



Service Manual

Washing machine

Frontloader

WA BERLIN 1300-NL

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	8583 287 12000	
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This documentation is only intended for qualified technicians who are aware of the respective safety regulations.

Date: 06.12.1999

Document-No.: 4812 712 14917

Subject to modification

Technical data**Dimensions**

Height	85	cm
Width	59.5	cm
Depth	60	cm

Weight

Without packing	79	kg
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Main connection

Voltage	230	V
Frequency	50	Hz
Power consumption	2.3	kW
Fuse rating	10	A

Drum

Volume	48	l
Wash spin	40/54	rpm
Ramp spin	110	rpm
Speed spinning	1400	rpm

Capacity of dry laundry

Cotton/coloured laundry	5	kg
Cotton rapid	3	kg
Easy care	2.5	kg
Easy care rapid	1.5	kg
Delicate	1.5	kg
Wool	1.0	kg

Pressostat for washing-machine

Level1		
Switching point	50 ± 5	mmWc
Reset	30 ± 5	mmWc
Level2		
Switching point	120 ± 5	mmWc
Reset	90 ± 5	mmWc
Overflow		
Switching point	280 ± 20	mmWc

Water column drum

Level1		
Switching point	31 - 42	mm
Level2		
Switching point	105 - 116	mm
Overflow		
Switching point	267 - 306	mm

Nominal current**Contacts:**

11 - 12	4 (4)	A
11 - 14	16 (4)	A
11 - 16	1 (1)	A
21 - 24	1 (1)	A

Contacts system:

11-12-14	jump contacts
21 - 24	jump contacts
11 - 16	slow action contacts

Door lock

Lock time (20°C)	3 - 6"
Unlock time	60 - 90"
Nominal voltage	230 V

Nominal current contacts:

4 - 5	1	mA
11 - 14	16 (4)	A
11 - 12	<1	A

Heating element

Kind of heating	Tubular heating element with NTC - Sensor	
Nominal voltage	230	V
Nominal power	2050	W
Heat conductor resistance R 25	22-28	Ω
Resistance NTC:		
0°C	35.9	kΩ
30°C	9.8	kΩ
40°C	6.7	kΩ
50°C	4.6	kΩ
60°C	3.2	kΩ
70°C	2.3	kΩ
95°C	1.1	kΩ

Aquastop

Water temperature max.	60	°C
Rated flow	> 1 bar	8 l/min.
Pressure range	0.5-10	bar
Nominal voltage	220-240	V
Frequency	50	Hz
Starting voltage	< 6 bar	160 V
	6-10 bar	170 V
Nominal current	35	mA
Nominal power	6	VA
Nominal resistor (20°C)	3.4 - 4.5	kΩ

Floater

Nominal current	230	V
Nominal power	3 (1)	A
Switch energy	< 15	cN

Technical data

Drain pump (synchronous)

Nominal voltage	230	V
Nominal current	0.3	A
Nominal consumption	34	W
Frequency	50	Hz
Resistor (coil)	155 ± 7%	Ω
Motor protection	no	
Capacity (1.25m height)	15 ± 2	l/min

Drain pump (optional)

Nominal voltage	230	V
Nominal current	0.3	A
Nominal consumption	34	W
Frequency	50	Hz
Resistor (coil)	155 ± 7%	Ω
Motor protection	170	°C
Capacity (1.25m height)	15 ± 2	l/min

Program timer

Type	Hybridtimer with integrated electronic	
Fab.	Eaton EC 4489.02 (Timer3)	

Nominal voltage	230	V
Frequency	50	Hz
Total positions	60	
Pre wash	pos. 01 - 08	
Main wash	pos. 09 - 28	
Rinse	pos. 29 - 50	
Spin	pos. 51 - 55	
Error	pos. 56 - 58	
Stop	pos. 59 - 60	

Ambient temperature	to 70	°C
Storage temperature	to 85	°C

Output

motor	A9 - A10	>40 V
pump	DP2.1 - DP2.2	230 V
doorlock	DL3.1 - DL3.3	30 V
pressostat	A4 - A10	230 V
- empty	A2 - A10	230 V
- full N1	A3 - A10	230 V
- full N2	A4 - PR2.2	230 V
aquastop	Aq2.1 - A10	230 V
- pumping step	Aq2.2 - A10	230 V
valve	V2.1 - V2.2	>170 V
Options	OD7.1-OD7.3	230 V
Heating element	A1-B11	230 V

Motor

Type	MCA 61/64 - 148 t.f./ BkD0	
	i = 1 :12.36	
Resistance		
1 - 2	68.70	± 7% Ω
Collector directly	1.65	± 7% Ω
5 - 6	1.60	± 7% Ω
5 - 7	0.69	± 7% Ω

Radio interference supression

Nominal voltage	230	V
Nominal capacity	1μ FX1+2x22nFY	
Nominal inductance	2 x 1	mH
Nominal resistance	470	kΩ

Push button switch integrated in display board

Start	SST
Rinse hold	SRS
Rapid	SR
Spin speed	SSR
Pre wash	SPW
Eco	SEC
Intensive rinse	SRI
Time delay	STD

Display board

with Start delay		
Nominal voltage	PB7.5-PB7.7	230 V

Spare part list

Model WA BERLIN 1300-NL
Service No. 858328712000
Version 858328712000

Pos. No.	12NC Code	Description
001 0	4812 440 18996	Cabinet
003 0	4812 464 48112	Traverse BK-cold
004 0	4812 440 19583	Drip tray assy WH,BK-STEP1
011 0	4812 500 18068	Foot variable
021 0	4812 440 19329	Front
021 1	4812 440 19331	Flap Filter
024 0	4812 440 18998	Panel, rear
025 0	4812 440 18994	Holder WA-DE-IG-BK
030 0	4812 310 38181	Table top
040 0	4812 417 18787	Hinge
053 0	4812 459 38011	Plinth
061 1	4812 466 88464	Counter weight SS-TUB,1400
080 0	4812 466 48057	Shock absorber
084 0	4812 466 58001	Silent bloc
084 1	4812 404 68021	Holder
086 0	4812 401 18409	Holder Shock Absorber
086 2	4812 401 18412	Stopper
110 0	4812 498 18139	Handle,door white
130 0	4812 417 28046	Lock Door
130 1	4812 417 28045	Pin Door Lock
131 0	4812 417 28047	Plate Door lock
131 1	4812 417 28048	Plate Doorlock Lower
141 0	4812 450 68218	Door glass
143 0	4812 440 18988	Glassdoor frame white
144 0	4812 440 19589	Frame,door glas DE-WT
144 1	4812 498 18137	Knob Door safety
144 2	4812 492 58023	Spring Door Safety
144 3	4812 290 68153	Holder,adjust. Door Safety
190 0	4812 466 68557	Door bellow
190 1	4812 492 18015	Strap Fix. Bellow
190 2	4812 492 98011	Strap
200 0	4812 418 18181	Tub
201 0	4812 464 48002	Bottom tub
210 0	4812 520 18034	Crosspiece
220 0	4812 418 18186	Drum 1200-1400,48L
228 0	4812 418 18096	Crosspiece,drum
271 0	4812 358 18157	Belt BK 1254 J5
272 0	4812 528 58004	Pulley
272 1	4812 532 28006	Bushing conical
292 0	4812 530 58003	Gasket tub bottom
301 0	4812 452 19318	Control panel
303 0	4812 498 18138	Handle, drawer
322 0	4812 452 10167	Insert panel
324 0	4812 440 18992	Lid Rearcover
331 0	4812 413 48222	Knob
331 1	4812 413 18191	Adapter f. Knob
332 0	4812 410 28546	Push button Start
332 1	4812 413 48225	Push button Right
332 2	4812 413 18195	Push button Middle
332 3	4812 413 48226	Push button Left
332 4	4812 413 48224	Push button Delay
342 0	4812 413 18192	Program indic.
342 1	4812 278 88006	Slide Indicator
342 2	4812 413 18212	Cam indicator
342 3	4812 413 18194	Spring

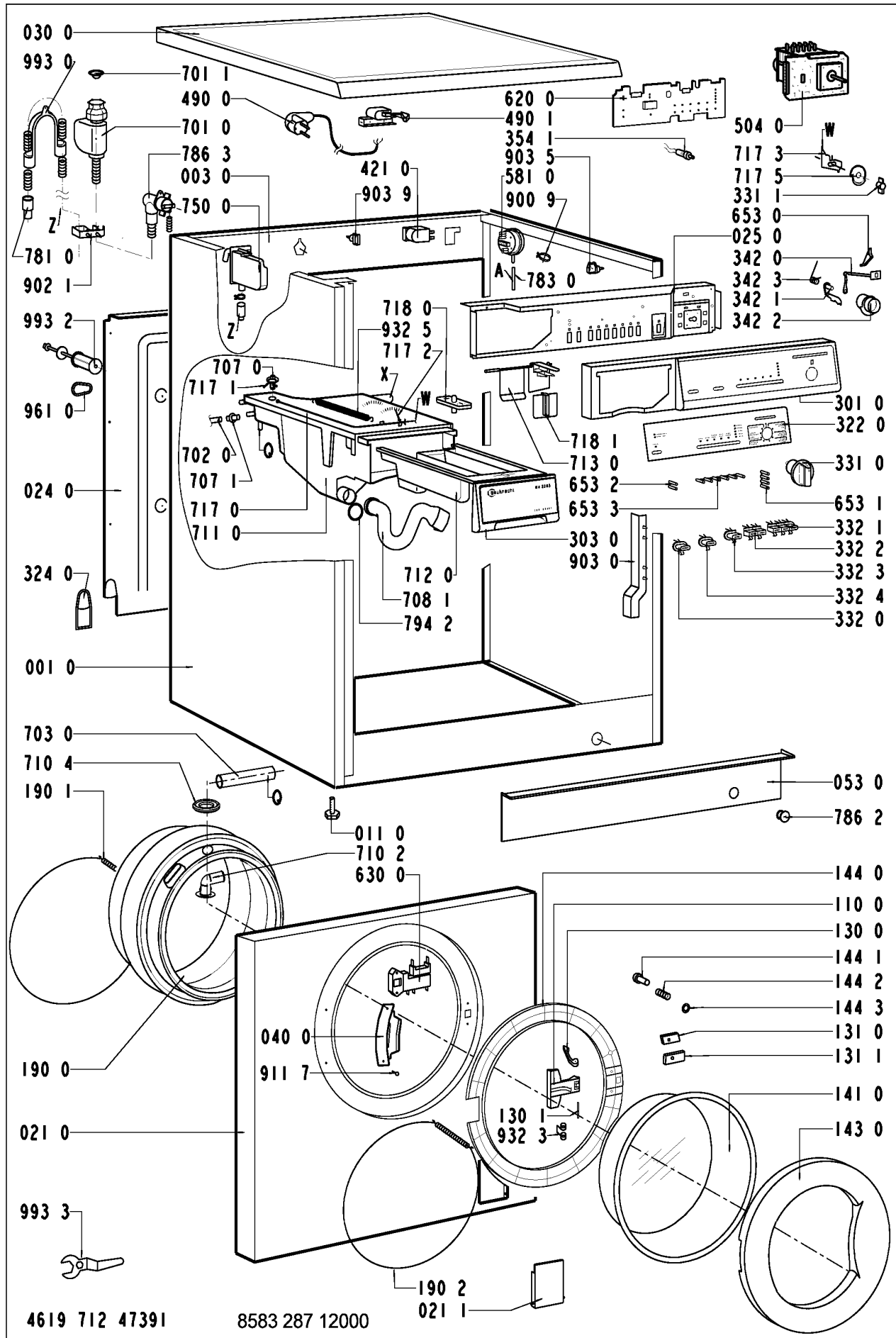
Pos. No.	12NC Code	Description
354 1	4812 134 48216	Pilot lamp
401 0	4812 361 58091	Motor MCA61/64-148-1400
401 1	4812 362 48004	Brush,carbon motor CESET
421 0	4812 121 18142	Interf.filter 1,00 uF
430 0	4812 310 18458	Pump SERVICE SET
451 0	4812 259 28669	Heating element
490 0	4819 321 18136	Cable,mains 2m
490 1	4812 321 28367	Strain relief
504 0	4819 310 39827	Timer 3 Mask.5EC4489
581 0	4812 271 28365	Pressostat
620 0	4812 276 28365	Module TIMER 3
623 0	4812 271 38358	Switch MICRO
623 1	4812 360 58112	Floater Kit BK,WH
630 0	4812 280 58019	Door lock
653 0	4812 134 48189	Guide,light On/Off
653 1	4812 134 48194	Guide,light 4x
653 2	4812 134 48193	Guide,light 2x
653 3	4812 134 48195	Guide,light 6x
701 0	4812 530 18002	Hose, inlet VWS 3m
701 0	4812 530 28808	Hose, inlet VWS 1,5m
701 1	4819 466 69704	Gasket and filter
702 0	4819 530 29019	Hose intern
703 0	4812 530 48162	Hose
707 0	4812 526 48031	Nozzle Distribution
707 1	4812 526 48028	Nozzle
708 1	4812 530 48141	Bend
710 2	4812 530 48161	Fitting
710 4	4812 530 78011	Washer edge disc
711 0	4812 418 88032	Dispenser
712 0	4812 418 88029	Drawer Detergent
713 0	4812 418 88019	Flap Detergent Container
717 0	4812 418 78925	Bowden cable
717 1	4812 321 38013	Lever , Nozzle
717 2	4812 321 38012	Holder,adjust.
717 3	4812 278 88007	Slide
717 5	4812 310 18381	Cam
718 0	4812 526 48027	Siphon 3 - Chamber
718 1	4812 418 88018	Accessory
750 0	4812 530 48139	Boiler
753 1	4812 418 68125	Chamber,air
754 0	4812 530 28838	Drainhose
760 0	4812 480 58085	Filter set pump
781 0	4819 530 28959	Hose
781 1	4812 530 28818	Hose
783 0	4812 530 28816	Hose Pressostat
783 1	4812 530 28822	Hose
783 3	4812 530 18001	Connection Part
786 0	4812 530 28812	Hose Draining
786 1	4812 462 79641	Stopper
786 2	4812 462 79642	Threaded cap
786 3	4812 530 28809	Hose Aqua-Stop
787 0	4812 530 28819	Hose with hole
794 2	4812 530 58005	O-Ring
794 5	4812 530 58015	Gasket
900 9	4812 401 48569	Clamp hose pressostat

Spare part list

Model WA BERLIN 1300-NL
Service No. 858328712000
Version 858328712000

Pos. No.	12NC Code	Description
901 0	4812 401 18054	Clamp,hose
901 2	4819 401 18174	Clamp,hose 25-45 mm
901 3	4812 401 18414	Clamp,hose
902 1	4812 255 18204	Holder Hose outlet
903 0	4812 290 88043	Bracket Door lock
903 5	4812 290 88048	Cable clamp
903 9	4812 290 88046	Cable clamp
904 0	4812 529 58002	Rivet Base
910 0	4812 452 18994	Screw M8x20 A2F
910 1	4819 502 18417	Screw
910 5	4812 502 18424	Screw damper
911 7	4812 903 08196	Screw M 5X14-Z
912 0	4812 502 18361	Screw M8x30
921 0	4812 011 18522	Ring,circlip 52x2
923 0	4812 532 18024	Washer
931 0	4812 492 38361	Spring Suspension 1200
932 3	4812 492 58022	Spring Door Lock
932 5	4812 492 38359	Spring , Nozzle
941 0	4812 520 28003	Bearing,ball 6306
941 1	4812 520 28005	Bearing,ball 6304
953 0	4812 530 68001	Shaft seal V 40 A
961 0	4812 466 68545	Cover BK/WH
962 0	4812 466 38011	Cover,protect. heating element
993 0	4819 530 29028	Bow
993 2	4812 310 18435	Distance sleeve BK service kit
993 3	4812 395 58004	Tool

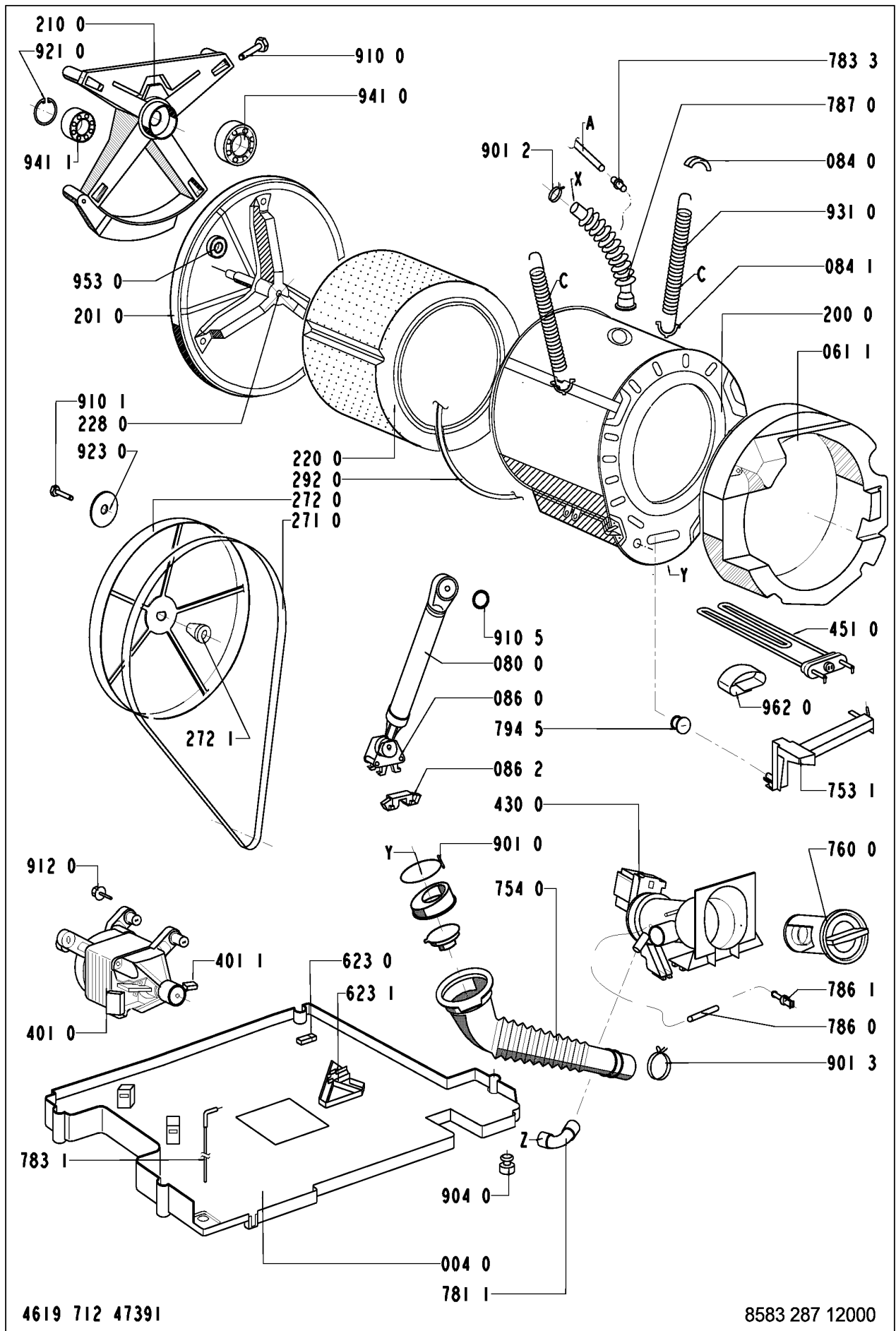
Exploded view



4619 712 47391

8583 287 12000

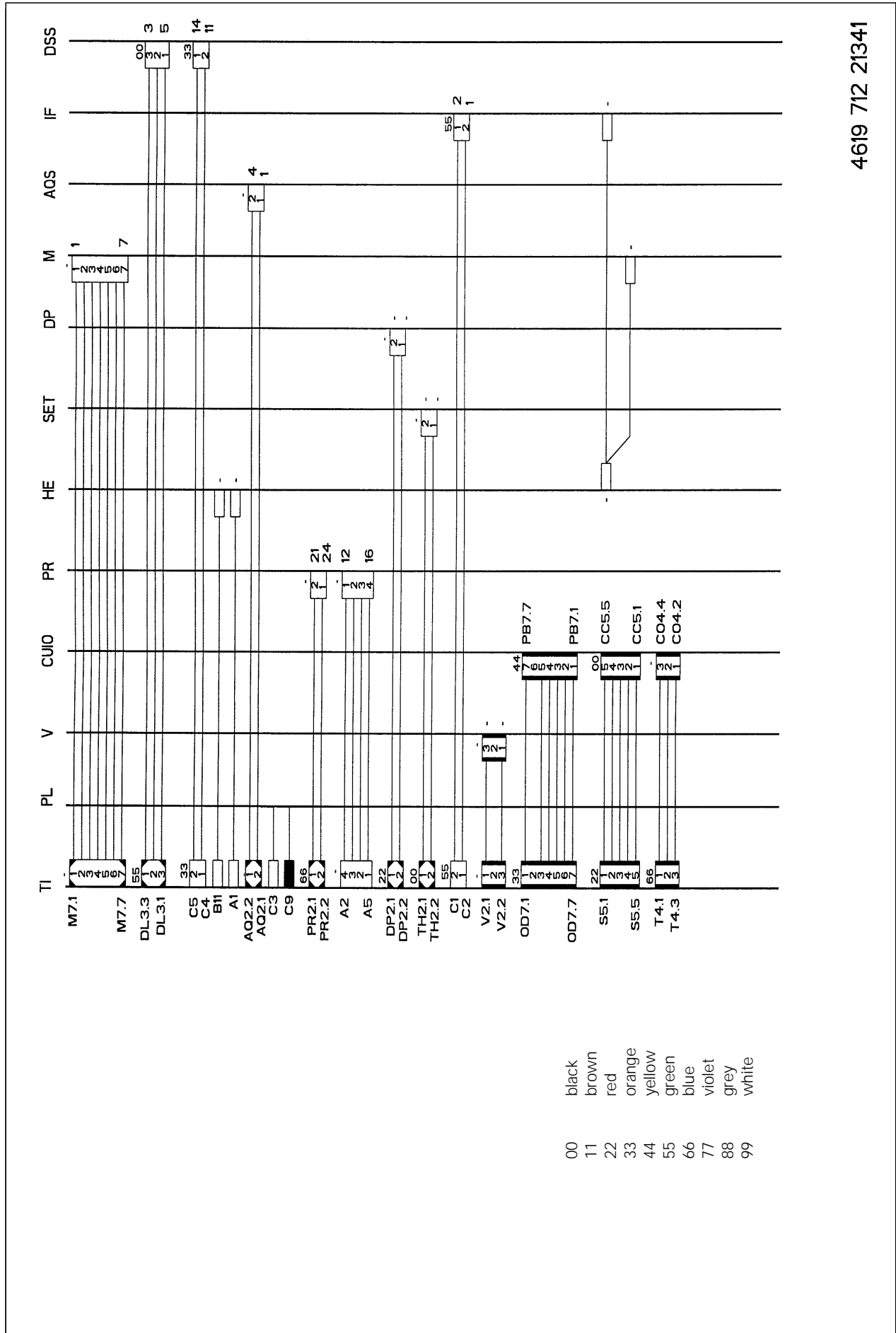
Exploded view



4619 712 47391

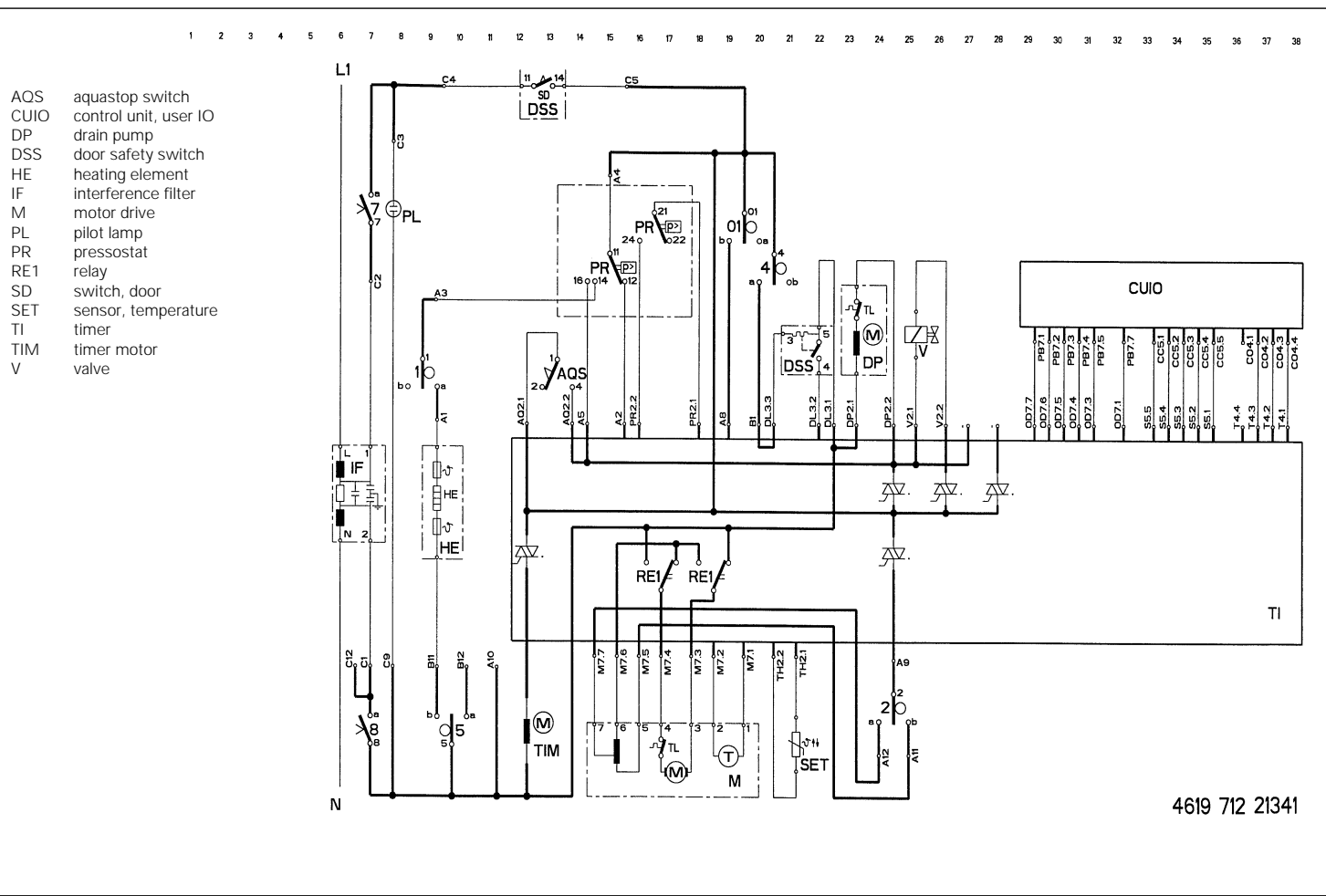
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Wiring diagram



4619 712 21341

Circuit diagram



Program diagram

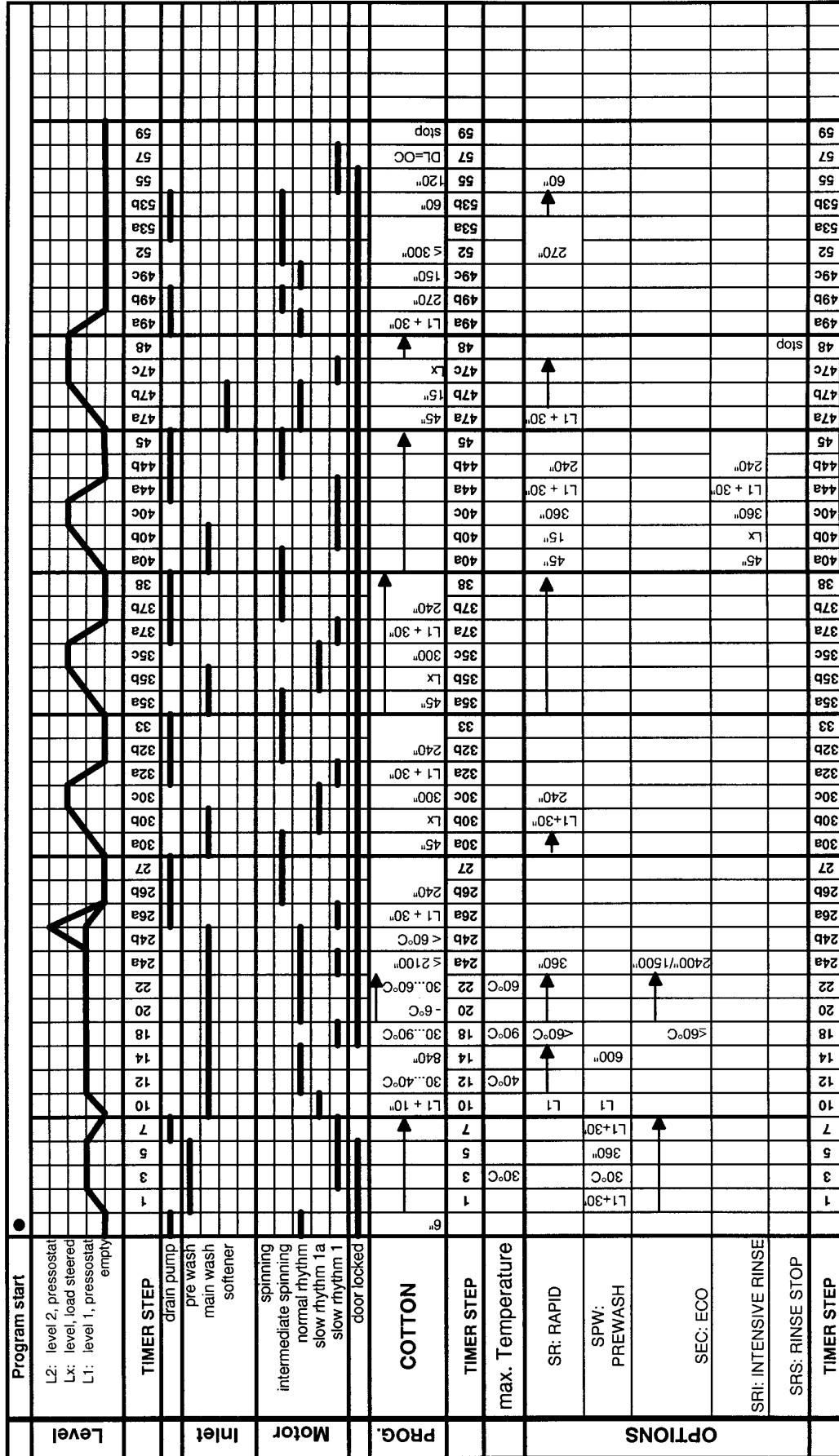
4619 712 22912

Soap dispenser: 3 chambers

Cotton

BK from CW60/1997

timer3 diagram
 Mask3



Motor rhythms: slow rhythm 1: ON 10"/OFF 6" slow rhythm 1a: ON 10"/OFF 6" normal rhythm: ON 12"/OFF 4"

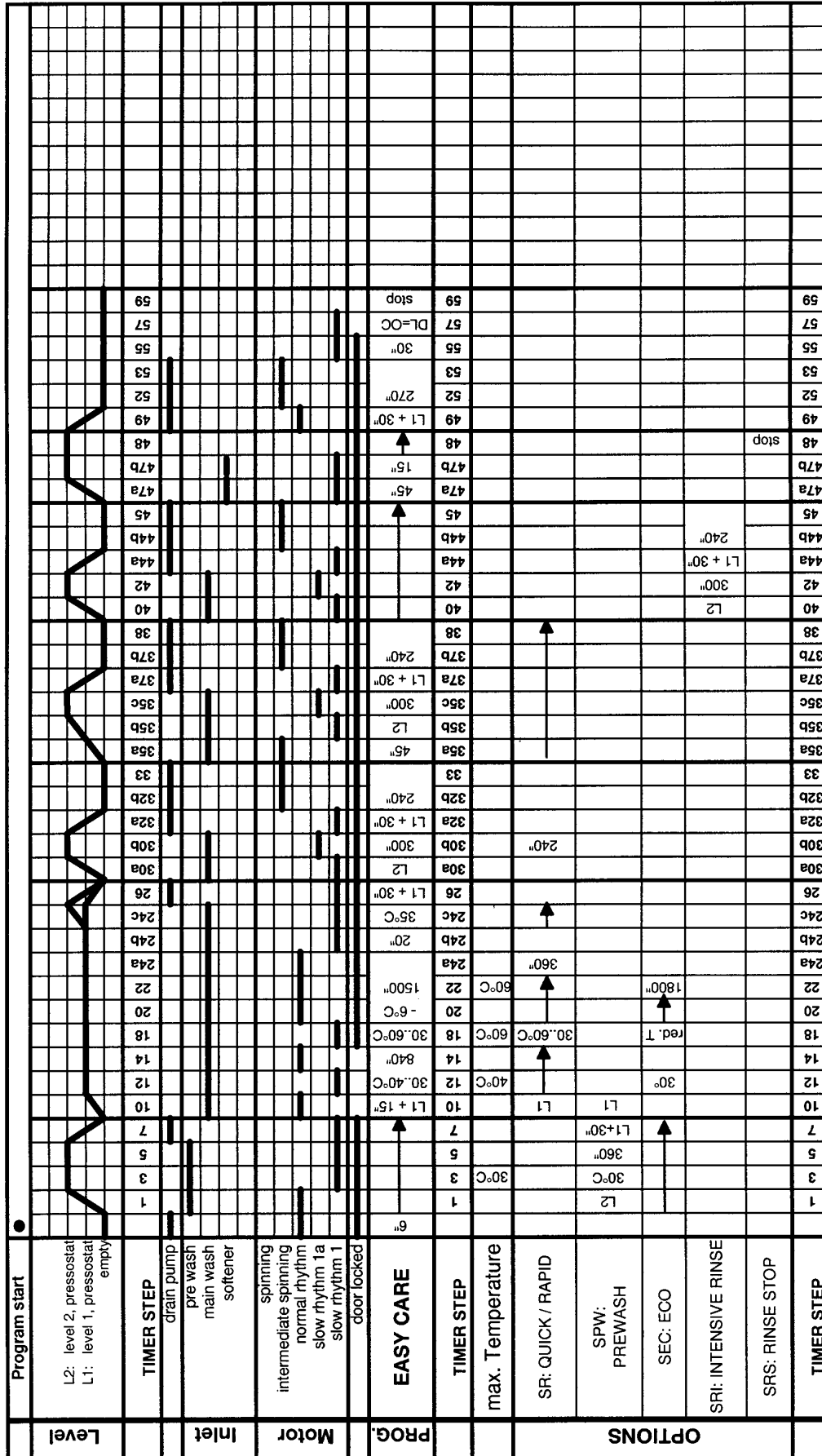
Program diagram

4619 712 22912

timer3 diagram

BK from CW30/1997

Mask3



Motor rhythms: normal rhythm: ON 12"/OFF 4" slow rhythm 1: ON 10"/OFF 6" slow rhythm 1a: ON 10"/OFF 6"

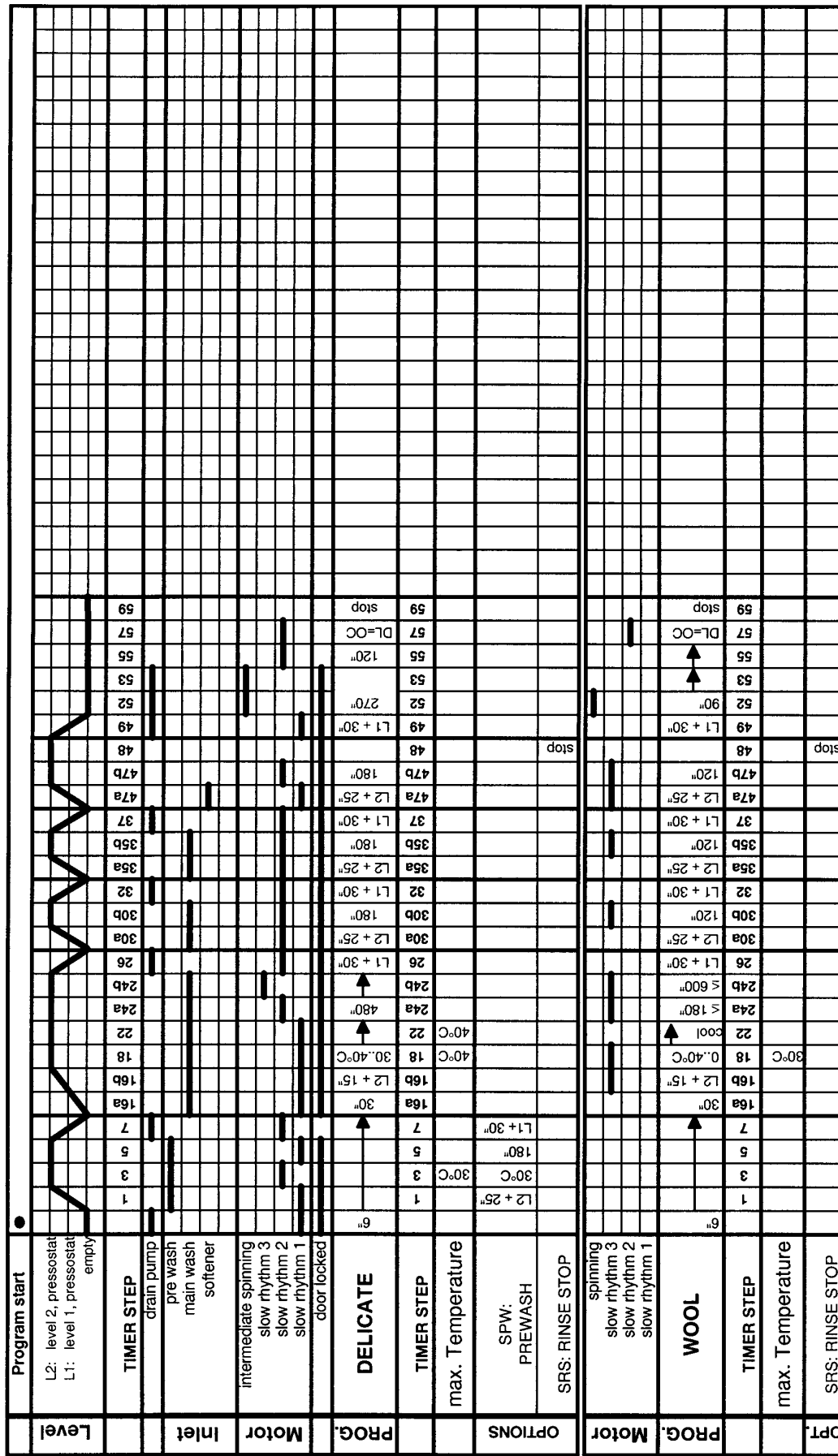
Program diagram

4619 712 22912

Delicate / Wool

BK from CW30/1997

**timer3 diagram
Mask3**



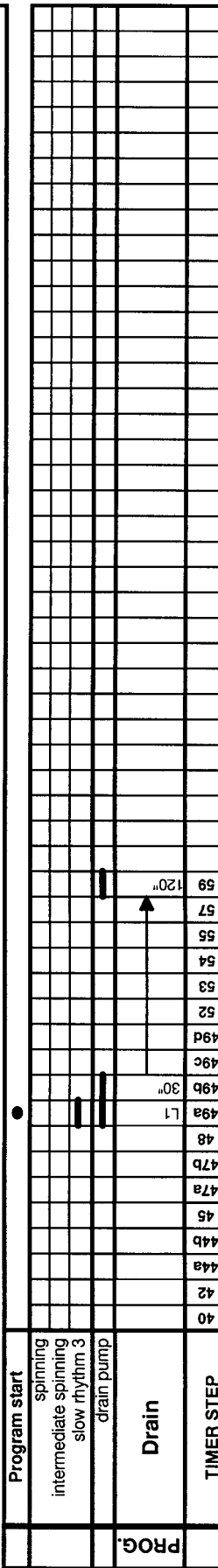
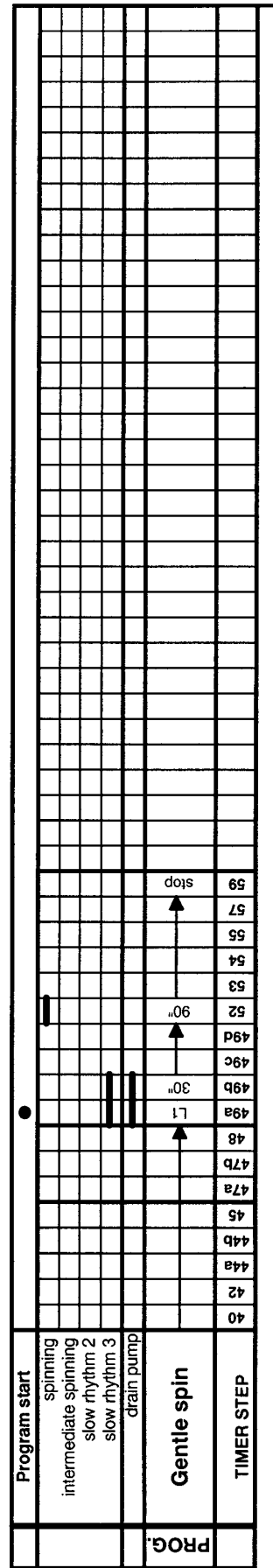
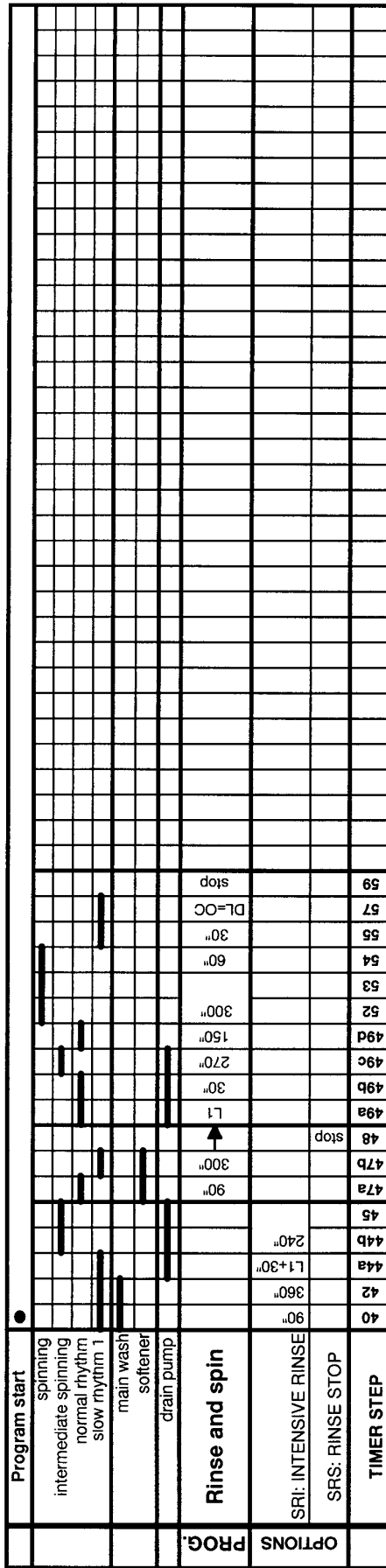
Motor rhythms: normal rhythm: ON 12"/OFF 4" slow rhythm 1: ON 10"/OFF 6" slow rhythm 2: ON 6"/OFF 10" slow rhythm 3: ON 1.5"/OFF 13.5"

Program diagram

4619 712 22912

timer3 diagram BK from CW30/1997 Rinse + Spin / Gentle spin / Drain

Mask3



Text/Legend

Test flow Bauknecht timer 3 EC 4489

- Mask 3 factory code: 4619 710 21033 (on timer label)**
- Mask 5 hot fill factory code: 4619 710 21034 (on timer label)**
- Mask 4 factory code: 4619 710 43961 (on timer label)**
- Mask 4 hot fill factory code: 4619 710 43962 (on timer label)**

- | | | |
|--------------------------------------|--|--|
| 1. Select program
Clean the timer | drain
push start button
wait until buzzer indicates end
select off | > 5 sec |
| 2. Select program | drain | |
| 3. Start test program | push pre wash option 4 times
timer goes to step 1 | < 5 sec |
| 4. Indication elements | digit (display)
start-LED
start delay-LED
rest time-LED
door lock-LED
water inlet-LED | 88
flashing
flashing
flashing
flashing
flashing |
| 5. Go to next step | push pre wash option 2 times | < 5 sec |
| Finish the test program | push start button | > 5 sec |

Attention: Use the test program only without laundry!

step	function	duration	checked	drum rhythm
1. step	fill,pre wash	level 2		
2. step	fill,pre wash	level 1, max 40°, 600"	NTC	
3. step	pump	level 1 + 30 sec		
4. step	fill (cold + hot)	level 1		
5. step	fill, main wash	level 1, max 90°, 900"	NTC	
6. step	fill, main wash	level 1, 300 sec	motor	drum right
7. step	pump	level 1 + 30 sec	motor	drum left
8. step	fill, softening	level 2	motor	drum left
9. step	pump	level 1 + 30 sec		
10. step	ramp+spin	24 sec + 3 sec		intermed.spin
11. step	spin	90 sec	door lock	spinning
12. step	tapped field	270 sec (>700rpm)	door lock	spinning
13. step	stop	endless		

If failure occurs see next page

Text/Legend

ERROR indication Bauknecht timer 3 EC 4489

Mask 3 factory code: 4619 710 21033 (on timer label)

Mask 5 hot fill factory code: 4619 710 21034 (on timer label)

Mask 4 factory code: 4619 710 43961 (on timer label)

Mask 4 hot fill factory code: 4619 710 43962 (on timer label)

If failure occurs timer stays in its position
buzzer beeping for 20 sec. (0,5 sec on, 0,5 sec off)

Appliances with delay digit indication, see list

Appliances without delay LED's on, see list

ERROR indication

ERROR	SHORT LED	INTENSIVE LED	RINSE-HOLD LED	PREWASH LED	DIGITS
WATER-INLET ERROR	0	0	0	1	E1
AQUASTOP / OVERFLOW	0	0	1	0	E2
PUMPING ERROR	0	0	1	1	E3
HEATING ERROR	0	1	0	0	E4
NTC-ERROR	0	1	0	1	E5
MOTOR klixon failure	0	1	1	0	E6
TACHO ERROR	0	1	1	0	E6
HYBRID TIMER ERROR	0	1	1	1	E7
INPUT ERROR via T4.1-T4.4	1	0	0	0	E8
TRIAC SHORT CIRCUIT	1	0	0	1	E9

Text/Legend

Test step	
all:	Pilot lamp C3 / C9 230 V
2:	Door lock A10 / C5 230 V
all:	Filter C1 / C2 230 V
2:	Heating A1 / B11 230 V

A2 / A10	230 V Niveau < level 1
A3 / A10	230 V Niveau => level 1

Pressostat
2 Door lock DL 3.2-DL3.3 230V
3 Pump 230V
NTC
Aquastop switch

6 motor A9-M7.4	approx. 80V
7 motor A9-M7.3	approx. 80V
10 motor A9-C9	>160V
11 motor A9-C9	>160V

4812 712 98006
 EC 4489 M5

Bauknecht timer EC 4489 mask 3 and following

