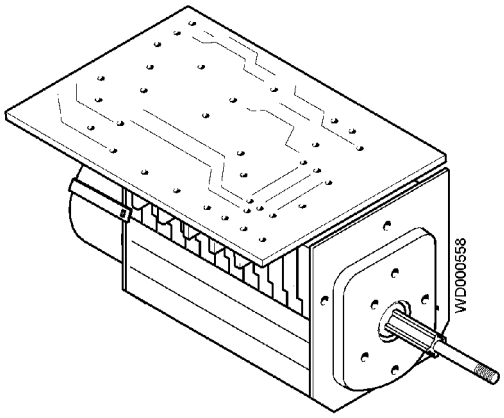
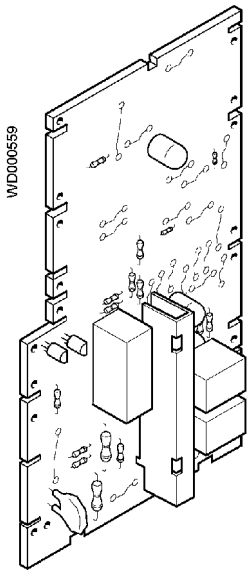
SERVICE MANUAL

WASHING





WASHING MACHINES
WITH TIMERS
124 92000.. / 124 92010..

FUNCTIONS:
VA30J - VB30J - VC30J

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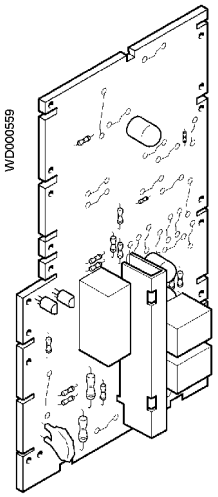
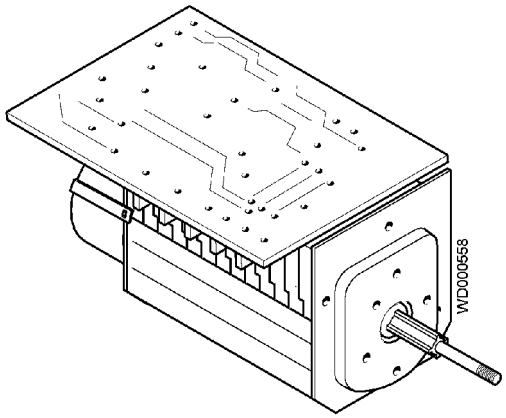
Pubblication No,
599 33 49-01/7
980220
EN/SERVICE/EB

INDEX

GENERAL CHARACTERISTICS

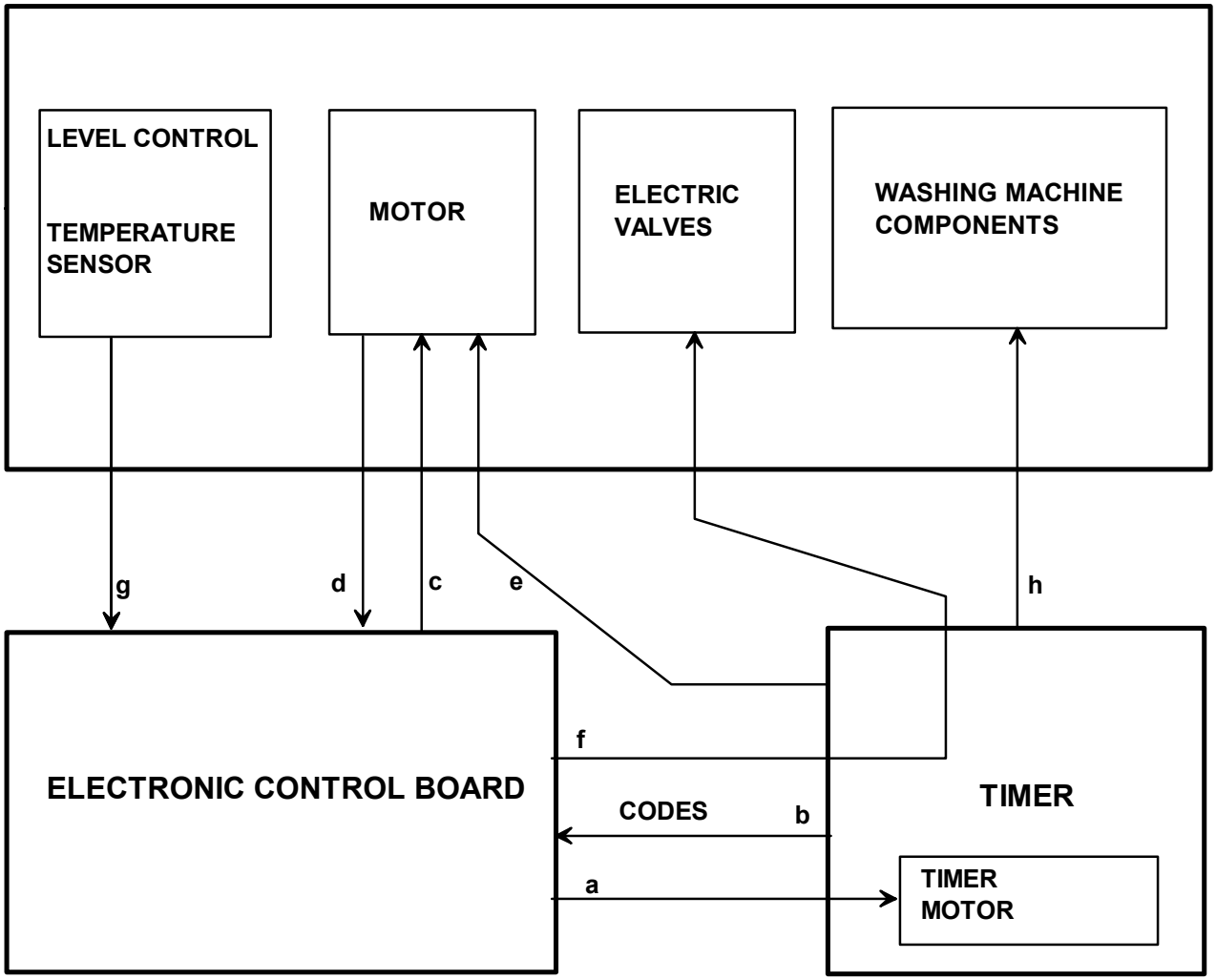
The VA30J - VB30J - VC30J timers manufactured by AKO are used in certain washing machine models with spin speeds from 900 rpm to 1500 rpm.
These are "hybrid" timers which consist of an electromechanical timer and an electronic control board (fitted to the base of the washing machine).





FUNCTIONS	VA30J	VB30J	VC30J
WASHING SYSTEM	JETSYSTEM	JETSYSTEM	JETSYSTEM
RINSING SYSTEM	ANTI-FOAM	ANTI-FOAM	ANTI-FOAM
POSSIBILITY OF DELAYED START	YES		
TUB	STAINLESS STEEL AND CARBORAN		
WATER FILL:			
- "EUROPE" VERSION	COLD		
- "GB" VERSION	HOT AND COLD		
LEVELS	3 WATER FILL LEVELS CONTROLLED BY PRESSURE SWITCHES		
TYPE OF MOTOR	COMMUTATOR		
TEMPERATURE CONTROL	BY NTC SENSOR. THE WASHING TEMPERATURES MAY BE FIXED OR ADJUSTABLE USING A KNOB		

OPERATING PRINCIPLES



a. The electronic control board (with microprocessor) powers the timer motor (via a TRIAC) so that it advances through the various steps.

b. The duration and type of each washing phase depend on the closure of a series of timer contacts (codes). The phases also depend on the configuration (different functions) and on the options selected using the keys or potentiometers.

c. The drum motor is powered directly by the electronic control board via a TRIAC. Reversal of the direction of rotation of the drum is performed by two relays fitted to the electronic board.

d. The electronic control board controls the speed of rotation of the motor according to a signal received from the tachymetric generator.

e. A timer contact selects half the stator during the final spin cycles.

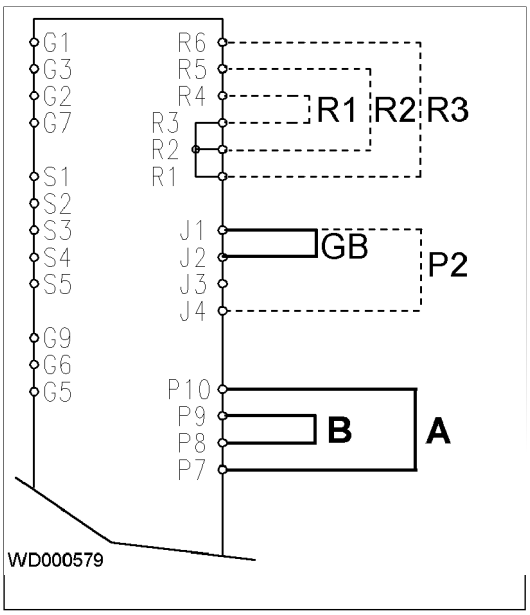
f. The hot (if featured) and cold water fill solenoids are powered by the electronic control board via a TRIAC and selected by one of the timer contacts.

g. The temperature of the washing solution is controlled directly by the electronic control board via an NTC sensor. The board also detects the closure of the contacts of the level pressure switch and the anti-foam pressure switch.

h. All the other components of the washing machine are powered directly by the timer.

CONFIGURATION OF THE FUNCTIONS OF THE ELECTRONIC BOARD

The various functions of the washing programmes are configured according to the settings of the wiring connectors on the electronic control board.



Configuration of functions VA30J - VB30J - VC30J (connectors A and B)

VA30J: Connectors **A** (P7 - P10) and **B** (P8 - P9) connected to the board.

VB30J: Connector **A** (P7 - P10) connected to the board.

VC30J: Connector **B** (P8 - P9) connected to the board.

Selection of the "GB" function (hot and cold water)

This option can be selected for each of the different functions by connecting contacts J1-J2 on the electronic board. If these contacts are not connected, the appliance is set to the "EUROPE" function (cold water only).

Selection of spin speed (connectors R1, R2, R3)

The configuration of the various spin speeds, which depends on the transmission ratio between the drum pulley and the motor pulley, is by selecting the appropriate connections between contacts R1 - R6 on the electronic board.

Configuration of the "G13" tub function (connector P2)

This function, used only for models with the "G13" stainless steel tub (54 litre drum) is configured using contacts J1 - J4 on the electronic board.

SAFETY FEATURES

ANTI-UNBALANCING DURING SPINNING

Control of the balance of the load is performed while the drum rotates at between 45 rpm and 85 rpm, i.e. before the spin cycle.

Final spin for COTTON cycles (CF / CFQ)

In these spin cycles, control of unbalancing is performed at two levels: 1.2 kg and 0.8 kg:

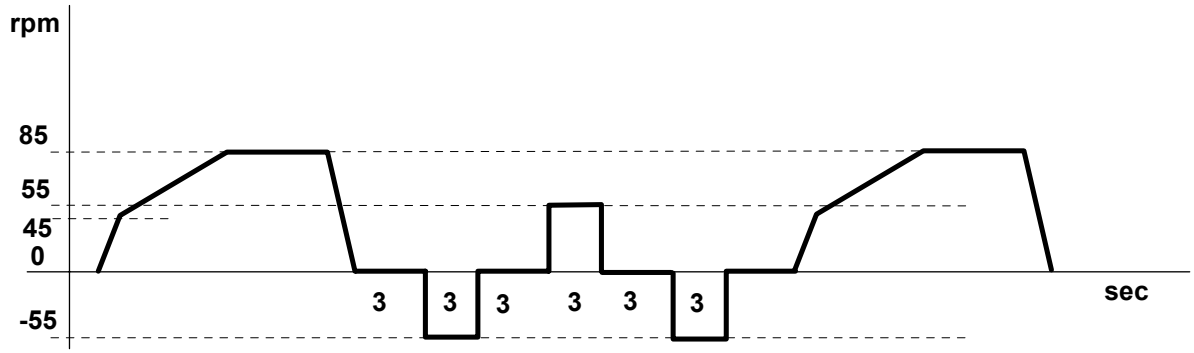
- if the unbalancing control detects unbalancing of less than 0.8 kg, the spin cycle is carried out normally.
- if the unbalancing is between 0.8 and 1.2 kg, the spin cycle is not carried out, and the drum is rotated at low speed in an attempt to balance the load. The spin cycle is then restarted, and the unbalancing check is repeated. If, after three attempts at balancing the load, unbalancing remains between 0.8 kg and 1.2 kg, the spin speed is limited to 1000 rpm.
- if the unbalancing control detects unbalancing in excess of 1.2 kg, the spin cycle is not carried out, and the drum is rotated at low speed in an attempt to balance the load. The spin cycle is then restarted, and the unbalancing check is repeated. If the load is still unbalanced, this sequence is repeated for the entire duration of the phase; thereafter, if the load is still unbalanced, the spin cycle is skipped.

Other spin cycles

For the intermediate spin cycles in programmes for COTTON, and spin cycles in those for SYNTHETICS, DELICATES and WOOL, the unbalancing check is based on a single level: 1.2 kg.

- if the unbalancing control detects unbalancing of less than 1.2 kg, the spin cycle is carried out normally.
- if the unbalancing is in excess of 1.2 kg, the appliance performs the sequence described above for CF and CQ; if the load remains unbalanced, the spin cycle is skippeed.

Drum movement with unbalanced load



MOTOR PROTECTION

Power TRIAC for motor short-circuited

If the electronic control board detects a short-circuit in the TRIAC which powers the drum motor, it immediately opens the relay contacts, thus disconnecting the motor for one minute; thereafter, power is restored to the motor. If the malfunction persists, the electronic control board makes 4 attempts to restore power to the motor (at intervals of 255 seconds), after which the cycle continues normally without motor movement.

Malfunction in tachymetric generator circuit

If a malfunction is detected in the tachymetric generator circuit, the electronic control board disconnects the motor; if, after three attempts to restore power to the motor, the malfunction persists, the timer advances rapidly to position 58.

Motor circuit-breaker open - motor windings interrupted

If one of these malfunctions should occur, the electronic control board disconnects the motor, and restores power at periodic intervals.
If the circuit-breaker has tripped, the motor will be powered normally when the circuit-breaker is reset.
If the malfunction persists, the washing programme will be performed without movement of the motor.

PROTECTION OF HEATING ELEMENTS

Temperature sensor short-circuited or open

The heating phase is skipped.

Temperature sensor incorrectly set, heating element faulty

The heating phases have a maximum preset duration; after this period, the timer passes to the subsequent phase even if the correct temperature has not been reached.

PROTECTION OF DRAIN PUMP

Drain pump faulty

The drain phases have a maximum duration of 3 minutes. After this period, the timer passes to the subsequent phase even if the 1st level pressure switch is not closed in the "empty" position.

WASHING PROGRAMMES: "EUROPE" VERSION WITH COLD WATER

	FIXED TEMPERATURES			ADJUSTABLE TEMPERATURES		
N°	**COTTON-LINEN**	**Temp. (°C)**	**Rinses**	**COTTON-LINEN**	**Temp. (°C)**	**Rinses**
1	Whites with pre-wash	95°	3	Whites/coloureds with pre-wash	30° - 95°	3
2	Whites	95°	3	Whites and coloureds	30 - 95°	3
3	Colour-fast coloureds	60°	3	-	-	-
4	Colour-fast coloureds, light soiling	60°	3	Whites and coloureds, light soiling	30° - 60°	3
5	Delicate coloureds	40°	3	-	-	-
6	Rinses	-	3	Rinses	-	3
7	Conditioner	-	1	Conditioner	-	1
8	Spin	-	-	Spin	-	-
9	Drying *	-	-	Drying *	-	-
	SYNTHETICS			**SYNTHETICS - MIXED FABRICS**		
10	Whites with pre-wash	60°	3	Whites / coloureds with pre-wash	30° - 60°	3
11	Whites	60°	3	Whites and coloureds	30° - 60°	3
12	Coloureds	40°	3	-	-	-
13	Short cycle	30°	3	Short cycle	30°	3
14	Rinses	-	3	Rinses	-	3
15	Conditioner	-	1	Conditioner	-	1
16	Drying *	-	-	Drying *	-	-
	DELICATES / WOOL			**DELICATES / WOOL**		
17	Wool	40°	3	Wool	40°	3
18	Delicates	40°	3	Delicates	30° - 40°	3
19	Rinses	-	3	Rinses	-	3
20	Conditioner	-	1	Conditioner	-	1
21	Short spin	-	-	Short spin	-	-
22	Drain	-	-	Drain	-	-

* Washer-dryers only.

Other special programmes can be selected using the keys as follows:

- **BIO** (only for programmes 1, 2, 3, 4, 10 and 11)
- **SHORT CYCLE** (only for programmes 1, 2, 3, 4, 5, 10, 11 and 12)
- **SOAK** (only for programmes 1 and 10)
- **STAINS** (only for programme 2 in versions with adjustable temperatures)

WASHING PROGRAMMES: "GB" VERSION WITH HOT AND COLD WATER

	FIXED TEMPERATURES			ADJUSTABLE TEMPERATURES		
N°	**COTTON - LINEN**	**Temp. (°C)**	**Rinses**	**COTTON - LINEN**	**Temp. (°C)**	**Rinses**
1	Extra pre-wash	40°	3	Extra pre-wash	40°	3
2	Whites	95°	3	Whites	60° - 95°	3
3	Colour-fast coloureds	60°	3	Colour-fast coloureds	40° - 60°	3
4	Colour-fast coloureds, light soiling	60°	3	Colour-fast coloureds, light soiling	40° - 60°	3
5	Delicate coloureds	40°	3	Delicate coloureds	30° - 40°	3
6	Rinses	-	3	Rinses	-	3
7	Conditioner	-	1	Conditioner	-	1
8	Spin	-	-	Spin	-	-
9	Drying *	-	-	Drying *	-	-
	SYNTHETICS			**SYNTHETICS - MIXED FABRICS**		
10						
11	Whites	50°	3	Whites and coloureds	30° - 50°	3
12	Non-iron	40°	3	Non-iron	30° - 40°	3
13	Short cycle	30°	3	Short cycle	30°	3
14	Rinses	-	3	Rinses	-	3
15	Conditioner	-	1	Conditioner	-	1
16	Drying *	-	-	Drying *	-	-
	DELICATES / WOOL			**DELICATES : WOOL**		
17	Wool	40°	3	Wool	40°	3
18	Delicates	40°	3	Delicates	30° - 40°	3
19	Rinses	-	3	Rinses	-	3
20	Conditioner	-	1	Conditioner	-	1
21	Short spin	-	-	Short spin	-	-
22	Drain	-	-	Drain	-	-

* Washer-dryers only.

In phases 2, 3, 4 and 10, the appliance fills with both hot and cold water.

Other special programmes can be selected using the keys as follows:

- **HEAVY SOILING** (only for programmes 2, 3, 4 and 10)
- **BIO** (only for programmes 2, 3, 4, and 10)
- **SHORT CYCLE** (only for programmes 2, 3, 4, 5, 10, and 11)

WASHING CYCLE OPTIONS

START/STOP	switches the appliance ON and OFF
SOAK	stops the machine with water in the tub at the end of the pre-wash phase in COTTON and SYNTHETICS cycles
SUPER RINSE	increases the water fill in the COTTON cycles
RINSE HOLD	stops the appliance leaving water in the tub at the end of the final rinse (in cycles for COTTON, SYNTHETICS, DELICATES and WOOL). When the key is pressed again, the cycle is completed (i.e. the appliance performs the drain and spin cycles). N.B. For washer-dryers, if this key is pressed together with the automatic drying option (in programmes for COTTON and SYNTHETICS), the cycle stops with water in the tub at the end of the final rinse.
DELICATE SPIN	the function of this key is opposite to that of the "RINSE HOLD" key.
HEAVY SOILING	**(only on models with hot water solenoid):** disactivates the hot water fill solenoid.
SHORT CYCLE	reduces the duration of the COTTON and SYNTHETICS cycles. This makes it possible to select extremely short cycles, especially when this key is pressed in the following programmes: COTTON 60°C (programmes 2 or 3 with fixed temperatures): cycle duration 60 minutes with a 3 kg load. SYNTHETICS 40°C (programme 11, "Europe" version): cycle duration 30 minutes with a load of 2 kg. MIXED 40° (programme 12): it is possible to select a special programme with water fill to level 3, vigorous drum movement, two rinses, and cycle duration 40 minutes with a load of 2 kg.
STAINS PROGRAMME	**(only for "Europe" versions with adjustable temperatures)**: In COTTON programmes (without pre-wash), after the BIO phase, water is ducted through the pre-wash compartment in order to introduce the additive required to remove stains. In 70° and 90° COTTON programmes, if the STAINS key is pressed, the BIO phase is performed at the beginning of the cycle.
BIO	**(appliances with adjustable temperatures):** during the heating phase in COTTON programmes, adds a phase of approximately 10 minutes during which the temperature is maintained at 30°C. During the heating phase in SYNTHETICS/MIXED FABRICS cycles, the period during which the temperature is maintained at 40°C is extended for approximately 10 minutes.
	(appliances with fixed temperatures): during the heating phase in 90° COTTON programmes, adds a phase of approximately 10 minutes during which the temperature is maintained at 30°C. During the heating phase of COTTON 60°/SYNTHETICS/MIXED FABRICS cycles, the period during which the temperature is maintained at 40°C is extended for approximately 10 minutes.
	In appliances with a hot water fill solenoid, this key also performs the HEAVY SOILING function.
AUTOMATIC DRYING	**(washer-dryers only):** performs the drying cycle automatically at the end of the washing cycle. If this key is not fitted, this function is performed by selecting the drying time.

REDUCED-SPEED SPIN

The speed of the final spin cycle can be reduced by pressing a key or using an 8-position selector knob. In COTTON cycles, the intermediate spin cycles are unaltered in order to ensure that rinsing is performed efficiently.

Spin speeds in COTTON cycles:

		SPIN SPEEDS (rpm)						
Position of selector	**1**	**300**	**300**	**300**	**500**	**500**	**700**	**700**
	2	385	400	410	600	610	800	900
	3	470	500	515	700	715	900	1.000
	4	555	600	625	800	825	1.000	1.100
	5	640	700	730	900	930	1.100	1.200
	6	725	800	840	1.000	1.040	1.200	1.300
	7	810	900	945	1.100	1.145	1.300	1.400
	8	**900**	**1.000**	**1.050**	**1.200**	**1.250**	**1.400**	**1.500**
Reduced spin key		**650**	**650**	**650**	**650**	**850**	**1.000**	**1.000**
Transmission ratio		**1/14 1/12**	**1/14**	**1/12**	**1/12**	**1/10.4**	**1/10.4**	**1/10.4**

Spin speeds in SYNTHETICS cycles:

		SPIN SPEED (rpm)	
VERSION		**EUROPE GB (with auto-drying)**	**GB (without auto-drying)**
Position of selector	**1**	**300**	**300**
	2	385	350
	3	470	400
	4	555	450
	5	640	500
	6	725	550
	7	810	600
	8	**900**	**650**
Reduced spin key		**650**	**450**

Spin speeds in DELICATES cycles:

		SPIN SPEED (rpm)	
VERSION		**EUROPE**	**GB**
Position of selector	**1**	300	300
	2	385	350
	3	470	400
	4	555	450
	5	640	500
	6	725	550
	7	810	600
	8	900	650
Reduced spin key		**650**	**450**

Spin speeds in WOOL cycles:

		SPIN SPEED (rpm)	
VERSION		**EUROPE**	**GB**
Position of selector	**1**	**300**	**300**
	2	385	400
	3	470	500
	4	555	600
	5	640	700
	6	725	800
	7	810	900
	8	**900**	**1.000**
Reduced spin key		**650**	**650**
Transmission ratio		**1 / 14** **1 / 12**	**1 / 14** **1 / 12** **1 / 10.4**

DELAYED START

A timer knob can be used to set the delayed start option to between 0 and 12 hours.

TABLE OF WASHING PROGRAMMES

KEY

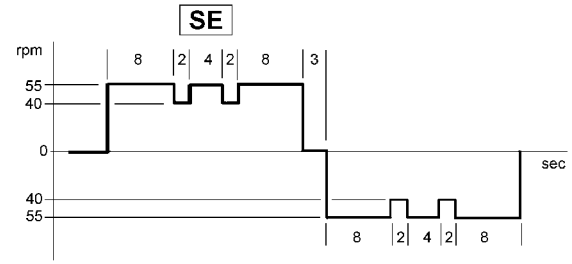
P = fill time
T = heating time

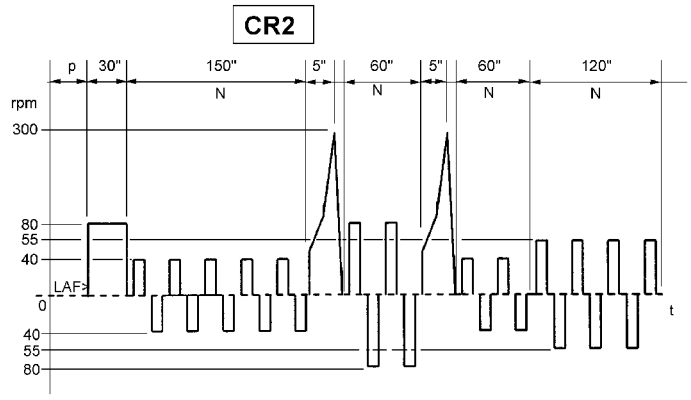
MOTOR MOVEMENT SEQUENCE

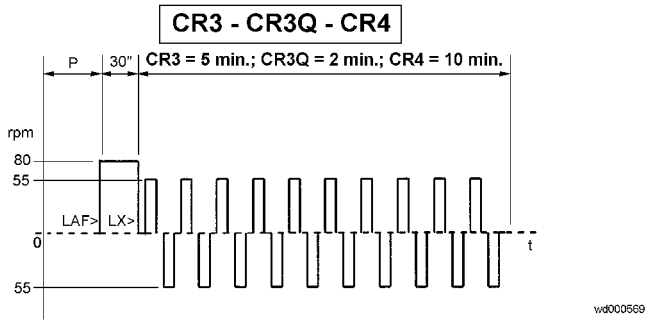
During the course of the washing phases, the motor moves in various sequences as shown below:

TYPE		MOVEMENT (sec)	PAUSE (sec)	SPEED OF DRUM (rpm)
SED	Super-vigorous, drying	27	3	55
SE	Super-vigorous	24	3	55/40
E	Vigorous	8	4	55
N	Normal	8	8	55
D	Delicate	4	12	55
D1	Delicate	4	12	33
D2	Delicate	2	28	33
D3	Delicate	2	58	33
DPS	Positioning of drum (top-loaders only)			

Movements SE, CR2, CR3, CR3Q, CR4:







VA30J — COTTONS

WASH PHASES																																						
STEP NO.		1		2			3	4	5	6	7	8		9	10	11	12	13	14	15			16	17		18	19	20	21	22		23	24	25	26		27
ACTIONS		A	B	A	B	C						A	B							A	B	C		A	B					A	B				A	B	
PROGRAMME STARTING POINTS		1							2			3				4		5						6						7			8		9		
DETERGENT DRAWER																																					
BASIC FUNCTIONS	TEMPERATURE (˚C)	40	40							30					40		60 40		90 40																		
	MOTOR ACTION	N	D	N	D3	-	C1	-	CR4	E	E	CR4	E	-	E	SE	E	E	N	E	N	N	C2	CR2	CR 3Q	C2		CR3	C2	CR2	CR3	-	C1 (CF)	CF	D1	SED	DPS
	MAX. DURATION (MINUTES)	P T	T	4	20	∞	10	∞	P 10	T	10	P 10	0,2		T	(10)	T	(10)	T	18	0,4	2	(10)	P 7	P 2	(10)		P 5	(10)	P 7	P 5	∞	(15)	(15)	10	T	∞
	WATER INTAKE: 3rd LEV.																																				
	WATER INTAKE: BY TIME (24 SEC)																																				
	WATER INTAKE 2nd LEV.																																				
	WATER INTAKE: 1st LEV.																																				
	EMPTY CONDITION																																				
PROGRAMMES / OPTIONS	70˚ - 90˚		→		→	→		→		→	→	→	→	→		→	60˚	→							→		→				→	→			→	→	
	0˚ - 60˚									→	→	→	→	→			SE		SE	SE	→	→			→		→				→	→			→	→	
	INTENSIVE - 60˚												→	→			SE		SE	SE	→	→			→		→				→	→			→	→	
	60˚															CR4		→	SE	SE	→	→			→		→				→	→			→	→	
	40˚																	CR4	E	SE	→	→			→						→	→			→	→	
	QUICK WASH: 0˚ - 90˚								CR3Q	→	→	→	→	→		→	SE	→	SE	2'	2'	→	C2Q	→		C2Q	→	CR3Q	C2Q	→	CR3Q	→		CFQ	→	→	
	QUICK WASH: 60˚															CR3Q		→	SE	2'	2'	→	C2Q	→		C2Q	→	CR3Q	C2Q	→	CR3Q	→		CFQ	→	→	
	QUICK WASH: 40˚																	CR3Q	E	2'	2'	→	C2Q	→		C2Q	→	CR3Q	C2Q	→	CR3Q	→		CFQ	→	→	
	BIO 70˚ - 90˚		→		→	→		→				→	→	→		→	60˚	→							→		→				→	→			→	→	
	BIO INTENSIVE 60˚												→	→		20'E	SE		SE	SE	→	→			→		→				→	→			→	→	
	BIO 60˚															CR4			SE	SE	→	→			→		→				→	→			→	→	
	EXTRA RINSE	ALL PROGRAMMES:																					C3R	→	CR3	C3R	→		C3R	→		→			→	→	
	SOAK	→		→																																	
	EXTRA PREWASH (GB)	→		→	4'D	→																															
	STAIN									40˚		→		→		→	60˚	→							→		→				→	→			→	→	
	AUTODRY																																C8				
	G13 TUB														N	E	N		N	E																	

VA30CA-EN

VB30J — COTTONS

WASH PHASES																																						
STEP NO.		1		2			3	4	5	6	7	8		9	10	11	12	13	14	15		16	17		18	19	20	21	22		23	24	25	26		27
ACTIONS		A	B	A	B	C						A	B							A	B	C		A	B					A	B					A	B	
PROGRAMME STARTING POINTS		1							2			3				4		5					6						7			8		9		
DETERGENT DRAWER																																				
BASIC FUNCTIONS	TEMPERATURE (˚C)	40	40							30					40		60 40		90 40																		
	MOTOR ACTION	N	D	N	D3	-	C1	-	CR4	E	E	CR4	E	-	E	SE	E	E	N	E	N	N	C3R	CR2	CR 3Q	C3		CR3	C3		CR3	-	C1 (CF)	CF	D1	SED	DPS
	MAX. DURATION (MINUTES)	P T	T	4	20	∞	10	∞	P 10	T	10	P 10	0,2		T	(10)	T	(10)	T	18	0,4	2	(10)	P 7	P 2	(10)		P 5	(10)		P 5	∞	(15)	(15)	10	T	∞
	WATER INTAKE: 3rd LEV.																																				
	WATER INTAKE: BY TIME (24 SEC)																																				
	WATER INTAKE 2nd LEV.																																				
	WATER INTAKE: 1st LEV.																																				
	EMPTY CONDITION																																				
PROGRAMMES / OPTIONS	70˚ - 90˚		→		→	→		→		→	→	→	→	→		→	60˚	→						→		→			→		→			→	→	
	0˚ - 60˚									→	→	→	→	→			SE		SE	SE	→	→		→		→			→		→			→	→	
	INTENSIVE - 60˚												→	→			SE		SE	SE	→	→		→		→			→		→			→	→	
	60˚															CR4		→	SE	SE	→	→		→		→			→		→			→	→	
	40˚																	CR4	E	SE	→	→		→		→			→		→			→	→	
	QUICK WASH: 0˚ - 90˚								CR3Q	→	→	→	→	→		→	SE	→	SE	2'	2'	→	C3RQ	→		C3Q	→	CR3Q	C3Q	→	CR3Q	→		CFQ	→	→	
	QUICK WASH: 60˚															CR3Q		→	SE	2'	2'	→	C3RQ	→		C3Q	→	CR3Q	C3Q	→	CR3Q	→		CFQ	→	→	
	QUICK WASH: 40˚																	CR3Q	E	2'	2'	→	C3RQ	→		C3Q	→	CR3Q	C3Q	→	CR3Q	→		CFQ	→	→	
	BIO 70˚ - 90˚		→		→	→		→				→	→	→		→	60˚	→							→		→			→		→			→	→	
	BIO INTENSIVE 60˚												→	→		20'E	SE		SE	SE	→	→			→		→			→		→			→	→	
	BIO 60˚															CR4			SE	SE	→	→			→		→			→		→			→	→	
	EXTRA RINSE	ALL PROGRAMMES:																						→	CR3		→			→		→			→	→	
	SOAK	→		→																																	
	EXTRA PREWASH (GB)	→		→	4'D	→																															
	STAIN									40˚		→		→		→	60˚	→							→		→			→		→			→	→	
	AUTODRY																																C8				
	G13 TUB														N	E	N		N	E																	

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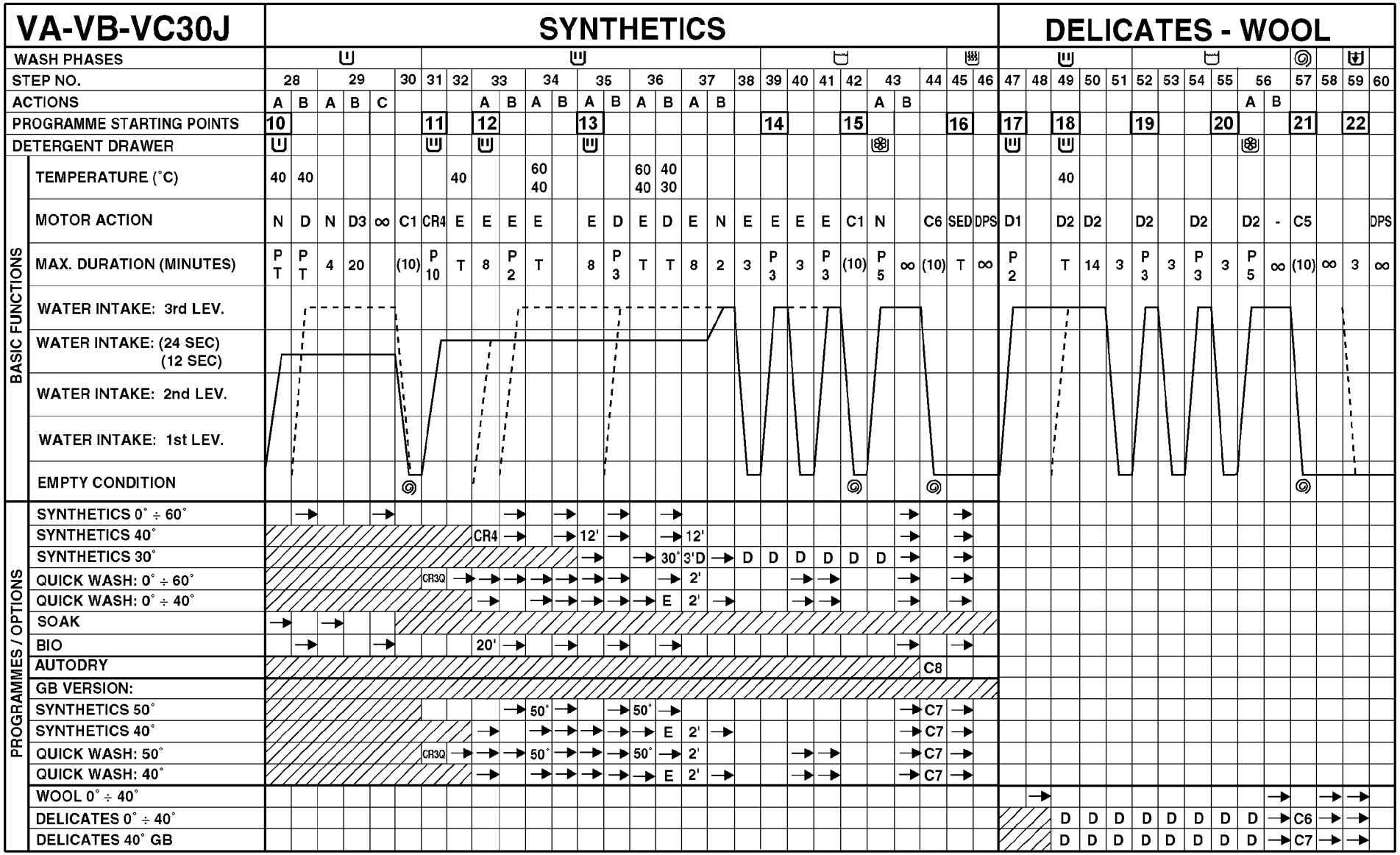
VC30J — COTTONS

WASH PHASES																																								
STEP NO.		1		2			3	4	5	6	7	8		9	10	11	12	13	14	15		16	17		18	19	20	21	22		23	24	25	26		27
ACTIONS		A	B	A	B	C						A	B							A	B	C		A	B					A	B				A	B		
PROGRAMME STARTING POINTS		1							2			3				4		5					6						7			8		9			
DETERGENT DRAWER																																							
BASIC FUNCTIONS	TEMPERATURE (˚C)	40	40							30					40		60 40		90 40																				
	MOTOR ACTION	N	D	N	D3	-	C1	-	CR4	E	E	CR4	E	-	E	SE	E	E	N	E	N	N	C3R (C4R)	CR2	CR 3Q	C4		CR3	C4		CR3	-	C1 (CF)	CF	D1	SED	DPS		
	MAX. DURATION (MINUTES)	P T	T	4	20	∞	10	∞	P 10	T	10	P 10	0,2		T	(10)	T	(10)	T	18	0,4	2	(10)	P 7	P 2	(10)		P 5	(10)		P 5	∞	(15)	(15)	10	T	∞		
	WATER INTAKE: 3rd LEV.																																						
	WATER INTAKE: BY TIME (24 SEC)																																						
	WATER INTAKE 2nd LEV.																																						
	WATER INTAKE: 1st LEV.																																						
	EMPTY CONDITION																																						
PROGRAMMES / OPTIONS	70˚ - 90˚		→		→	→		→		→	→	→	→	→		→	60˚	→						→		→			→		→			→	→		
	0˚ - 60˚									→	→	→	→	→			SE		SE	SE				→		→			→		→			→	→		
	INTENSIVE - 60˚												→	→			SE		SE	SE				→		→			→		→			→	→		
	60˚															CR4		→	SE	SE				→		→			→		→			→	→		
	40˚																	CR4	E	SE				→		→			→		→			→	→		
	QUICK WASH: 0˚ - 90˚								CR3Q	→	→	→	→	→		→	SE	→	SE	2'	2'	→	C3RQ	→		C4Q	→	CR3Q	C4Q	→	CR3Q	→		CFQ	→	→		
	QUICK WASH: 60˚															CR3Q		→	SE	2'	2'	→	C3RQ	→		C4Q	→	CR3Q	C4Q	→	CR3Q	→		CFQ	→	→		
	QUICK WASH: 40˚																	CR3Q	E	2'	2'	→	C3RQ	→		C4Q	→	CR3Q	C4Q	→	CR3Q	→		CFQ	→	→		
	BIO 70˚ - 90˚		→		→	→		→				→	→	→		→	60˚	→						→		→			→		→			→	→		
	BIO INTENSIVE 60˚												→	→		20'E	SE		SE	SE				→		→			→		→			→	→		
	BIO 60˚															CR4			SE	SE				→		→			→		→			→	→		
	EXTRA RINSE	ALL PROGRAMMES:																						→	CR3		→			→		→			→	→		
	SOAK	→		→																																		
	EXTRA PREWASH (GB)	→		→	4'D	→																																
	STAIN									40˚		→		→		→	60˚	→						→		→			→		→			→	→		
	AUTODRY																																C8						
	G13 TUB														N	E	N		N	E																			

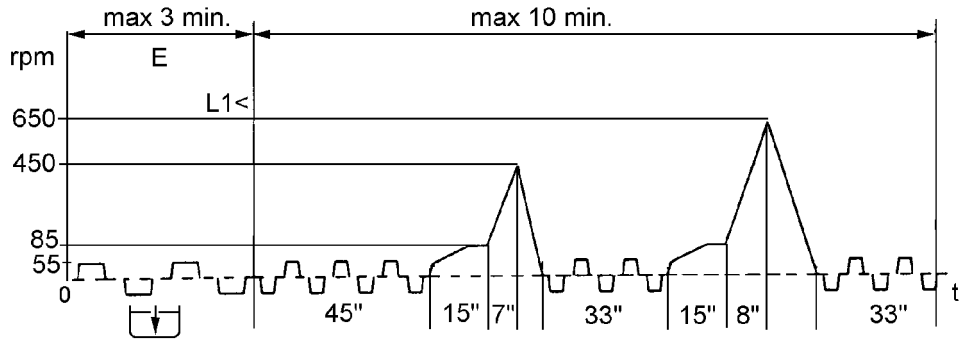
VC30CA-EN


VA-VB-VC30J
SYNTHETICS
DELICATES - WOOL
WASH PHASES
STEP NO.
ACTIONS
PROGRAMME STARTING POINTS
DETERGENT DRAWER
BASIC FUNCTIONS
TEMPERATURE (°C)
MOTOR ACTION
MAX. DURATION (MINUTES)
WATER INTAKE: 3rd LEV.
WATER INTAKE: (24 SEC) (12 SEC)
WATER INTAKE: 2nd LEV.
WATER INTAKE: 1st LEV.
EMPTY CONDITION
PROGRAMMES / OPTIONS
SYNTHETICS 0° ÷ 60°
SYNTHETICS 40°
SYNTHETICS 30°
QUICK WASH: 0° ÷ 60°
QUICK WASH: 0° ÷ 40°
SOAK
BIO
AUTODRY
GB VERSION:
SYNTHETICS 50°
SYNTHETICS 40°
QUICK WASH: 50°
QUICK WASH: 40°
WOOL 0° ÷ 40°
DELICATES 0° ÷ 40°
DELICATES 40° GB

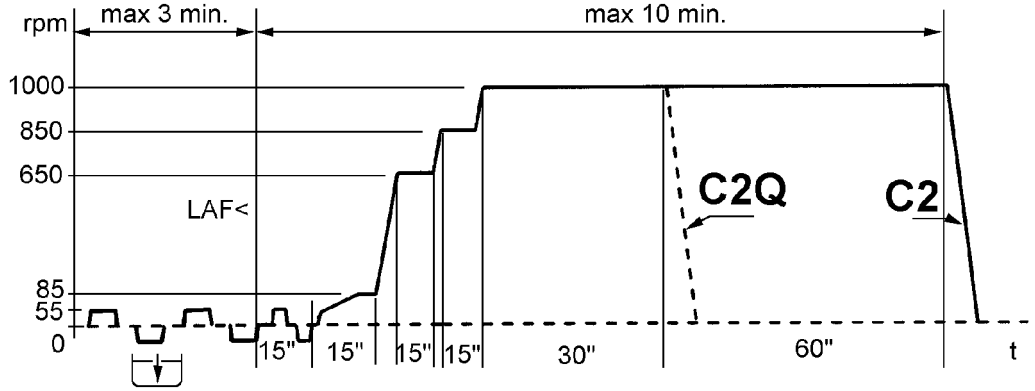
VB30SA-EN

SPIN SEQUENCES

C1



C2 - C2Q



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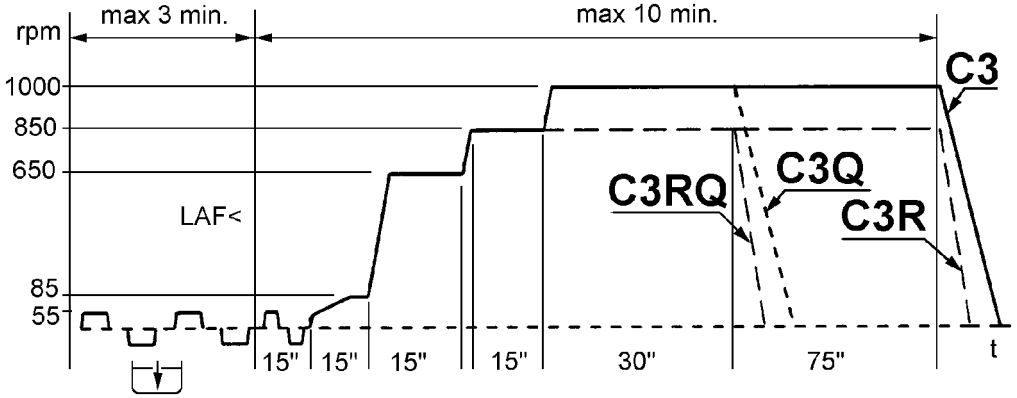
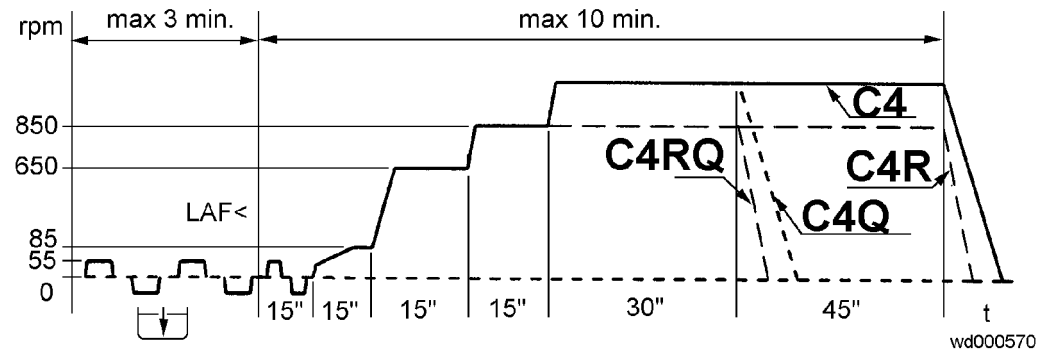


C4 - C4R - C4Q - C4RQ



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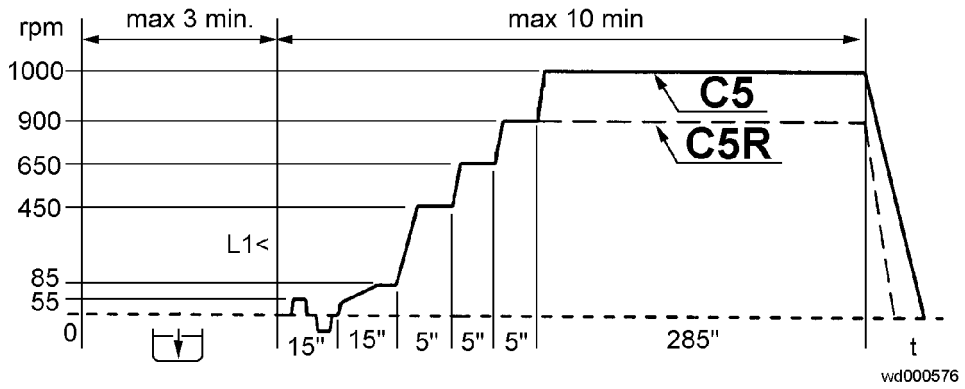

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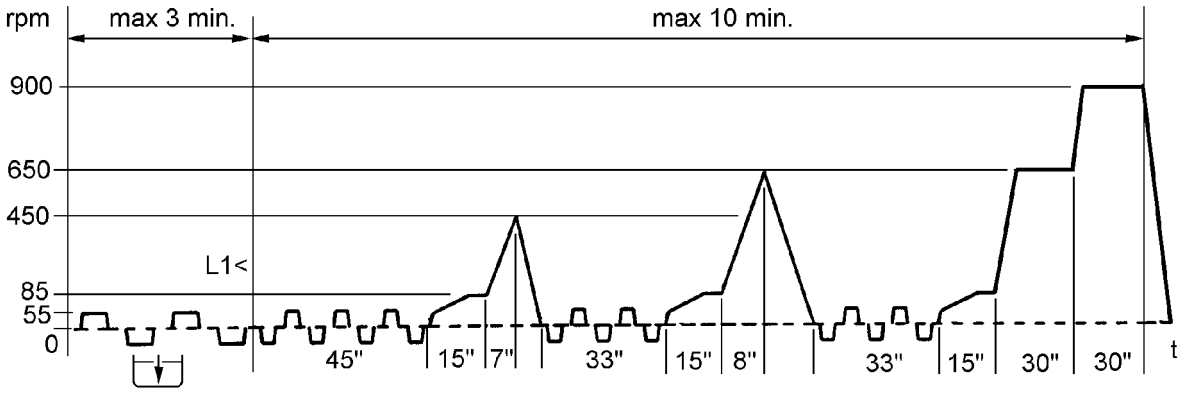

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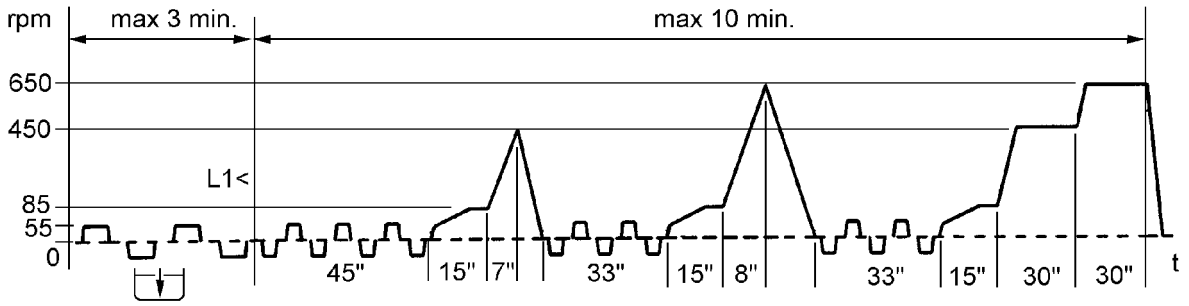
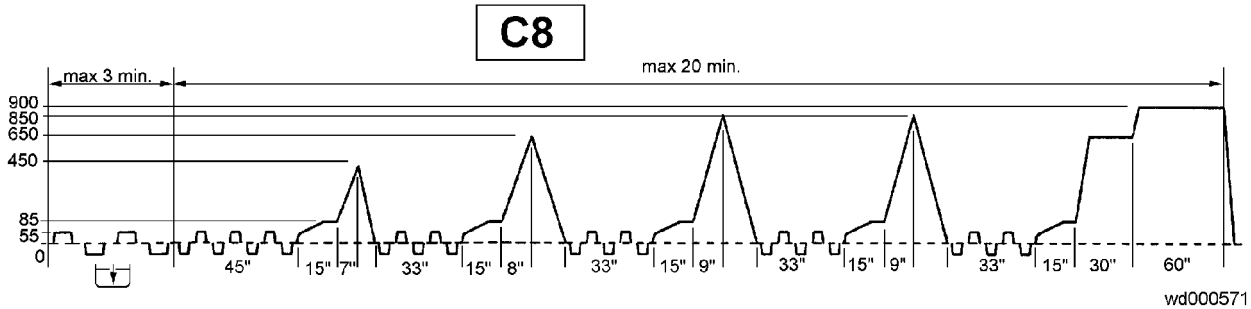


C8



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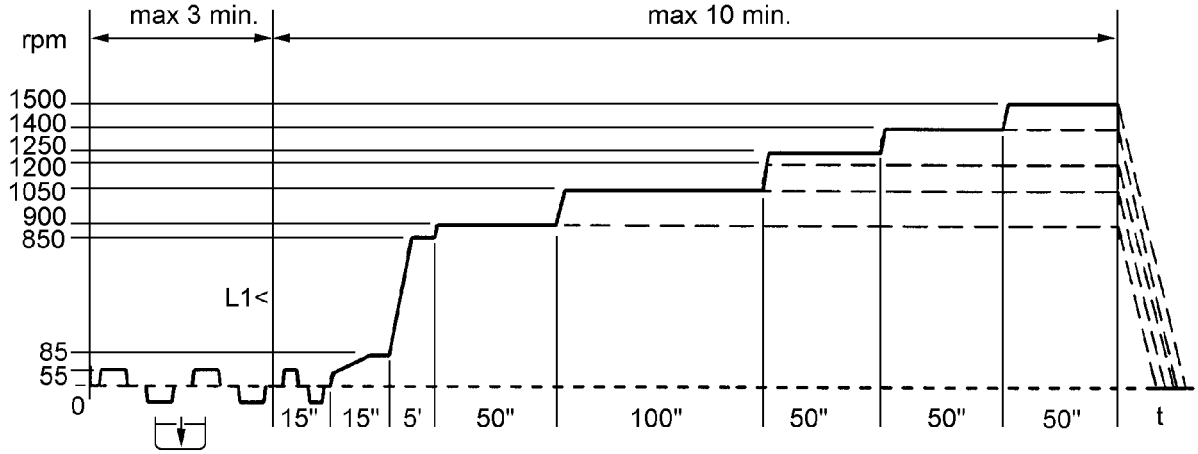

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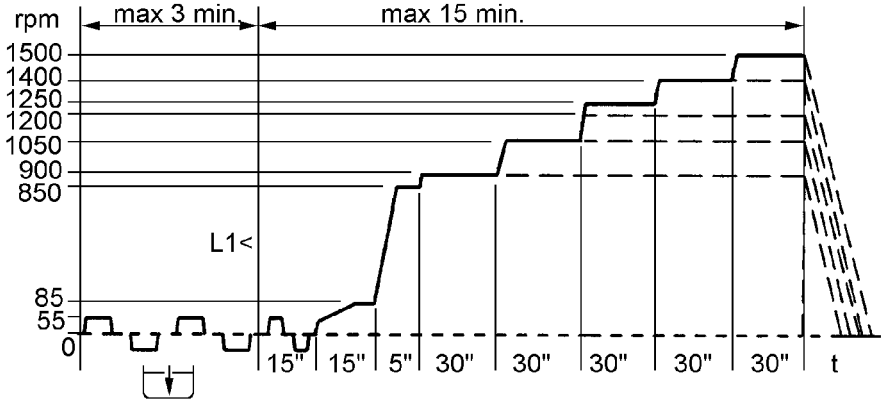
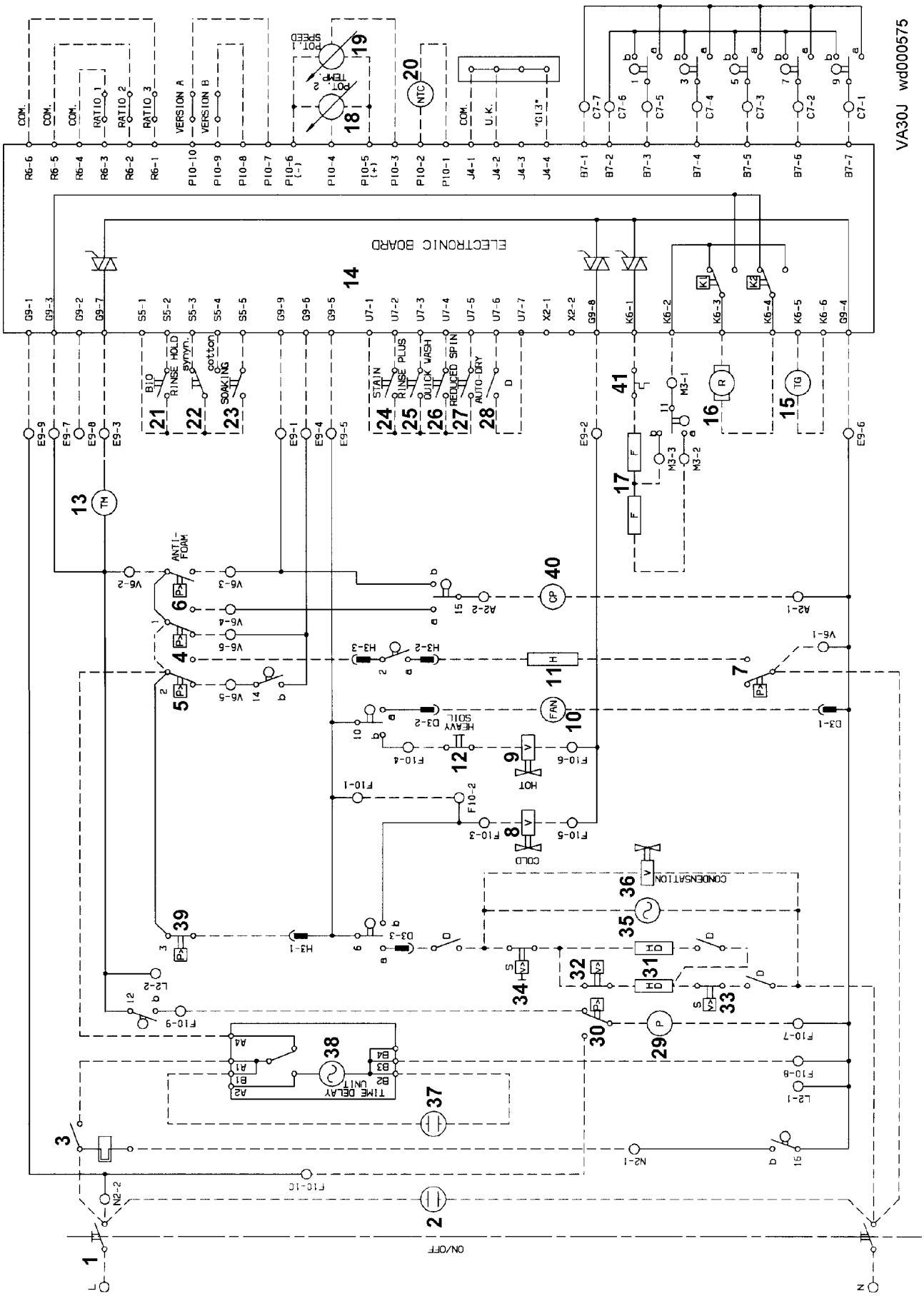


wd000572

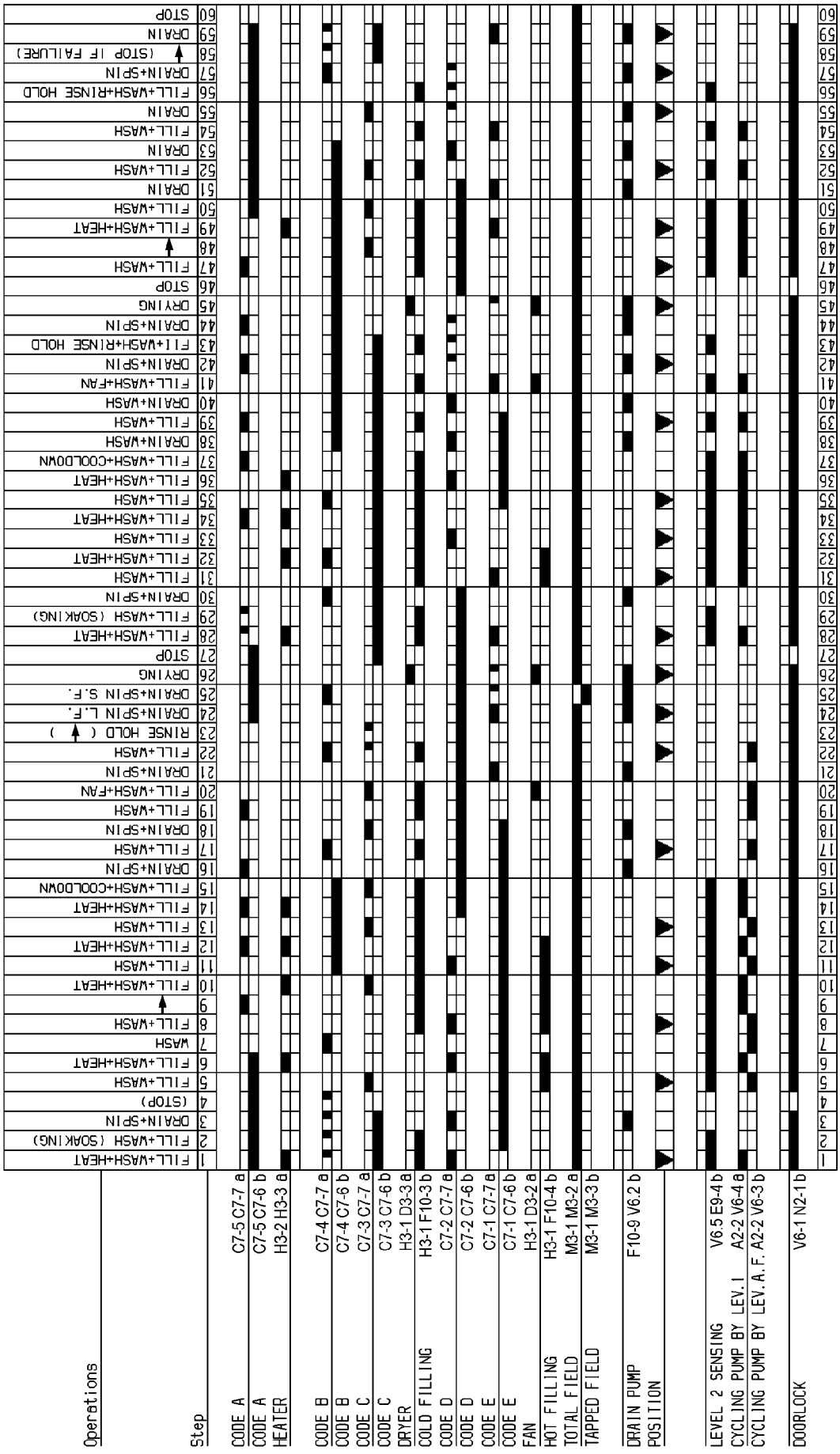
BASIC CIRCUIT DIAGRAM



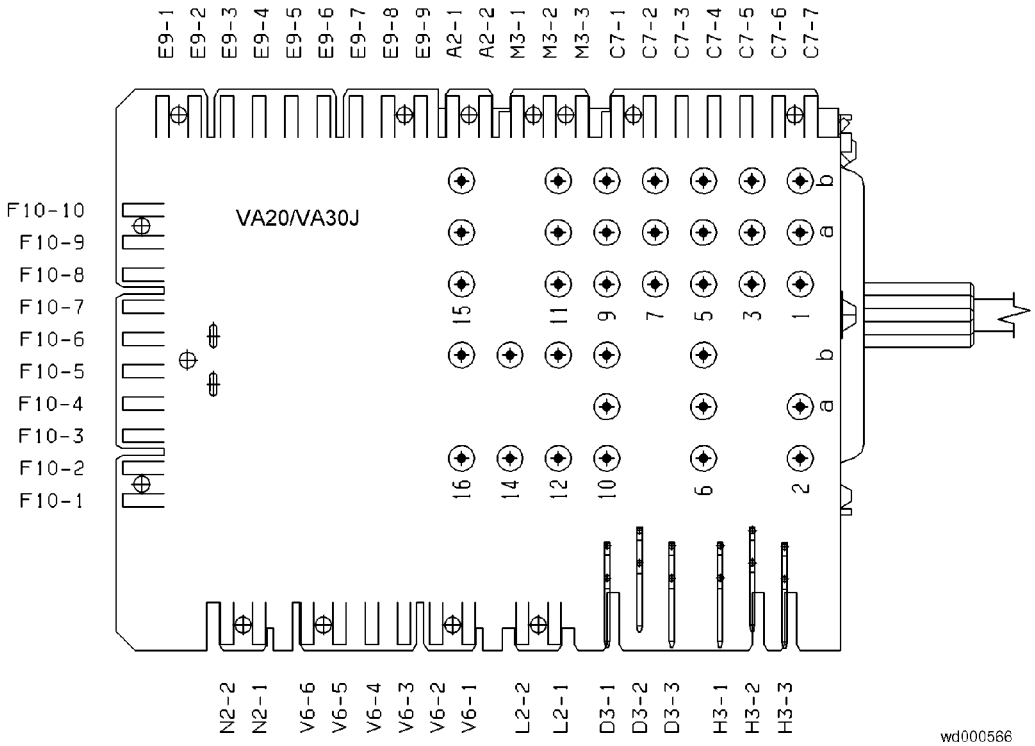
KEY TO CIRCUIT DIAGRAM

1. START/STOP key
2. Pilot lamp
3. Door interlock
4. Pressure switch (1st level)
5. Pressure switch (2nd level)
6. Anti-foam pressure switch
7. Anti-boiling pressure switch
8. Cold water solenoid
9. Hot water solenoid
10. Fan motor
11. Washing heater
12. "HEAVY SOILING" key
13. Timer motor
14. Electronic board
15. Tachymetric generator
16. Rotor
17. Stator
18. Potentiometer 2 (temperature control)
19. Potentiometer 1 (reduced spin speed)
20. Temperature sensor
21. "BIO" key
22. "RINSE HOLD" key
23. "SOAK" key
24. "STAINS" key
25. SUPER-RINSE key
26. "SHORT CYCLE" key
27. "REDUCED SPIN" key
28. "Automatic drying"
29. Drain pump
30. Anti-overflow pressure switch
31. Drying heater
32. Drying thermostat
33. Safety thermostat
34. Manual-reset safety thermostat
35. Drying timer motor
36. Condensation solenoid
37. Pilot lamp (versions with delayed start option)
38. Timer for delayed start
39. 3rd level pressure switch
40. Circulation pump
41. Motor circuit-breaker

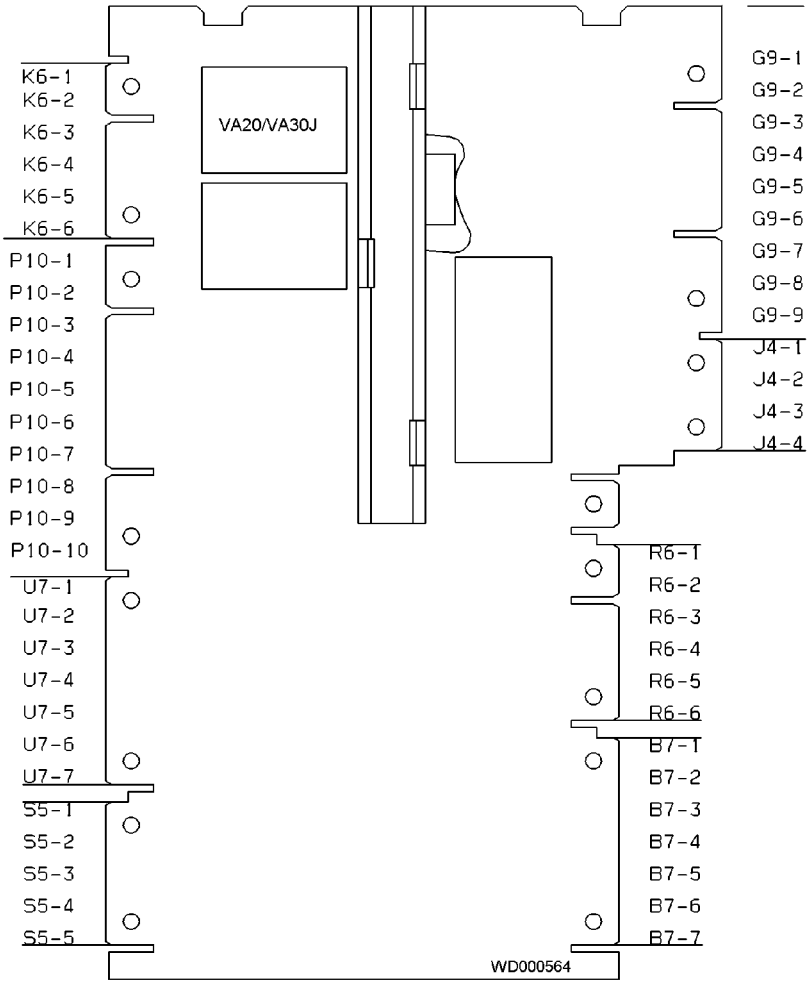
TIMER DIAGRAM



TIMER CONNECTORS



ELECTRONIC BOARD CONNECTORS



TROUBLESHOOTING

TYPE OF FAULT	POSSIBLE CAUSES
WM DOES NOT START (models without delayed start option)	PILOT LAMP OFF: power cable; suppressor; main switch; wiring between suppressor and main switch
	PILOT LAMP ON: door interlock; wiring between door interlock - timer (N2.1) - main switch; timer (N2.1 - V6.1)
WM DOES NOT START (models with delayed start option)	PILOT LAMP OFF: power cable; suppressor; main switch; wiring between suppressor - main switch - door interlock; wiring between door interlock - delay timer - main timer (F10.8)
	PILOT LAMP ON: delay timer; wiring between delay timer and main timer;
DOES NOT FILL WITH COLD WATER	tap closed; mains pressure insufficient; solenoid valve; wiring between door interlock - pressure switches - timer (V6.1 - V6.2); wiring between timer (E9.9 - E9.7 - E9.6 - E9.5 - E9.2 - E9.1) and electronic board (G9.1 - G9.3 - G9.4 - G9.8 - G9.6 - G9.5); wiring between solenoid valve and timer (F10.3 - F10.5); level pressure switch; pressure switch hydraulic circuit; wiring between pressure switches and timer (H3.1 - V6.6); timer (H3.1 - F10.3); electronic board.
DOES NOT FILL WITH HOT WATER	hot water fill solenoid; HEAVY SOILING key; wiring between solenoid - HEAVY SOILING key - timer (F10.4 - F10.6); timer (F10.4 - H3.1).
FILLS CONTINUOUSLY	solenoid valve jammed; pressure switch; pressure switch hydraulic circuit
FILLS CONTINUOUSLY (without reaching level)	drain hose too low; leakage from hydraulic circuit
WATER LEVEL INCORRECT	pressure switch; pressure switch hydraulic circuit; wiring between timer (E9.4 - E9.5) and electronic board (G9.6 - G9.5); electronic board.
JETSYSTEM RECIRCULATION SYSTEM INOPERATIVE	drain filter blocked; circulation pump; wiring between circulation pump and timer (A2.1 - A2.2); circulation hydraulic circuit; timer (A2.2 - V6.4; A2.2 - V6.3).
MOTOR INOPERATIVE	motor (stator; rotor; circuit-breaker; brushes); wiring between motor and electronic board (K6.1-7); timer (M3.3 - M3.1; M3.2 - M3.1); electronic board.
MOTOR STARTS FOR A MOMENT; THEN STOPS AND RESTARTS FOR A MOMENT (up to 5 times)	electronic board
MOTOR STARTS FOR A MOMENT; THEN STOPS (4 TIMES); THEN TIMER ADVANCES TO POSITION 58	motor (tachymetric generator); wiring between tachymetric generator and electronic board (K6.5; K6.6); electronic board
MOTOR ROTATES IN ONE DIRECTION ONLY	electronic board
ONLY SPINNING INOPERATIVE	wiring between spin speed selector and electronic board; spin speed selector; electronic board
MOTOR DOES NOT OPERATE AT CORRECT SPEED	wiring between spin speed selector and electronic board; wiring to electronic board (R6.1 - R6.6); spin speed selector; reduced spin key; timer; electronic board

TYPE OF FAULT	POSSIBLE CAUSES
DOES NOT HEAT	heating element; 2nd level pressure switch and anti-boiling device; wiring between heating element - pressure switches - timer (H3.2; H3.3); timer (H3.2; H3.3); temperature sensor short-circuited or interrupted; wiring between temperature sensor and electronic board (P10.1; P10.2); electronic board
TEMPERATURE INCORRECT	temperature sensor; electronic board
DOES NOT DRAIN	drain pump; wiring between drain pump and timer (F10.7; F10.9); timer (F10.9 - V6.2)
TIMER DOES NOT ADVANCE	timer (motor); wiring between timer (E9.3) and electronic board (G9.7); electronic board
TIMER ADVANCES CONTINUOUSLY	electronic board
CYCLE INCORRECT	wiring on electronic board (P10.7-10; J4.1-4); wiring between timer (C7.1-7) and electronic board (B7.1-7); timer contacts (C7.1-7); electronic board
CYCLE OPTIONS INCORRECT	check the various option keys and their wiring; electronic board

WASHER-DRYERS: DRYING CIRCUIT	
TYPE OF FAULT	**POSSIBLE CAUSES**
AUTO DRYING INOPERATIVE	drying timer; (AUTO DRYING key); wiring between electronic board (U7.6, U7.7) and drying timer (AUTO DRYING key); electronic board
DRYING HEATERS, CONDENSATION SOLENOID, DRYING TIMER MOTOR INOPERATIVE	timer (D3.3 - H3.1); drying timer; wiring between timer (D3.3) - drying timer - ON/OFF switch
DRYING HEATERS INOPERATIVE	drying timer; wiring between drying timer - heating elements - thermostats; drying heaters; safety thermostat; manual-reset safety thermostat
ONE OF THE DRYING HEATERS IS INOPERATIVE	drying timer; wiring between drying timer - heating elements - thermostats; drying heater; drying thermostat
CONDENSATION THERMOSTAT INOPERATIVE	condensation solenoid; wiring between drying timer and condensation solenoid
DRYING TIMER MOTOR DOES NOT ADVANCE (drying operative)	drying timer
FAN MOTOR INOPERATIVE	fan motor; wiring between fan motor and timer (D3.1, D3.2); timer (D3.2 - H3.1)