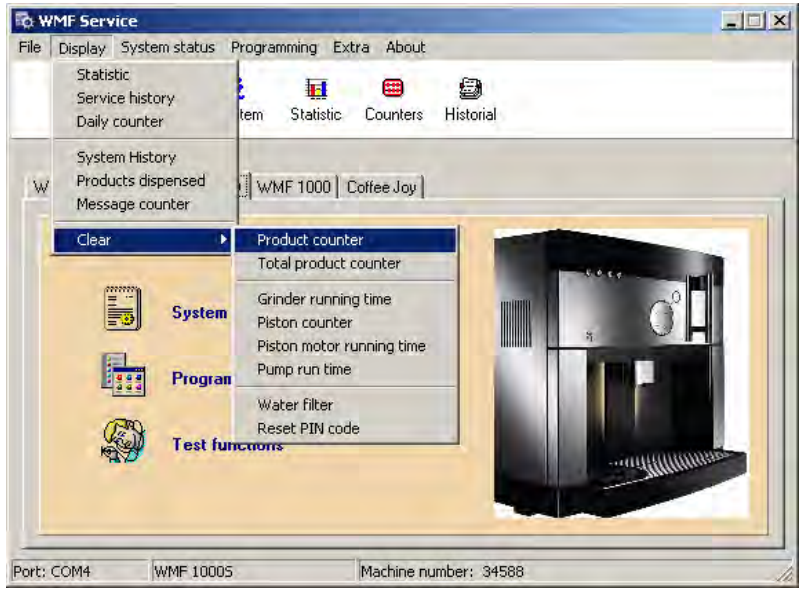


1. Drop – Down – Menu „Extra“

1. **System Information –** indicates among others the software version which is on the coffee machine, see also chapter 3.2.1
2. **Set Real Time Clock –** sets the system time into the service program
3. **Product name –** new beverage names can be defined here, see chapter 5.2
4. **Flash Programmer –** starts the function „Load software“ or „Software update“ see chapter 4
5. **Language –** the language for the service program can be set here.
6. **Options –** communication settings between coffee machine and laptop can be made here.

9.5 Drop Down Menu – „Display“





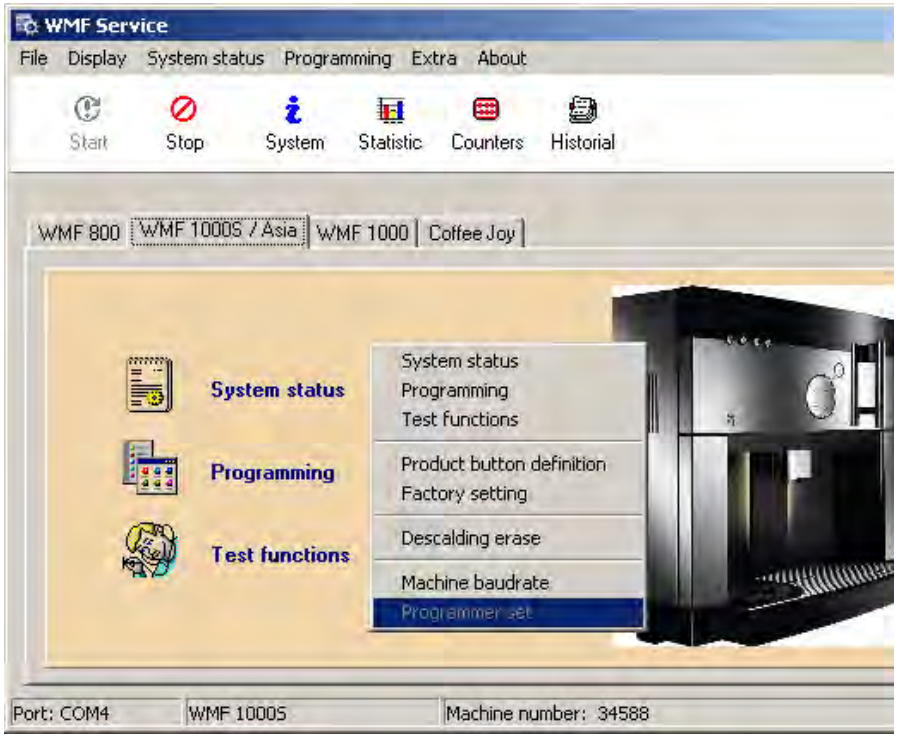
2. Drop – Down – Menu „Display“

1. **Statistic –** indicates the coffee machine statistic, same function as statistic button, see chapter 3.2.2
2. **ServiceHistory –** indicates the services carried out last, same function as service button, see chapter 3.2.2
3. **Daily counter –** indicates the beverage counter since the last deletion, same function as counter button, see chapter 3.2.2
4. **System History –** all actions carried out at the coffee machine are documented and displayed here.
5. **Products dispensed –** all beverages dispensed at the coffee machine are documented and displayed here.
6. **Message counter –** all error messages displayed by the coffee machine are documented and displayed here.
7. **Clear –** see as from item 8
8. **Clear product counter –** deletes the daily counter, function must not be carried out. Deletion does not influence the coffee machine statistic!
9. **Total product counter –** deletes the total product counter „Total counter“, but does not delete the single product counter (see item 8), function must **not** be carried out. Deletion does not influence the coffee machine statistic (except „Total coffee products deletable“)
10. **Grinder running time –** deletes the grinder running time; if this counter is deleted the software automatically corrects the grinding quantity in the recipes by 10 % upwards after 1000 grindings. This counter must be deleted if a new grinder or new grinding disks have been installed.

All other items are irrelevant and must not be deleted.

9.6 Special functions – right mouse button

These functions can be called up by a click with the right mouse button in the button window.



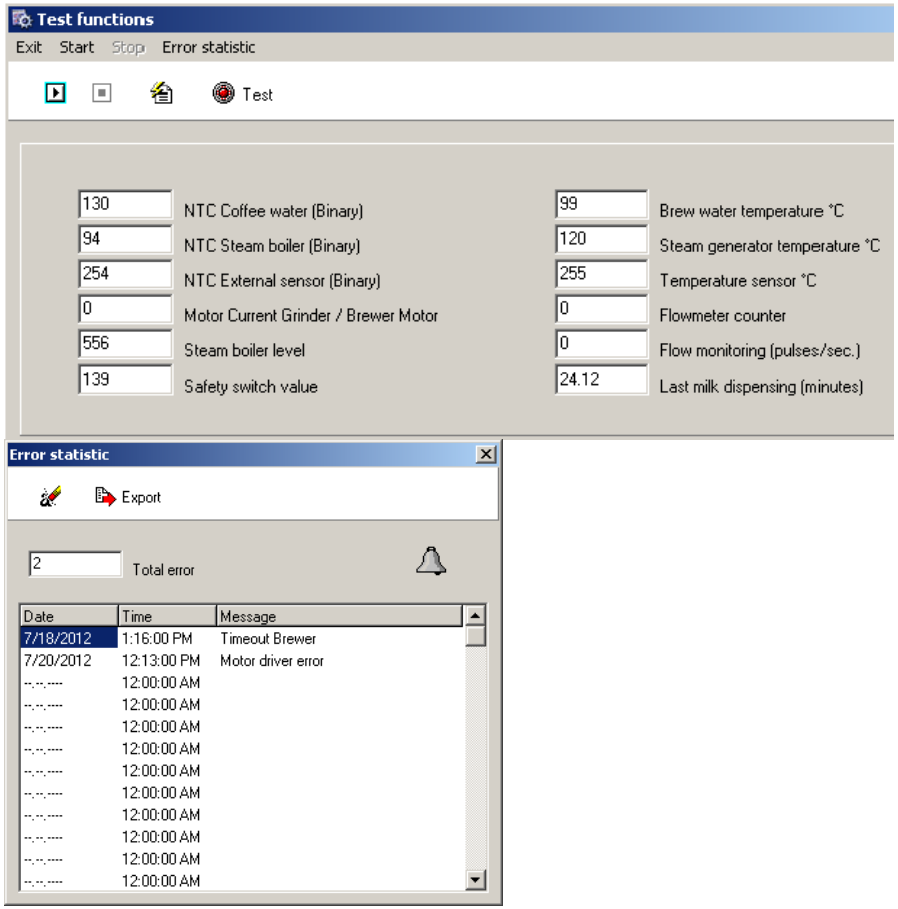
3. Special functions of the right mouse button

1. **System status – Programming – Test functions –** without function, these functions can only be called up directly through the buttons.
2. **Product button definition –** the saved beverage recipes can be allocated to the respective buttons here, must **not** be modified.
3. **Factory setting –** uploads the last saved data from the factory setting memory to the working memory, the data in the working memory is therefore permanently lost.
4. **Descaling erase –** If a descaling caused by the descaling counter comes up, the prompt can be erased here.
5. **Machine Baudrate –** the baudrate (connection speed) of the coffee machine can be set here, this value must always be set to 19200.
6. **Programmer set –** without function, must **not** be modified

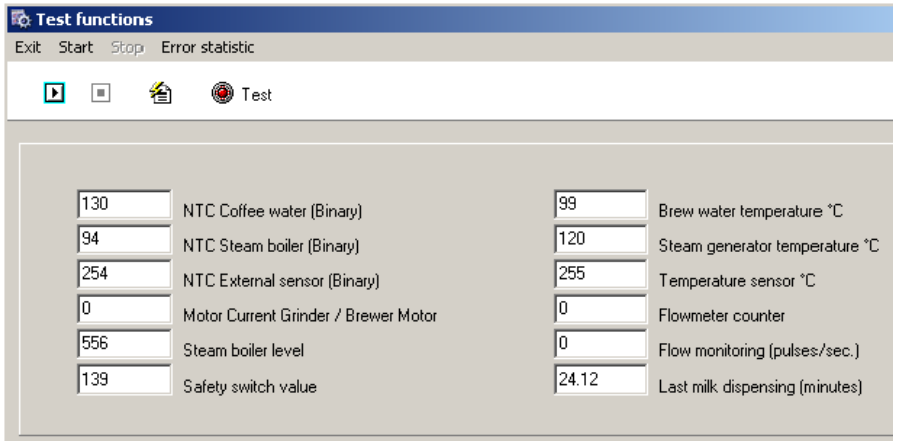
10 Button Test Functions

In this chapter the – test functions – and the single possibilities for live display resp. component test will be explained in detail as already mentioned in chapter 6!

10.1 Button > Test functions – upper window

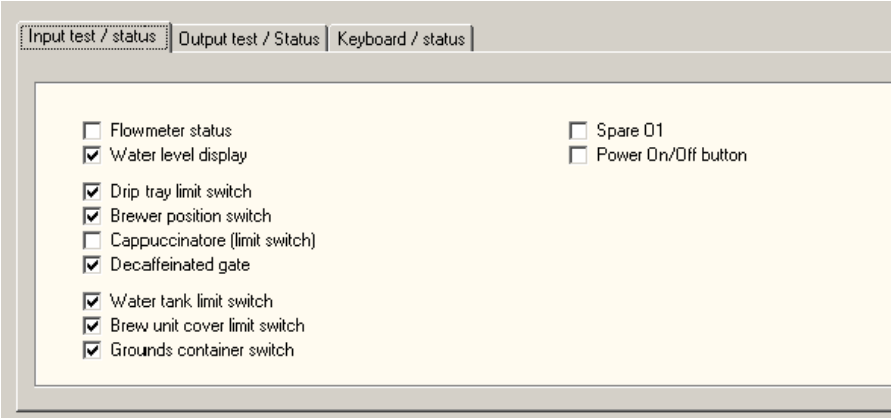


1. **Test functions – upper window**
1. **Exit –** closes the window „Test functions"
2. **Start –** starts the live display
3. **Stop –** stops the live display
4. **Error statistic –** indicates the documented error statistic of the coffee machine
5. **Play –** starts the live display, same function as „Start"
6. **Stop –** stops the live display, same function as „Stop"
7. **Labeling symbol –** indicates the documented error statistic of the coffee machine, same function as error statistic
8. **Test button –** starts or stops the component test
9. **NTC coffee water –** indicates the binary NTC value of the hot water boiler
10. **NTC steam boiler –** indicates the binary NTC value of the steam boiler
11. **NTC external sensor –** without function, not occupied
12. **Motor current grinder / brewer motor –** indicates the binary current value of the running grinder or brewer motor



13. **Safety switch value –** indicates the binary current value of all safety-relevant micro switches (grounds container, brewer lid, water tank). If one of these switches is triggered, the binary value changes and the coffee machine is not ready for operation.
14. **Brew water temperature –** indicates the currently measured temperature in the hot water boiler
15. **Steam generator temperature –** indicates the currently measured temperature in the steam boiler
16. **Temperature sensor –** without function
17. **Flowmeter counter –** indicates the summarized pulses of the FM, from start until beginning of dispensing
18. **Flow monitoring –** indicated the pulses per sec. during the current dispensing
19. **Last milk dispensing –** indicates the time in minutes since the last milk / milk foam dispensing

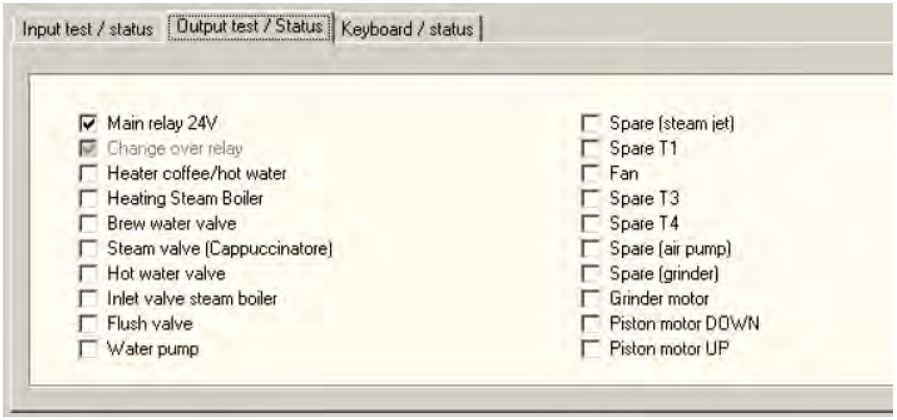
10.2 Button Test functions – Tab Input test / Status



2. Test functions – Input test / status

1. **Flowmeter status –** indicates whether the FM is active respectively whether it sends pulses
2. **Water level display –** indicates whether the water tank sensor detects water in the tank
3. **Drip tray limit switch –** indicates whether the control switch for the drip tray is active
4. **Brewer position switch –** indicates whether the control switch (brewer end switch) for the filling position of the brewer is active
5. **Cappuccinatore (limit switch) –** indicates whether the control switch of the all-in-one spout (upper position) is active
6. **Decaffeinated gate –** indicates whether the control switch of the manual insert lid is active
7. **Water tank limit switch –** indicates whether the control switch for the water tank lid is active
8. **Brew unit cover limit switch –** indicates whether the control switch for the brewer lid is active
9. **Grounds container switch –** indicates whether the control switch for the grounds container is active
10. **Spare 01 –** without function
11. **Power On/Off button –** indicates whether the On/Off switch has been pushed

10.3 Button Test functions – Tab Output test / Status

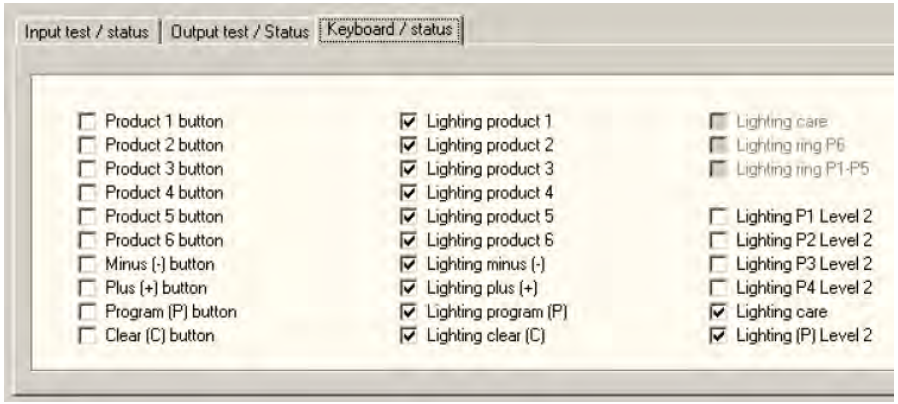


3. Test functions – Output test / Status

1. **Main relay 24V –** indicates whether the main relay for the 24 V supply is active
2. **Change over relay –** indicates whether the CPU is supplied with 230V
3. **Heater coffee/hot water –** indicates whether the heating of the hot water boiler is active
4. **Heating steam boiler –** indicates whether the heating of the steam boiler is active
5. **Brew water valve –** indicates whether the brewing valve is active
6. **Steam valve –** indicates whether the steam valve is active
7. **Hot water valve –** indicates whether the hot water valve is active
8. **Inlet valve steam boiler –** indicates whether the inlet valve to the steam boiler is active
9. **Flush valve brew piston –** indicates whether the release valve is active
10. **Water pump –** indicates whether the oscillation pump is active
11. **Spare (steam jet) –** indicates whether the valve of the steam jet is active
12. **Fan –** indicates whether the ventilator is active
13. **Spare (air pump) –** indicates whether the air pump (only "pro" – coffee machines) is active
14. **Grinder motor –** indicates whether the grinder is active
15. **Piston motor DOWN –** indicates whether the brewer opens
16. **Piston motor DOWN –** indicates whether the brewer closes

Spare T1, T3 and T4 do not have any function

10.4 Button Test functions – Tab Keyboard / Status

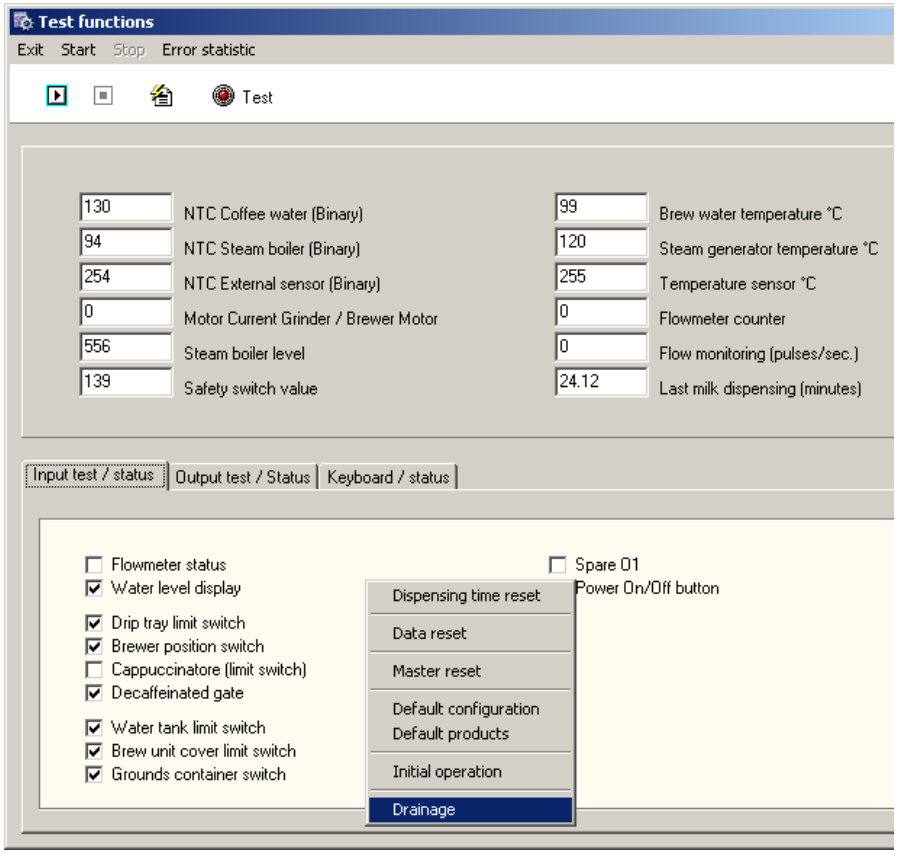


4. Test functions – Keyboard / Status

1. **Left column –** the status of each button is indicated here
2. **Central column –** the status of each lighting of the 1st level is indicated here
3. **Right column –** the status of each lighting of the 2nd level is indicated here

Test function through the „Test“button is not possible here!

10.5 Button Test functions – Special functions right mouse button



5. Test functions – Special functions right mouse button

1. **Dispensing time reset –** no function
2. **Data reset –** All counters and statistics are deleted, configuration and beverage settings are kept
3. **Master reset –** All counters, statistics, configurations and beverage settings are deleted and the last saved date is loaded from the factory setting memory, afterwards the machine starts with the initial operation mode
4. **Default configuration –** The configuration data from the factory setting memory is loaded into the working memory, the beverage settings remain unchanged. Also see software update (chapter 4.3)
5. **Default products –** The beverage settings from the factory setting memory are loaded into the working memory, the configuration data remains unchanged
6. **Initial operation –** The initial operation bit is set again which means that during next switching on of the machine the complete initial operation program is called up and the initial operation date will be set again in the statistic, the counters in the statistic remain unchanged.
7. **Drainage –** Here, the steam valve is opened for a short period, the machine releases pressure and switches off afterwards. During switching on the machine assumes that the boilers have been emptied and refills again. Attention – the system is not emptied through this function, for a complete drainage the remaining water must still be taken out of the boilers manually. This is important for transporting the machine at temperatures below 0°C and if there is the risk of freezing.

11 WMF Service Program – Source of Supply, Installation and Troubleshooting

In this chapter it is described how the service program is correctly installed on the laptop. The software has been checked and tested for Windows Vista and Windows XP, an installation on Windows 7 is not tested, however, it should be possible as well. In order to install the software, administrator rights are required.

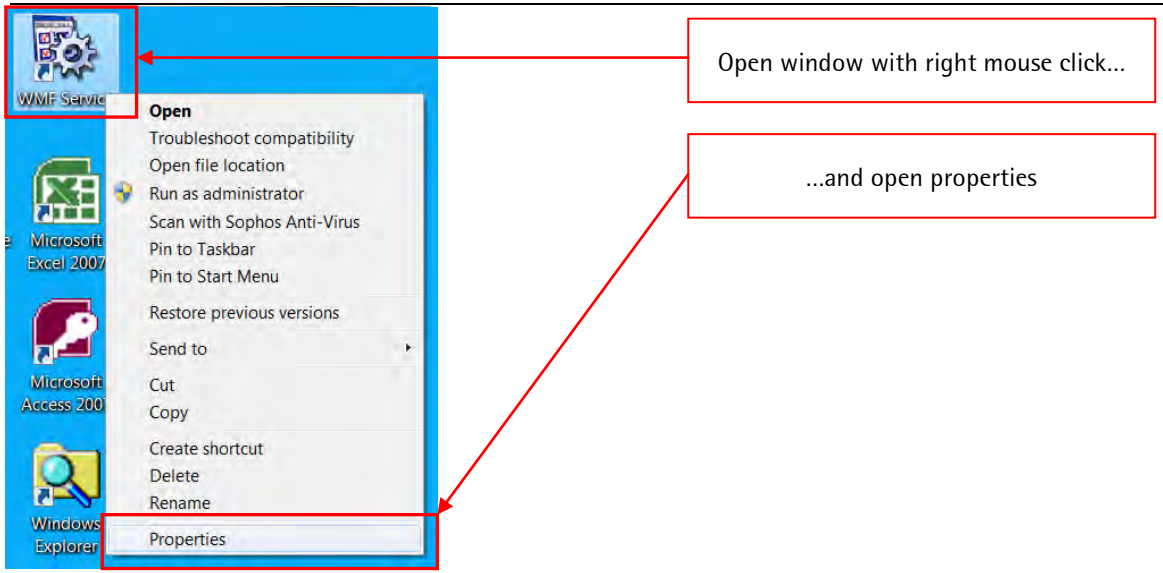
11.1 Source of supply and installation service program

- You will find the current version of the WMF service program as well as the suitable FTDI driver here: www.servicecenter.wmf.de -> software for technicians - > WMF 800/900S or WMF 1000S.
- Open the downloaded – „**WMF Service DE.msi**" – file with a double click and follow the installation routine. It is imperative to pay attention that the installation path is as follows:

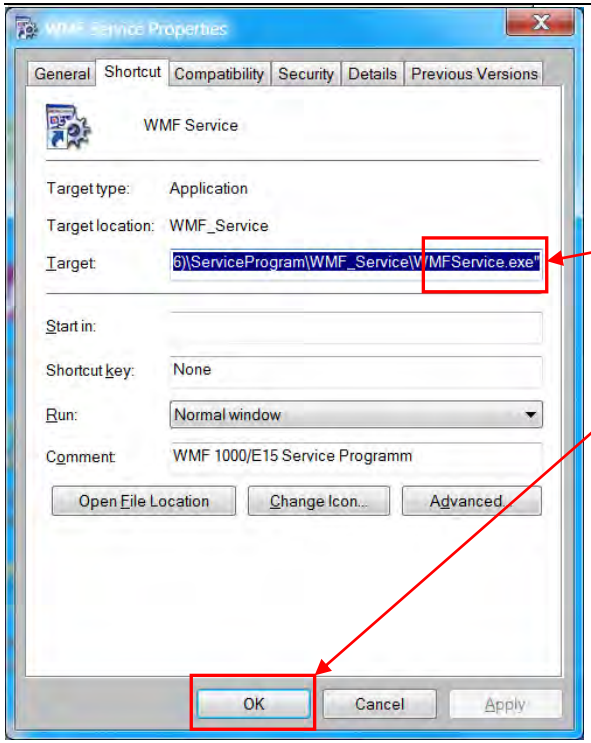
  C:\Programme\ServiceProgramm\WMF_Service – or - C:\Program\ServiceProgram\WMF_Service\HexLoad

  other paths such as **C:\Program Files...**, or **C:\Software...**, are not possible!

- In order to get access to the **"Set"-/"Gear"** key (save working memory and factory setting memory see chapter 5.4), after installation on the desktop the starting path for the service program has to be added as follows:.
  - Click with right mouse button on the icon **„service program"**



- At „target“it must be added **„_/e“**.



Enter after „..Service.exe **/e**", please pay attention to the blank after exe.

Afterwards close window with **„OK"**

The installation of the WMF service program is now finished. In the next step, the corresponding FTDI driver still has to be installed.

11.2 Installation FTDI driver

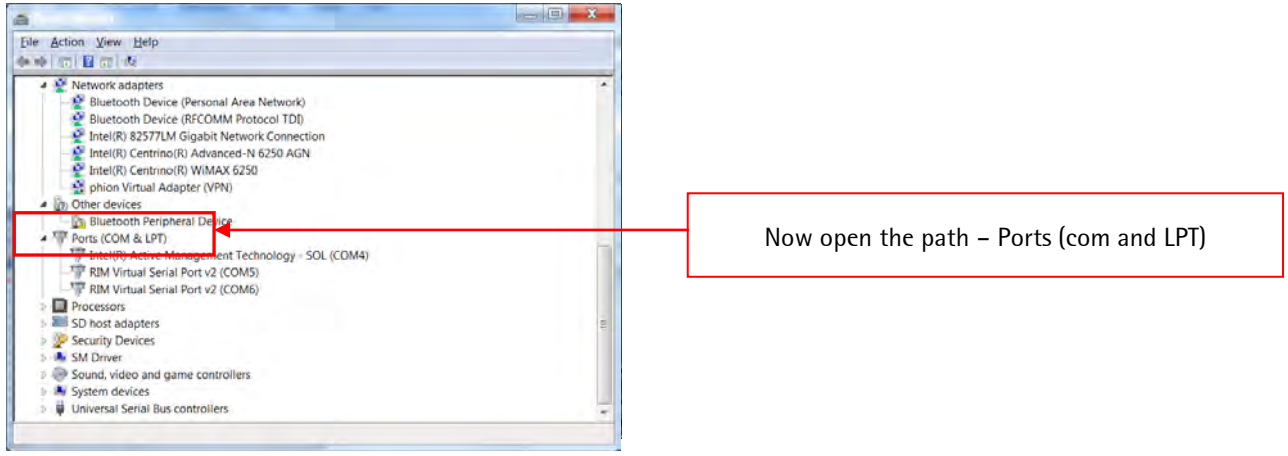
In order to enable the laptop to communicate with the coffee machine, it is necessary to install a corresponding USB driver (FTDI driver). Please find this driver here: www.servicecenter.wmf.de -> software for technicians - > WMF 800/900S. After having assigned this driver in Windows to the corresponding coffee machine type, this coffee machine has to be assigned to a fixed com port **below com6** in the device manager.

- Download FTDI driver (CDM 20600.exe) and save in a folder.
- Start the downloaded file – **„CDM 20600.exe"** – by a double clock, the FTDI driver installs itself now
- Connect coffee machine and laptop by means of a USB cable and switch on coffee machine now.

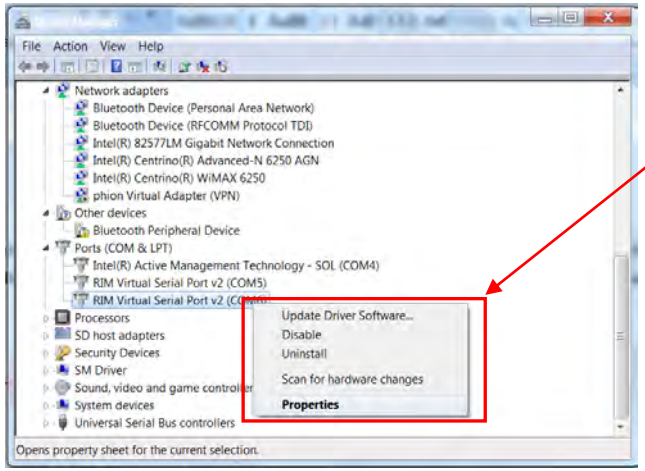
11.3 Assign Com Port

In order to grant a safe coffee machine update the coffee machine has to be assigned in the Windows device manager to a fixed com port, this com port must be below com 6.

➢ Open the following window in Windows – „System control" –> „System" -> „device manager":

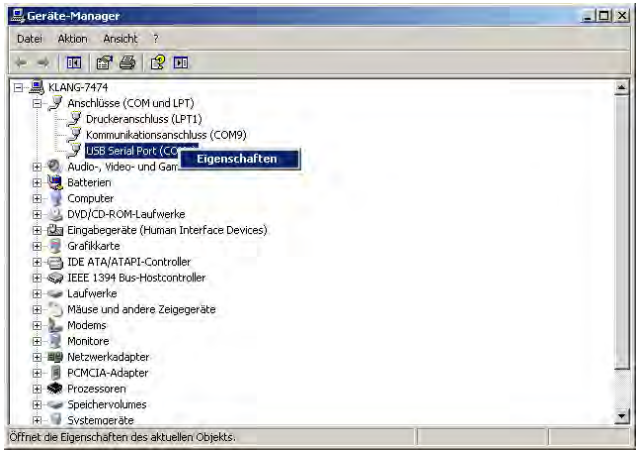


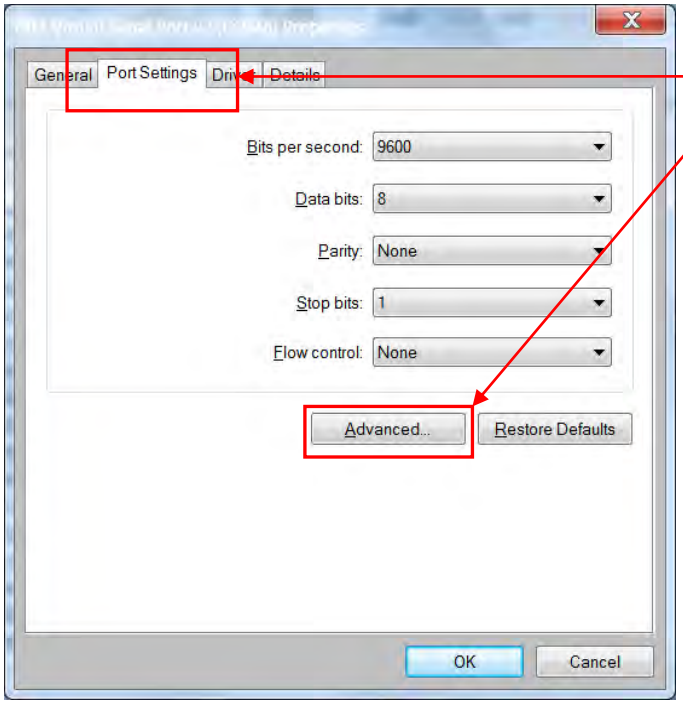
Here, the interface must be selected on which the coffee machine has been logged (coffee machine must be switched on and connected to the laptop). With a right click to the interface and the selection **„Properties“**the setting possibilities are opened for this interface.



Open setting possibilities with „Properties“

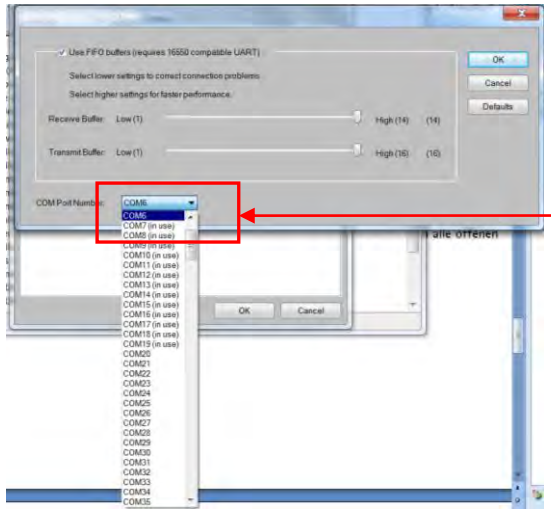
- Now this window opens





Open the new window with „Port Settings"and „Advanced"

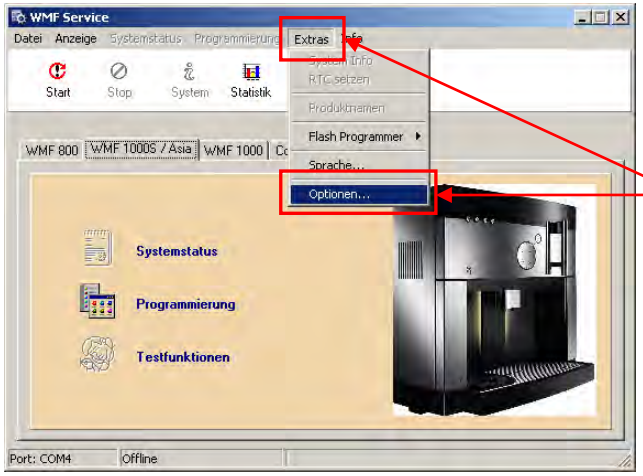
- In this window the fixed com port must now be assigned, hereby please note that it must be below com 6. Afterwards close all open windows again with **„OK"**.



Assign here the new com port and close all windows again by OK.

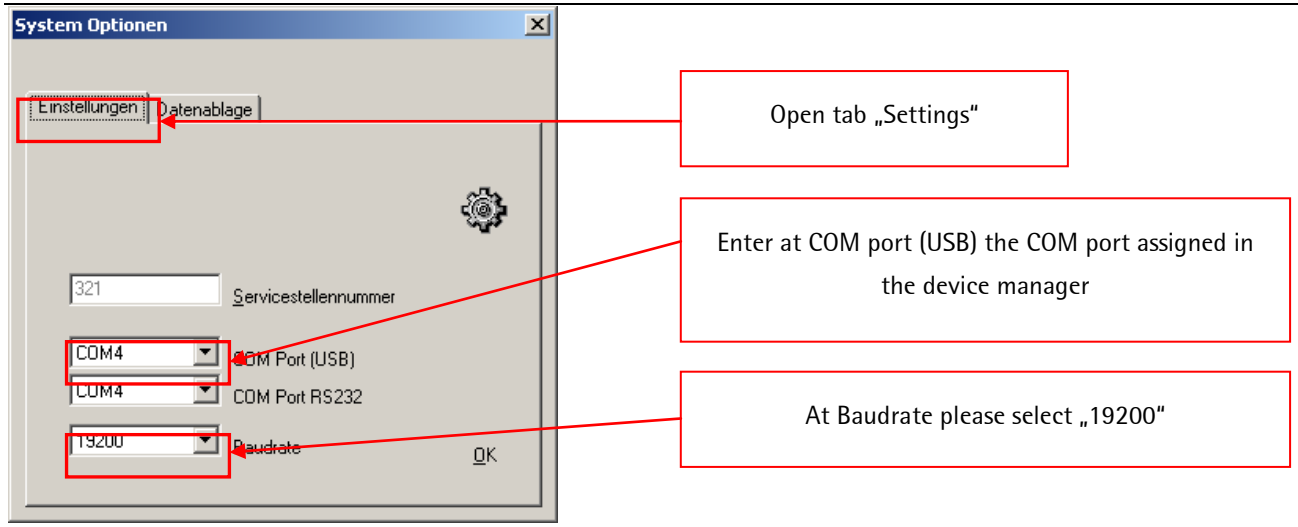
Finally, the assigned com port has to be set in the service program with **„Extras“**-> **„Options“**. In order to do this, the service program must be opened, the coffee machine must be connected to the laptop with the USB cable and the coffee machine must be switched on.

- In – **„Extras“**-> **„Options“**you will find the setting possibilities for the communication to the machine.



Open the communication window through „Extras“ - > „Options“

- Now the following window opens in which the communication settings can be carried out.

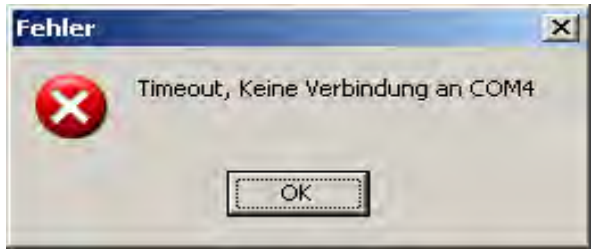


Now all installations, assignments and settings have been carried out and the connection between coffee machine and laptop is possible. Should there be any problems with the connection, please take a look at chapter 11 in which the troubleshooting is described.

12 Troubleshooting

In this chapter error messages and their elimination is described. Even if settings and installation are correct there might be problems with the connection or the connection may be interrupted. In this chapter, error messages and possible troubleshooting is explained with screenshots.

12.1 Unable to open com port / Timeout connection

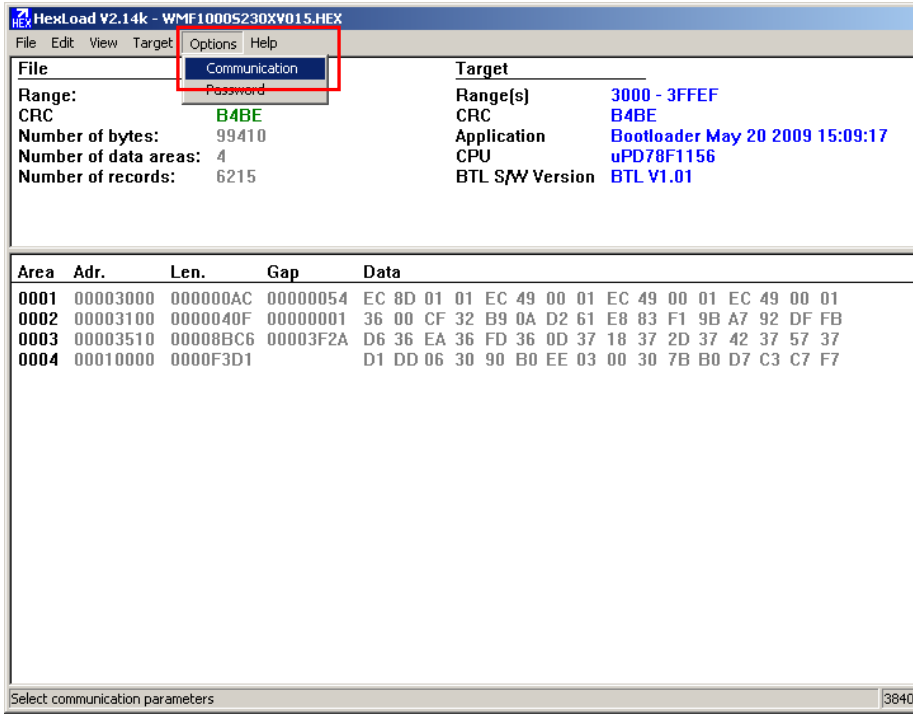


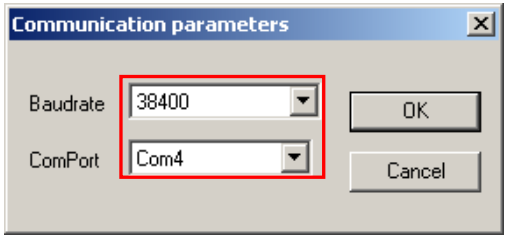
Com port could not be opened.

- Switch on coffee machine
- Connect coffee machine and laptop with USB cable
- Assign correct com port in **„Extras“** -> **„Options“** (chapter 10.3)
- Select correct baudrate In **„Extras“** -> **„Options“** (chapter 10.3)

12.2 Machine update (HexLoad) does not start by itself

During the first machine update it might happen that the baudrate in HexLoad Program has not been set correctly and thus the update does not start by itself. In order to eliminate this error, the communication settings have to be adjusted in the HexLoad program.





Machine update does not start by itself

- Open with „Options“ -> „Communication“ the communication parameters
- At baudrate **„38400“** must be set
- At com port the port must be set which has been assigned to the machine in the Windows device manager (chapter 10.3)

If the communication parameters have been set correctly, the machines update starts automatically.

Part 5 Service

5/1 Start-up

5/1.1 General Information for Customer Start-up

In its factory setting, the coffee machine will automatically commence with customer start-up after initial switch-on.

During the display-guided start-up program, the water system fills up. Various prompts guide the user to set the water hardness and select whether a water filter will be fitted. The date of the initial start-up is recorded in the statistics.

Once the start-up is completed, it can only be restarted if this has been enabled by the authorized Service Center using the service program.

For any questions please contact the WMF Coffee Machines Service Department.

5/1.2 Information for Checking in a Service Center

The coffee machine automatically recognizes many electrical faults.
Error messages and operating states will be shown on the display. To enable identification of leaks, it is recommended that the machine be cleaned and descaled.

Error messages, instructions, troubleshooting see part 6

The flow meter is designed for a maximum pressure of 1 bar.
Do not use compressed air to purge the water system.

✻ Drain the boiler water system when needed (required whenever the coffee machine will be exposed to a temperature of below 0° C, such as during shipping.)
✻ With the service program in the testing environment, set the start-up flag:
-> This resets the initial commissioning date, and the coffee machine fills up. The coffee machine statistics remain intact. Data-reset erases all statistics entries (see the service program description.)

See Item 14. Drain boiler

The last two points are required when the coffee machine is new, but has been and initially started by the end user by running the customer start-up procedure.

5/1.3 Selection of Customer-Specific Settings

Copying Settings to Several Coffee Machines

Can be done only with the service program in the service center
Using the service program, machine data and beverage settings can be saved and transferred to other coffee machines. Specific machine data, such as the counter, are not transferred (see service program description.)

For any questions please contact the WMF Coffee Machines Service Department.

5/2 Service and maintenance

5/2.1 Introduction

Small professional coffee machines require regular maintenance and descaling.

Apart from regular cleaning by the user / operator, the coffee machine must be descaled by the user / operator at the intervals shown.

Timing of descaling is calculated by the coffee machine. This depends upon the settings for the degree of hardness of the local mains water and whether or not a water filter is fitted.

For descaling, see the user manual and maintenance intervals

Descaling:
When prompted on the display, descaling can be carried out by the user / operator.

Service maintenance:
Service maintenance every 7,000 cycles for WMF 800/900, every 10,000 cycles for 1000 S/1000 pro S. The service maintenance may be performed only by trained staff or by WMF Service. Safety checks must be carried out.

5/2.2 Safety checks during maintenance

By carrying out maintenance, the service engineer takes on the operator's responsibilities to ensure the safety of the coffee machine.
In particular, he must:

- check the electrical safety devices, e. g. protective earth connections, isolation of primary voltage cables, casing and casing screw connections, temperature limiters on boilers,
- check the safety of the pressure container (s), including connections (corrosion, leaks),
- replace the safety valve (s) as specified.

These checks must be documented. The completion of the maintenance must be recorded in writing and in the appropriate form (incl. name and date).

5/2.3 Customer Check-up

5/2.3.1 General Information

The user or operator performs the cleaning and descaling.

5/2.3.2 Care kit for customer check-up (33.2907.4000 and 33.2907.4100)

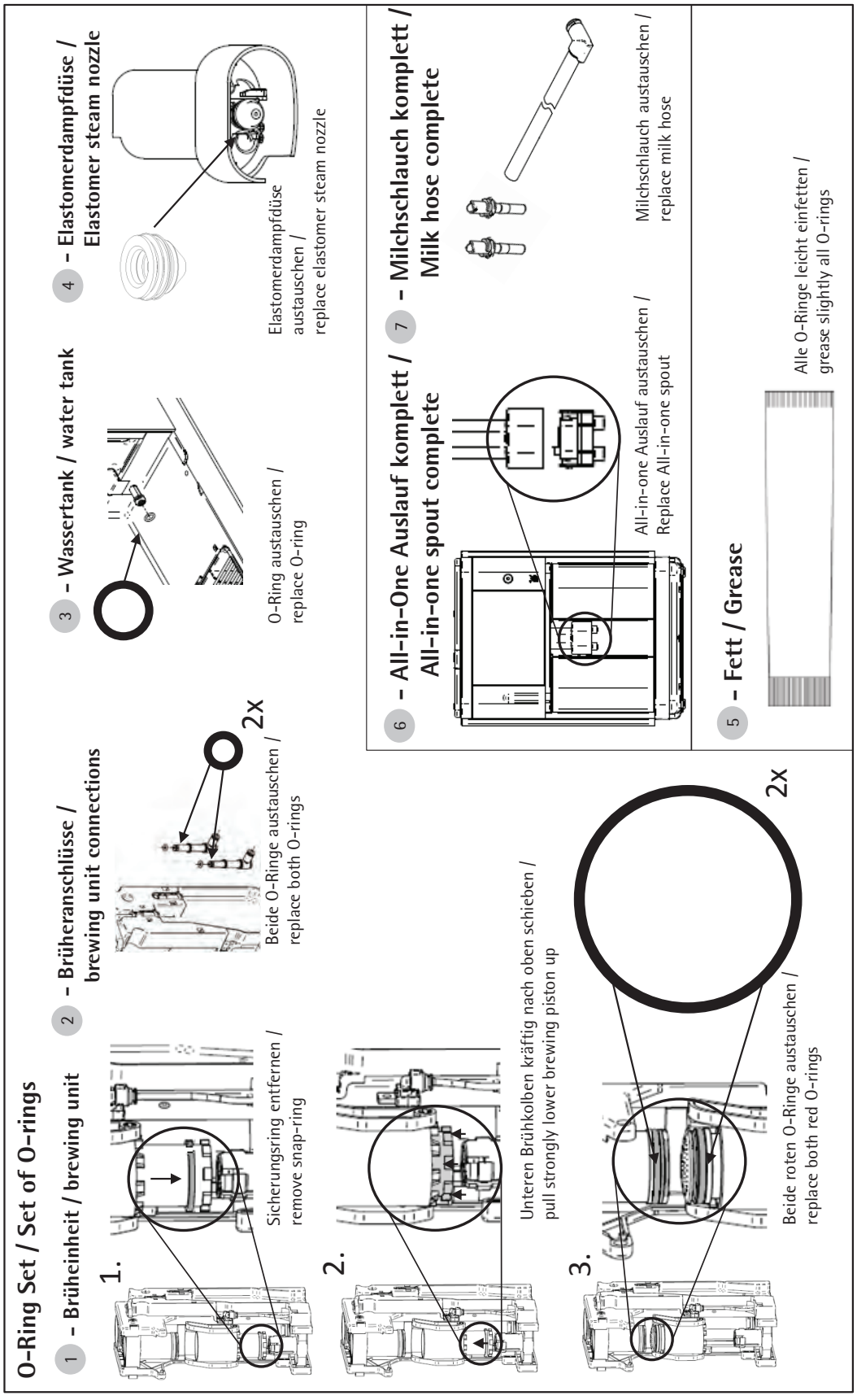
Care kit 33.2907.4000 for WMF 800/900/1000S

No.	Designation	Position	Comments
1	2x O-Ring red	Brewing unit	replace
2	2x O-Ring 3,68 m x 1,78 mm	Brewing unit - transition connection	replace
3	1x O-Ring 7,65 x 1,78 mm	Transfer, water tank	replace
4	Elastomer nozzle (steam nozzle)	All-in-One spout; steam nozzle	replace , grease lightly with No. 5
5	Grease for O-rings		
6	Milk foamer complete		replace
7	Milk hose complete with 1,7 mm and 1,5 mm nozzles		replace

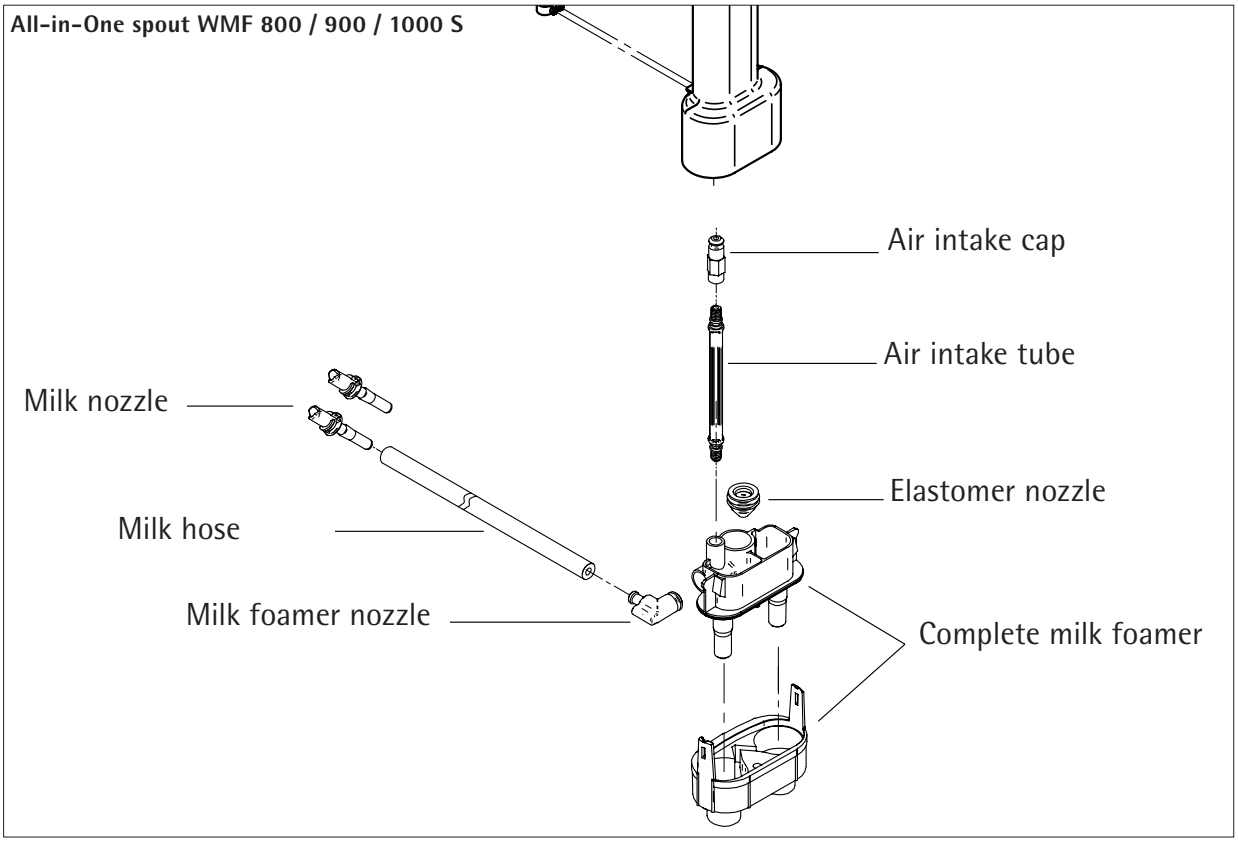
Care kit 33.2907.4100 for WMF 1000pro S

No.	Designation	Position	Comments
1	2x O-Ring red	Brewing unit	replace
2	2x O-Ring 3,68 m x 1,78 mm	Brewing unit - transition connection	replace
3	1x O-Ring 7,65 x 1,78 mm	Transfer, water tank	replace
4	Elastomer nozzle (steam nozzle)	All-in-One spout; steam nozzle	replace , grease lightly with No. 5
5	Grease for O-rings		
6	Milk foamer complete		replace
7	Milk hose complete with 1,3 mm and 1,15 mm nozzles		replace

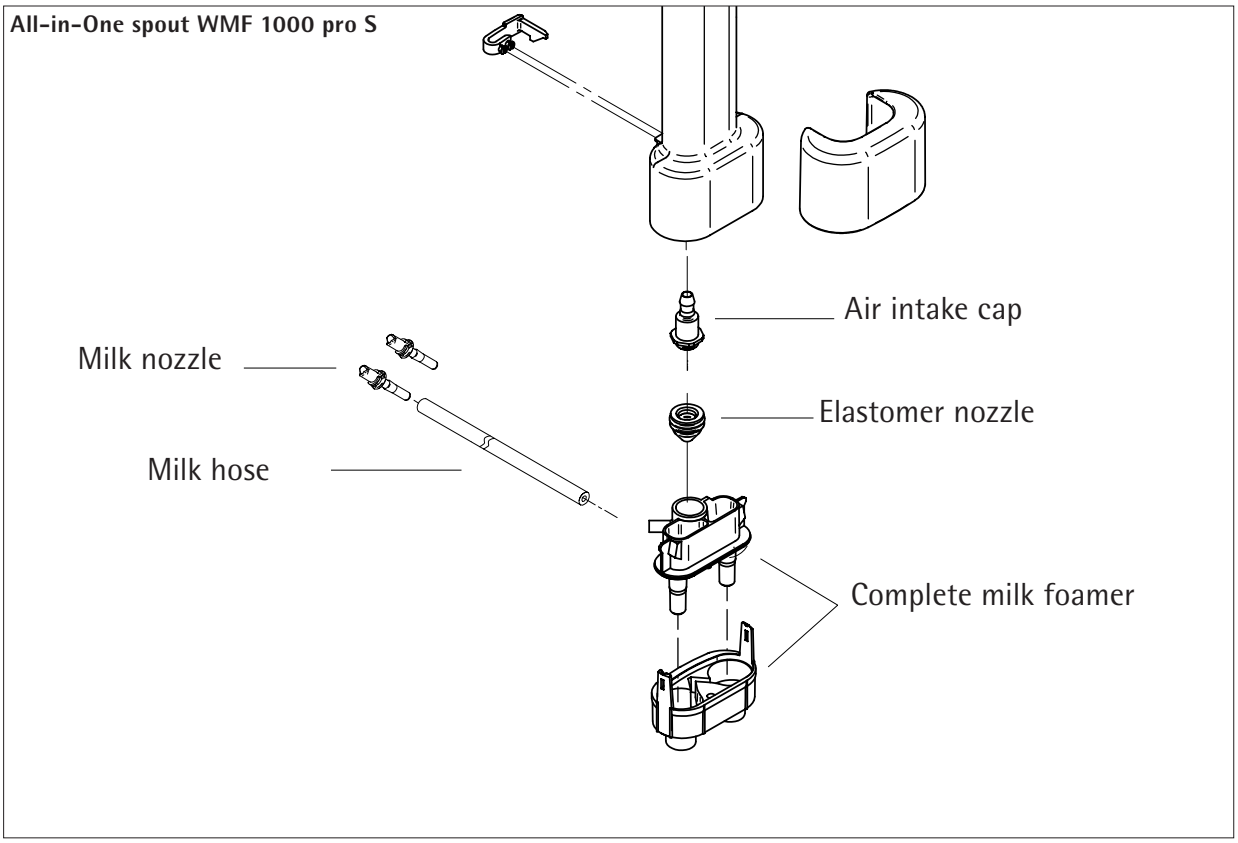
5/2.3.3 Customer Check-up Procedure



All-in-One spout WMF 800 / 900 / 1000 S



All-in-One spout WMF 1000 pro S



5/2.4 Service Maintenance of Coffee Machine

5/2.4.1 General Information

The service message "Service recommended" is shown on the display after every 7,000 or 10,000 cycles. The service may be performed only by trained staff or by WMF Service. Safety checks must be carried out.
The statistics record the number of counted beverages since start-up (for the date, see the last line.) They cannot be erased. The customer care programs also show how often and when it was last performed. The item "Reference for maintenance" shows how many beverages have been dispensed since the last maintenance.

Statistic WMF800 Titan

8/14/2012 1:17:45 PM

Serial number:	03-12-22406
Machine number:	22406
Production date:	3/27/2012

Description	Value
Machine counter	12
Total coffee products	9
Total milk products	1
Total tea products	2
Total double products (2x)	1
Total large cups (XL)	0
Total pot Cafe Creme	0
Total coffee products (erasable)	9
Product 1 count Espresso	3
Product 2 count Cafe Creme	2
Product 3 count Cappuccino	3
Product 4 count Latte macchiato	1
Product 5 count Mug of milk	1
Product 6 count Hot water	2
Product 7 count Espresso	0
Product 8 count Cafe Creme	0
Product 9 count Cappuccino	0
Product 10 count No product	0
Number ofbrew cycles	8
Number of milk system rinsings	3
Last milk system rinsing	7/3/2012
Number of piston cleanings	2
Brew piston cleaning time (minutes)	6:30
Last brew piston cleaning	6/19/2012
Cleaning prompt delayed	0
Number of descaling cycles	0
Descaling time (minutes)	0:00
Last descaling	
Number of water filter changes	0
Water filter rinsing time (minutes)	5:13
Last water filter change	6/18/2012
Actual grounds quantity (sec.) Grinder	15.2
total grinding time (minutes) Piston	0:51
motor operating time (minutes) Water	6:20
pump runtime (min.)	15:29
Machine run time (hours) Reference	18:30
for cleaning (products) Water volume -	2
total counter (litre) Current water	3
volume, descaling (litre)	3
Current water volume, water filter (liter)	3
Reference for service (brew cycles)	8
Relay cycle brew water	132
Relay cycle steamer	399
Machine commissioning date	6/18/2012

5/2.4.2 Service Maintenance (reference for maintenance)

In order to perform the maintenance, we recommend you to use the respective care kit and additionally the parts listed in the maintenance table below.

Care kit WMF 800/900/1000S - 33.2907.4000
Care kit WMF 1000proS - 33.2907.4100

Parts	*Part number*	*Service 7.000 / 10.000*	*Service 14.000 / 20.000*	*Service 21.000 / 30.000*	*Service 28.000 / 40.000*
All-in-One spout (milk foamer assembly)	Care kit	replace	replace	replace	replace
Elastomer nozzle (steam nozzle)	Care kit	replace	replace	replace	replace
Milk hose assembly	Care kit	replace	replace	replace	replace
Air pump (1000 pro S only)	33 7007 1596	optical inspection and functional test	optical inspection and functional test	optical inspection and functional test	optical inspection and functional test
Sieve water tank	33 7006 2608	clean	clean	clean	replace
O-ring water tank coupling	Care kit	replace	replace	replace	replace
O-ring set brewing unit assembly	Care kit	replace	replace	replace	replace
Brewing unit Grease for O-rings Grease for casing	Care kit 33 2451 7000	Clean and lubricate according to lubrication chart in chapter 5/2.5.3.	Clean and lubricate according to lubrication chart in chapter 5/2.5.3.	Clean and lubricate according to lubrication chart in chapter 5/2.5.3.	Clean and lubricate according to lubrication chart in chapter 5/2.5.3.
Valves (brewing, release, hot water, Cappuccino and inlet valves)		Visually check for leaks; replace valve base, if required.	Visually check for leaks; replace valve base, if required.	Visually check for leaks; replace valve base, if required.	replace
Safety valves (steam and hot water)	33 7006 2126	Visually check for leaks; replace, if required.	Visually check for leaks; replace, if required.	Visually check for leaks; replace, if required.	replace
Attention: always replace the safety valves after 2 years					
Fan	33 2405 4000	clean	clean	clean	replace
Oscillation pump	33 7006 2160	Visually check for leaks, delivery	Visually check for leaks, delivery	Visually check for leaks, delivery	replace
Flow meter	33 2393 3000	clean	clean	clean	replace
Grinder	33 7006 0160	setting	setting	setting	setting
Drive motor	33 2250 2000	Check the travel of the brewer	Check the travel of the brewer	Check the travel of the brewer	Check the travel of the brewer
Hot water boiler	33 7006 2300	Visually check for leaks, lime scale	Visually check for leaks, lime scale	Visually check for leaks, lime scale	Visually check for leaks, lime scale
Steam boiler	33 7006 2350	Visually check for leaks, lime scale	Visually check for leaks, lime scale	Visually check for leaks, lime scale	Visually check for leaks, lime scale
Attention: always replace the hot water and steam boilers after 5 years					

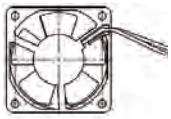
After the service or maintenance, perform "Set service" in the service program.
This sets the counter "Reference for maintenance" to 0 (see service program description.)

5/2.4.3 Service Maintenance Procedure

1. Prepare coffee machine
Coffee machine must be cold and depressurized.
✻ Switch off coffee machine, disconnect mains plug
✻ Position coffee machine so that it is easily accessible from all sides

2. Open coffee machine
✻ Remove all product containers
✻ Remove all lids
✻ Remove the coffee machine covers down to the pedestal

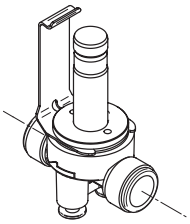
3. Fan
✻ Unscrew fan and adapter from side panel
✻ Clean fan
✻ Refit fan, adapter and side panel

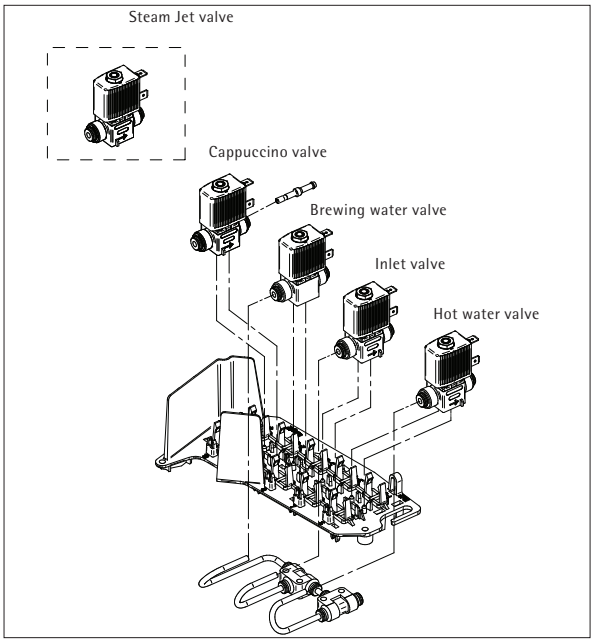


4. Replace safety valves, if required
✻ Remove top
✻ Remove hose from safety valve and unscrew safety valve
✻ Install new safety valve and replace hose
✻ Re-install top

5. Replace solenoid valves
Valves must be checked for leakage and lime scale. If required, replace valve base.
✻ Remove top
✻ Remove the safety clip
✻ Remove solenoid
✻ Remove hoses completely
✻ Replace valve base (observe direction of flow)
✻ Replace hoses
✻ Replace solenoid

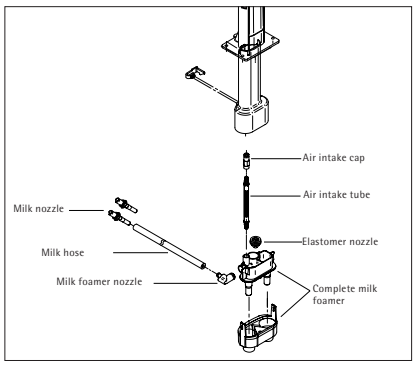
The brewing valve must be installed against the direction of flow. The arrow on the valve must point away from the hot water boiler.

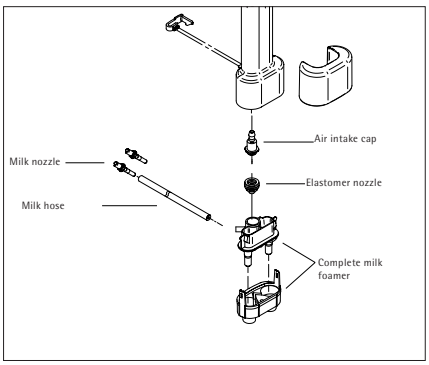




6. All-in-One spout and elastomer nozzle (steam nozzle)

✻ Remove All-in-One spout
✻ Replace elastomer nozzle
✻ Completely disassemble the All-in-One spout and clean it
✻ Replace milk hose, including milk nozzle and suction nipple
✻ Completely reassemble the All-in-One spout and install it

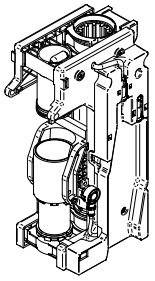




Elastomer nozzle (steam nozzle)

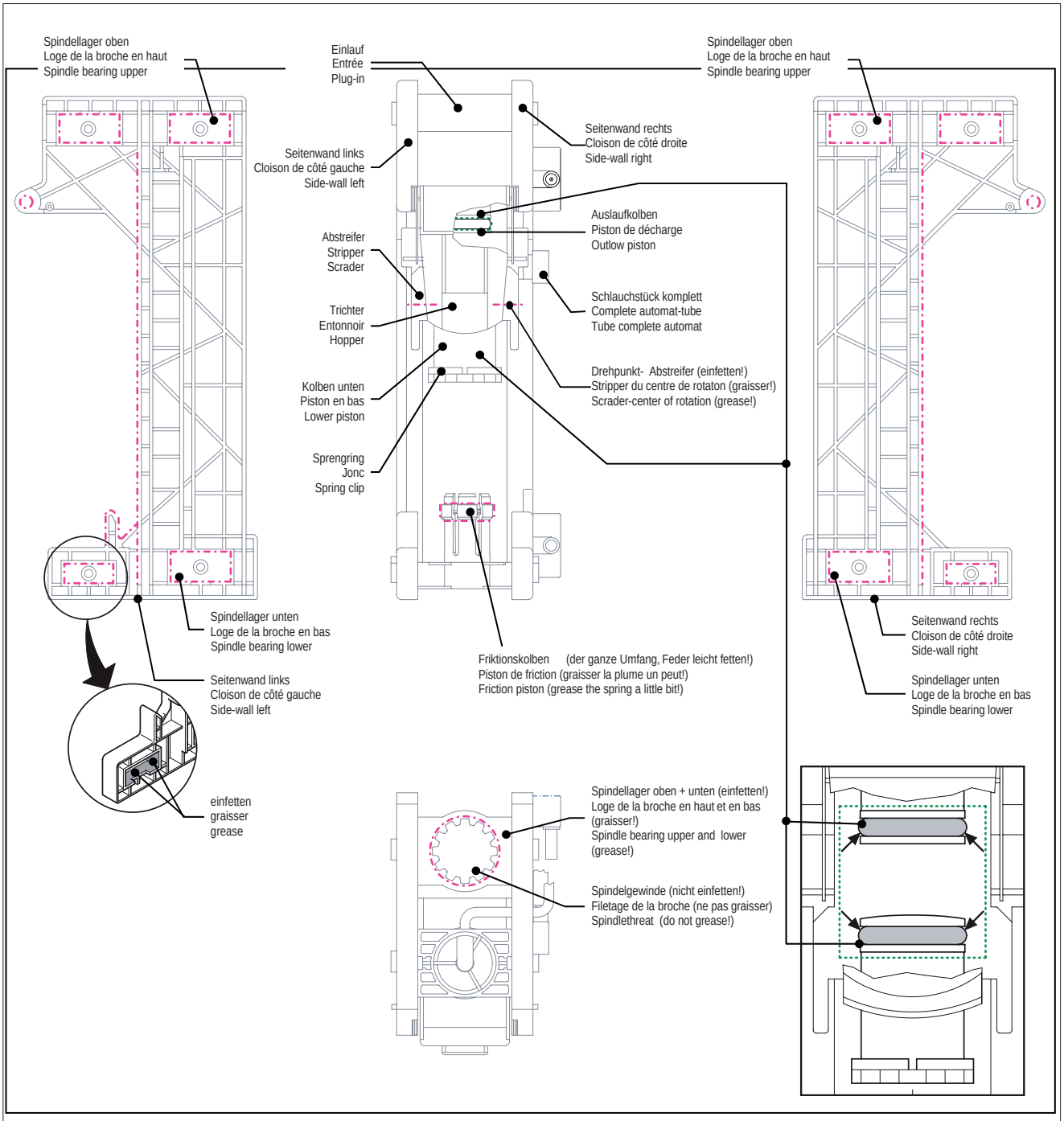
7. Brewing unit

✻ Disassemble brewing unit
✻ clean
✻ lubricate - according to lubrication chart
✻ Reassemble brewing unit
✻ Check brewing unit



Lubrication chart for brewing unit

After disassembly, cleaning, and repair of worn or faulty parts, lightly lubricate the following components (marked areas, bearing and guide surfaces) with the specified food-grade lubricants (note WMF AG product codes). Please note which parts must not be lubricated, and follow the safety and application instructions for food-grade lubricants.



= einfetten mit "Spezialschmierstoff KM" (Art.Nr. 33.2451.7000)
= graisser avec "Spezialschmierstoff KM" (Art.No. 33.2451.7000)
= grease with "Spezialschmierstoff KM" (Art.No. 33.2451.7000)

= Achtung! O-Ring, Brühzylinder oben und unten einfetten mit "Molykote" (Art.Nr. 00.0048.7705)
= Attention! Graisser joint torique, cylindre d'echaudage en haut et en bas avec "Molykote" (Art.Nr. 00.0048.7705)
= Attention! Grease seal toroid, brew cylinder above and under with "Klübersynth UH 1-64-2403 food grease" (Art. No. 00.0048.7705)

8. Close coffee machine
✻ Please check to ensure:
- no electric cables are in contact with hot parts,
- all screw fittings are tightened,
- no cables are pinched,
- hoses are not kinked,
- coffee machine is clean inside
- no beans, coffee grounds or dirt are left

✻ Replace the coffee machine covers
✻ Fit all lids
✻ Insert product container

9. Restart
✻ Plug in the mains plug
✻ Fill up the water tank
✻ Switch on coffee machine and let it warm up

10. Settings
✻ Fill grinder
✻ Check / set grinding grade
✻ Set service in service program
✻ Check / set cup volumes of beverages

Perform the descaling first, followed by cleaning.
The coffee machine is again ready for operation.

After descaling, check in particular for:
- escaping water
  – a screw fitting may not be tightened properly, or a seal may be missing or damaged
- rattling noise
  – a hose or another part may be vibrating against the casing or the side covers.

11. Replace oscillation pump
✻ Empty water tank, grounds container, and bean hopper
✻ Place coffee machine on its back and remove base plate (4 screws)
✻ Loosen both rubber holders and remove pump inlet / outlet
✻ Disconnect cables and remove and dispose of old pump
✻ Insert new pump into rubber holder and conect cables
✻ Fit pump inlet / outlet and refasten rubber holder
✻ Start up the coffee machine and check pump for leaks

12. Replace / clean flow meter
✻ Empty water tank, grounds container, and bean hopper
✻ Place coffee machine on its back and remove base plate (4 screws)
✻ Remove inlet / outlet hose from flow meter and remove flow meter
✻ To open, turn the top part to the right and remove the turbine
✻ Clean the bottom part under warm, running water with the little brush
✻ When reinstalling, make sure that the red O-ring has been properly inserted
✻ Insert flow meter in holder and ensure hoses are kink-free
✻ Start up the coffee machine and check pump for leaks

13. Replace grinder completely
✻ Remove top
✻ Remove hopper together with springs
✻ Disconnect cables
✻ Remove grinder, absorber stays in coffee machine
✻ Insert new grinder into absorber and conect cables
✻ Refit hopper, ensure hopper can still be moved
✻ Connect cables
✻ Enter the amount of grounds in the service program
✻ Calibrate the empty grinder current again
✻ Set the grinder counter to "0" in the service program

13.1 Basic grinder settings
After the grinder has been opened in order to remove foreign objects or to exchange the grinder disks, the factory settings must be done:

✻ Set adjustment pillar to fine adjustment (adjustment counterclockwise 7 o'clock)
✻ Remove screw from adjustment pillar, loosen other screw and fold out adjustment pillar
✻ Close grinder to block (5 Nm torque)
-> Mark on grinder housing: first line leftmost (block position)
✻ Open adjustment ring (upper grinder disk) for 4 cogs
-> Mark on grinder housing: line in the middle (finest setting)
✻ Fold adjustment pillar again; pay attention to keep the finest setting
✻ Fix screw of adjustment pillar and turn in other screw
✻ Open grinder via adjustment pillar (with Multitool) for further 6 cogs
-> Mark on grinder housing: last line rightmost (delivery status)
✻ Reassemble grinder

New installed grinder:
✻ Set new grinding capacity and idle current in Service Program and delete grinder running time (see Training manual Service Program)

New installed grinder disks:
✻ Delete grinder running time in Service Program (see Training manual Service Program)

14. Empty boiler
✻ Select Service program -> Test functions (right click on the button) -> Drain system
✻ Coffee machine switches off automatically after the steam jet
Empty boiler:
✻ Disconnect mains plug; allow to cool
✻ Open the coffee machine
✻ Pull the top hose off of the hot water boiler and unscrew the nipple
✻ Unscrew the level probe on the steam boiler
✻ Draw the water out of the hot water boiler and steam boiler with the 1.5 m long hose (00.4800.7400)
✻ Screw the level probe onto the steam boiler, tighten, and plug in the cable
✻ Install the nipple and insert the hot water hose
✻ Close coffee machine

The next time it is switched on, the coffee machine will be filled again; all counter levels and statistics entries remain intact

Part 6 Troubleshooting

6/1 User messages on the display

6/1.1 Operation messages

beverage sel. locked fill the water tank	The water tank is nearly empty.
refill beans confirm beverage	Bean hopper is empty. Grinder idle current detected.
empty grounds cont.	Grounds container has reached maximum fill level
grounds cont. empty? No: C Yes: P	Confirm that grounds container really was emptied.
lower spout await dripping	Instructions: milk is dripping. (not for 1000 pro S)
heating up...	Message appears when heating up after switch on, or after the Eco-Mode status (no Eco-Mode for WMF 800)

6/1.2 Cleaning and descaling messages

milk system rinsing No: C Yes: P	Request for milk system rinsing. Appears 20 minutes after the last milk beverage preparation. Press off/c button to cancel the process.
your selection pls clean machine	Request for cleaning
machine cleaning OK: P	Forced cleaning of machine (appears 2 days after request to clean).
your selection pls descale machine	Coffee machine descaling request
machine descaling OK: P	Forced descaling of coffee machine (appears after 50 liters)

6/1.3 Maintenance and care messages

change water filter	Insert new water filter.
Service recommended	Request for maintenance.

6/2 Error messages and events

6/2.1 Error messages on the display

Error message	Entered in error statistics	Comments
beverage sel. locked grounds cont.missing		Place grounds container.
beverage sel. locked fill the water tank		Refill and place water tank.
beverage sel. locked water tank missing		Place water tank.
beverage sel. locked drip tray missing		Place drip tray.
beverage sel. locked tank lid missing		Close water tank lid.
beverage sel. locked lid open		Close brewer lid.
place brewer		Replace brewer.
brewer end switch		Place brewing unit correctly, clean the brewing chamber.
beverage sel. locked clean control panel		Switch off the machine, clean control panel (only with the WMF 800 and 900).

Error message	Entered in error statistics	Comments
clear flow stopped		Fill the water tank, bleed machine via hot water button.
water temp. sensor		Switch off the machine and allow to cool for at least 4 hours. If the error repeats, the hot water boiler must be replaced.
steam temp. sensor		Switch off the machine and allow to cool for at least 4 hours. If the error repeats, the steam boiler must be replaced.
grinding too fine?		Set the grinding degree at the grinder to be more coarse.
grinder blocked		The grinder is blocked by foreign objects, grinding sounds can be heard briefly. Remove foreign objects.
level timeout		The steam boiler is not filled up to the level of the level probe. Possibly air in the system. Inlet valve does not open.
motor driver error		Switch coffee machine off and then on again. If the error repeats, the grinder motor or the brewer motor must be replaced.
EEPROM Error		Switch coffee machine off and then on again. If the error repeats, the CPU must be replaced.

See flow errors chapter 2/3.7

6/2.2 Troubleshooting

Errors without display message	Entered in error statistics	Comments / Help
No milk foam / milk output, but milk is in reservoir		✻ Check whether: hot steam is dispensed elastomer nozzle is inserted milk hose is kinked or squashed ✻ Clean spout
No milk foam, only warm milk		✻ Carry out milk system rinse If the problem continues: ✻ Clean milk system All components must be clean, and the passages must be clear. ✻ Clean the air intake cap and the air intake pipe (not for WMF 1000 pro S) ✻ Check air pump (only with the WMF 1000 pro S)
Milk or milk foam too cold		✻ Check whether the correct milk nozzle is attached to the milk hose
Milk is too hot and there is too little or milk foam has bubbles		Milk is too hot: ✻ Refrigerate milk ✻ Check whether the milk hose is kinked or squashed ✻ Check whether the correct milk nozzle is attached to the milk hose Leakage: ✻ Check all connections and seals of the spout
Water tank is difficult to move		✻ Lightly smear the O-rings on the water tank coupling with the WMF "gasket grease"
Brewing unit is difficult to remove and replace		✻ Lightly the smear O-rings on the brewer with WMF gasket grease
Brewing unit can no longer be pulled out or inserted		Brewing unit is not in the basic position: ✻ The brewing unit can be adjusted using the multitool until the brewer can be inserted ✻ Remove coffee grounds residue from the inside of the brewer
Noticeably large amount of coarse ground coffee in the brewing chamber		✻ Check grinding degree setting and set finer if necessary ✻ Check whether the metal spring ring is missing from the brewer plunger ✻ Check the ground coffee spout on the grinder
Oscillation pump makes loud noises		✻ Air in the system ✻ Bleed machine: dispense hot water until a constant stream of water comes out ✻ Push in water tank completely Instructions: it is normal for the oscillation pump to start by itself from time to time during operation, as it automatically fills the system.
Coffee has no crema		✻ Coffee mixture is not suitable, or coffee is no longer fresh ✻ Quantity of ground coffee is set too low ✻ Cup is too cold: preheat ✻ Grinding degree too coarse: set the grinding degree to be finer ✻ Carry out warm-up rinse