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DGS-TDS-N  
Edition 12.06

**Washing machines,  
Toploader**

**LCD-appliance  
EWM 2500, 2100**

**ENV 06  
TC3 low, TC3 high, TC2**

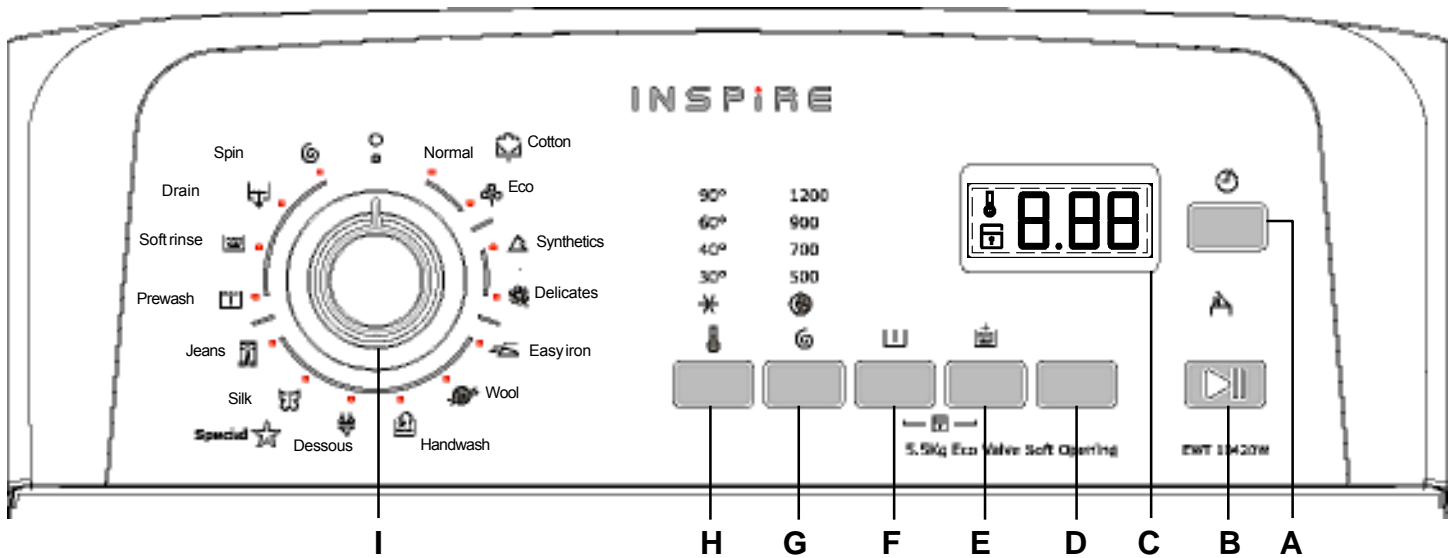
**ELECTROLUX**

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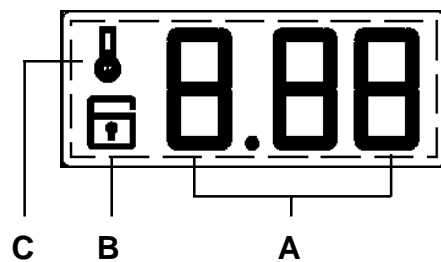
# Control Panel

## Version TC3 low (Electrolux-design)



- |                                    |                          |
|------------------------------------|--------------------------|
| <b>A</b> Delayed start             | <b>F</b> Prewash         |
| <b>B</b> Start, Pause              | <b>G</b> Spin            |
| <b>C</b> Multifunctionsdisplay LCD | <b>H</b> Temperature     |
| <b>D</b> Options                   | <b>I</b> Programselector |
| <b>E</b> Extra rinses              |                          |

## Multifunctionsdisplay LCD



- |                       |                      |
|-----------------------|----------------------|
| <b>A</b> Display      | <b>C</b> Temperature |
| <b>B</b> Child safety |                      |

## Display

Function:

- delayed start selection with the delayed start button
- cycle duration and remaining time indicated in hours and minutes 2.08 (e.g. 2h08min)
- information on error codes (e.g. E10)
- End of cycle when 0.00 is indicated.

## Standby

Function:

- After 10 minutes of standby in the pre-selection position or at the end of the cycle, the light of the Display switches off and the LED Start/Pause flashes slowly.  
Pressing any button or rotating the selector, the appliance returns to the normal status (following model MCF-file).

## Child safety



Function:

- All keys are blocked (see page 16).

## Temperature

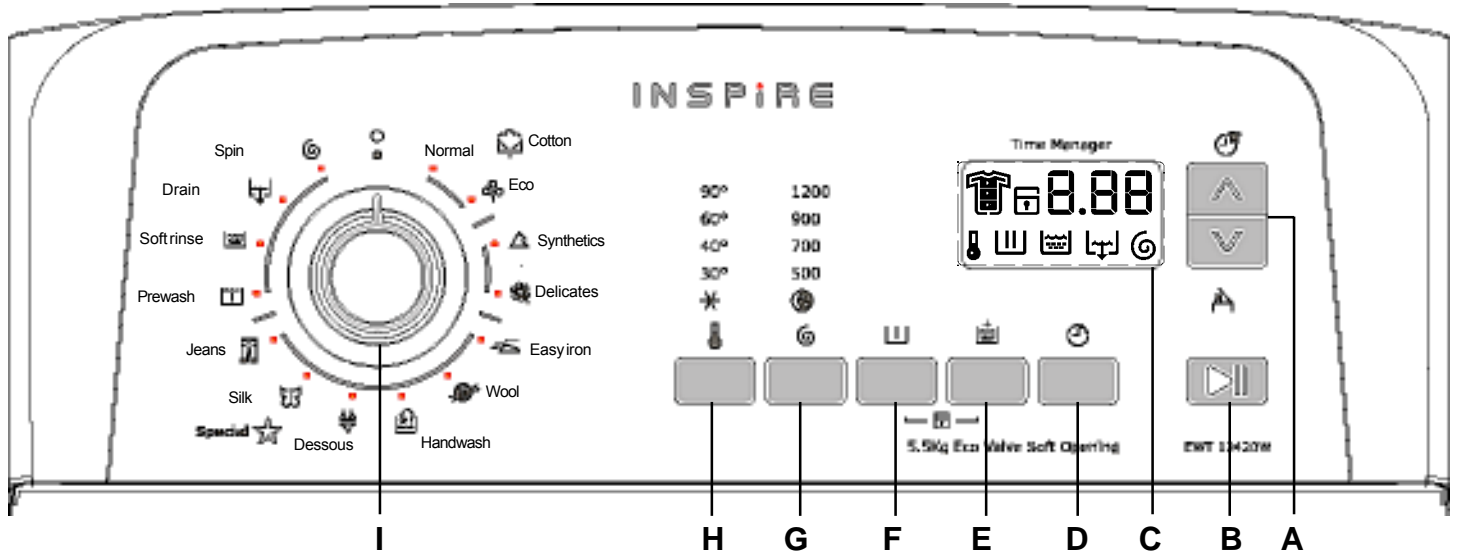


Function:

- Is lit when heater is selected.

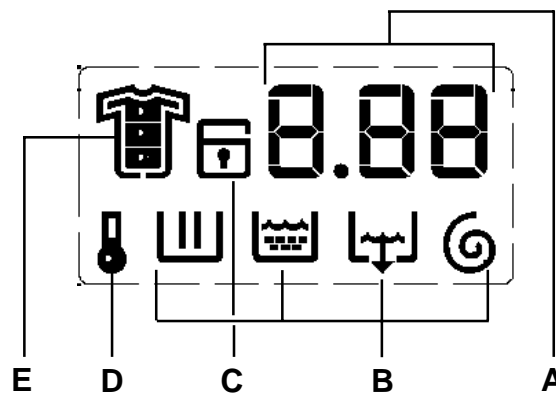
# Control Panel

Version TC3 high (Electrolux-design)



- |                                    |                          |
|------------------------------------|--------------------------|
| <b>A</b> Time Manager              | <b>F</b> Prewash         |
| <b>B</b> Start, Pause              | <b>G</b> Spin            |
| <b>C</b> Multifunctionsdisplay LCD | <b>H</b> Temperature     |
| <b>D</b> Delayed start             | <b>I</b> Programselector |
| <b>E</b> Extra rinses              |                          |

## Multifunctionsdisplay LCD







- |                       |                       |
|-----------------------|-----------------------|
| <b>A</b> Display      | <b>D</b> Temperature  |
| <b>B</b> Cycles       | <b>E</b> Time Manager |
| <b>C</b> Child safety |                       |

## Display

Function:

- delayed start selection with the delayed start button
- cycle duration and remaining time indicated in hours and minutes 2.08 (e.g. 2h08min)
- information on error codes (e.g. E10)
- End of cycle when 0.00 is indicated.

## Cycles

washing	rinse	drain	spin
			

## Standby

Function:

- After 10 minutes of standby in the pre-selection position or at the end of the cycle, the light of the Display switches off and the LED Start/Pause flashes slowly.  
Pressing any button or rotating the selector, the appliance returns to the normal status.

## Child safety



Function:

- All keys are blocked (see page 16).







## Temperature



Function:

- Is lit when heater is selected.

## Time Manager

Program	Soiling degree					
						
	intensiv	normal	daily	quick	extra quick	super quick
Cotton	X	X	X	X	X	X
Easy care		X	X	X		X
Delicate		X	X	X		X

Function:

- The washing cycle is extended or reduced depending on the selected degree of soiling level.

e.g. Cotton 60°C



Cotton 60°C + intensiv

2h 10min



Cotton 60°C + normal

2h 00min



Cotton 60°C + daily

1h 40min



Cotton 60°C + quick

1h 30min



Cotton 60°C + extra quick

1h 20min

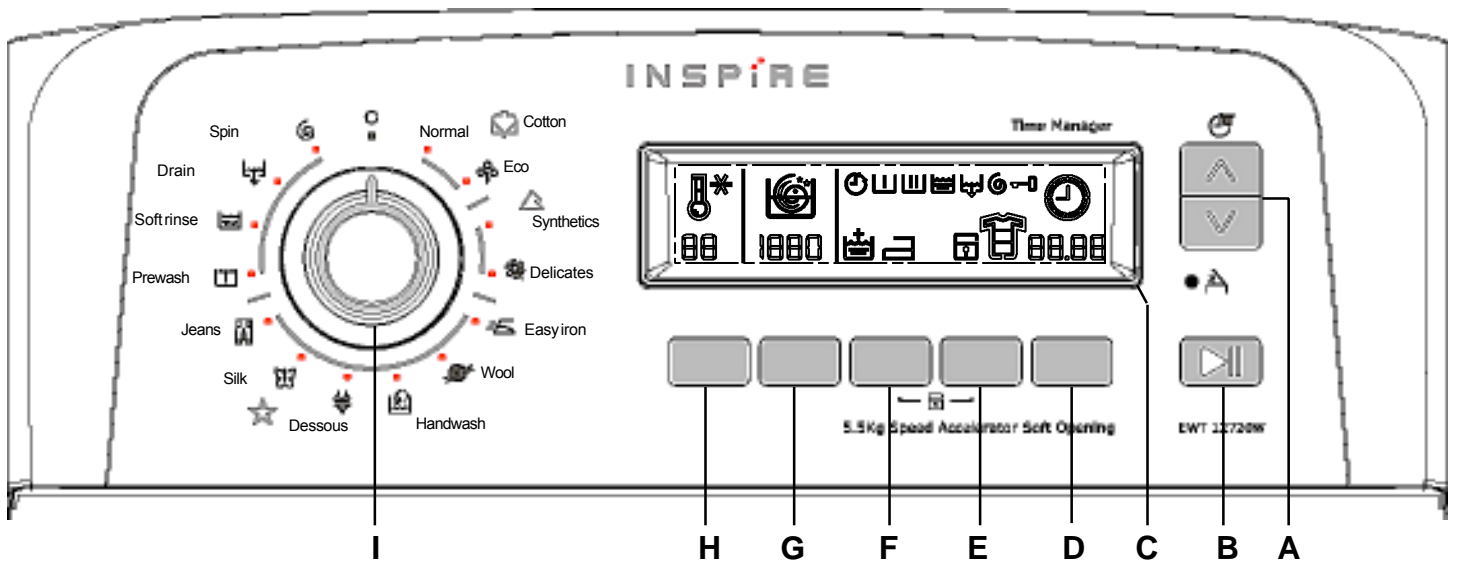


Cotton 60°C + super quick

1h 00min

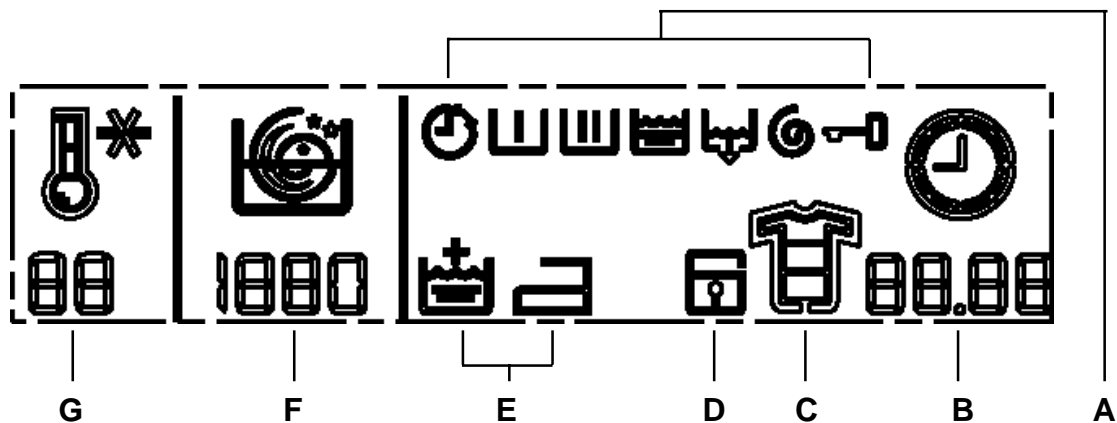
# Control Panel

Version TC2 (Electrolux-design)



- |                                    |                          |
|------------------------------------|--------------------------|
| <b>A</b> Time Manager              | <b>F</b> Prewash         |
| <b>B</b> Start, Pause              | <b>G</b> Spin            |
| <b>C</b> Multifunctionsdisplay LCD | <b>H</b> Temperature     |
| <b>D</b> Delayed start             | <b>I</b> Programselector |

## Multifunctionsdisplay LCD



- |                       |                      |
|-----------------------|----------------------|
| <b>A</b> Cycles       | <b>E</b> Options     |
| <b>B</b> Display      | <b>F</b> Spin        |
| <b>C</b> Time Manager | <b>G</b> Temperature |
| <b>D</b> Child safety |                      |



## Display

Function:

- delayed start selection with the delayed start button
- cycle duration and remaining time indicated in hours and minutes 2.08 (e.g. 2h08min)
- information on error codes (e.g. E10)
- End of cycle when 0.00 is indicated.

## Cycles

prewash	washing	rinse	drain	spin

Symbol	Status	process
	ON	cycle is running (lid closed)
	OFF	lid not closed

## Standby

Function:

- After 10 minutes of standby in the pre-selection position or at the end of the cycle, the light of the Display switches off and the LED Start/Pause flashes slowly. Pressing any button or rotating the selector, the appliance returns to the normal status.

## Child safety



Function:

- All keys are blocked (see page 16).

## Option



Function:

- Depending on model there can be various additional features.

## Spin

Function:

- A corresponding symbol is indicated depending on the selected speed.
- Animated spiral symbol during spin cycle.
- Night cycle- and Rinse hold-Symbol









## Temperature

Function:

- A corresponding symbol is indicated depending on the selected temperature.
- The temperature is indicated in degree Celsius.



## Time Manager

Program	Soiling degree					
	 intensiv	 normal	 daily	 quick	 extra quick	 super quick
Cotton	X	X	X	X	X	X
Easy care		X	X	X		X
Delicate		X	X	X		X

Function:

- The washing cycle is extended or reduced depending on the selected degree of soiling level.

e.g. Cotton 60°C



Cotton 60°C + intensiv

2h 10min



Cotton 60°C + normal

2h 00min



Cotton 60°C + daily

1h 40min



Cotton 60°C + quick

1h 30min



Cotton 60°C + extra quick

1h 20min



Cotton 60°C + super quick

1h 00min

## Push Buttons

### Spin deselection button

Function:

- By pressing this key, you can reduce spin-dry speed step by step down to zero, to rinse hold or to night cycle.
- Reduces the spinning speed of all spin-dry cycles.

1500	1400	1200	1000	800	600	400	0	Rinse hold	Night Cycle
	1400	1200	1000	800	600	400	0	Rinse hold	Night Cycle
	1300	1200	1000	800	600	400	0	Rinse hold	Night Cycle
		1200	1000	800	600	400	0	Rinse hold	Night Cycle
			900	800	600	400	0	Rinse hold	Night Cycle
				700	600	400	0	Rinse hold	Night Cycle

### Temperature button

Function:

- To activate the temperature button it is necessary to select a program.
- By pushing this button the washing temperature can be reduced to 0°C step-by-step.

adjust temperature	95°C	60°C	50°C	40°C	30°C	0°C
--------------------	------	------	------	------	------	-----

### Start/ Pause button

Function:

- The selected program is activated by pressing the start/pause button. The LED start/pause on.
- If the cycle is to be paused, press the start/pause button. Start/ Pause-LED blinks. The program interrupt.
- This is not possible after a program run time of 10 min..
- The LED-lid or LED-add washing off.

LED	status	process
start/pause	(green) ON	cycle is running (lid closed)
	(green) Flashing	cycle in pause position
	(red) Flashing	additional option key pressed, after program start. Err in display.
	OFF	
lid (green)	ON	lid can be opened, it is possible to pause the cycle
	OFF	cycle running, no possibility to pause
add washing (green)	ON	lid can be opened, it is possible to pause the cycle
	OFF	cycle running, no possibility to pause

### Delayed Start button



Function:

- Hold the "delayed start" button pressed, the start time will be indicated in the display and counted up, the start time can be selected max. from 0h, 30', 60', 90', 2h - 20h.
- The start time is counted down hour by hour, from 90 min in steps of 30 minutes, from 30 min in steps of minutes.
- Change of delayed start:
  - switch off the programselector
  - select a new program again

## Options

The selection of the options is to be carried out after switching on the appliance and setting the desired programme with the selector and before pressing the start/pause button.

Programmes		Options																
		Rinse-hold	Night cycle	Pre-wash	Stains	Bleach	Extra rinse	Easy iron	Eco	Intensiv	Normal	Daily	Light	Quick	Super quick	Reduced spin speed	no spin	Half-load
Compatibility with programmes	Cotton	90°C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		60°C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		50°C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		40°C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		30°C	X	X	X		X	X	X		X	X	X	X	X	X	X	X
	cold	X	X	X		X	X	X		X	X	X	X	X	X	X	X	
	Synthetic	60°C	X	X	X	X	X	X	X		X	X	X		X	X	X	
		50°C	X	X	X	X	X	X	X		X	X	X		X	X	X	
		40°C	X	X	X	X	X	X	X		X	X	X		X	X	X	
		30°C	X	X	X		X	X			X	X	X		X	X	X	
		cold	X	X	X		X	X			X	X	X		X	X	X	
	Delicates	40°C	X	X	X	X	X				X	X	X		X	X	X	
		30°C	X	X	X		X				X	X	X		X	X	X	
		cold	X	X	X		X				X	X	X		X	X	X	
	Wool	40°C	X	X							X					X		
		30°C	X	X							X					X		
		cold	X	X							X					X		
	Easy iron	60°C	X		X			X	X		X					X	X	
		50°C	X		X			X	X		X					X	X	
		40°C	X		X			X	X		X					X	X	
		30°C	X		X			X	X		X					X	X	
	cold	40°C	X		X			X	X		X					X	X	
		30°C	X		X			X	X		X					X	X	
		cold	X		X			X	X		X					X	X	
		cold	X		X			X	X		X					X	X	
	Blanket	40°C									X					X		
		30°C									X					X		
	Jeans	60°C	X	X	X			X	X		X					X	X	
		50°C	X	X	X			X	X		X					X	X	
		40°C	X	X	X			X	X		X					X	X	
		30°C	X	X	X			X	X		X					X	X	
	cold	40°C	X	X	X			X	X		X					X	X	
		30°C	X	X	X			X	X		X					X	X	
		cold	X	X	X			X	X		X					X	X	
	Shoes	40°C	X	X	X			X			X					X		
		30°C	X	X	X			X			X					X		
		cold	X	X	X			X			X					X		
	Lingerie	40°C	X	X							X					X	X	
		30°C	X	X							X					X	X	
		cold	X	X							X					X	X	
	Silk	30°C	X	X											X	X	X	
		cold	X	X											X	X	X	
	Baby, Sport intensiv	40°C	X	X	X			X			X					X	X	
		30°C	X	X	X			X			X					X	X	
		cold	X	X	X			X			X					X	X	
	Sport light, Mi	30°C													X	X	X	
	Sanitär	90°C	X	X	X	X	X			X						X	X	
	5 Shorts	30°C													X	X		
	MIX 40°-60°	40°C	X	X	X	X	X		X							X	X	X
	Hygiene +	90°C	X	X		X	X	X			X					X	X	X
60°C		X	X		X	X	X			X					X	X	X	
50°C		X	X		X	X	X			X					X	X	X	
40°C		X	X		X	X	X			X					X	X	X	
Gras	60°C	X	X	X	X	X	X		X						X	X		
	50°C	X	X	X	X	X	X		X						X	X		
	40°C	X	X	X	X	X	X		X						X	X		
Express	60°C	X				X								X	X			
Sensitiv Plus	60°C	X	X	X	X	X	X			X		X			X	X		
Quick	30°C	X								X					X			
Soak	30°C			X						X								
Rinses		X	X			X	X	X							X	X		
softener		X	X			X									X	X		
Conditioner		X	X				X								X	X		
Drain																		
Spin															X			
Gentle spin															X			

Function:



### Rince hold

- The program is finish with water in the drum.
- In order to continue a program afterwards, you first have to select a separate draining or spinning.

Function:



### Night Cycle

- The number of rinces are increase cotton/cotoured from three rinces to six rinces and synthetic from three rinces to four rinces.
- All rinces are without a spinphase.
- The programm is stopped in a rinse hold.
- In order to continue a program afterwards, you first have to select a separate draining or spinning.
- Switches off the buzzer ( if configured)

Function:



### Pre-Wash

- It is heated up to max. 30 ° C.
- Can't be combined with the programe wool, silk and sport 30.

Function:



### Stains

- The selected temperature however must be  $\geq 40^{\circ}\text{C}$ .
- Separate rinsing in of stain remover through the pre-wash chamber, approx. 1.2 ltrs.
- Can't be combined with the pre-wash function.
- Extends the cycle duration in the main wash by 5 minutes after the first heating to  $40^{\circ}\text{C}$ .

Function:



### Extra rinse

- Two additional rinse cycles are added in the cycle cotton / coloured.
- One additional rinse cycle are added in the cycles synthetics, delicate fabrics and silk.
- No intermediate rinse, except after the last rinse cycle.

Function:



### Easy Iron 40°

With **cotton/coloureds** programmes:

- No intermediate spin-dry cycle.
- 3 additional rinse cycles.
- Pulse spin-dry
- Additional loosening phase after spin-drying

With **synthetics** programmes:

- Reduced wash temperature
- Prolonged wash time and prolonged cooling phase
- One additional rinse cycle
- Additional loosening phase after spin-drying

Function:



### Energy Saving

- The washing temperature in the programs:
- $E90^{\circ}\text{C}$  is reduced to  $67^{\circ}\text{C}$ , the max. temperature kept constantly for a certain period of time.
- $E60^{\circ}\text{C}$  is reduced to  $40^{\circ}\text{C}$ , the max. temperature kept constantly for a certain period of time.
- $E40^{\circ}\text{C}$  is reduced to  $40^{\circ}\text{C}$ , the max. temperature achieved for a short moment.
- Can't be combined with the quick function.

## Programselector

Depending on the model, the electronic may include a programselector with 15 or 21-positions. The programselector includes the “on/off” function and the wash programs.



## Programme

### Jeans



Function:

- The cycle includes a main cycle, five rinse cycles. (1. and 2. rinses without intermediate spins and 3., 4., 5. rinses with intermediate spins max.1200 1/min).
- The load amount is 3kg.
- Can be combined with the Night Cycle Pre-wash and Spin deselection button.

### Shoes 30°, 40°



Function:

- The program consists of a main wash, three rinses without intermediate spins but with an end spin. (1000 1/min).
- It is heated up to 40 °C.
- Can be combined with the Quick, Extra rinse, Night Cycle, Pre-wash, Soaking and Spin deselection button.

### Silk 30°



Function:

- The program consists of a main wash, three rinses without intermediate spins but with an end spin. (700 1/min).
- Washing time during main wash is 10 min.
- The load amount is 1kg.

### Baby 30°, 40°



Function:

- The program consists of a main wash, three rinses with higher water levels without intermediate spins, but with an end spin. (700 1/min).
- The load amount is 2kg.

### Sanitär 90°

Function:

- The program consists of a main wash, three rinses with intermediate spins but with an end spin. (1200 1/min).
- Washing temperature during main wash is kept constantly to 85° for 10 min.
- The load amount is 5,5kg.

### **Dessous 30°, 40°**



Function:

- The program consists of a main wash, three rinses without intermediate spins but with an end spin. (900 1/min).
- The load amount is 1Kg.

### **Blanket 30°, 40°**

Function:

- The program consists of a main wash, three rinses with higher water levels (20ltr.) intermediate and end spin. (650 1/min).
- The load amount is 2,5kg.

### **Soak**



Function:

- The soaking period begins with pre-wash and soaks for about the next 30 minutes.
- Can't be combined with the function pre-wash.
- It is heated up to 30 °C.
- A short spin cycle is performed in the cycles COTTON and SYNTHETICS, before passing on to the main wash.
- You can prolong soaking time for max. 0h, 30', 60', 90', 2h - 10 h using the „Start preset“ key.
- After pressing the start key, the duration of the cycle is displayed by hours and minutes.

### **Sport light 30°**

Function:

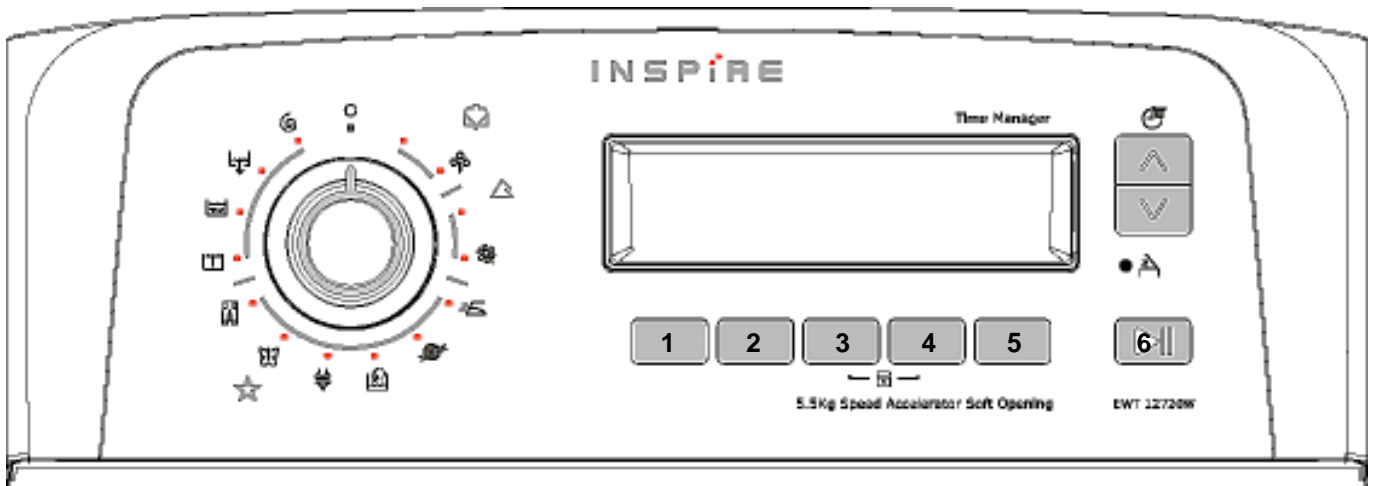
- The program consists of a main wash, two rinses with higher water levels without intermediate spins, but with an end spin. (700 1/min).
- The load amount is 2kg.

### **Sport intensiv 30°, 40°**

Function:

- The cycle consists of prewash, higher water level, heating to 30° and spin cycle to 650 1/min, one main wash, two rinse cycles without intermediate spin with higher water level but with final spin (900 1/min).
- The load amount is 2,5kg.

## Buzzer, Extra rinse cycle, Child safety



### Activation and deactivation of the buzzer:

Function:

- Depending on the model, the electronic may include a buzzer.
- Switch off the appliance.
- Hold buttons 3 and 2 pressed simultaneously and turn the program selector one position to the right. The buzzer is activated.
- You can deactivate the buzzer by repeatedly pressing the key combination.

### Activation and deactivation of the extra rinse cycle:

Function:

- If no extra rinse key is available, you can select extra wash.
- This button is effective in the cycles cotton/coloured wash, synthetics and delicate fabrics.
- Two additional rinse cycles are added.
- No intermediate rinse, except after the last rinse cycle.
- Switch off the appliance.
- Hold buttons 4 and 2 pressed simultaneously and turn the program selector one position to the right. The extra rinse is activated.
- You can deactivate extra wash by repeatedly pressing the key combination.

### Activation and deactivation of the child safety:

Function:

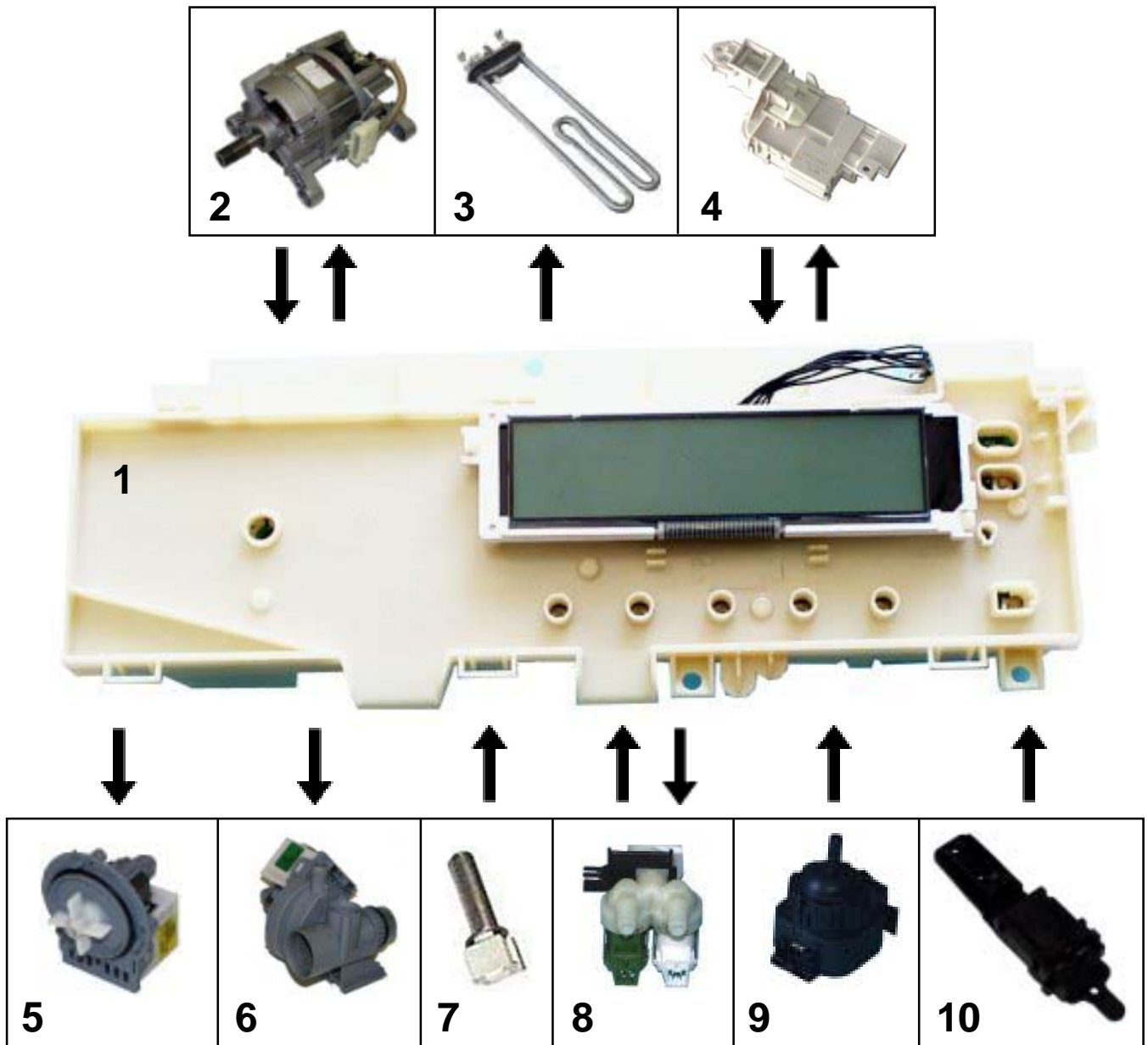
- The child safety function can be activated at the start of the program and also after the program has started.
- Press keys 4 and 3 simultaneously and hold until a symbol appears on the LCD.
- The option is activated, the initiated wash program runs normally through and on completion any further function of the appliance is disabled. The option remains saved when the appliance is turned off.
- You can deactivate child safety by repeatedly pressing the key combination.





# Functions of the System

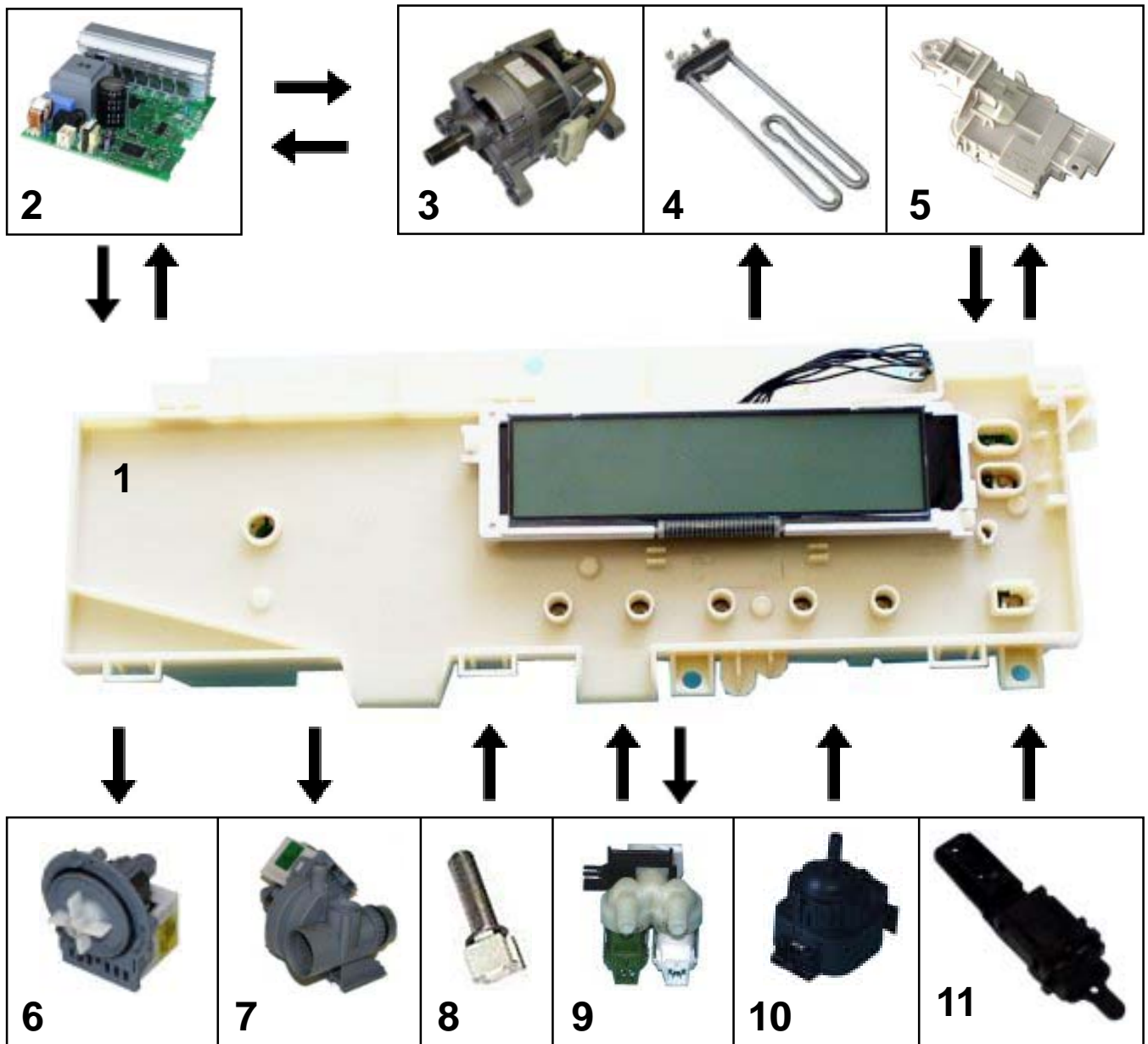
Electronic EWM2100 with universal motor AC



1. electronic module
2. motor
3. heating element
4. door security
5. drain pump
6. circulation pump
7. NTC-sensor
8. inlet valve with flow-meter-sensor
9. analog pressure switch
10. drum self position (DSP)

# Functions of the System

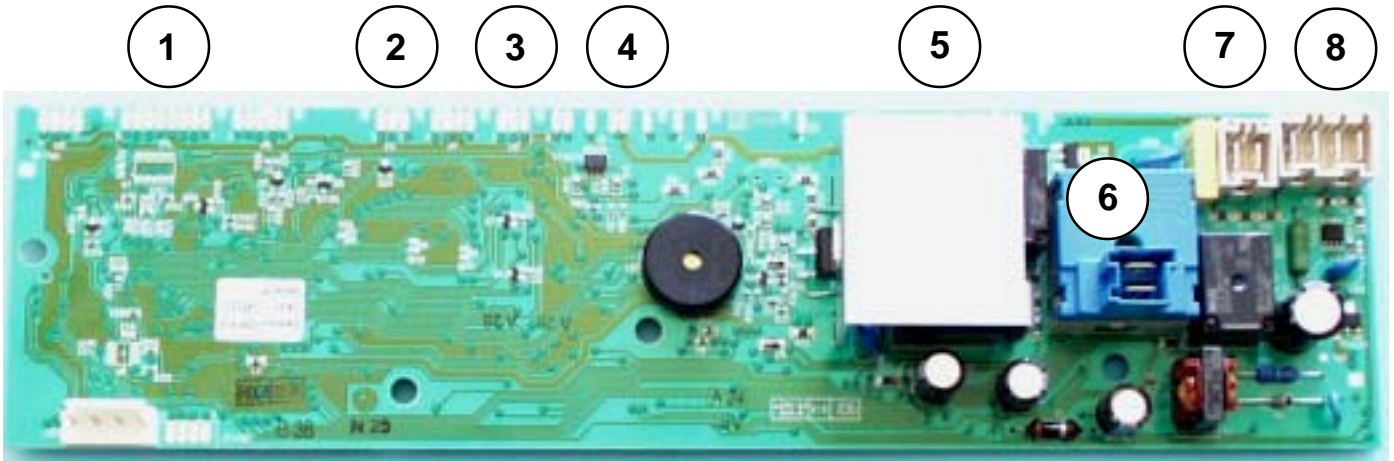
Electronic EWM2500 with asynchronous three-phase motor



1. electronic module
2. motor control board
3. motor
4. heating element
5. door security
6. drain pump
7. circulation pump
8. NTC-sensor
9. inlet valve with flow-meter-sensor
10. analog pressure switch
11. drum self position (DSP)

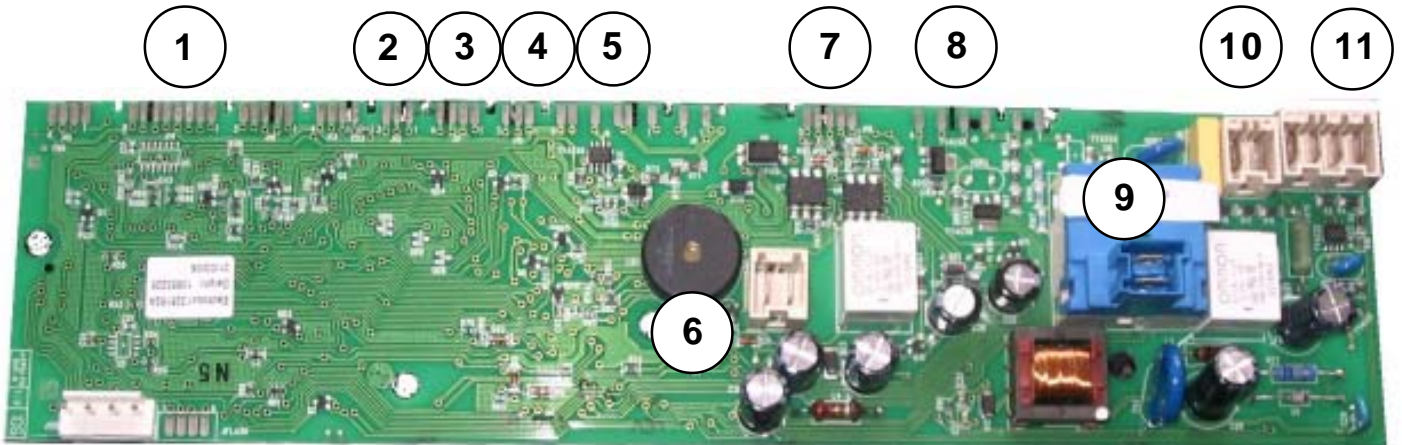
## Connection cable electronic

### Electronic EWM2100



1. multifunctionsdisplay LCD
2. drum self position (DSP)
3. analogic pressue switch
4. NTC-sensor, Inlet valve with flow-meter-sensor
5. motor, drain pump
6. Power supply 230V
7. heating element
8. door security

### Electronic EWM2500



1. multifunctionsdisplay LCD
2. drum self position (DSP)
3. flow-meter-sensor
4. analogic pressue switch
5. NTC-sensor, Inlet valve
6. Power supply motorcontrol board
7. motorcontrol board +5V, +15V
8. drain pump, circulation pump
9. Power supply 230V
10. heating element
11. door security

## Electronic Module

The electronic module, including the  $\mu$ P, controls various functions and is placed in a protective housing.

It is the communication interface between the user and the appliance.

It consists of:

- The option buttons and the multifunctiondisplay LCD.
- The programselector with 15 or 21-positions.
- The time display and the alarm identification.
- The "Start/Pause" button.



Functions:

- Taking data of the selected cycle programs through the module.
- Water level control (antifoam, overflow level) in the tub; the level is recognized by the analog pressure switch.
- Cycle temperature control by a NTC sensor.
- Power supply of the heating element.
- Power supply of the drive motor (EWM2100) and control of its speed by the tachymetric generator.
- Control of the motor control board (EWM2500).
- Control of water inlet valves.
- Control of drain pump, circulation pump, door lock and DSP (drum self position).

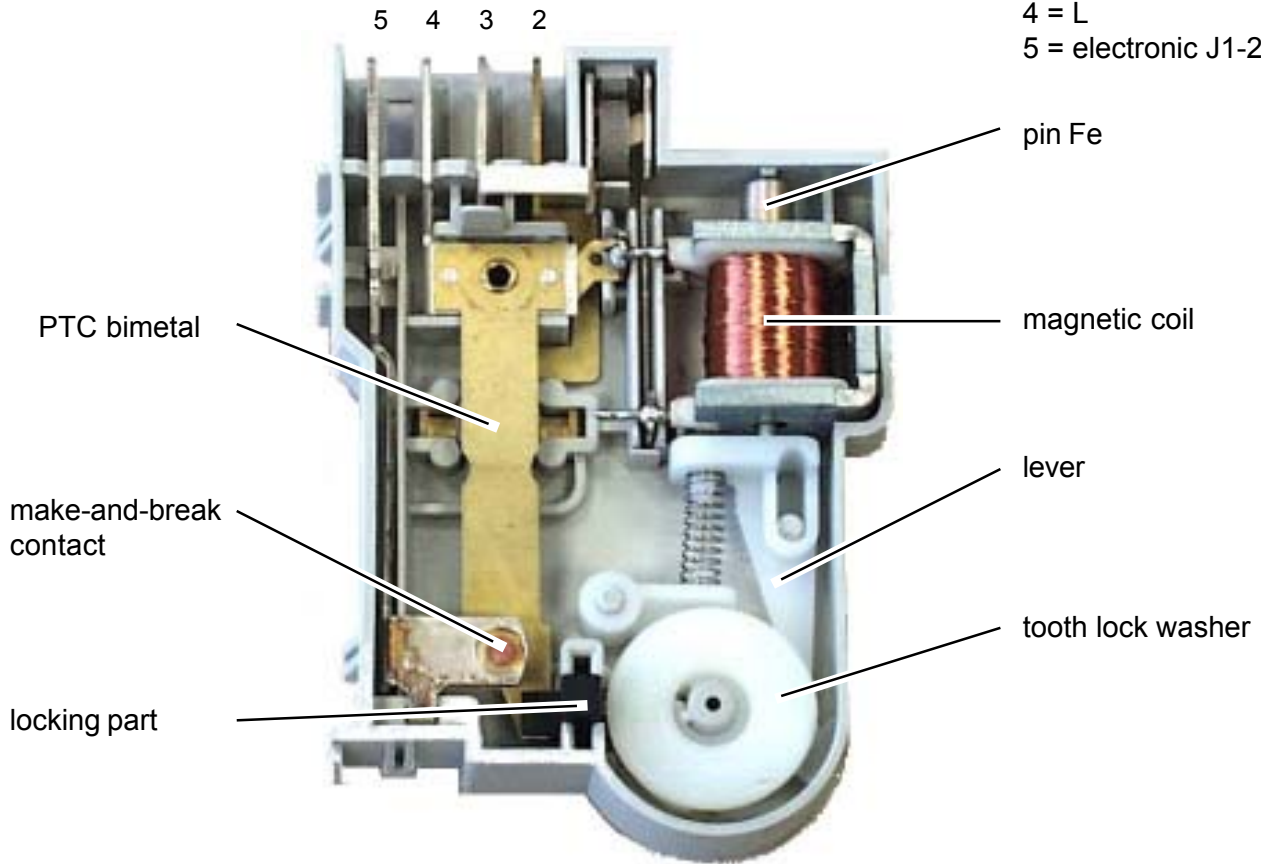
In case of a power failure the module saves the just paused cycle.

- When the power supply to the appliance is restored again, the cycle starts where the program was paused.



## Door Lock

2 = N  
 3 = impulse electronic  
 4 = L  
 5 = electronic J1-2



**When closing** the lid the door lock gets an impulse from the electronic by contact 3. The impulse feeds the magnetic coil over the PTC resistor. This moves the lever down and the tooth lock washer is forwarded by another tooth. This can be heard by a click. The locking part is unlocked, the lid is closed.

**When opening** the lid, e.g. with the start/pause button or at the end of the cycle, the door lock gets two impulses from the electronic. The tooth lock washer is moved twice. Only because of the second impulse the lid can be opened **immediately**.

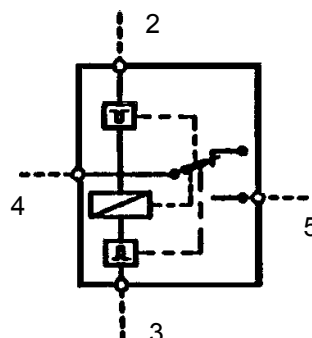
The second impulse unlocks the locking part mechanically through the tooth lock washer.

Why two impulses?

The door lock is controlled by a triac which is on the main circuit board. If there is a triac short circuit, the electronic sends an impulse to the door lock. The customer could open the appliance, if the second impulse was not required.

If there is a **power failure** during a wash cycle, the door lock requires approx. 2 min until the lid can be opened. During this time the PTC bimetal cools down and the locking part opens.

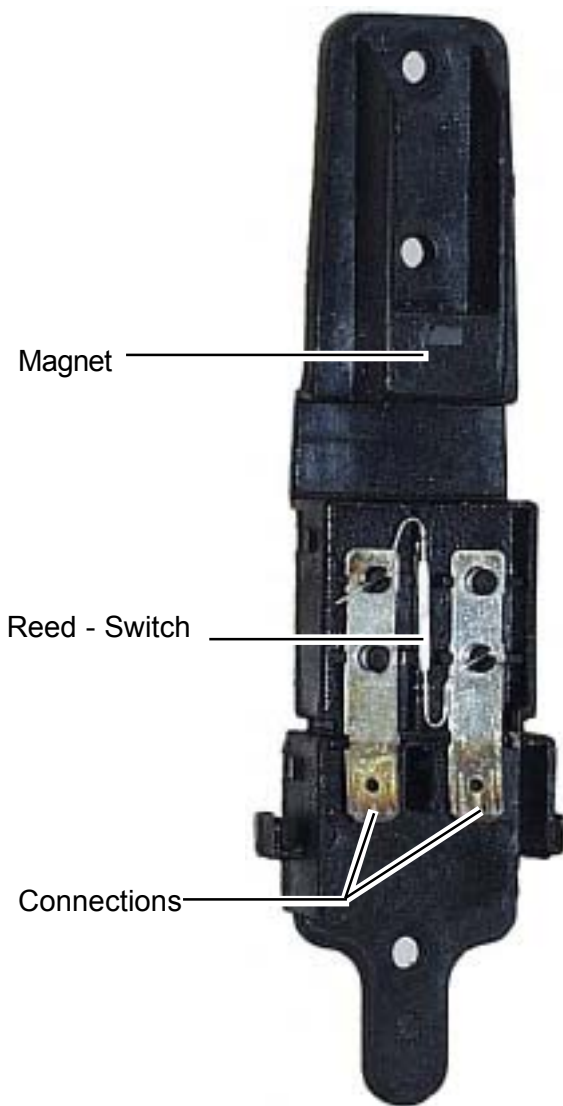
## Circuit Diagram



## Security:

(see page **Service - Program** fault display E40)

## DSP (Drum-Self-Position)



Control ( check ) the DSP-Function:

1. Remove the side panel, switch on the appliance  
- Turn the drum to the right position ---> LED on  
- Turn the drum over the right position ---> LED off
2. Remove the two plugs from the DSP and check the resistance of the reed relay.  
- Turn the drum to the right position --->  $> 0\Omega$   
- Turn the drum over the right position --->  $0\Omega$
3. The drum is still in the right position.  
Now measure the voltage. 5-6V DC  
- If there is no voltage ---> Cable, Main electronic board is defective
4. Check the In / Output electronic in the customers service test program.  
- LED on ---> In / Output electronic OK.  
- LED off ---> In / Output electronic defective.

### Function:

The reed relay is closed if the metallic sheet, located on the pulley, isn't between the magnet and the reed relay. If the position of the metallic sheet is between those parts the contact of the reed relay is opened.

### To mount the pulley in the correct way, you have to take care about following items:

The metal sheet located on the pulley should be in the drum self positioning device, if the door of the drum is in the upper position. The DSP is supplied with 5-6 V DC by the main board.

### Condition drum positioned:

Reed contact opened, LED-Drum positioned illuminated, 5-6V DC.

### Condition drum out of position:

Reed contact closed, LED-Drum positioned not illuminated, 0V.

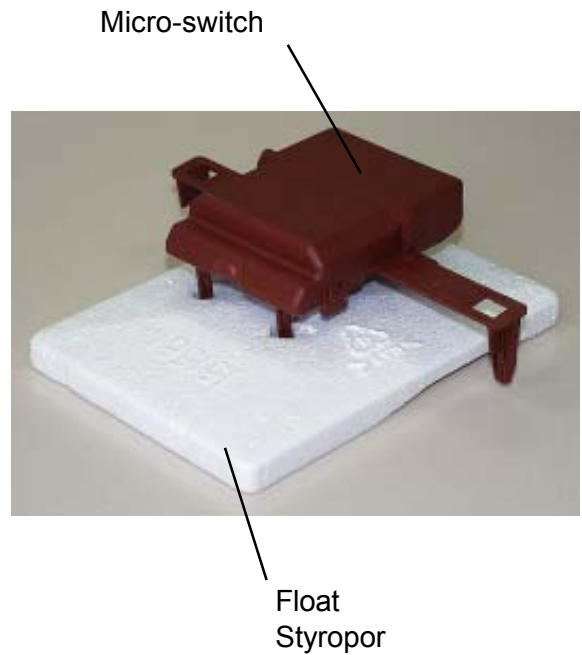
If the washing cycle is interrupted by the start pause button the drum has to be positioned within 10 sec. During this time 2-3 attempts can be executed. If the drum isn't positioned during this time, the lid of the appliance is released and can be opened. The LED drum positioned is not illuminated. At the end of the cycle the positioning phase is 2 min until time out is reached.

## Float switch

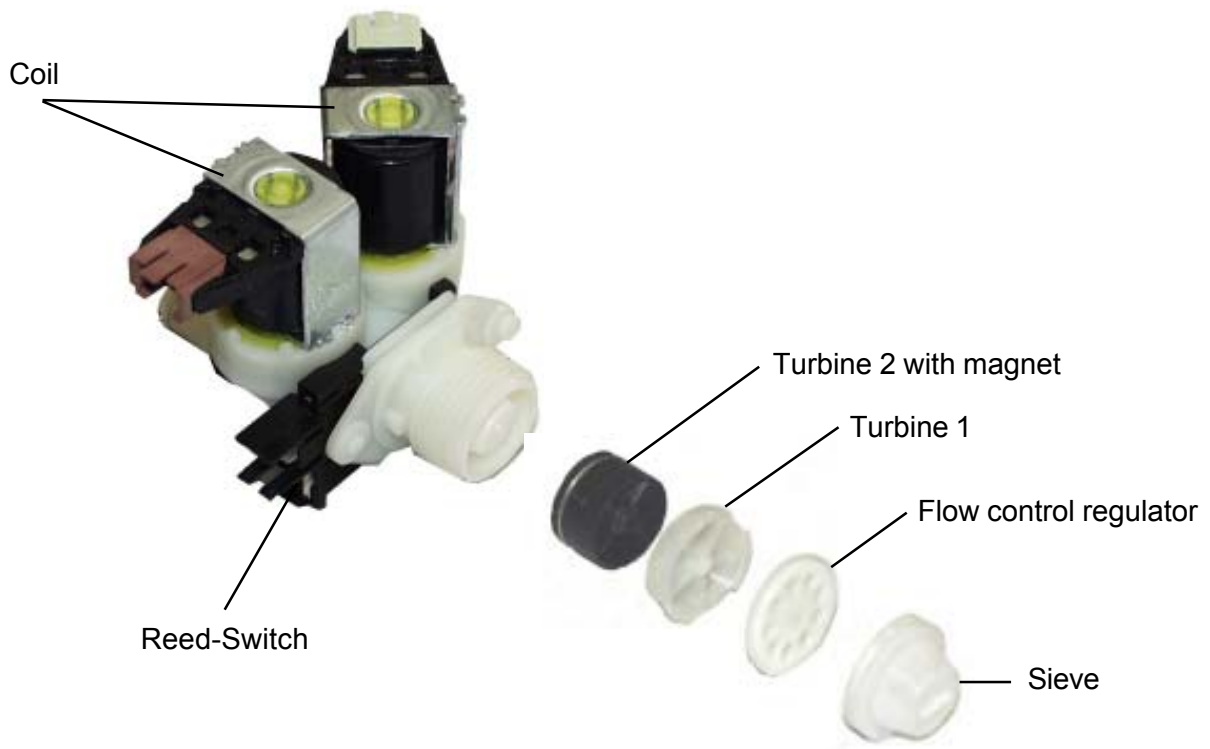
The float switch is made of a housing with a micro switch and a float body.

### Function:

The float switch is located in the bottom tray. The bottom tray is constructed in a way that the water is gathering in the area of the float switch in case of leaky components (tub, hoses, etc.). The float body comes up and switches a micro switch. This selects the drain pump, the existing water in the tub is drained. The inlet valve is switched off.



## Inlet valve with flow-meter-sensor



Depending on the type of appliance, the automatic washer can be equipped with a 2-fold inlet valve with or without flow-meter-sensor.

### Function:

The inlet valve includes a flow meter sensor. The flow meter sensor emits electrical pulses of 5V to the main electronic. This is enabled by a magnet which opens and shuts a reed contact. The magnet is located on a movable turbine 2. Because of the water pressure the turbine rotates and thus gives impulses to the main electronic. The water pressure of > 1 bar is limited by the volume regulator to 5.5 l/min +15%/-15%.

(see Page **Service - Program** fault display EC0)

## Water Inlet Valve for 3-chamber detergent box



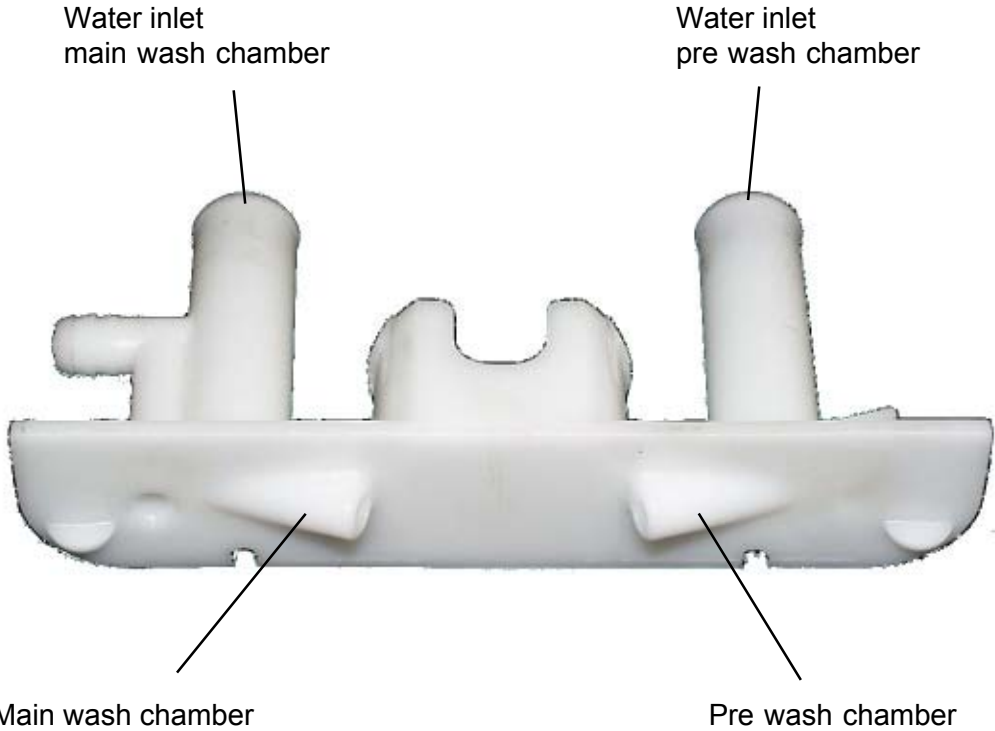
- 1 - connection water inlet hose
- 2 - inlet valve, 2-fold
- 3 - hose for pre-wash
- 4 - hose for main wash
- 5 - water distributor
- 6 - hose for fluff filtre

**\*) Attention!**

The simultaneous filling through hoses 3 and 4 provides the fill-in through the softener chamber.



# Water Distributor

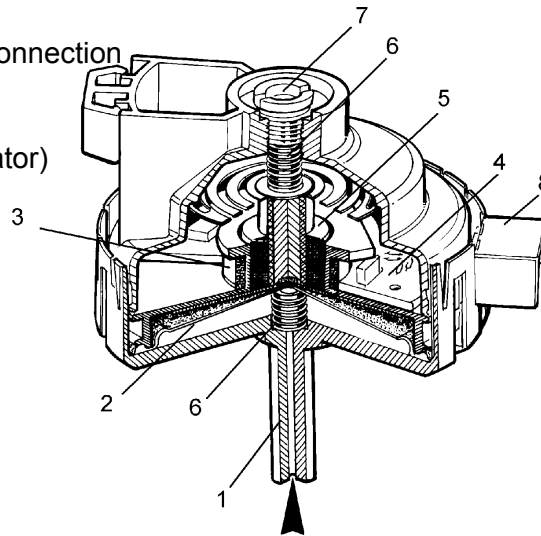


## Analogic pressure switch

The analogic pressure switch controls the water level in the tub, it is directly connected to the electronic modul.

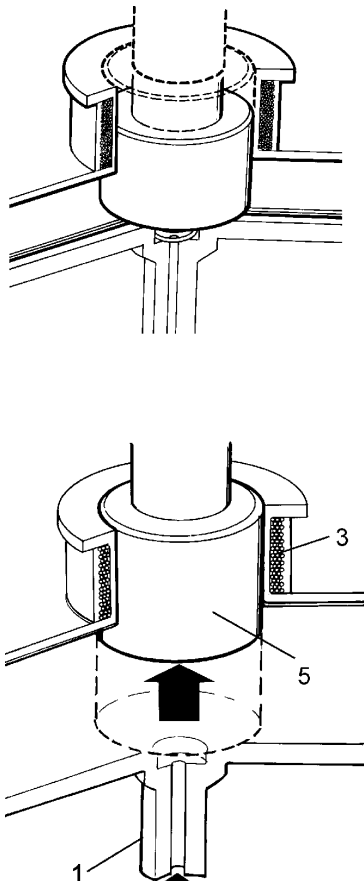
If the pressure switch does not work correctly, the programm in progress is cancelled:

1. Pressure switch hose connection
  2. Diaphragm
  3. Coil (self)
  4. Electronic circuit (oscillator)
  5. Magnet
  6. Spring
  7. Adjusting screw
  8. Connector
- Kontakt 1 = Out  
Kontakt 2 = GND  
Kontakt 3 = 5V DC

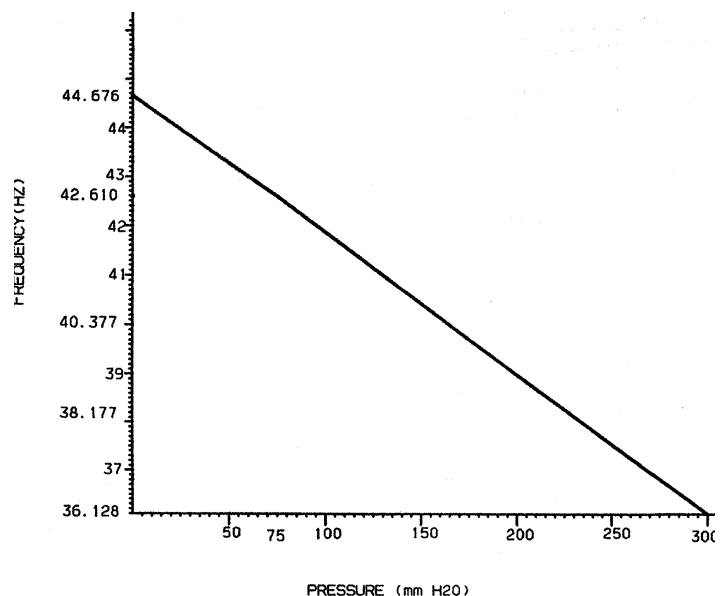


When the tub is full, the pressure inside the hydraulic circuit acts on the diaphragm which moves the magnet inside the coil.

This moving modifies the inductance of self and consequently the frequency delivered by the scillatory circuit. the  $\mu P$ , after frequency reading, recognizes the water level inside the tub. (see Page **Service - Program** fault display E30)



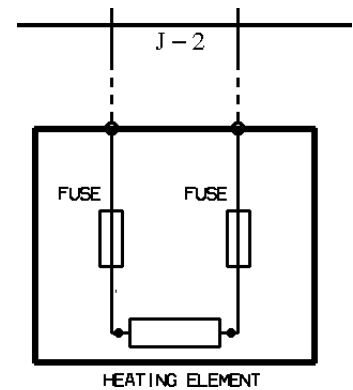
Frequency delivered follow the pressure ( $\pm 50$  Hz)



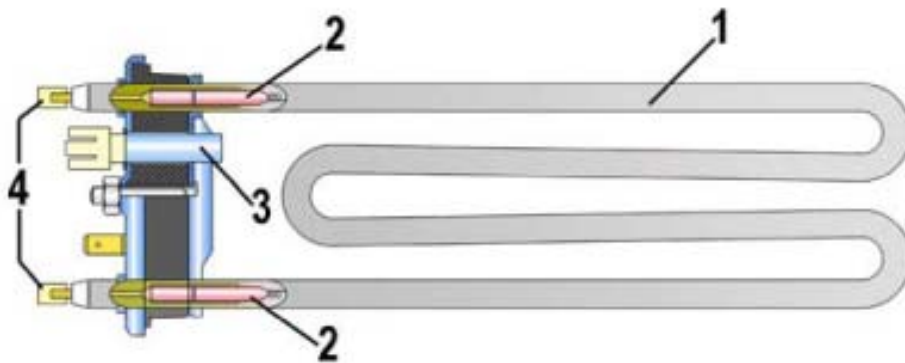
## Heating element



Connection: 230V; 50Hz;  
 Power: 1950W  
 Fuse: 10A



The heating element is supplied with power directly from the control electronics by means of a relay. For security reasons, 2 switching contacts of the pressure switch are connected in series. The switching positions are monitored by control electronics via 2 control lines.



1. Heating element
2. Temperature fuse
3. NTC-sensor
4. Connection

### Check of insulation resistance with the heating

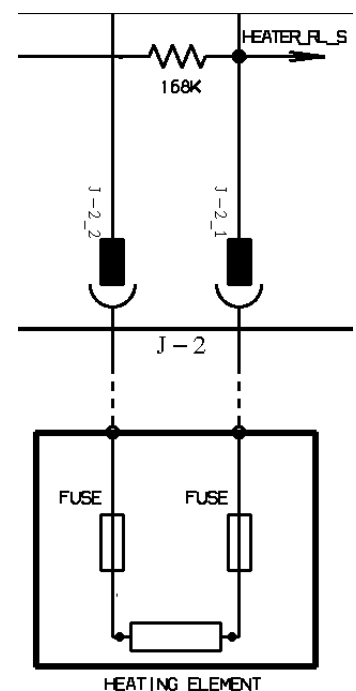
Wash a cycle for approx. 10 minutes. Switch off the appliance, unplug the plug and remove the side panel.

Draw off the connecting lines from the heater.

Measure the resistance between heating (depending on connection) and mass.

Resistance > 200 kOhm → heater OK.

Resistance < 168 kOhm → error E68



## Heating Circuit

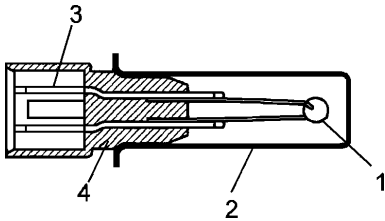
The cycle temperature is fixed by the  $\mu\text{P}$  depending on the selected program.

The temperature control is guaranteed by the  $\mu\text{P}$  through the NTC temperature sensor. The temperature sensor reduces its resistance according to the temperature increase.

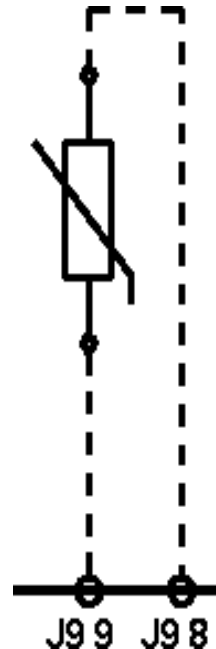
The reduction in the ohmic value of the temperature sensor is detected by the  $\mu\text{P}$ ; as soon as the selected temperature is reached the power supply to the heating element will be paused.

The NTC sensor is integrated in the heating element.

### NTC-Sensor



1. NTC resistance
2. Metallic casing
3. Connections
4. Plastic casing



To check the NTC sensor function you can measure the ohmic resistance between the contacts J9/8 and J9/9.

### Variations of NTC resistance

Temperature ( $^{\circ}\text{C}$ )	Resistance (Ohm)
25	4815 $\pm$ 207
40	2563 $\pm$ 102,5
60	1196 $\pm$ 26,31
80	602 $\pm$ 19,89

### Security

- The  $\mu\text{P}$  will be break off if an anomaly on the termistance circuit is detected : cut or short-circuit. (see Page **Service-Program** fault display E70)
- The heating phase is not executed.

## Drain pump / Circulation pump

The drain pump and circulation pump is directly controlled via triac from the control electronics.

## Motor

### Electronic EWM2100

The motor is directly phase-controlled via triac from the control electronics.

Relays K2, K3 are responsible for commuting the sense of rotation.

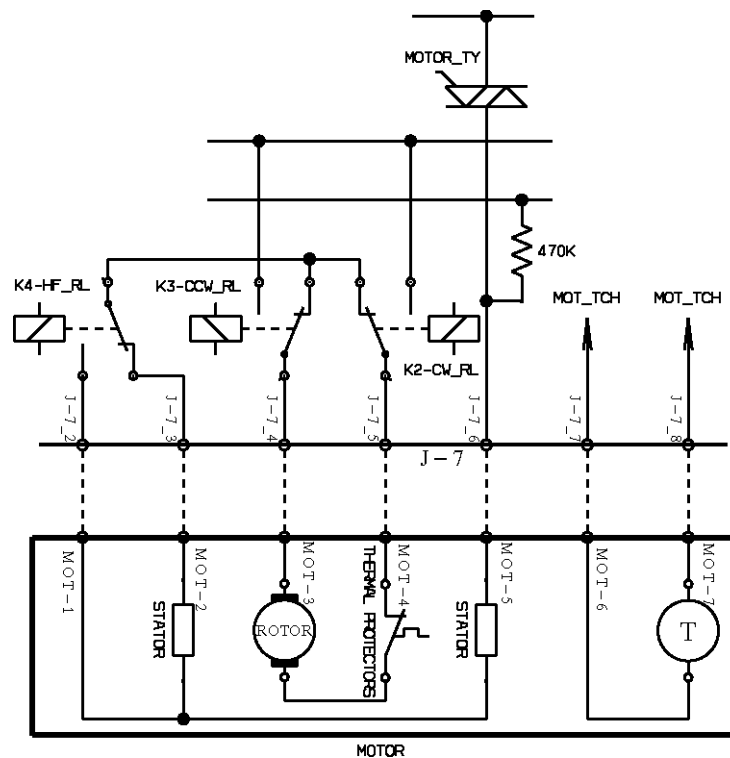
Field switching (if any) is controlled by relay K4.

Speed is monitored by tachometer generator g1 and controlled by control electronics.

Integral overheat protection disconnects the motor from power supply at 115°C.



Connection:



### Safety

- If the triac for the motor is in short-circuit, or if the tachometer generator is interrupted, 4 trials are executed in intervals of 5 minute each. After a break of 20 minutes, the fifth and last trial is started. If the motor does not run this time, the programme is aborted. (see Page **Service-Program** fault display E60)

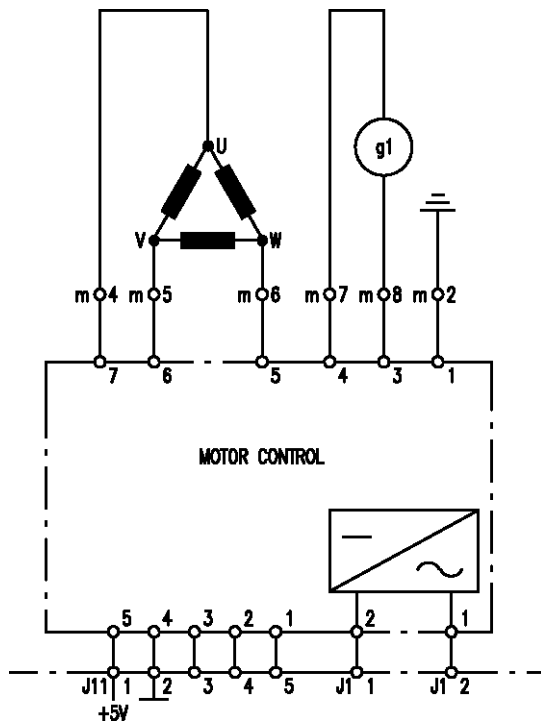
# Motor, Motor control board

## Electronic EWM2500

These appliances include a 2-pin asynchronous three-phase motor. This motor is directly driven by a special inverter motor electronic system. This changes the frequencies of the rotary current in accordance with the required rotational speed. The motor electronic system is connected with the control electronic system via a control line.



Connection:

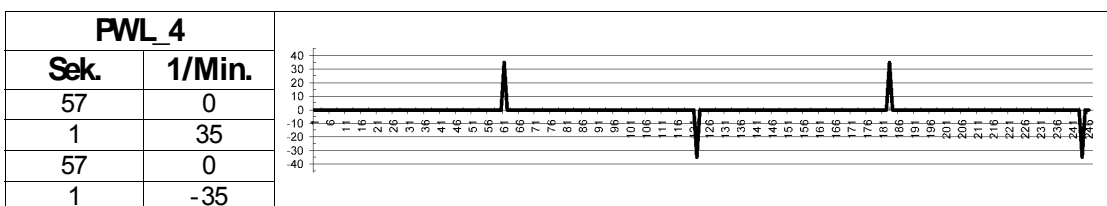
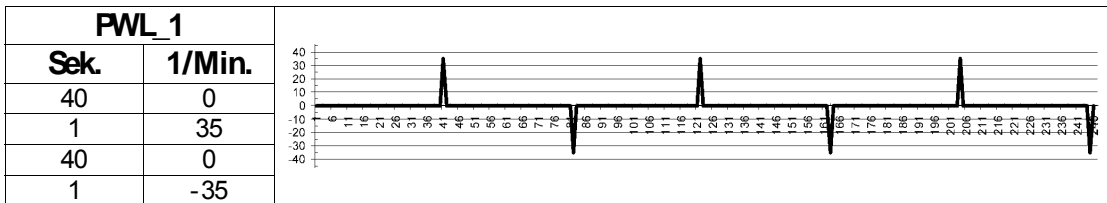
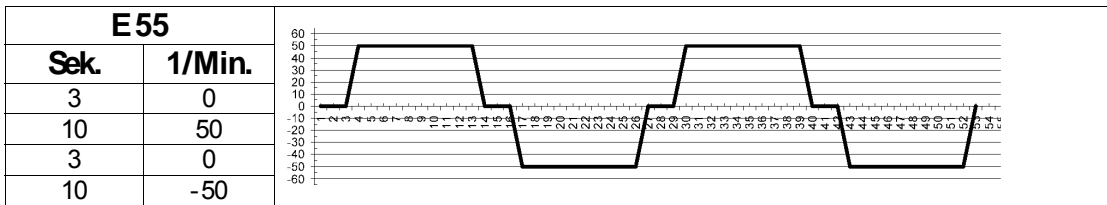
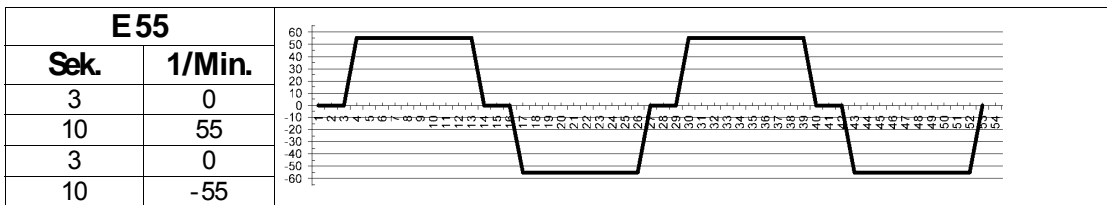
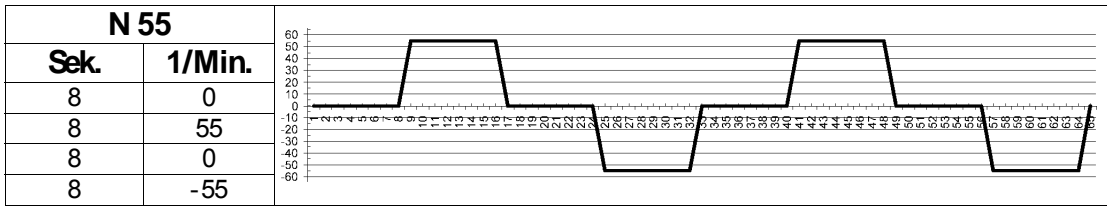
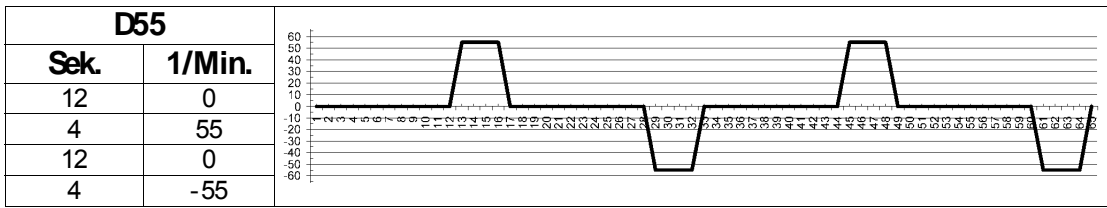


The ohmic resistance of the tachometer generator amounts to approx. 119 Ohms. The measurable resistance of the motor coils can be measured between the connection contacts of motors m4-m5 / m4-m6 / m5-m6 and amount to approx. 5.5 Ohms in each case. The phase shift between the phases is 120° and peak amplitude is 310V.

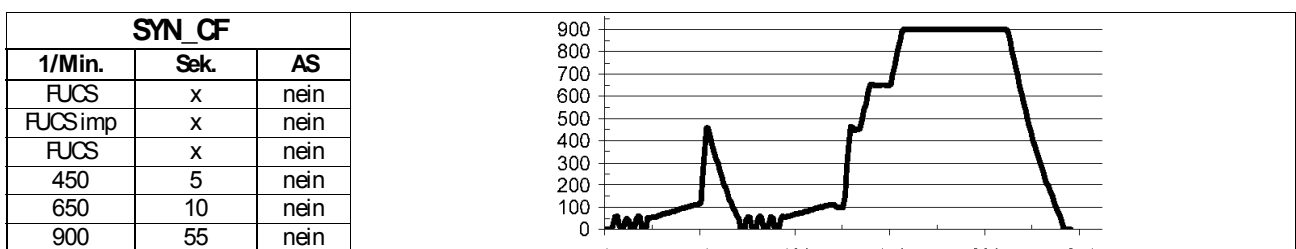
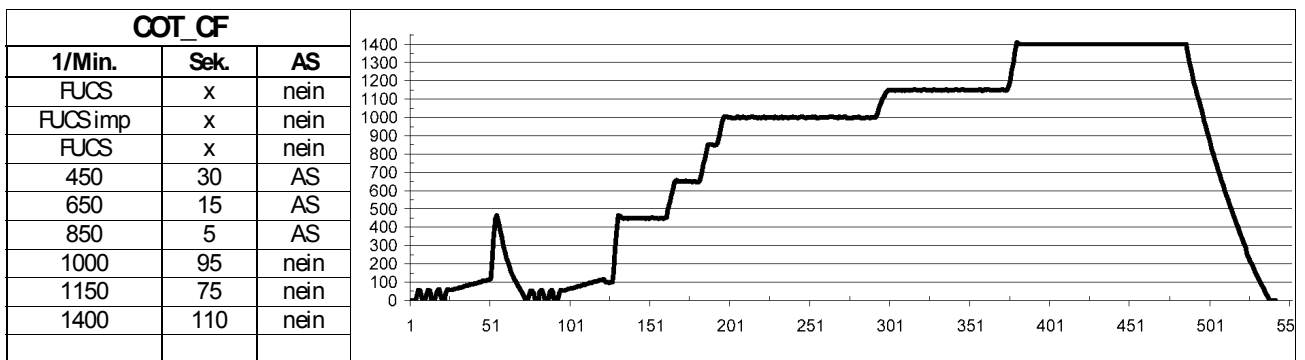
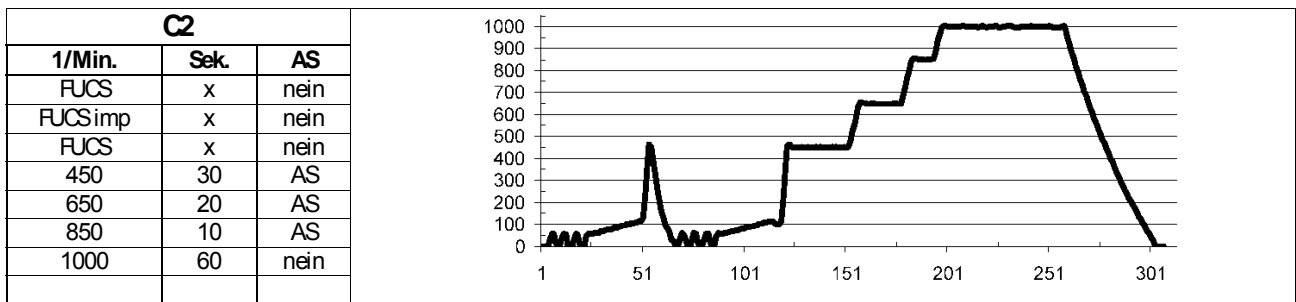
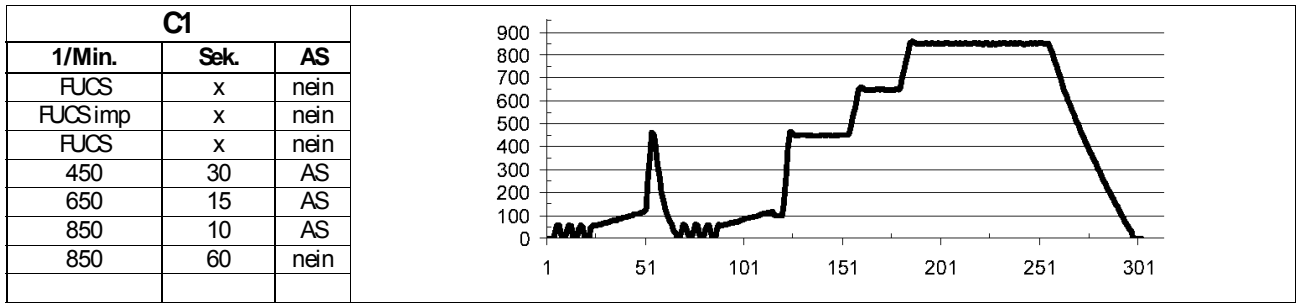
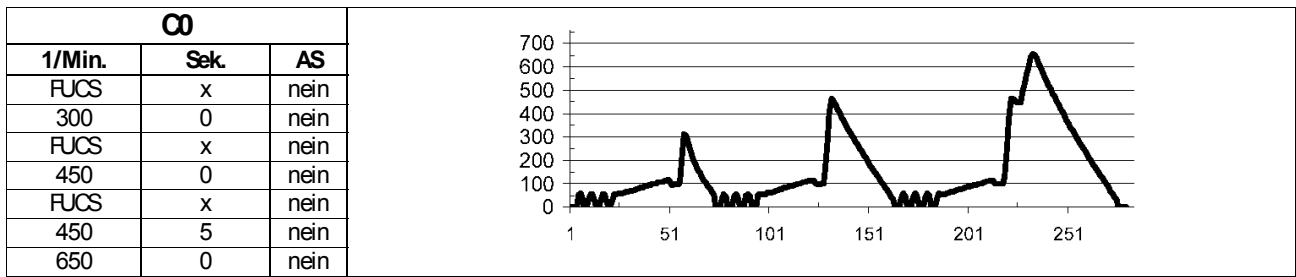
### Safety

- If the transistor for the motor is in short-circuit, or if the tachometer generator is interrupted, 4 trials are executed in intervals of 5 minute each. After a break of 20 minutes, the fifth and last trial is started. If the motor does not run this time, the programme is aborted. (see Page **Service-Program** fault display E50)

# Drum movements

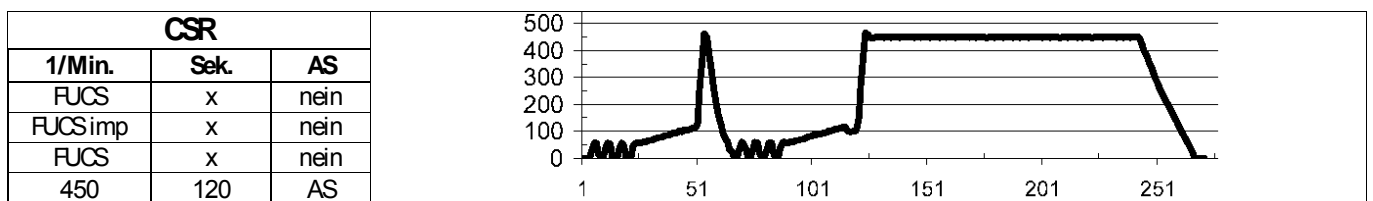
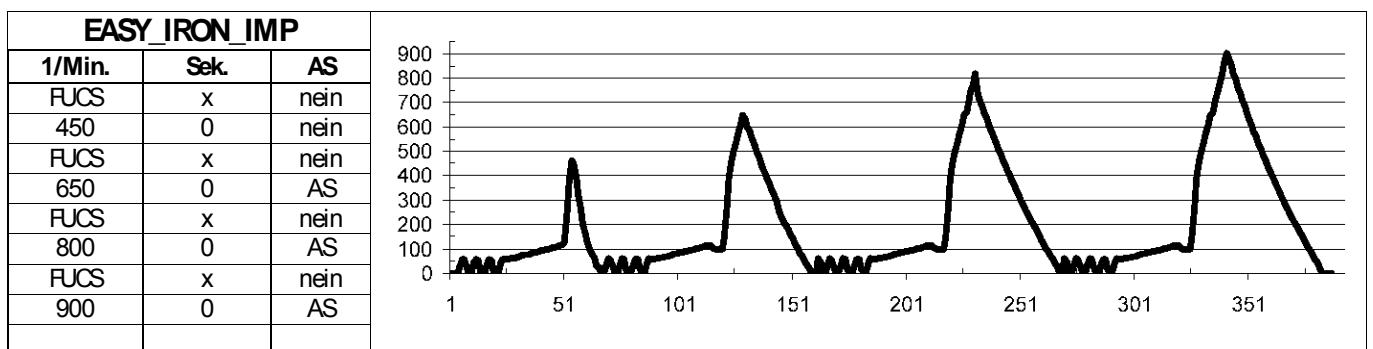
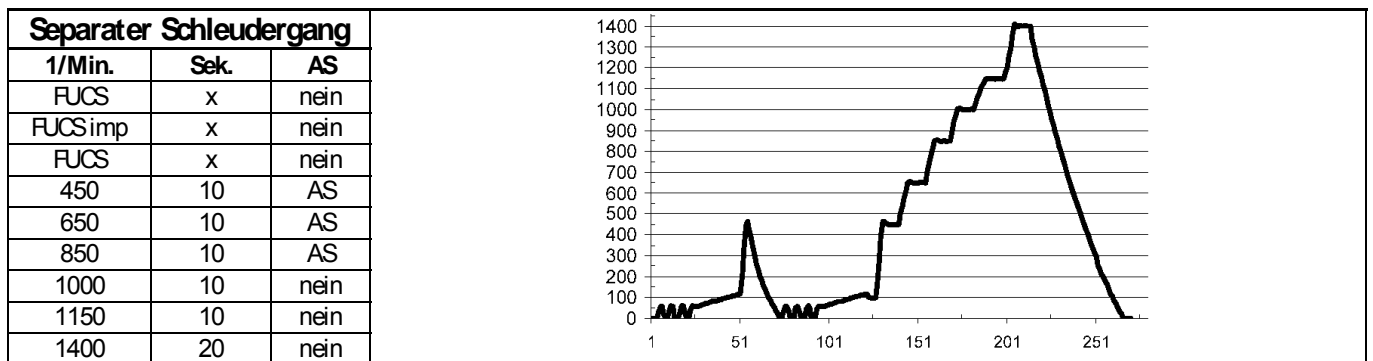
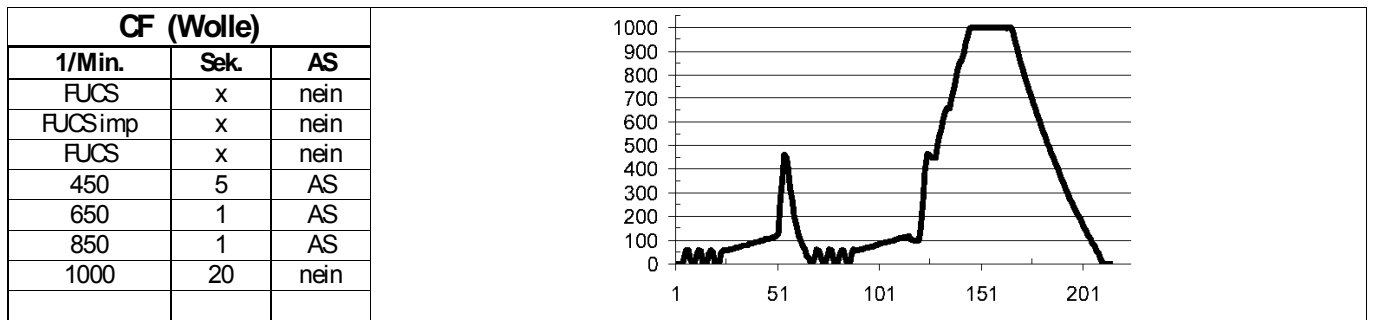
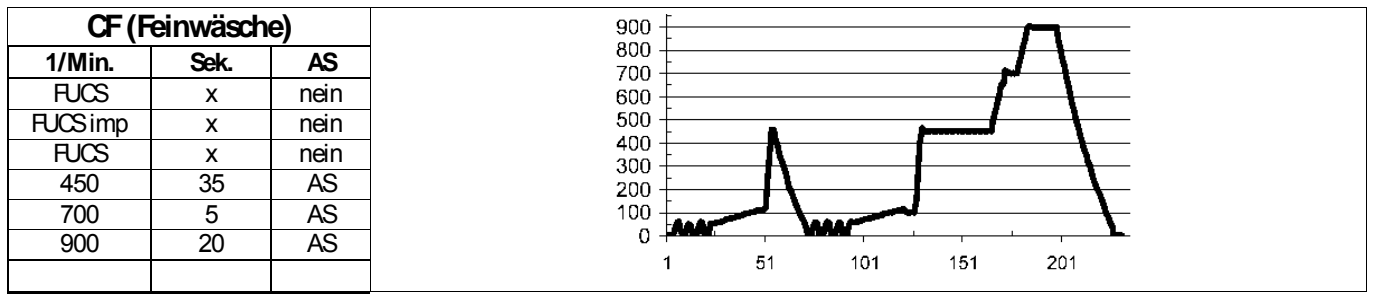


# Spin profiles





# Spin profiles



**AS** indicates that the anti-foam function is active.

## Function of the FUCS

“FUCS” is an English expression and means “Fast Unbalanced Control System”

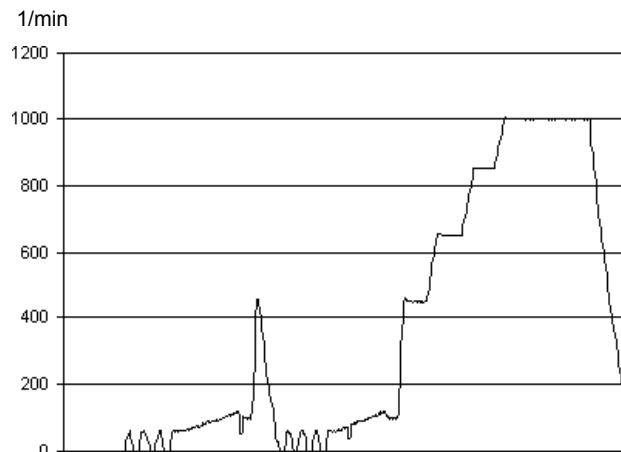
Function:

The unbalance control includes 4 phases. These phases are of different duration and have different limits of unbalance. The magnitude of the unbalance is calculated every 300 ms, hereby the magnitude is compared to the fixed unbalance limits, and then it is decided whether the speed will be increased or reduced by 2 1/min. FUCS starts at 55 1/min and ends ideally when reaching 115 1/min.

- Phase 0: When the unbalance threshold (850gr.) of the first phase is reached, the appliance performs a spin cycle with 100 1/min for 5 sec followed by a spin cycle pulse of 470 1/min.
- Phase 1: The first phase (350gr.) takes max. 120 sec to obtain the required speed of 115 1/min. If the speed is not reached after this 120 sec, the spinning cycle will be stopped. The laundry is dispersed and it is changed to phase 2.
- Phase 2: Phase 2 (650gr.) takes max. 60 sec. Here it is tried to obtain the speed of 115 1/min with various unbalance limits. If the speed is not reached after 60 sec, the spinning cycle will be stopped again. The laundry is dispersed and it is changed to phase 3.
- Phase 3: In phase 3 (1100gr.), the required speed is reduced to 85 1/min. Within 90 sec, speed should be reached, the machine then runs a spin-dry cycle at 100 1/min for 5 sec. and a subsequent spin-dry pulse at 470 1/min, then again starting by phase 1. If the speed is reached, a reduced spin-dry cycle at 650 1/min is carried out. If the speed is not reached, spin-dry is skipped.

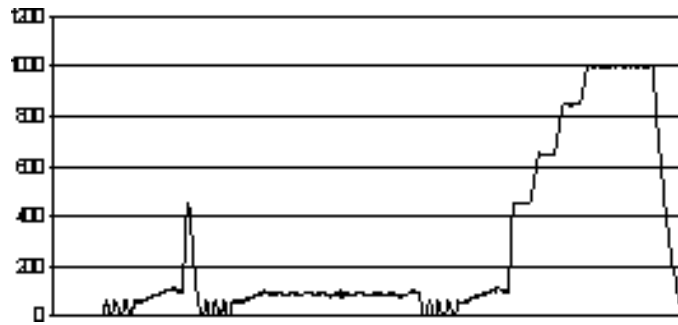
Perfect balance

- Reversing
- FUCS phase 0 with spin-dry pulse
- Reversing
- FUCS phase 1
- regular spin-dry



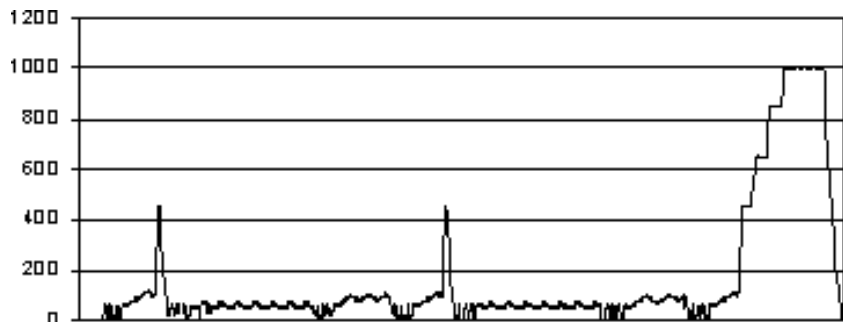
Balancing after two attempts

- Low speed
- FUCS phase 0
- FUCS phase 1
- FUCS phase 2



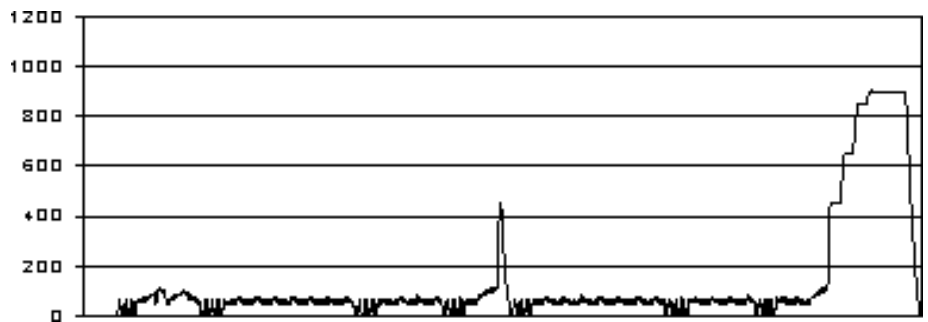
Balancing after the third phase (normal spin-speed)

- FUCS phase 0 with spin pulse
- FUCS phase 1
- FUCS phase 2
- FUCS phase 3 with spin pulse
- FUCS phase 1
- FUCS phase 2
- FUCS phase 3
- Normal spin



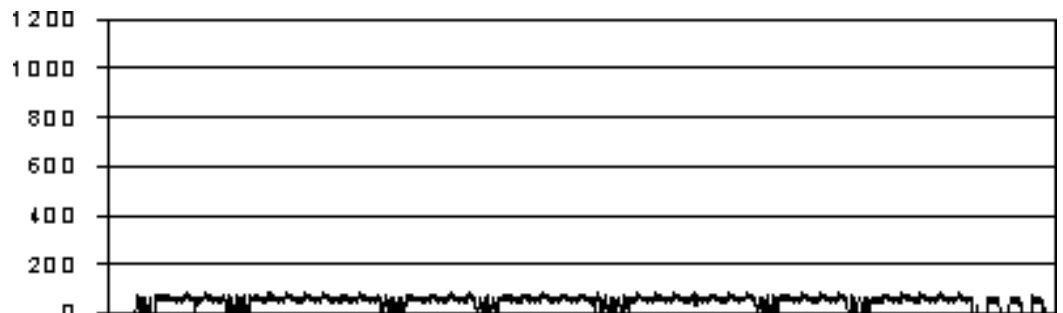
Balancing after the third phase (reduced spin-speed)

- FUCS phase 0
- FUCS phase 1
- FUCS phase 2
- FUCS phase 3 with spin pulse
- FUCS phase 1
- FUCS phase 2
- FUCS phase 3
- reduced-speed spin



Unalancing after the third phase

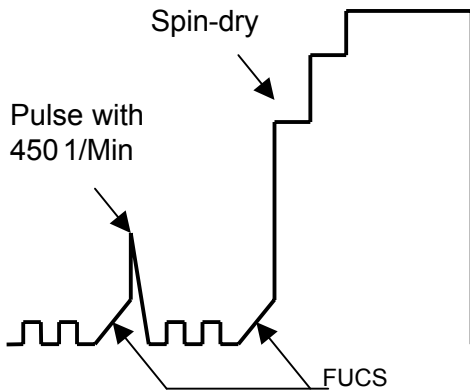
- FUCS phase 0
- FUCS phase 1
- FUCS phase 2
- FUCS phase 3
- FUCS phase 1
- FUCS phase 2
- FUCS phase 3
- no spin



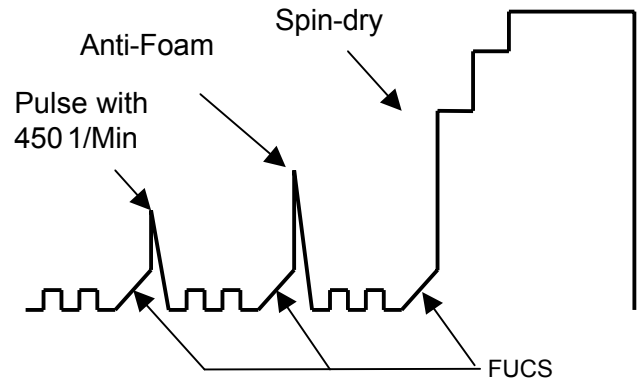
## Foam Detection

Anti-foam control is excited via analog pressure switch.

### Spin-dry phase without foam:



### Spin-dry phase with little foam:



### Spin-dry with little foam:

When the analogous pressure switch detects foam (45 mm "full"), the spinning cycle is stopped and the drain pump keeps on running until the foam level will be fallen below (15 mm "empty") and the spinning cycle is continued.

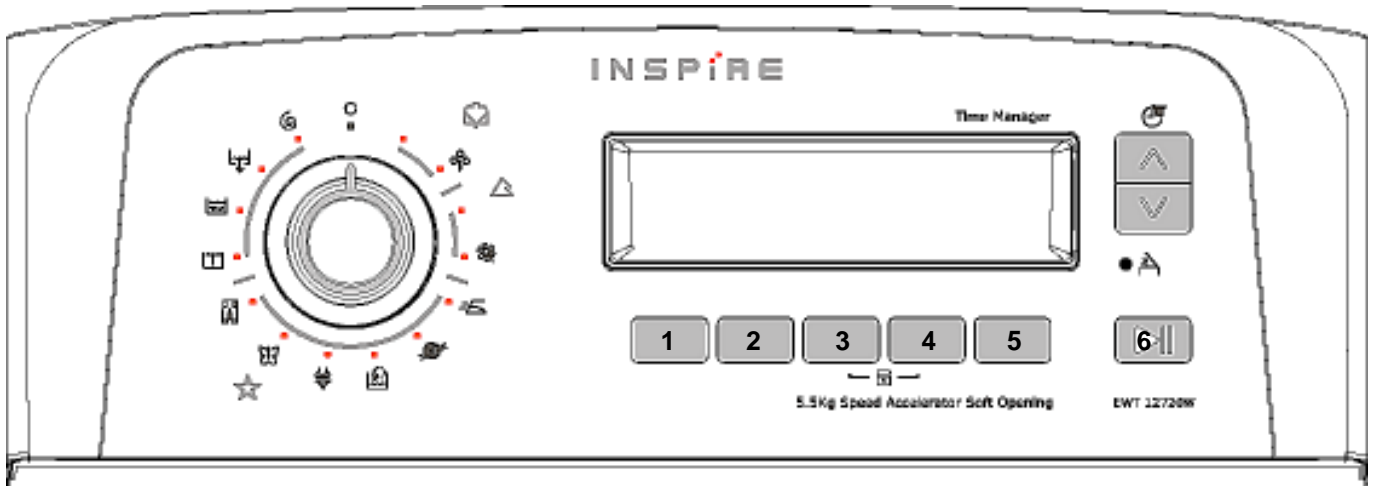
### Spin-dry with excess foam:

When the analogous pressure switch detects a foam 5 times (45 mm "full"), the spinning will be skipped. Draining is carried out for 1 minute with the motor at stop. If too much foam is detected during any wash cycle, an additional rinse cycle is added.

# Service Program

## Fault indication by multifunctionsdisplay LCD

- Switch off the appliance.
- Hold buttons 6 and 5 pressed simultaneously and turn the program selector one position to the right.
- Hold the two selected buttons pressed until possibly a buzzer will sound and/or the LCD will give a light.
- By the program selector it is possible to interrogate the desired checking function according to the table.



Position of the rotary switch	Button	Test function
Off		Off
21 - 15 Positions		
01	Button 6 and Button 5	<b>1) Start of the customer service testprogram</b> <b>2) LCD - Test</b> LEDs are step by step illuminated. If you press a button the according LED is on.
02		<b>Water channel mainwash</b> Water intake up to safety level fS Time max. 5 min Valve mainwash Display indicates current water level in mm
03		<b>Water channel prewash</b> Water intake up to safety level fS Time max. 5 min Valve prewash Display indicates current water level in mm
04		<b>Water channel softener</b> Water intake up to safety level fS Time max. 5 min Valve mainwash and prewash Display indicates current water level in mm
05		<b>Water channel spots</b> Water intake up to safety level fS Time max. 5 min Valve spots or hotwater Display indicates current water level in mm
06		<b>Heating and circulation pump</b> Heating up to 90°C Time max. 10 min Water intake over mainwash chamber Display indicates current temperature in °C
07		<b>Tub leakage test</b> Water intake over mainwash chamber up to 1. Niv. Motor rotation 250 1/min Display indicates current speed in 1/min
08		<b>Draining and spinning</b> Draining Spinning up to maximum spin speed, if level < fSch Display indicates current speed in 1/min
09		<b>DSP</b> The drum is positioned if level < fSch
10		Displaying the error code (programme display)





# Service Program

## Fault indication by multifunctionsdisplay LCD

Fault code	Type of fault	Remedy	Alarm Code	E N V O 6														
				E	W	M	D	M	2	3	0	0	0	0	E	N	V	O
E43	Door lock triac defect	Replace doorlock, Replace cable	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Door lock sensing failure Input voltage allways 0V or 5V	Replace electronic	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Door lock triac sensing failure Input voltage allways 0V or 5V	Replace electronic	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E50	Motortriac short circuit	Replace cable	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Motor cable short circuit	Replace electronic	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E52	No signal from tachogenerator	Replace tachogenerator	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Motor blocked	Replace motor																
E53	Motor cable defective	Replace cable																
	Motor triac sensing failure Input voltage allways 0V or 5V	Replace electronic	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E54	Motor relay defect	Replace electronic	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E55	Motor circuit interrupted	Replace motor, Replace cable	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E56	No signal from tachogenerator, No signal after 15 min	Replace tachogenerator	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E57	Inverter current goes above threshold (>15A)	Replace motor, replace cable	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Motor phase current goes above threshold (>4,5A)	Replace motor control board																
E58	Motor phase current goes above threshold (>4,5A)	Replace motor, replace cable	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Motor control board	Replace motor control board																
E59	No tacho signal for 3 seconds after new speed target different from zero	Replace motor, replace tachogenerator	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Replace motor control board, replace cable	Replace motor control board, replace cable																
E5A	Heat Sink temperature goes above threshold (88°C)	Replace motor control board	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E5B	DC bus voltage goes below threshold (<175V)	Replace motor control board, replace cable	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E5C	DC bus voltage goes above threshold (>430V)	Replace motor control board	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E5D	FCV cannot receive and/or transmit a message for more than 2 seconds	Replace cable	1,6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	There are communication problems in between FCV control board and mainboard	Replace electronic	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E5F	FCV control board is continuously asking for configuration parameters due to repetitive reset	Replace motor control board, replace cable	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Replace electronic	Replace electronic																







# Service Program

## Fault indication by multifunctionsdisplay LCD

Fault code	Type of fault	Remedy	Alarm Code		E W M 2 0 0 0 0 0		E W M 1 0 0 0 0 0 0		E W M 1 0 0 0 0 0 0		E W M 2 0 0 0 0 0 0		E W M 2 3 0 0 0 0		E N V 0 6		
			2 A	S	6 A	2 A	0	0	0 A	0 A	0 A	2 A	2 A	X	X	X	X
EC0	EC1	Inlet valve blocked	Replace inlet valve, Replace electronic													X	
	EC2	Turbidity sensor defect	Replace wiring														
EF0	EF1	Filter dirty Drainhose closed Time for draining to long	Replace turbidity sensor Cleaning drainhose and filter Checking drainpump														X
	EF2	Detergent overdosing Too much foam during the drain phase Filter dirty Drainhose closed	Cleaning drainhose and filter Checking drainpump Not overdosing														X
EF3		Aqua Control system activated	Leakage in the machine														X
		Drain pump cable defective Drain pump interruption	Replace cable Replace drain pump														X
EF4		No signal from flow meter with electro valves switched on	Water tap closed or mains pressure insufficient.														X
EF5		Interrupted the spinning phase Unbalance to high, unbalance >1200gr	Pay attention to the quantity of laundry, check stationary behaviour of washer														X
EH0	EH1	Power supply frequency out of limits	Wrong or disturbed power supply line Replace electronic														X
	EH2	Power supply voltage too high	Wrong or disturbed power supply line Replace electronic														X
	EH3	Power supply voltage too low	Wrong or disturbed power supply line Replace electronic														X
EHF	EHE	Line Safe relay faulty	Replace electronic														X
	EHF	Line Safe "sensing" faulty	Replace electronic														X

## Service Program

### Fault indication by multifunctiondisplay LCD

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 canceled	
5	DSP-function is skipped	
6	after 5 attempt	

## Service Program

### Rapid reading of alarm codes

The last alarm code can be displayed even if the programme selector is not in the 10th position (service test mode) or if the appliance is in normal operating mode (e.g. during the execution of an washing programme):

- Keep buttons 6 and 5 pressed in together.
- The alarm sequence continues as long as the two buttons are held down
- While the alarms are displayed, the appliance continues to perform the cycle or, if in the programme selection phase, maintains the previously-selected options in memory.

### Indication of error code through LEDs

The error code is additionally indicated by the START/PAUSE LED. The START/PAUSE LED is a double LED with colors red and green. When the red LED is flashing (0.5 sec on, 0.5 sec off), the alarm family will be indicated, when the green LED is flashing afterwards, the alarm number will be indicated.

e.g. EA4

- **EA4** ----> red LED flashes 10 x
- pause of 1.5 sec
- **EA4** ----> green LED flashes 4 x
- pause of 2.5 sec, then repetition



Alarm codes	flashing
1	1 x
:	:
9	9 x
A	10 x
B	11 x
:	:
H	17 x

### Cancelling the last alarm

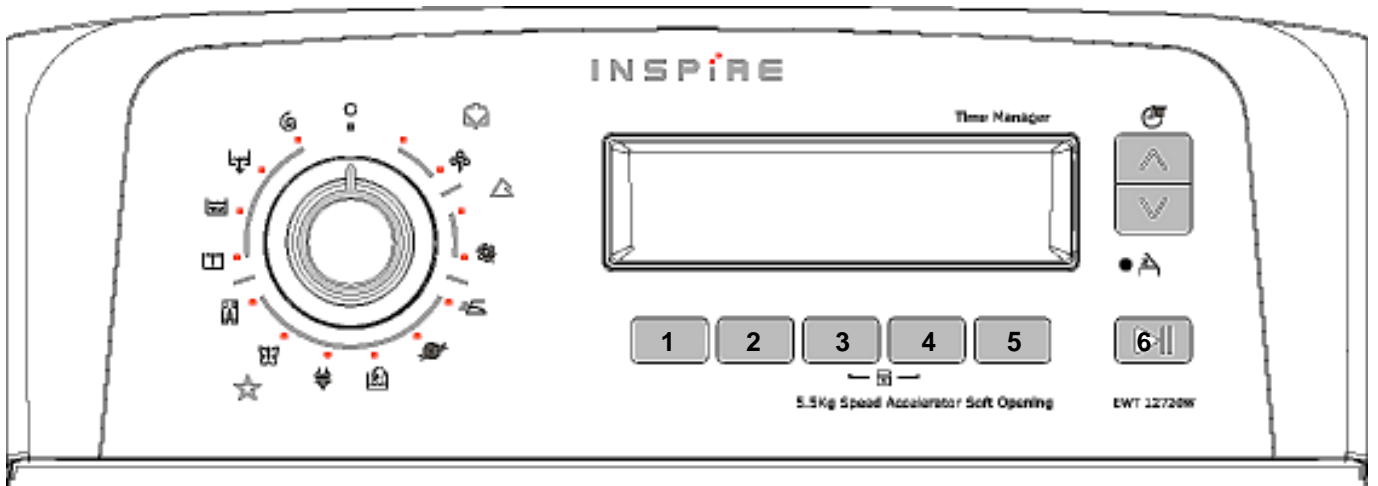
- Enter service test program (page 37)
- Press buttons 6 and 5 in together and keep them pressed in until the LCD E00.

### It is good practice to cancel the last alarm:

- after reading the alarm code, to check whether the alarm re-occurs during diagnostics
- after repairing the appliance, to check whether it re-occurs during testing.

# Demo-Programm

## Activate the demo - program



These appliances have a Demo-Mode for demonstration purposes.

main electronic EWM2100  
main electronic EWM2500

Software **WBD101..**  
Software **WCB101..**

### 1. Access to demo program

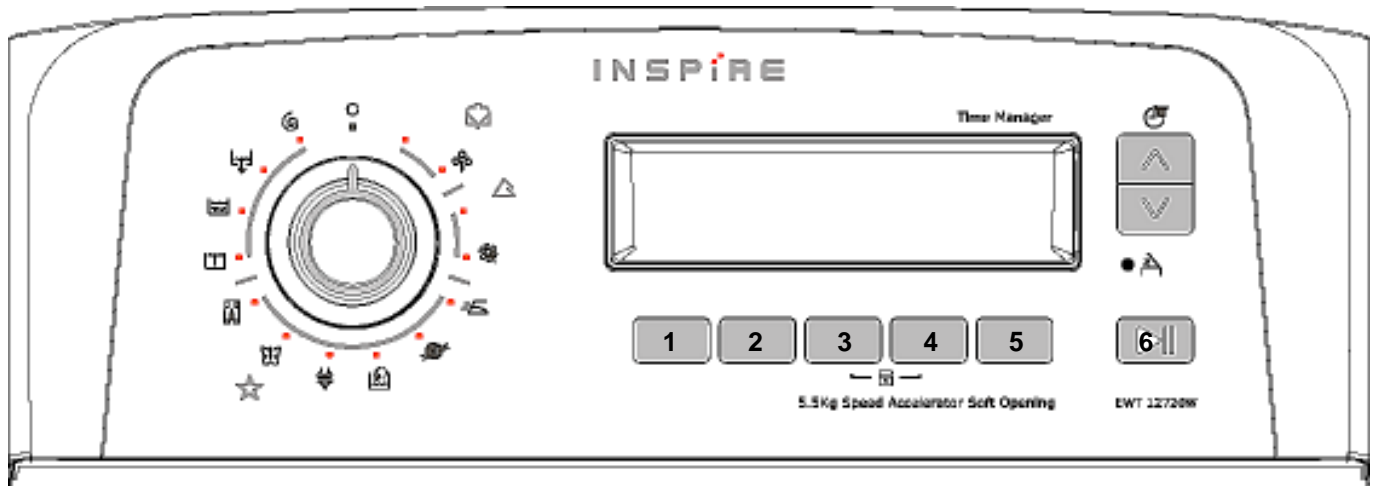
- Switch off the appliance.
- Keep buttons 6 and 5 pressed in together and rotate the programme selector three positions to the right.
- Keep both selected keys pressed for about 2 seconds.
- You can select the individual programs and the associated option keys by using the program selector switch.  
The key start/pause is disabled.
- The demo program will remain in the memory even if the appliance is switched Off.

### 2. Adandoning the demo program

- Switch off the appliance.
- Keep buttons 6 and 5 pressed in together and rotate the programme selector three positions to the right.
- Keep both selected keys pressed for about 2 seconds.
- Switch Off the appliance to deactivate the demo program.

# Electronic-Test

## Activate the electronic-test



### 1. Access to the electronic-test

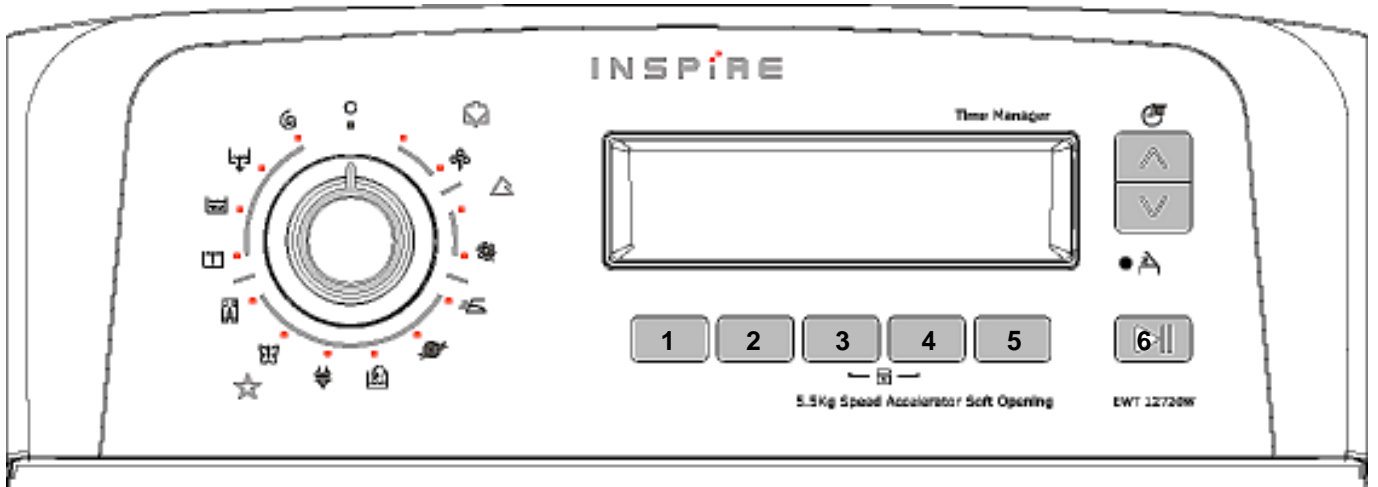
- Switch off the appliance.
- Hold buttons 6 and 5 pressed simultaneously and turn the program selector one position to the right.
- Keep both selected keys pressed for about 2 seconds.
- Hold buttons 6 and 5 together and pressed again.
- Switch off and on the appliance
- The display indicates „ELE“
- The electronic-test is running
  - Filling till 1. Niveau
  - Movement with 50 1/min.
  - Heating up to max. 50°C or 20min duration.

### 2. Abandoning the elektronik-test

- Switch off the appliance.

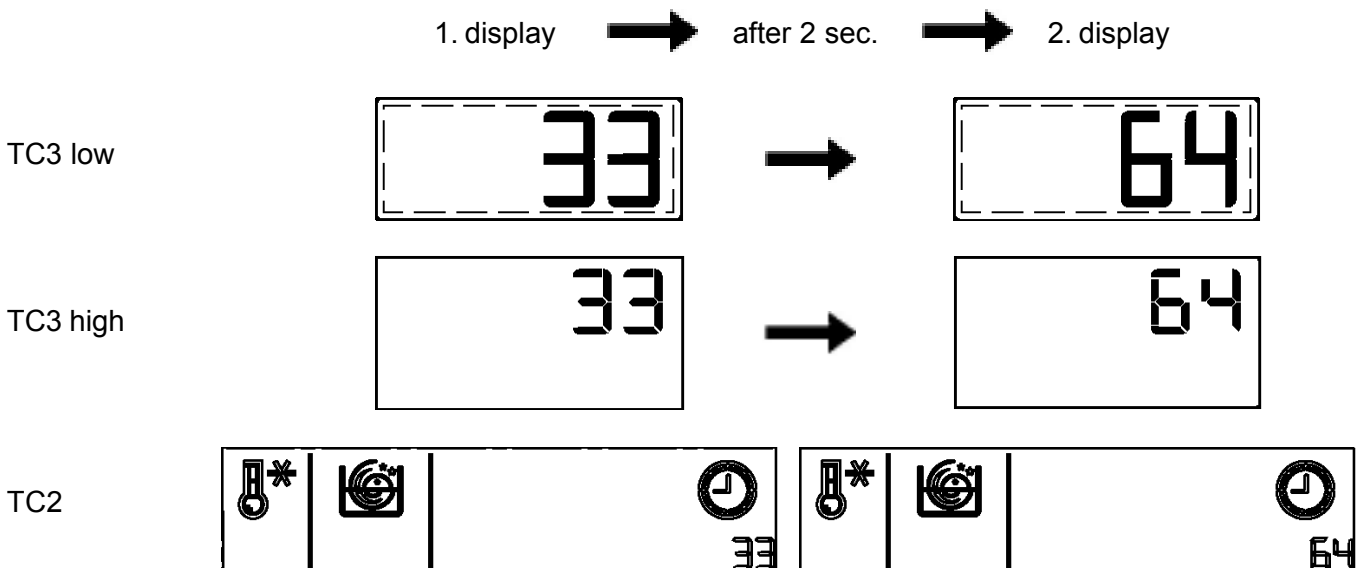
# Operating time

## Activate the operating time



1. **Access to the operating time**
  - Switch off the appliance.
  - Keep buttons 6 and 5 pressed in together and rotate the programme selector five positions to the right.
  - Keep both selected keys pressed for about 2 seconds.
  
2. **Adandoning the operating time**
  - Switch off the appliance.

e.t. 3364 operating time





# Circuit Diagram

## Technical Specifications

### GENERAL FEATURES

Supply voltage .....	230 V
Dimensions (height, width, depth) .....	85/40/60 cm
Dryclothes loading capacity .....	5,5 kg
Drum rotation speed (washing/spinning).....	55/600-1500 r.p.m
Intermediate speed .....	1000 r.p.m
Intermediate speed .....	850 r.p.m

### **WATER LOAD CAPACITY (without clothes) :**

Heating Level I .....	2 l
Heating Level II .....	2 l
Anti-overflow level .....	43 l

### **WATER PRESSURE :**

Max./Min. ....	0,8/0,05 MPa
----------------	--------------

### **CONSUMPTIONS (COTTON 60°) :**

see energie label

### TECHNICAL PARTICULARS

#### **DRAIN PUMP :**

Maxi head .....	100 cm
Mini head .....	70 cm
Delivery rate .....	25 l/min
Power absorbed .....	30 W
Winding resistance .....	164/224 ohm

#### **HEATING ELEMENT :**

Power absorbed .....	1950 W
Resistance .....	27 ohm

#### **WATER VALVE :**

Delivery rate .....	5,5 l/min
Coil resistance .....	4300 ohm

#### **CYCLING PUMP :**

Delivery rate .....	12 l/min
Power absorbed .....	18 W
Winding resistance .....	200 ohm

#### **DOOR INTERLOCK :**

Type .....	voltmetric
Internal door locking .....	0,02 s
Internal door release .....	0,02 s

#### **DOOR INTERLOCK :**

Type .....	voltmetric
Internal door locking .....	6 s
Internal door release .....	40-120 s

### **WATERSAFETY SYSTEM :**

Type .....	110539000
------------	-----------

<b>TEMPERATURE PROBE (NTC) .....</b>	6 kohm at 20°C
--------------------------------------	----------------

### **PRESSURE SWITCH ANALOGIC :**

Analogic Level .....	000 mm - 44,7 Hz
Analogic Level .....	300 mm - 36,1 Hz

### **USER INTERFACE : EWM2100**

Identification mark .....	13251510.
Identification mark .....	13251511.
Identification mark .....	13251512.
Identification mark .....	13251513.

### **USER INTERFACE : EWM2500**

Identification mark .....	13251520.
Identification mark .....	13251521.
Identification mark .....	13251522.
Identification mark .....	13251523.

### **MODULE REGULATION SPEED : EWM2500**

Module .....	13252771.
Supply voltage .....	230 V

### **DOOR POSITIONNING (electric):**

Identification mark .....	146132000
---------------------------	-----------

### **DISPLAY LCD :**

TC4 .....	13252920.
TC3 .....	13252911.
TC2 .....	13252901.
TC1 .....	13252950.
TC1 .....	13252830.

### **CONNECTION:**

Water supply connection .....	1,5 m long
Water discharge connection height .....	mini 70 / maxi 100 cm
Total power .....	2300 W

**COLLECTOR MOTOR :**

Pulley ratio ..... 10,2  
 Insulation class ..... F  
 Spinning speed ..... 1450 r.p.m  
 Winding resistance (1-2) ..... 5,44 ohm  
 Winding resistance (3-2) ..... 5,44 ohm  
 Winding resistance (1-3) ..... 5,44 ohm

**TACHOGENERATOR:**

Resistance (5-4) ..... 115 ohm

Pulley ratio ..... 10,4  
 Insulation class ..... B/F  
 Spinning speed ..... 1450 r.p.m  
 Winding resistance (3-4) ..... 2,20 ohm  
 Winding resistance (1-2-5) ..... 0,55 ohm  
 Winding resistance (2-5) ..... 1,10 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 135 ohm

Pulley ratio ..... 10,4  
 Insulation class ..... B/F  
 Spinning speed ..... 1450 r.p.m  
 Winding resistance (3-4) ..... 1,78 ohm  
 Winding resistance (1-2-5) ..... 0,60 ohm  
 Winding resistance (2-5) ..... 1,75 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 68,7 ohm

Pulley ratio ..... 12  
 Insulation class ..... B/F  
 Spinning speed ..... 1250 r.p.m  
 Winding resistance (3-4) ..... 1,73 ohm  
 Winding resistance (1-2-5) ..... 1,10 ohm  
 Winding resistance (2-5) ..... 1,70 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 15,1 ohm

Pulley ratio ..... 12  
 Insulation class ..... B/F  
 Spinning speed ..... 1250 r.p.m  
 Winding resistance (3-4) ..... 1,65 ohm  
 Winding resistance (1-2-5) ..... 0,62 ohm  
 Winding resistance (2-5) ..... 1,23 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 135 ohm

Pulley ratio ..... 12  
 Insulation class ..... B/F  
 Spinning speed ..... 1150 r.p.m  
 Winding resistance (3-4) ..... 1,90 ohm  
 Winding resistance (2-5) ..... 1,30 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 68,7 ohm

Pulley ratio ..... 14  
 Insulation class ..... B/F  
 Spinning speed ..... 1050 r.p.m  
 Winding resistance (3-4) ..... 1,62 ohm  
 Winding resistance (2-5) ..... 1,67 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 15,1 ohm

Pulley ratio ..... 14  
 Insulation class ..... B/F  
 Spinning speed ..... 1050 r.p.m  
 Winding resistance (3-4) ..... 2,46 ohm  
 Winding resistance (2-5) ..... 1,86 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 68,7 ohm

Pulley ratio ..... 18  
 Insulation class ..... B/F  
 Spinning speed ..... 850 r.p.m  
 Winding resistance (3-4) ..... 1,62 ohm  
 Winding resistance (2-5) ..... 1,67 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 15,1 ohm

Pulley ratio ..... 18  
 Insulation class ..... B/F  
 Spinning speed ..... 850 r.p.m  
 Winding resistance (3-4) ..... 2,25 ohm  
 Winding resistance (2-5) ..... 1,83 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 68,7 ohm

Pulley ratio ..... 21  
 Insulation class ..... B/F  
 Spinning speed ..... 600 r.p.m  
 Winding resistance (3-4) ..... 3,82 ohm  
 Winding resistance (2-5) ..... 3,58 ohm

**TACHOGENERATOR:**

Resistance (6-7) ..... 68,7 ohm

**ASYNCHRONOUS THREE-PHASE MOTOR :**

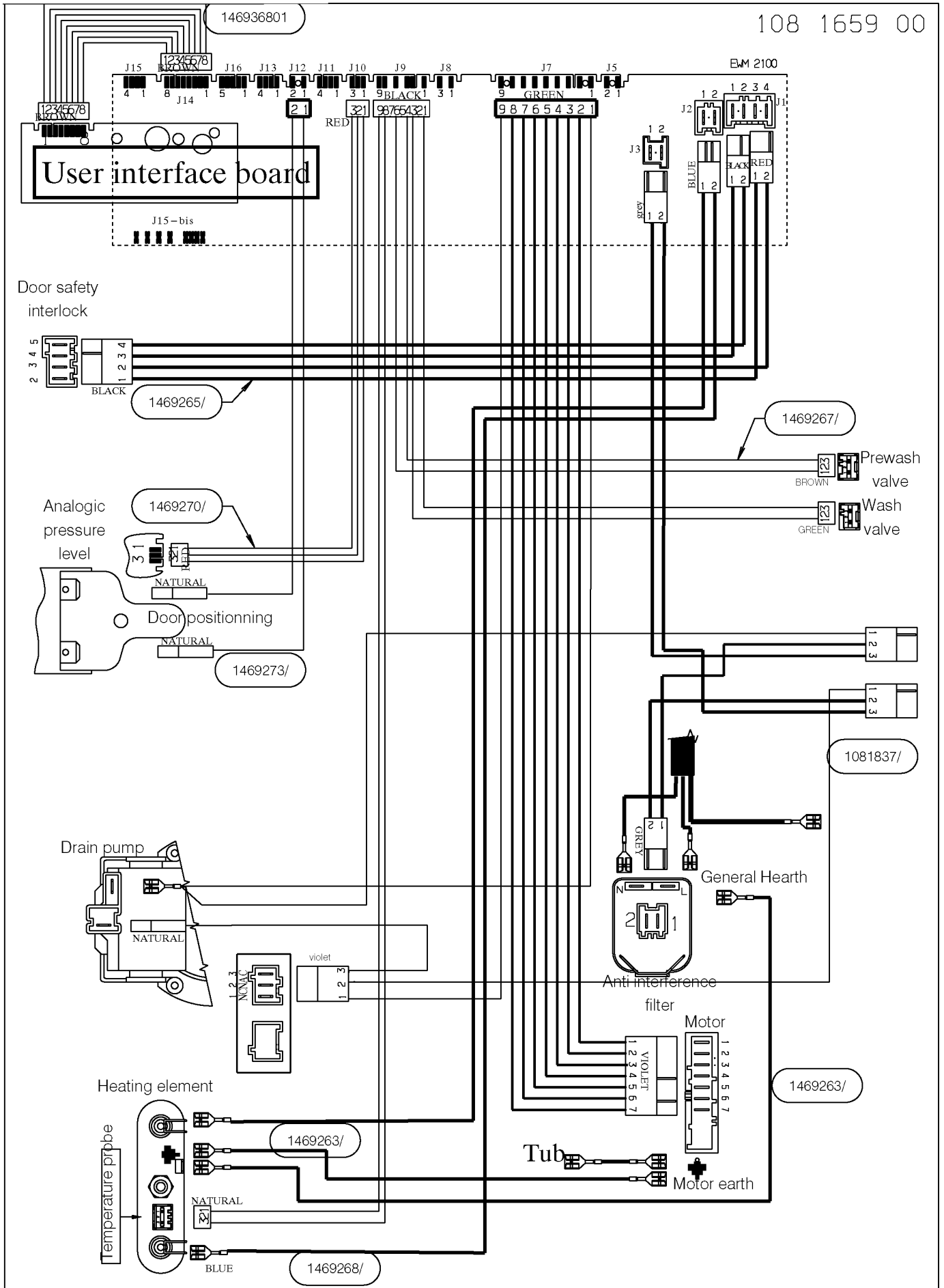
Pulley ratio ..... 12  
 Insulation class ..... F  
 Spinning speed ..... 17000 r.p.m  
 Winding resistance X (4-5) ..... 5,5 ohm  
 Winding resistance Z (4-6) ..... 5,5 ohm  
 Winding resistance Y (5-6) ..... 5,5 ohm

**TACHOGENERATOR:**

Resistance (7-8) ..... 119ohm

# Circuit Diagram

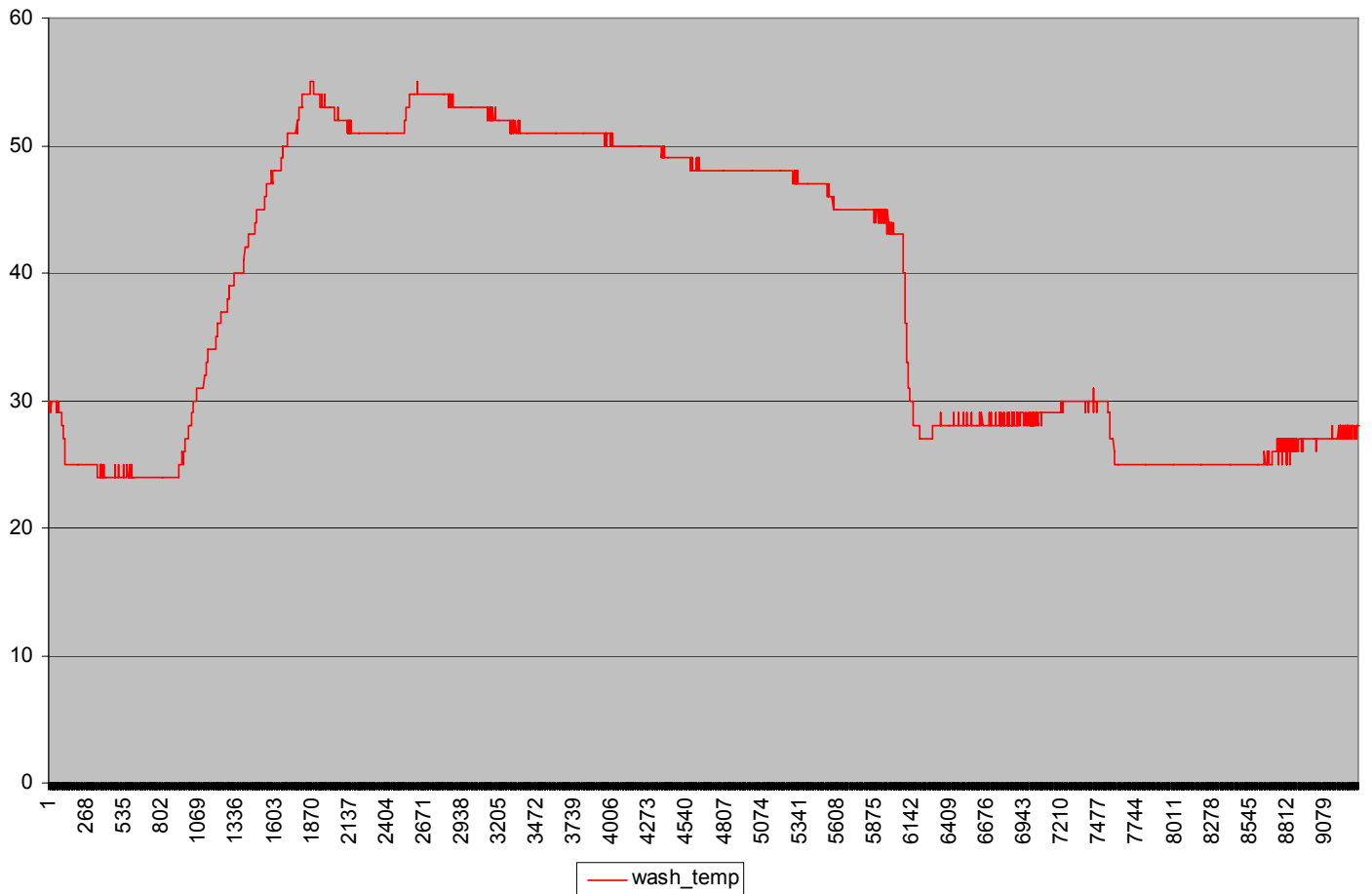
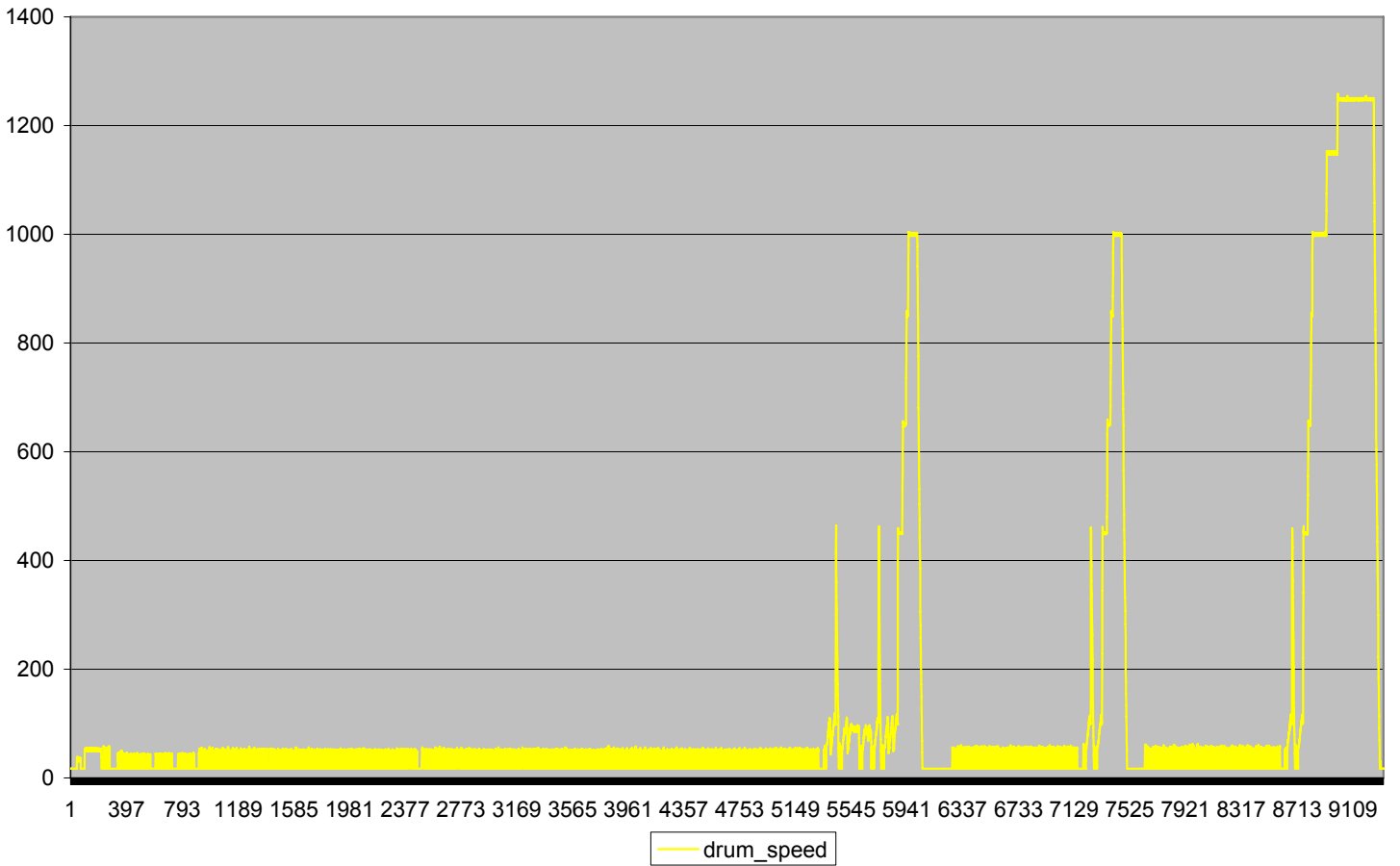
## Wiring Diagram





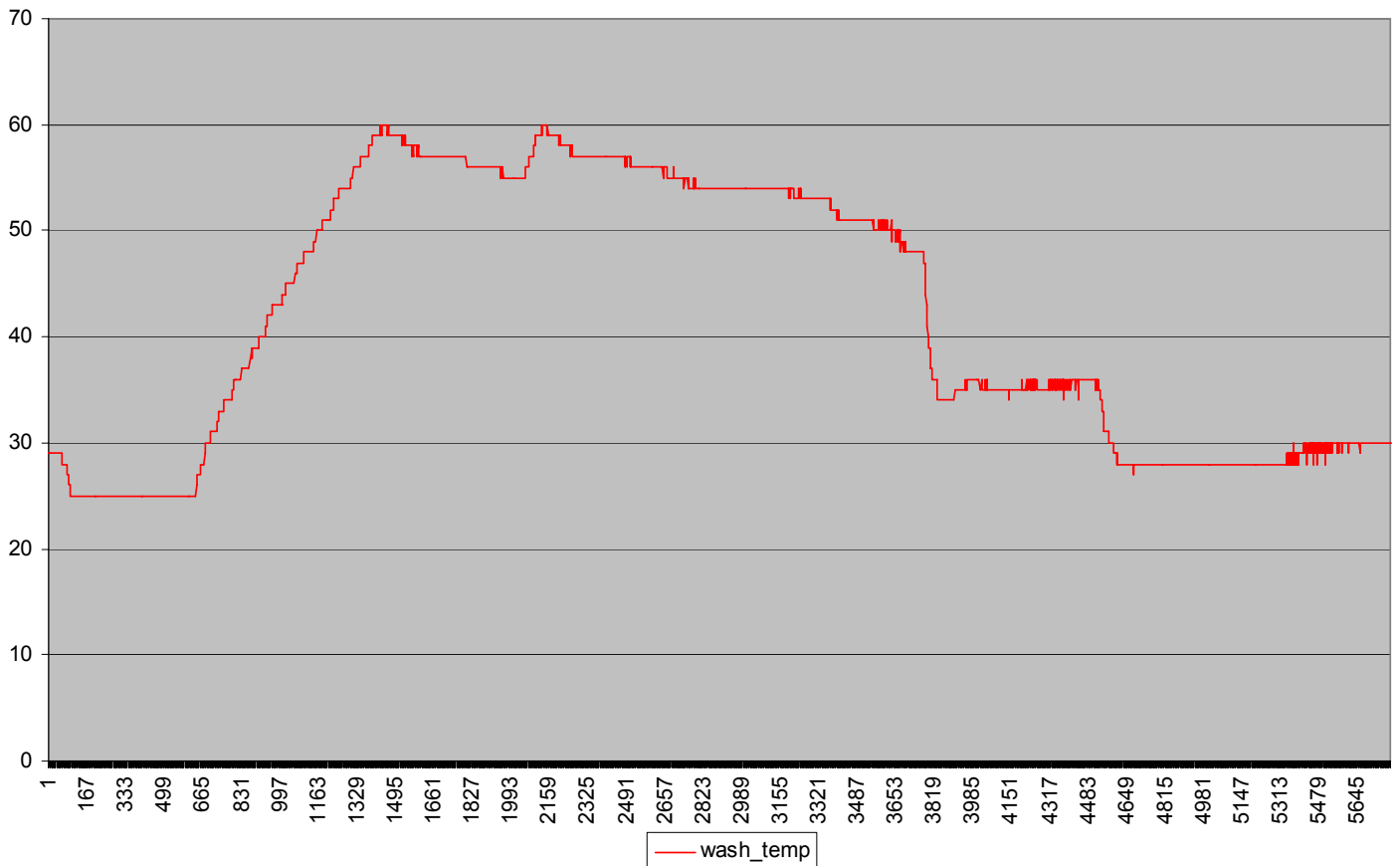
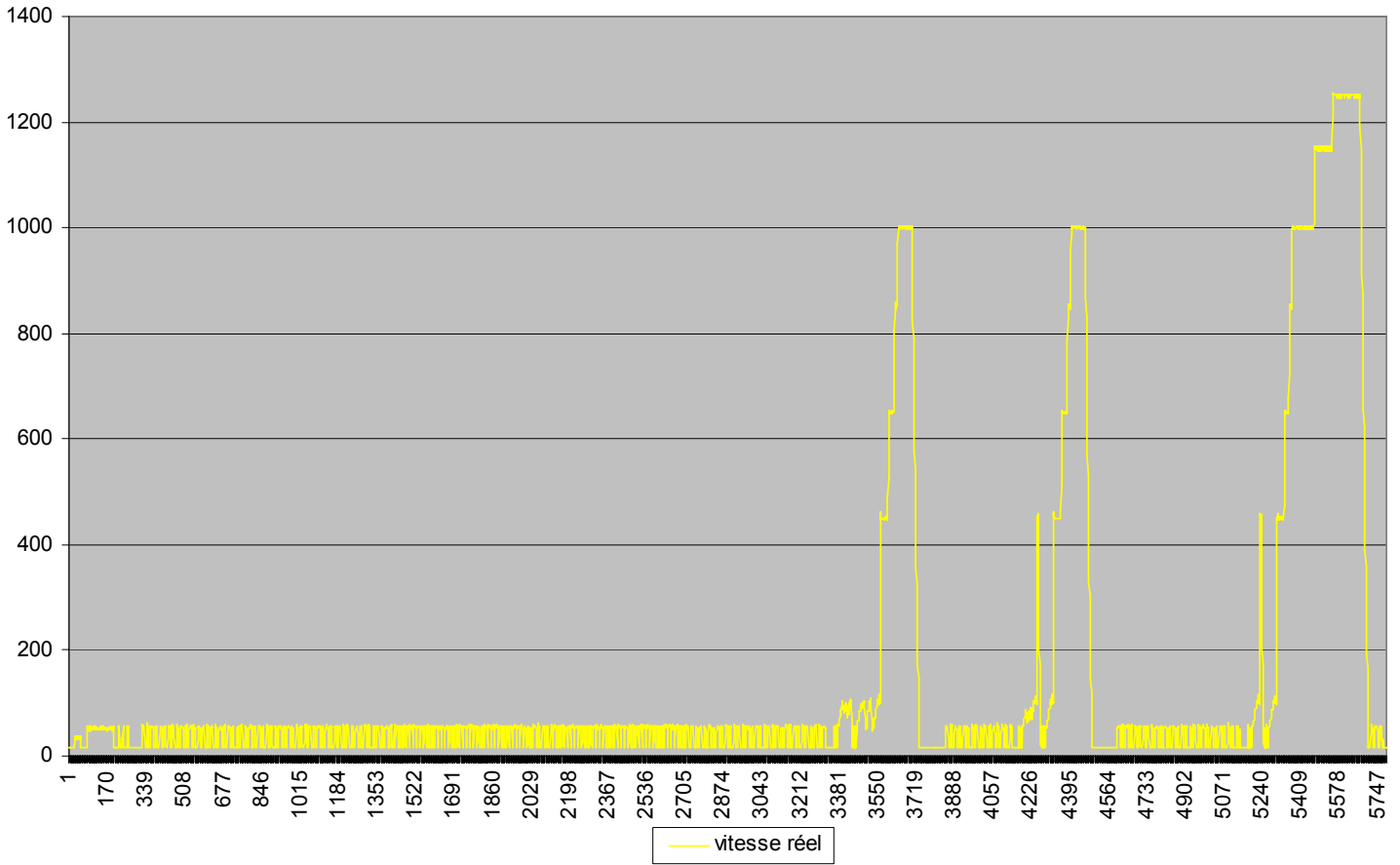
# Program cycles

Cotton / Coloured 60° ECO (without options) Software WBD101..



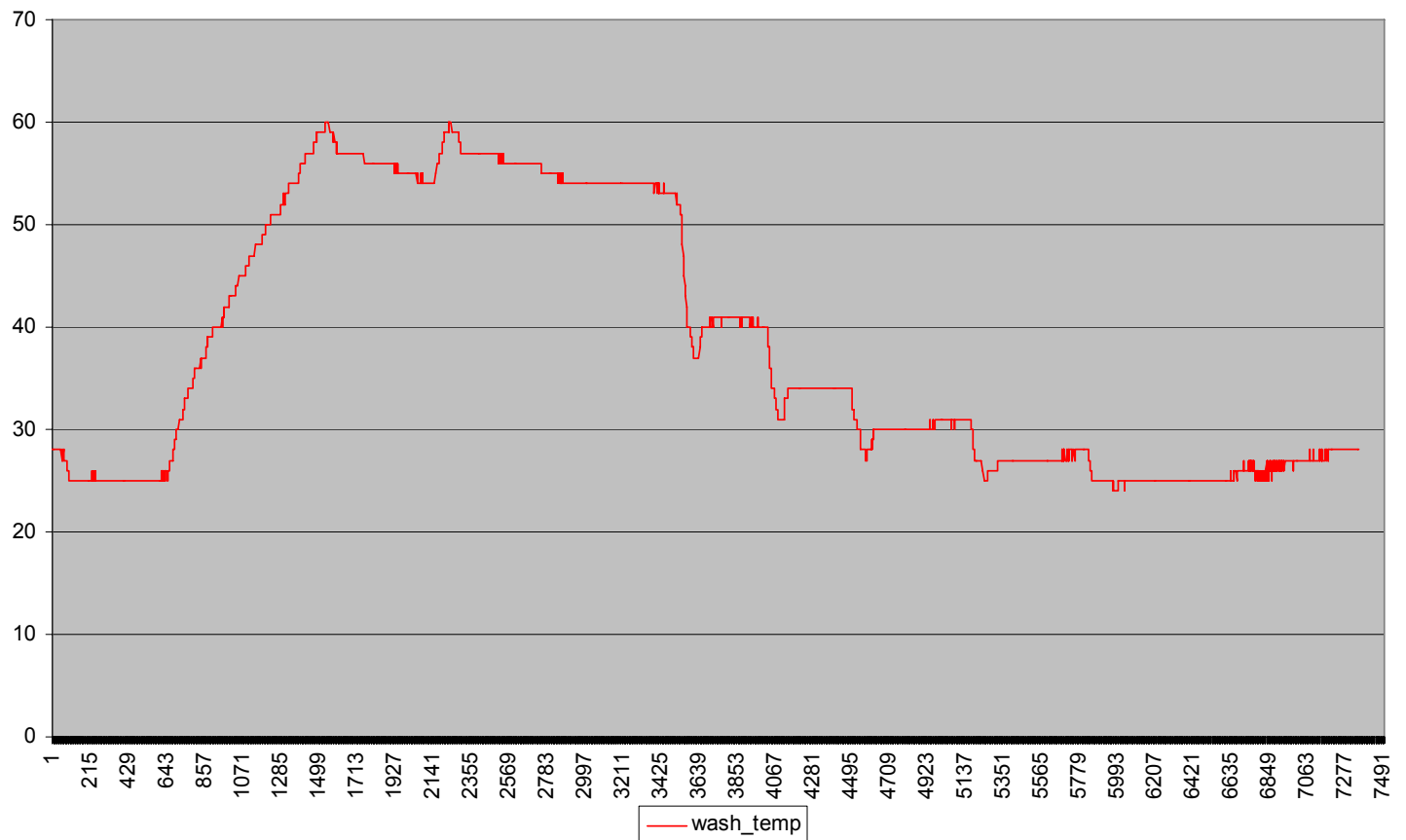
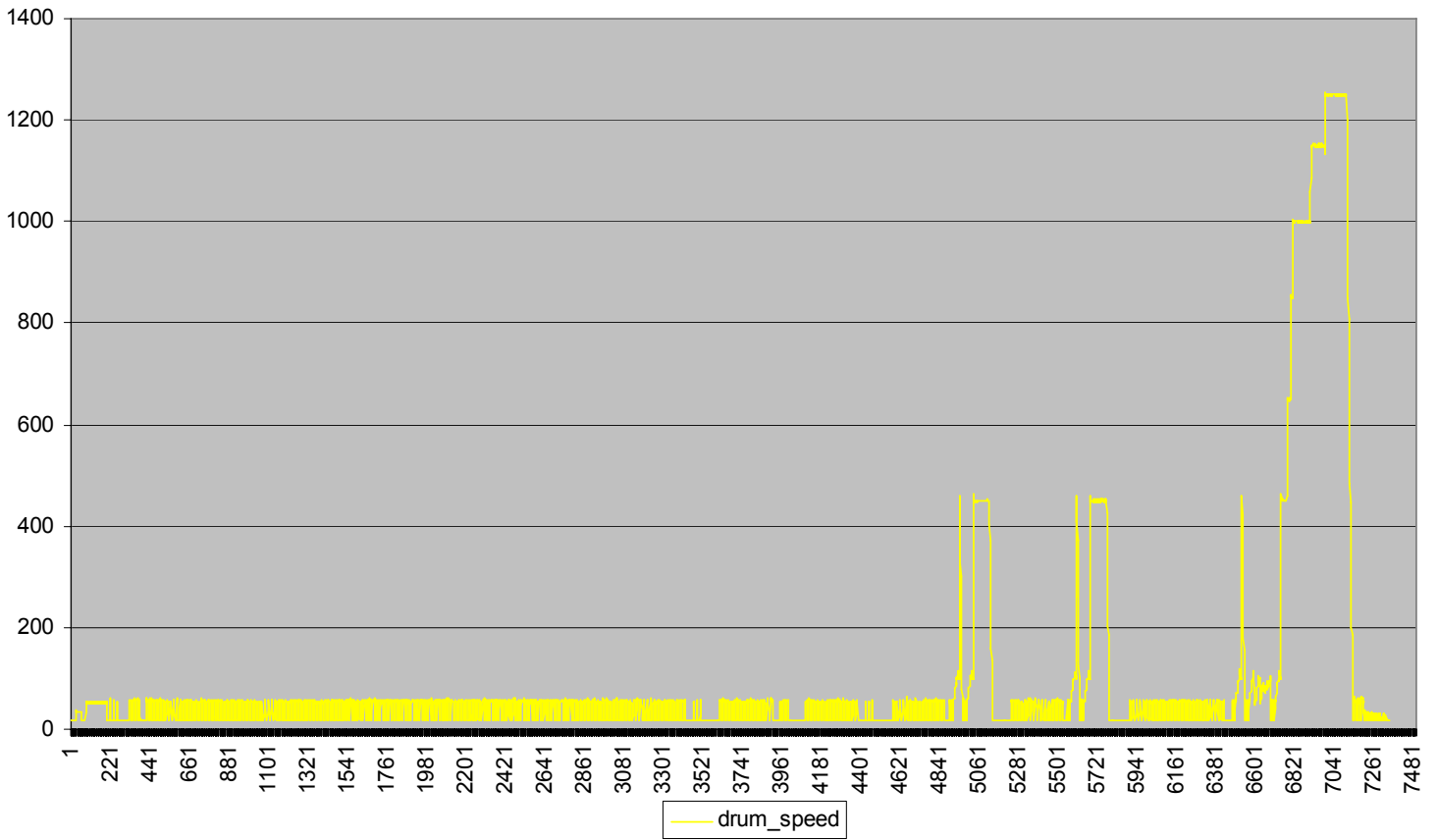
# Program cycles

Cotton 60° (without options) Software WBD101..



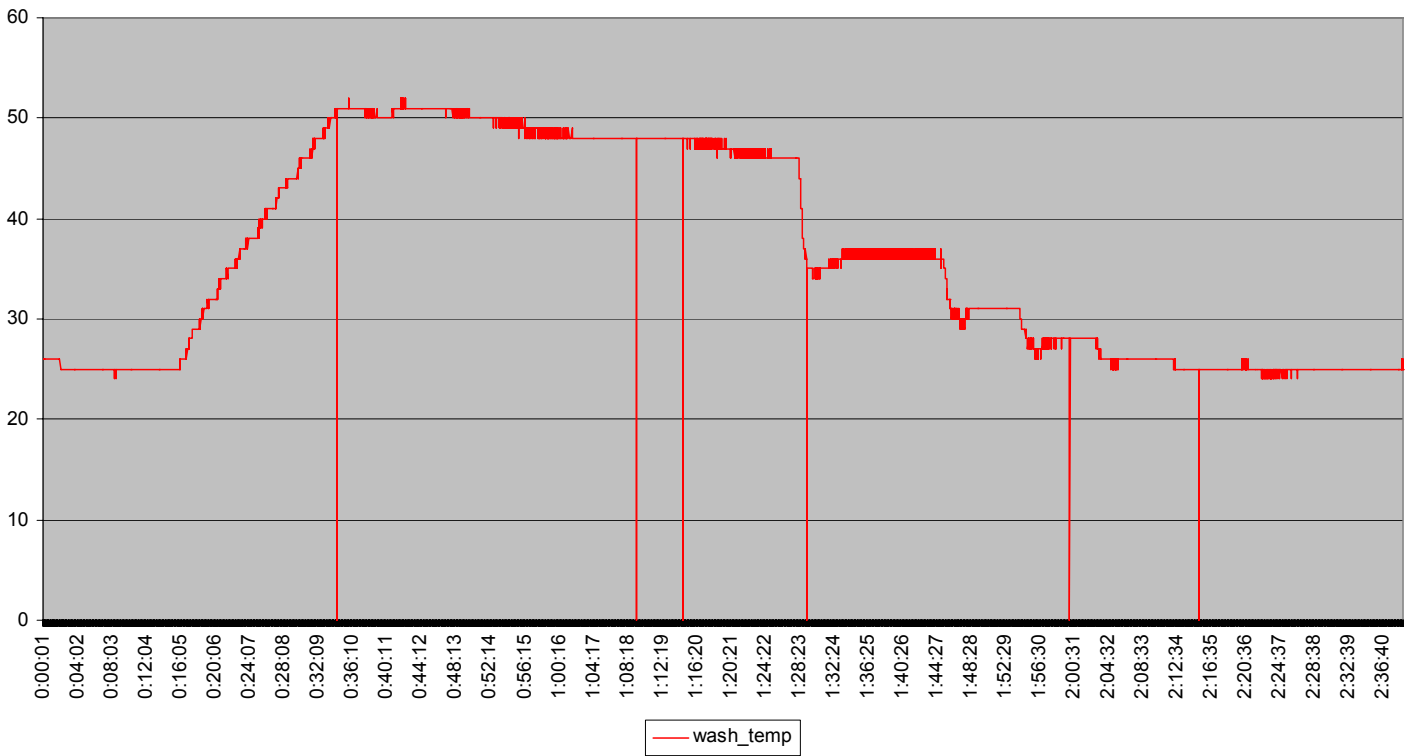
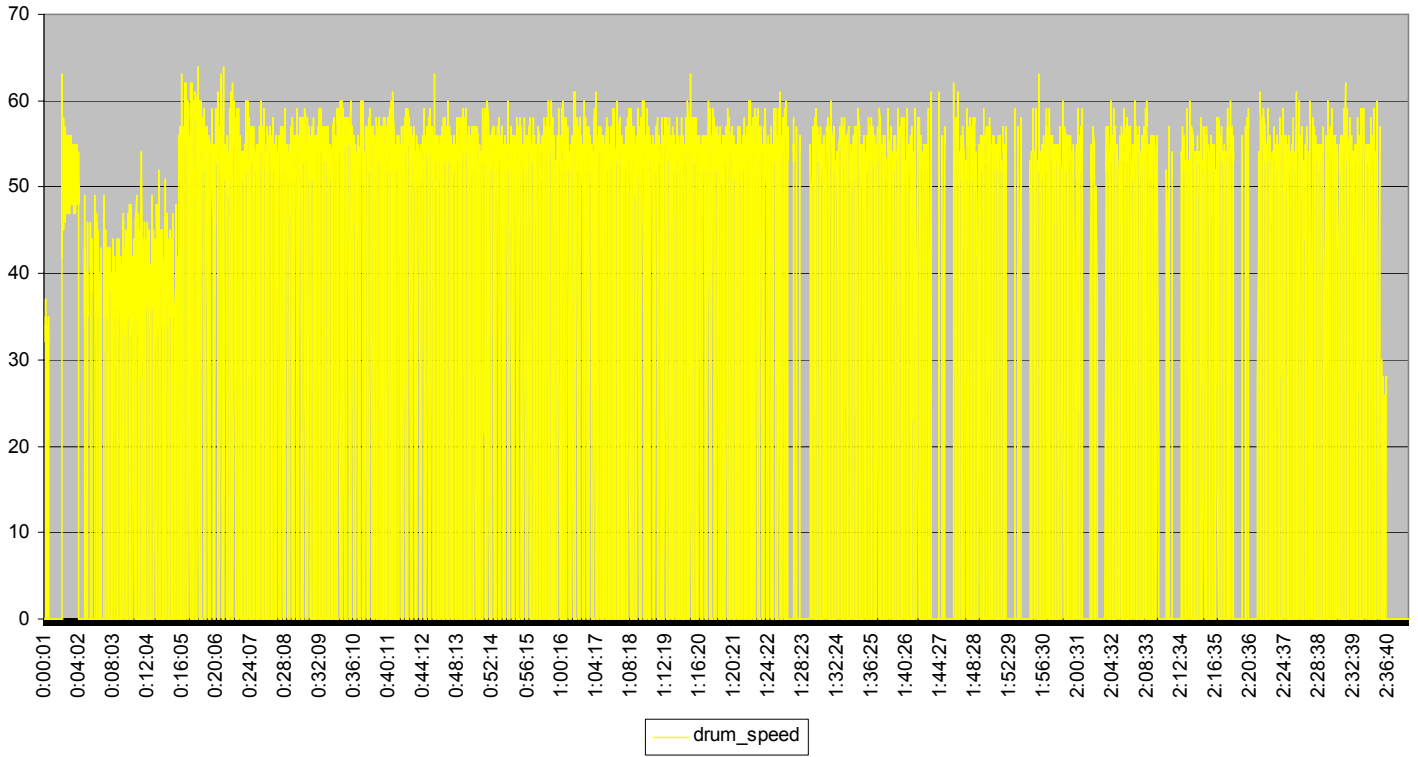
# Program cycles

Cotton / Cloured 60° + Rinse+ Software WBD101..



# Program cycles

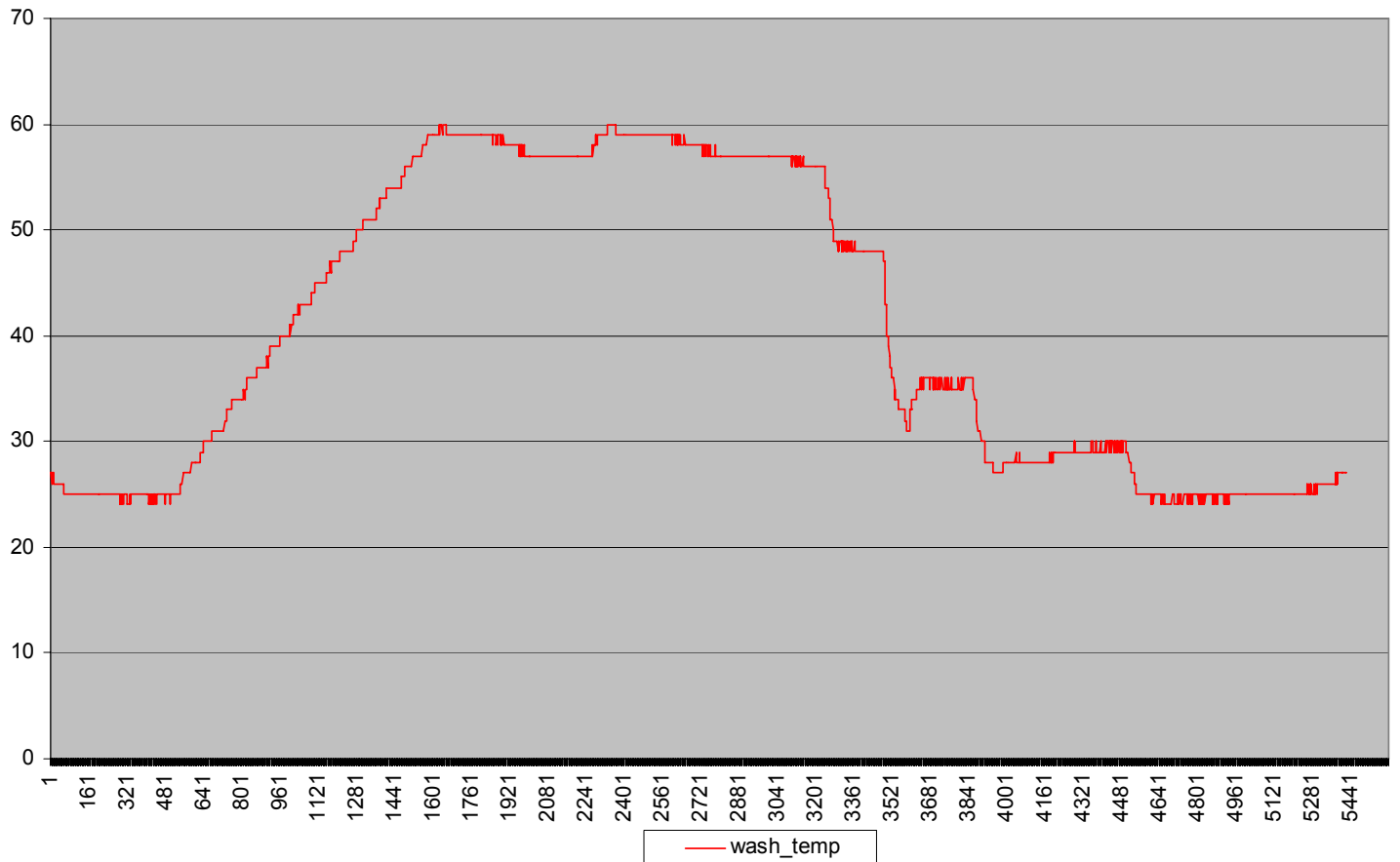
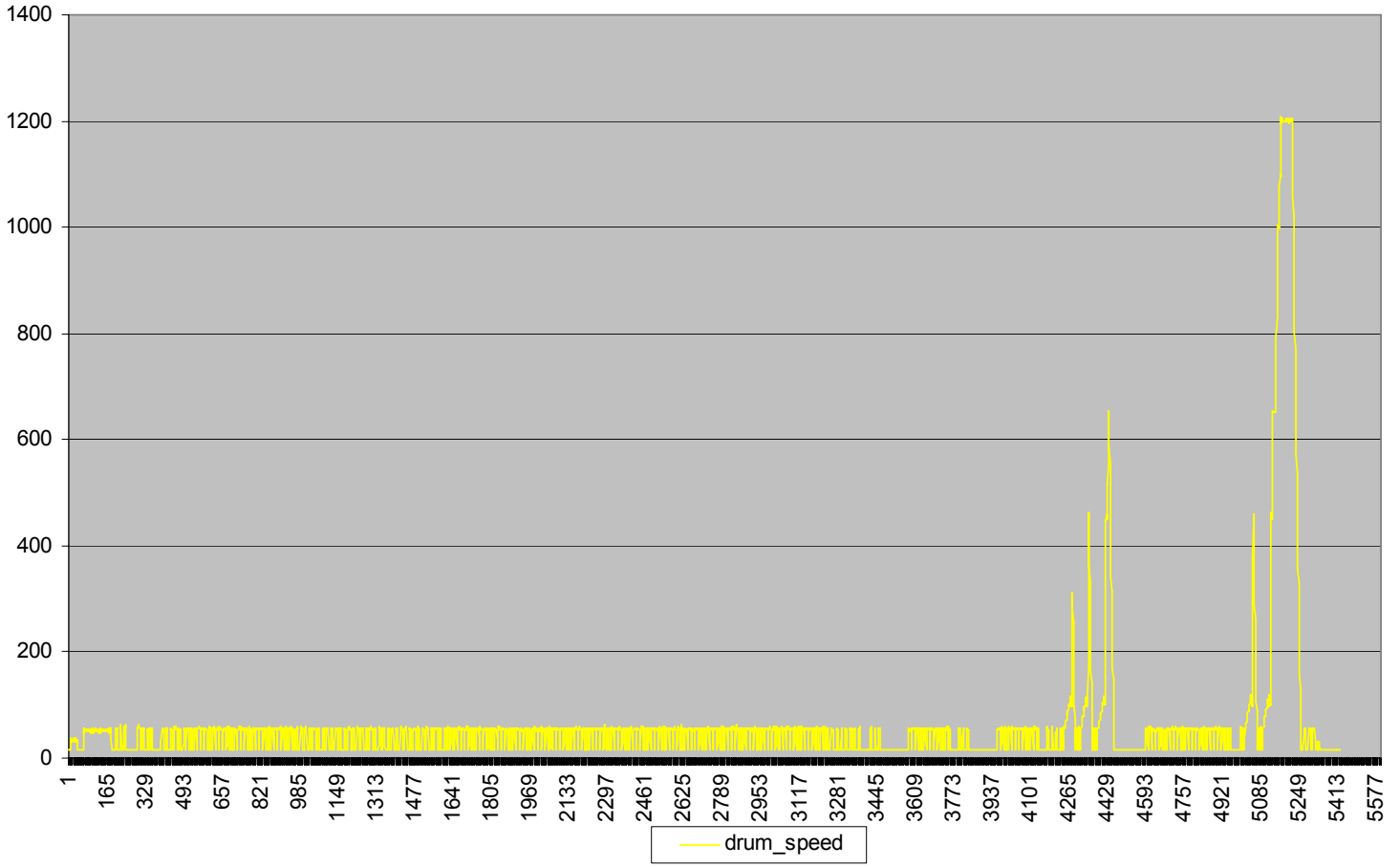
Cotton / coloured 60° ECO + Night cycle    Software WBD101..





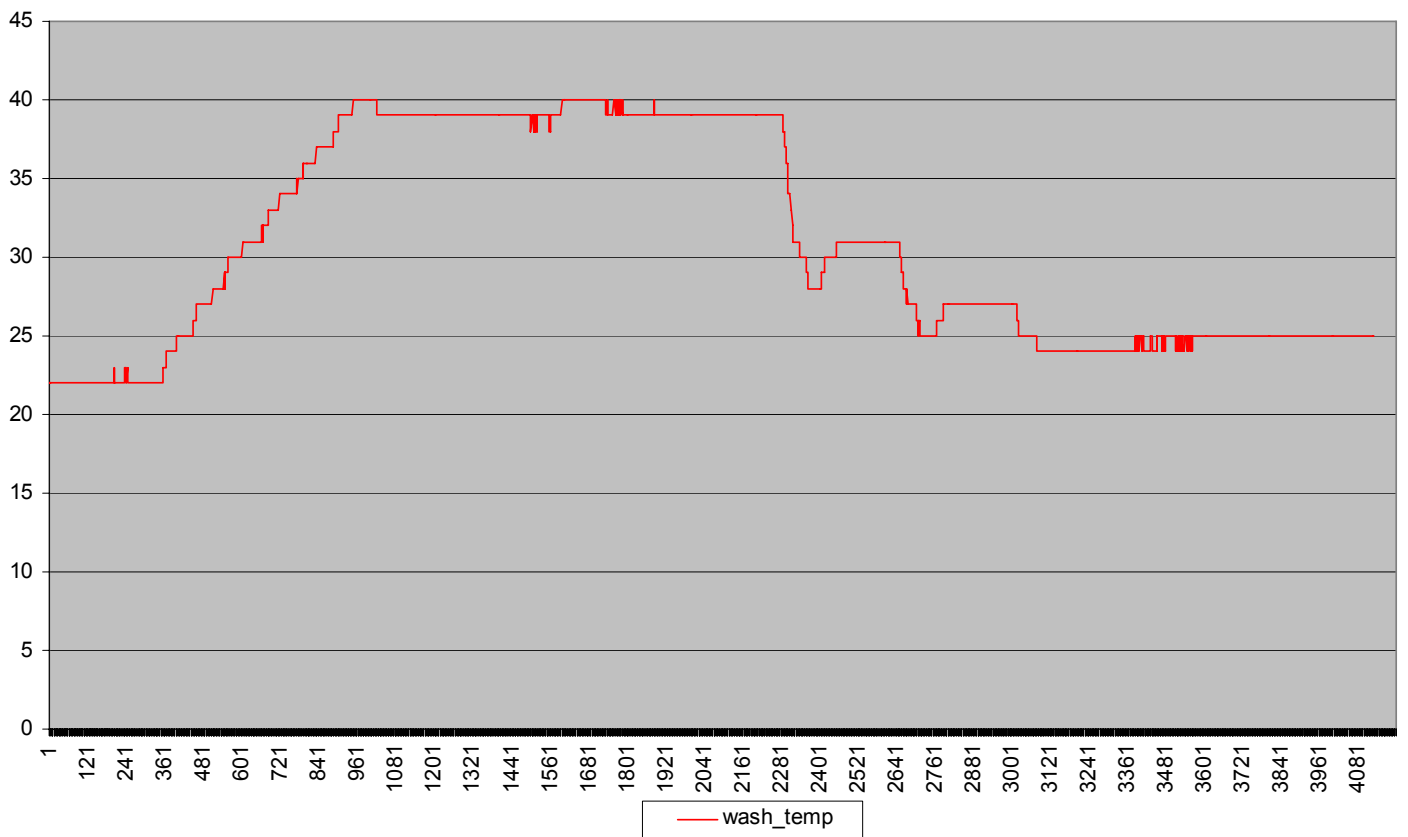
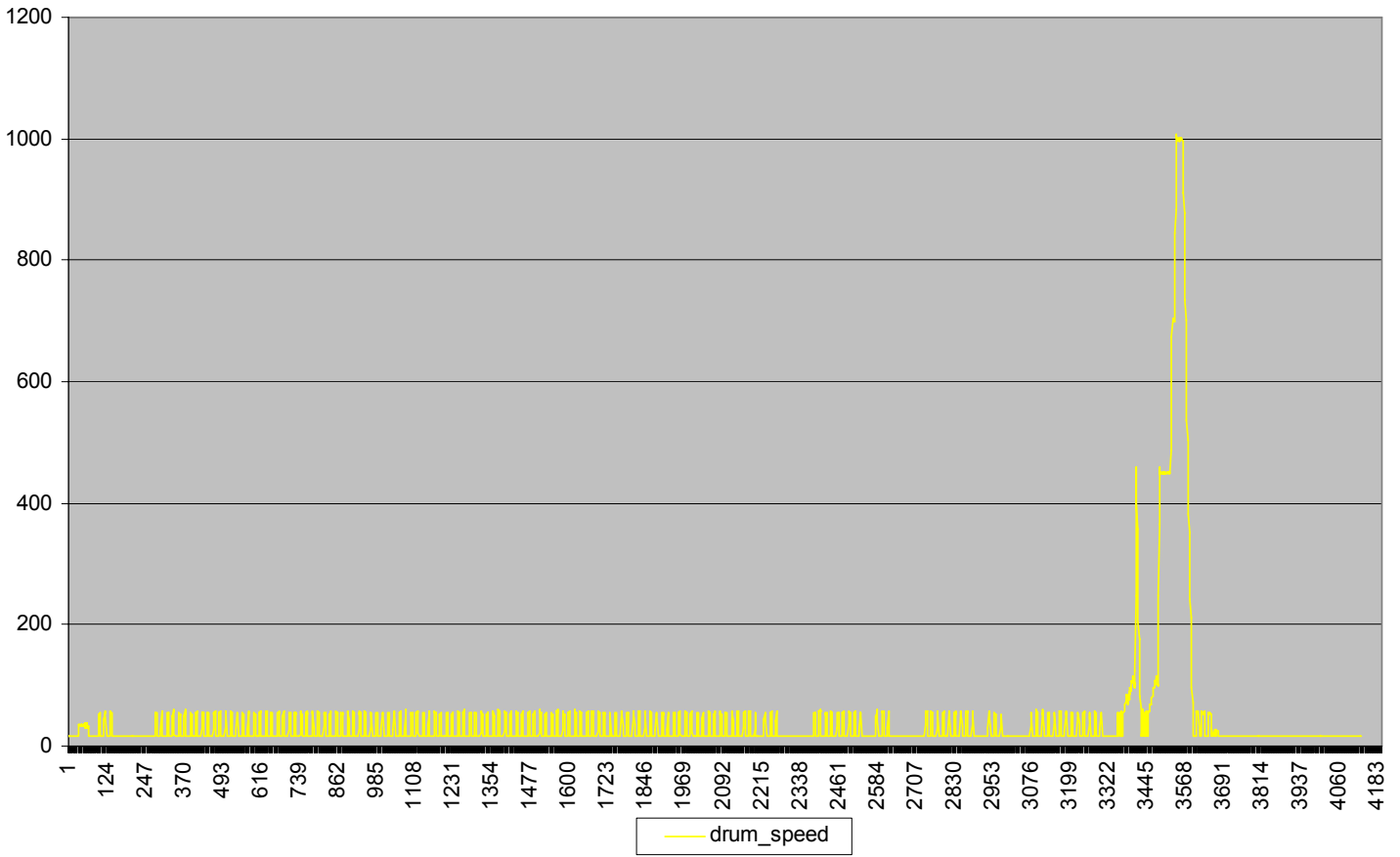
# Program cycles

Synthetic 60° (without options) Software WBD101..



# Program cycles

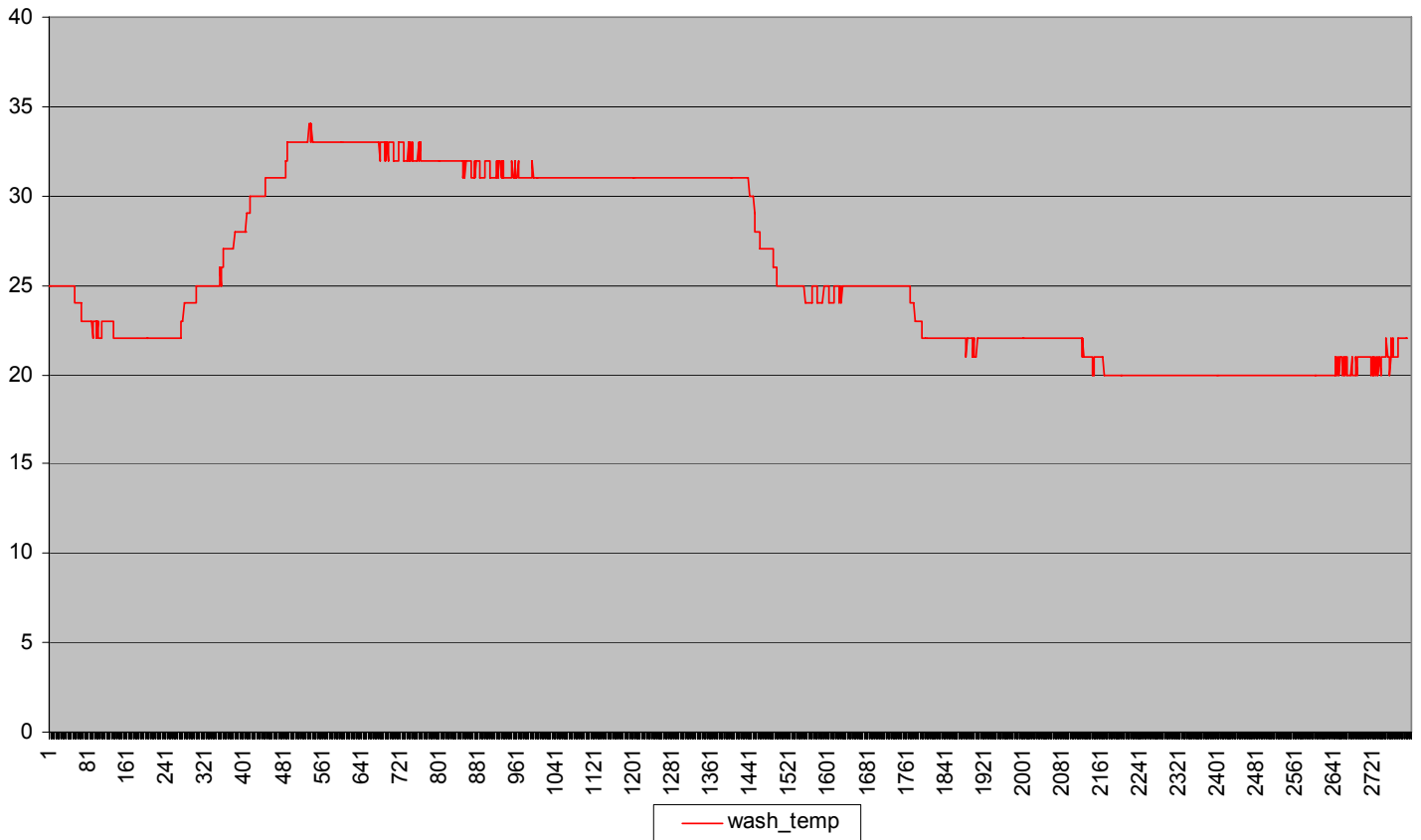
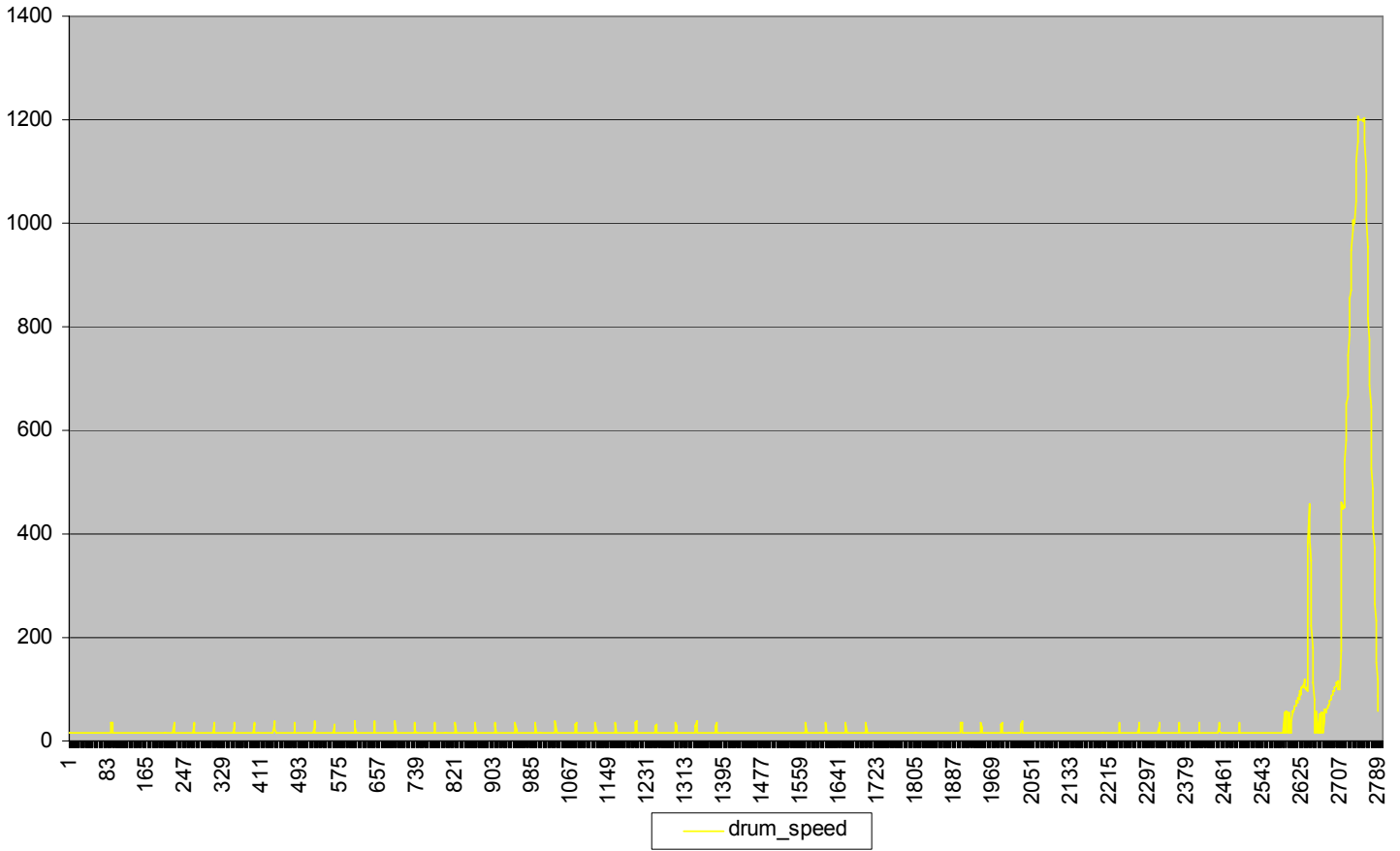
Delicates 40° (without options) Software WBD101..



# Program cycles

Wool 40° (without options)

Software WBD101..



## Changes

Date	Page changed
07.11.2006	13, 27, 30, 36, 45
18.12.2006	13, 27