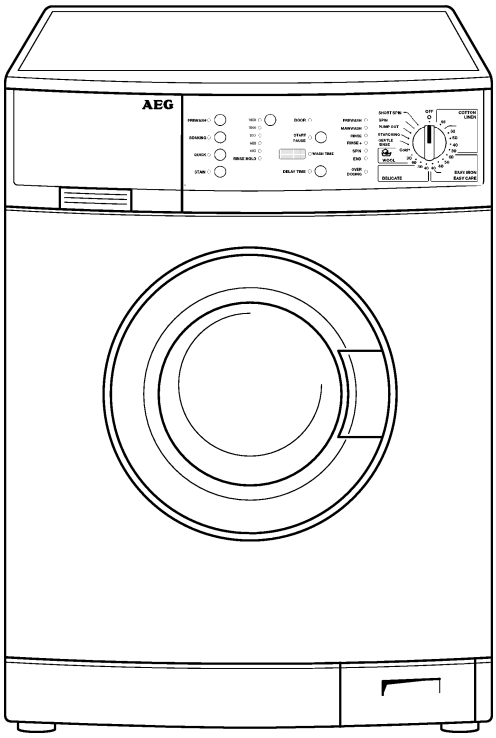
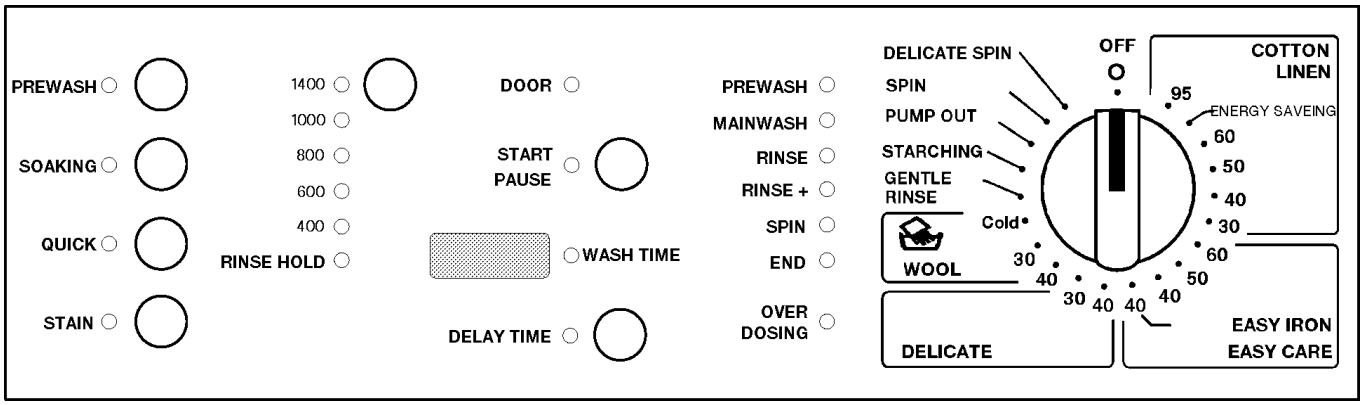
Electrolux

Technical Support Europe

SERVICE MANUAL

WASHING





Frontloading

Washing machines

EWM 2000-

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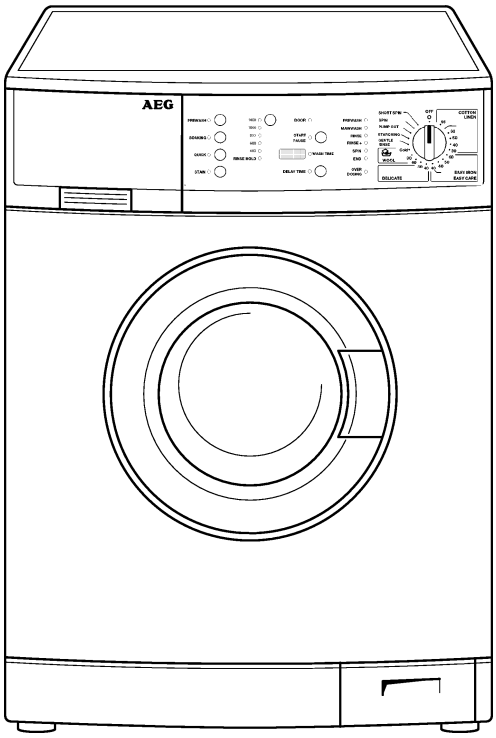
II. LAVAMAT 70030

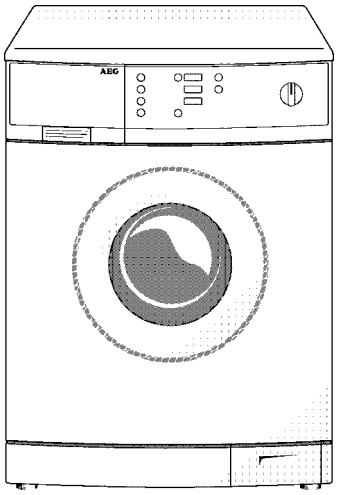


ÖKO_LAVAMAT 70030 UPDATE

Characteristics (features)

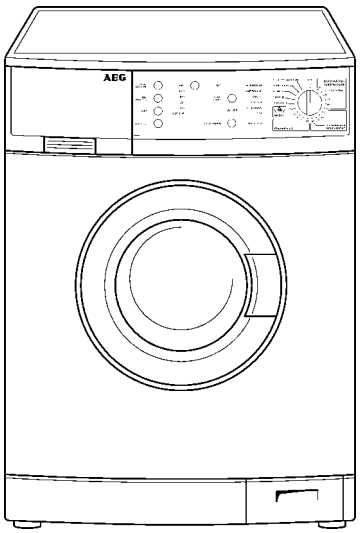
- Electronic machine
- Sensortronic foam detection
- **F**ast **u**nbalance **c**ontrol **s**ystem **FUCS**
- Motor is phase cutting controlled
- Öko - Flap
- Carbon tub
- Updatefunction
- Maximal number of drum revolution 1600 1/min
- Handlaundry program
- Easy Iron
- Top class machines with automatic foot

Machine classes



Machine class			PGS TYPE
I	ÖKO_LAVAMAT	80030	EWM3000 with Handlaundry and easy iron
II	ÖKO_LAVAMAT	70030	EWM 2000+ with Handlaundry and easy iron EWM 2000- with Handlaundry and easy iron
III	ÖKO_LAVAMAT	Wxx3x	Vs 70

Over view Range				
Machine class 97-98	**80000**	**70000**	**60000**	**Wxxxx**
PGS - Type	EPW EPW+ EPW++	EAC EAC+ ; EAC- EAC++ ; EAC--	H200 V H200 E H200 V+ H200 E+	ZD ZAD ZD+ ZAD+
		↘	↙	
Machine class 99	**80030**	**70030**		**W1030**
		↙	↘	
PGS - Type	EWM3000 (mirrored)	EWM 2000+	EWM 2000-	VS 70



Indication of several models

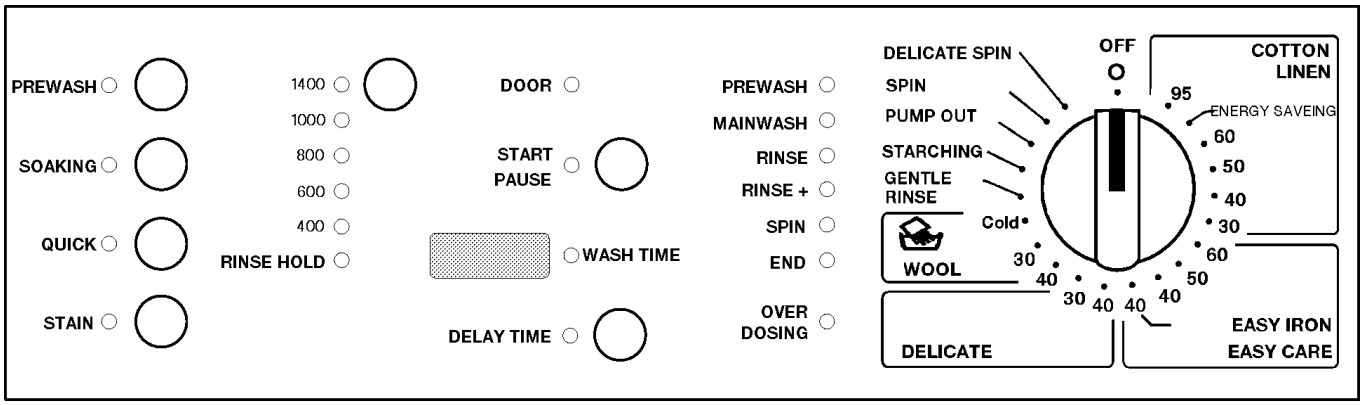
digits

X	X	X	X	X		
⇓	⇓	⇓	⇓	⇓	⇒	**Sales kind**
						0 = Linie 2 = Otto 3 = Special Netherland sales kind 4 = Special Netherland sales kind 6 = Saphir 8 = Carat 9 = Exclusiv
⇓	⇓	⇓	⇓		⇒	**Design and equipment**
						0 = convex 1 = with hot water connection 2 = Range 98 z.B. 80020 ; 70020 3 = Range 99 z.B. 80030 ; 70030 5 = flat door glass 6 = flat door
⇓	⇓	⇓			⇒	**Order of rank**
						8 = illuminated from behind 7 = Basic machine with Aqua - Control 6 = Basic machine without Aqua - Control 5 = without preselected start time 4 = Flange valve with Aqua - Control 3 = with flange valve
⇓	⇓				⇒	**Spinspeed 1/min**
						8 = 1800 6 = 1600 5 = 1500 4 = 1400 3 = 1300 2 = 1200 1 = 1100 0 ≤ 1000
⇓					⇒	**Appliance class Appliance group**
						8 = 80000 7 = 70000 6 = 60000 5 = 50000 ; Wxxxx 4 = Toploader high 3 = 30000 ; Wxxxx 2 = Toploader low 1 = Washer dryer

1. Operating elements / panel

1.1 One button - Input philosophy

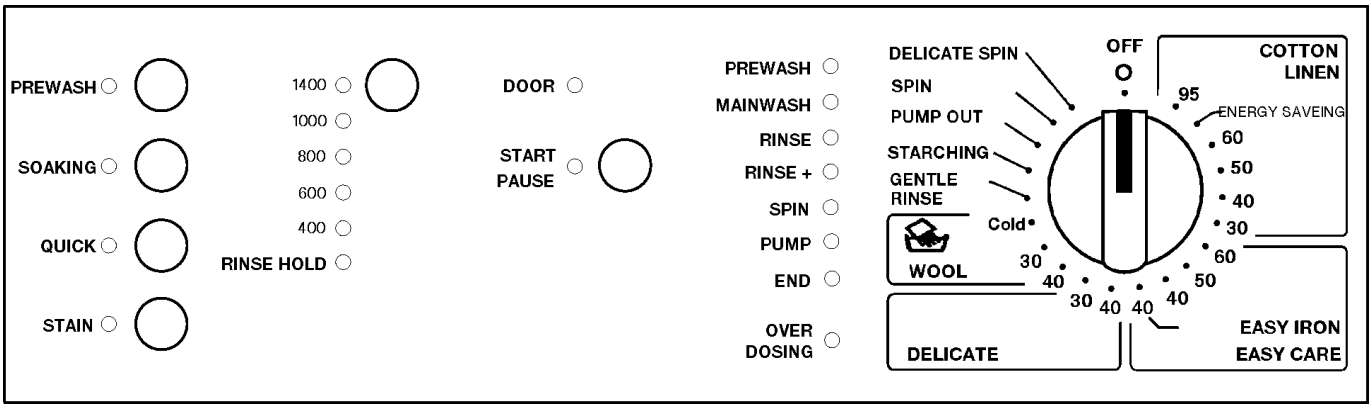
Every washing programe with its temperature can be adjusted with the programe selection switch.



Option buttons Spin speed Door Program cycle Program adjusting

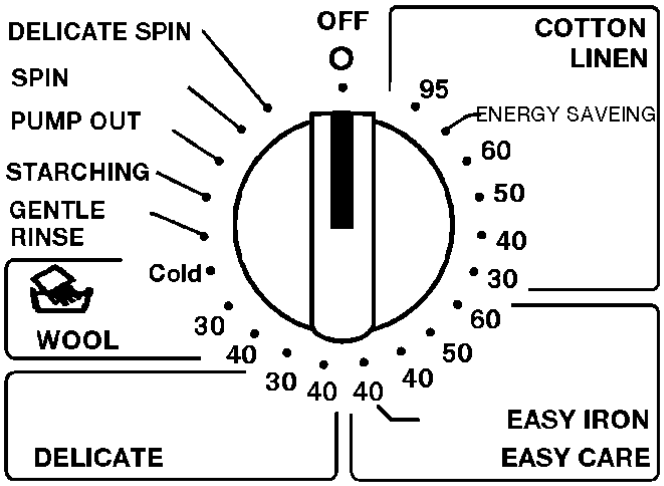
Start / Pause

Multidisplay



Variants without multidisplay have 8 LED's in the program cycle display. The LED „Pump" is added. The reason is, 8 LED's are needed for the customer service test program.

1.2 Programe selection switch



- 15 basic programes
- 4 program blocks
  - Cotton / Linen
    - Energy saving
  - Easy care
    - Easy Iron
  - Delicate wash
  - Handlaundry program / Wool
- 5 additional programes
- On / Off - switch integrated in programe selector
- Quick programe correction possible

2. Additional programes

2.1 Gentle spin

Select with programe selection switch
Programe time 4 min.; speed 600 1/min
„Gentle spin“: (IMP_C0 Page 34)
same as delicate spin

2.2 Spinning

Select with programe selection switch
Programe time 8 min.; speed maximum
„Spinning“: (IMPCF_01_AC Page 33)
same as cotton / linen final spin

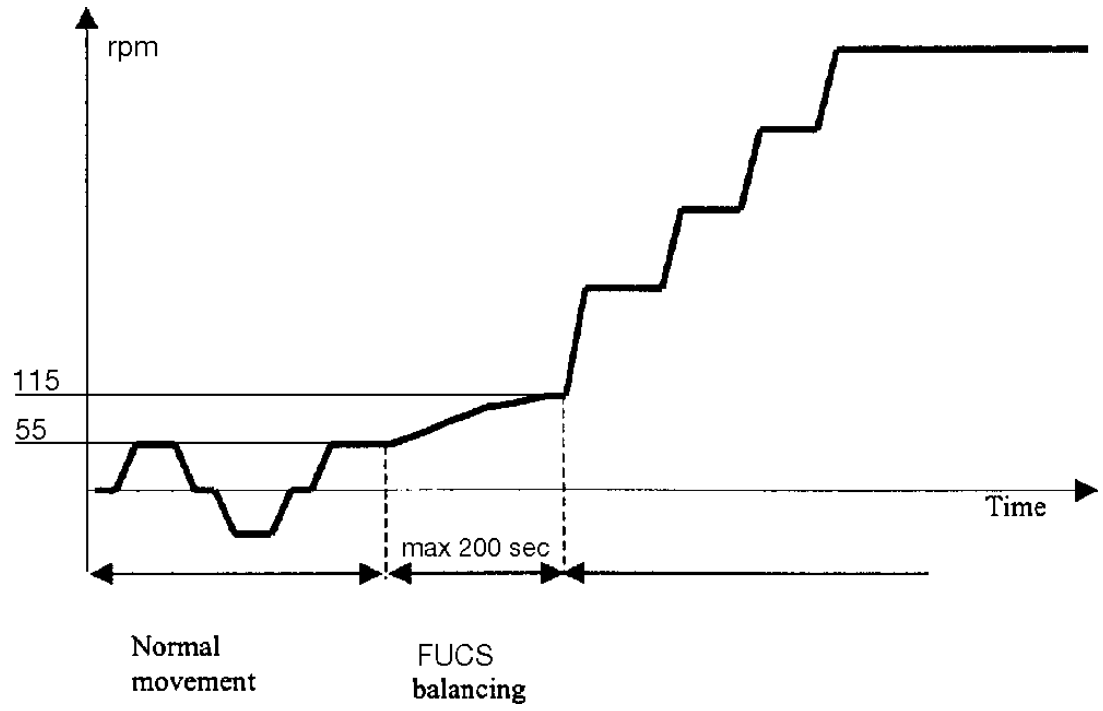
2.3 **F**ast **u**nbalanced **c**ontrol **s**ystem **FUCS**

Common function:
The unbalanced load measurement has 3 phases.
These phases have different durations and unbalanced load limits.

The value of the unbalanced load is calculated every 160 ms.
After this the unbalanced load is compared with the fixed limits
in order to decide whether the drum speed is increased or
decreased by 2 rpm.

The FUCS measuring phase starts at 55 rpm and ends in the ideal
case at 115 rpm.

Ideal case:

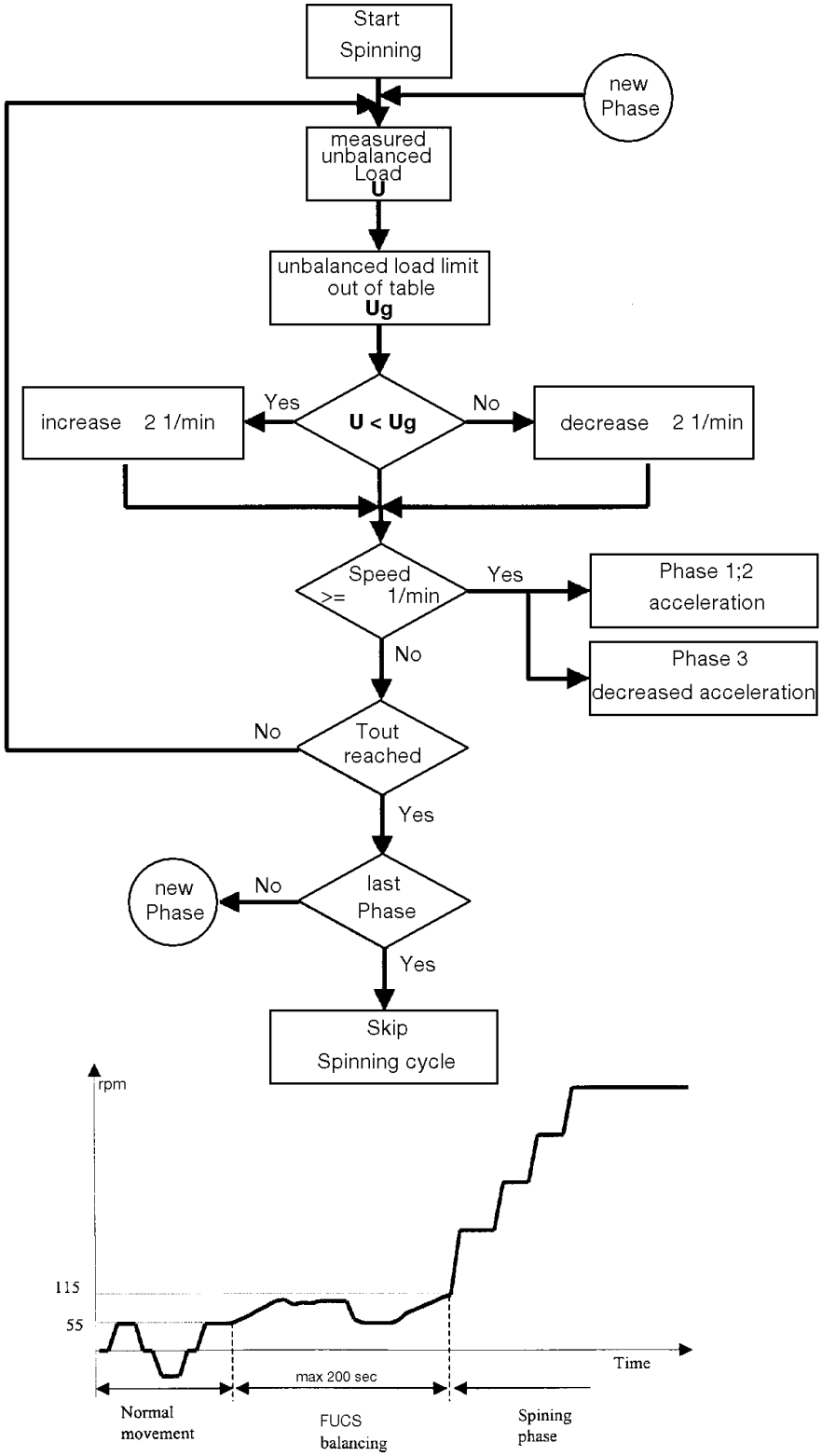


2. Additional programes

2.3.1 Function of FUCS

Duration and limit table:

Phase	Speed start	Speed end	Time (duration)	Unbalanced load limits
1	55 1/min	115 1/min	from 0 to 200 sec Time out 1	1,280
2	55 1/min	115 1/min	from 0 to 140 sec from 140 to 155 sec from 155 to 170 sec from 170 to 200 sec Time out 2	1,280 1,760 2,240 2,720
3	55 1/min	85 1/min	from 0 to 60 sec Time out 3	5,440



2. Additional programes

2.4 Pumping

Select with programe selection switch position „Pumping“
Programe time 3 min.
Pumping until switching point of the pressure switch (Foam level)
additional 120 sec. fixed pumping time

2.5 Starching

Select with programe selection switch position „Starching“
Programe time 23 min. maximum spin speed
It’s the same rinse as the 3. rinse from cotton linen

- ☞ It’s a traditionell rinse
- ☞ Filling over softener chamber (RII_level) about 13L with 5 Kg
- ☞ Movement N_MOV 8sec off 6 sec on 55 1/min

Final spin cotton/linen (IMPCF_01_AC Page 33)

2.6 Delicate rinse

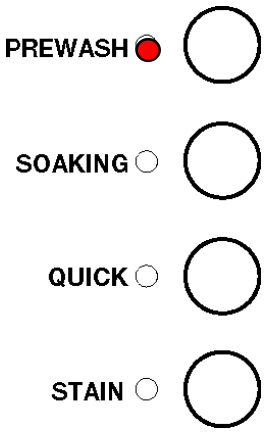
Select with programe selection switch position „Delicate rinse“
It’s the same as 3 rinsing cycles from delicate wash
Programe time 20 min.

- ☞ All rinses are traditionell
- ☞ First two rinses filling over bleaching chamber (High_level) about 13L with 2,5 Kg
  The last rinse uses the softener chamber
- ☞ Movement D_MOV 12sec off 4 sec on 55 1/min

Final spin delicate (IMP7 Page 35)

3. Option buttons / display

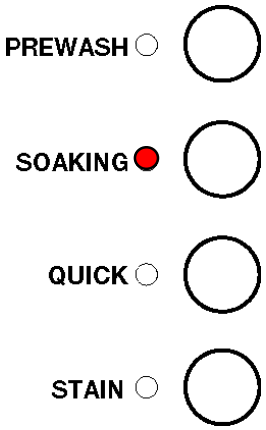
3.1 Prewash



- Can be started infront of each main programe.
- If you chose **wool with prewash** it is not possible because this function is locked. It’s also locked, **soaking** is chosen. The option **stain** is available
- Prewash is hot 30°C
- Different washing mechanics
  They depend on the chosen main programe
- It takes about 25 min.
- 5 min. circulation pump „On“
- Spinning at the end of prewash is IMP_C0
- After the prewash the main programe is automatically started

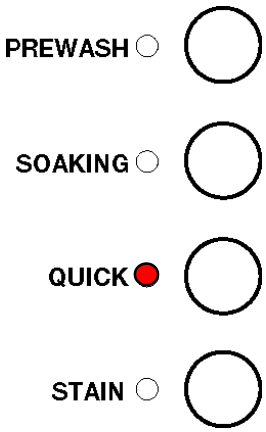
3. Option buttons / display

3.2 Soaking



- No prewash can be chosen
- for dried, encrusted stains
- If you chose handlaundry with soaking it is not possible because this funktion is locked
- soaking with a temperature max. 30°C possible
- Different washmechanics. They depend on the chosen main programe such as **cotton, easy care and delicate**
- Programe time ca. 25min. plus heating step till soaking stop (Stoptime: 0,5 h.)
  Soaking time (Stoptime) can be adjusted with the pre-select starting time
  (Stoptime overall: 0,5 / 1,5 / 2,5 .... and so on in 1h steps)
- After start the selected soaking time is added to the program time and it's then shown in minutes.
- 14 min: Movement D_MOV 12sec off 4 sec on 55 1/min and heating
  After heating gentle movement PWL1_MOV 40 sec off 1 sec on 35 1/min
- shortest possible soaking time ca. 50 minutes
- after the soaking, pump out is executed and the programe continues with the main programe

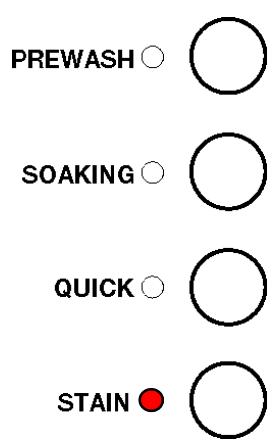
3.3 Quick



- This option is available during the entire cycle.
- For the programes cotton load 3,5 kg, easy care load 2,5 kg and delicate 2,5 kg.
- It doesn't work with the option stain or energy saving.
- Shorter washing time
- It reduces the amount of rinses by one.
- It increases the water levels of the rinse cycles.
- It's not available for the handwash, enrgy saveing and stain program

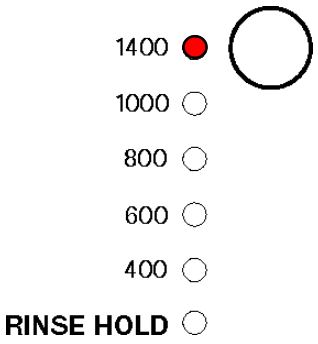
3. Option buttons / display

3.4 Stain



- Available for cotton, easy care and delicate with a chosen temperature greater or equal the 40°
- Load spot powder into the stain compartment of the drawer
- Spot powder intake after the 40° bio phase
- Program time extention of 10 min.
- Not working in combination with the quick and intensive options
- Also not working with handlaundry program

3.5 Alternating spin speed



- This option is available during the entire cycle.
- Selectable with push button function
- At the program cotton linen the max. spin speed is suggested.
- At easy care, delicate wash and handlaundry the maximim spinspeed is suggested.
  Easy care / Easy iron: 800 1/min
  Delicate wash: 600 !/min
  Handlaundry: 800 1/min
- At all programes the rinse hold can be chosen
- The spin speed of the intermidiate spin is decreased the same as the final spin.

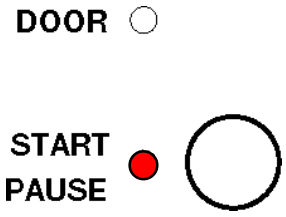
Only in cotton linen programes, the kind of rinses is adapted to the chosen spin speed.

Intermediate spin 1/min	1 rinse	2 rinse	Last rinse
< 850	**TR2**	**TR2**	**TR2**
900 - 1150	**TR1**	**TR1**	**TR2**
1200 - 1600	**TR1**	**TR1**	**TR1**

TR2: Traditional rinses high level
TR1: Traditional rinses RINSE level

3. Option buttons / display

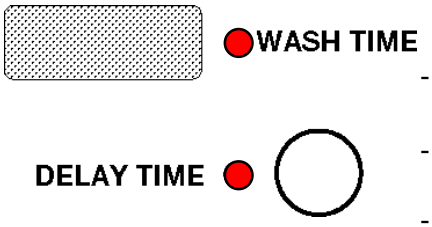
3.6 Start / Pause



- It starts the machine after the options and the desired cycle is selected.
- Pressing the start / Pause button during a cycle, the program stops and the start/pause LED blinks. The locking condition decides, if the machine can be opened. The door LED illuminates according to the locking conditions.
- If the cycle is paused it's possible to add or eliminate the extra rinse before it's executed. The spin speed can be alternated until the final spin has been performed.

  ⇒ During the breaktime the change of the programe isn't possible.
- To continue the cycle it's necessary to press the start / pause button again.
- If you turn the selection switch during the programe the machine continues with the previous started programe.

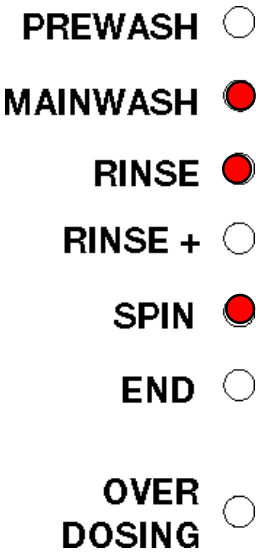
3.7 Multidisplay



- It indicates pre-selected start time up to 19h
- Adjustable in steps of 1 h
- after the start time is chosen, the start button must be pushed to activate the pre-selected start time. The coundown begins in steps of 1 h.
- If the pause button is pressed during delay time, the countdown is stopped and the door can be opened.
- It indicates the soaking time.
- It indicates the estimated duration of a programe in minutes. The suggested program time may be corrected automatically during the cycle.
- The display also indicates the fault codes. (E10)
- In the customer service test program it shows the water level

3. Option buttons / display

3.8 Electronik cycle display



- indicates the selected programe steps
- indicates the actual steps during the programe
- indicates the end of programe
- indicates at the end of programe „Overdosage“ that means to much detergent is used. The LED is only illuminated if foam is detected during the first intermidiate spin. Its active in all programes.
- indicates fault codes

3.9 The intelligent doorlock

- This is a magneto - dynamic doorlock
- You have to open the door with the handle, which is not depending on the power source.
- Emergency opening with the knob on the base panel.

Before start- door is open	Green	Door is open
	Red „blinking“	Start button is pressed, while the door is open. Until E40 is shown.
Before start – door closed	Grenn	Door can be opened with the handle
After start – door closed	Green	Door will be locked and LED stays green
After the end of program	Green	Door is unlocked and can be opened with the handle.
	Green	Door is open
During the program cycle	Off	Door is locked due to level and temperature

3.10 Door locking conditions

If the door is closed and the machine started, the door is locked in any case.
If you push the break button the locking condition decide, if the machine can be opened.
The LED illuminates according to the locking conditions.

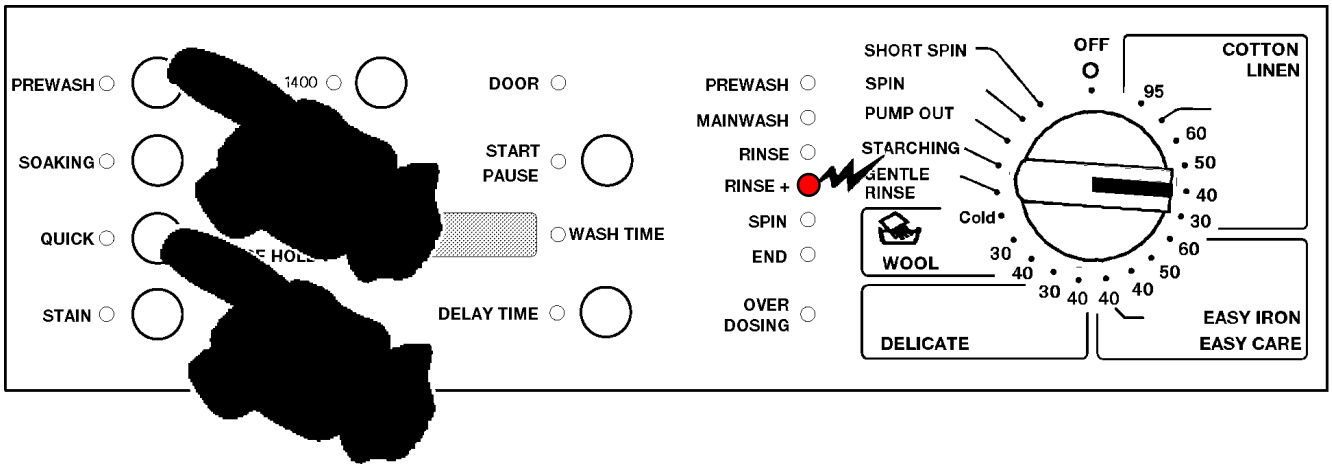
1. Niveau
2. water temperature ≥ 60°C
3. Drum speed
4. Broken tacho generator

4. Additional features

4.1 More water switch

The function of the more water switch must now be programmed with the in/output electronic . This has to be done before a programe is started. The extra rinse will be inserted in all programes except wool. The cool down setting is not available it's excecuted, if the chosen temperature is > 60°C in a cotton linen program.

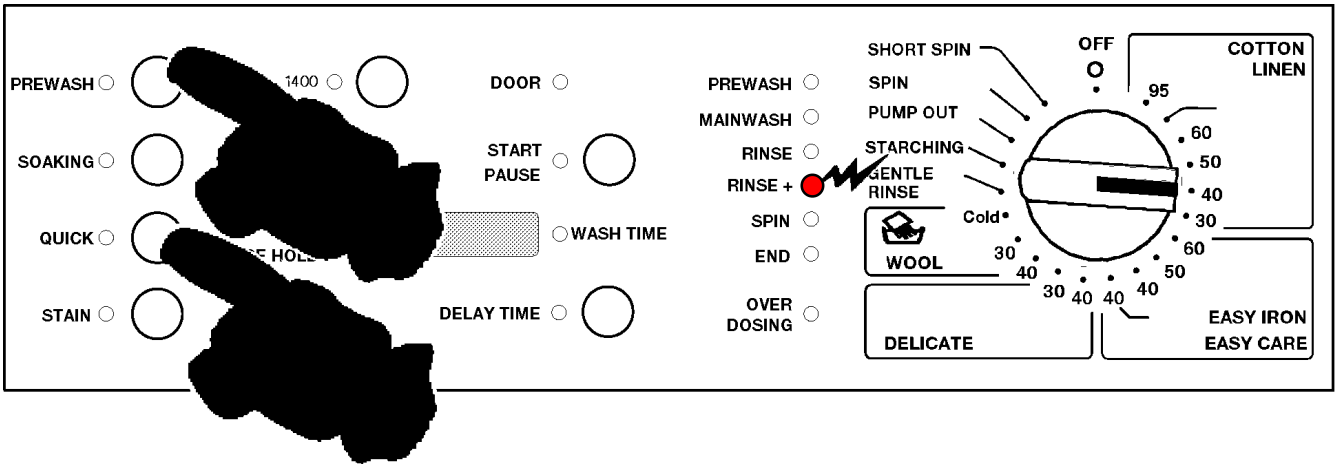
4.1.2 Activating the extra rinse



Activating during the set up phase:

- Keep the buttons prewash and quick pressed for 2 sec.
- The LED **Rinse+** is permanetly illuminated as confirmation
- The extra rinse is memorized until it's deactivated.

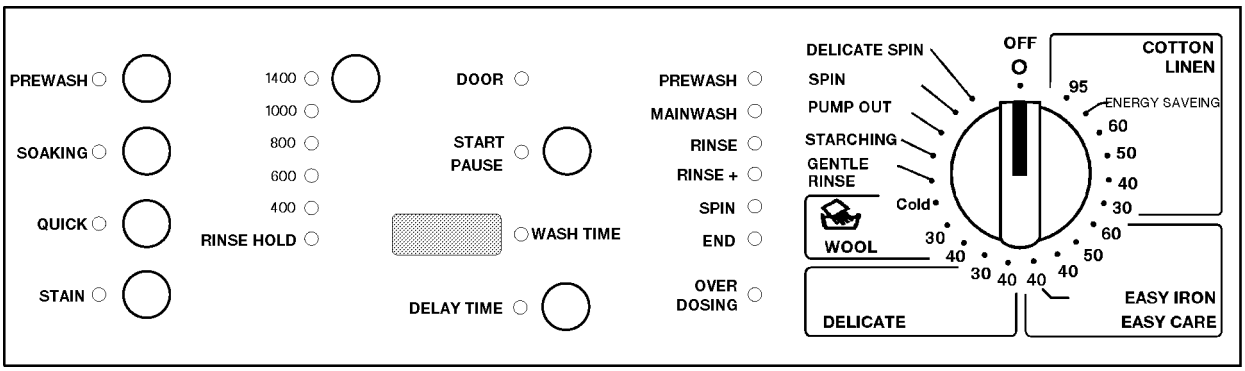
4.1.3 Deactivating the extra rinse



Activating during the set up phase:

- Keep the buttons prewash and quick pressed for 2 sec.
- The LED **Rinse+** is off as confirmation

4.2 Easy iron



- You can find the programe easy iron in the programe block easy care.
- Temperature 40°C; Load 1Kg
- The mainwash is the same as by easy care,
  The movement of the motor is 2 minutes extended
- The rinse cycles are the same as by easy care
  No intermidiate spin
- Automatic cool down about 8L
- Final spin as in the programe easy care (short variomatic)
- Additional options: quick, prewash, soaking, stain, extra rinse

4.3 The hand-laundry programme

Every piece of laundry with the sign " only suited for hand-laundry " can now be washed with the appliance.

The machine wash has an advantage regarding the hand wash.
This proves an expert's report of the Wfk-Institute.

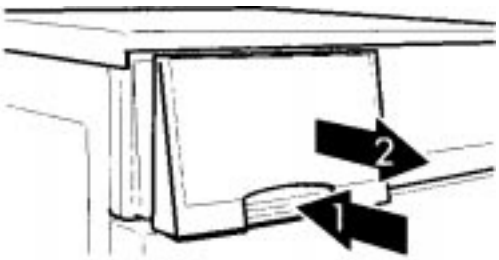
- ☞ less shrink
- ☞ the laundry is less felted ⇒ The surface is more even and fleecy
- ☞ less bleaching of colours
- ☞ less formation of crease

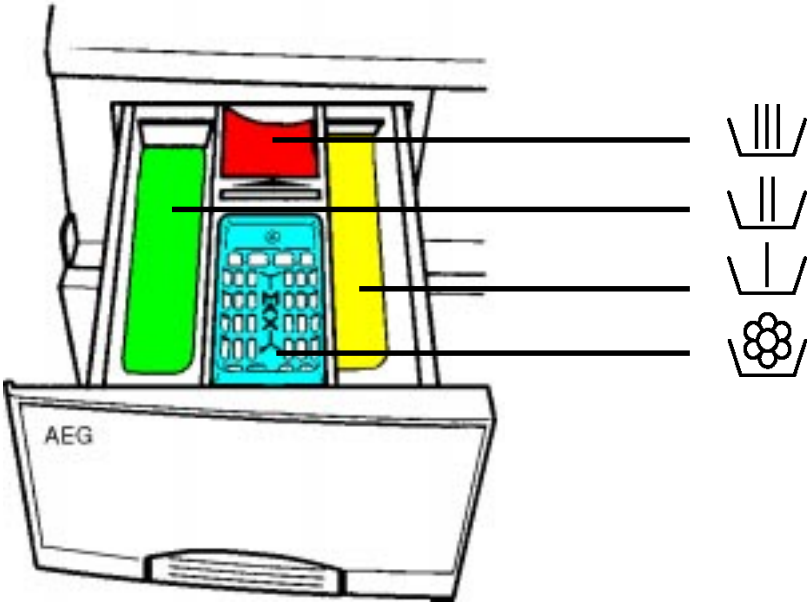
5. Water intake system

5.1 Waterdistributer + Valve

- 4 - Way Waterdistributer mechanically moved
- 3 - Valves

5.2 Drawer





Compartment for **prewash** powder/**soaking** powder
or **water softener**
Will be taken in at the very beginning of the program
Active valve: S1

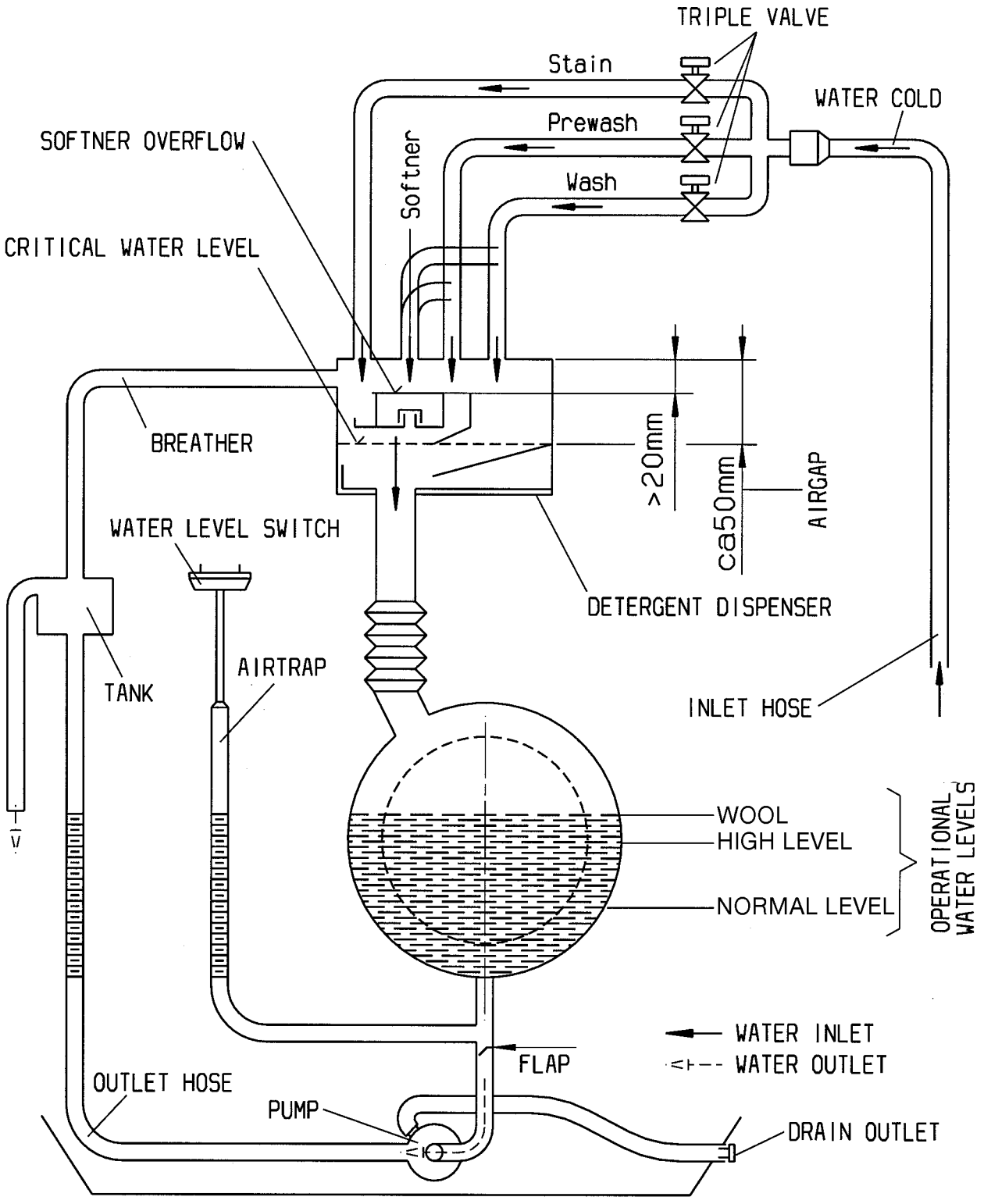
Compartment for the **main wash** powder.
Will be taken in at the beginning of the main wash.
If you like to use water softener and the right compartment is filled with prewash or soaking powder, add the water softener to the washing powder.
Active valve: S2

Compartment for the **spot** powder
The intake is delayed during the main wash.
Active valve: S15

Compartment for the **liquid softener** or **starching powder**
Intake at the last rinse.
Caution: Fill the compartment to the mark maximum.
Dilute high viscidity fluids.
Active valves: S1+S2

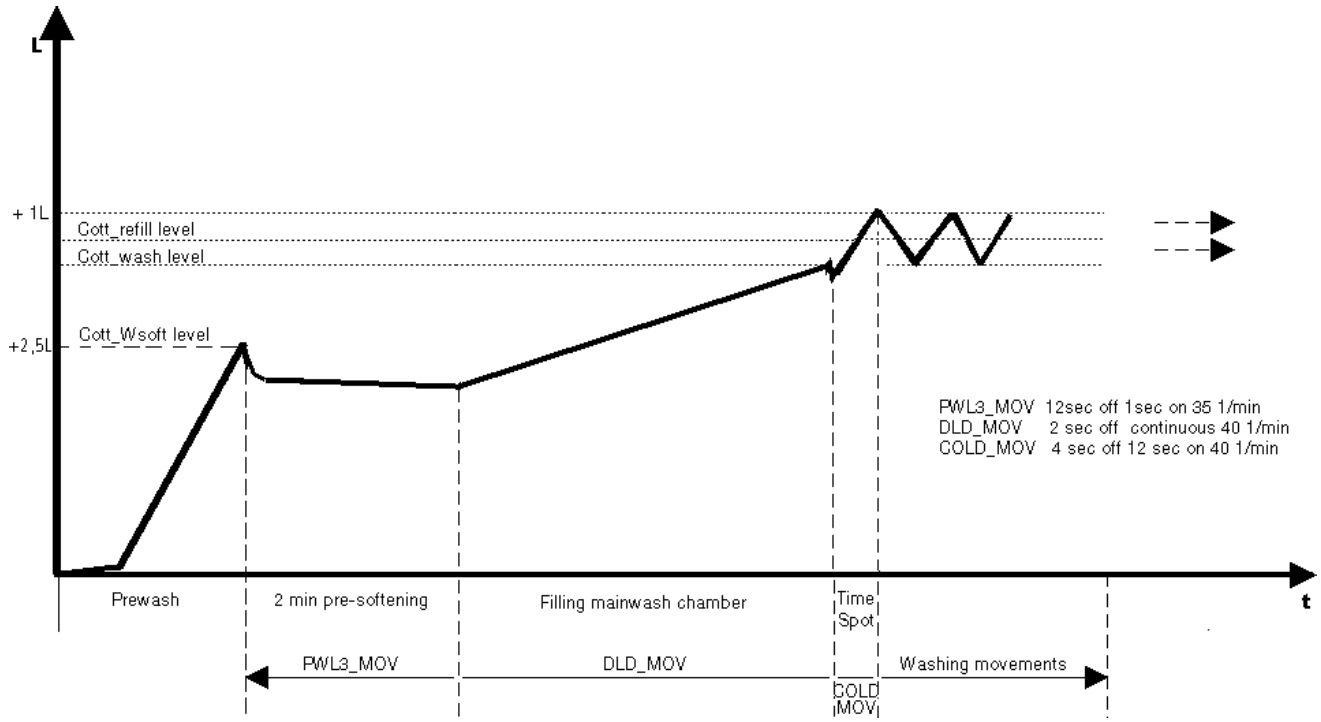
5.3.1 Water scheme

- 4 detergent chambers; recirculation pump and drain pump
- 4 - Way Waterdistributer mechanically moved
- 3 - Valves



5.3 Water intake diagrames

5.3.1 Water intake diagram cotton linen without any options chosen.



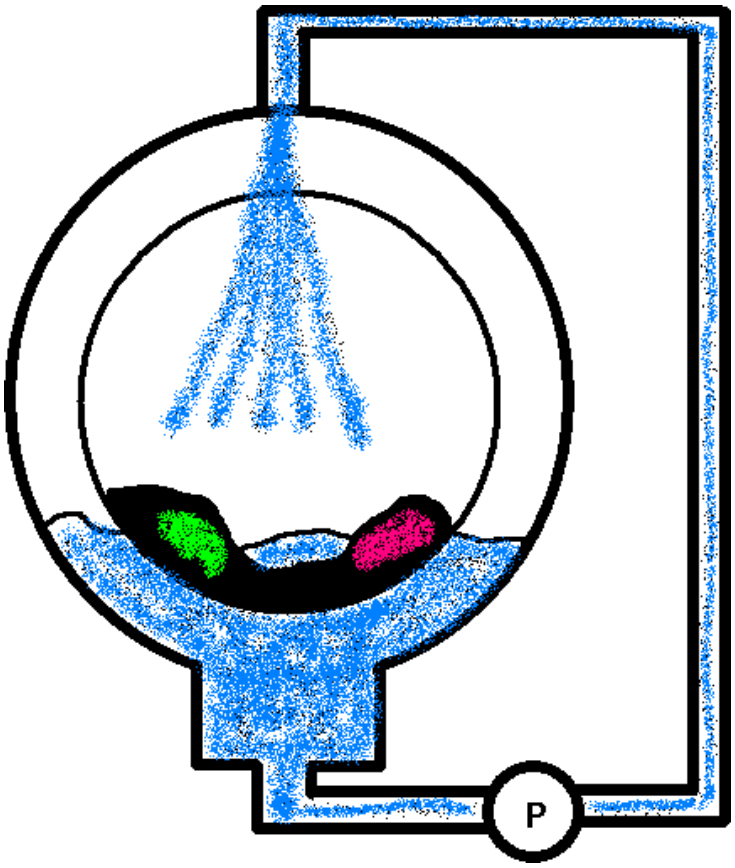
Waterintake depends on the kind of laundry and the soakingability!
No Fuzzy logic measurements in this machine.

SPMFF
Rinse with free water

The machine excecutes a maximum of 4 rinses

This rinse techcnology has no disadvantage, because the recirculation system guaranties the rinse result.

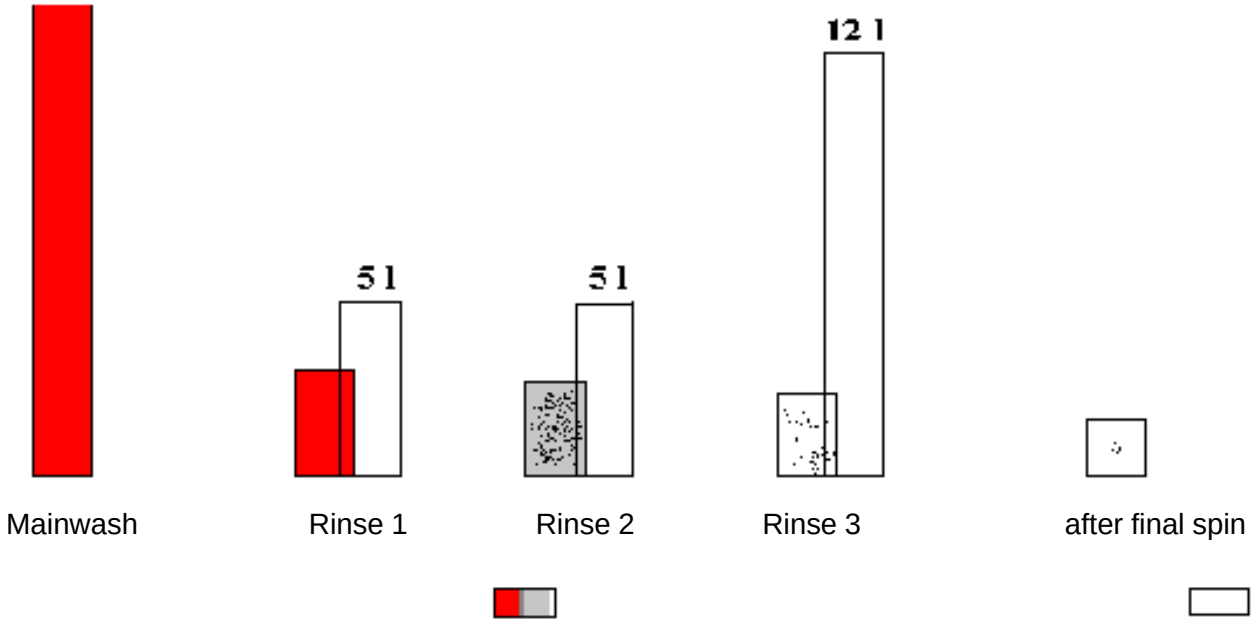
The last range of washing machines had the same amount of water and needed therfore more rinse cycles (SPOFF), because the free water couldn't be used.



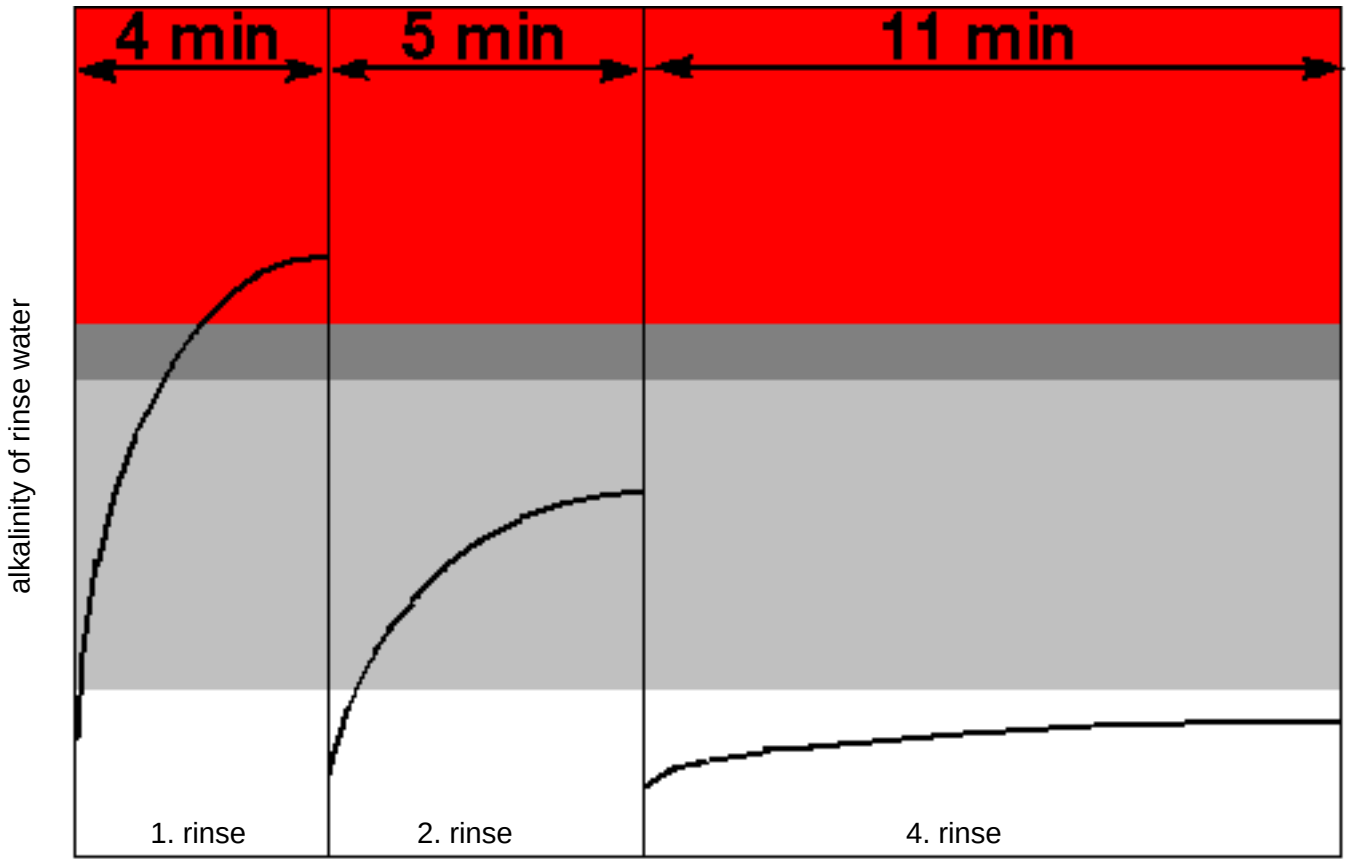
5.4 Definition rinsing

5.4.1 The principle rinse technology

Gradual increasing of the water used at the rinse cycle and the intermidiate spin.



Soaked water after the rinse cycle and its remaining alkalinity.



Gradual increasing the duration of the rinsing cycle.
The saturation of the rinse water is reached.

5.5 First rinse

a**) Cotton / linen virtual rinse:**

⇒ Filling up to rinse_level (mainwash chamber) about 9L if load 5 kg depending on pressure sensor (Soakingability and load)
⇒ movement E_MOV 4 sec off 8sec on 55 1/min

b) Easy care traditionell rinse:

⇒ Filling up to high_level (mainwash chamber) about 12L if load 2,5 kg and recirculation pump is on. Depending on pressure sensor. (Soakingability and load)
⇒ movement N_MOV 8 sec off 6 sec on 55 1/min

c) Delicate wash traditionell rinse:

⇒ Filling up to high_level (mainwash chamber) about 12L if load 2,5 kg Depending on pressure sensor. (Soakingability and load)
⇒ movement D_MOV 12 sec off 4 sec on 55 1/min

d) Wool Handlaundry:

⇒ Filling up to high_level (mainwash chamber) about 14L if load 2 kg Depending on pressure sensor.(Soakingability and load)
⇒ movement PWL3_MOV 12 sec off 1 sec on 35 1/min

5.6 Additional rinse

a) **Cotton / linen virtual rinse:**

⇒ Filling up to R_II_level (mainwash chamber) about 9L if load 5 kg depending on pressure sensor (Soakingability and load)
⇒ movement E_MOV 4 sec off 8sec on 55 1/min

b) Easy care traditionell rinse:

⇒ Filling up to high_level (mainwash chamber) about 12L if load 2,5 kg and recirculation pump is on. Depending on pressure sensor. (Soakingability and load)
⇒ movement N_MOV 8 sec off 6 sec on 55 1/min

c) Delicate wash traditionell rinse:

⇒ Filling up to high_level (mainwash chamber) about 12L if load 2,5 kg Depending on pressure sensor. (Soakingability and load)
⇒ movement D_MOV 12 sec off 4 sec on 55 1/min

5.7 Second rinse

a) **Cotton / linen virtual rinse:**

⇒ Filling up to rinse_level (mainwash chamber) about 9L if load 5 kg depending on pressure sensor (Soakingability and load)
⇒ movement E_MOV 4 sec off 8sec on 55 1/min

b) Easy care traditionell rinse:

⇒ Filling up to high_level (mainwash chamber) about 12L if load 2,5 kg and recirculation pump is on. Depending on pressure sensor. (Soakingability and load)
⇒ movement N_MOV 8 sec off 6 sec on 55 1/min

c) Delicate wash traditionell rinse:

⇒ Filling up to high_level (mainwash chamber) about 12L if load 2,5 kg Depending on pressure sensor. (Soakingability and load)
⇒ movement D_MOV 12 sec off 4 sec on 55 1/min

d) Wool Handlaundry:

⇒ Filling up to high_level (mainwash chamber) about 14L if load 2 kg Depending on pressure sensor.(Soakingability and load)
⇒ movement PWL1_MOV 53 sec off 1 sec on 35 1/min

5.8 Softening rinse

a) Cotton / linen traditionell rinse:

☞ Filling over softener chamber (RII_level) about 13L if load 5 Kg
Depending on pressure sensor. (Soakingability and load)
☞ Movement N_MOV 8sec off 6 sec on 55 1/min

b) Easy care traditionell rinse:

⇒ Filling up to High_level (softener chamber) about 12L if load 2,5 kg
Depending on pressure sensor (Soakingability and load).
⇒ movement N_MOV 8 sec off 6 sec on 55 1/min

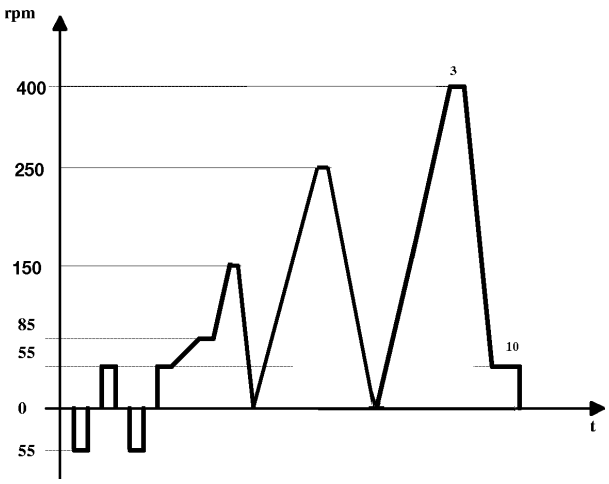
c) Delicate wash traditionell rinse:

⇒ Filling up to High_level (bleach chamber) about 12L if load 2,5 kg
Depending on pressure sensor (Soakingability and load).
⇒ movement D_MOV 12 sec off 4 sec on 55 1/min

c) Wool Handlaundry:

⇒ Filling up to high level (softener chamber) max. 14L if load 2 kg
Depending on pressure sensor (Soakingability and load).
⇒ movement PWL1_MOV 53 sec off 1 sec on 35 1/min

5.9 Foam detection and anti foam phase



The anti foam phase depends on the temperature of the chosen program.

The movement is excecuted after the mainwash.
At the programes cotton linen and easy care:.

a) Temperature < 45°C
☞ Complete movement

b) <u>Temperature > 45°C</u>
☞ Movement without reversing

Pressure sensor does the foam detection.
The spinning cycle will be interrupted.

6. Cool down

Cool down is depending on temperature and chosen program.

a) Cotton / linen
☞ Filling about 3 L if temperature > 67°C

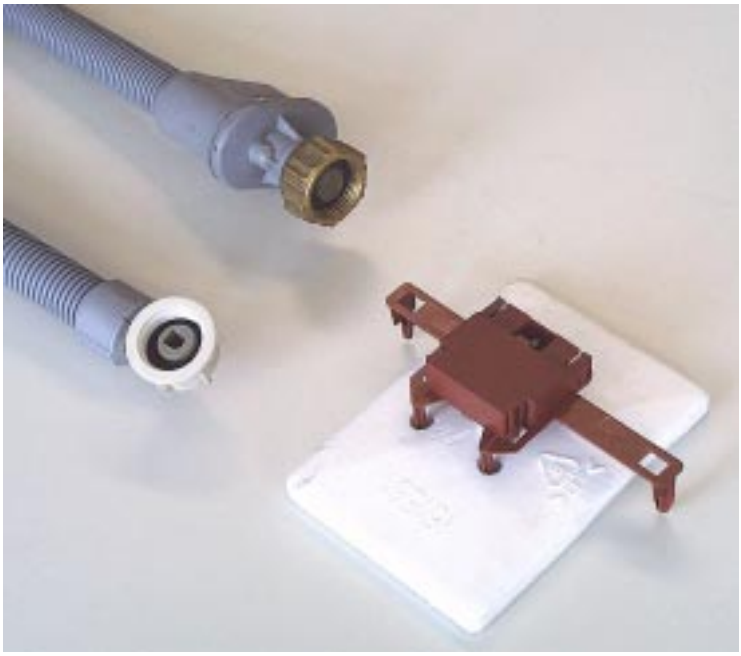
b) Easy care and easy iron
☞ Filling about 8 L generally in that program

c) Delicate wash and wool
☞ General without cool down

7. Aqua Control System

7.1 General construction

- Safty hose with a „normal“ pressure hose inside, without integrated electrical connection between the machine and the water tab valve.
- Hose system is all around closed and watertight
- At the water tab is a „mechanic“ safty valve without electric connection
- The hose is connected at the water inlet valve
- In case of a fault, that means the inner hose is leaking, a sponge as a part of the mechanic safty valve expands and closes the valve at the water tab.
- The water inlet valve with a flow regulator is positioned in the machine.
- There is no need for for special AC water distributer or valves.

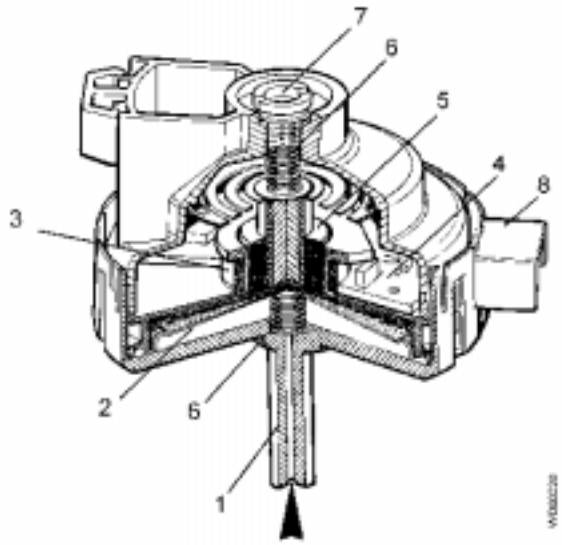


7.2 Floating switch

Floating switch f16 with 2 alternating contacts:

- ☞ Switches on the pump - The Pump has direct voltage.
- ☞ Electronic regognizes the opened pump contact and therefore the AC- case.
- ☞ The fault code **„EF0“** is shown.
- ☞ At this position the programe stops.
- ☞ If the floarting switch switches back, the machine stops pumping.
  If you switch off the machine and start it again, the programe will start from the beginning.

8. The pressure sensor

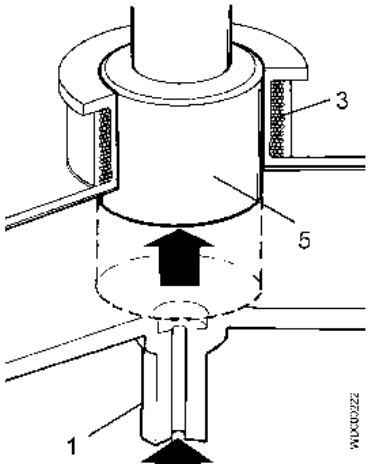


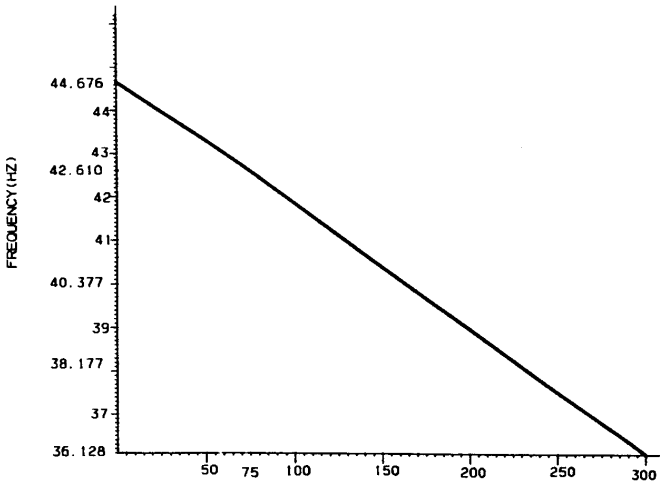
1	Air inlet
2	Membrane
3	Coil
4	Oscillator (Elektronic)
5	Magnetic ring
6	Spring
7	Screw to adjust
8	Connector

8.1 Function of the analog sensor

1 Over the air inlet the water pressure moves the membrane.

2 The membrane moves the magnetic ring (5) into the coil (3). Then the oscillator puts an other frequency on the main electronic. The water level is recognized.





PRESSURE (mm H20)	FREQUENCY (Hz)
0	44.676
75	42.610
300	36.128

9. Automatic foot

The automatic foot is a kind of shock absorber.
The machine stands on three fixed points (The usal adjustable feet).
The adjustable range of the automatic foot is about 11 mm.

- It is not necessary to adjust the feet anymore.
- The machine allways stands nicely.

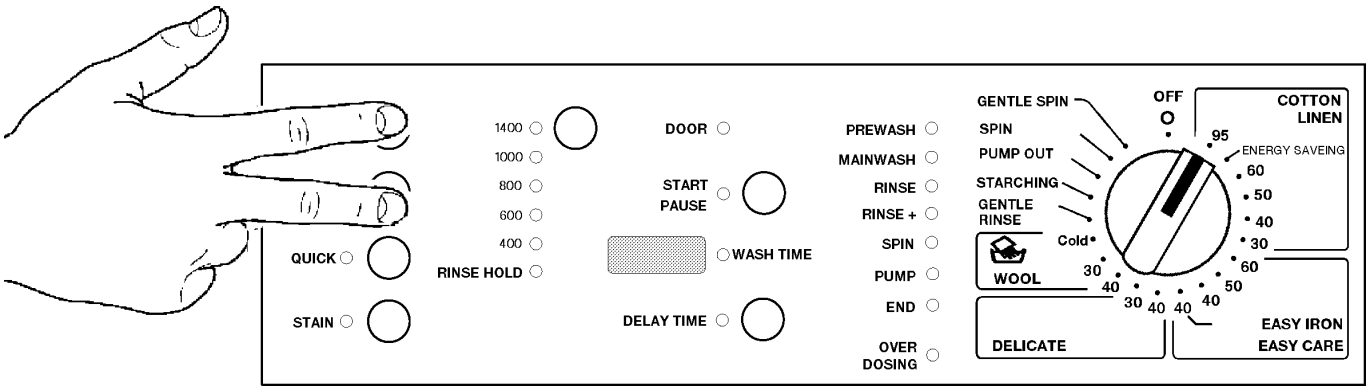
10. Service - Program

10.1 Activate Service - Program

⇨ Switch the machine off.

⇨ Keep the prewash and soaking button depressed and turn the rotary switch to the position cotton linen 95°C.

⇨ Keep the prewash and soaking button depressed until the LED's are illuminated.



Position of the rotary switch		Button	Test function
Off	**Off**		Off
01	**Cotton linen 95°C**	Prewash Soaking	❶ **Start of the customer service test program** ❷ **LED - Test** - LEDs are step by step illuminated. - If you press a button the according LED is on. and the according binary code is shown in the display
20	**Delicate spin**		Activates the configuration program
19	**Spin**		Shows the fault code (Display + program duration LEDs)
02	**Energy saving**		**Water channel mainwash** Water intake up to savety level fS Time max. 10 min Valve mainwash
03	**Cotton linen 60°C**		**Water channel prewash** Water intake up to savety level fS Time max. 10 min Valve prewash
04	**Cotton linen 50°C**		**Water channel softener** Water intake up to savety level fS Time max. 10 min Valve mainwash and Prewash
05	**Cotton linen 40°C**		**Water channel spots** Water intake up to savety level fS Time max. 10 min Valve spots or hotwater
06	**Cotton linen 30°C**		**Heating and circulation pump** Heating up to 90°C Time max. 10 min Water intake over mainwash chamber
07	**Easy care 60°C**		**Tub leakage test** Water intake over mainwash chamber up to 150 mm Motor rotation 250 1/min
08	**Easy care 50°C**		**Draining and spinning** Draining Spinning up to maximium spin speed, if level < fSch

Water level in mm shown in the display

Temperature in °C shown in the display

Drum speed shown in the display; x 10

Clear the fault memory

⇨ To clear the fault memory access the configuration program.
Press the **„prewash"** and the **„soaking"** button at the same time until the LED's are blinking.

10. Service - Programm

10.2 Fault indication in the multidisplay.

Fault code		Type of fault	Program knob Position	Remedy	Alarm Code	
Customer	Register					
E10 E10	E11	Water tap closed Valve does not open / interruption Valve flow rate to low Air trap system leaking	Energy saveing Cotton linen 60°C Cotton linen 40°C Cotton linen 30°C	Open tap Change the valve Clean filter Replace air trap	0	S
E20	E21	Pump blocked / not working Pump interrupted Reduced pump output rate Pressure sensor defect Pressure switch defect	Easy care 50°C	Remove foreign object Replace pump Check draining system Replace pressure sensor Replace pressure switch	0	S
	E31	Pressure sensor defect Frequency of the pressure sensor out of limit Cable interrupted	Easy care 50°C Easy care 50°C	Replace pressure sensor Replace cable	1	A
	E32	Calibration problems pressure sensor After initial calibration the waterlevel not in between 0 - 66mm and antiboil level off		Open tap Change the valve Clean filter Replace air trap Replace pressure sensor	0	S
	E33	Incongruence between pressure sensor and antiboil level 1 Fault has to be for a time longer than 60 sec.		Replace pressure sensor Replace cable Replace air trap	1	A
	E34	Incongruence between pressure sensor and antiboil level 2 Fault has to be for a time longer than 60 sec.		Replace pressure sensor Replace cable Replace air trap	1	A
	E35	Safety level (Pressure sensor) Level has to be 300mm for For a time of more than 15 sec Drain pump will be activated Until level is below 120 mm	Easy care 50°C Easy care 60°C	Replace pressure sensor Replace cable Replace air trap	1	A
	E36	Antiboil 1 sensing failure 1 Input voltage allways 0V		Change mainelectronic	1	A
	E37	Antiboil 2 sensing failure Input voltage allways 0V or 5V		Change mainelectronic	1	A
	E38	Airtrap blocked No pressure differences detected		Change airtrap Clean airtrap	1	A
E40	E41	Door lock defective Cable defective		Replace doorlock Replace cable	0	S
	E42	Door lock defective Door is unlocked during the cycle Tout 15 sec Door is not unlocking at the end of cycle Tout 3 min		Replace doorlock Replace cable	0	S
	E43	Door lock triac defective		Replace cable Change mainelectronic	0	S
	E44	Door lock sensing failure Inputvoltage allways 0V or 5V		Change mainelectronic	1	A
	E45	Door lock triac sensing failure Inputvoltage allways 0V or 5V		Change mainelectronic	1	A
	E51	Motortriac short circuit Motor cable short circuit	Easy care 50°C	Change mainelectronic Replace cable	1	A
	E52	No signal from tachogenerator Motor blocked Motor cable defective	Easy care 50°C	Replace tachognerator Replace motor Replace cable	1	A
	E53	Motor triac sensing failure Input voltage allways 0V or 5V		Change mainelectronic	1	A
	E54	Motor relay defect		Change mainelectronic	1	A
	E55	Motor circuit interrupted		Change motor Change cable	1	A

10. Service - Programm

10.2 Fault indication in the multidisplay.

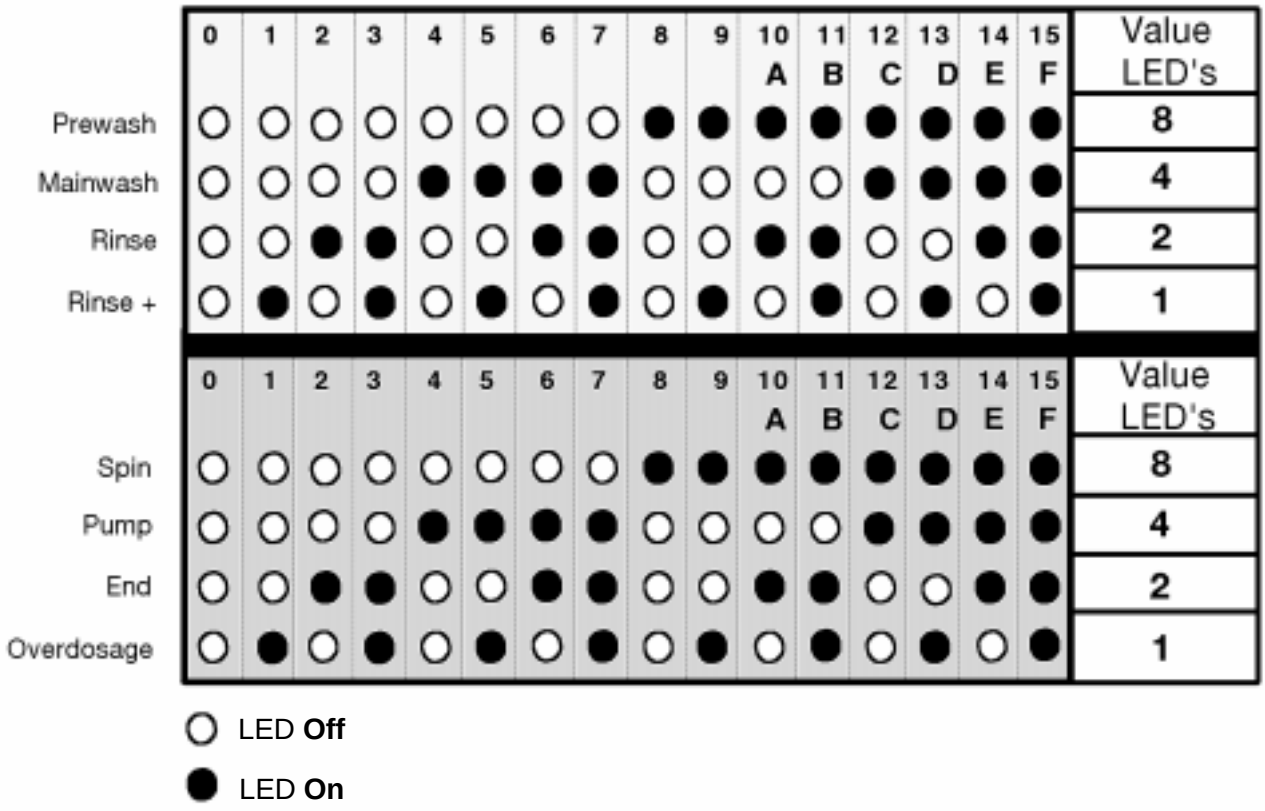
Fault code		Type of fault	Program knob Position	Remedy	Alarm Code	
Customer	Register					
	E61	Insufficient heating Maximum heating time expired NTC defective Heating element defective Connection heating element interrupted	Cotton linen 30°C	Replace NTC Replace heating element Replace cable	3	
	E62	**Overheating:** - Temperature greater 88°C for a time longer than 5 min - NTC defective - Cable defective		Replace NTC Replace heating element Replace cable	2	A
	E66	Heating relay defective Incongruence between antiboil 2 and relay	Cotton linen 30°C	Replace pressure switch Replace cable	2	A
	E71	NTC short circuit NTC interruption		Replace NTC	3	S
	E84	Recirculation pump sensoring failure. Input voltage allways 0V or 5V		Replace mainelectronic	1	A
	E85	Recirculation pump defective Triac defective		Replace recirculation pump Replace mainelectronic	2	A
E90	E91	Interrupted communication between In/Output electronic and mainelectronic		Replace cable Replace mainelectronic Replace In/Output electronic		
	E92	Incongruence between In/Output electronic and mainelectronic		In/Output electronic is incompatible with mainelectronic		
	E93	Configuration error		Wrong configuration of the machine	1	A
	E94	Loss of cycle datas		Replace mainelectronic	1	A
EF0	EF2	Overdosage		Advise the customer to use less detergent.	4	S
	EF3	Aqua Control system activated Drain pump cable defective Drain pump interruption Floating swirch defective Isolation resistance of heating element to small < 70kΩ		Leakage in the machine Replace cable Replace drain pump Replace floating switch Change heating element	2	A

Composition alarm codes			
Alarm state		Reactivate the machine with	
0	Program cycle interrupted.	S	Start Button
1	Program cycle interrupted. Door locked	A	Off / On
2	Program cycle stopped. Drain pump is activated.		
3	Heating step is skipped		
4	Program continues Only shown in fault memory		

10. Service - Programm

10.2 Fault indication in the multidisplay.

⇨ Machines without multidisplay show the faultcodes with the program cycle LED's.
In this case you have to take care about the values of the single LED's.



⇨ If fault E40 is shown the LED mainwash will be blinking.

⇨ If faultcode E93 is shown, **Prewash, Rinse+, End** und **Overdosage** blinks.

The faultcode contents following values:

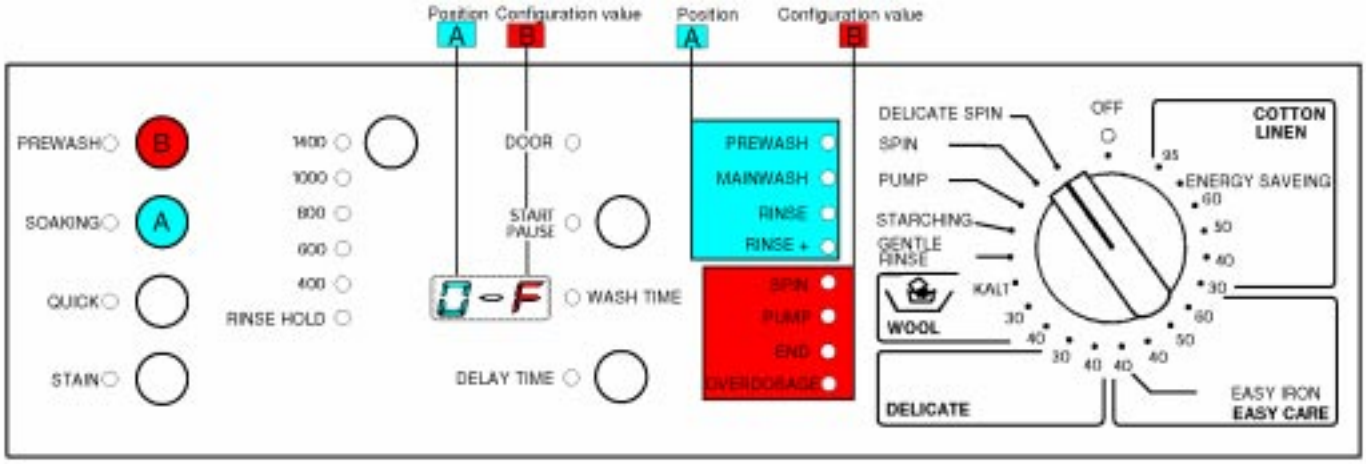
LED	**Value**
Prewash	8
Rinse+	1
Total	**9**
End	2
Overdosage	1
Total	**3**

☞ **Now you are able to figure out the faultcodes in the previous tables.**

10. Service - Programm

10.3 The configuration - Program

1. Activate service - program
2. Turn the rotary switch clockwise to the position delicate spin.



If the mainelectronic has to be changed you have to configurate the spare part electronic
A code with 16 digits has to be stored. This code sets the variante of the machine.

Caution: Don't use the LED's to configurate if there is a multidisplay, because this variante has 7 LED's. Appliances without multidisplay have 8 LED's, which you then have to use to configurate the electronic board.

A = The first digit of the display (if present), or the first 4 program duration LED's show the binary code of the position in which the value has to be stored.
To check the several positions press the option button „Soaking".

B = The last digit of the display (if present), or the last 4 program duration LED's show the configuration digit as binary code which has to be stored in the according position.
To change the value press the „prewash" button.

<u>Store the configuration code:</u>
After the input of the configuration code, you have to store it in the memory.
Press the **„prewash"** and the **„soaking"** button at the same time until the LED's are blinking.

<u>Binary codes:</u>
With this table you are able to convert the binary code, shown by the LED's, into the according number.

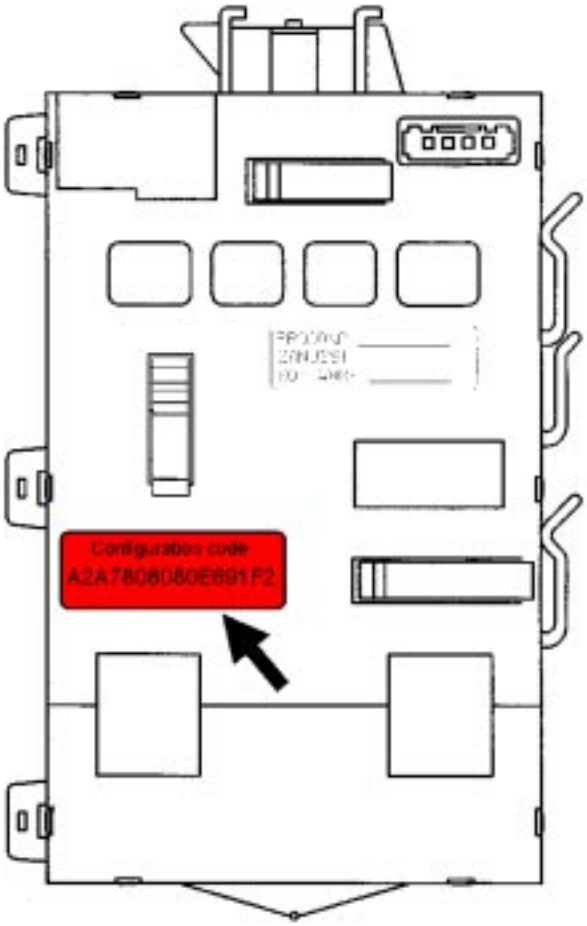
0	1	2	3	4	5	6	7	8	9	10 A	11 B	12 C	13 D	14 E	15 F
○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●
○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●
○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●
○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●

○ LED off

● LED on

10. Service - Programm

10.3 The configuration program



Configuration code:

You can find the configuration code on a sticker, which is located on the electronic housing.
Also in the spare part list the code is shown.

It is very important to remark this code on the new elctronic housing.

Reading the configuration code:

Examble
Code: A2A7808080E691F2

Table of the illuminated LED's:

Position: ⇨	0	1	2	3	4	5	6	7	8	9	10 A	11 B	12 C	13 D	14 E	15 F
	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●
	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●
	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●
	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●
	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○
	○	○	○	●	○	○	○	○	○	○	●	●	○	○	●	○
	●	●	●	●	○	○	○	○	○	○	●	●	○	○	●	●
	○	○	○	●	○	○	○	○	○	○	○	○	●	●	●	○
configurationscode: ⇨	A	2	A	7	8	0	8	0	8	0	E	6	9	1	F	2

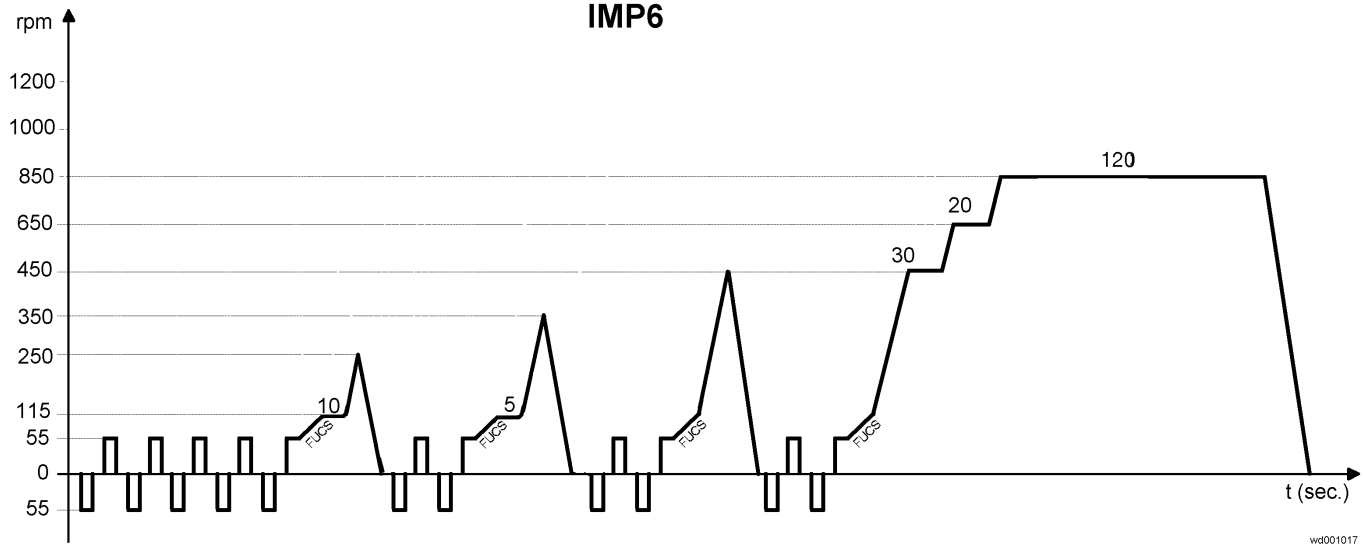
○ LED off

● LED on

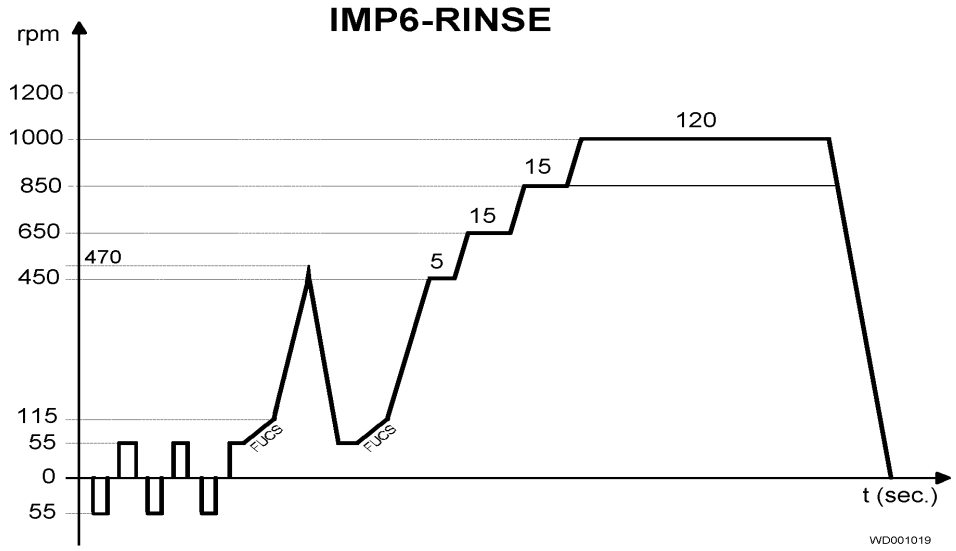
11. Spinning profiles

11.1 For the program cotton linen

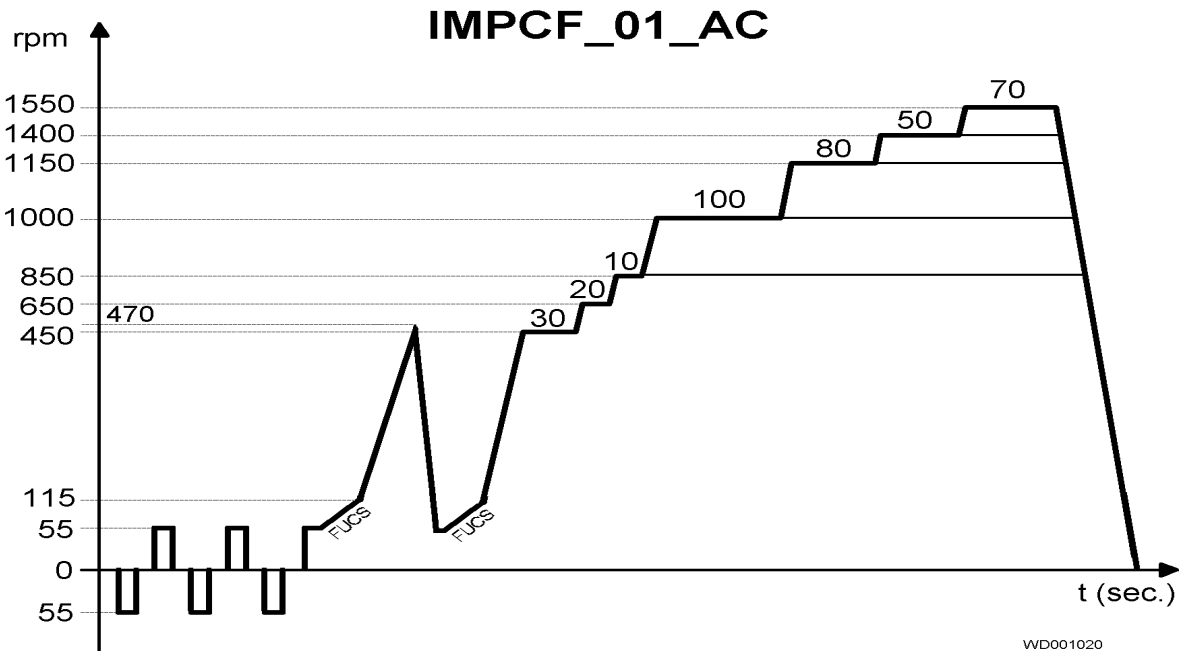
1. Intermidiate spin



2. und 3. Intermidiate spin



Final spin

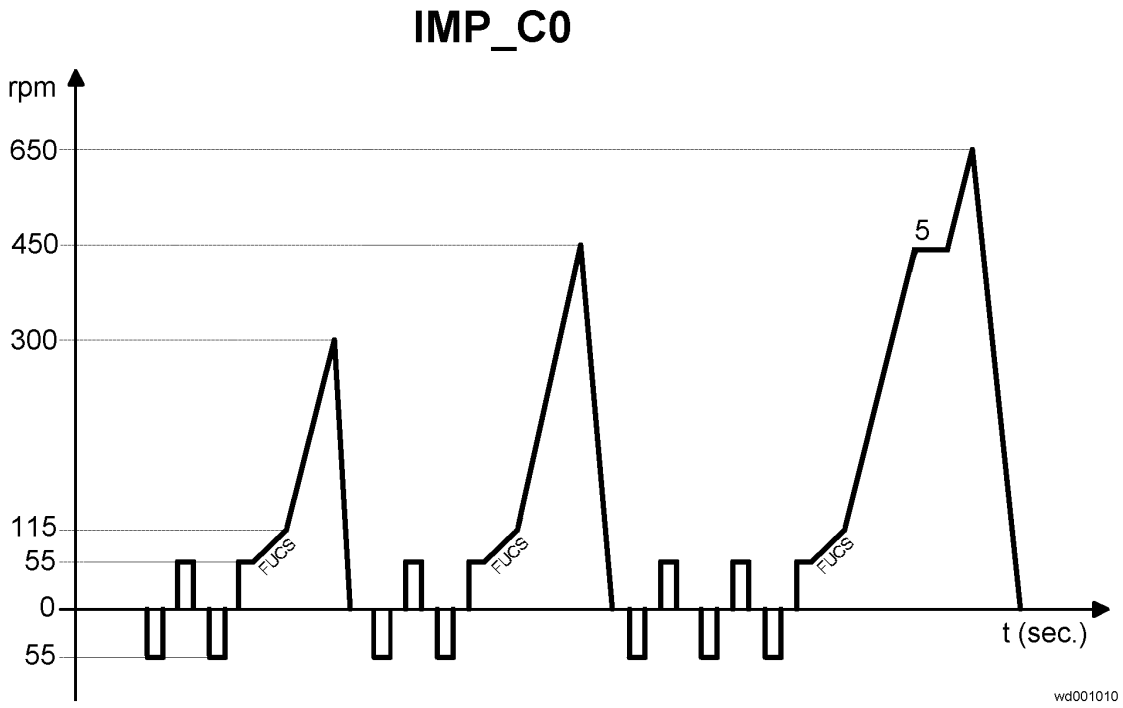


11. Spinning profiles

11.2 For the program easy care

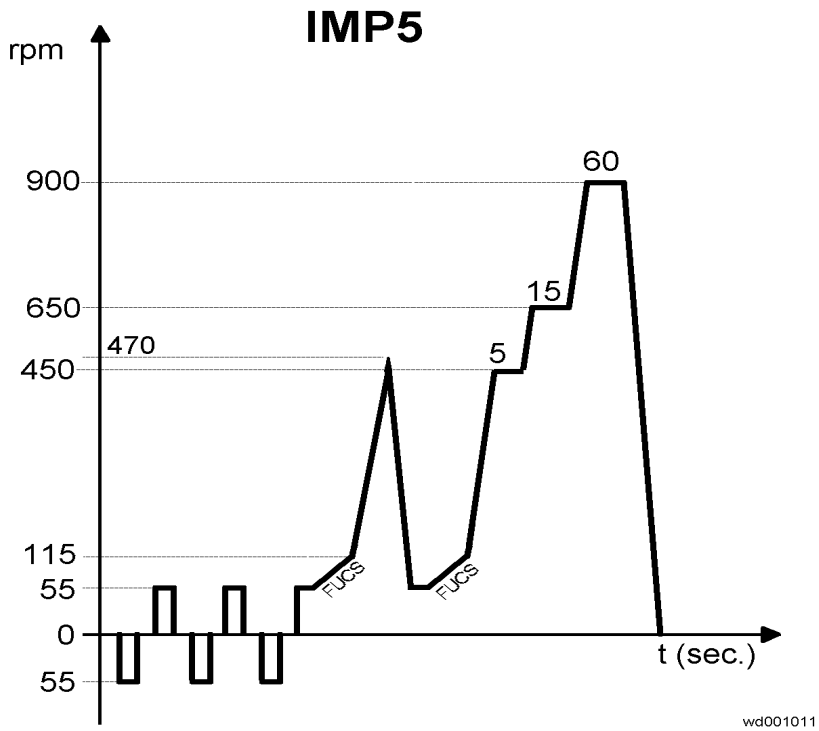
1. Intermidiate spin is not excecuted

2. Intermidiate spin



3. Intermidiate is not excecuted

The final spin

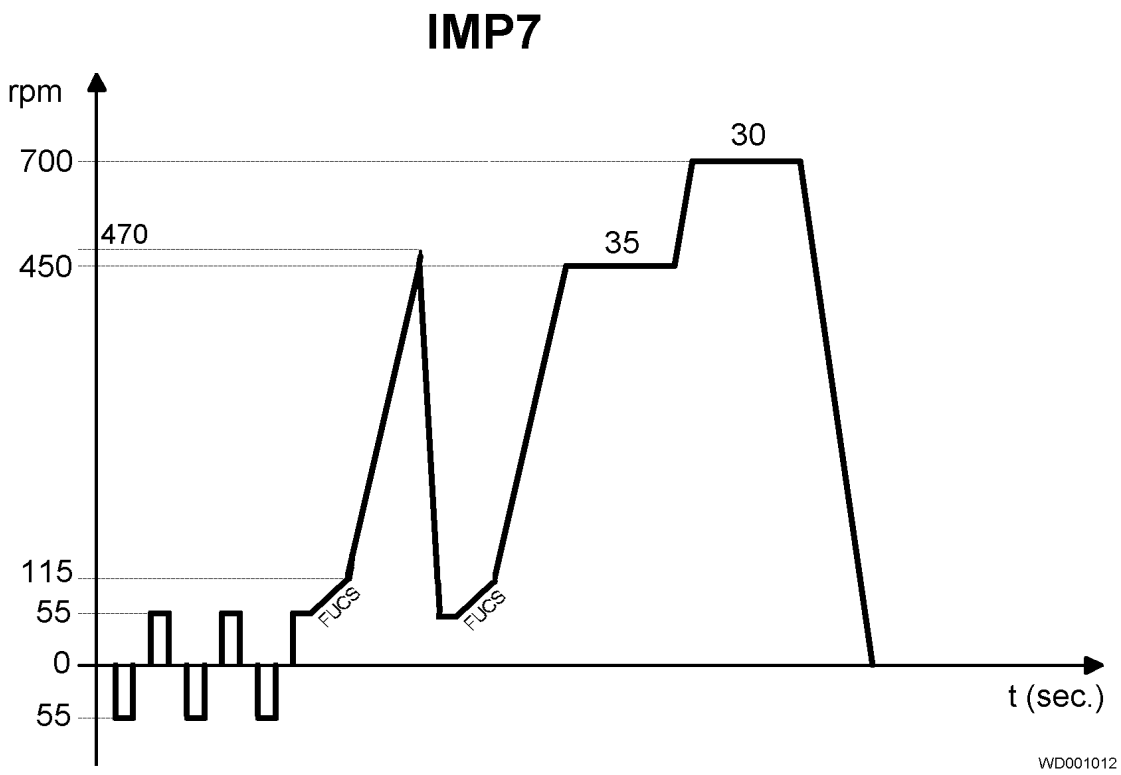


11. Spinning profiles

11.3 For the program delicate wash

No intermidiate spins are excecuted!

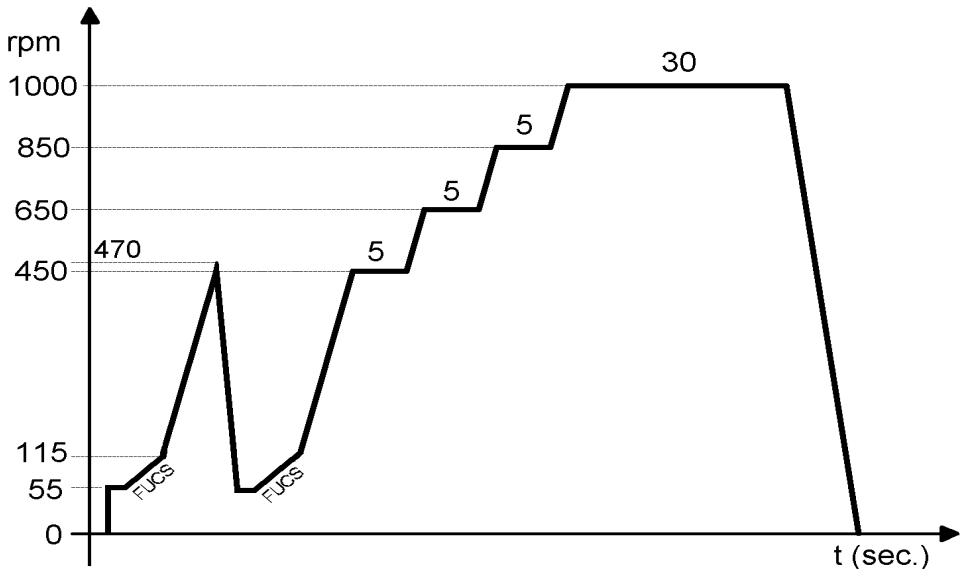
The final spin



11.4 For the Handlaundry program

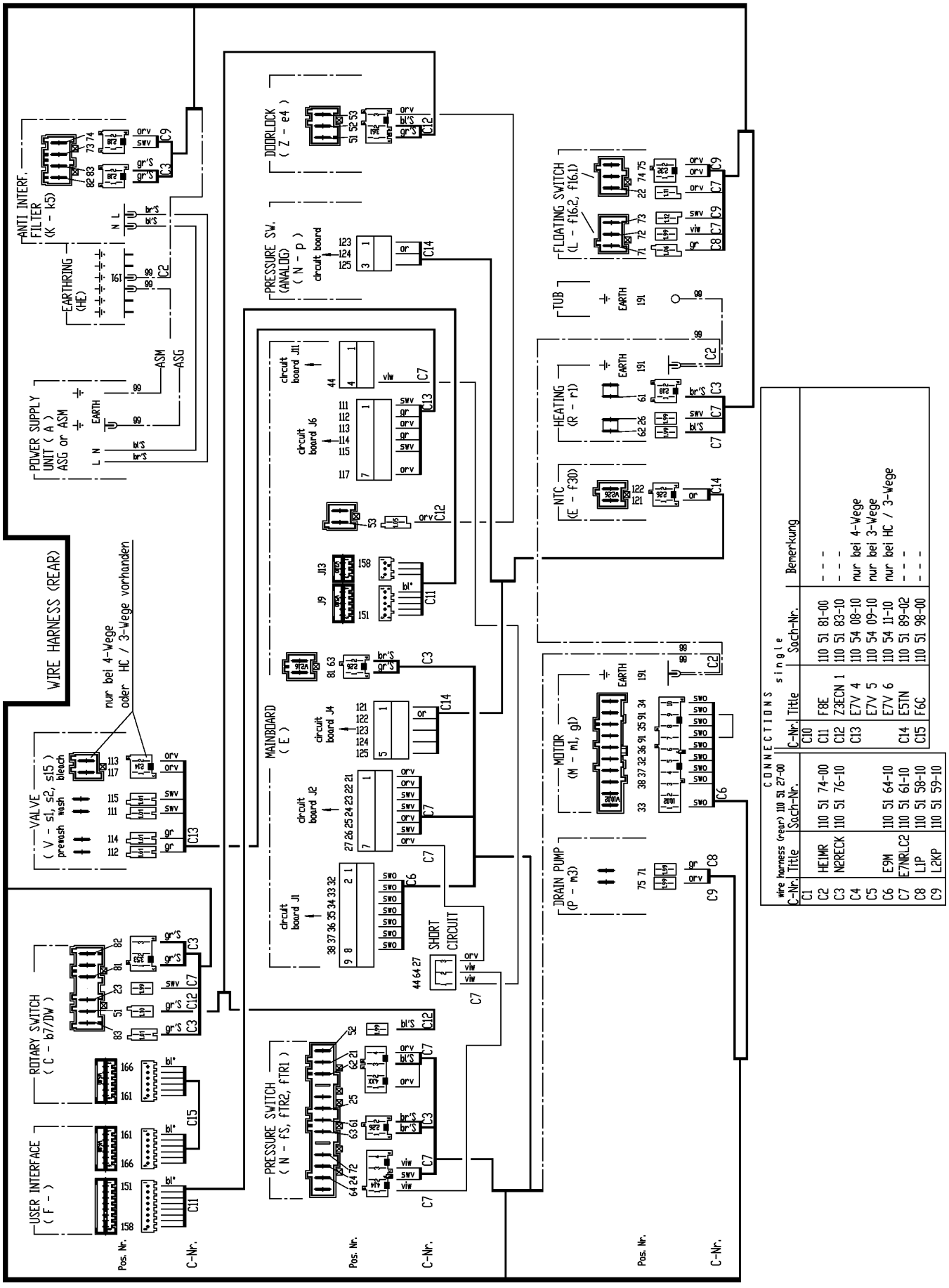
No intermidiate spins are excecuted!

The final spin

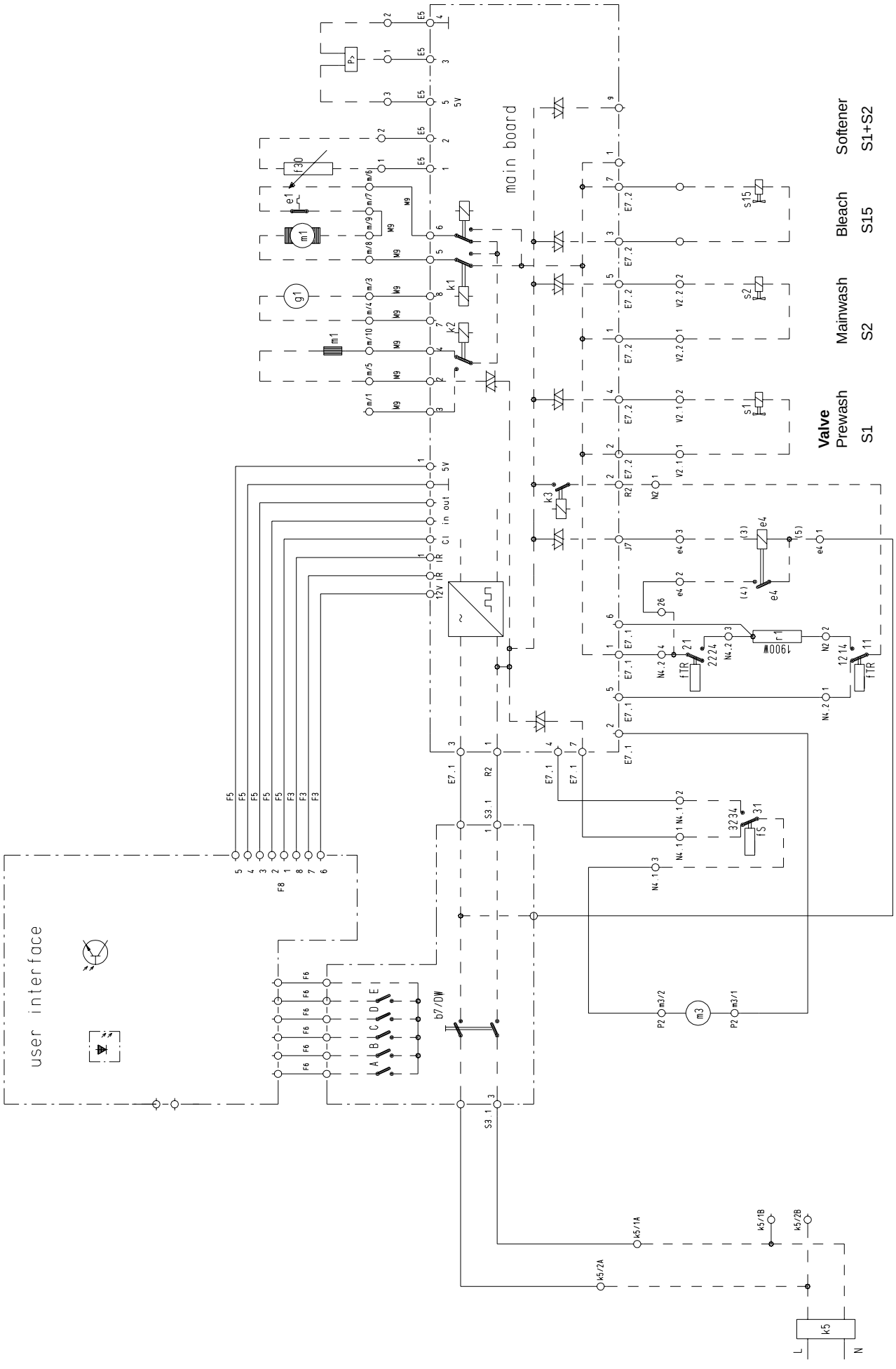


12. Technic

12.1 Wiring plan



12.2 Circuit diagram



12.3 Legend

Legende der Steuerung
Legend for the wiring plan
Légende pour Schéma des interconnexions

Kurzzeichen Short name	Bezeichnung Description	Bez. im Stromlaufplan Description in the wiring plan
A	**Anschlußgehäuse** connection housing Boîtier de raccordement	
C	**Drehwahlschalter** Selection switch Sélecteur rotatif	b7/DW
E	**NTC - Fühler** NTC sensor Senseur CTN	f30
E	**Elektronik** Main electronic Electronique	
F	**Ein / Ausgabeelektronik** In / Output electronic Déroulem. Progr.	S17
HE	**Haupterde** Main earth Terre centrale	
K	**Kondensator** Suppressor Condensateur	k5
L	**Schwimmerschalter** Floating switch Int. Flotteur	f16.1 ; f16.2
M	**Motor** motor moteur	m1
N	**Druckwächter** Pressure switch Pressostat	fs;fTR2;fTR1
N	**Drucksensor** Pressure sensor Pressostat analog	p
P	**Zirkulationspumpe** Recirculation pump Pump circulation	m22
P	**Pumpe** Pump Pompe	m3
R	**Heizung** Heating, Résistance	r1
V	**Ventil** valve valve	s1;s2;s15
Z	**Türverriegelung** Door lock Verrouillage de porte	e4

Legende des Stromlaufplanes
Legend for the circuit diagram
Légende pour Schéma de circuit

b7 / DW	**Drehwahlschalter** Selection switch Sélecteur rotatif
e4	**Türverriegelung** Door lock Verrouillage de porte
E	**Elektronik** Main electronic Electronique
f16.1 f16.2	**Schwimmerschalter** Floating switch Int. Flotteur
f 30	**NTC - Fühler** NTC sensor Senseur NTC
fS	**Sicherheits-Niveau** Safety level Niveau de sécurité
fTR1 ; fTR2	**Trockengehschutzniveau** Boil-dry protection Niveau sécurité séchage
g 1	**Tachogenerator** Tacho generator Générateur tachymétrique
k1	**Drehrichtung** direction of drum movement mouvement la Tambour
k2	**mit / ohne Anzapfung (950 1/min / 650 1/min)** tapping / complete field (950 1/min / 650 1/min) soutirage / champ intégral (950 1/min / 650 1/min)
k 5	**Störschutzfilter** Suppressor Filtre anti-parasite
m 1	**Antriebsmotor (allgemein)** Main motor Moteur d'entraînement
m 3	**Entleerungspumpe** Drain pump Pompe de vidange
m22	**Zirkulationspumpe** Recirculation pump Pump circulation
p	**Drucksensor** Pressure sensor Pressostat analog
r1	**Heizstab** Heating element Résistance
s1 s2 s15	**Ventil** Valve Valve
s17	**Ein / Ausgabeelektronik** In / Output electronic Déroulem. Progr.

Cotton 60 TRADITIONAL G54L Without options and laundry

Step n.°	PHASE	Option	Description	Levels wc	Levels rpc	Levels dpc	Levels mc	Rec. pump	Drain pump	Elv / Det comp.	Movement type	Movement code	Refilling type	Refilling wl	Refilling ab	Temp. °C	Time	Time to end
1	**MAINWASH**	WITHOUT	CALIBRATION	40/15	40/15	40/15	40/15		ON		OFF	Motor Stopped	NR	Dis	Dis	OFF	Tout 10'	00:00:20
2			WATER LOAD	42/15					OFF	ELV2				En			Tout 15'	00:01:40
3			MOVEMENT								ON	PWL3_MOV					1'	00:01:00
4			WATER LOAD	95/60						ELV3	OFF	Motor Stopped					Tout 15'	00:01:40
5			MOVEMENT	85/60			85/60				LEV	COLD_MOV					4'	00:04:00
6			MOVEMENT									E_MOV					3'	00:03:00
7			HEAT+MOV												En	40	Tout 40'	00:09:10
8			HEAT+MOV									N_MOV				59	Tout 40'	00:14:00
9			MOVEMENT								ON	SE_MOV		Dis	Dis	OFF	6'	00:06:00
10			MOVEMENT									E_MOV					8'	00:08:00
11			MOVEMENT									N_MOV					4'	00:04:00
12			MOVEMENT									SE_MOV					18'	00:18:00
13			MOVEMENT									PWL3_MOV					4'	00:04:00
14			WATER DRAIN						Lev			D_MOV					Tout 10'	00:00:20
15			SPINNING						ON			IMP6					Tout 20'	00:09:00
16	**1 RINSE**		CALIBRATION	40/15			40/15				OFF	Motor Stopped					Tout 10'	00:00:00
17			MOVEMENT						OFF								5''	00:00:10
18			WATER LOAD	95/55										En			Tout 15'	00:01:40
19			MOVEMENT				95/55				LEV	E_MOV					5'	00:05:00
20			WATER DRAIN						Lev		ON	D_MOV		Dis			Tout 10'	00:00:20
21			SPINNING						ON			IMP6_RINSE					Tout 20'	00:05:00
22	**2 RINSE**		CALIBRATION	40/15			40/15				OFF	Motor Stopped					Tout 10'	00:00:00
23			MOVEMENT						OFF								5''	00:00:10
24			WATER LOAD	95/55										En			Tout 15'	00:01:40
25			MOVEMENT				95/55				LEV	E_MOV					5'	00:05:00
26			WATER DRAIN						Lev		ON	D_MOV		Dis			Tout 10'	00:00:20
27			SPINNING						ON			IMP6_RINSE					Tout 20'	00:05:00
28	**SOFTENING**		CALIBRATION	40/15			40/15				OFF	Motor Stopped					Tout 10'	00:00:00
29	**RINSE**		MOVEMENT						OFF								5''	00:00:10
30			WATER LOAD	125/85						ELV2 ELV3				En			Tout 15'	00:01:40
31			MOVEMENT				125/85				LEV	N_MOV					7'	00:07:00
32			MOVEMENT								OFF	Motor Stopped		Dis			22''	00:00:20
33	**SPINNING**		CALIBRATION	40/15			40/15		ON		OFF	Motor Stopped					Tout 10'	00:00:00
34			WATER DRAIN						Lev		ON	D_MOV					Tout 10'	00:00:20
35			SPINNING						ON			IMPCF_01_AC					Tout 20'	00:20:00
36			MOVEMENT						OFF			N_MOV					2'	00:02:00

Mechanic	**Off**	**On**	**1/min**
D_MOV	12	4	55
N_MOV	8	6	55
E_MOV	4	8	55
PWL3_MOV	12	1	35
PWL4_MOV	57	1	35
PWL1_MOV	53	1	35
E1_MOV	4	10	75

Niveaus		
AF_LEV	40/15	mm
Softn_LEV	42/15	mm
Firstload_LEV	95/60	mm
Refill_LEV	85/60	mm
Rinse_LEV	95/55	mm
R_II_LEV	125/85	mm

Legend Niveaus

Typ	Describtion
WC	Water control level
PPC	Recirculation control level
DPC	Drain pump level
MC	Motor Niveau

Nachtakten

NR	Normal refill
VT	Virtual refill
WL	Analog ic sensor
AB	Anti boil protection

Handwash 30 TRADITIONAL G54L Without options and laundry

Step n.°	PHASE	Option	Functions	Levels wc	Levels rpc	Levels dpc	Levels mc	Rec. pump	Drain pump	Elv / Det comp.	Movement type	Movement code	Refilling type	Refilling wl	Refilling ab	Temp. °C	Time	Time to end
1	**MAINWASH**	WITHOUT	CALIBRATION	40/15	40/15	40/15	40/15		ON		OFF	Motor Stopped	NR	Dis	Dis	OFF	Tout 10'	00:00:00
2			WATER LOAD	42/15					OFF	ELV2	▼	▼		En			Tout 15'	00:01:10
3			MOVEMENT	▼						▼	ON	PWL3_MOV					1'	00:01:00
4			WATER LOAD	140/90						ELV3	OFF	Motor Stopped					Tout 15'	00:01:10
5			MOVEMENT								LEV	PWL1_MOV			▼	▼	4'	00:04:00
6			HEAT+MOV												En	30	Tout 40'	00:06:00
7			MOVEMENT												▼	▼	2'	00:02:00
8			HEAT+MOV								▼	▼		▼	▼	30	14'	00:14:00
9			MOVEMENT						▼		OFF	Motor Stopped		Dis	Dis	OFF	22"	00:00:20
10			WATER DRAIN						Lev								Tout 10'	00:00:20
11			TIME WATER DRAIN	▼					ON								1'	00:01:30
12	**1 RINSE**		CALIBRATION	40/15					▼								Tout 10'	00:00:00
13			MOVEMENT	▼					OFF					▼			5"	00:00:10
14			WATER LOAD	135/85							▼	▼		En			Tout 15'	00:01:10
15			MOVEMENT						▼		ON	PWL3_MOV		▼			3'	00:03:00
16			WATER DRAIN						Lev		OFF	Motor Stopped		Dis			Tout 10'	00:00:20
17			TIME WATER DRAIN	▼					ON								1'	00:01:30
18	**2 RINSE**		CALIBRATION	40/15					▼								Tout 10'	00:00:00
19			MOVEMENT	▼					OFF					▼			5"	00:00:10
20			WATER LOAD	135/85							▼	▼		En			Tout 15'	00:01:10
21			MOVEMENT						▼		ON	PWL1_MOV		▼			3'	00:03:00
22			WATER DRAIN						Lev		OFF	Motor Stopped		Dis			Tout 10'	00:00:20
23			TIME WATER DRAIN	▼					ON								1'	00:01:30
24	**SOFTENING**		CALIBRATION	40/15					▼								Tout 10'	00:00:00
25	**RINSE**		MOVEMENT	▼					OFF	▼				▼			5"	00:00:10
26			WATER LOAD	135/85						ELV2 ELV3	▼	▼		En			Tout 15'	00:01:10
27			MOVEMENT						▼		ON	PWL1_MOV		▼			5'	00:05:00
28			MOVEMENT	▼					▼		OFF	Motor Stopped		Dis			22"	00:00:20
29	**SPINNING**		CALIBRATION	40/15					ON								Tout 10'	00:00:00
30			WATER DRAIN	▼					Lev		▼	▼					Tout 10'	00:00:20
31		▼	SPINNING	▼	▼	▼	▼		ON	▼	ON	IMP4	▼	▼	▼	▼	Tout 20'	00:14:20

Mechanic	Off	On	1/min
D_MOV	12	4	55
N_MOV	8	6	55
E_MOV	4	8	55
PWL3_MOV	12	1	35
PWL4_MOV	57	1	35
PWL1_MOV	53	1	35
E1_MOV	4	10	75

Niveaus		
AF_LEV	40/15	mm
Softn_LEV	42/15	mm
WOL_LEV	140/90	mm
HIGH_LEV	135/85	mm

Legend Niveaus

Typ	Describtion
WC	Water control level
PPC	Recirculation control level
DPC	Drain pump level
MC	Motor Niveau

Nachtakten

NR	Normal refill
VT	Virtual refill
WL	Analog ic sensor
AB	Anti boil protection