



Service Information

Toploader Washing machine AWE 2316

8593 231 10060

Last Modification: 01/30/09

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This document is only intended for qualified technicians who are aware of the respective safety regulations.
Subject to modifications

Spare Part List

Pos No	12NC	Description
002 0	4812 459 38057	Flap round GW
002 1	4812 459 38058	Hinge flap GW
004 0	4812 440 19625	Drip tray assy
010 0	4812 459 48175	Door frame inner GW
010 1	4812 440 11637	Frame Top+nozzle box KIT
011 0	4812 462 48054	Foot
012 7	4812 310 18497	Trolley kit front
012 8	4812 528 78075	Foot rear
021 0	4812 440 10838	Front panel WH GW
022 0	4812 440 10839	Side panel right GW
022 1	4812 440 10841	Side panel left GW
024 0	4812 440 11638	Rear panel
040 0	4812 417 19155	Hinge bolt lid GW
061 0	4812 466 88489	Counter weight
061 1	4812 466 88491	Counter weight front
061 2	4812 466 88492	Counter weight bottom
081 4	4812 529 18043	Shock absorber
086 4	4812 529 18045	Pin f. Shock absorber
086 5	4812 529 18052	Damper f. Shock absorber
100 1	4812 440 10842	Lid outer GW
100 3	4812 440 10843	Lid inner GW
100 5	4812 440 10845	Lid assembly WH GW
110 4	4812 498 18249	Handle cpl. WH GW
130 0	4812 417 19193	Door latch GW
191 0	4812 466 68596	Door bellow
191 1	4812 492 98037	Strap f. bellow
200 0	4812 418 18242	Tub 4 fix points
201 0	4812 440 19644	Cover cpl.
220 0	4812 418 18556	Drum soft op., to 800
223 0	4812 418 48725	Drum lifter
271 0	4812 358 18167	Belt Poly V 1204 H8 MA
272 0	4812 528 88083	Pulley 298 mm
290 0	4812 532 68078	Gasket
301 0	4812 452 17723	Control panel AWE 2316
331 0	4812 414 58306	Knob timer EBL WP25
331 2	4812 414 58307	Spring Knob timer
333 0	4812 410 29503	Push button start/reset
333 1	4812 410 29504	Push button option
400 0	4812 361 58444	Motor 1BA5736-0WA/BSH
421 0	4812 121 18285	Interf.filter 1,00 μ F
421 2	4812 404 38679	Holder RFI
430 0	4812 360 18577	Pump,draining
451 0	4812 259 28919	Heating element 2050W, 230V + NTC
490 0	4819 321 18136	Cable mains 2m SA
490 1	4812 321 28367	Strain relief
521 0	4812 214 70161	Control unit DOMINO, programmed
521 0	4812 214 70092	Control unit DOMINO, basic C1
571 0	4812 281 28468	Valve magnet 1 inlet, 2 outlets

Pos No	12NC	Description
571 1	4812 281 18069	Cover for top frame
581 0	4812 271 28585	Pressostat 50/25 INVENS.
630 0	4812 271 38519	Door lock 3P ROLD
653 0	4812 134 18077	Light guide PR.FLOW-FULL
691 0	4812 282 19485	Sensor NTC SC1,OMEGA3,DOMINO
701 0	4812 530 29329	Hose inlet EN 11770 Reflex
702 2	4812 530 29453	Hose valve-dispenser
707 0	4812 526 48242	Nozzle box cold cpl.
707 1	4812 526 48049	Clamp f. nozzle box
712 4	4812 418 68302	Siphon f. softener
712 6	4812 418 68164	Clip soap dispenser
712 9	4812 418 68404	Soap dispenser cpl. 3 ch.
753 0	4812 418 68187	Chamber,air
754 0	4812 530 28938	Drainhose
754 1	4812 530 28832	Lock eco
760 0	4812 480 58089	Filter set pump
781 0	4819 530 29035	Hose draining
782 0	4812 530 28941	Hose Pressostat
787 0	4812 530 29309	Hose Air Exhaust
787 1	4812 530 29311	Cover of hose
794 0	4812 530 58098	Gasket airtrap
900 0	4819 401 18686	Clamp hose
900 1	4812 401 18431	Clamp to pump
900 2	4812 255 18304	Holder hose
900 3	4819 401 18529	Clamp hose
901 0	4812 401 18462	Clamp hose drain hose
910 0	4812 502 48347	Screw,selftap 3,5x14SS
910 1	4812 502 38151	Screw 4x14
910 3	4812 502 18404	Screw
910 4	4812 502 18423	Screw PT 7x15
910 5	4812 502 18705	Screw M8x35
910 6	4812 502 18399	Nut Push in M 8
921 0	4812 400 18047	Washer
930 1	4812 492 48171	Torsions spring
930 2	4812 492 48162	Spring
941 0	4812 310 18578	Bearing Kit
953 0	4812 325 68001	Shaft seal
962 0	4812 440 98142	Cover for Motor AC
962 2	4812 440 11424	Spacer
965 0	4812 462 79974	Cap Transport blocking
990 0	4812 310 18504	Fixing mat.set front counter
990 2	4812 310 18506	Fixing mat.set bottom
993 0	4819 530 29028	Bow
993 1	4812 290 18025	Clamp heatingelement

Technical Data

Dimensions + Weight

Product dimensions

Height	85 cm
Width	40 cm
Depth	60 cm

Weight

Gross	~66 kg
net	~63 kg

Electrical base data

Voltage	230 - 240 V $\pm$ 10%
Frequency	50 Hz
Fuse	10 A
Power Consumption	~2.3 kW

Drum data

Volume	42 l
Wash speed	52 rpm
Spinning speed max.	800 rpm

Capacity of dry laundry

Cotton	5.0 kg
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95 °C-60 °C-40 °C

Synthetics	2.5 kg
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60/40/30 °C

Delicate	40/30 °C	1.5 kg
Chrono	40 °C	3.0 kg
Quick Wash	30 °C	3.0 kg
Wool		1.0 kg
Handwash	40/30 °C	1.0 kg
Rinse & Spin		5.0 kg
Spin		5.0 kg
Gentle Spin		1.0 kg
Jeans		5.0 kg

Pressostat

Type	B1 - 250
Nominal voltage	230 V
Water Level Level1	

(11 - 12/14)

Switching point 50 ± 5 mmWc
Switching back point 25 ± 5 mmWc
Overflow (11 - 16) 300 ± 20 mmWc
Nominal current
Contacts

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

Door lock

Type BP P/5 DA
Kind of switch Switch with PTC heater of bimetal
Locking time
max. 6"
Unlock time 37 - 65"
Nominal voltage 230 (90 - 264) V
Nominal current
Contact 16 (6) A

4 - 5 (250 V)

Heating element

Kind of heating Tubular heating element with NTC - sensor
Nominal voltage $230 + 10\%, -15\%$ V
Total power $2050 \text{ W} \pm 5\%$
Resistance (20 °C) $23.9 \Omega \pm 5\%$
Thermo-fuse (switch OFF temperature) 152 °C
Leakage current (< 99 °C) <0.8

mA

NTC sensor
Resistance NTC

0 °C	35.9	$k\Omega \pm 5.8\%$
30 °C	9.8	$k\Omega \pm 3.7\%$
40 °C	6.6	$k\Omega \pm 3.1\%$
50 °C	4.6	$k\Omega \pm 2.6\%$
60 °C	3.2	$k\Omega \pm 2.0\%$
70 °C	2.3	$k\Omega \pm 2.5\%$
95 °C	1.1	$k\Omega \pm 3.7\%$

Electronic

Type DOMINO
Basic 4619 714 03655

Programmed	4619 751 56591
Nominal voltage	220 V - 240 V
Frequency	50 - 60 Hz
Programs	
Ambient temperature	0 to 70 °C
Storage temperature	-35 to 70 °C

1.	Cotton 95 °C
2.	Cotton 60 °C
3.	Cotton 40 °C
4.	Synthetics 60 °C
5.	Synthetics 40 °C
6.	Synthetics 30 °C
7.	Delicate 40 °C
8.	Delicate 30 °C
9.	Daily 40°
10.	Quick wash
11.	Wool 40 °C
12.	Woll cold
13.	Handwash 40 °C
14.	Handwash 30 °C
15.	Rinse & Spin
16.	Spin
17.	Gentle spin
18.	Spin Drain

Output control unit

Motor	M7.6 - DSS3.2	>40 V
Aquastop	AQ2.2 - DSS3.2	230 V
in pump step	AQ2.1 - DSS3.2	230 V
NTC	not measurable	
Pump	DP2.1 - DP2.2	230 V
Doorlock	DSS3.1 - DSS3.3	230 V
Pressostat	E4 - E2	230 V
- empty	PR2.1 - E2	230 V
- full	PR2.2 - E2	230 V
Valve (Rast 2.5)	V2.1 - V2.2	>170 V
Options	not measurable	

Inlet valve

Type

1-way valve
for cold water

Water temperature 5 - 90 °C
Rated flow 8 l/min $\pm$ 8%

(1 - 1.5 bar)

Pressure range 0.3 bar - 10 bar
Nominal voltage 220 V - 240 V
Frequency 50 Hz
Nominal current 35 mA
Nominal resistance (20 °C) 3.8

k $\Omega \pm 10\%$

Total power 6 W $\pm$ 10%

Drain pump

(synchronous)

Type 292079
Nominal voltage 220 V - 240 V
Nominal current 0.2/0.22 A
Total power 26 W
Rotations 3000 rpm
Frequency 50 Hz
Resistor (coil) 224 $\Omega \pm 5\%$
Motor protection no
Capacity 14 $\pm$ 2 l/min

(1.25m height)

Position of draining hose outlet 0.9 m - 1.25 m

Motor

Type 1BA5736-OWA
Belt ratio i = 1:20.0
Resistance contacts (20 °C)
Stator (full field) 1.95 $\Omega \pm 7\%$
Rotor 1.85 $\Omega \pm 7\%$
Tacho generator 13.3 $\Omega \pm 7\%$
Input power
Washing (230 V AC) 130 W $\pm$ 7%
Rinsing 246 W $\pm$ 7%
Spinning 340 W $\pm$ 10%

(full field)

Radio interference filter

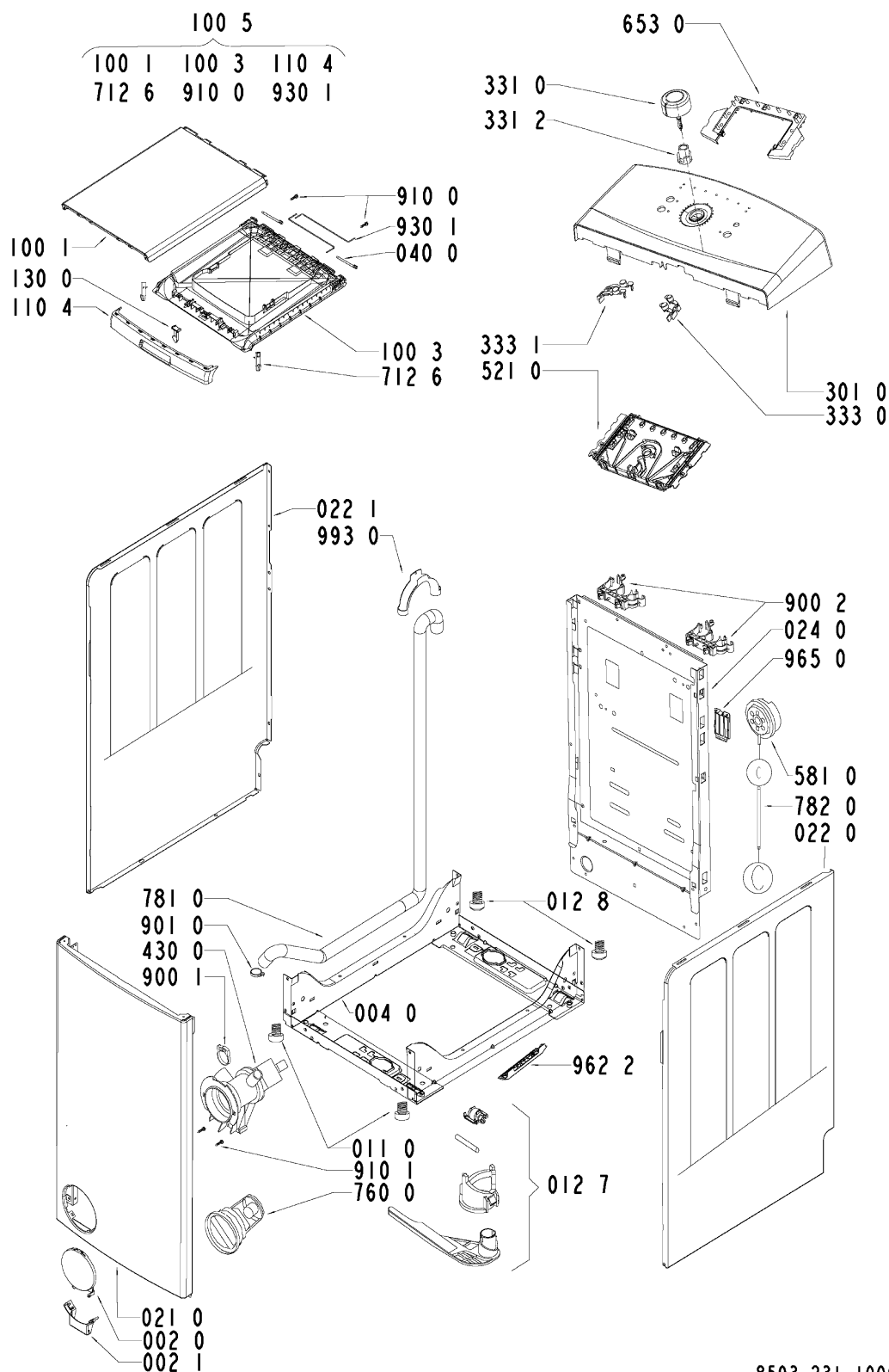
Rated voltage	90 - 250 V
Rated current	16 A
Frequency	50/60 Hz
Nominal capacity	240/250 nF X1 + 2 x 22 nF Y ± 20%
Nominal resistance	1000 K Ω ± 5%
Derivation current	≤ 4.15 (2 x 2.075) mA

($u = 250$ V AC)

Push button switch

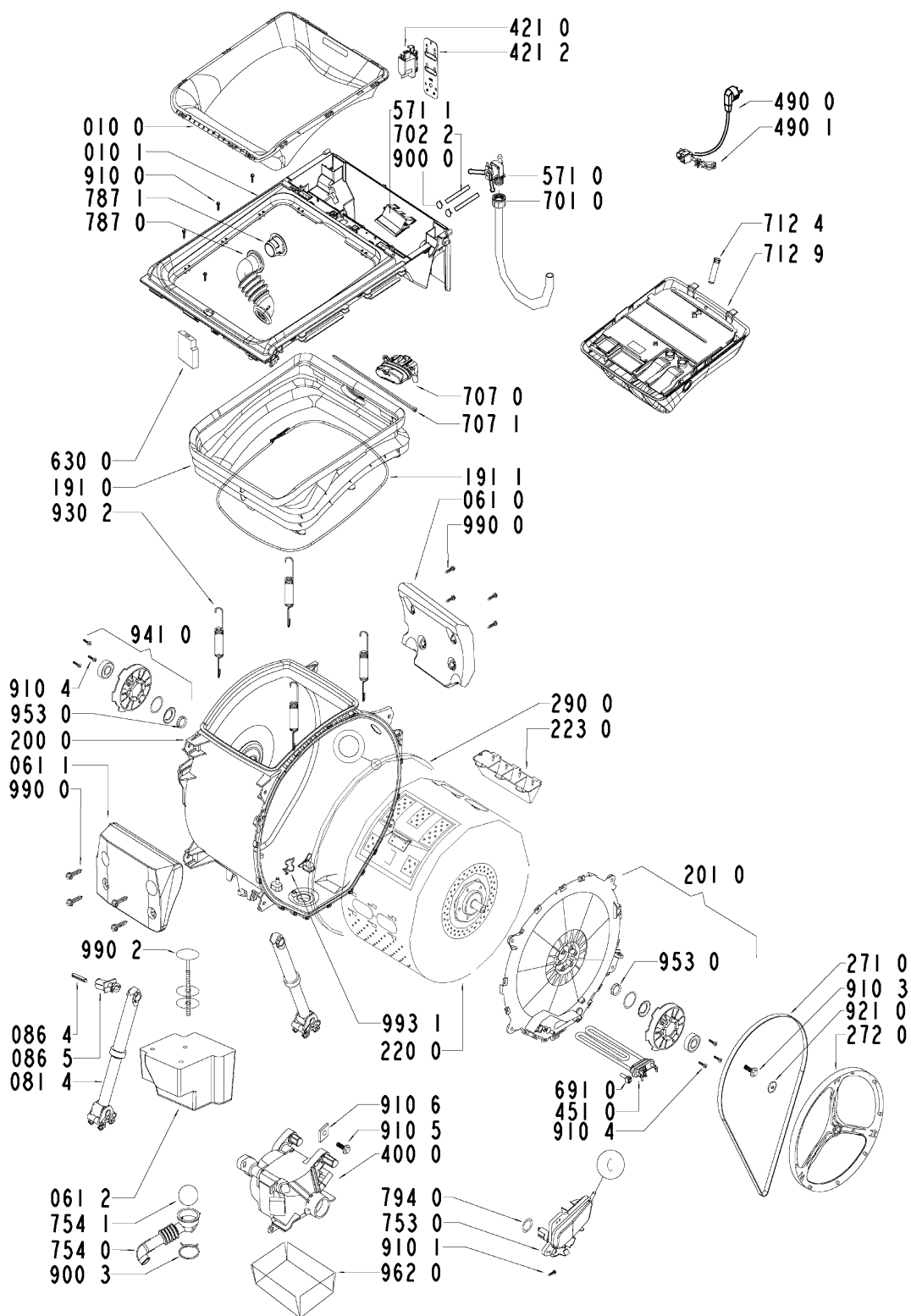
Start
Reset
Switch Rinse intensive
Switch no spin

Exploded View



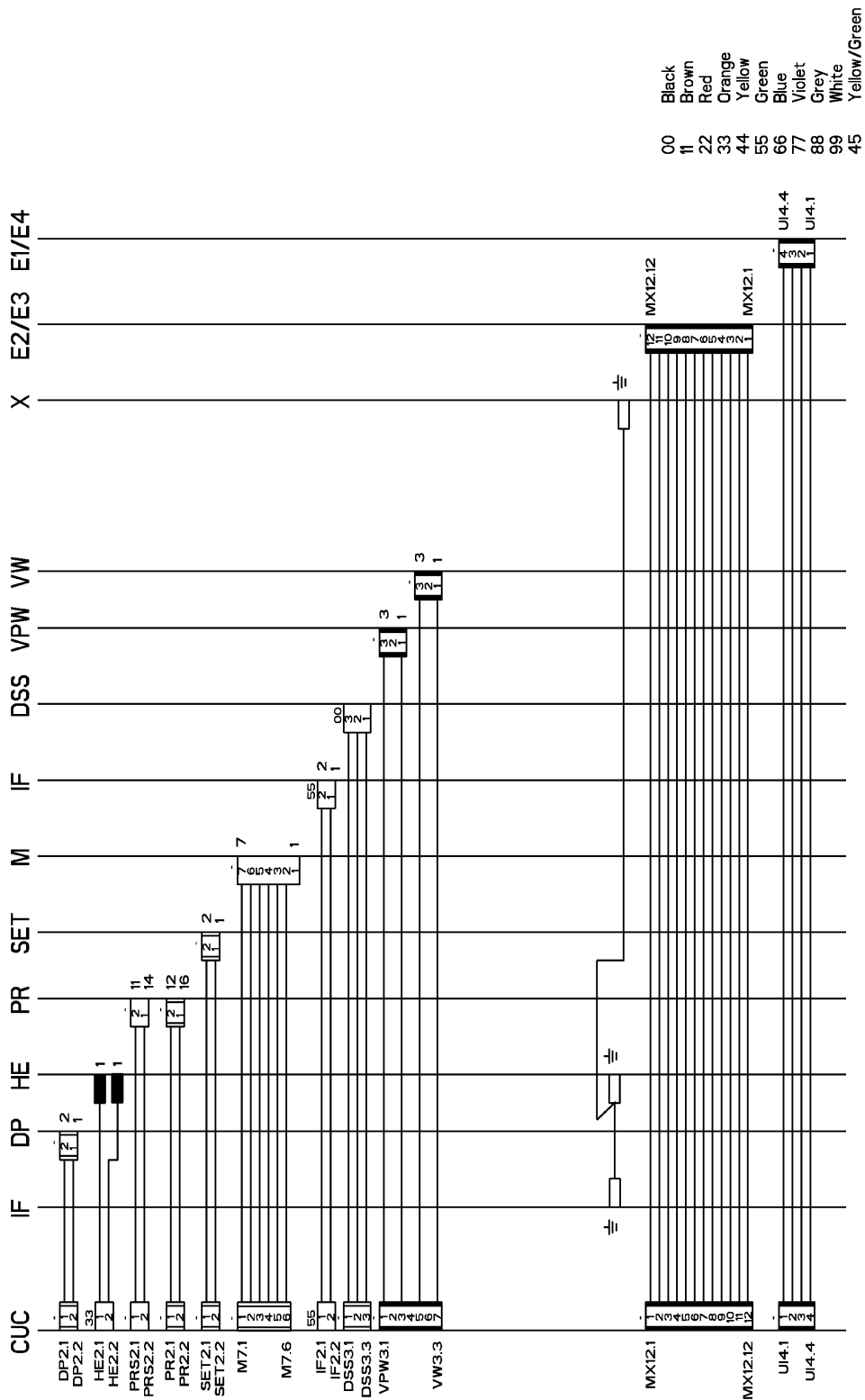
8593 231 10060

Exploded View



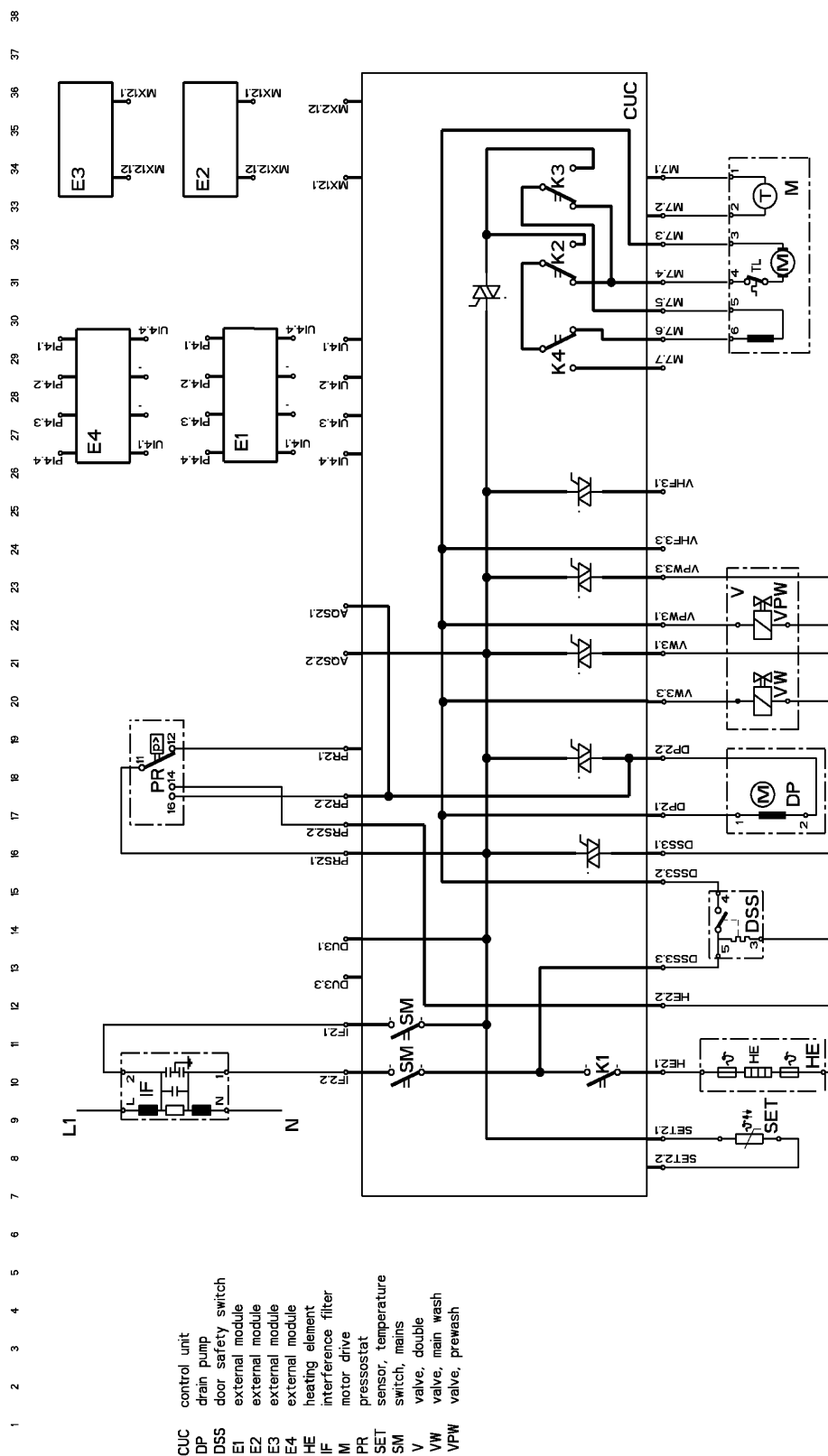
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Wiring Diagram



4619 730 72341

Circuit Diagram



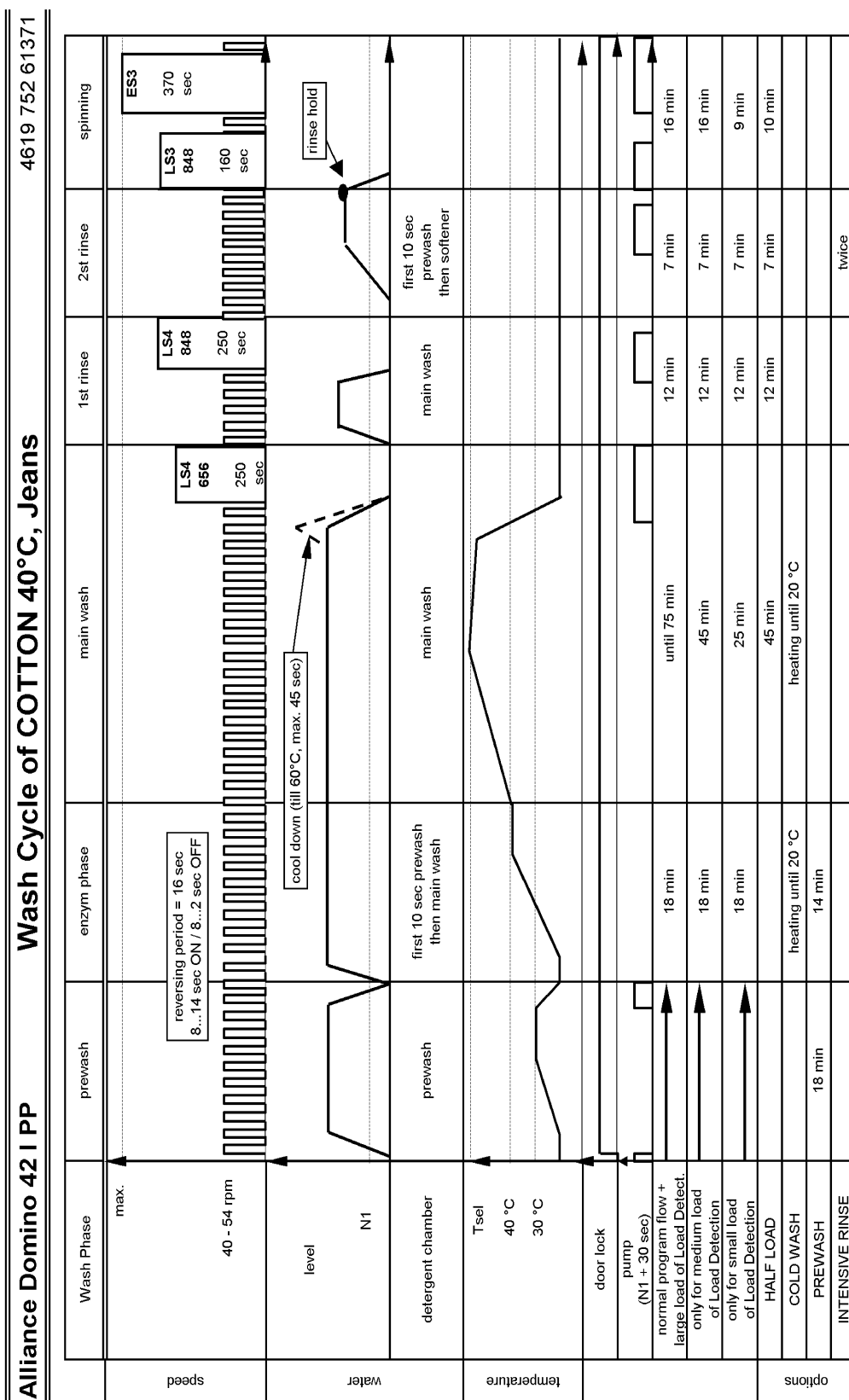
4619 730 72341

Program Chart

Alliance Domino 42 I PP				Wash Cycle of COTTON 60, 95°C				4619 752 61371			
Wash Phase	prewash	enzym phase	main wash	1st rinse	2nd rinse (twice, if intensive Rinse selected, not used for small and medium load of Load Detection)	3rd rinse	spinning				
speed	max. 40 - 54 rpm reversing period = 16 sec 8...14 sec ON / 8...2 sec OFF LS1 448 300 sec LS1 656 300 sec LS1 848 300 sec LS1 848 260 sec ES3 370 sec										
water	level N1 cool down (till 60°C, max. 45 sec) rinse hold										
detergent chamber	prewash	first 10 sec prewash then main wash	main wash	main wash	main wash	10 sec prewash then softener					
temperature	Tsel 40°C 30°C first 10 sec prewash then main wash main wash 10 sec prewash then softener twice										
door lock	door lock pump										
options	normal program flow + large load of Load Detect. only for medium load of Load Detection only for small load of Load Detection ECO only by Cotton 95°C HALF LOAD PREWASH 18 min 14 min 18 min 18 min 18 min until 75 min 45 min 25 min Tsel -10 °C / + 10 min 45 min 12 min 12 min 12 min 12 min 7 min 7 min 7 min 16 min 16 min 9 min 10 min twice										

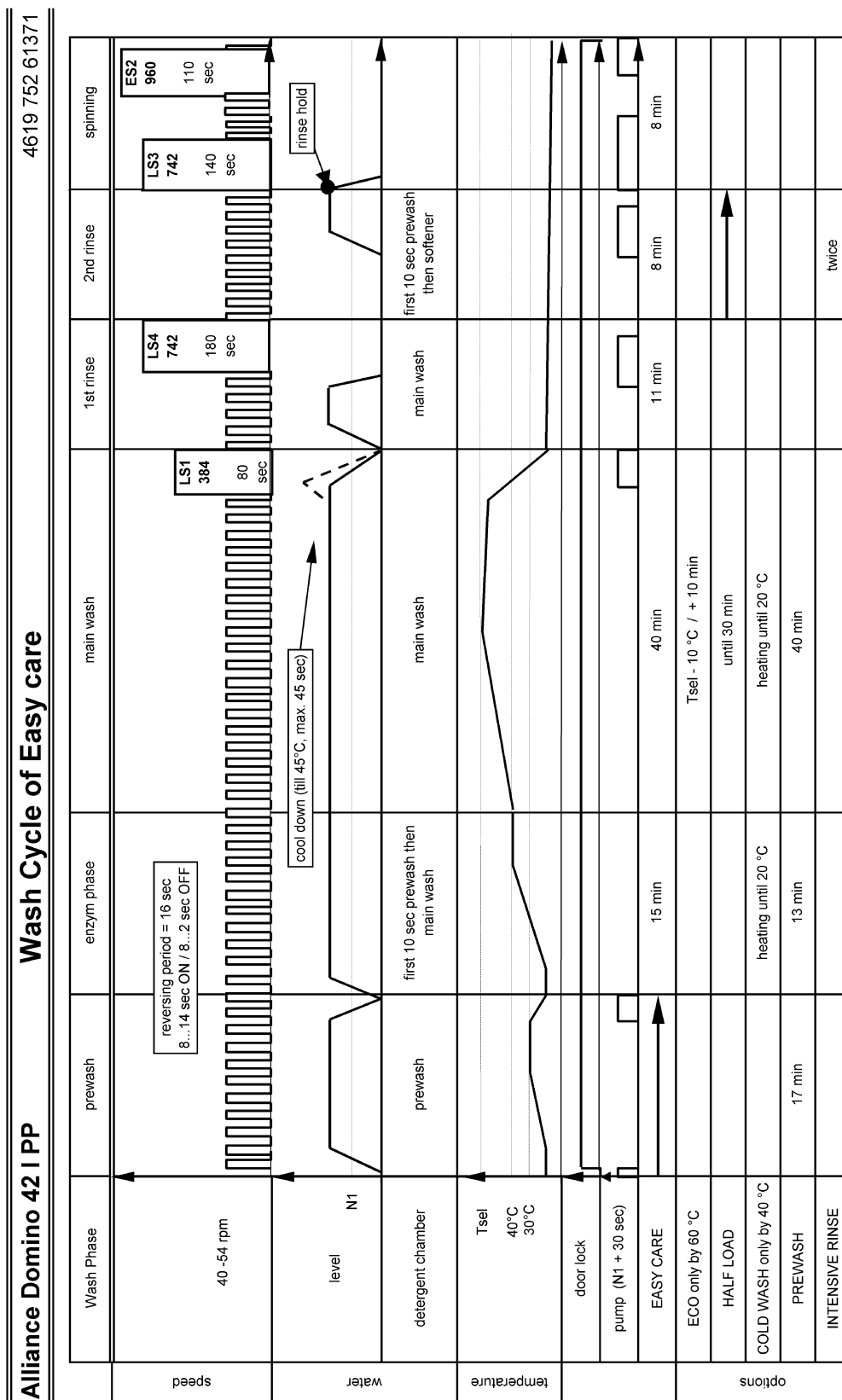
no spin: the spinning until rinse 3 is performed but not the extraction phase

Program Chart

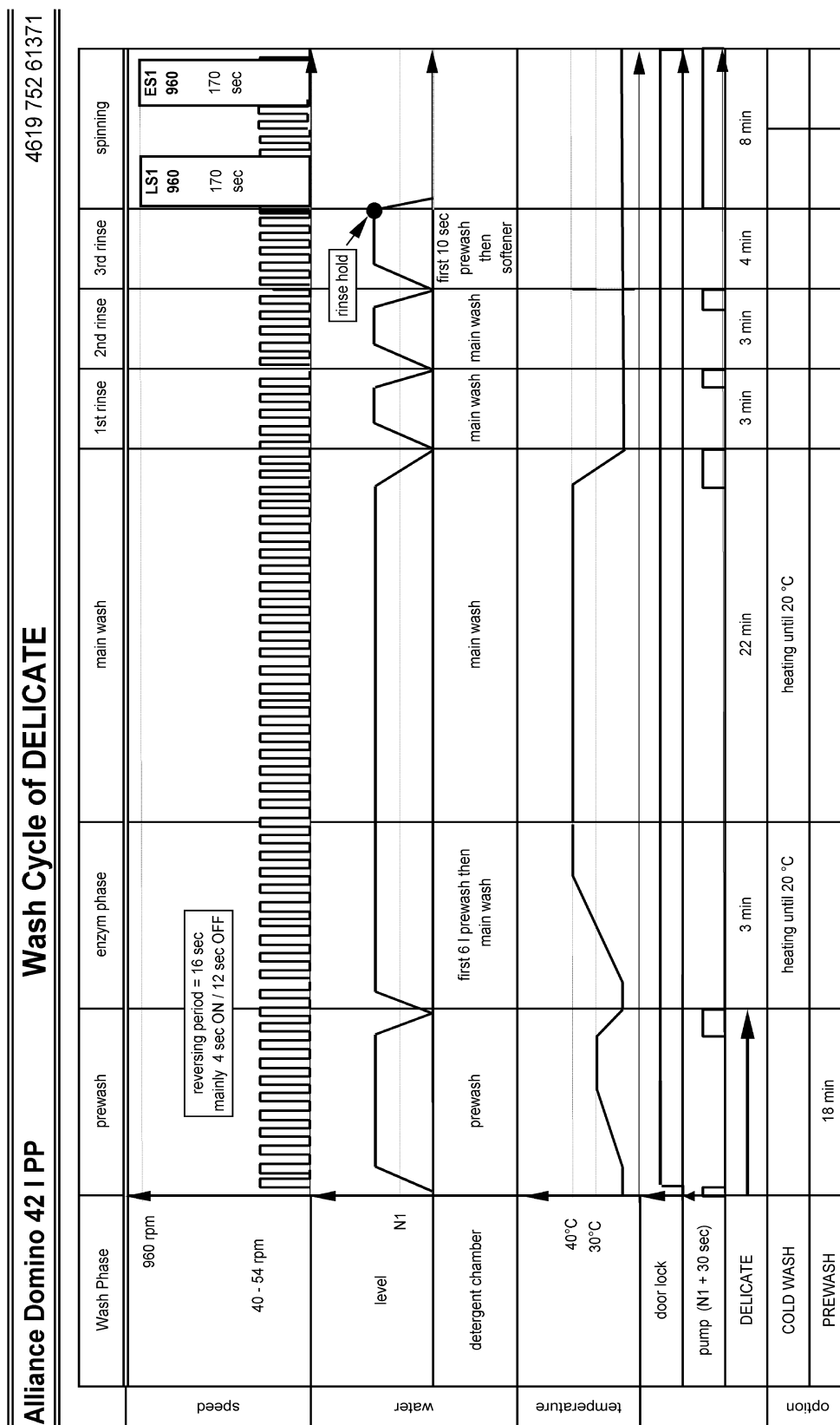


no spin: the spinning until rinse 3 is performed but not the extraction phase
Jeans: Cotton Colour 40 °C plus intensive rinse is as default programmed

Program Chart



Program Chart



no spin: the spinning until rinse 3 is performed but not the extraction phase

Program Chart

Alliance Domino 42 I PP							Wash Cycle of Express							4619 752 61371						
Wash Phase			prewash			enzym phase			main wash			1st rinse			2nd rinse			spinning		
40 -54 rpm			reversing period = 16 sec 8...14 sec ON / 8...2 sec OFF			LS1 848 120 sec			LS1 848 120 sec			ES4 max 240 sec			rinse hold			first 10 sec prewash then softener		
level N1			first 10 sec prewash then main wash			main wash			main wash			6 min			4 min			5 min		
Tsel 40°C 30°C																				
door lock																				
pump (N1 + 30 sec)																				
Express			2 min			11 min			6 min			4 min			5 min					
COLD WASH			heating until 20 °C			heating until 20 °C			heating until 20 °C											
INTENSIVE RINSE												twice								

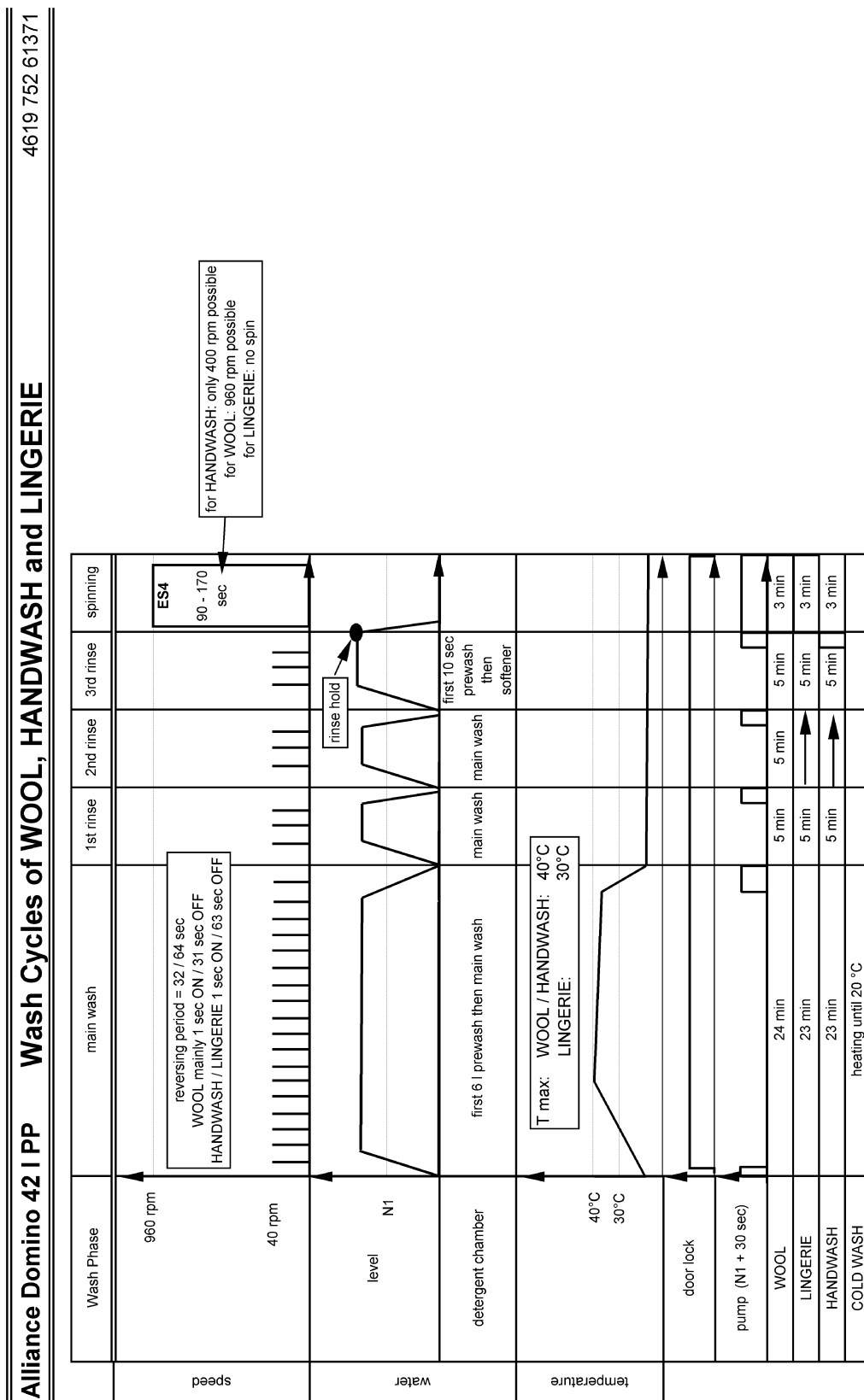
no spin: the spinning until rinse 3 is performed but not the extraction phase

Program Chart

Alliance Domino 42 I PP									
Wash Cycle of Chrono (1 h cycle)									
4619 752 61371									
Wash Phase	prewash	enzym phase	main wash	1st rinse	2nd rinse	spinning			
40 -54 rpm		reversing period = 16 sec 8...4 sec ON / 8...2 sec OFF		LS3 448 150 sec	LS3 656 150 sec	LS3 742 150 sec ES4 960 240 sec			
level						rinse hold			
detergent chamber		first 10 sec prewash then main wash	main wash	main wash	first 10 sec prewash then softener				
temperature	Tsel 40°C 30°C								
door lock									
pump (N1 + 30 sec)									
Chrono		11 min	18 min	10 min	5 min	10 min			
COLD WASH		heating until 20 °C	heating until 20 °C						
INTENSIVE RINSE				twice					

no spin: the spinning until rinse 3 is performed but not the extraction phase

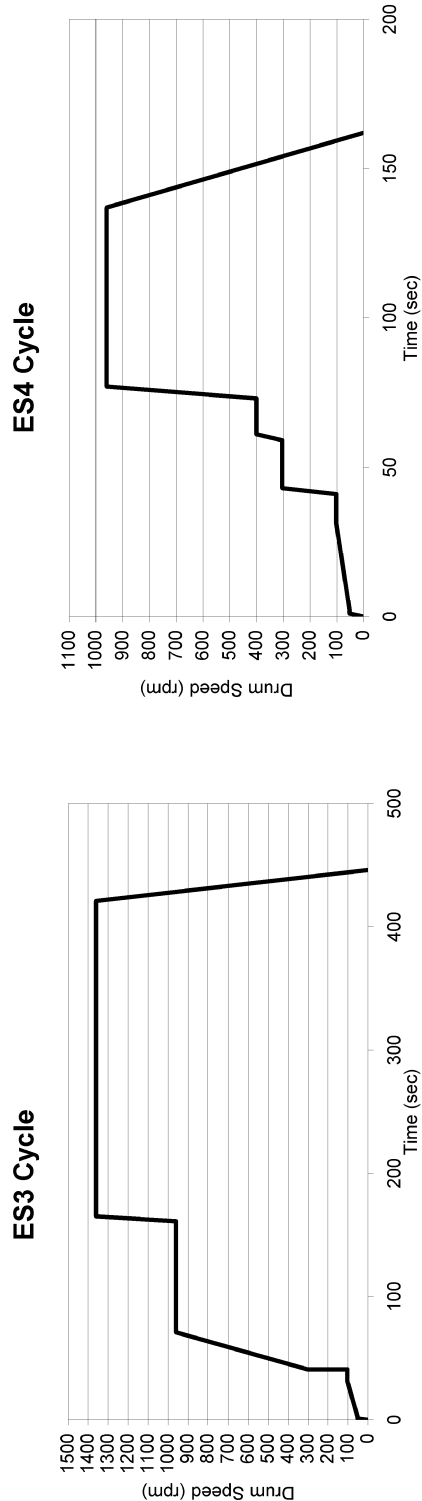
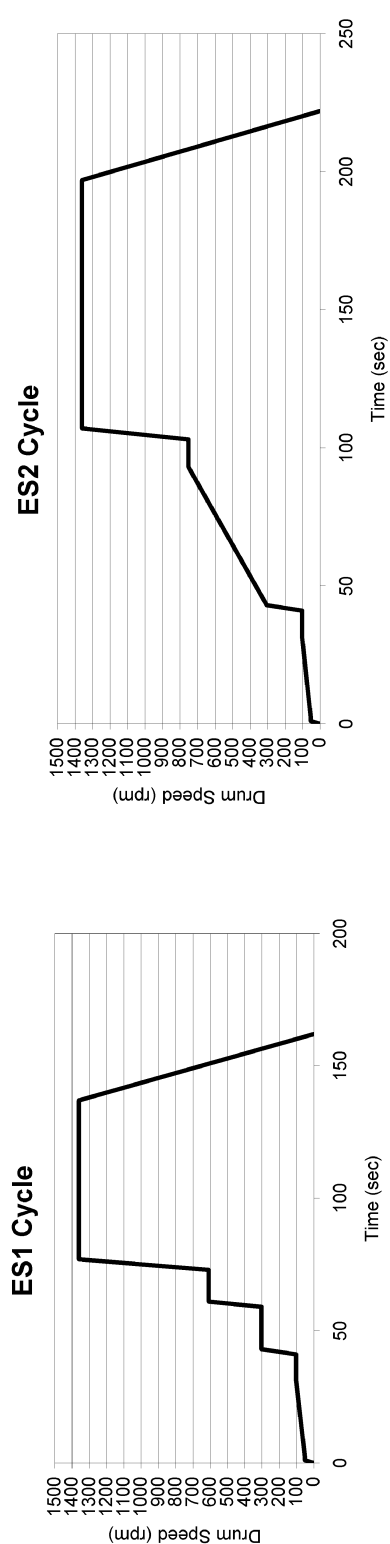
Program Chart



no spin: the spinning until rinse 3 is performed but not the extraction phase

Program Chart

Alliance Domino 42 I PP Spinning Profiles Soap dispenser: 3 chambers 4619 752 61371



Peak 1 = 384 rpm
Peak 2 = 608 rpm
Peak 3 = 656 rpm
Peak 4 = 848 rpm

LS1 = Peak 1 + ES1
LS2 = Peak 1 + Peak 2 + Peak 3 + Peak 4
LS3 = Peak 1 + Peak 4
LS4 = Peak 1 + ES1

Text legend

DOMINO **Test Program** **4619 714 04651**

1. Switch ON the appliance
2. Close the Door
3. Selected the DRAIN program
4. Press Push button (PB) Reset 4 times within 5 seconds
5. Go to the next step press PB Reset twice

Attention: Use the test program only without laundry!

LED Status	Digits *	Description of the Program Flow	Check to perform
	-- 0	The door is locked. The CUC is performing the Selftest.	CUC detects F05, F08, F12, F13, F14, F15, F23
	-- 1	Fill 15" hot valve (only if hot fill appliance) Fill 15" in prewash (PW) Fill 15" in mainwash (MW) Fill 15" in PW + MW (Softener) Fill by MW to wash level. Motor is reversing.	Technician: - Check the valve activation - Check the dispensing into the dispenser - Check the pressure switch
	-- 2	The heating element is switched ON. Motor is reversing.	Technician: - Check heating element activation - Check if the motor is reversing CUC detects: - F06, F07, F27
	-- 3	The drain pump is switched ON until the wash level = OFF + 5" motor is reversing.	Technician: - Check drain pump activation - Check pressure switch operation - Check if the motor is reversing CUC detects: - F06, F07, F27
	-- 4	The motor is driven to maximum speed. Drain pump is ON.	Technician: - Check if the motor is running at max. speed - Check drain pump activation CUC detects: - F28
	-- 5	Motor is switched OFF. Door is unlocked.	Technician: - Check if the door is unlocked CUC detects: - F13

* Digits1,2, (the left on) are executing an animation

Text legend

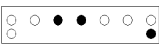
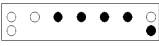
DOMINO

Test Program

4619 714 04651

Failure Indication		Explanation and Recommended Procedure
On Status LEDs	On Digits if available	
	Remaining Time	No water detected entering machine or pressure switch trip not detected. If after 6 minutes the control does not detect water entering machine and then valves will be turned off and the LED Water Tap will be switched ON. The Control is in Pause Mode. If it was possible to remove the failure, by pushing PB Start the appliance will restart. Potential Causes • If there is no water in the unit: • Make sure that both valves at the water source(s) are turned on all the way. • Check for plugged or kinked inlet hoses or plugged screens in the inlet valves. • Verify inlet valve operation. • If there is water in the unit: • Pressure switch hose is in good condition and properly connected to tub and pressure switch. • Verify there is not a siphon problem. • Verify wire harness connections to; inlet valves, pressure switch and central control unit (CUC). • Check all hoses for possible leaks. • Verify pressure switch operation. • Verify CUC operation.
	Remaining Time	Long Drain If the drain time exceeds 8 minutes, the LED clean Filter is turned ON. The control is in Pause Mode. If it was possible to remove the failure, by pushing PB Start the appliance will restart Potential Causes • Check the drain hose and make sure it is not plugged or kinked • Check the electrical connections at the pump and make sure the pump is running. • Check the drain pump filter for foreign objects. • Check the electrical resistance of the drain pump.
	FA	Aquastop Failure If the aquastop contact on the bottom tray of the appliance is closed for more than 30" an aquastop failure will be detected. In aquastop condition, the door will remain locked and the drain pump will run constantly. Potential Causes • If there is water in the bottom tray of the appliance: • Check all hoses for any leakage. • Check if there was an overfoam due to too much detergent used. • Check the tub for any leakage. • If there is no water in the bottom tray • Check if the aquastop switch has a short circuit. • Check if the aquastop wiring is properly connected. • Verify CUC operation.
	F04	Too Long Heat Time If the water temperature is not increasing over 35°C during 40 minutes of the first heating step in the cycle the CUC will display this Error. Potential Causes • Check the electrical resistance of the heating element. • Check Wire Harness connections to the heating element, NTC and CUC. • Check the electrical resistance of the NTC.
	F05	Water Temperature Sensor Error If during the water heating step in the wash cycle, the water temperature sensor (NTC) value is out of range, the F05 error code will be displayed. Potential Causes • Check the NTC resistance. • Check connections to the NTC and CUC.

Text legend

DOMINO	Test Program	4619 714 04651
	F06	Drive Motor Tachometer Error The control is unable to properly detect motor speed (several times) and the machine will shut down. If a failure occurs during high speed spin the door will be unlocked after the drum has stopped rotating. Potential Causes • Check wire harness connections between the motor and CUC. • Check the resistance of the tachometer circuit on the motor. • Check resistances of the motor windings.
	F07	Motor Control Triac Error The main control has detected a short circuit in the motor control triac. If a failure occurs during high speed spin the door will be unlocked after the drum has stopped rotating. Potential Causes • Check CUC by running Test Program.
 	F08 F12	Heater Circuit Error The main control has detected a heater circuit failure. This failure modes are checked before the cycle starts and after the spinning steps. Potential Causes • Check the resistance of the heater connectors to the ground. • Check the resistance of the heater. • Check the wiring connectors to the heater and CUC. • Check the CUC.
LED Door open flashing for 10"  	Only during test program F13	Door Open LED flashing after the cycle is started If the CUC is not able to lock the door of the washer after program start within 10", the door open LED will flash for 10". Potential Causes • Check if the door is closed properly. • Check if there is a mechanical problem on the door lock system. • Check the wiring/harness between the CUC and the door lock. • Start the Test Program. If the problem persists the error Code F13 will be displayed.
	F14	EEPROM Error The CUC receives it's data from an EEPROM on board the CUC. If there is an error reading this data it will cause this failure indication. Potential Causes • A power glitch (mains disturbance) may cause this error: Run the Test Program. This will perform a complete check of the EEPROM. If the failure is detected during the Test Program replace the CUC.
	F15	Drum Up Circuit Missing (only for TOPLOADERS with DRUM UP Circuit) If the CUC is not detecting the Drum Up switch closing during Motor rotation this failure is displayed. This Error is detected ONLY during the Test Program. Potential Causes • Check the position of the electromagnetic device. • Check the position of the reed sensors. • Check the resistance of the reed sensor. • Check the wiring connection between the reed sensor and the CUC.
	F21	User Interface Error (detected only with Smart user interfaces) If the communication between user interface module and CUC is disturbed, this Error is displayed. If the failure is displayed on the digits the display module is not able to "talk" to the CUC. If the failure is displayed on the status LED the CUC is not able to contact the Display module. Potential Causes • Check wiring connection to the display module. • Check display module. • Check CUC.

Text legend

DOMINO	Test Program	4619 714 04651
	F23	Pressure switch Failure If the CUC detects during the wash cycle that the pressure switch contact for the wash level and the pressure switch level for the heater safety are ON simultaneously for 10" this failure will be displayed. Potential Causes • Check the resistance of the pressure switch contacts. • Check the wiring of the connection to the pressure switch and to the CUC. • Start the Test Program. If the problem persists F23 will be displayed.
	F24	Overflow Failure If the overflow contact on the pressure switch is closed for more than 60" the overflow failure will be indicated. In this overflow condition, the Door will remain locked and the drain pump will run constantly. Potential Causes • Check the drain hose and make sure it is not plugged or kinked. • Check Wire Harness connections to the drain pump, pressure switch, and CUC. • Check/clean drain pump filter of foreign objects. • Check for drain pump failure. • Check the inlet valve for proper shut off. • Check the pressure switch for proper operation.
	F26	Pump Driver Failure If the CUC detects during the wash cycle that the triac of the pump is defective it will display this failure. Potential Causes • Check the resistance of the pressure switch contacts. • A failure of the pressure switch could also cause the Code. • If OK. Start Service test to check the CUC. If the failure occurs replace the CUC.
	Only during test program F27	Reversing relay failure If the CUC detects that the motor is possible to rotate only in one direction this failure is displayed. Potential Causes • Check the harness to the motor. • Check the CUC.
	Only during test program F28	Tapped Field Failure If the CUC is not able to switch ON the tapped field of the Motor, this failure Code is displayed. Potential Causes • Check if the correct motor is build in. • Check the resistance of the fields of the motor. • Check the harness between Motor and CUC. • If the points above are OK replace the CUC.
	Fod	Foam detected During the Wash Cycle If the CUC is not able to drain out the water after washing or not able to spin after several trials this alarm Code is displayed. Potential Causes • Customer used too much detergent. • Check if there is any problem with the pump hoses. • Check the electrical resistance of the pump. • Check the electrical resistance of the pressure switch. • Check if pressure switch hose is in good condition and properly connected to tub and pressure switch. • Verify there is not a syphon problem.