

Service Manual

Washing machine

Frontloader

EXCELLENCE 1600

Model Version	EXCELLENCE 1600 8554 908 12001	Page
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	Family	GAMMA



Technical data**Dimensions**

Height	85	cm
Width	59.5	cm
Depth	60	cm

Weight

Without packing	77	kg
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Main connection

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

Drum

Volume	53	l
Wash spin	54	rpm
Ramp spin	90	rpm
Speed spinning max.	1600	rpm

Capacity of dry laundry

Cotton/coloured laundry	6	kg
Cotton rapid	3	kg
Cotton short	6	kg
Synthetics	2.5	kg
Synthetics rapid	1.5	kg
Synthetics short	2.5	kg
Delicate	1.5	kg
Wool	1	kg
Easy ironing	3	kg

Pressostat for washing-machine**Level1**

Switching point	50 ± 5	mmWc
Reset	25 ± 5	mmWc

Overflow

Switching point	300 ± 20	mmWc
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Water column drum**Level1**

Switching point	31 - 42	mm
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Overflow

Switching point	267 - 306	mm
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Nominal current

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

Contacts system:

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

Door lock

Lock time max.	6"	(20 °C)
Unlock time after 600"on	60" - 90"	(20 °C)
Nominal voltage	230	V
Nominal current:		
contact:		
4 - 5	1	mA
11 - 14	10	mA

Heating element

Kind of heating	Tubular heating element with NTC- Sensor	
Nominal voltage	230	V
Nominal power	2050	W
Heat conductor resistance R25	22 - 28	Ω
Resistance NTC:		
0 °C	35.9	kΩ
30 °C	9.8	kΩ
40 °C	6.6	kΩ
50 °C	4.6	kΩ
60 °C	3.2	kΩ
70 °C	2.3	kΩ
95 °C	1.1	kΩ

Inlet valve

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

Switch aquastop

Nominal voltage	230	V
Nominal current	3 (1)	mA
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	$\Omega \pm 7\%$
Motor protection	170	$^{\circ}\text{C}$
Capacity (1.25m height)	15	l/min

Distribution actuator

Motor:

Nominal voltage	230 +10%, -15%	V
Nominal current	13	mA
Nominal resistance (20 $^{\circ}\text{C}$)	6.5	$\text{k}\Omega \pm 10\%$

Contacts:

Nominal current	1	mA
Nominal voltage	24	V

Electronic complete

Type	GAMMA	
Basic	4619 710 89243	
Programmed	4619 744 84511	
Nominal voltage	230	V
Frequency	50	Hz
Detergent Dispenser	3 Chamber	
Programs	11	
Cold fill	yes	
Speed	1600	rpm

Ambient temperature	up to 70	$^{\circ}\text{C}$
Storage temperature	up to 85	$^{\circ}\text{C}$

Program

1.	Cotton
2.	Easy care
3.	Daily
4.	Express
5.	Delicate
6.	Wool
7.	Handwash
8.	Rinse & Spin
9.	Intensive Spin
10.	Gentle spin
11.	Drain
12.	Easy Ironing

Output

Aquastop (activated)	AQS2.2 - (Vcc)	24 V
Pump (on)	DP2.1 - DP2.2	230 V
Doorlock (on)	DSS3.1 - DSS3.3	230 V
Valve (on)	VCF3.1 - VCF3.3	>170 V
Heating (on)	HE2.1 - HE2.2	230 V
Motor distributor (on)	DI6.1 - DI6.3	230 V
Pressostat	E4 - E2	230 V
- empty	PR3.2 - E2	230 V
- full (level1)	PR2.2 - E2	230 V

Motor

Type	MCA 61/64 - 148/ WHE 8 i = 1:11.2	
Resistance contacts:		
6 - 7	12.5	$\Omega \pm 7\%$
4 - 5	1.57	$\Omega \pm 7\%$
2 - 3	1.61	$\Omega \pm 7\%$
1 - 3	0.62	$\Omega \pm 7\%$

Radio interference supression

Nominal voltage	230	V
Nominal capacity	470 nF X1 + 2 x 22 nF Y	
Nominal inductance	2 x 470 or 2 x 500	μH
Nominal resistance	680	$\text{k}\Omega$

Display module

Switch Start	SST
Switch Start delay	STD
Switch Eco	SEC
Switch Pre wash	SPW
Switch +	SW +/-
Switch Rinse intensive	SRI
Switch Rinse stop	SRS
Spin speed reduction (1560, 1160, 960, 400, 0)	SSR
Remaining time	
Switch Reset	

Spare part list

Model EXCELLENCE 1600
Service No. 855490812001
Version 855490812001

Pos. No.	12NC Code	Description
001 0	4812 440 10784	Cabinet GW
002 0	4812 440 10812	Flap Filter square GW
004 0	4812 440 18993	Drip tray assy
011 0	4812 462 48421	Adjust.foot
021 0	4812 440 10927	Front square flap GW 50mm
024 0	4812 440 18998	Panel, rear
025 0	4812 440 11067	Holder GAMMA BK
030 0	4812 440 11175	Table top EBL short
040 0	4812 417 18787	Hinge
050 0	4812 440 89046	Plinth VBL BK GW
061 0	4812 466 88818	Counter weight upper 1600
061 1	4812 466 88819	Counter weight bottom 1600
061 3	4812 094 98006	Mounting kit Weight bottom, 1600
061 4	4812 466 88821	Counter weight front 1600
061 5	4812 094 98007	Mounting kit weight front, 1600
081 0	4812 466 48088	Shock absorber 1400
084 0	4812 466 58001	Silent bloc
086 2	4812 401 18412	Stopper
110 0	4812 498 18675	Handle,door EBL BK, galv.
130 0	4812 417 28047	Plate Door lock
130 1	4812 417 28048	Plate Doorlock Lower
131 0	4812 417 28046	Lock Door
131 1	4812 417 28045	Pin Door Lock
131 2	4812 492 58056	Spring Door Lock
135 1	4812 498 18137	Knob Door safety
135 2	4812 491 48004	Spring Door Safety
135 3	4812 290 68153	Holder,adjust. Door Safety
140 0	4812 450 58983	Door glass
143 0	4812 440 11453	Glassdoor frame EBL BK
144 0	4812 440 11139	Frame,door glas
191 0	4812 466 68841	Door bellow short 1600
191 1	4812 401 18673	Strap 1600
191 2	4819 530 58059	Ring
200 1	4812 418 18534	Tub, half front 53l, 1600
200 2	4812 418 18533	Tub, half rear 53l, 1600
200 4	4812 290 88054	Clamp for tub
220 0	4812 418 18532	Drum 1600, 53l, PP
271 0	4812 358 18194	Belt POLY5 1272 J 5
272 0	4812 528 58039	Pulley 1600
272 3	4812 505 18371	Nut M 12
292 0	4812 530 58176	Gasket Tub 1600
301 0	4812 452 16648	Control panel + handle drawer
331 0	4812 414 58303	Knob,timer EBL BK
332 0	4812 410 29376	Button Options EBL BK
333 0	4812 410 29375	Button Start EBL BK
400 0	4812 361 58413	Motor MCA 61/64-148/WHE8, 1600
400 1	4812 502 18737	Screw 8x38
409 0	4812 362 48004	Brush,carbon motor CESET
421 0	4812 121 18285	Interf.filter 1,00 µ F
430 0	4812 310 28144	Pump,draining KIT
451 0	4812 259 28905	Heating element 2050W + NTC
480 0	4812 321 78109	Cable Motor SC1/OM PP/ALPHA/GA
490 0	4819 321 18136	Cable,mains 2m SA
491 0	4812 321 28367	Strain relief
491 1	4812 502 38152	Screw 4.8x19

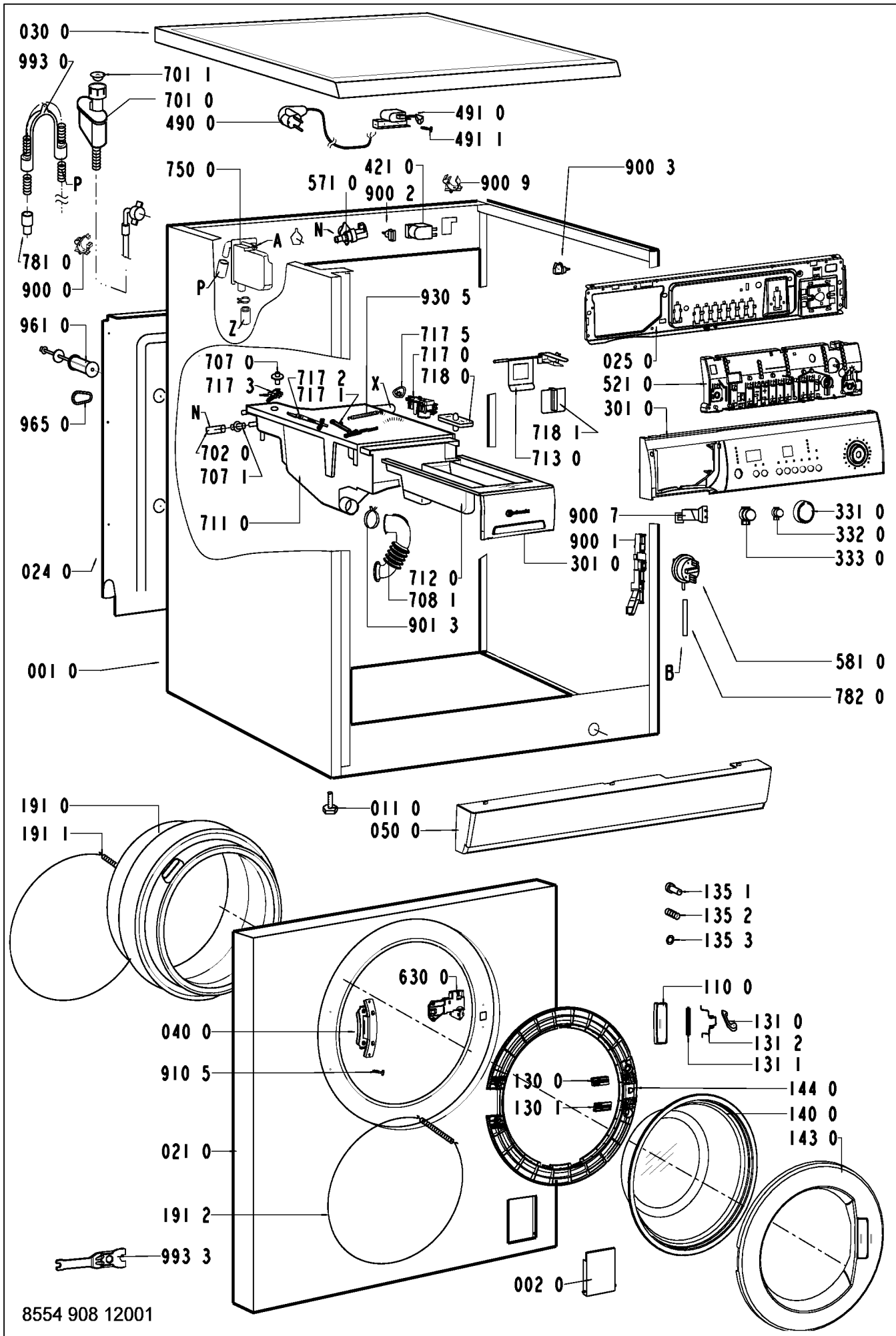
Pos. No.	12NC Code	Description
521 0	4812 214 79658	Control board GAMMA BK2, programmed
521 0	4812 214 79691	Control board Basic GAMMA, BK2, SAM
571 0	4812 271 28543	Valve,magnet
581 0	4812 271 28554	Pressostat 50/25 no dis.
630 0	4812 280 58044	Door lock
631 0	4812 271 38358	Switch MICRO
631 1	4812 360 58112	Floater Kit BK,WH
691 0	4812 282 19485	Sensor NTC SC1,OMEGA3
701 0	4812 530 28781	Hose, inlet 3.8 m (Eltek)
701 0	4819 530 28926	Hose, inlet 2.5 m (Eltek)
701 1	4819 466 69704	Gasket and filter
702 0	4819 530 29019	Hose intern
707 0	4812 526 48031	Nozzle Distribution
707 1	4812 526 48028	Nozzle
708 1	4812 530 48143	Bend
711 0	4812 418 68328	Dispenser 3 ch. GAMMA 53l.
712 0	4812 418 68369	Drawer 3 C., white, BK EBL
713 0	4812 418 89037	Flap Detergent Cont. 3 ch. GW
717 0	4812 323 18006	Actuator f. Distribution
717 1	4812 321 38015	Lever water distr. OMEGA/GAMMA
717 2	4812 321 38014	Lever OMEGA/GAMMA
717 3	4812 321 38016	Lever connection OMEGA/GAMMA
717 5	4812 310 18459	Cam actuator OMEGA/GAMMA
718 0	4812 526 48051	Siphon
718 1	4812 418 89065	Separator 3 C. white, BK EBL
750 0	4812 530 48139	Chamber,expand.
753 1	4819 418 68234	Chamber,air
754 0	4812 530 28826	Drainhose
754 1	4812 530 28832	Lock eco
754 2	4812 530 29352	Flange eco
760 0	4812 480 58105	Filter set pump
781 0	4812 530 29355	Hose
782 0	4812 530 28827	Hose Pressostat
783 1	4812 530 29353	Steam hose
783 3	4812 530 18001	Connection Part
783 4	4812 530 29354	Hose
787 0	4812 530 28813	Steam hose
787 2	4819 401 18174	Clamp,hose 25-45 mm
794 5	4812 530 58098	Gasket Airtrap
900 0	4812 255 18287	Holder Hose outlet right
900 1	4812 290 88086	Bracket
900 2	4812 290 88077	Cable clamp
900 3	4812 401 18446	Cable clamp
900 4	4812 401 18414	Clamp,hose
900 5	4819 401 18529	Clamp,hose
900 6	4812 401 18444	Support Heatingelement
900 7	4812 256 98031	Holder pressostat
900 9	4812 255 18286	Holder Hose outlet left
901 3	4812 401 18549	Clamp,hose
910 5	4812 502 18516	Screw 4,2 x 13
910 6	4812 502 18678	Screw 10.9-M8X50-F
910 7	4812 502 18682	Screw P6X40
930 0	4812 492 38391	Spring Suspension 53l, 1400
930 5	4812 492 38359	Spring , Nozzle
941 0	4812 520 28186	Bearing,ball 6208 2Z C3

Spare part list

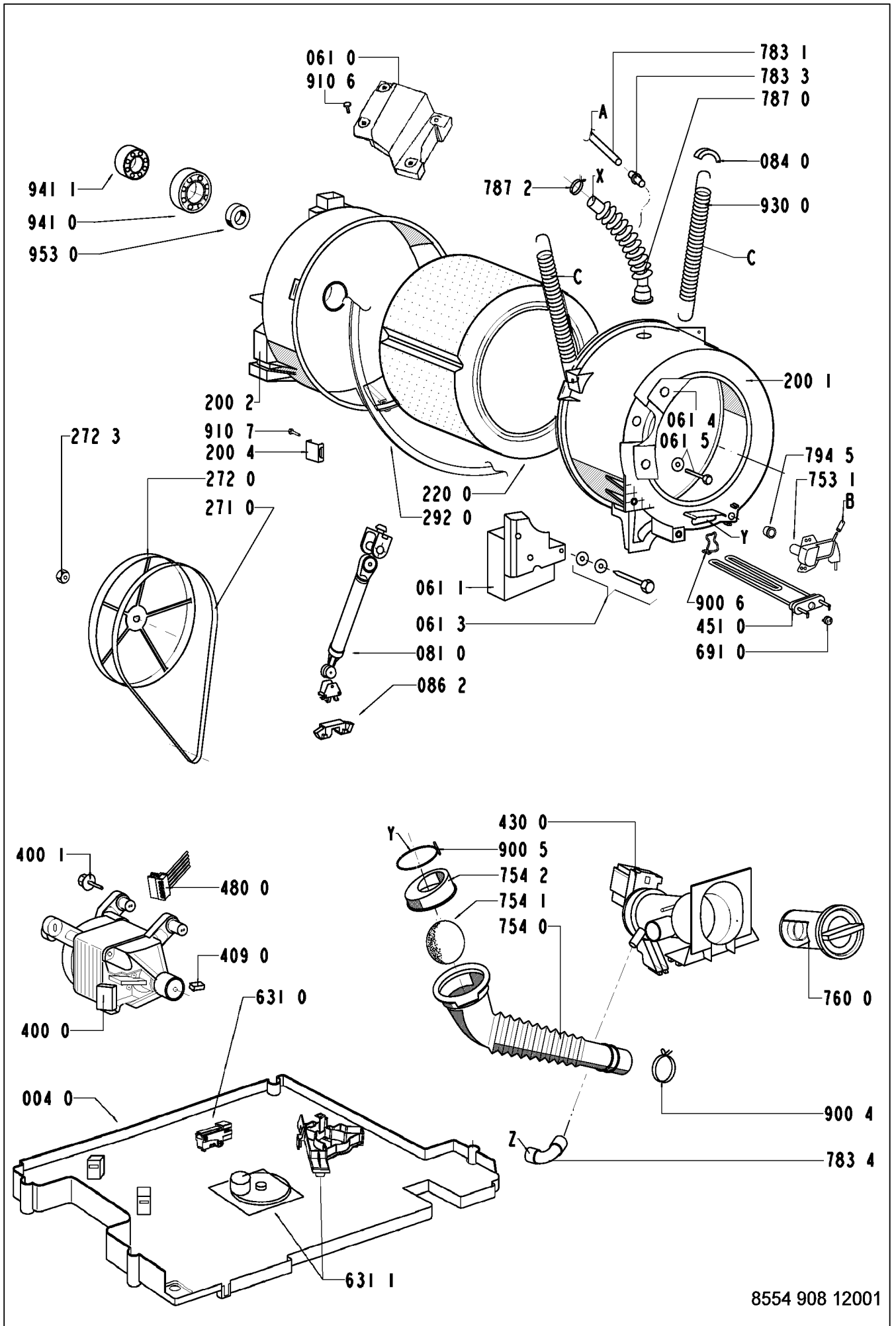
Model	EXCELLENCE 1600
Service No.	855490812001
Version	855490812001

Pos. No.	12NC Code	Description
941 1	4812 520 28001	Bearing,ball 6205 2Z C3
953 0	4812 530 58177	Shaft seal 50X93X12,5/9, 1600
961 0	4819 532 68829	Spacer
965 0	4812 466 68545	Cover BK/WH
993 0	4819 530 29028	Bow
993 3	4812 395 58004	Tool

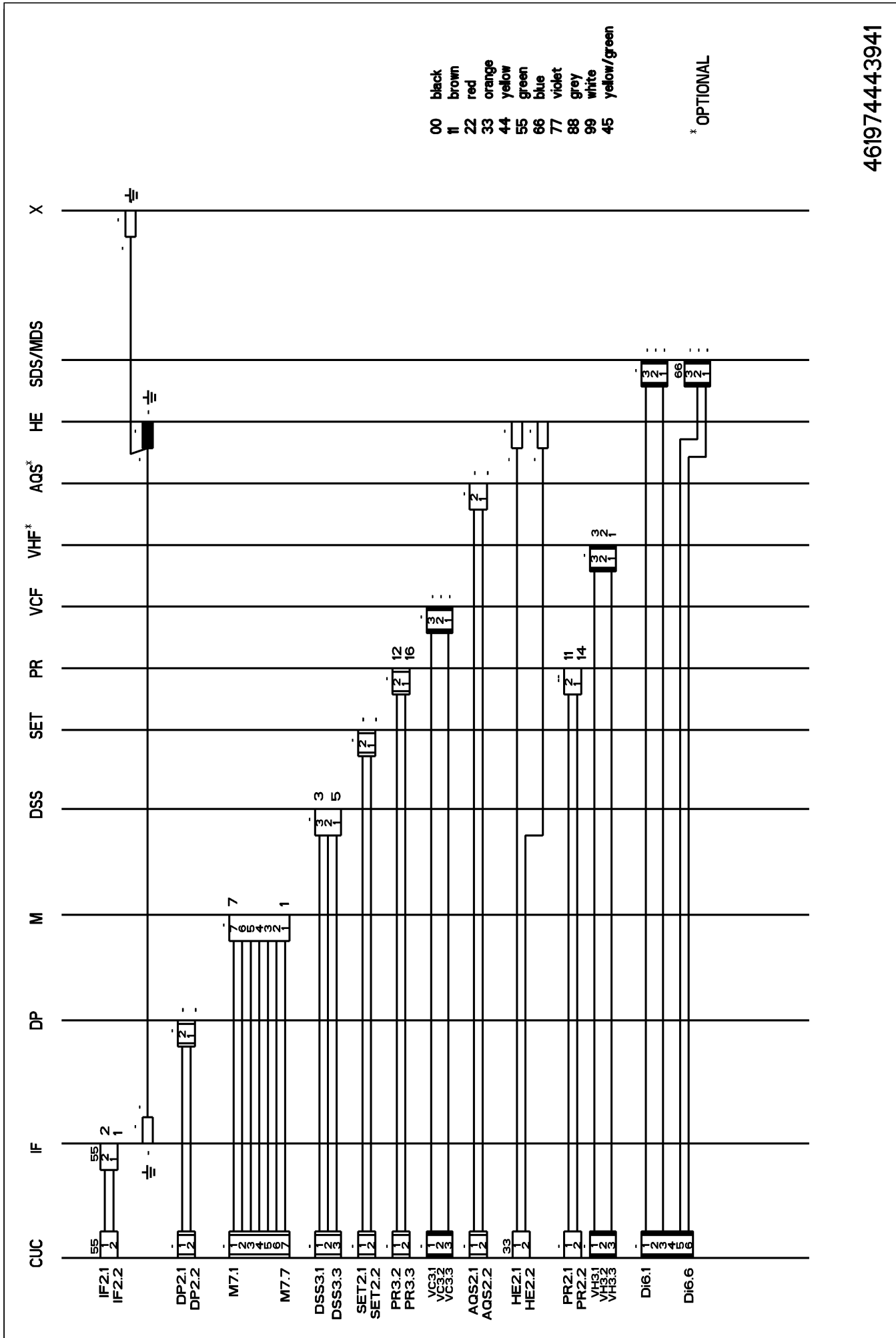
Exploded view



Exploded view

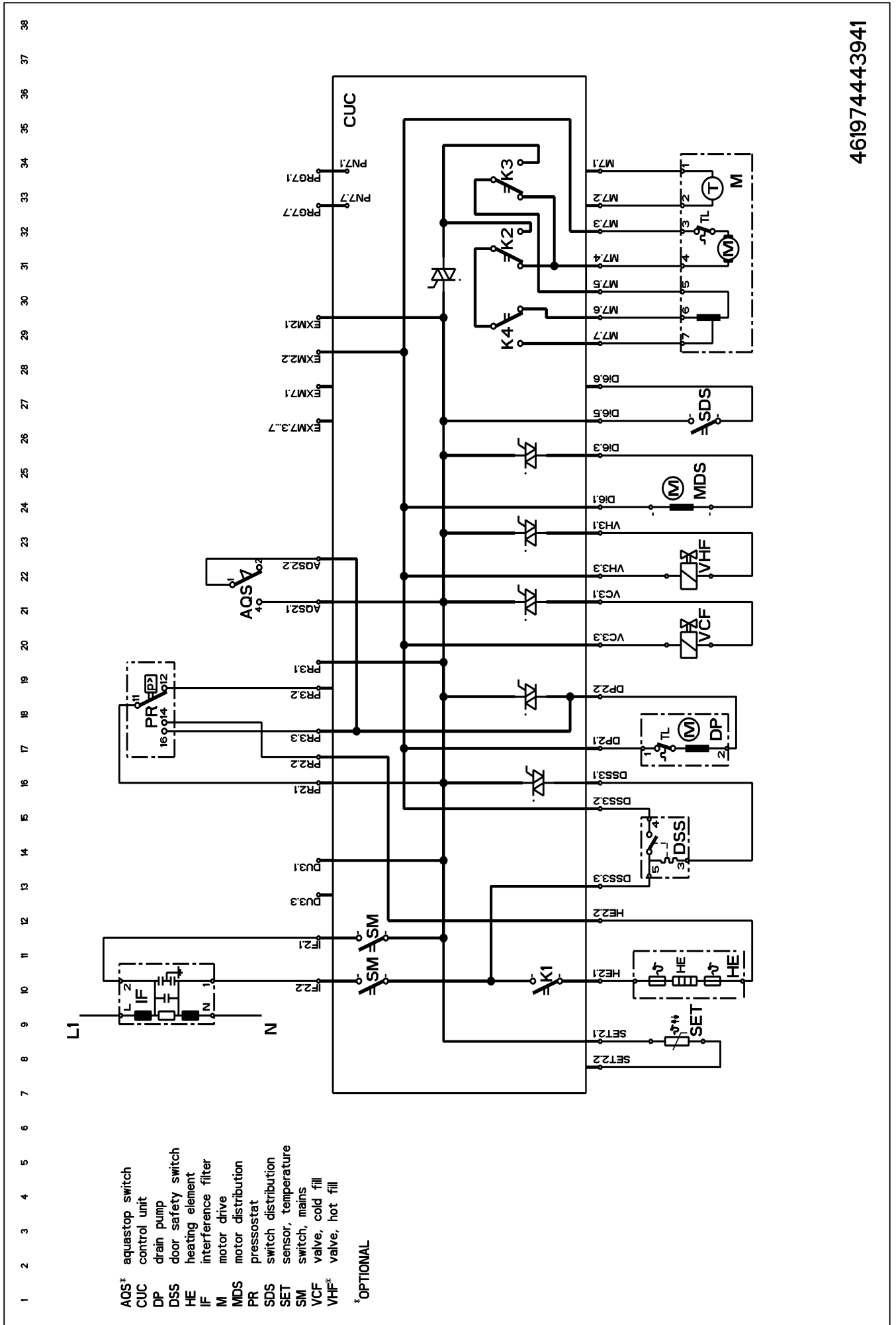


Wiring diagram



461974443941

Circuit diagram



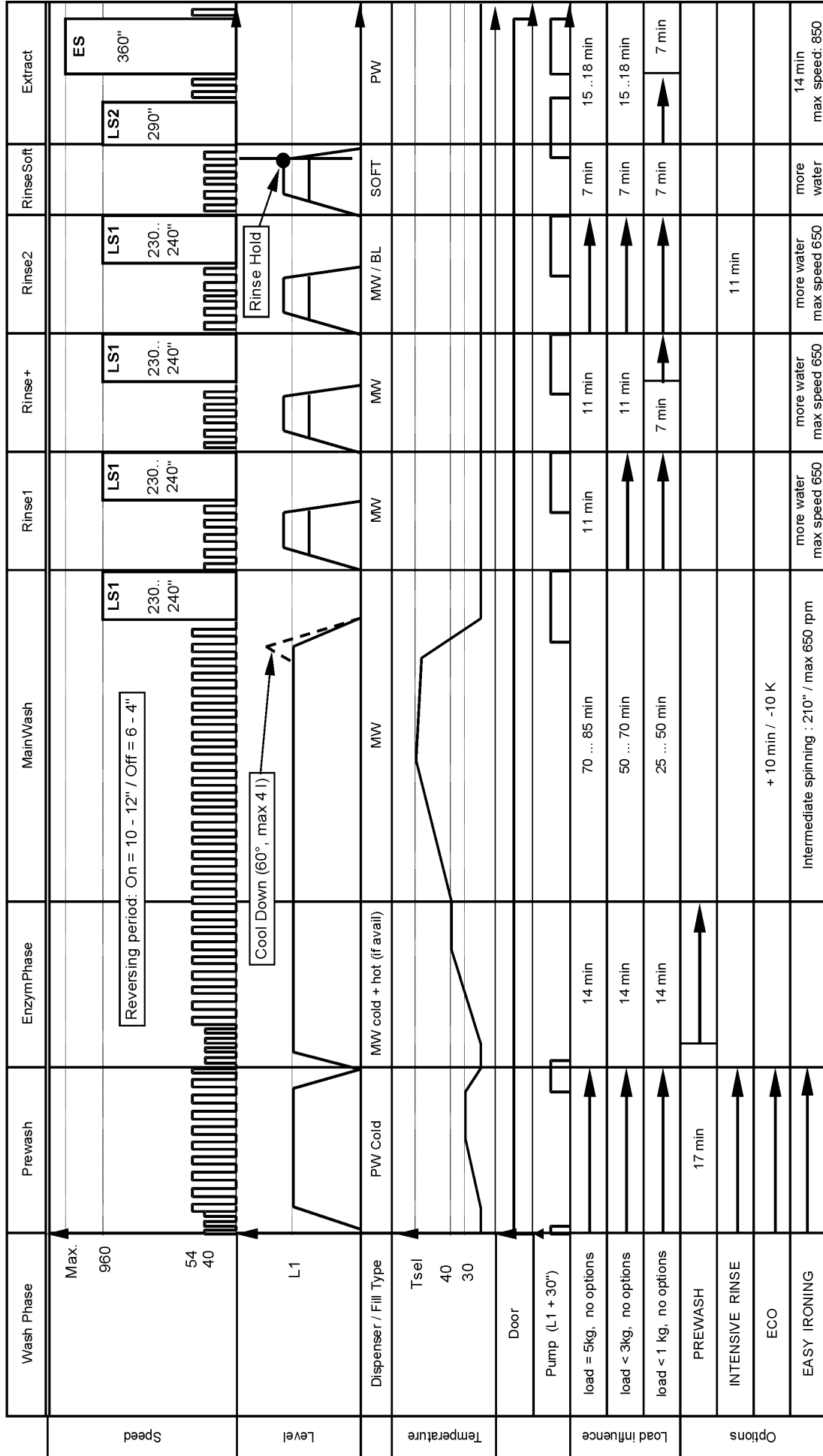
Program chart

4619 712 69521

Wash Cycles / Spin Cycles

GAMMA DELTA

Cotton



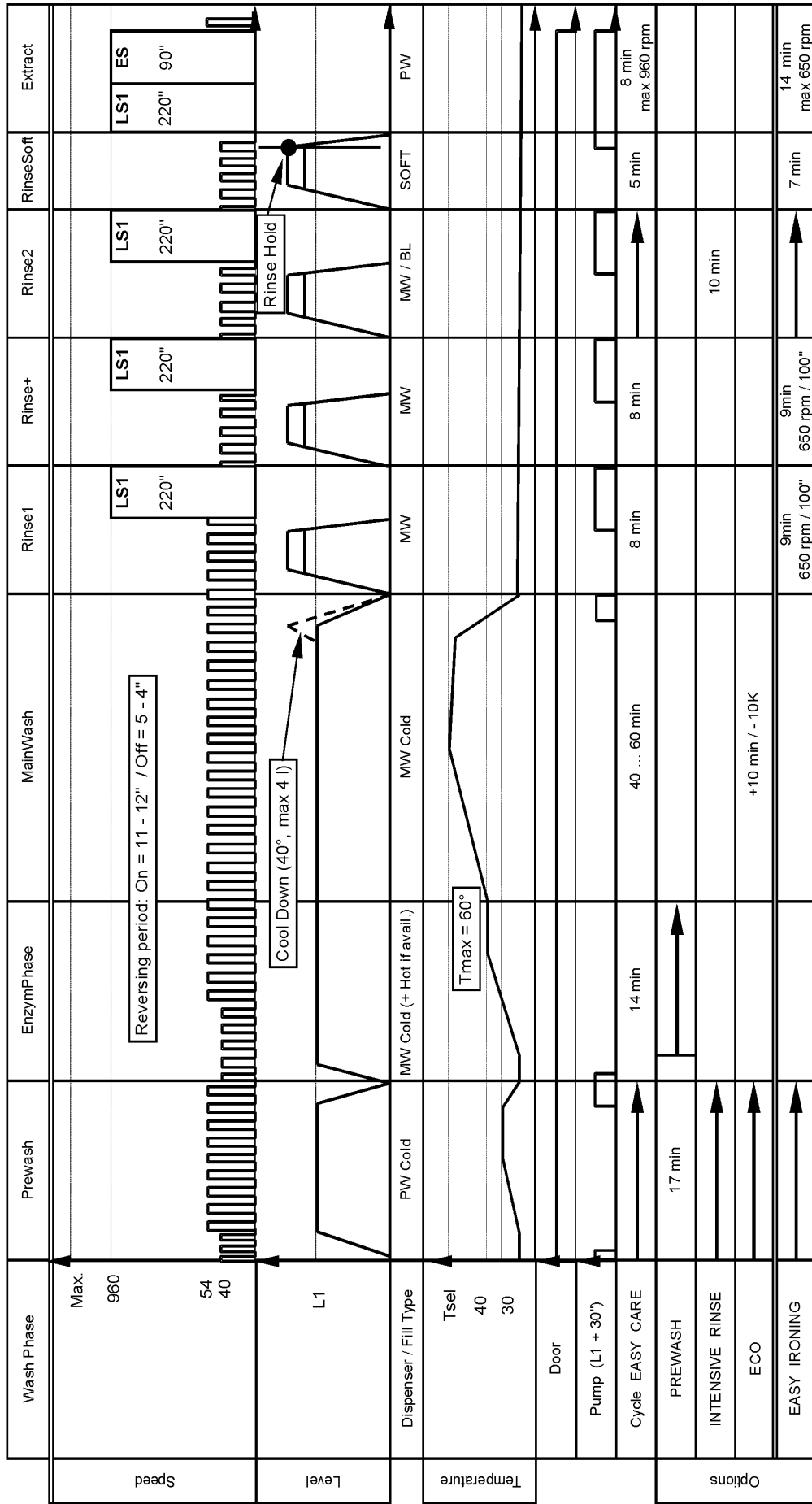
Program chart

4619 712 69521

Wash Cycles / Spin Cycles

GAMMA DELTA

Easy Care

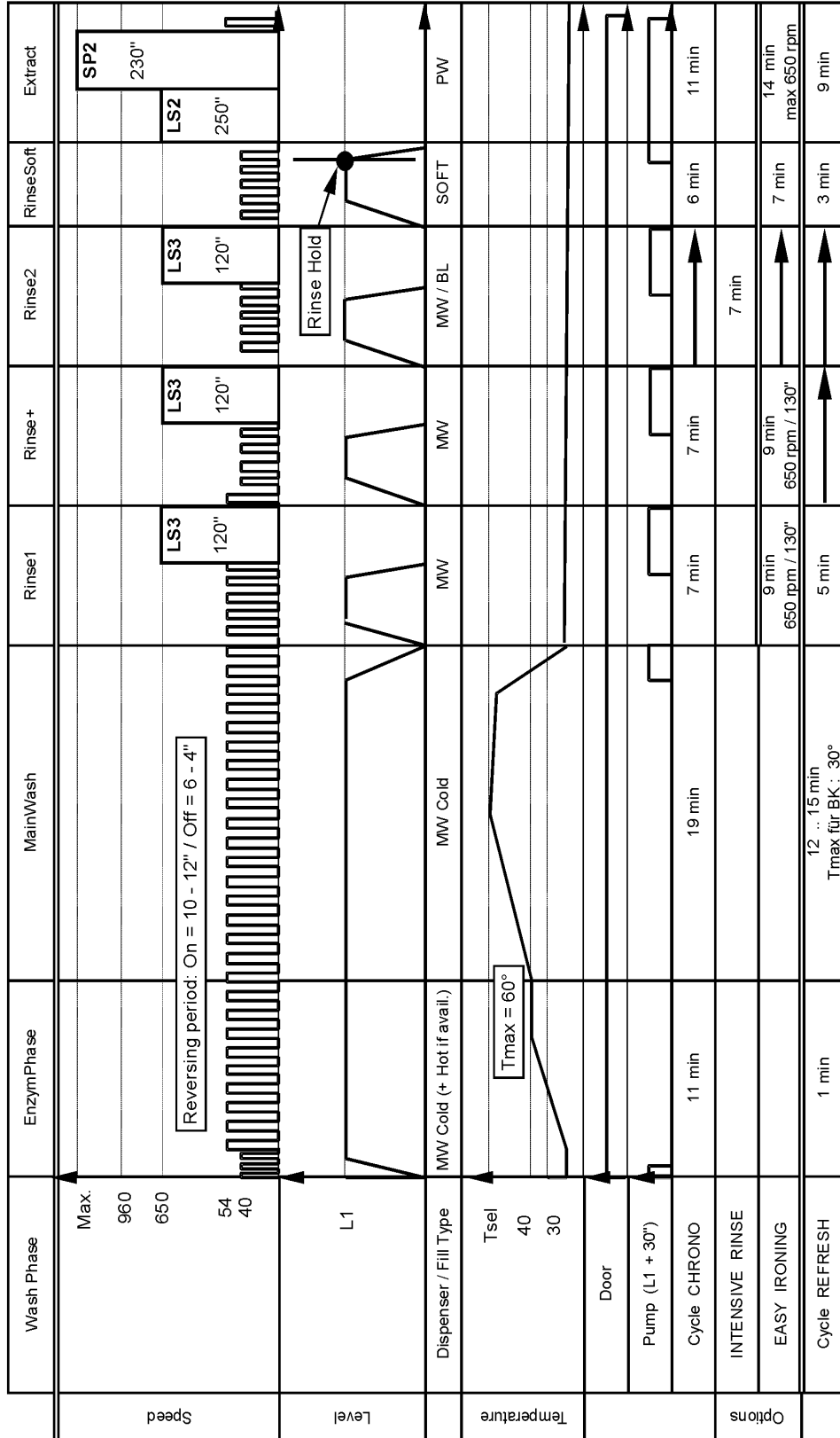


Program chart

4619 712 69521

Wash Cycles / Spin Cycles

Chrono (Daily) / Refresh (Express)



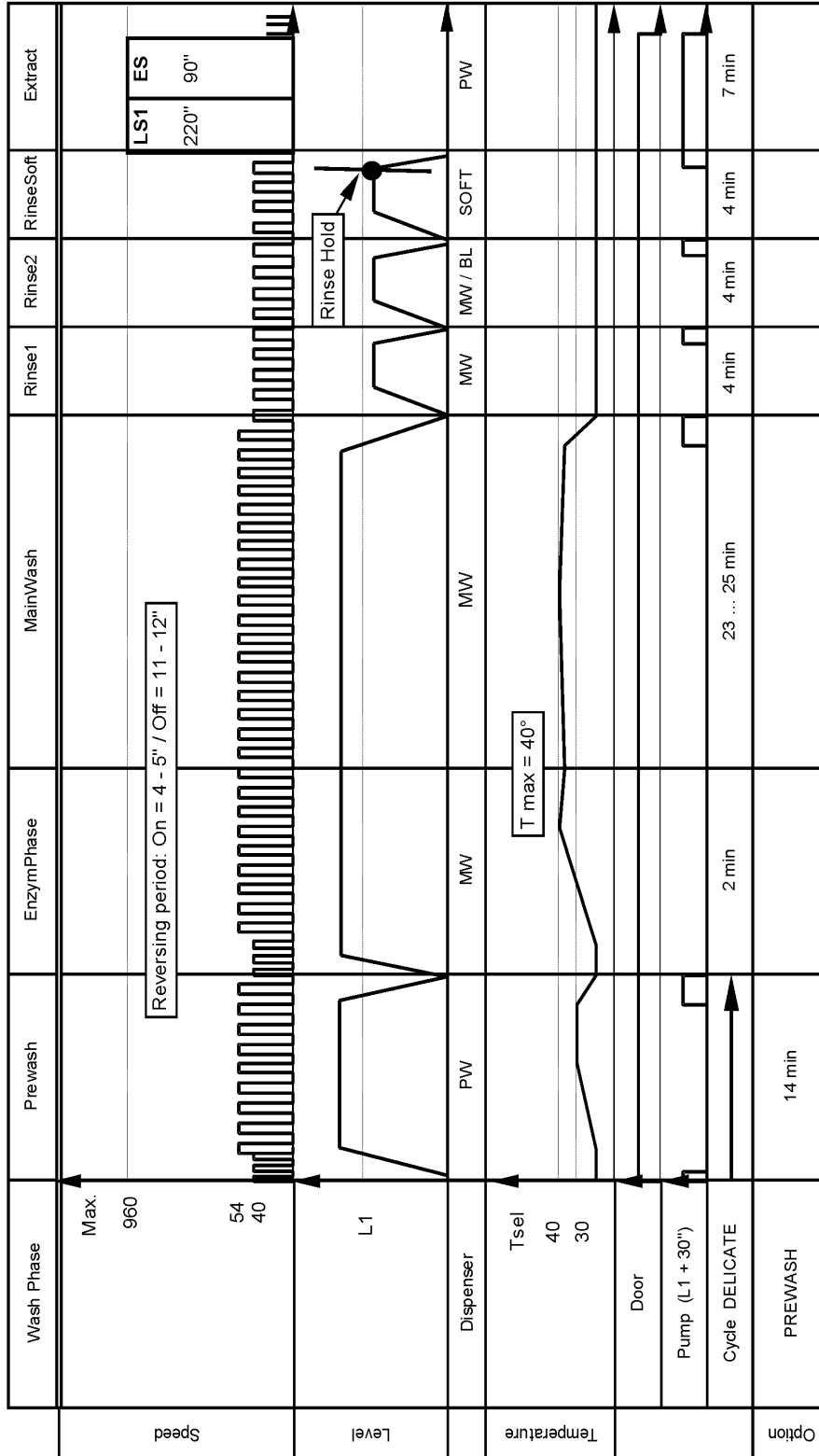
Program chart

4619 712 69521

Wash Cycles / Spin Cycles

GAMMA DELTA

Delicate



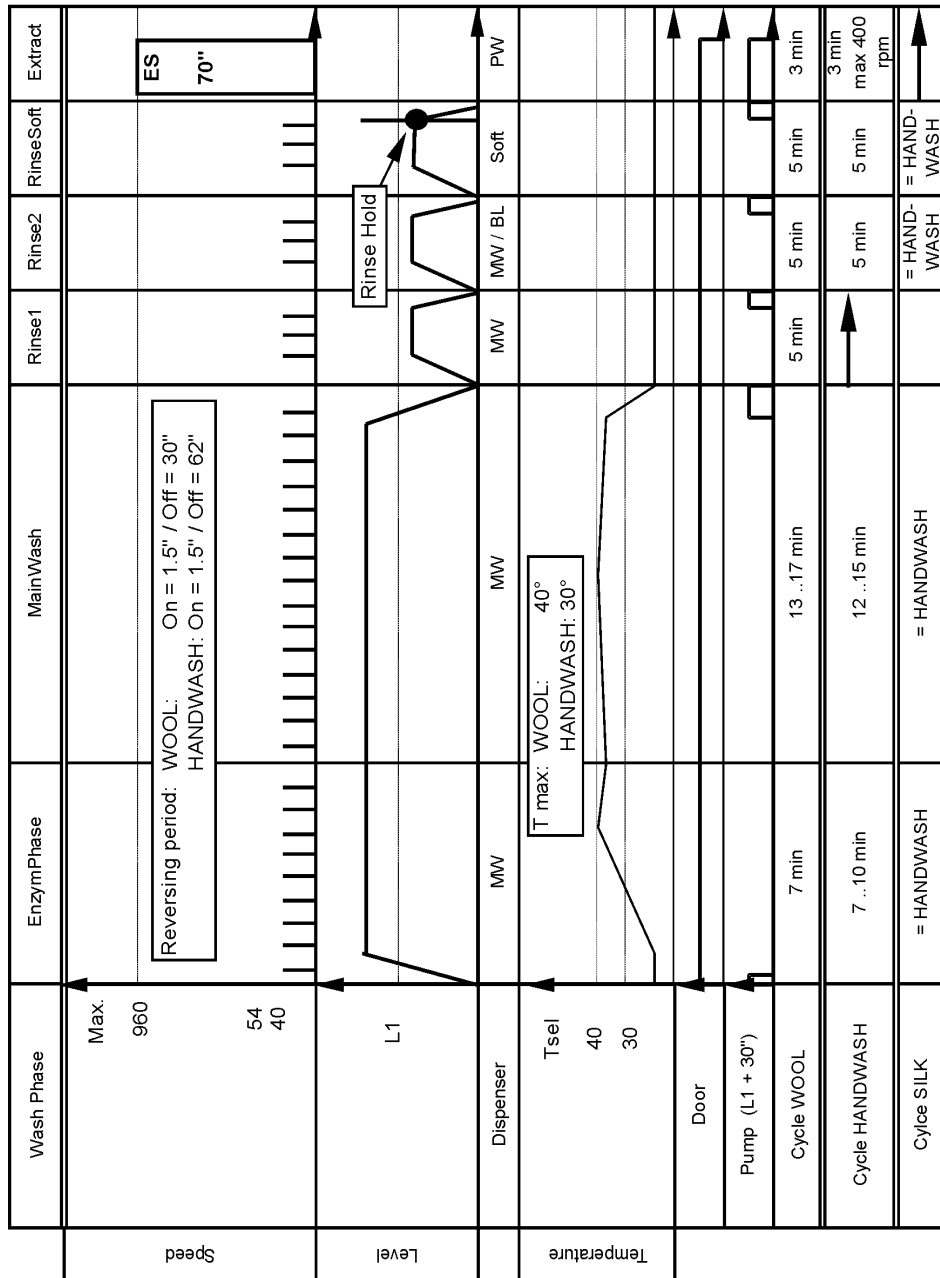
Program chart

GAMMA DELTA

Wash Cycles / Spin Cycles

4619 712 69521

Wool / Handwash / Silk



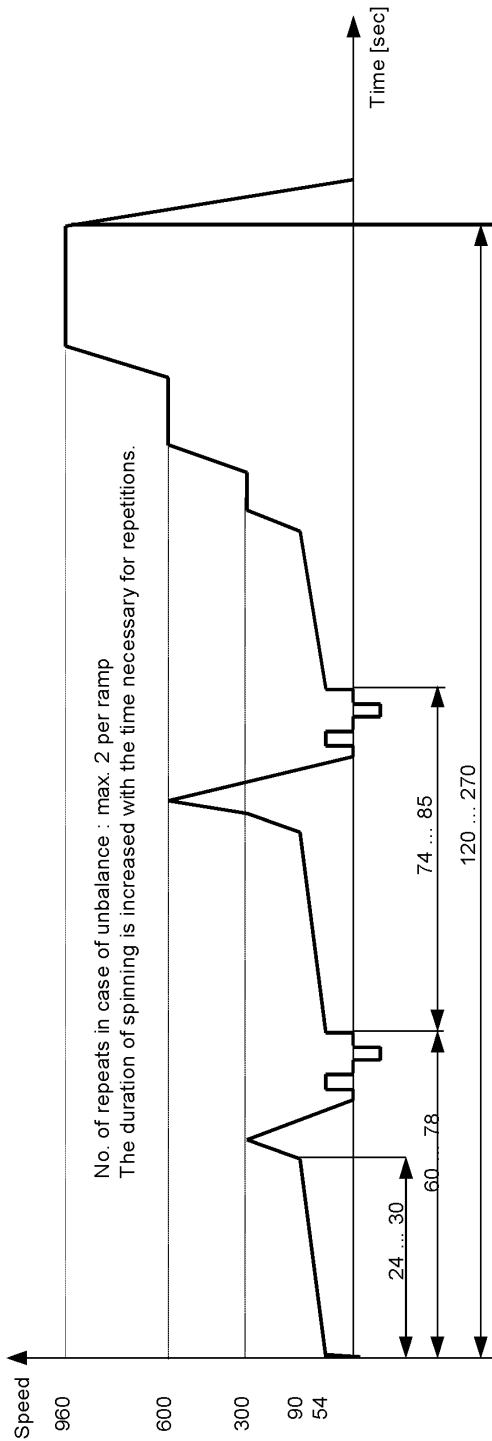
Program chart

4619 712 69521

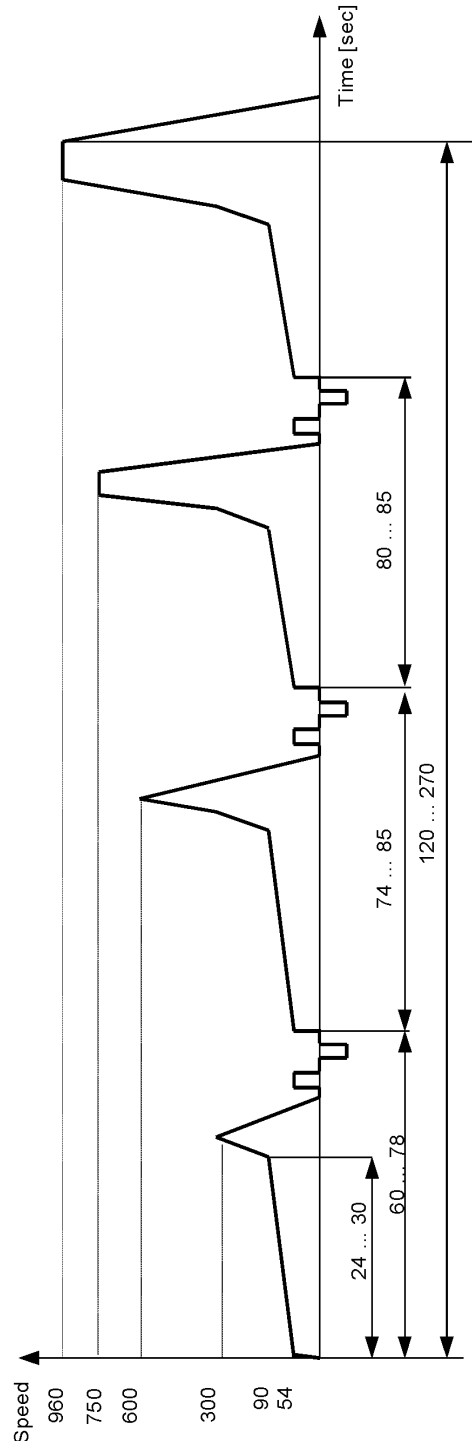
Wash Cycles / Spin Cycles

GAMMA DELTA

Spin Cycle : LS1



Spin Cycle : LS2



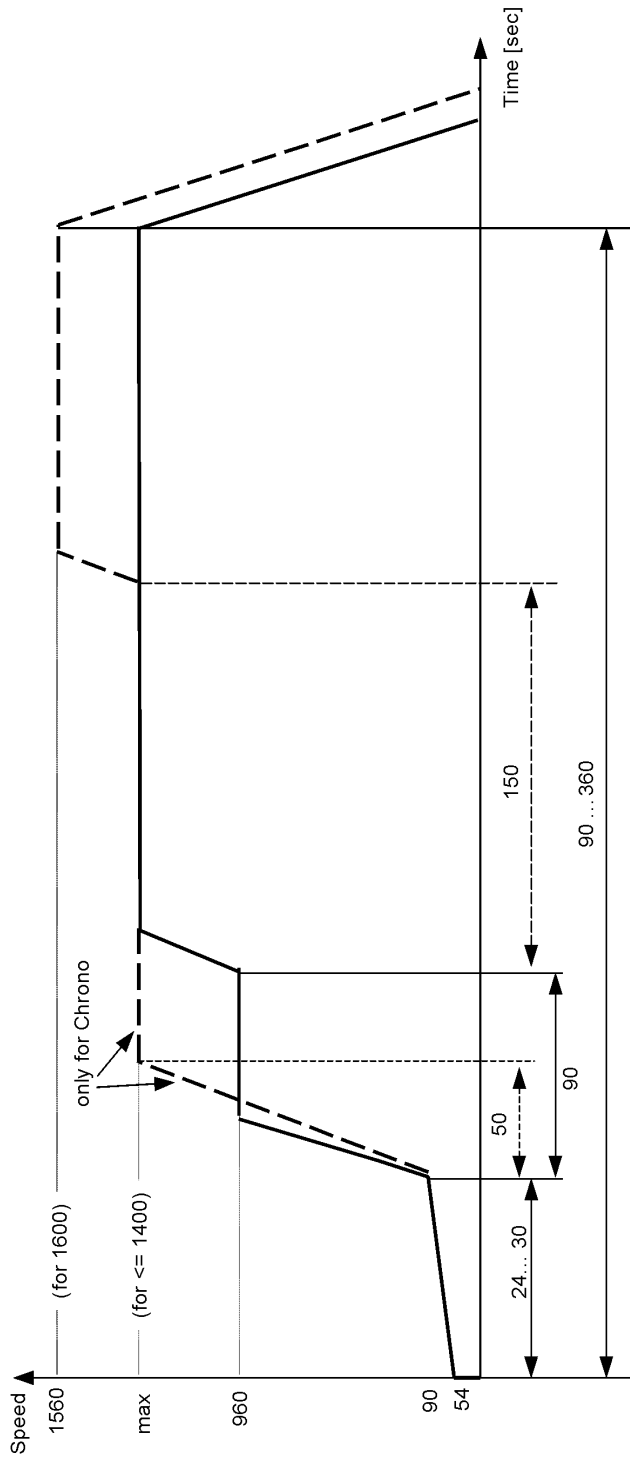
Program chart

4619 712 69521

Wash Cycles / Spin Cycles

GAMMA DELTA

Spin Cycle : ES



No. of repeats in case of unbalance : max. 11
 No. of repeats in case of foam : max. 3
 The duration of spinning is increased with the time necessary for repetitions.

Text/Legend

GAMMA DELTA		Test Program	4619 712 69521
1 →	Select program	Drain	
2 →	Start test program	Press PB3 (Prewash) 4 times during 5" then press PB Start	
3 →	Indication elements	red safety LEDs on Start delay LEDs on or rest time digits on Start LED flashing	
4 →	Go to next step	Push the button below the flashing LED	
5 →	Finish test program	Move the program selector from the DRAIN position	

Attention: Use the test program only without laundry !

Testprogram Flow

Step	digits	press buttonswithin	indication LEDs	check
1	left 3 on	4x prewash 1x Start		left side on, Start is flashing	left half of LEDs, door lock, valves
2	right 2 on	1x Start	60"	right side on, Start is flashing	right half of LEDs
3	C1	1x Start	60"	5 Start delay LEDs on, lowest is flashing	prewash fill, cold valve
4	C2	1x PB1 or PB7	60"	Eco is flashing	hot fill
5	C3	1x PB2 or PB7	60"	Prewash is flashing, wash is on	mainwash fill
6	C4	1x PB3	60"	Rinse is flashing, Intensive is on	bleach fill
7	C5	1x PB4	60"	Rinse hold is flashing	softener fill
8	C6	1x PB5	60"	safety LEDs on, Start is flashing	reversing relay, motor, NTC, heater
9	C7	wait till L1		Start is flashing	L1
10	temperature	1x Start or PB Temp if available		safety LEDs on, Start is flashing or wash is flashing	water leakage
11	C9 / CA	1x Start or PB Temp		lowest speed LED on, spin on	pump, L1, L0
12	Cb	wait till L0 is reached	300"	spin is flashing, lower 3 speed LEDs on	motor
13	CC	1x PB6	300"	spin is flashing, End is flashing, regarded speed on	tapped field relay
14	Cd	1x PB7		End is flashing, Reset on	

If failure occurs: The test program is stopped
The spin speed LEDs are flashing

Text/Legend

GAMMA DELTA Test Program 4619 712 69521

● Door closed
● Pump
● Water tap
● Aquastop

Start Start delay Eco

1600 ●
1200 ●
800 ●
400 ●
Reset ●

Prewash Wash Rinse Rinse hold Spin End

PB Start PB1 PB2 PB3 PB4 PB5 PB6 PB7

Temp

● Door closed ● 12
● Pump ● 9
● Water tap ● 6
● Aquastop ● 3
Start Start delay Eco Intensive

Prewash Wash Rinse

PB Start PB1 PB2 PB3 PB4

Temperature indication during the heating step

spin speed LEDs		NTC temperature
max	●	50 - 102 °C
	●	40 - 50 °C
	●	30 - 40 °C
	●	20 - 30 °C
0	●	-2,5 - 20 °C

Failure codes for Whirlpool GAMMA timer

failure indication	failure	Detected failure	To be checked
Prewash Wash Rinse Rinse Hold Spin			
○ ○ ○ ○ ●	FH	No water inlet	Water Tap / Valve / Pressostat
○ ○ ○ ● ○	FA	Aquastop failure	Aquastop switch
○ ○ ○ ● ●	FP	Drain failure	Drain pump / Pressostat
○ ○ ● ○ ●	F05	NTC failure, open / short circuit	NTC / Wiring
○ ○ ● ● ○	F06	Tachometer failure (no motor movement detected)	Motor / Tachometer
○ ○ ● ● ●	F07	Triac short circuit detection	Control Unit / Motor
○ ● ○ ○ ○	F08	heating element, open circuit	Heating element / Relay / Wiring
○ ● ● ○ ○	F12	heating element, short circuit	Heating element / Relay / Wiring
○ ● ● ○ ●	F13	dispenser, open / short circuit	Dispenser actuator / Wiring
○ ● ● ● ○	F14	EEPROM failure	Control Unit
● ○ ● ○ ●	F21	Communication failure between Control Unit and Display	Control Unit / Display
● ○ ● ● ●	F23	heating element, pressostat failure	Heating element / Wiring / Pressostat
● ● ○ ○ ○	F24	overflow failure	Pressostat
● ● ○ ● ○	F26	pump triac failure	Control Unit

Text/Legend

GAMMA DELTA

Test Program

4619 712 69521

Timer GAMMA – Connection

