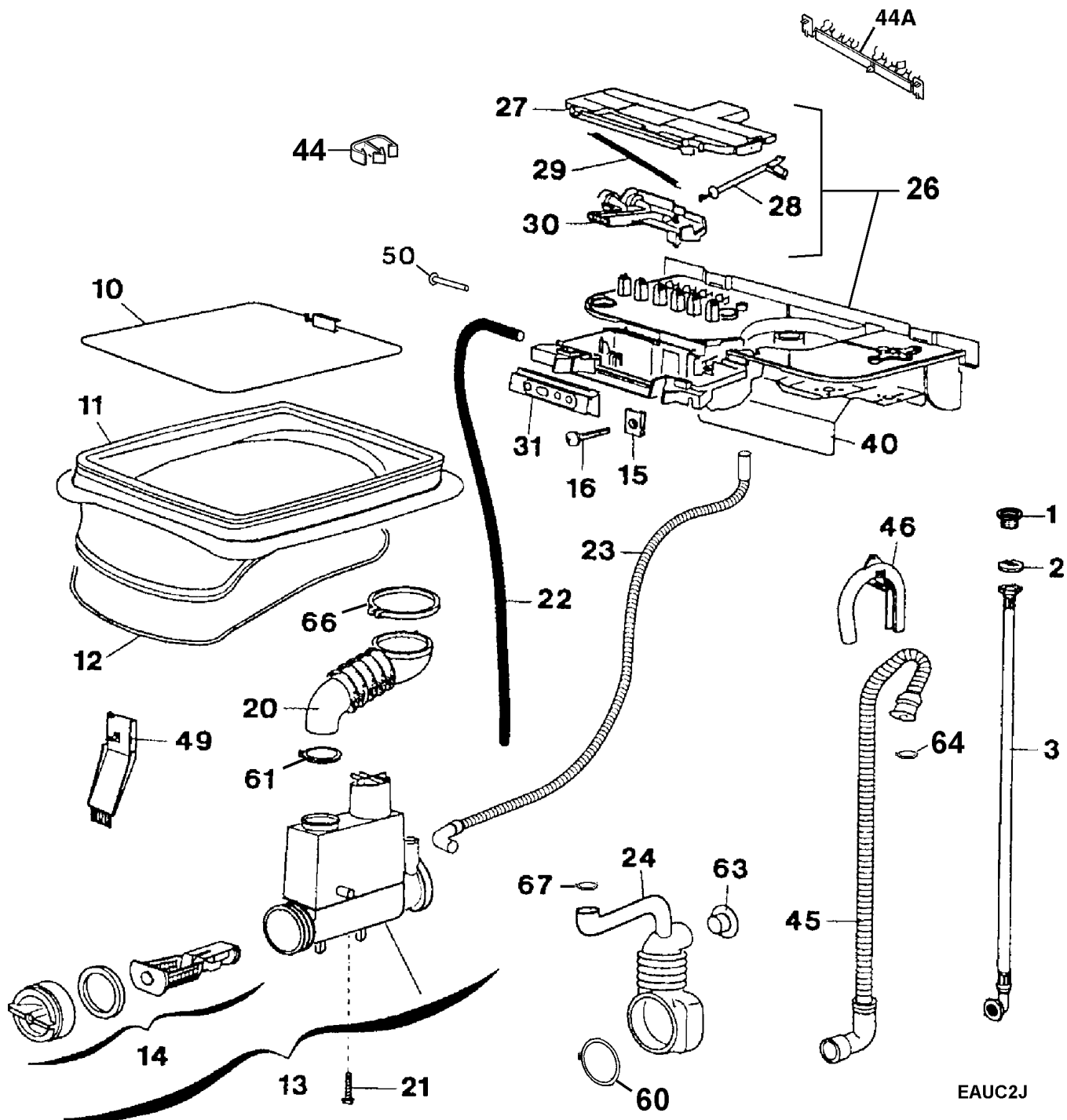
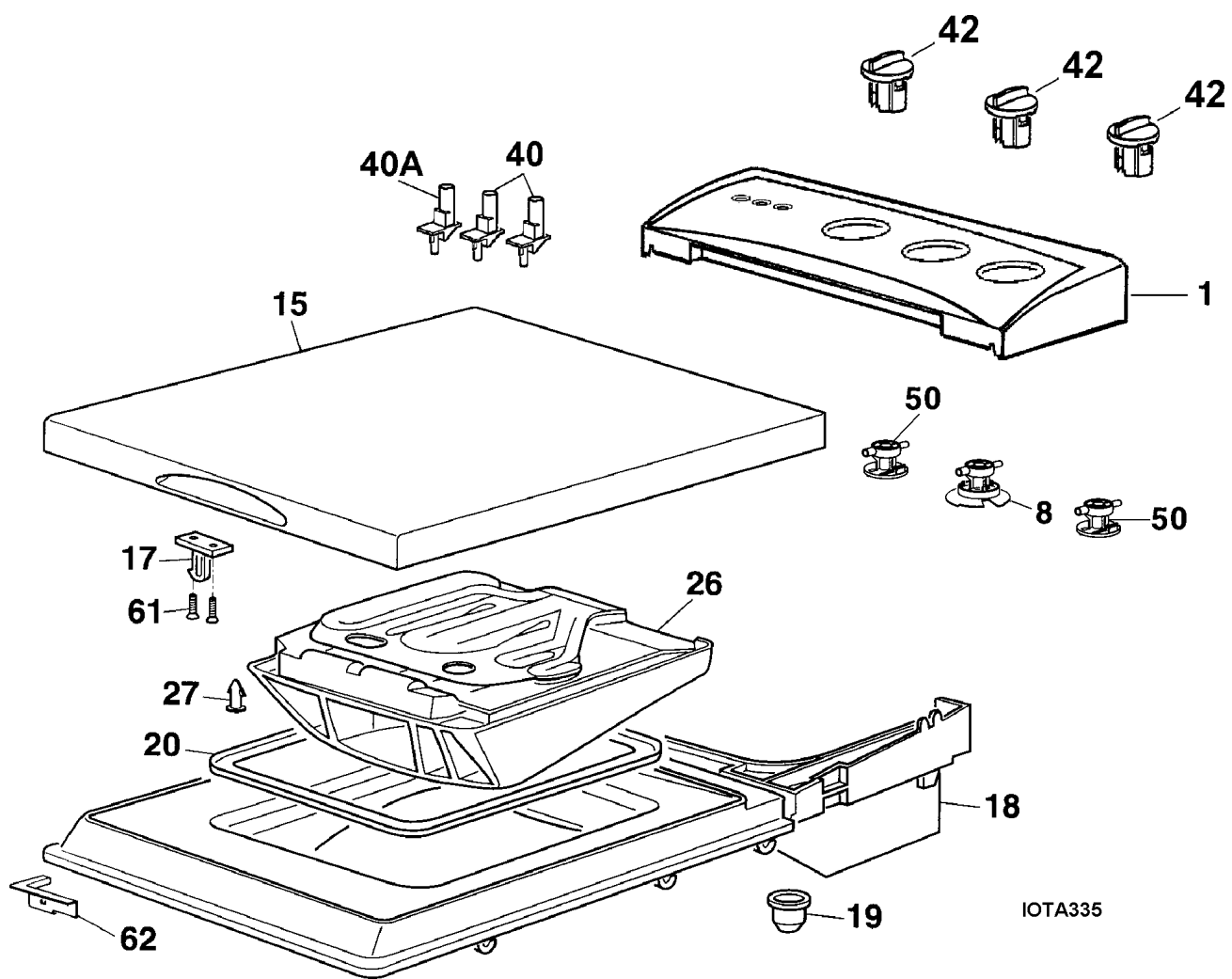
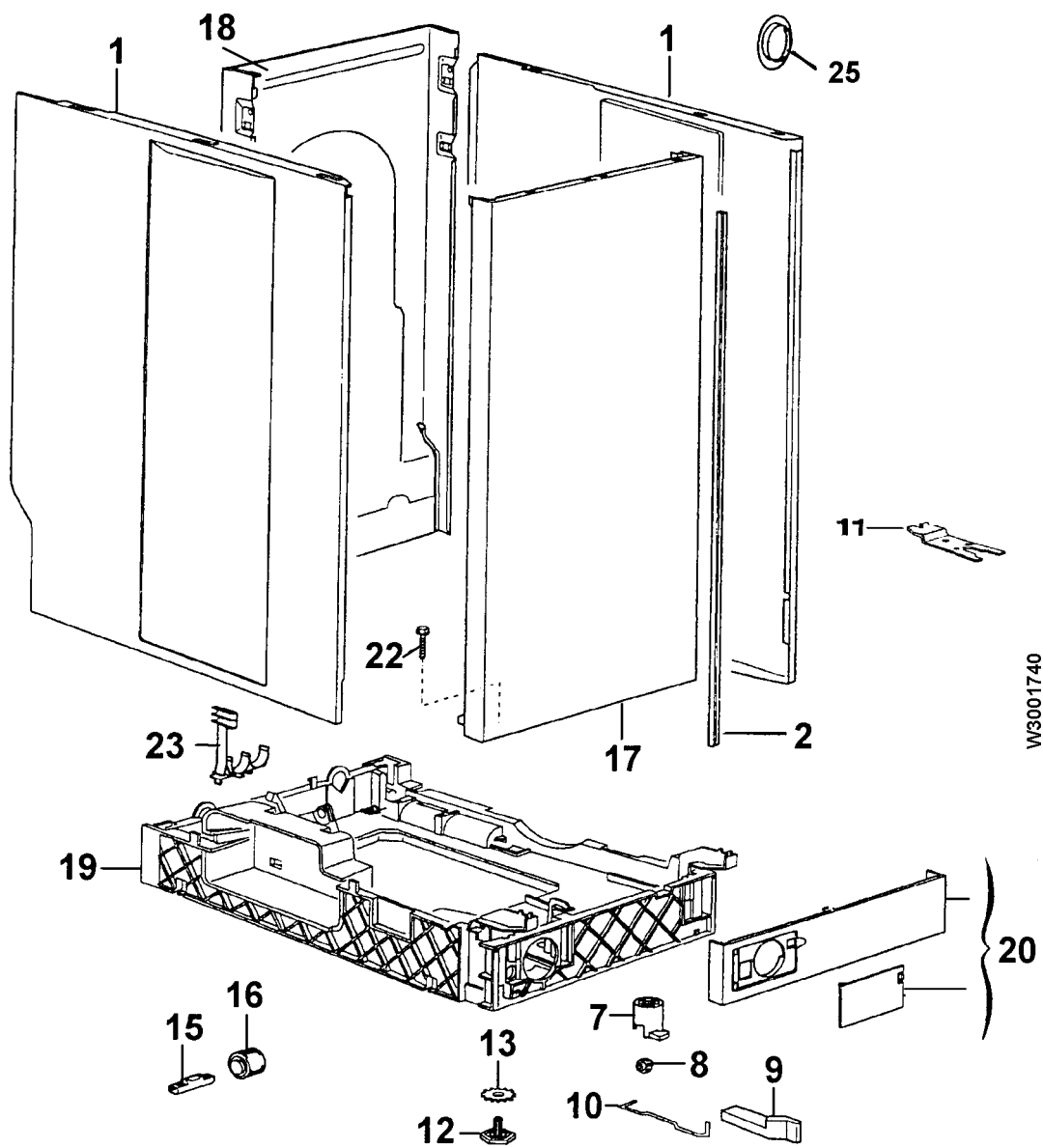


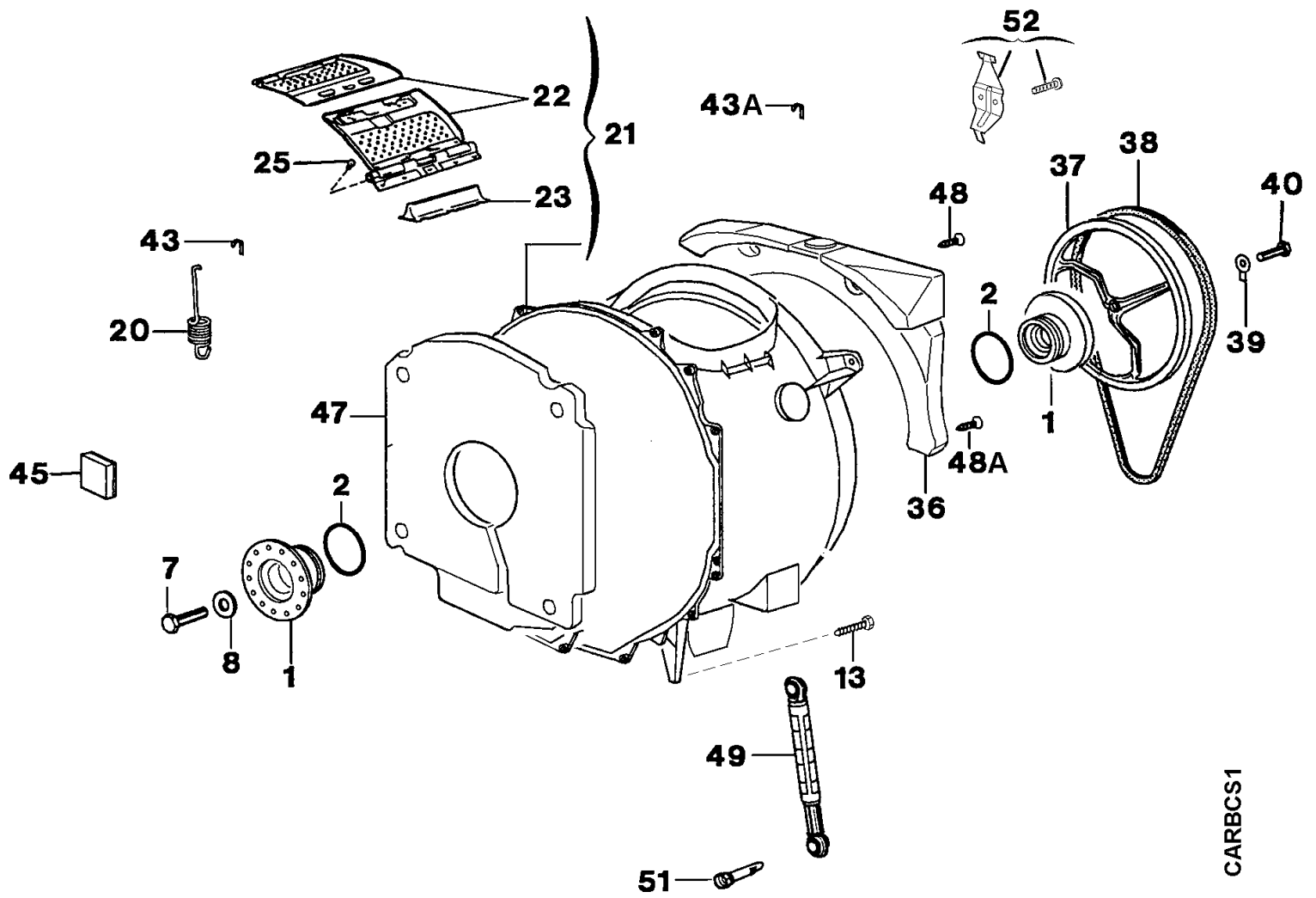




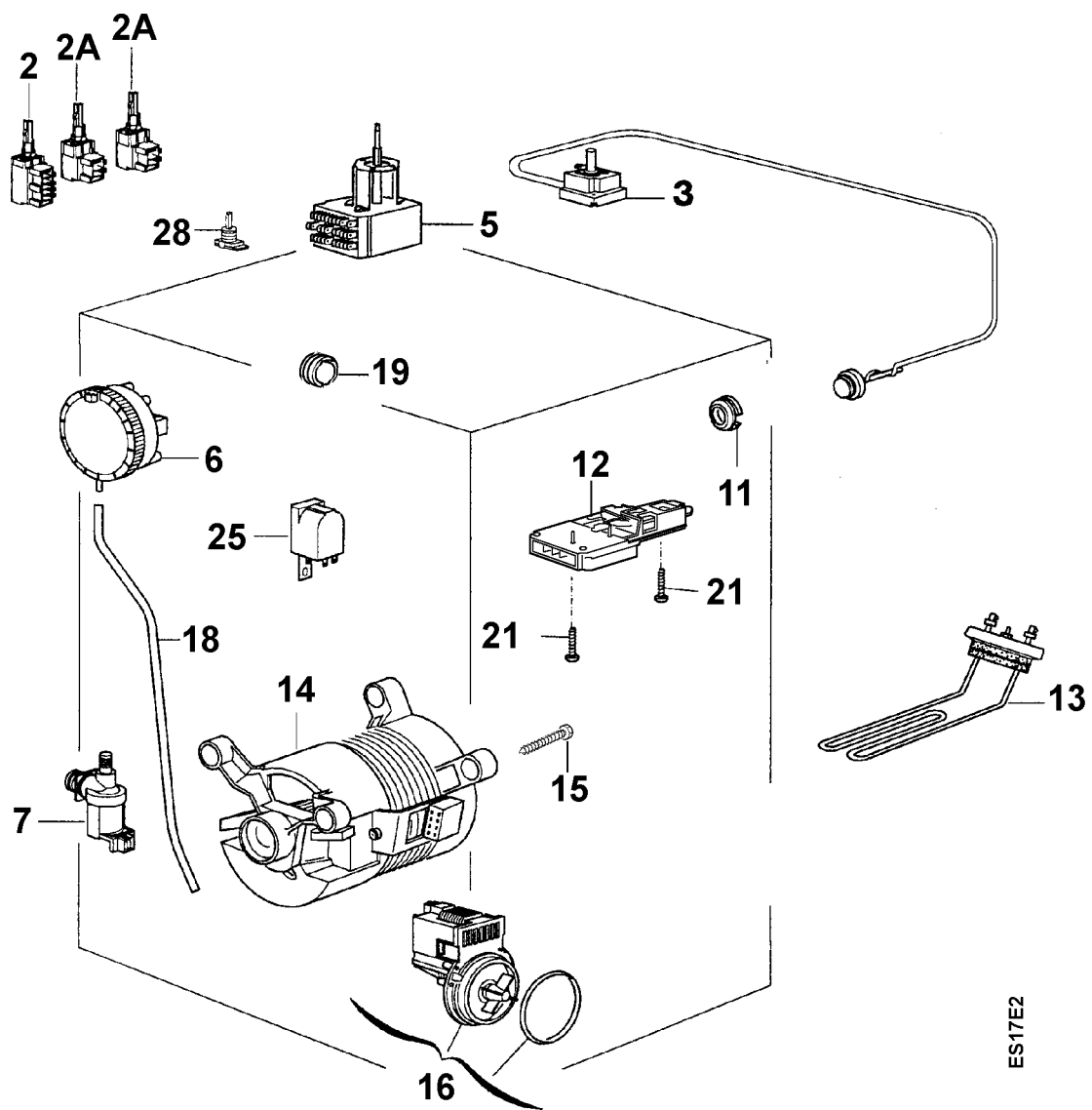
IOTA335



W3001740

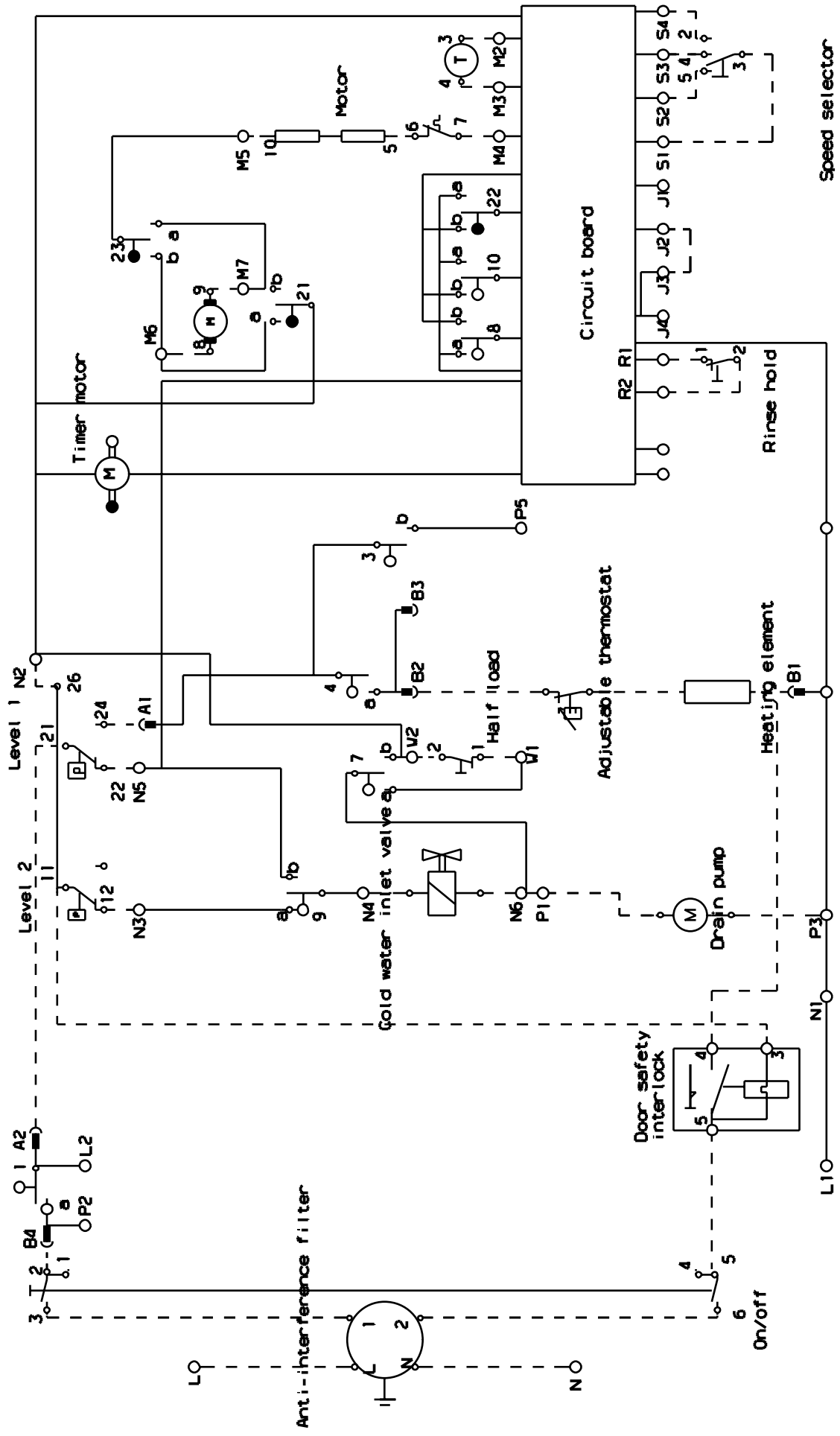


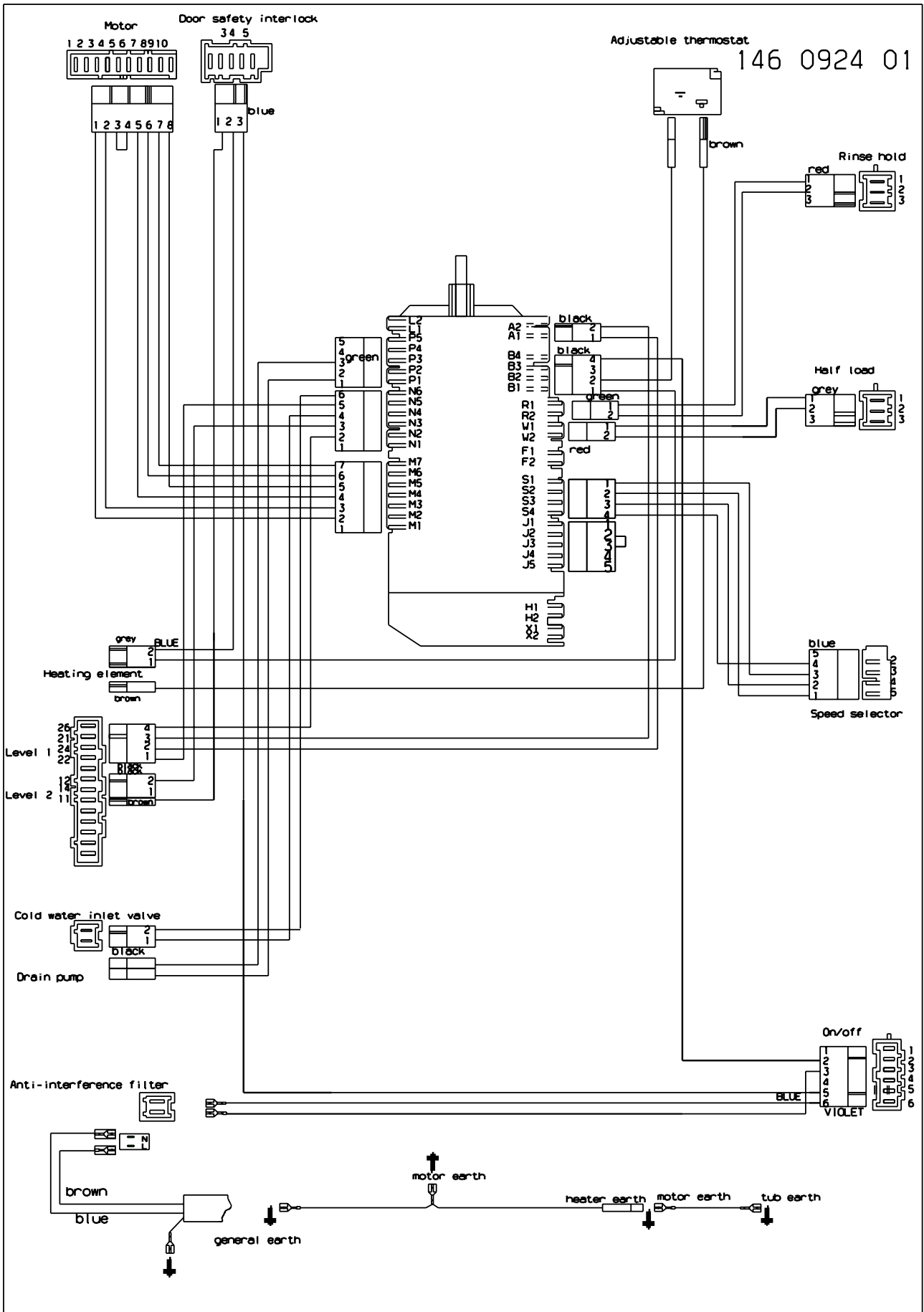
CARBOS1

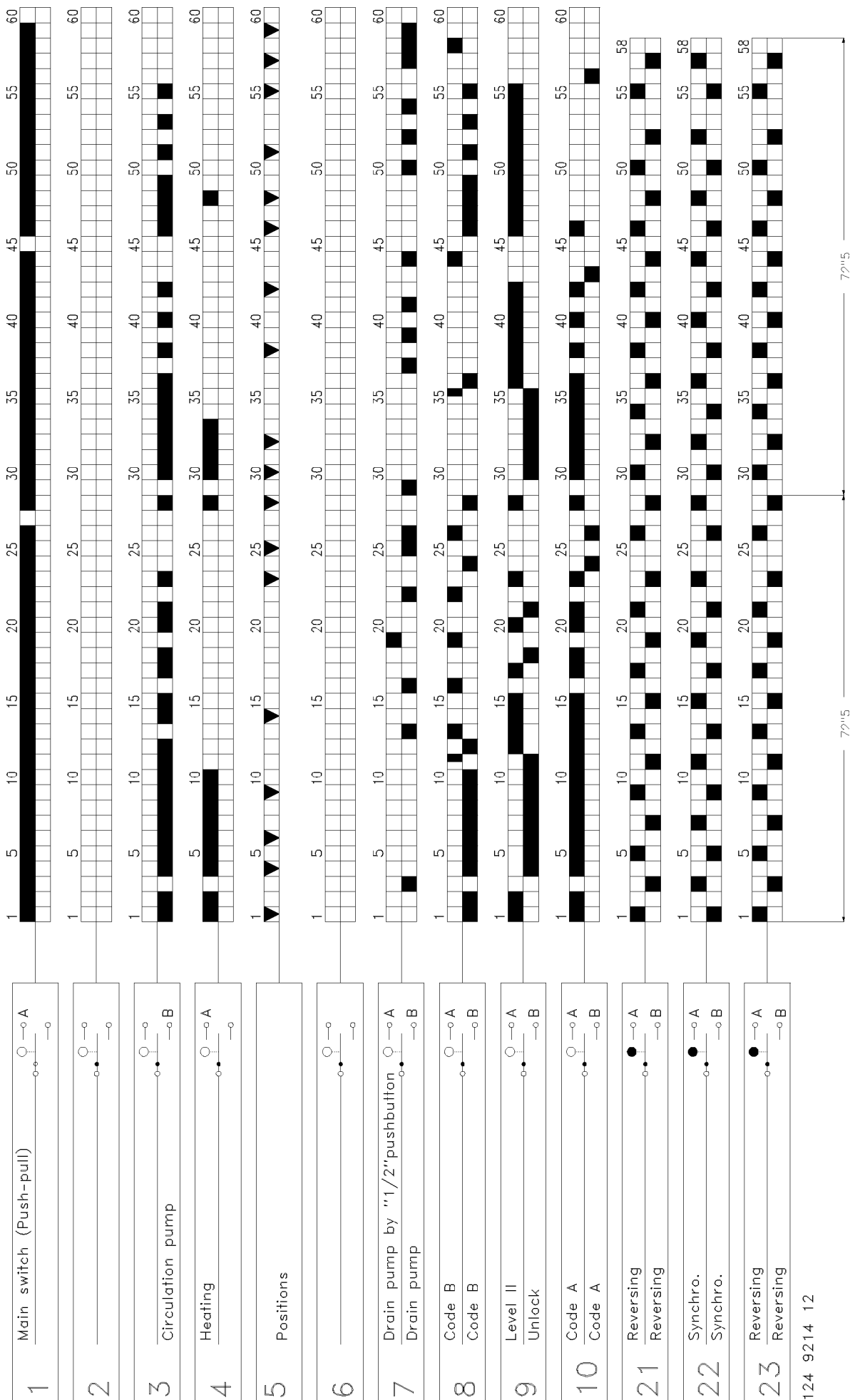


ES17E2

146 0924 01







Programmes		WHITES												SYNTHETICS												DELICATES-WOOL											
		S						T						S						T																	
		O						P						O						P																	
Starts of programme																																					
Step number																																					
Boxes																																					
Filling																																					
Step duration																																					
Base																																					
Programme 60°																																					
Programme 40°																																					
Push-button Plus																																					
Push-button 1/2																																					
Heating																																					
Temperature maximum																																					
Drum																																					
rotation																																					
Operations																																					
1/2																																					
PLUS																																					

TECHNICAL SPECIFICATIONS

TOP LOAD / STAINLESS STEEL DRUM AND CARBORAN TUB

GENERAL FEATURES

Supply voltage 230 V
Dimensions (height,width,depth) 85/40/60 cm
Dryclothes loading capacity 4,5/5 kg
Drum rotation speed (washing/spinning) 55/600-1050 r.p.m

WATER LOAD CAPACITY (WITHOUT CLOTHES) :

Level I 9 l
Level II 16 l
Anti-overflow level 43 l

WATER PRESSURE :

Maximum/minimum 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 150-200 ohm

HEATING ELEMENT :

Power absorbed 1950 W
Resistance 27 ohm

CYCLING PUMP :

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

WATER VALVE:

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

PRESSURE SWITCH :

Level I 120/70 WC mm
Level II 170/110 WC mm
Anti-overflow level 350/290 WC mm

TEMPERATURE PROBE (NTC) 21 kohm at 25°C

TIMER (with speed regulation module) :

Identification mark 124921430-VD55
Identification mark 124288450-VD55

DOOR INTERLOCK:

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

ADJUSTABLE THERMOSTAT :

Range 0/87°C N.C

THERMOSTAT :

Temperature 60° C N.C

COLLECTOR MOTOR:

Ratio 18
Insulation class B/F
Power absorbed : washing 140 W
Power absorbed : spinning 370 W
Washing speed 990 r.p.m
Spinning speed 10800/14400 r.p.m
Rotor : coil resistance (8-9) 1,8 ohm
Stator : coil resistance (5-10) 2 ohm
TACHOGENERATOR:
Coil resistance (3-4) 500 ohm

Ratio 14
Insulation class B/F
Power absorbed : washing 345 W
Power absorbed : spinning 470 W
Washing speed 770 r.p.m
Spinning speed 12600/14700 r.p.m
Rotor : coil resistance (8-9) 1,9 ohm
Stator : coil resistance (5-10) 1,7 ohm
TACHOGENERATOR:
Coil resistance (3-4) 135 ohm

SPEED SELECTOR :

Range 0-600/0-1050 tr/min

CONNECTION:

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

Service-Bulletin

Washing machines

599 517 544 EN

Toploader Noise reduction

Complaint: Depending on the customer's perception there is a too high running noise during a wash cycle.

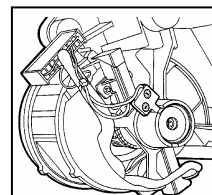
Measure: In order to reduce this running noise there are different insulation mats which can be installed in the appliance. These insulation mats are self-adhesive and can be put on directly.

For the	right side panel	:	ref.	146 407 700/5
	left side panel	:	ref.	146 407 700/5
	front panel	:	ref.	146 340 500/9

SUMMING UP OF THE TACHOMETRIC GENERATORS AND BRUSHES FOR COMMUTATOR / ASYNCHRONOUS MOTORS USED IN WASHING MACHIENS AND WASHER-DRYERS

Commutator motors used on models with spin speed from 650 to 1800 rpm are produced by:

- **SOLE / ACC**
- **FHP**
- **CESET**
- **BSH**
- **ECM**

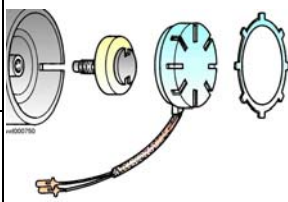
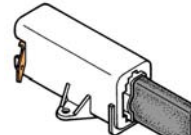
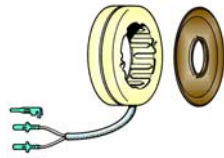
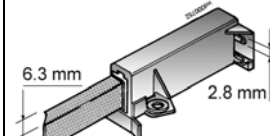
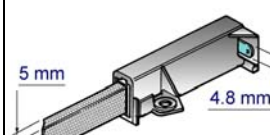


Each of these motors can be alternatively fitted in production to the same model. For this reason, there might be a possibility that motors made by different suppliers can be supplied as spare parts in place of the original one. The different motors are perfectly interchangeable with the previous one.

For any type of motor, tachometric generators and brushes are available as well.

As it is not possible to determine through the spare part no. which motor has been fitted to the appliance, we suggest you to check the brand on the component itself:

In this way it is possible to get the correct part no. of the brushes and generators. Should there be any doubt, it is possible to get the production code on the rating plate of the motor (124xxxxxx_132xxxxxx_147xxxxxx). The following table displays the correct part nos. and the resistive values of the motor windings as well.

Supplier	Tachometric generator part no.		Brush part no.	
SOLE / ACC	Version with 504 Ω coil: 5020 48 73-00/9		Up to July 1992 (serial no. 230...) white support: 5068 17 42-00/8	
	Version with 184 Ω coil: 5022 90 52-00/1		From august 1992 (serial no. 231...), black support: 5022 65 88-00/7	
FHP	Produced up to 1997 : 5021 25 04-00/0		Up to august 1990 (serial no. 036...) 5068 04 90-00/5	
	In production from 1997/98 : 5024 01 54-00/0		From September 1990 (serial no. 037...) 400 60 20-34/3 (replaces part no. 5022 17 78-00/9)	
CESET	5023 20 55-00/9		5021 63 97-00/5	

Commutator motors - Summing up

UNIVERSAL MOTORS (with 10-terminal connection box)											
Motor supplier code	Brand	Type	V/Hz	Spin speed	Pulley Ø mm	Winding resistance (Ω)				Part nos. (*)	
						½ field (1-5)	Stator (5-10)	Rotor (8-9)	Tacho (3-4)	Tachometric generator	Brush
12403680..	SOLE/ACC	20584014	220-240/50	650-850	21.5	no	1.48±1.71	1.67±1.92	504±7%	50204873009	50226588007
12403690..	SOLE/ACC	20584027	220-240/50	1000-1500	25.26	0.59±7%	1,18±7%	2,2±7%	184±7%	50229052001	50226588007
12405280..	FHP	UO 112 G40	220-240/50	850-1000	21.26	no	1,7±7%	1,95±7%	135±7%	50240154000	4006020343
12405282..	FHP	UO 112 G40	220-240/50	850-1000	21.26	no	1,7±7%	1,95±7%	135±7%	50240154000	4006020343
12405290..	FHP	UOZ 112 G63	220-240/50	1000-1500	25.26	0.55±7%	1.1±7%	2.15±7%	135±7%	50240154000	4006020343
12405390..	FHP	UOZ 112 G63	220-240/50	1000-1200	21.26	0.52±7%	1.2±7%	1.75±7%	135±7%	50240154000	4006020343
12405480..	CESET	MCA38/64.148/ZN1	220-240/50	850-1000	21.5	no	1.07±7%	2.28±7%	68.7±7%	50232055009	50216397005
12405481..	CESET	MCA38/64.148/ZN5	230-240/50	850-1000	21.5	no	1.86±7%	2.46±7%	68.7±7%	50232055009	50216397005
12406500..	FHP	U 112 G63	220-240/50	1000	25.26	no	0.98±1.34	1.97±2.27	135±7%	50240154000	4006020343
12406510..	SOLE/ACC	20584028	220-240/50	1000	25.26	no	1.09±1.26	2.04±2.34	184±7%	50229052001	50226588007
12408470..	CESET	MCA30/64.148/ZN4	220-240/50	600-850	16.4	no	1.95±7%	2.57±7%	68.7±7%	50232055009	50216397005
12408471..	CESET	MCA30/64.148/ZN4	220-240/50	600-850	16.4	no	1.95±7%	2.57±7%	68.7±7%	50232055009	50216397005
12421230..	SOLE/ACC	20584513	230-240/50	1150	21.5	no	1,07±7%	1.6±7%	184±7%	50229052001	50226588007
12421390..	SOLE/ACC	20584514	230-240/50	1150	21.5	0.89±7%	1.77±7%	2,14±7%	184±7%	50229052001	50226588007
12421391..	SOLE/ACC	20584514	230-240/50	1150	21.5	0.89±7%	1.77±7%	2,14±7%	184±7%	50229052001	50226588007
12423100..	SOLE/ACC	20584020	220-240/50	1000	21.5	no	1.03±1.17	1.62±1.87	184±7%	50229052001	50226588007
12427070..	SOLE/ACC	20584024	220-240/50	1000-1200	21.5	0.55±7%	1,1±7%	1,75±7%	184±7%	50229052001	50226588007
12427071..	SOLE/ACC	20584024	220-240/50	1000-1200	21.5	0.55±7%	1,1±7%	1,75±7%	184±7%	50229052001	50226588007
12427073..	SOLE/ACC	20584024	220-240/50	1000-1200	21.5	0.55±7%	1,1±7%	1,75±7%	184±7%	50229052001	50226588007
12427170..	SOLE/ACC	20580052	230-240/50	1000	19	no	1.65±7%	1.8±7%	504±7%	50204873009	50226588007
12427270..	CESET	MCA38/64.148/ZN3	220-240/50	1000	19	no	1.07±7%	2.28±7%	68.7±7%	50232055009	50216397005
12427780..	SOLE/ACC	205880052	230-240/50	850-1000	21.5	no	1.65±7%	1.8±7%	504±7%	50204873009	50226588007
12430180..	CESET	MCA61/64.148/ZN10	230-240/50	1000-1600	25.26	0.37±7%	1,5±7%	1,8±7%	68.7±7%	50232055009	50216397005
12430470..	FHP	U0Z 112 G63	220-240/50	1600	25.26	1,1±7%	2.92±7%	1.63±7%	135±7%	50240154000	4006020343
12430471..	FHP	U0Z 112 G63	220-240/50	1600	25.26	1,1±7%	2.92±7%	1.63±7%	135±7%	50240154000	4006020343
12430472..	FHP	U0Z 112 G63	220-240/50	1600	25.26	1,1±7%	2.92±7%	1.63±7%	135±7%	50240154000	4006020343
12430600..	SOLE/ACC	20584303	230-240/50	600-850	16.4	no	1.65±7%	1,8±7%	184±7%	50229052001	50226588007
12430610..	FHP	UO 112 G40	230-240/50	650-850	16.4	no	1,7±7%	1,95±7%	135±7%	50240154000	4006020343
12430620..	CESET	MCA38/64.148/ZN9	230-240/50	600-850	16.4	no	1.75±7%	2,3±7%	68.7±7%	50232055009	50216397005
12430980..	SOLE/ACC	20584087	230/50	1600	25.26	0.47±7%	1.3±7%	1.72±7%	184±7%	50229052001	50226588007
12430990..	FHP	UZ 112 G63	230-240/50	1150	21.26	no	1.12±7%	1.75±7%	135±7%	50240154000	4006020343
12439100..	FHP	UZ 112 G63	230-240/50-60	1150	21.26	no	1.09±7%	1.5±7%	135±7%	50240154000	4006020343
12439101..	FHP	UZ 112 G63	230-240/50	1150	21.26	no	1.09±7%	1.5±7%	135±7%	50240154000	4006020343
12458150..	CESET	MCC61/64.148/ZN9	230-240/DC	1000-1600	25.26	0.37±7%	1.8±7%	1.64±7%	68.7±7%	50232055009	50216397005
12461790..	SOLE/ACC	20584603	240/50	1600	25.26	0.56±7%	1.43±7%	1.72±7%	184±7%	50229052001	50226588007
12461791..	SOLE/ACC	20584603	240/50	1600	25.26	0.56±7%	1.43±7%	1.72±7%	184±7%	50229052001	50226588007
12466020..	FHP	UOZ112 G55	220-240/50	1000-1200	21.26	0.62±7%	1.23±7%	1.6±7%	135±7%	50240154000	4006020343
12461792..	SOLE/ACC	20584603	240/50	1600	25.26	0.56±7%	1.43±7%	1.72±7%	184±7%	50229052001	50226588007
12466021..	FHP	U112 G55	220-240/50	1000	21.26	no	1.23±7%	1.6±7%	135±7%	50240154000	4006020343

UNIVERSAL MOTORS (with 10-terminal connection box)											
Motor supplier code	Brand	Type	V/Hz	Spin speed	Pulley Ø mm	Winding resistance (Ω)				Part nos. (*)	
						½ field (1-5)	Stator (5-10)	Rotor (8-9)	Tacho (3-4)	Tachometric generator	Brush
12467840..	FHP	UOZ112 G63	240/50	1400	25.26	0.63±7%	1.35±7%	2.6±7%	135±7%	50240154000	4006020343
12470100..	SOLE/ACC	20580056	230-240/50	600-850	16.4	no	2.00±7%	1.8±7%	504±7%	50204873009	50226588007
12470102..	SOLE/ACC	20580056	230-240/50	600-850	16.4	no	2.00±7%	1.8±7%	504±7%	50204873009	50226588007
12471900..	FHP	UOZ112 G63	200/60	1000-1200	21.26	0.5±7%	1.01±7%	1.82±7%	135±7%	50240154000	4006020343
12474470..	FHP	UOZ112 G63	230/50	850-1400	25.26	0.59±7%	1.35±7%	2.2±7%	135±7%	50240154000	4006020343
12483510..	CESET	MCA61/64.148/ZN4	230-240/50	1400	25.26	0.6±7%	1.88±7%	1.78±7%	68.7±7%	50232055009	50216397005
12483520..	CESET	MCA61/64.148/ZN3	230-240/50	1200	21.5	0.6±7%	1.88±7%	1.78±7%	68.7±7%	50232055009	50216397005
12492030..	SOLE/ACC	20584027	220-240/50	1050-1200	21.5	0.59±7%	1.18±7%	2.2±7%	184±7%	50229052001	50226588007
12494610..	CESET	MCA52/64.148/ZN4	230-240/50	1000	21.5	no	1.3±7%	1.9±7%	68.7±7%	50232055009	50216397005
13205550..	CESET	MCA61/64.148/ZN14	230-240/50	1150	21.5	no	1.13±7%	1.78±7%	68.7±7%	50232055009	50216397005
13207990..	FHP	UOZ 112 G70	230/50	1600	25.26	0.41±7%	1.26±7%	1.75±7%	135±7%	50240154000	4006020343
13211010..	FHP	UOZ 112 G63	210-230/60	1150	21.26	0.53±7%	1.00±7%	1.75±7%	135±7%	50240154000	4006020343
13219502..	BSH	1BA6755	230-240/50	1150	21.5	no	1.67±7%	1.62±7%	-----	-----	-----
13222780..	SOLE/ACC	20584615	220/60	1600	25.26	0.48±7%	0.96±7%	1.72±7%	184±7%	50229052001	50226588007
13230360..	ECM	UAH522300-82R01	230-240/50	1000-1200	21.5	0.73±7%	1.46±7%	2±7%	91±7%	-----	50216397005
13230570..	ECM	UAH382300-51R01	230-240/50	850	16.4	no	1.95±7%	2.3±7%	91±7%	-----	50216397005
13252870..	SOLE/ACC	20584024	220-240/50	1000	21.5	0.55±7%	1.1±7%	1.77±7%	184±7%	50229052001	50226588007
13252960..	SOLE/ACC	20580052	220-240/50	1000	21,5	no	1.65±7%	1.8±7%	504±7%	50204873009	50226588007
14711100..	SOLE/ACC	20584616	200-240/50	1000	19	0.61	1.23	1.72	184	50229052001	50226588007

(*) part nos. presently in production

Remarks on the windings:

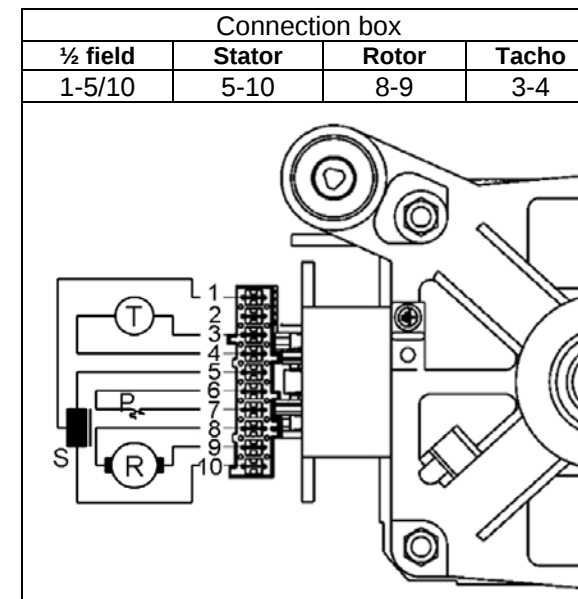
- ⚡ Check the connectors (wiring) and the presence of outcoming / bent terminals.
- ⚡ Check the presence of traces / deposits of water or detergent and their cause
- ⚡ Check the earthed windings / components (or with poor insulation to earth) by means of a tester with a minimum capacity of 40 MΩ between single terminal and the housing (read ∞).
- ⚡ Check the individual windings according to the table.

P=motoprotector

R=rotor

S=stator

T=tachometric



UNIVERSAL MOTORS (with 7-terminal connection box)											
Motor supplier code	Brand	Type	V/Hz	Spin speed	Pulley Ø mm	Winding resistance (Ω)				Part nos. (*)	
						½ field (1-5)	Stator (5-10)	Rotor (8-9)	Tacho (3-4)	Tachometric generator	Brush
12405482..	CESET	MCA38/64.148/ZN5	230-240/50	850-100	21.5	no	1.86±7%	2.46±7%	68.7±7%	50232055009	50216397005
12408472..	CESET	MCA30/64.148/ZN4	220-240/50	600-850	16.4	no	1.95±7%	2.57±7%	68.7±7%	50232055009	50216397005
12421231..	SOLE/ACC	20584513	230-240/50	1150	21.5	no	1.07±7%	1.6±7%	184±7%	50229052001	50226588007
12421392..	SOLE/ACC	20584514	230-240/50	1150	21.5	0.89±7%	1.77±7%	2.14±7%	184±7%	50229052001	50226588007
12430601..	SOLE/ACC	20584303	230-240/50	600-850	16.4	no	1.65±7%	1.8±7%	184±7%	50229052001	50226588007
12430611..	FHP	UO 112 G40	230-240/50	650-850	16.4	no	1.7±7%	1.95±7%	135±7%	50240154000	4006020343
12430621..	CESET	MCA38/64.148/ZN9	230-240/50	600-850	16.4	no	1.75±7%	2.3±7%	68.7±7%	50232055009	50216397005
12439102..	FHP	UZ 112 G63	230-240/50-60	1150	21.26	no	1.09±7%	1.5±7%	135±7%	50240154000	4006020343
12439103..	FHP	UZ 112 G63	230-240/50	1150	21.26	no	1.09±7%	1.5±7%	135±7%	50240154000	4006020343
12461792..	SOLE/ACC	20584603	240/50	1600	25.26	0.56±7%	1.43±7%	1.72±7%	184±7%	50229052001	50226588007
12470103..	SOLE/ACC	20580056	230-240/50	600-850	16.4	no	2.00±7%	1.8±7%	504±7%	50204873009	50226588007
12494611..	CESET	MCA52/64.148/ZN4	230-240/50	1000	21.5	no	1.3±7%	1.9±7%	68.7±7%	50232055009	50216397005
13205551..	CESET	MCA61/64.148/ZN14	230-240/50	1150	21.5	no	1.13±7%	1.78±7%	68.7±7%	50232055009	50216397005
13207991..	FHP	UOZ 112 G70	230/50	1600	25.26	0.41±7%	1.26±7%	1.75±7%	135±7%	50240154000	4006020343
13211011..	FHP	UOZ 112 G63	210-230/60	1150	21.26	0.53±7%	1.00±7%	1.75±7%	135±7%	50240154000	4006020343
13219506..	BSH	1BA6755	230-240/50	1150	21.5	no	1.6±7%	1.73±7%	15.1±7%	-----	-----
13222781..	SOLE/ACC	20584615	220/60	1550	25.26	0.48±7%	1.05±7%	1.72±7%	184±7%	50204873009	50226588007
13230361..	ECM	UAH522300-82R02	230-240/50	1000-1200	21.5	0.73±7%	1.46±7%	2±7%	91±7%	-----	50216397005
13230571..	ECM	UAH382300-51R03	230-240/50	850	16.4	no	1.95±7%	2.3±7%	91±7%	-----	50216397005
13252872..	SOLE/ACC	20584024	220-240/50	1000	21.5	0.55±7%	1.1±7%	1.77±7%	184±7%	50204873009	50226588007
13252961..	SOLE/ACC	20580052	220-240/50	1000	21.5	no	1.65±7%	1.8±7%	504±7%	50204873009	50226588007
14711101..	SOLE/ACC	20584616	200-240/50	1000	19	0.61	1.23	1.72	184	50229052001	50226588007

(*) part nos. presently in production

Remarks on the windings:

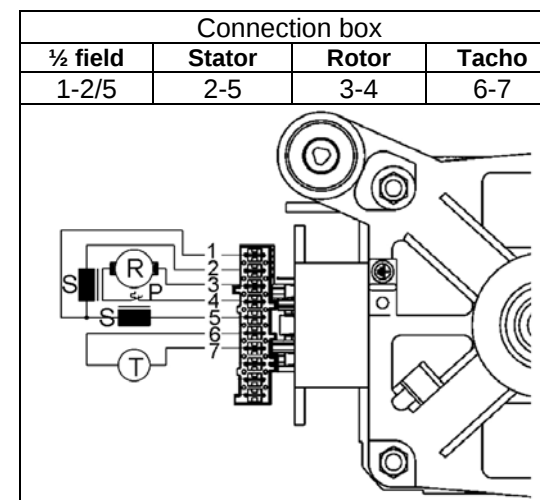
- ↗ Check the connectors (wiring) and the presence of outcoming / bent terminals.
- ↗ Check the presence of traces / deposits of water or detergent and their cause
- ↗ Check the earthed windings / components (or with poor insulation to earth) by means of a tester with a minimum capacity of 40 MΩ between single terminal and the housing (read ∞).
- ↗ Check the individual windings according to the table.

P=motoprotector

R=rotor

S=stator

T=tachometric



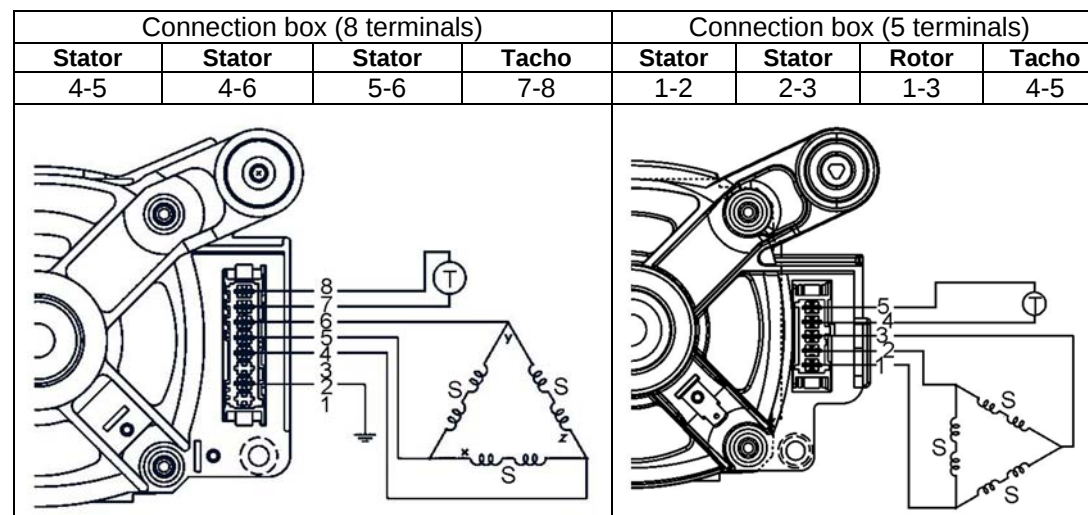
THREE-PHASE MOTORS (with 8/5-terminal connection box)										
Motor supplier code	Brand	Type	V/Hz	Spin speed	Pulley Ø mm	Winding resistance (Ω)				Part nos. (*)
						Stator (4-5)	Stator (4-6)	Stator (5-6)	Tacho (7-8)	Tachometric generator
13219300..	CESET	CIM 2/55-132ZH	195/300	1800	25.26	5,4±7%	5,4±7%	5,4±7%	121±7%	50280023008
						Winding resistance (Ω)				
						Stator (1-2)	Stator (2-3)	Stator (1-3)	Tacho (4-5)	
13247650..	ACC	20585119	195/300	1800	25.26	5,4±7%	5,4±7%	5,4±7%	188±7%	50296236008
13238680..	ECM	CZ-551950-51R01	195/300	1800	25.26	5,4±7%	5,4±7%	5,4±7%	91±7%	-----
14710100..	CESET	CIM 2/55-132ZH	195/300	1800	25.26	5,4±7%	5,4±7%	5,4±7%	121±7%	50280023008

(*) part nos. presently in production

Remarks on the windings:

- ↗ Check the connectors (wiring) and the presence of outcoming / bent terminals.
- ↗ Check the presence of traces / deposits of water or detergent and their cause
- ↗ Check the earthed windings / components (or with poor insulation to earth) by means of a tester with a minimum capacity of 40 MΩ between single terminal and the housing (read ∞).
- ↗ Check the individual windings according to the table.

S=stator
T=tachometric



Waschautomaten
Washing-machine
Machine à laver le linge

Motor, Moteur

ET-Nr. ref.-No. réf.-No.	Typ	Kohle brush brosse	Tachometer, Spule tachometer, coil tachymétrie, bobine	Befestigung fixing piece fixation	Ritzel pulley poulie
124 052 800/8	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 802/4	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 803	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 804	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 805	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 806	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 807	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 811	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 052 900/6	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25,3
124 052 905/5	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25,3
124 052 906/3	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25,3
124 052 907/1	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25,3
124 052 910/5	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25,3
124 052 911	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25,3
124 054 821	MCA38/64-148/ZN5	5021 639 700/5	5023 205 500/9		21,5
124 084 721	MCA30/64-148/ZN4	5021 639 700/5	5023 205 500/9		16,4
124 270 700/6	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 702/2	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 703/0	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 704/8	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 705	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 706	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 707/1	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 708/9	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 709/7	205 84.024	5022 658 800/7	5022 905 200/1		21,5
124 270 720	205 84.425	5022 658 800/7	5022 905 200/1		21,5
124 270 721/2	205 84.425	5022 658 800/7	5022 905 200/1		21,5
124 304 703/0	UOZ112/g63	400 602 034/3	400 602 029/3		25,2
124 304 704/8	UOZ112/g63	400 602 034/3	400 602 029/3		25,2
124 306 100/7	U112/g40	400 602 034/3	400 602 029/3		16,4
124 306 101/5	U112/g40	400 602 034/3	400 602 029/3		16,4
124 306 102/3	U112/g40	400 602 034/3	400 602 029/3		16,4
124 306 103/1	U112/g40	400 602 034/3	400 602 029/3		16,4
124 306 104/9	U112/g40	400 602 034/3	400 602 029/3		16,4
124 306 203/9	MCA38/64-148/ZN9	5021 639 700/5	5023 205 500/9		16,4
124 306 204/7	MCA38/64-148/ZN9	5021 639 700/5	5023 205 500/9		16,4
124 306 211	MCA38/64-148/ZN9	5021 639 700/5	5023 205 500/9		16,4
124 391 003/9	U112/g63	400 602 034/3	400 602 029/3		21,3
124 660 200/5	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 201/3	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 202/1	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 203/9	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 204	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 205	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 206	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 207	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3

Waschautomaten
Washing-machine
Machine à laver le linge

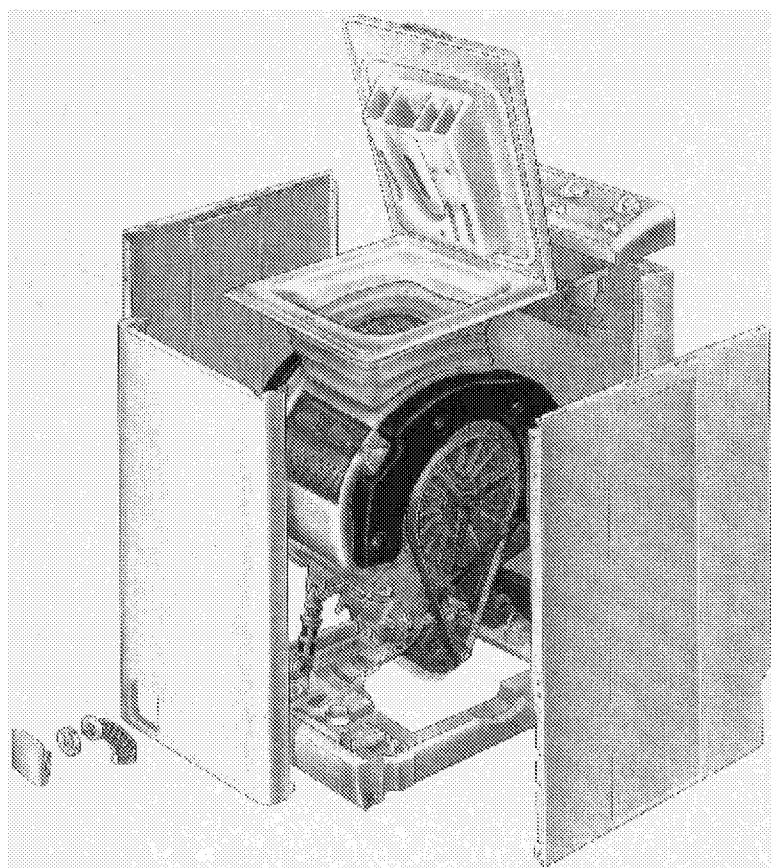
Motor, Moteur

ET-Nr. ref.-No. réf.-No.	Typ	Kohle brush brosse	Tachometer, Spule tachometer, coil tachymétrie, bobine	Befestigung fixing piece fixation	Ritzel pulley poulie
124 660 209	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 210/4	U112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	22
124 660 211/2	U112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	22
124 660 231	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 233	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 234	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 660 251/8	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	21,3
124 701 000/0	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 002/6	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 003/4	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 004	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 005	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 006/7	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 007/5	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 701 011	205 80.056	5022 658 800/7	5022 905 200/1		16,4
124 835 000/9	U112/g30	400 602 034/3	400 602 029/3		16,4
124 835 001/7	U112/g30	400 602 034/3	400 602 029/3		16,4
124 835 002/5	U112/g30	400 602 034/3	400 602 029/3		16,4
124 835 003	U112/g30	400 602 034/3	400 602 029/3		16,4
124 835 005	U112/g30	400 602 034/3	400 602 029/3		16,4
124 835 100/7	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 101	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 102/3	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 103	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 104	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 105/6	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 106/4	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 835 107	MCA61/64.148/ZN4	5021 639 700/5	5023 205 500/9		25,26
124 946 103/7	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 104	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 105	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 106	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 107	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 108/6	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 109/4	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
124 946 111/0	MCA52/64-148/ZN4	5021 639 700/5	5023 205 500/9		21,5
129 182 900/8	U112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	22
129 183 000/6	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	17
132 195 000	1BA6740	407 137 608/3			16,4
132 195 001	1BA6740	407 137 608/3			16,4
132 195 010	1BA6740	407 137 608/3			21,5
132 195 040	1BA6755	407 137 608/3			21,5
132 195 041	1BA6755	407 137 608/3			21,5
132 195 050/1	1BA6740	407 137 608/3			16,4
132 195 070	1BA6755	407 137 608/3			21,5
132 195 080/8	1BA6740	407 137 608/3			21,5

Waschautomaten
Washing-machine
Machine à laver le linge

Motor, Moteur

ET-Nr. ref.-No. réf.-No.	Typ	Kohle brush brosse	Tachometer, Spule tachometer, coil tachymétrie, bobine	Befestigung fixing piece fixation	Ritzel pulley poulie
132 303 600	UAH522300-82R01				21,5
132 303 611	UAH522300-82R02				21,5
132 305 700/8	UAH382300-51R01				16,4
132 305 701	UAH382300-51R01				16,4
132 305 711/5	UAH382300-51R01				16,4
132 476 500	20585119				25,26
5022 080 000/2	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	22
605 121 601/5	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	25
605 121 602/3	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	22
645 428 081	U112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	22
645 428 095	U112/g40	400 602 034/3	400 602 029/3	899 645 428 358/2	17
645 428 180	UOZ112/g63	400 602 034/3	400 602 029/3	899 645 428 358/2	22
645 428 346	U112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	22
645 428 443	UOZ112/g55	400 602 034/3	400 602 029/3	899 645 428 358/2	22



**Washing machines,
Toploader**

**Range 40 cm
Tub C2**

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A) SAFETY PRECAUTIONS

Before intervention on any internal components, always remove the power plug from the socket.

When possible, the ohmic resistance of the components should be measured rather than making direct measurements of voltage and current.

Some parts of the mechanical structure of the appliance could be dangerous; it is necessary to take care in order to avoid injuries.

B) PURPOSE OF THIS MANUAL

This manual is to provide technicians, who have already a basic knowledge of repairing washing machines, with general information concerning this new range of products.

For more detailed information refer to:

- electrical diagram
- programming
- timer diagram
- spart parts list

C) PRESENTATION OF APPLIANCES

This new range of washing machines consists of:

- A CARBORANâ base including the filter body on which different components are fixed (drain pump, circulation pump, inlet valve, module and suspension).
- A tub of CARBORANâ and a drum of stainless steel with a capacity of 42 liters.

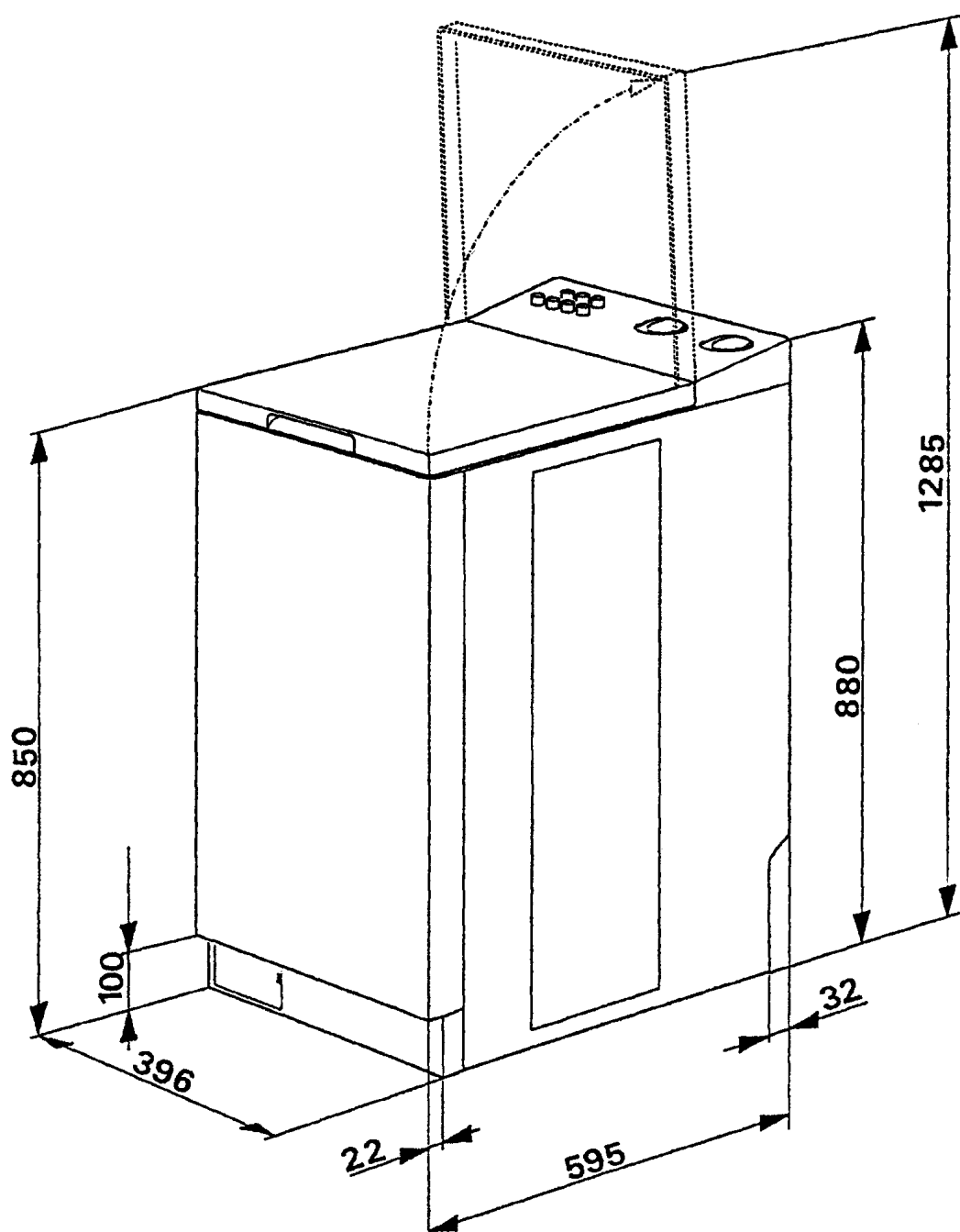
On the tub there are compensating weights, one left and one right, and electrical components such as heating element, thermostat, motor and cables.

- A cabinet including four side panels:
 - right, left and front panels electrogalvanized and thermolacquered;
 - rear panel electrogalvanized

On this construction the tub is hanging up by four springs.

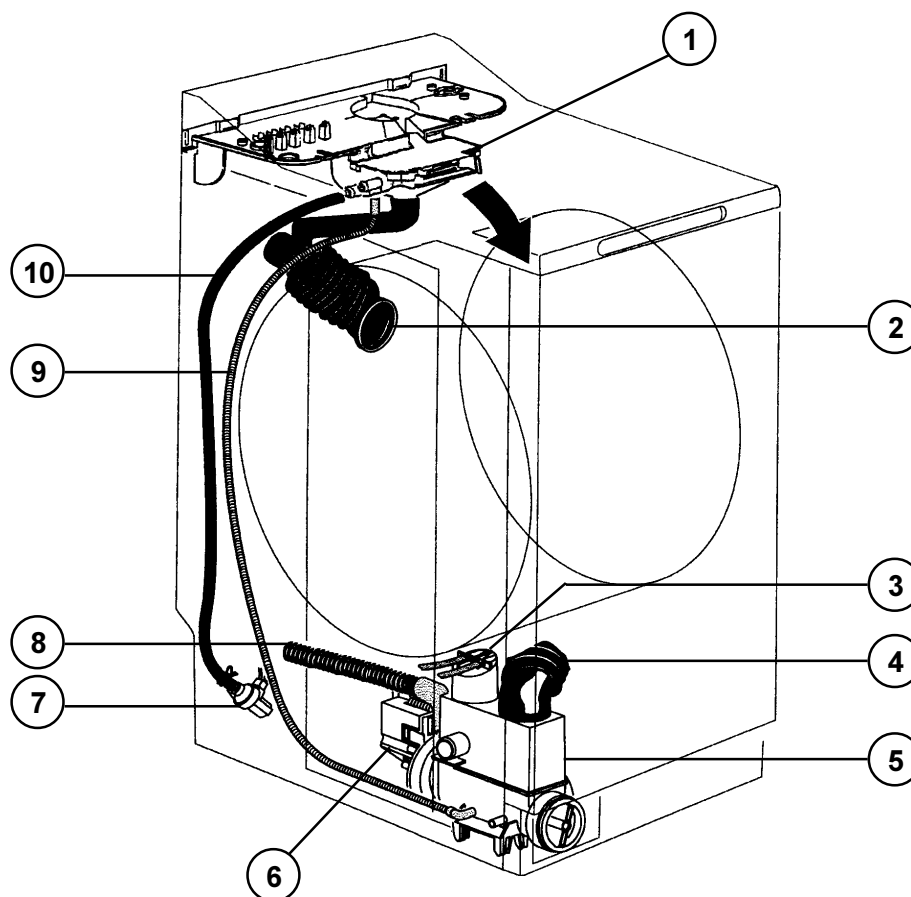
- A top of "polypropylene", a housing lid on which the water inlet tray is fixed, a functional support including the control panel with the electrical components and the water distributor.

D) DIMENSIONS



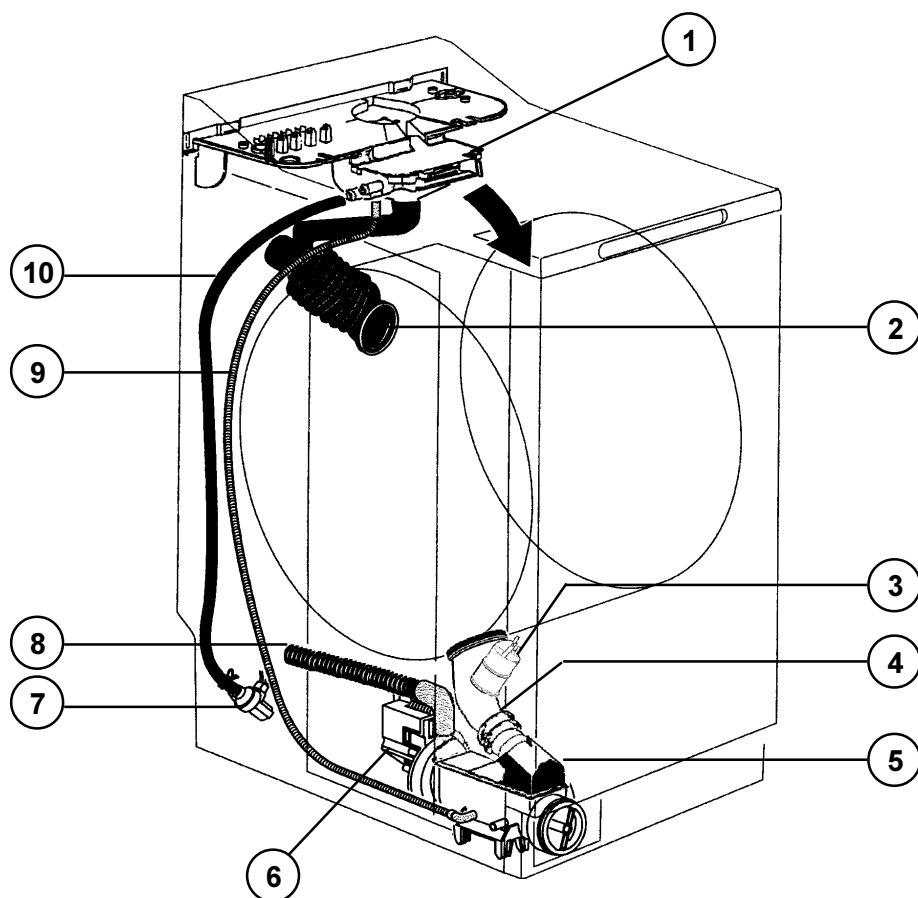
E) HYDRAULIC CIRCUIT

1) “STANDARD” washing system



- 1 - distributor
- 2 - vent hose
- 3 - compression chamber
- 4 - rubber-bellow
- 5 - filter body
- 6 - drain pump
- 7 - inlet valve
- 8 - drain hose
- 9 - ventilation of fluff filter housing
- 10 - cold water

2) "ECO"-washing system with nozzle



- 1 - distributor
- 2 - vent hose
- 3 - compression chamber
- 4 - durit-hose with ECO-ball
- 5 - filter body
- 6 - drain pump
- 7 - inlet valve
- 8 - drain hose
- 9 - hose with nozzle for ECO-ball
- 10 - cold water

a) Advantages of the “ECO” function

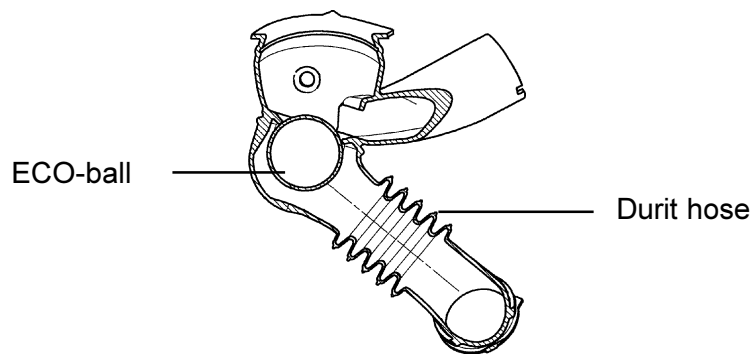
Due to the „ECO“ washing systems, with the ECO-ball in the durit-hose, the user achieves a high washing and rinsing result with a low consumption of detergent.

The detergent does not fall down as far as to the drain area during the filling cycle, but remains on the ECO-ball usable for the washing cycle.

b) Principle

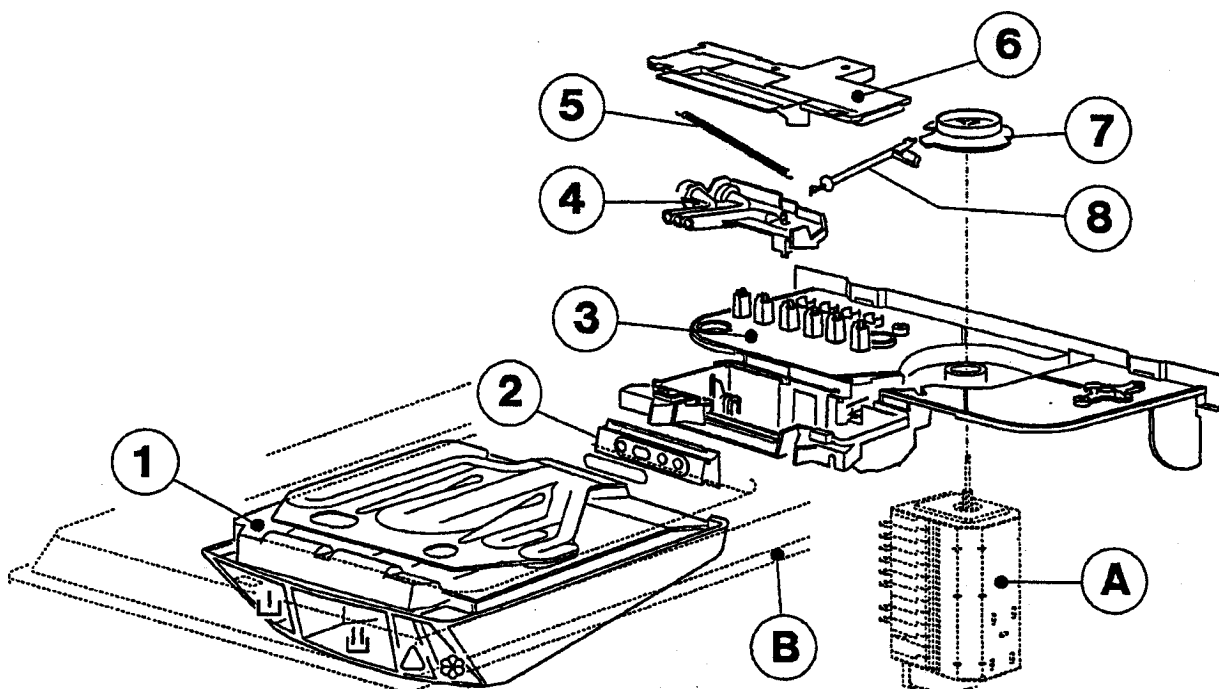
During the filling cycle, a part of the water is conducted through the hose (9) into the fluff filter housing. The water quantity inflow is dosed via a nozzle. This is located in the hose (9) approximately 5 cm beneath the water distributor.

The water level in the fluff filter housing increases until the ECO-ball floats up in the durit hose and locks the way to the tub (see figure).



When selecting the drain pump, the ECO-ball is drawn downwards because of the underpressure, the water in the tub can be drained.

3) Distribution



- 1 - box with 3 or 4 chamber (following model)
- 2 - gasket distribution
- 3 - support distribution
- 4 - distribution
- 5 - spring
- 6 - cover distribution
- 7 - program disk
- 8 - lever distribution
- A - timer
- B - table

a) Program disk

Cam profile is made up of 4 profiles corresponding to the water admission in the boxes:

prewash



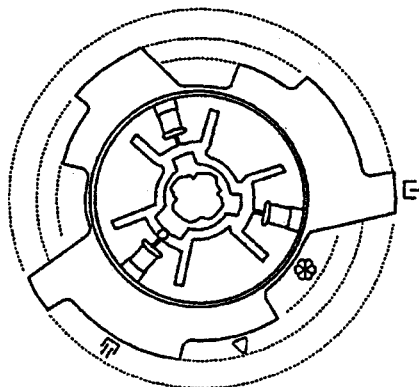
wash



bleach



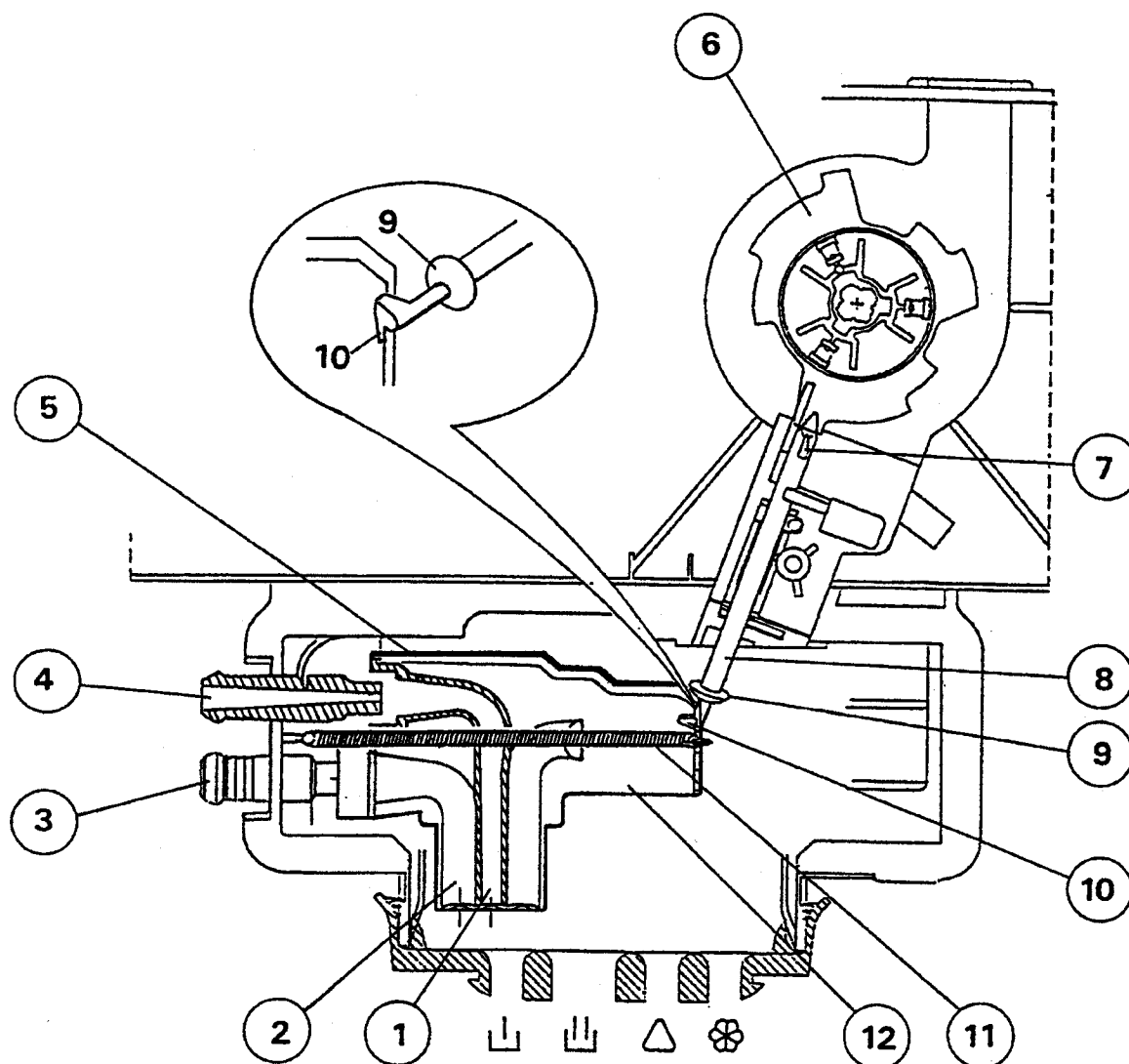
softner



Warning: Each type of timer has got a specific distributing cam.

4) Distribution function

a) Standing position

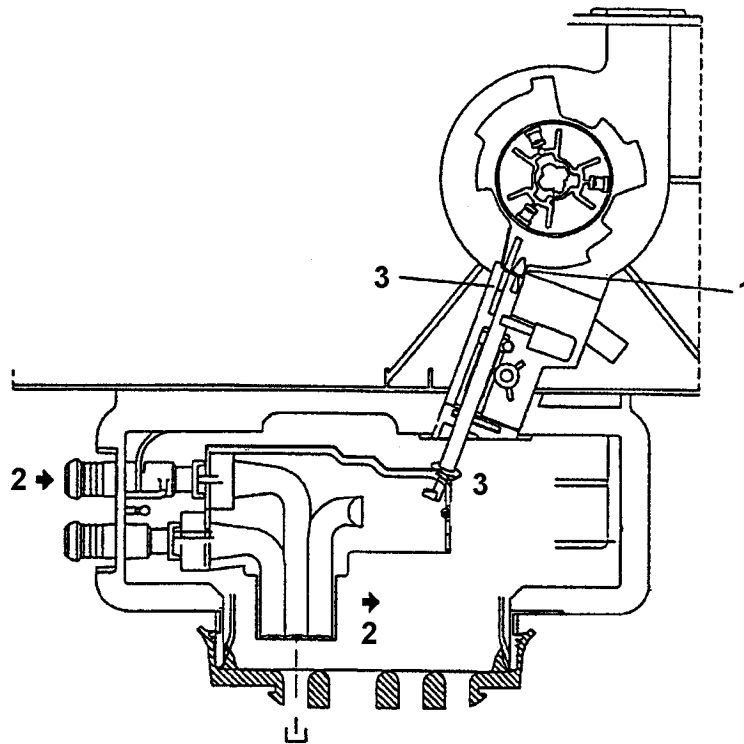


- | | | | | | |
|---|---|--|----|---|---------------------------------|
| 1 | - | cold water distribution | 7 | - | stop on program disk |
| 2 | - | hot water distribution (*) | 8 | - | lever |
| 3 | - | connection for hot water (*) | 9 | - | stop for distribution |
| 4 | - | connection for cold water | 10 | - | hook for distribution |
| 5 | - | stop on distribution profile 4 positions | 11 | - | release spring for distribution |
| 6 | - | program disk | 12 | - | distribution |

(*) Hot water function is only possible with a specific timer.

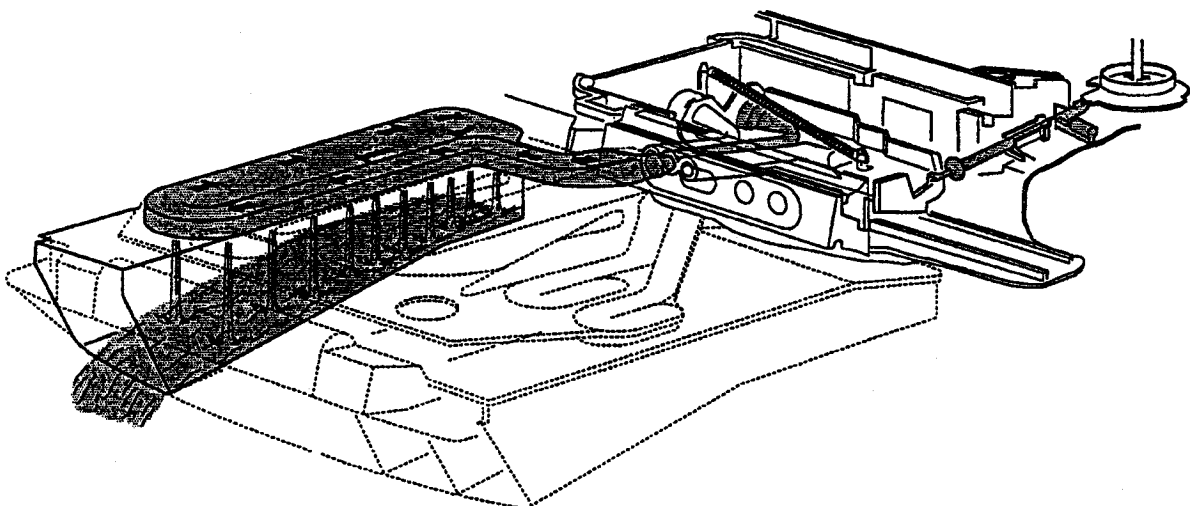
In standing position, without water admission, distributor is put in standing position by the release spring (11). the distributor return reinitials the position of cam sensor finger in standing position, the lever (8) is pulled up by release spring, It reads inside profile of the distributing profile.

b) Prewash admission

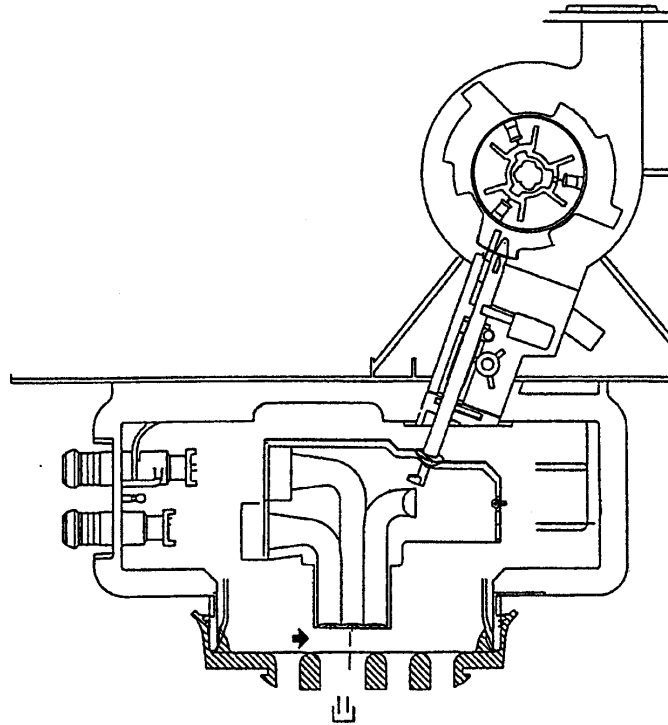


- 1 The profile of the cam is positionned on the prewash water admission pitch.
- 2 The inlet admission and water admission with injectors cause the displacement of the distribution by water pressure.
- 3 Distribution moves to its thrusting position on the position sensor disk. The position of sensor finger is initialed with the cam position reader.
- 4 When the prewash level is reached, the distributor reinitials in standing position.

Schema filling in the prewash chamber

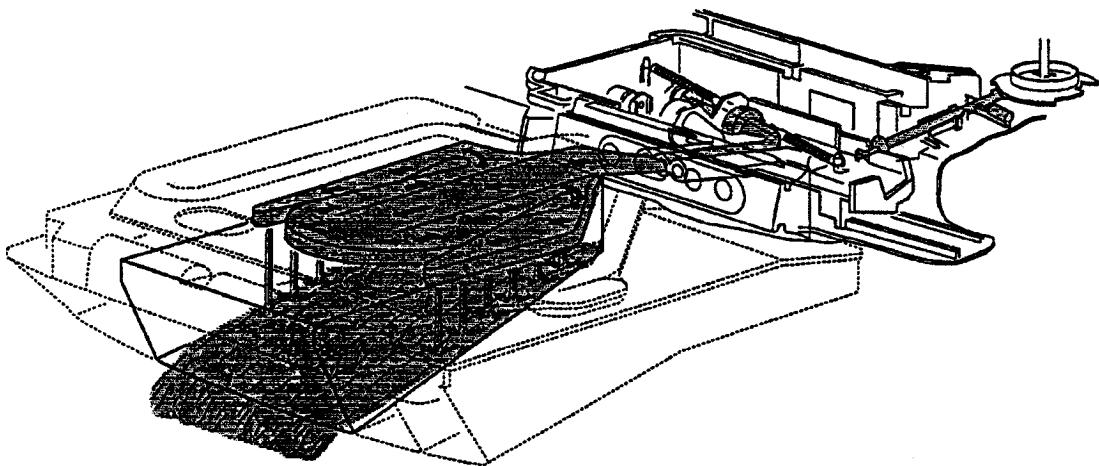


c) Wash admission

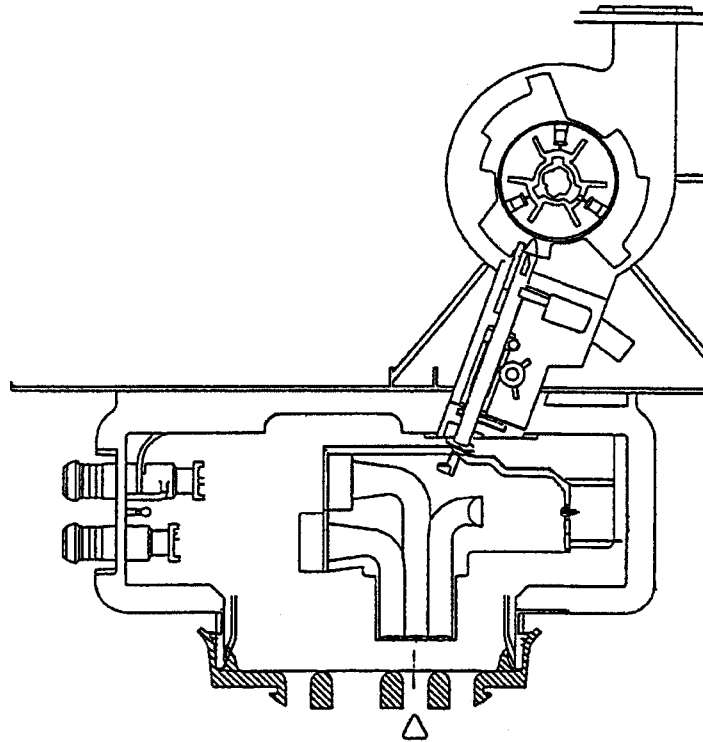


- 1 The profile of the cam is positionned on the wash water admission pitch.
- 2 The inlet admission and water admission with injectors cause the displacement of the distribution by water pressure.
- 3 Distribution moves to its thrusting position on the position sensor disk. The position of sensor finger is initialed with the cam position reader.
- 4 When the prewash level is reached, the distributor reinitials in standing position.

Schema filling in the wash chamber

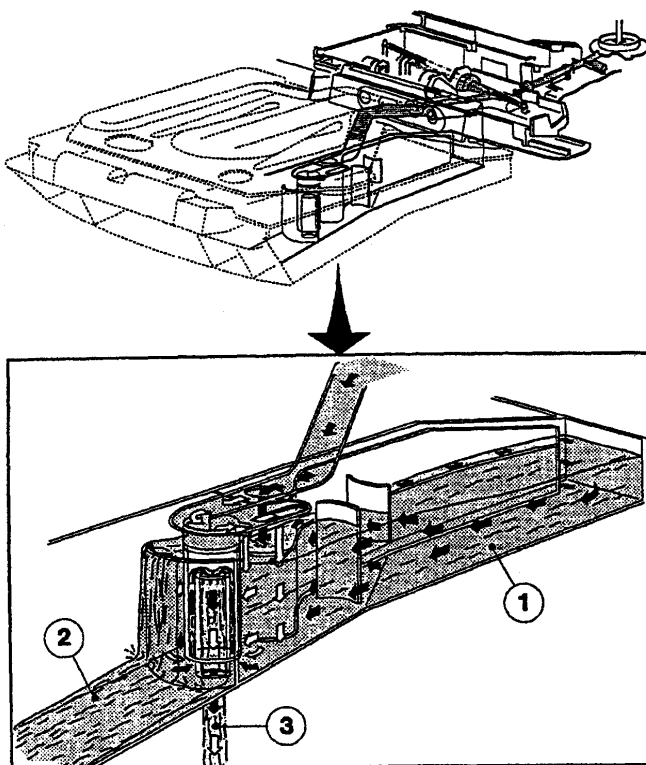


d) Bleach admission



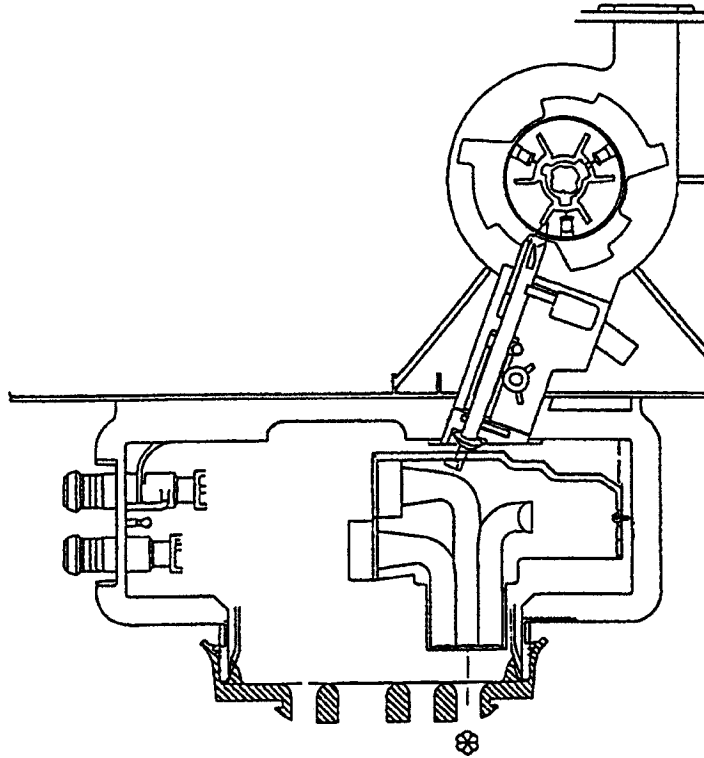
- 1 The profile of the cam is positionned on the bleach water admission pitch.
- 2 The inlet admission and water admission with injectors cause the displacement of the distribution by water pressure.
- 3 Distribution moves to its thrusting position on the position sensor disk. The position of sensor finger is initialed with the cam position reader.
- 4 When the prewash level is reached, the distributor reinitials in standing position.

Schema filling in the bleach chamber



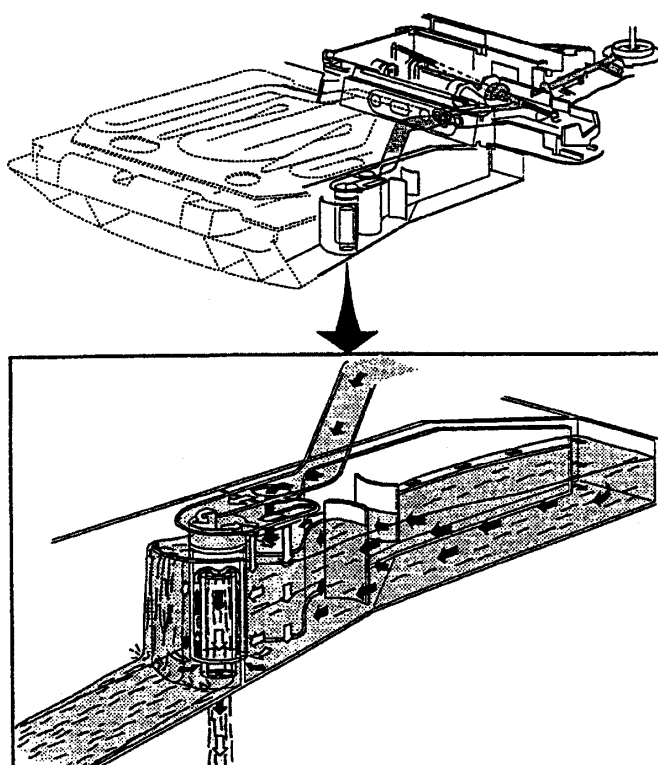
- 1 Mix of bleach and water
- 2 Bleach and water flow through overhanging
- 3 After water admission, draining of the box by siphon.

e) Softner admission



- 1 The profile of the cam is positionned on the softner water admission pitch.
- 2 The inlet admission and water admission with injectors cause the displacement of the distribution by water pressure.
- 3 Distribution moves to its thrusting position on the position sensor disk. The position of sensor finger is initialed with the cam position reader.
- 4 When the prewash level is reached, the distributor reinitials in standing position.

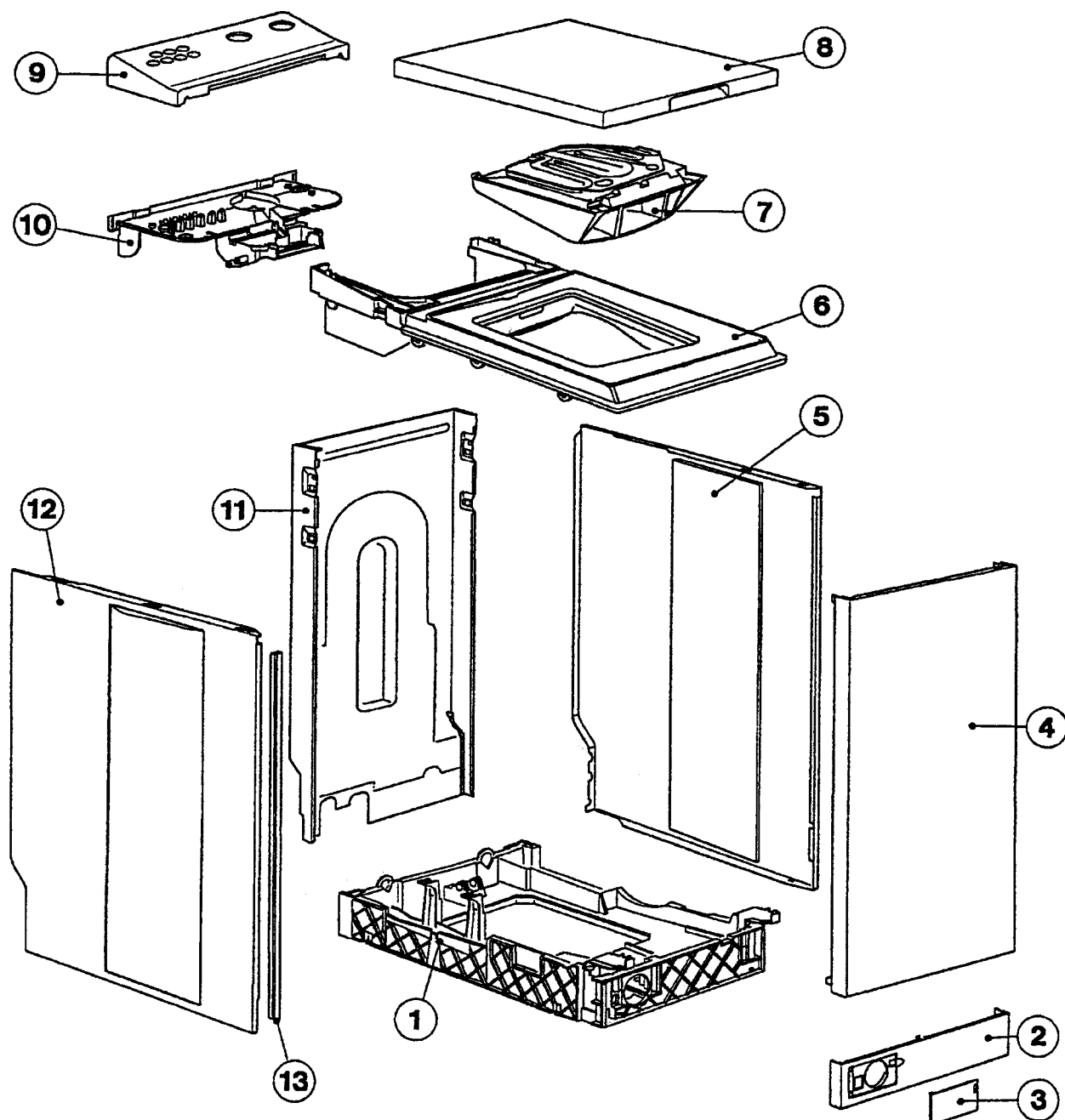
Schema filling in the softner chamber



- 1 Mix of softner and water
- 2 Softner and water flow through overhanging
- 3 After water admission, draining of the box by siphon.

F) STRUCTURE

1) Cabinet

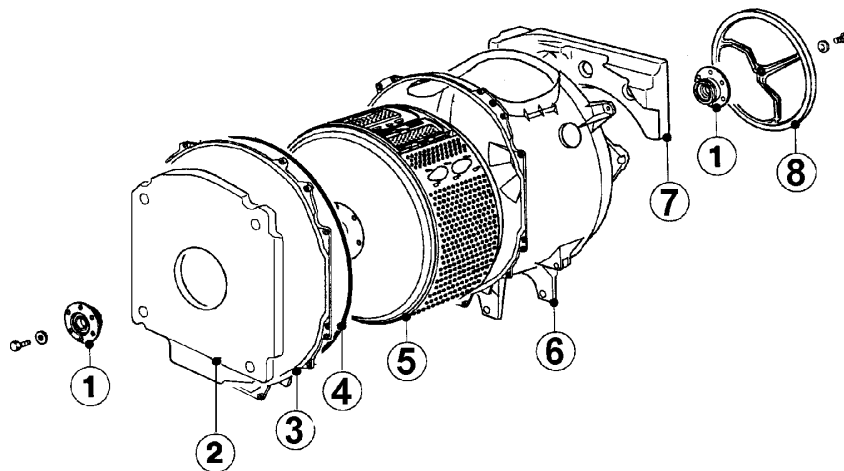


- 1 - base
- 2 - base panel
- 3 - flap for fluff filter
- 4 - front panel
- 5 - left panel
- 6 - table
- 7 - detergent box

- 8 - main lid
- 9 - control panel
- 10 - support water distributor
- 11 - rear panel
- 12 - right panel
- 13 - bar

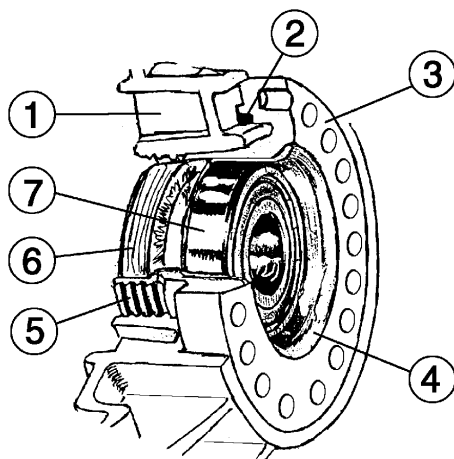
2) Internal

a) CARBORAN®-tub



- | | | | |
|---|------------------|---|----------------|
| 1 | - bearing | 5 | - drum |
| 2 | - left weight | 6 | - tub |
| 3 | - tub side panel | 7 | - right weight |
| 4 | - tub gasket | 8 | - pulley |

CARBORAN®-tub bearing



- | | |
|---|------------------------------|
| 1 | - tub |
| 2 | - static gasket |
| 3 | - bearing body |
| 4 | - metallic insert of bearing |
| 5 | - threading of bearing body |
| 6 | - dynamic gasket |
| 7 | - bearing |

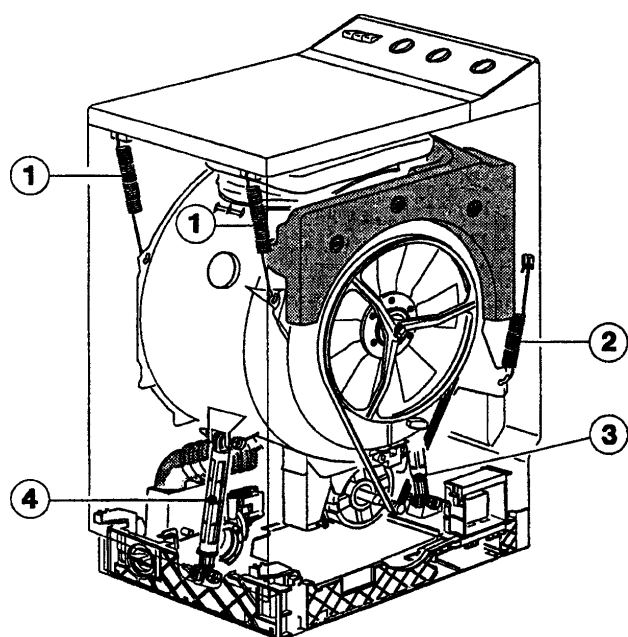
Both bearings are screwed on the tub (1).

The bearing (7) is pressed into a metallic insert.

The bearing is sealed as follows:

- The gaskets (6) to the shaft are set into the bearing body. The bearing seat permits to obtain a perfect concentricity between the bearing (7) and the gasket (6), which guarantees a perfect sealing.
- The bearing seat on the tub is sealed by a gasket (2).

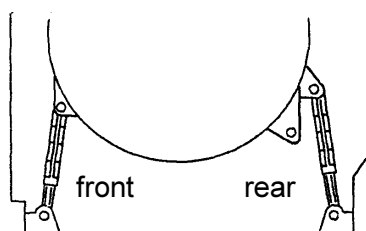
b) Shock absorber and spring



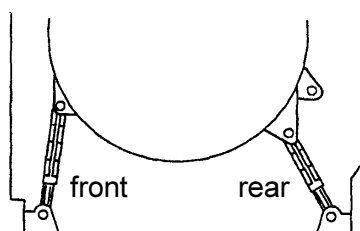
- 1 - Spring front
(hooked on the top)
- 2 - Spring rear
(hooked on the rear panel)
- 3 - Shock absorber rear
- 4 - Shock absorber front

Suspension shock absorber

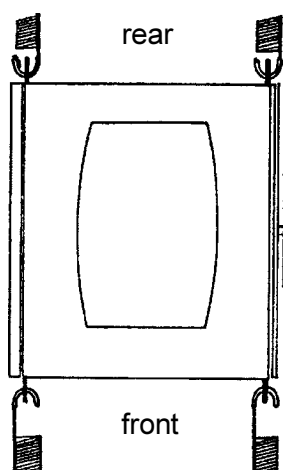
Asynchron Motor



Universal Motor

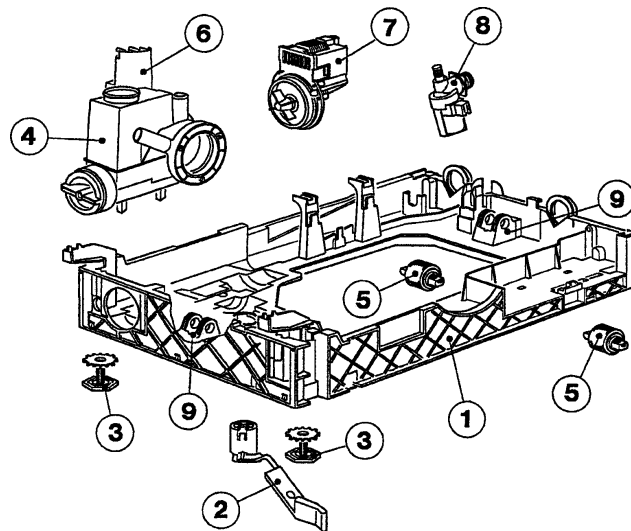


Suspension spring

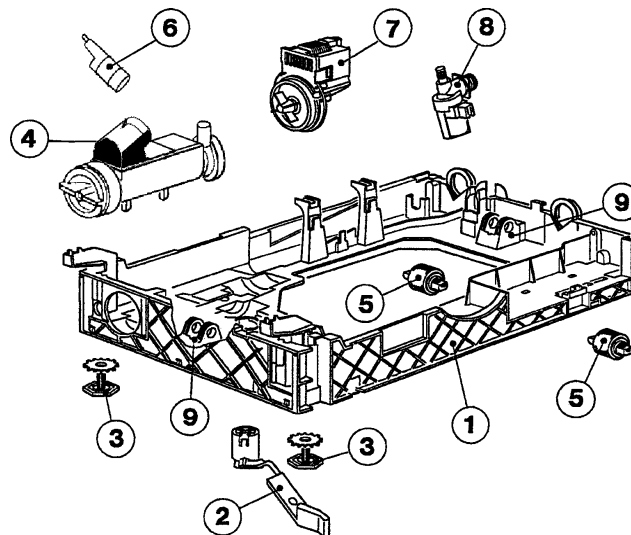


c) Base

Version 1



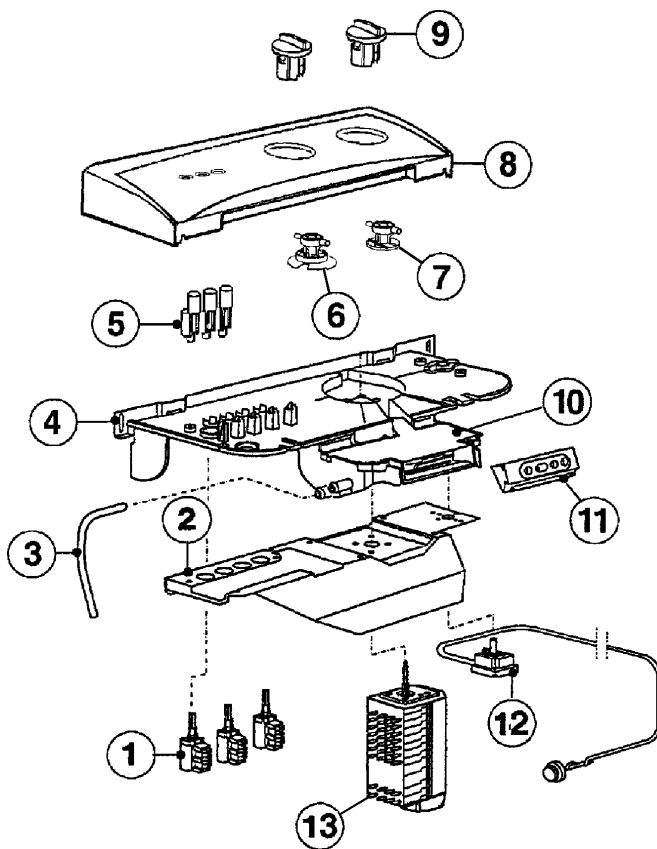
Version 2



- 1 - base
- 2 - front roller kit
- 3 - adjustable feet
- 4 - filter body
- 5 - rear roller

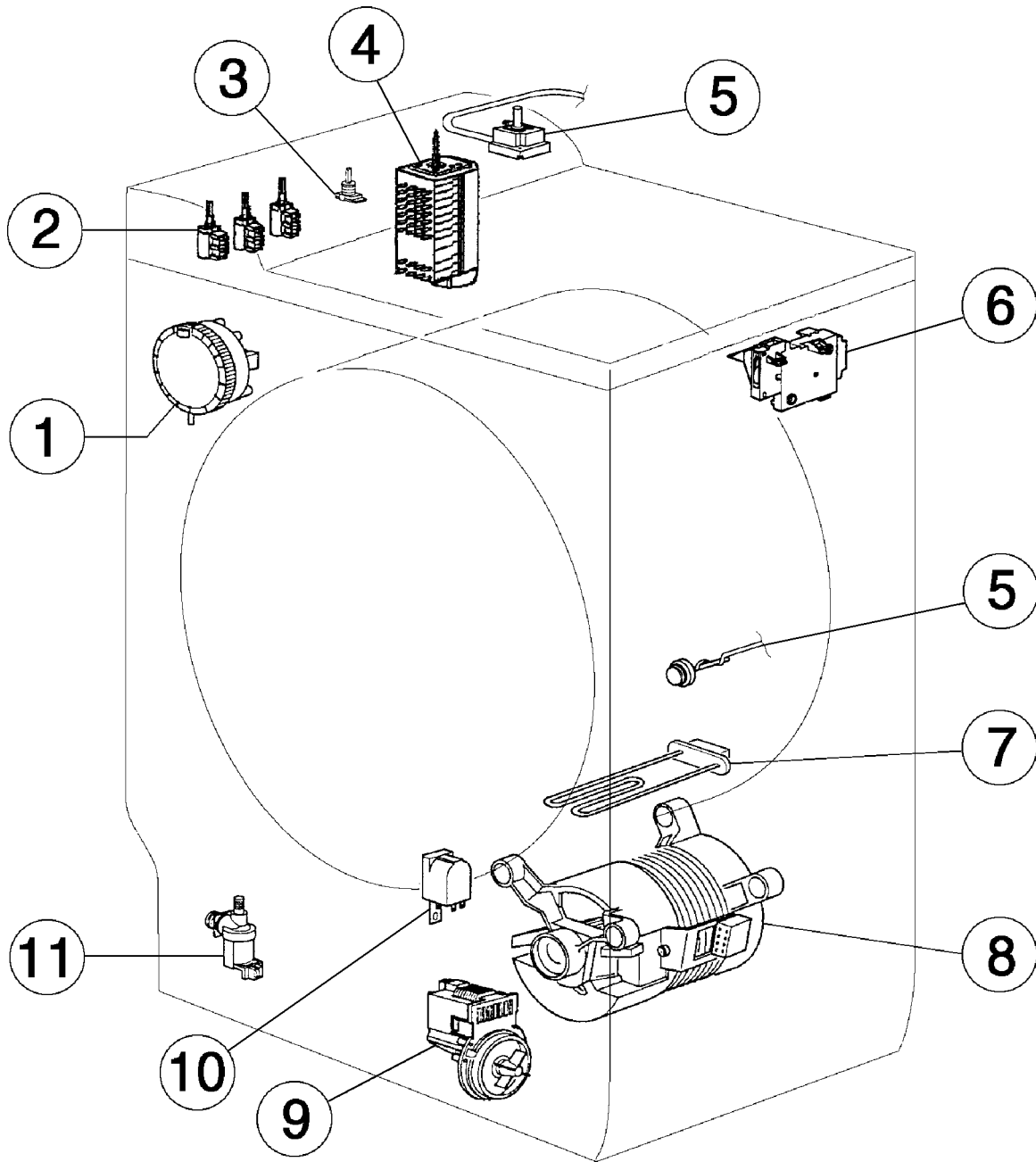
- 6 - air chamber
- 7 - drain pump
- 8 - cold water inlet valve
- 9 - fixation for shock absorber

d) Control panel



- 1 - push button switch
- 2 - plate
- 3 - cold water inlet hose
- 4 - functional support
- 5 - button
- 6 - programme disk
- 7 - hub
- 8 - panel support
- 9 - knob
- 10 - cover for water distributor
- 11 - gasket water distributor
- 12 - adjustable thermostat
- 13 - timer

e) electrical components position



- 1 - pressure switch
- 2 - push button switch
- 3 - potentiometer
- 4 - timer
- 5 - adjustable thermostat
- 6 - door lock
- 7 - heating element
- 8 - drum motor
- 9 - drain pump
- 10 - suppressor
- 11 - cold water inlet valve

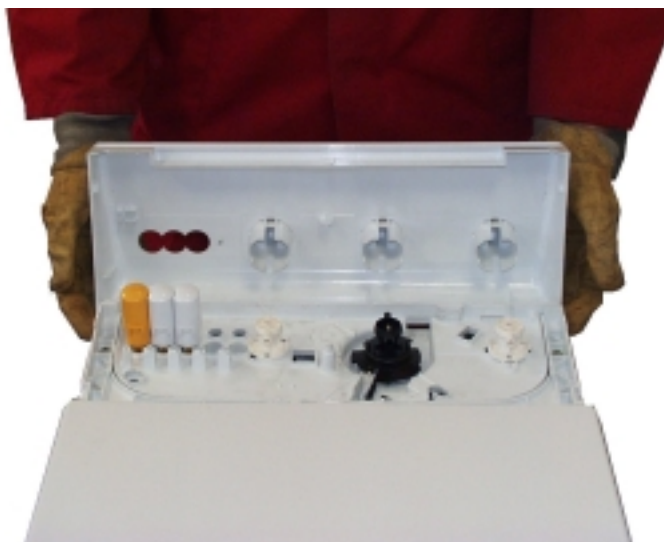
G) ACCESSIBILITY

1) Control panel

Disassembling / Assembling



- 1 - Unlock the control panel of side panel.
- 2 - Tilt the control panel to the back.
- 3 - Unlock the clips on the 2 points of rear panel.
- 4 - Remove the control panel.

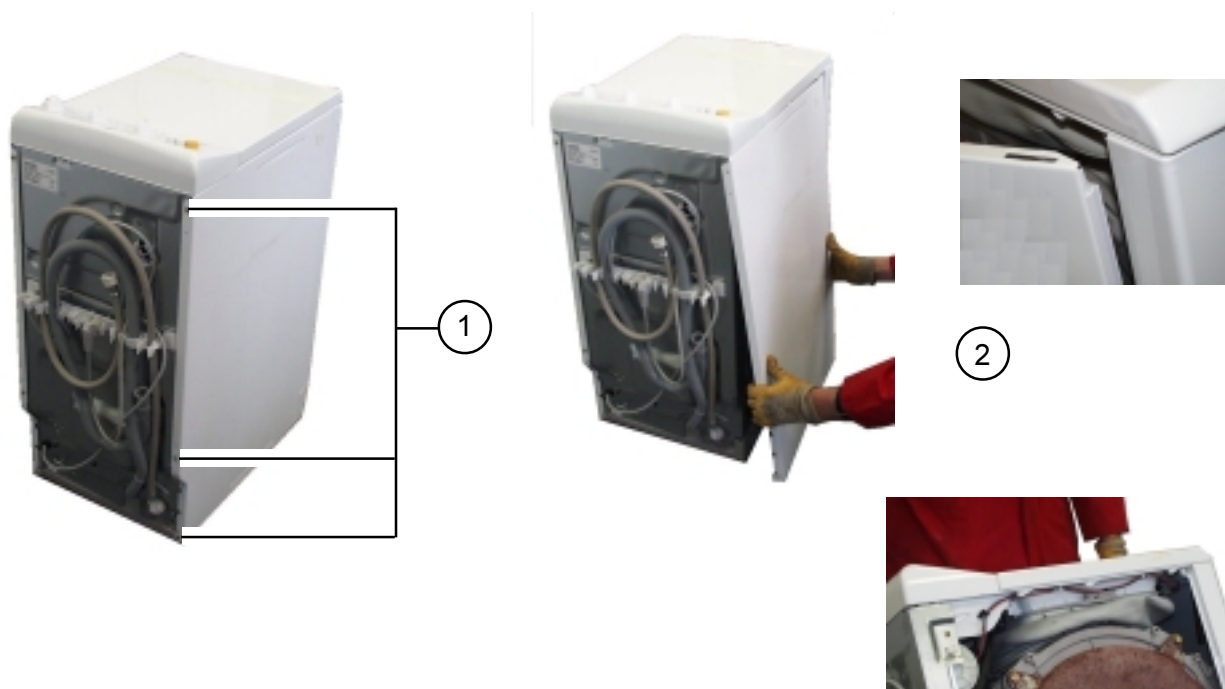


The disassembling of the control panel gives access to:

- button
- indicator disk
- knob hub
- knob
- functional support

2) Side panel

Disassembling / Assembling



- 1 - Unscrew the 3 rear fixation screws.

Warning: Do not forget the two washers when assembling. They confirm the earth connection of the side panels.

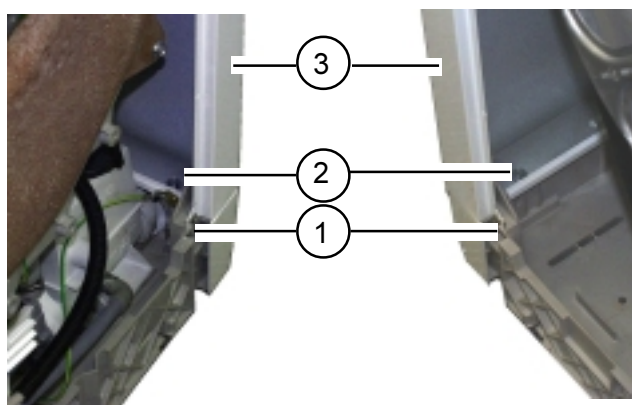
- 2 - Pull the side panel to the back in order to disassemble the upper anchoring and the three points of front anchoring.
- 3 - Then remove the side panel.

3) Front panel

Disassembling / Assembling

Warning: For easier handling it is necessary to put a block under the motor.

Remove the right and left side panel.



- 1 - Unscrew the two lower side fixation screws.
- 2 - Unscrew the two lower fixation screws.
- 3 - Unscrew the two upper side fixation screws.
- 4 - Remove the front panel.

4) Detergent box

Disassembling / Assembling



- 1 - Unbolt the lock with a screw driver
Horizontal: bolt
Vertical: unbolt
- 2 - Remove the detergent box



5) Main lid

Disassembling / Assembling

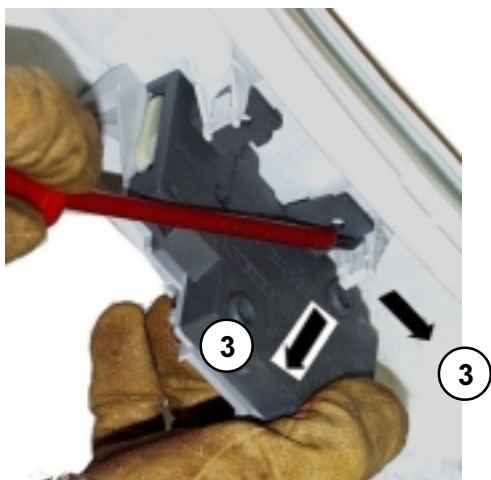


- 1 - Remove the side panels.
- 2 - Remove the rubber cap
- 3 - Remove the clip of the cover hinge with a crow bar with external circlips.
- 4 - Pull out the lid of the appliance upward.

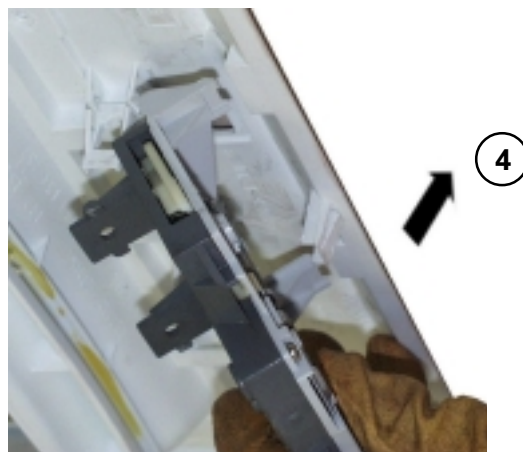


6) Door lock

Disassembling / Assembling



- 1 - Open the main lid.
- 2 - Remove the side panels.
- 3 - Release the door lock from both supports using a screwdriver.
- 4 - Remove the door lock



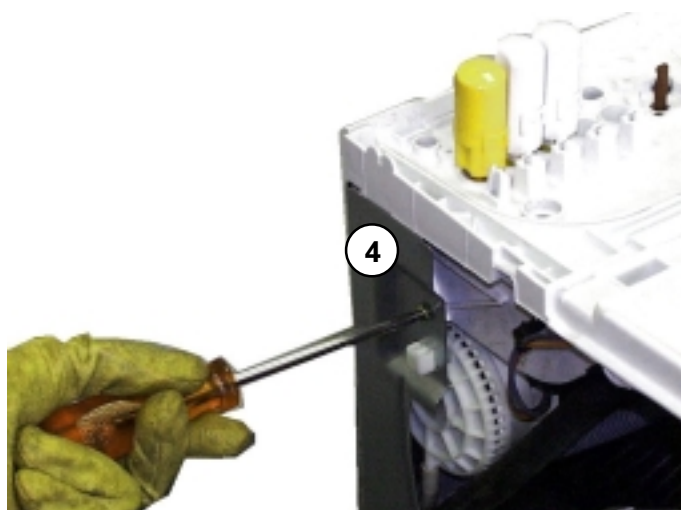
Warning: If during the disassembling one of the 2 rear fixation clips has been broken, use the 2 screws After Sales Service (see parts list).

7) Water distributor cover and water distributor

Disassembling



- 1 - Remove the control panel.
- 2 - Remove the side panels.
- 3 - Remove two screws left and right.



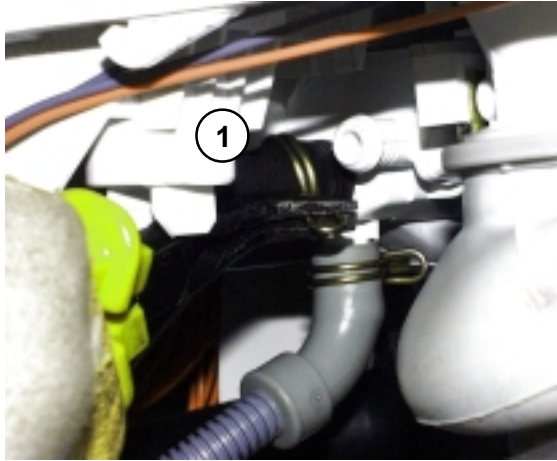
- 4 - Remove lateral two screws left and right.



- 5 - Remove both screws at the fill-in opening at the front.

Achtung:

Put a laundry on the drum, the screws can't fall into the appliance when remove.



- 1 - Unfasten the hose connection between inlet hose and water distributor.



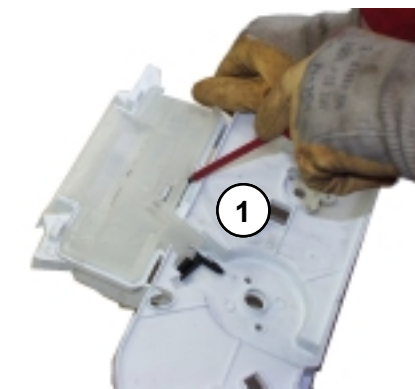
- 2 - Unfasten the hose connection between fluff filter housing and water distributor.



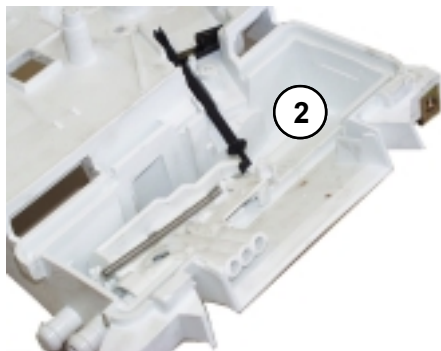
- 3 - Unfasten the hose connection between tub-rear panel and water distributor.



- 4 - The water diverter can be disengaged completely.



- 1 - Release the water diverter lid using a screwdriver.
- 2 - Change the lever, spring and the water distributor



Warning:

During the assembly of the lever the hook must lie be in the water diverter!

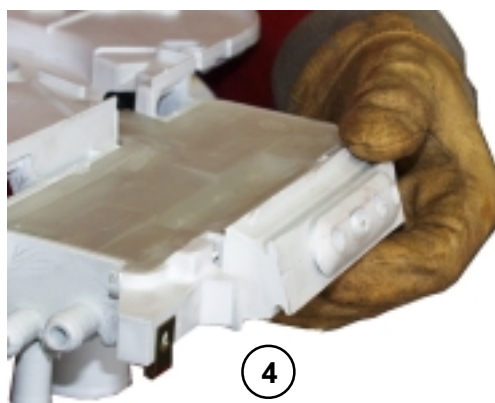


Montage



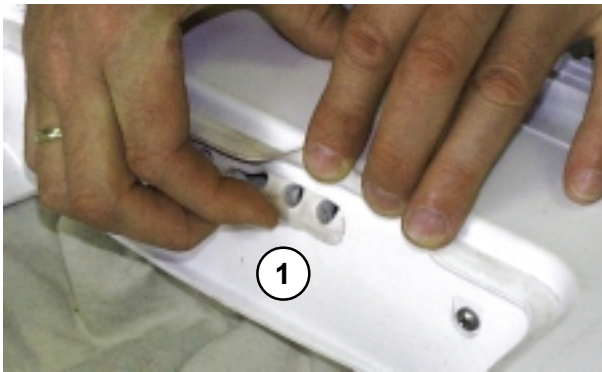
- 1 - Pull the rubber gasket for the water diverter out of the frame.
- 2 - Clean the silicone trails on the gasket and on the functional support.
- 3 - Put silicone on the gasket
- 4 - Place the gasket on the functional support.

Warning: During the assembly the rubber gasket of the water diverter must be sealed with silicone. The boreholes of the rubber gasket must show to the top!





- 1 - Install the water diverter completely into the frame and press it to the frame manually.
- 2 - Screw home the two front screws.



- 1 - Pull the rubber gasket lip through the frame using your fingers.
- 2 - Assemble both lateral and both upper screws.



- 3 - Refixed the hoses from the tub, fluff filter housing and the inlet valve.
- 4 - Refixed the panel and the side panels.

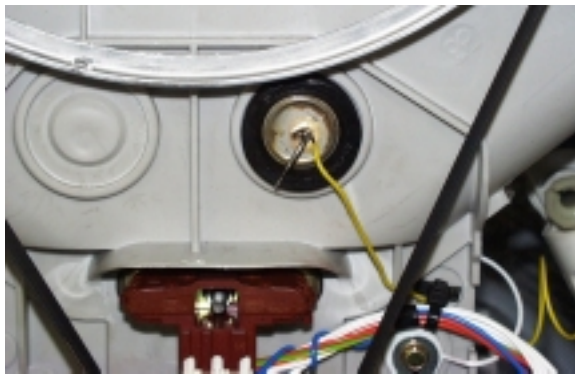
8) Thermostat

Disassembling



- 1 - Remove the panel and the right side panel.
- 2 - Remove the two screws.
- 3 - Clear the thermostat .
- 4 - Disassemble the sensor in the tub.
- 5 - Disassemble the capillary tube from the cable harness.

Assembling



- 6 - Refixed the thermostat
- 7 - Fasten the capillary tube in the cable harness.
- 8 - Remove the old glue remains at sensor and gasket.
- 9 - Fasten sensor and gasket in the tub using a glue.
- 10 - Attach the capillary tube of the thermostat but leave free some capillary tube windings for reasons of safety.

9) Timer

Disassembling / Assembling



- 1 - Remove the panel and the right side panel.
- 2 - Clear the thermostat .
- 3 - Remove the two screws.
- 4 - Clear the timer by the right side.

Warning:

During the assembly pay attention to the correct installation of the insulating foil!

10) Potentiometer

Disassembling / Assembling

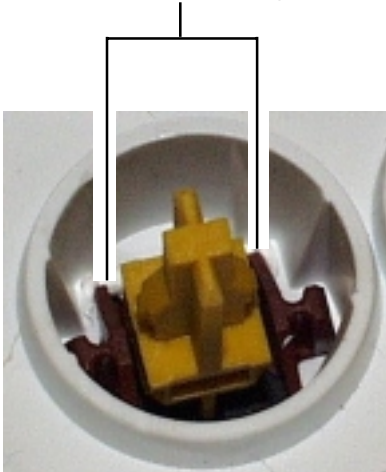


- 1 - Remove the panel and the left side panel.
- 2 - Remove the two screws.
- 3 - Clear the potentiometer

11) Push button switch

Disassembling / Assembling

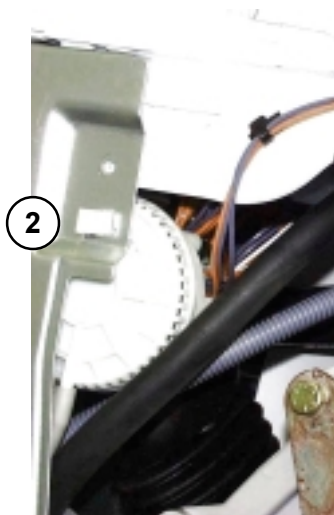
2 notches each left and
2 notches each right



- 1 - Remove the panel and the left side panel.
- 2 - Remove the pressure switch.
- 3 - Unclip the key switch at one side.



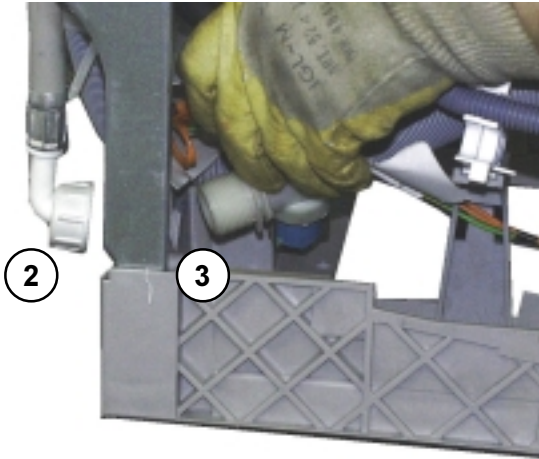
12) Pressure switch



Disassembling / Assembling

- 1 - Remove the panel and the left side panel.
- 2 - Remove the pressure switch.
- 3 - Loosen the pressure switch hose and the connector.

13) Inlet valve

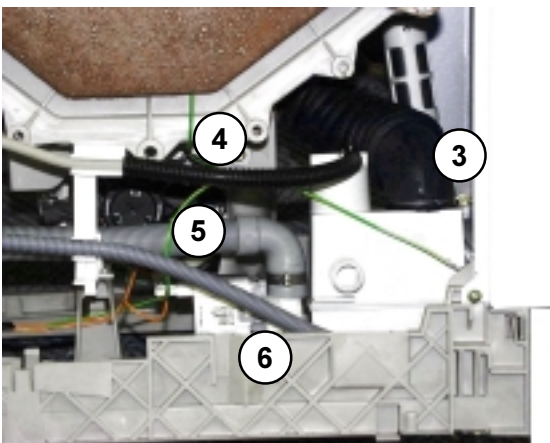


Disassembling / Assembling

- 1 - Remove the left side panel.
- 2 - Unfasten the inlet hose.
- 3 - Disengage the inlet valve.
- 4 - Unfasten the hose and the wiring.

14) Fluff filter housing

Version 1



Disassembling / Assembling

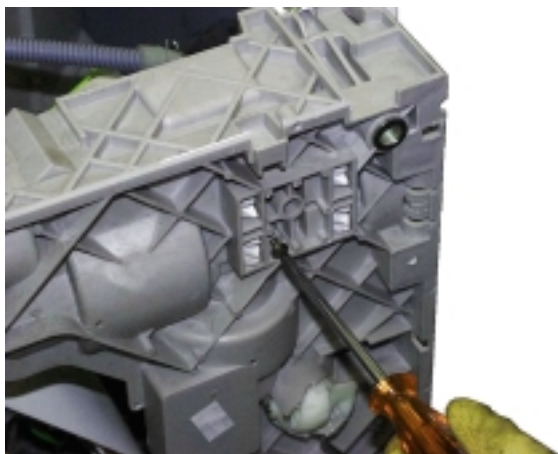
- 1 - Remove the left side panel.
- 2 - Remove the fluff filter.
- 3 - Unfasten the durit hose.
- 4 - Unfasten the hose from the pressure switch.
- 5 - Unfasten the drain hose.
- 6 - Unfasten the vent hose.



- 7 - Tilt the appliance to the right side.
- 8 - Disengage the fluff filter casing using a screwdriver or pliers.

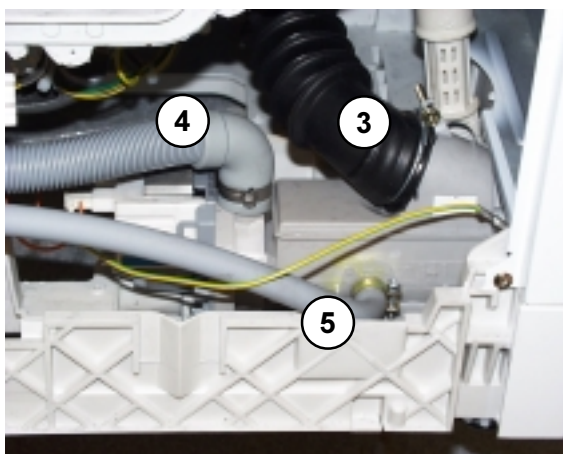


- 1 - Remove the drain pump



Warning: If during the disassembling one of the 4 fixation clips has been broken, use the screw After Sales Service (see parts list).

Version 2



Disassembling / Assembling

- 1 - Remove the left side panel.
- 2 - Remove the fluff filter.
- 3 - Unfasten the durit hose.
- 4 - Unfasten the drain hose.
- 5 - Unfasten the vent hose.



- 6 - Tilt the appliance to the right side.
- 7 - Disengage the fluff filter casing using a screwdriver or pliers.



- 1 - Remove the drain pump



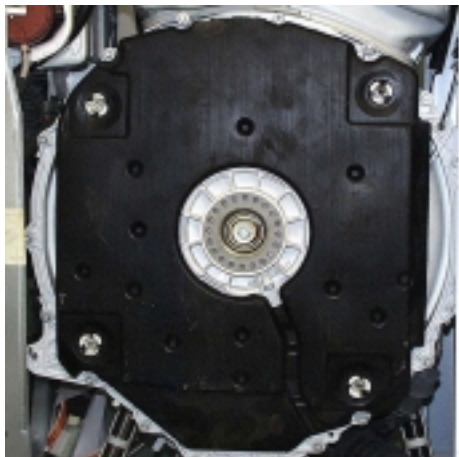
Warning: If during the disassembling one of the 4 fixation clips has been broken, use the screw After Sales Service (see parts list).

15) Drain pump

Disassembling / Assembling

- 1 - Remove the left side panel.
- 2 - Untighten the fluff filter housing
- 3 - Loosen the three screws at the drain pump.
- 4 - Remove the drain pump

16) Weight left



Disassembling / Assembling

- 1 - Remove the left side panel.
- 2 - Untighten and remove the 4 screws for the fixation of the weight
- 3 - Remove the left weight

17) Weight right



Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Untighten and remove the 4 screws for the fixation of the weight
- 3 - Remove the right weight.



18) Left bearing

Disassembling / Assembling

- 1 - Remove the left side panel.
- 2 - Remove the drum screw.
- 3 - Use the tool for loosening the bearing (in the direction of opening). ref. 899298001848/5

19) Right bearing

Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Remove the drum screw with pulley.
- 3 - Remove the pulley.
- 4 - Remove the drum earth fastening parts with a saw.
- 5 - Use the tool for loosening the bearing (in the direction of opening).ref. 899298001848/5



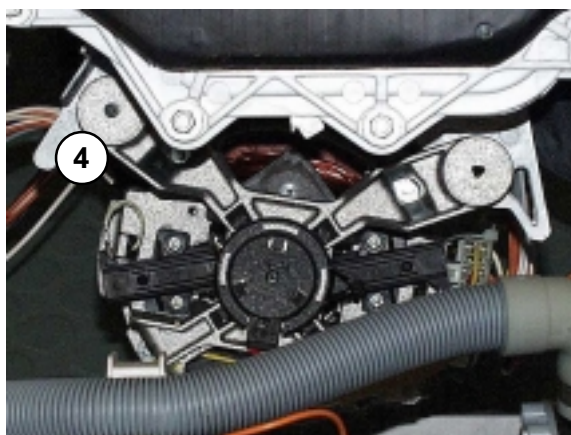
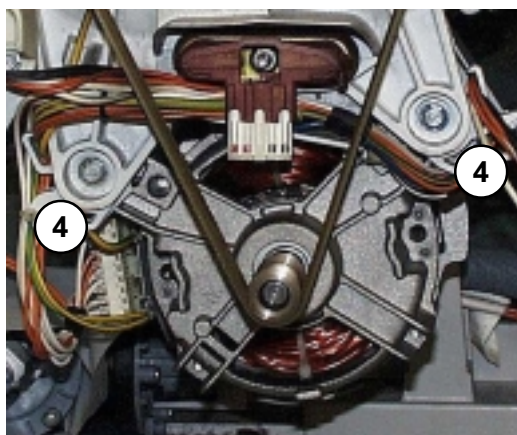
During assembling take care to the correct position of the round gasket. Clean the drum shaft, grease the shaft-sealing ring, screw the bearing to the tub (closed sense).

Note: These bearings are auto-fastening, therefore do not fasten them too strong.

20) Motor

Disassembling / Assembling

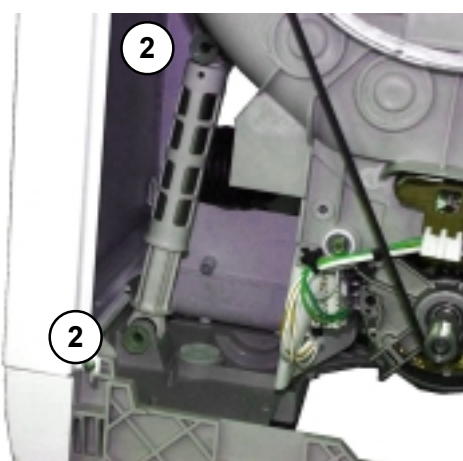
- 1 - Remove the left and right side panel.
- 2 - Remove the drive belt.
- 3 - Pull off the earth connection and the motor plug.
- 4 - Remove the 3 fixation screws.
- 5 - Take out the motor.



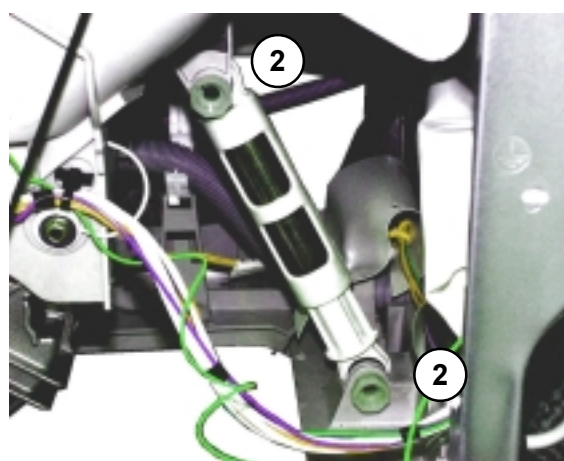
21) Shock absorber

Disassembling / Assembling

- 1 - Remove the left and right side panel.
- 2 - Leave the lower and the upper pivot.
- 3 - Take out the shock absorber.

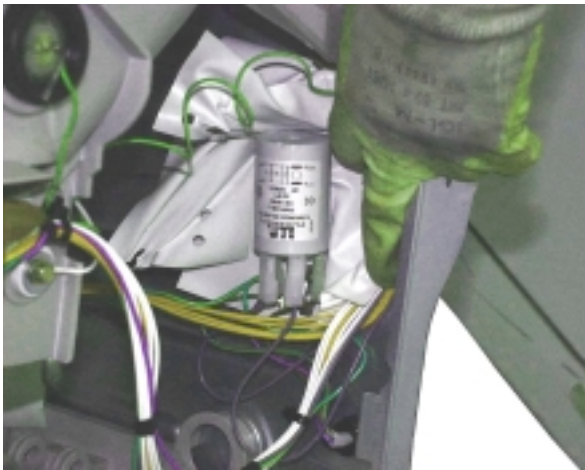


front



rear

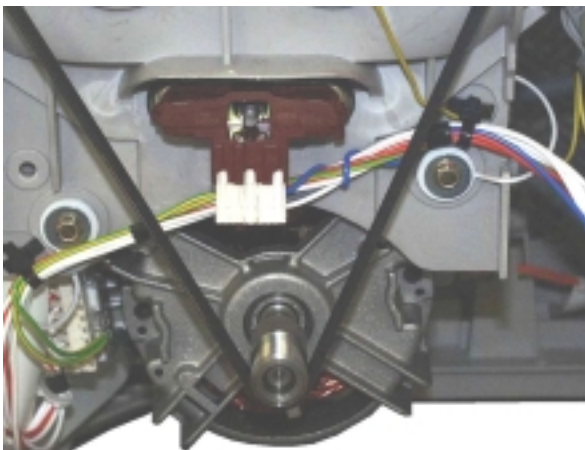
22) Supressor



Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Press the covering foil aside.
- 3 - Disassemble the supressor
- 4 - Disconnect all plugs.
- 5 - Remove the cover foil
- 6 - Take out the supressor

23) Heating element



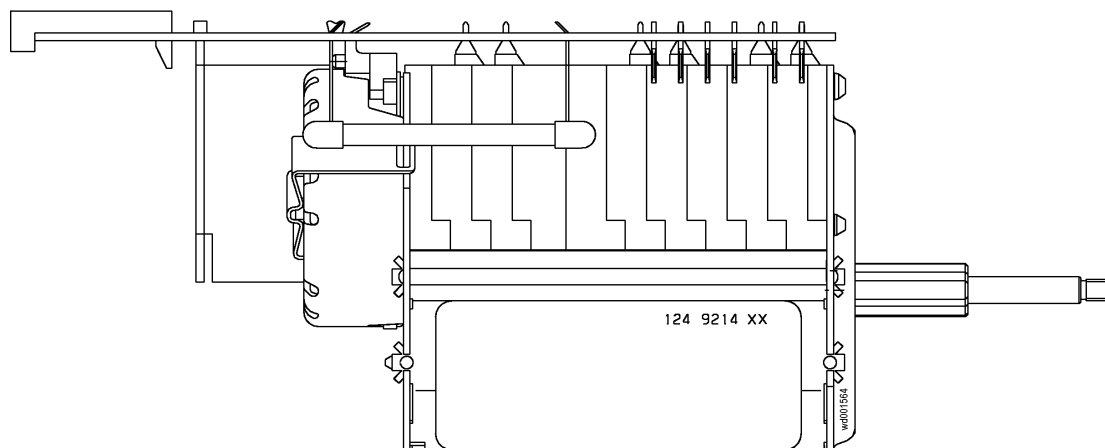
Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Disconnect all plugs.
- 3 - Loosen the fixation nut and leave the immersion heater.

Warning: During the heater assembly pay attention to the correct seat of the gasket!

Changes

Date	Page changed
07.05	2, 6, 7, 17, 31, 32, 36



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1 GENERAL FEATURES

The VD54/VD55 timers produced by AKO, are used in certain washing machines models.

- ♦ Front-loading washing machines produced in Spain (Alcala de Henares) **(ESA)**
- ♦ Top-loading washing machines produced in France (Revin) **(FFH)**
- ♦ Front-loading compacted in Sweden (Torsvik) **(TN)**
- ♦ Front-loading washing machines produced in Italy (Porcia) **(ZP)**

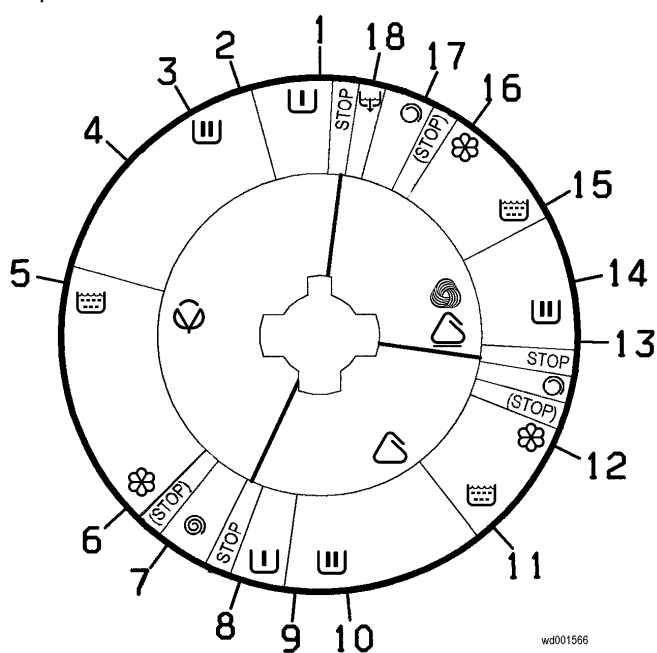
FUNCTIONS	VD54	VD55
WASHING SYSTEM:	- traditional - with "Eco-ball" - (jetsystem)	- traditional - with "Eco-ball" - (jetsystem)
TYPE OF RINSE:	traditional: - 4 rinses in cotton cycles - 3 rinses in synthetics, delicates and wool	traditional: - 3 rinses in cotton cycles - 3 rinses in synthetics, delicates and wool
WATER FILL:	cold	cold
POWER SUPPLY	220 -240V / 10A 50Hz	220 -240V / 10A 50Hz
Ignition system:	- versions with ON/OFF switch - versions with ignition by means of the timer knob (push-pull)	
Control of water level in tub:	- versions with 2 levels by means of pressure switch - versions with 1 level by means of pressure switch	
Washing temperature:	Fixed or adjustable	
Temperature control:	- versions with adjustable thermostat - versions with fixed thermostat	
Heating element	1950 W (max)	
Type of motor:	commutator	
Final spin speed (rpm):	600, 800, 900, 1000	

2 WASHING PROGRAMMES

2.1 Possible programmes of models with VD54 function

	Models with fixed temperatures			Models with adjustable temperatures		
	COTTON - LINEN	Wash (°C)	Rinses	COTTON - LINEN	Wash (°C)	Rinses
1	WHITES WITH PREWASH	60/95 *	4	WHITES and COLOURED WITH PREWASH	30-95	4
2	WHITES	60/95 *	4	WHITES and COLOURED	30-95	4
3	COLOURED-FAST	60	4	DELICATE COLOURED	30-60	4
4	DELICATE COLOURED	40	4	SHORT SPIN	30-40	4
5	RINSES	....	4	RINSES	....	4
6	CONDITIONER	....	1	CONDITIONER	....	1
7	SPIN	....	....	SPIN	....	....
	SYNTETICS – MIXED Fabrics			SYNTETICS – MIXED Fabrics		
8	WHITES WITH PREWASH	60	3	WHITES and COLOURED WITH PREWASH	30-60	3
9	WHITES	60	3	WHITES and COLOURED	30-60	3
10	COLOURED	40	3	....	....	....
11	RINSES	....	3	RINSES	....	3
12	CONDITIONER	....	1	CONDITIONER	....	1
	DELICATE - WOOL Fabrics			DELICATE- WOOL Fabrics		
13	DELICATES	40	3	DELICATES	30-40	3
14	WOOL	40	3	WOOL	40	3
15	RINSES	....	3	RINSES	....	3
16	CONDITIONER	....	1	CONDITIONER	....	1
17	SHORT SPIN	....	....	SHORT SPIN	....	....
18	DRAIN	....	....	DRAIN	....	....

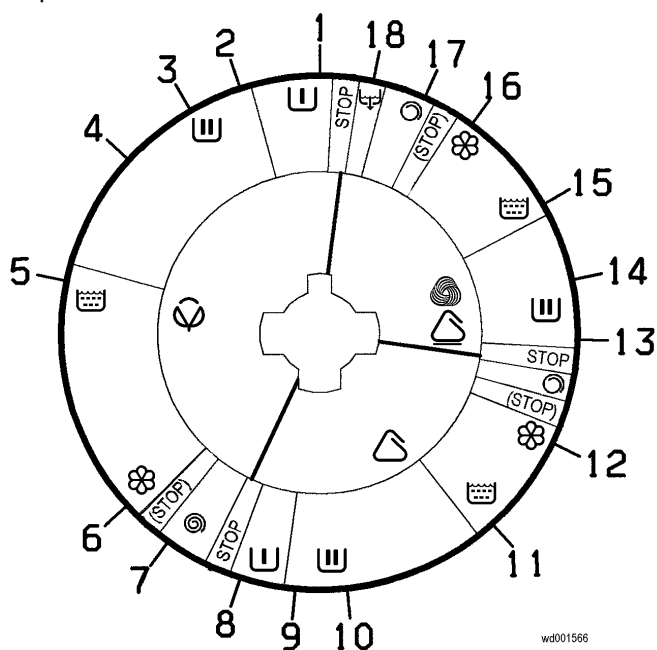
- Programme obtained with push-button 90°



2.2 Possible programmes of models with VD55 function

	Models with fixed temperatures			Models with adjustable temperatures		
	COTTON - LINEN	Wash (°C)	Rinses	COTTON - LINEN	Wash (°C)	Rinses
1	WHITES WITH PREWASH	60/95 *	3	WHITES and COLOURED WITH PREWASH	30-95	3
2	WHITES	60/95 *	3	WHITES and COLOURED	30-95	3
3	FAST-COLOURED	60	3	DELICATE COLOURED	30-60	3
4	DELICATE COLOURED	40	3	SHORT CYCLE	30-40	3
5	RINSES	....	4	RINSES	....	4
6	CONDITIONER	....	1	CONDITIONER	....	1
7	SPIN	....	....	SPIN	....	....
	SYNTETICS – MIXED Fabrics			SYNTETICS – MIXED Fabrics		
8	WHITES WITH PREWASH	60	3	WHITES and COLOURED WITH PREWASH	30-60	3
9	WHITES	60	3	WHITES and COLOURED	30-60	3
10	COLOURED	40	3	....	....	....
11	RINSES	....	3	RINSES	....	3
12	CONDITIONER	....	1	CONDITIONER	....	1
	DELICATES - WOOL Fabrics			DELICATES - WOOL Fabrics		
13	DELICATES	40	3	DELICATES	30-40	3
14	WOOL	40	3	WOOL	40	3
15	RINSES	....	3	RINSES	....	3
16	CONDITIONER	....	1	CONDITIONER	....	1
17	SHORT SPIN	....	....	SHORT SPIN	....	....
18	DRAIN	....	....	DRAIN	....	....

- Programme obtained with push-button 90°



2.3 PUSH-BUTTONS FUNCTIONS

2.3.1 ON/OFF

- Switches the appliance on and off (only some models).

2.3.2 Half load

- For VD4 function reduces the no. of rinses from 4 to 3 in COTTON cycles;
- For VD55 function reduces the no. of rinses from 3 to 2 in COTTON cycles.

2.3.3 Super rinse

- It fills water in two rinses of the cotton cycle at the second level instead of at first one (only in models with water fill at two levels).

2.3.4 Economy

- Reduces the washing temperature at 60° in 95° COTTON cycles (the programme duration remains unaltered).

2.3.5 90° Cotton

- In models with thermostats at fixed temperatures: performs the heating phase in COTTON cycles (n. 1 and 2) at 90° instead of 60°C.

2.3.6 Cold wash

- In models with fixed-temperature thermostats, disconnects the power supply to the heating elements.

2.3.7 Rinse hold

- Stops the appliance leaving water in the tub at the end of the final rinse (in cycles for SYNTHETICS, DELICATES and WOOL). If a jumper is fitted between timer contacts H2.1 and H2.2, this option can also be selected in cycles for COTTON. When the push-button is pressed again, the programme is completed with the phase of drain and spin.

2.3.8 Delicate spin

- Performs the function opposite to that of the "rinse hold" push-button.

2.3.9 No-spin

- It excludes all spin phases.

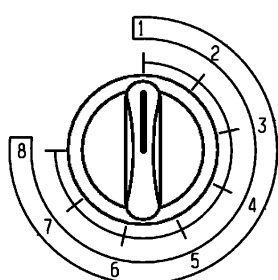
2.3.10 Spin reduction

- It reduces the final spins as shown in the table below. It can be of 2 types on the basis of how it is connected to the electronic control.

	COTTON (rpm)				SYNTETICS-WOOL-DELICATES (rpm)	
Final spin	600	800	900	1000	540	740
Push-button type 1	380	400	500	600	380	400
Push-button type 2	300	300	300	300	300	300

2.4 Spin speed selector

It is possible to select the speed of the final spins as shown in the table below, by means of a 8-position commutator (it does not affect the intermediate speeds).



		COTTON (rpm)				SYNTETICS-WOOL-DELICATES (rpm)	
Knob position	1	0	0	0	0	0	0
	2	300	300	300	300	300	300
	3	340	350	400	500	340	350
	4	380	400	500	600	380	400
	5	420	500	600	700	420	500
	6	460	600	700	800	460	600
	7	500	700	800	900	500	700
	8	600	800	900	1000	540	740

2.5 WASHING PROGRAMMES TABLE

Programme	Step	vd52_11 Basic functions (VD54)	level (*)	Time	Motor movement	VD55 (bridge JC)	Options									
							VD55 Rinses (prog. No. 5)	Cotton 60°	Cotton 40°	Synthetics 40°	Super rinse	Half load push-button	Wool	Spin reduction	No spin	Rinse hold push- button and Jumper J1
1	1	Load+heating+wash	2	P+9'	NA											
	2	Load+heating+wash	2	P+4.5'	NA											
	3	Drain		3'	DA											
2	4	Load+heating+wash	1	P+9'	NA											
	5	Load+heating+wash	1	P+9'	NA											
3	6	Load+heating+wash	1	P+4'	NA			P+9'								
	7	Load+heating+wash	1	P+9'	NA			P+9'								
	8	Load+heating+wash	1	P+6'	NA			P+4'								
4	9	Load+heating+wash	1	P+12'	NA			P+9'	P+9'							
	10	Load+heating+wash	1	P+12'	NA			P+6'	P+9'							
	11	Load+wash	1	P+12'	EA											
	12	Load+wash	2	P+3'	NA											
	13	Drain /RA		1.5'	DA Un	3"										
5	14	Load+wash/RA	2	P+14'	EA	3"	P+14"									
	15	Load+wash	2	P+4.5'	EA	2'NA	P+4.5'									
	16	Drain +spin		3'+TO	90°+90°DA+C2	C3.1	C3.2								X	
	17	Load+wash	2	P+3"	EA						P+1'					
	18	Load+wash	1	P+4.5'	EA						P+4'					
	19	Drain +spin		3'+TO	90°+90°DA+C2	C3.2	C3.2					90°off+ 90°DA			X	
	20	Load+wash	2	P+3"	EA						P+1'	3"				
	21	Load+wash	1	P+4.5'	EA						P+4'	90°DA				
	22	Drain +spin		3'+TO	90°+90°DA+C2	C3.2	C3.2								X	
6	23	Load+wash	2	P+4.5'	EA						P+5'					
	24	RA/ Rinse hold		3"	Off											∞
7	25	Drain		5"	Off											
	26	Drain+spin		3'+TO	3'DA+C1									X	X	
	27	STOP		∞	Off											
8	28	Load+heating+wash	2	P+9'	NA											
	29	Drain		4.5'	DA											
9	30	Load+heating+wash	1	P+4.5'	EA											
	31	Load+heating+wash	1	P+4.5'	NA											
10	32	Load+heating+wash	1	P+9'	NA					P+4.5'EA +4.5'NA						
	33	Load+heating+wash	1	P+12'	EA					P+9'NA						
	34	Load+wash	1	P+6'	NA					P+12'EA						
	35	Load+wash	1	P+12'	EA					P+6'NA						
	36	Load+wash	2	P+3'	NA											
	37	Drain		3'	DA											
11	38	Load+wash	2	P+4.5'	EA											
	39	Drain		3'	DA											
	40	Load+wash	2	P+4.5'	EA											
	41	Drain		3'	DA											
12	42	Load+wash	2	P+4.5'	EA											
	43	Rinse hold/RA		∞/3"	Off											∞
	44	Drain+spin		3'+TO	3'DA+C2	C3.2	C3.2							X	X	
	45	STOP		∞	Off											
13	46	Load+wash	2	P+3"	DA											
	47	Load+wash	2	3"	DA											
14	48	Load+heating+wash	2	P+18'	DA								6'D33+ 9'Off			
	49	Load+wash	2	p+6'	DA								6'D33			
	50	Drain		2'	Off											
15	51	Load+wash	2	P+6'	DA								6'D33			
	52	Drain		2'	Off											
	53	Load+wash	2	P+6'	DA								6'D33			
	54	Drain		2'	Off											
16	55	Load+wash	2	P+6'	DA								6'D33			
	56	Rinse hold/RA		∞/3"	Off											∞
17	57	Drain		5"	Off											
	58	Drain+spin		3'+TO	C2	C3.2	C3.2							X	X	
18	59	Drain		2'/4'	Off											
	60	STOP		∞	Off											

2.5.1 Programmes tables legend

- * In models with one-level pressure switch, all water fills are performed at the same level
- P** 1st level water fill time
- '** Minutes
- "** Seconds
- RA** Rapid advance
- TO** Spin max. time (timeout)

2.5.2 Motor Movements

Type	Phase duration (minutes)	Drum speed (rpm)	Movement (sec)	Pause (sec)
DA33	6'	33	4	40
DA	1.5'	55	4	12/3
DA	3'	55	4	11
DA	6'	55	7	19
DA	12'	55	7	19
NA	2'	55	10	15
NA	3'	55	7	6
NA	4.5'	55	10	9
NA	6'	55	14	12
EA	4.5'	55	14	5
EA	6'	55	19	7
DA Un	1.5'	55	Unidirectional movement	
Off	Motor stopped			

2.6 SPIN

2.6.1 Spin anti-unbalancing

The anti-unbalancing control of the load is performed during the 85 rpm movement before the spin phase. If the washing load is particularly unbalanced, the motor is stopped and then the ramp is repeated at 85 rpm.

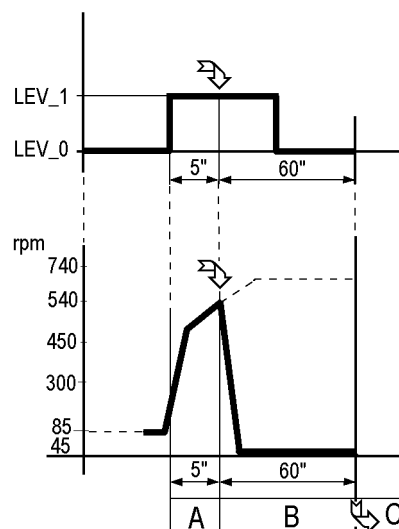
If the load is still unbalanced, this procedure is repeated for several times and after a time of 4-5 minutes, the timer passes to the subsequent phase without performing any spin cycle.

2.6.2 Safety against foam

During spin phases, the electronic control checks the correct position of the pressure switch contact (1st level), which has to be on "empty".

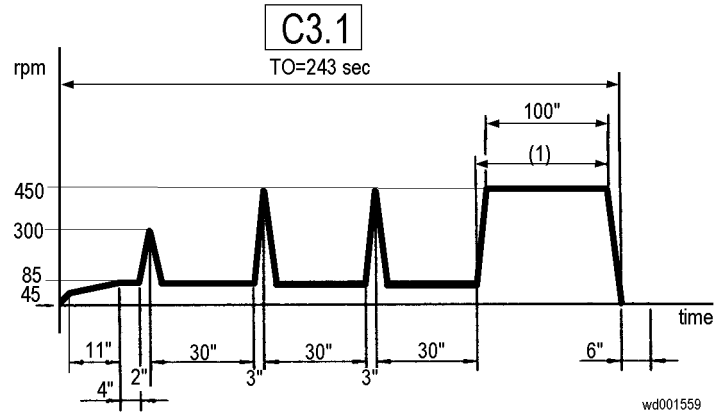
If the contact should remain closed on "full" for at least 5 seconds, the electronic control cuts power to the motor, then a one-minute drain phase is performed and then the timer passes to the subsequent step.

- LEV_0** pressure switch on "empty"
- LEV_1** pressure switch on "full"
- A** closure time of pressure switch on full
- B** drain phase with motor stopped
- C** timer advance



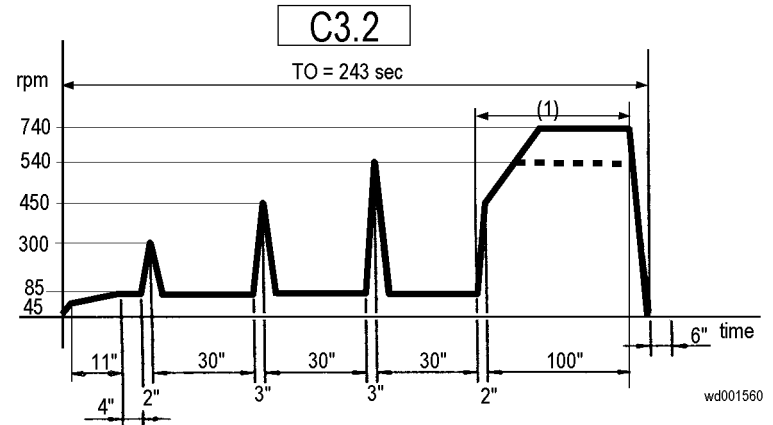
2.6.3 Spin C3.1

- COTTON rinses first intermediate spin in VD55 function



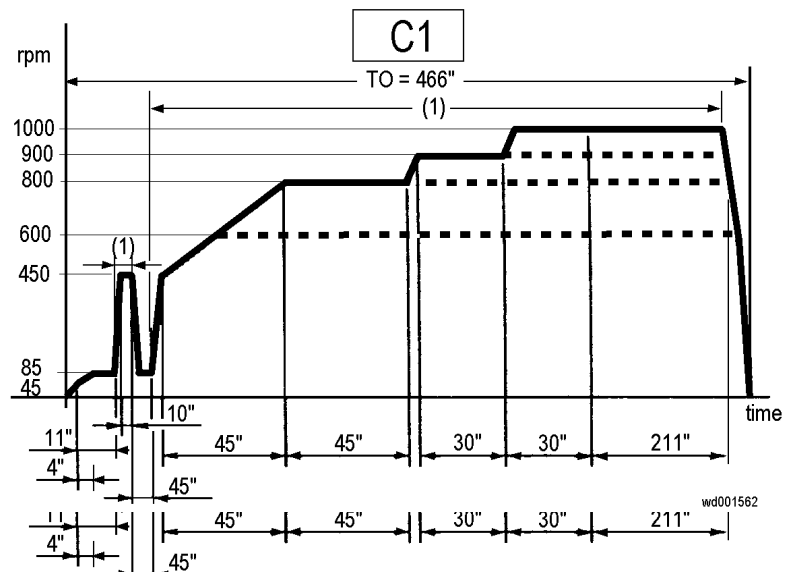
2.6.4 Spin C3.2

- COTTON rinses intermediate spins in VD55 function
- DELICATES and WOOL final spins in VD55 function



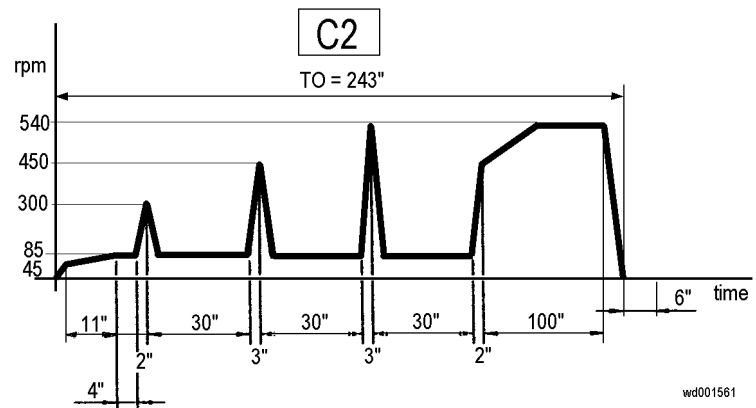
2.6.5 Spin C1

- COTTON final spin



2.6.6 Spin C2

- COTTON rinses intermediate spins in VD54 function
- DELICATES and WOOL spins in VD54 function



Notes

(1) = phase during which the anti-foam control is active

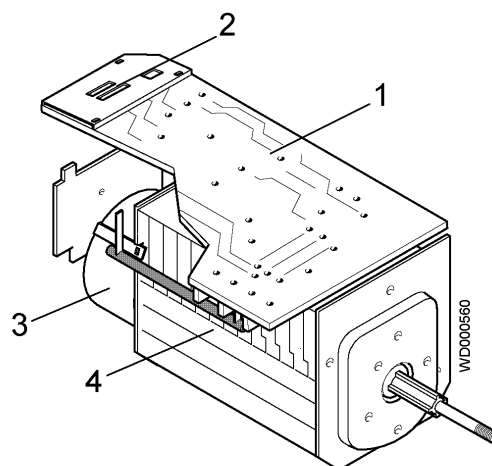
TO = max. time (timeout)

3 TECHNICAL CHARACTERISTICS

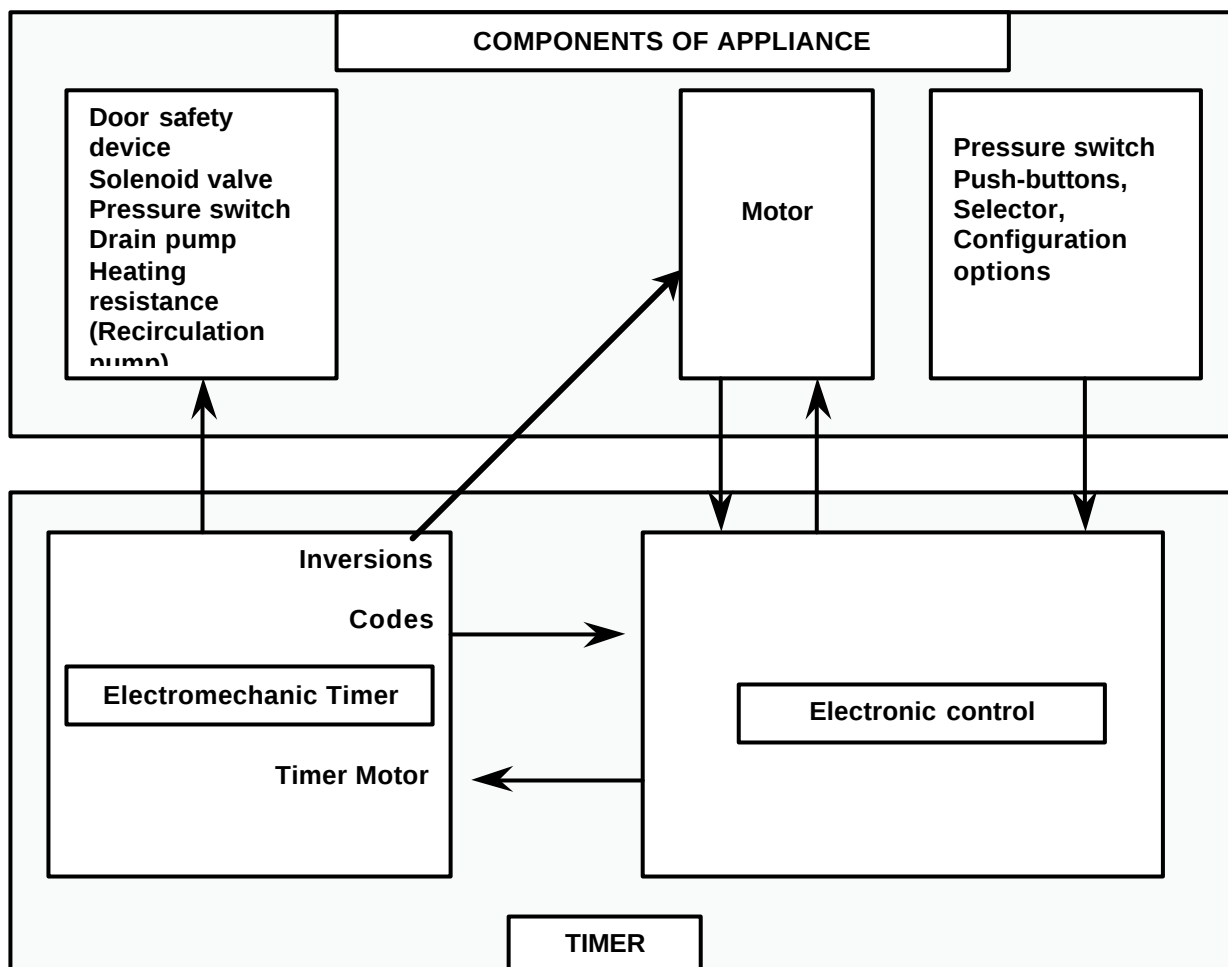
3.1 HYBRID TIMER

This timer consists of two components: the electromechanic timer and the electronic board; the electronic board is welded directly to the timer connectors.

1. *Electronic control*
2. *Microprocessor*
3. *Timer motor*
4. *Electromechanic timer*



3.2 Timer operating principle

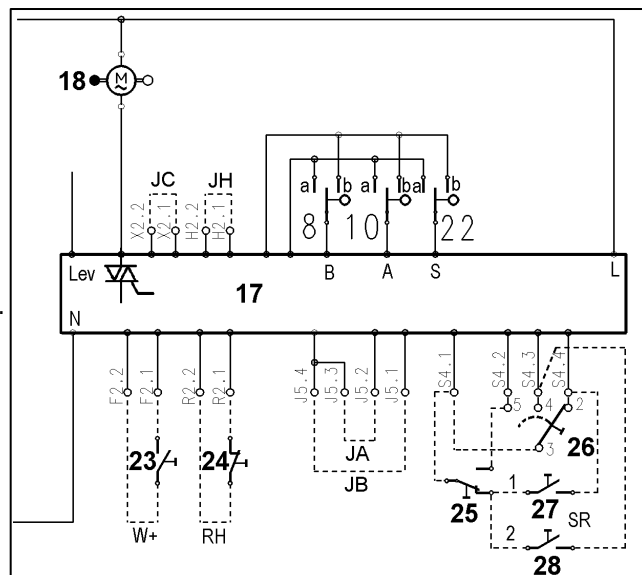


3.2.1 Washing programme control

The timer, through the closure of a series of contacts (8-a, 8-b, 10-a, 10-b), transmits to the electronic control (17) the codes that define what operations must be carried out in the various steps.

The electronic board, on the basis of the appliance configuration and of the selected options (push-buttons and selector 23÷28) controls the washing cycle:

- checks the closure of pressure switch
- powers the timer motor (18) through a TRIAC to control sense and time of direction of the drum and to advance in the various steps.

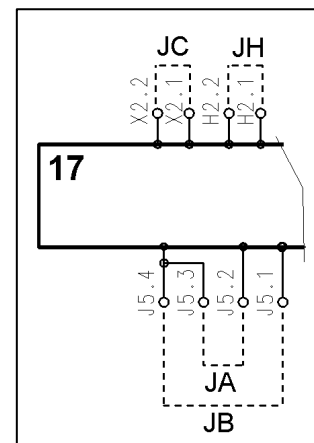


3.2.2 Configuration of timer function

17 Electronic control of timer

JC Connector which determines the **function** of timer

- **VD54** if there is no jumper between X2.1-X2.2:
 - 4 rinses in cotton cycle
 - cotton rinses intermediate spins and final synthetics, delicates and wool at 540 rpm.
- **VD55** if there is a jumper between X2.1-X2.2:
 - 3 rinses in cotton cycle
 - cotton rinses intermediate spins and final synthetics, delicates and wool at 740 rpm.



JH This connector is used in conjunction with the push-button "**rinse hold**":

- if there is no jumper between H2.1-H2.2, when the push-button is pressed there is the rinse hold function in synthetics, delicates and wool cycles
- in case there is a jumper between H2.1-H2.2 this function is performed also at the end of rinses of cotton cycles

JA, JB Connectors which determine, in function of the different models, the transmission relation between motor pulley / drum pulley and the speed of **final spin**

JB	JA	Transmission relation	Max. spin
0	0	1/18	600
0	1	1/18	800
1	0	1/14	900
1	1	1/14	1000

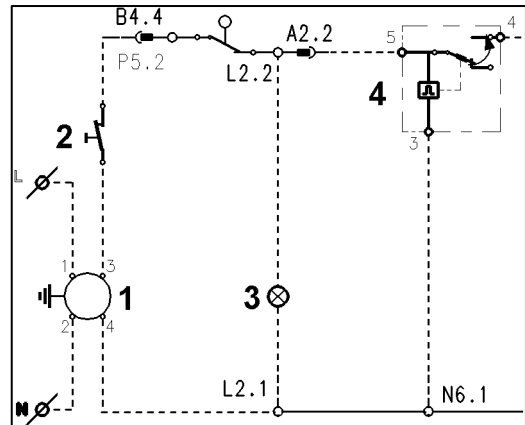
3.3 DESCRIPTION OF MAIN FUNCTIONS

3.3.1 Door closure

The door safety device is powered through the closure of contacts of the main switch and by the B4.4-A2.2 timer contact.

A few seconds after the switching on, the door is locked and the device contact closes powering the appliance (contact 5-4).

1. Interference suppressor
2. ON/OFF push-button (some models)
3. Pilot lamp
4. Door safety device



3.3.2 1st level water fill

The water fill solenoid valve (7) is powered in the following way:

All models:

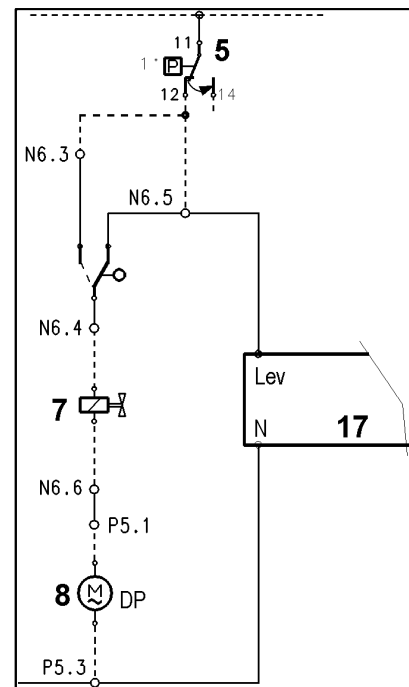
- 1st level pressure switch contact (5) closed on “empty”
- closure timer contact N6.4-N6.5
- drain pump winding (10).

Models with one level:

- at some steps the supply occurs also through the closure of contact N6.4-N6.3

Control of pressure switch closure

- The control of the position of pressure switch contact (empty or full) is detected by the electronic board (17) through “sensing” line (Lev).

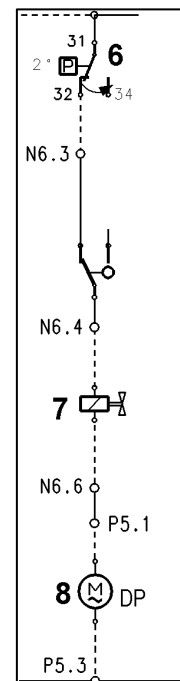


3.3.3 2nd level water fill

Models with two levels

To fill water at 2nd level, the solenoid valve (7) is powered in the following way:

- 2nd level pressure switch contact (6) closed on “empty”
- closure of timer contact N6.4-N6.3
- drain pump winding (10).



3.3.4 Heating

The heating element (10) is powered in the following way:

- first level pressure switch (5) closed on full
- safety pressure switch (12) closed on full
- closure of timer contact A2.1-B4.2
- 90° adjustable or fixed thermostat normally closed (11)

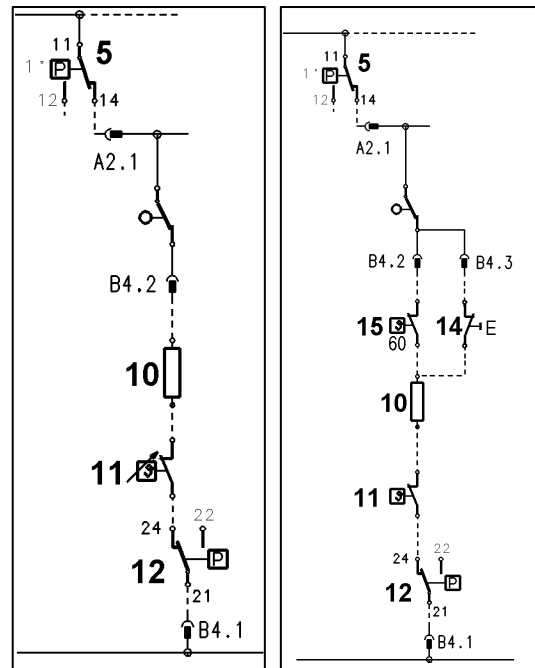
Warning!

This timer is "thermogradual", therefore the heating time of water is predetermined. Through the adjustable thermostat you can diminish the prefixed temperature of the selected cycle, but the performing time does not change.

Economy/90° Push-button

In some models with fixed temperatures it is possible that the heating is powered through a two-temperature thermostat:

- a 90° thermostat normally closed (11)
- a 60° thermostat normally closed (15)
- a push-button (14) can be of two types:
 - **E**: this push-button is normally closed, if pushed the heating temperature of 90° cotton cycles will be reduced to 60°C
 - **90°**: this push-button is normally open and the heating temperature of cotton cycles will be limited to 60°C, if pushed will be increased to 90°C.



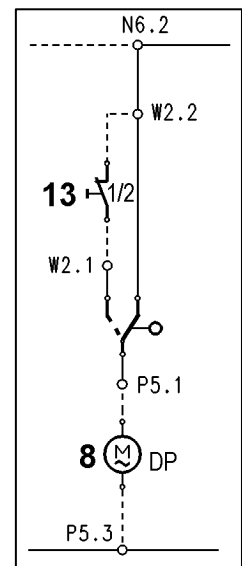
3.3.5 Drain

The drain pump is powered:

- Normally through P5.1-W2.2 contact timer
- At 19 step by half load push-button (if present) and by P5.1-W2.1 timer contact

3.3.6 "Half load" push-button

If pushed the drain with spin is not carried out at step 19, thus saving a water fill in cotton rinses.

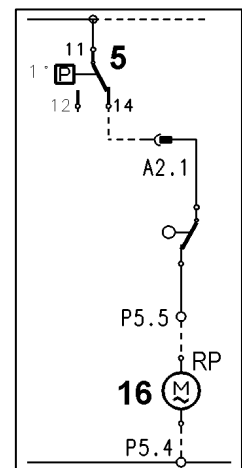


3.3.7 Recirculation pump (some models)

The recirculation pump (16) is powered in the following way:

- first level pressure switch (5) closed on full
- closure of timer contact P5.5-A2.1

(the timer with contact P5.5-A2.1 has specific codes)

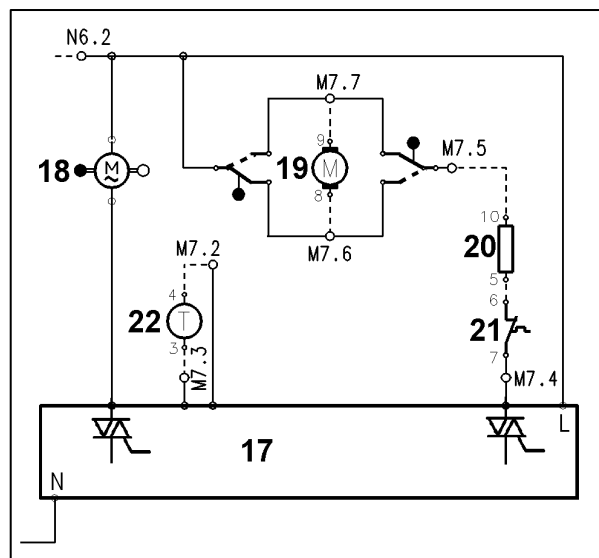


3.3.8 Drum rotation motor

- 17 Electronic control
- 18 Timer motor
- 19 Rotor
- 20 Stator
- 21 Moto-protector
- 22 Tachymetric generator

The motor is powered by the electronic control through a triac; the rotation speed is regulated on the basis of the sound emitted by the tachymetric generator.

The sense of motor rotation is determined by two secondary cams of timer (fast), that action the contacts to reverse the connection between rotor and stator.



- "A" position of timer cam
- "B" advance time when the motor timer is powered continuously
- "C" example of advance times during cycle (NA-3'): the electronic control powers the timer motor at intervals ("stop and go") to obtain the rotation and pause times suitable to the programme phase that is running.
- "D" sense of rotation of motor pulley drum rotation:
 - **CW**: clockwise
 - **ACW**: anti-clockwise

"D"	CW	OFF	ACW	OFF	CW	OFF	ACW	OFF	CW	OFF	ACW	OFF	CW	OFF	ACW	OFF
"C"	7"	6"	7"	6"	7"	6"	7"	6"	7"	6"	7"	6"	7"	6"	7"	6"
"B"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"	2.5"
"A"	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
N6.2-M7.6																
N6.2-M7.7																
M7.5-M7.7																
M7.5-M7.6																

3.3.9 Motor protection

Power Triac for motor short-circuited

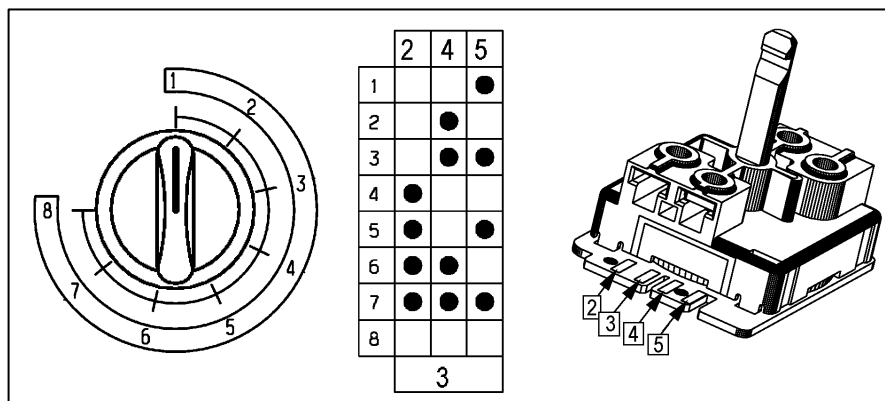
In case the triac for power motor is short-circuited, the electronic control moves the fast cams of timer in the position in which the motor is not powered. After 30 seconds it powers the motor again; if after 3 attempts the defect persists, the motor is not powered anymore and the timer remained locked in the position where it is.

Faulty tachymetric generator or other problems of the motor

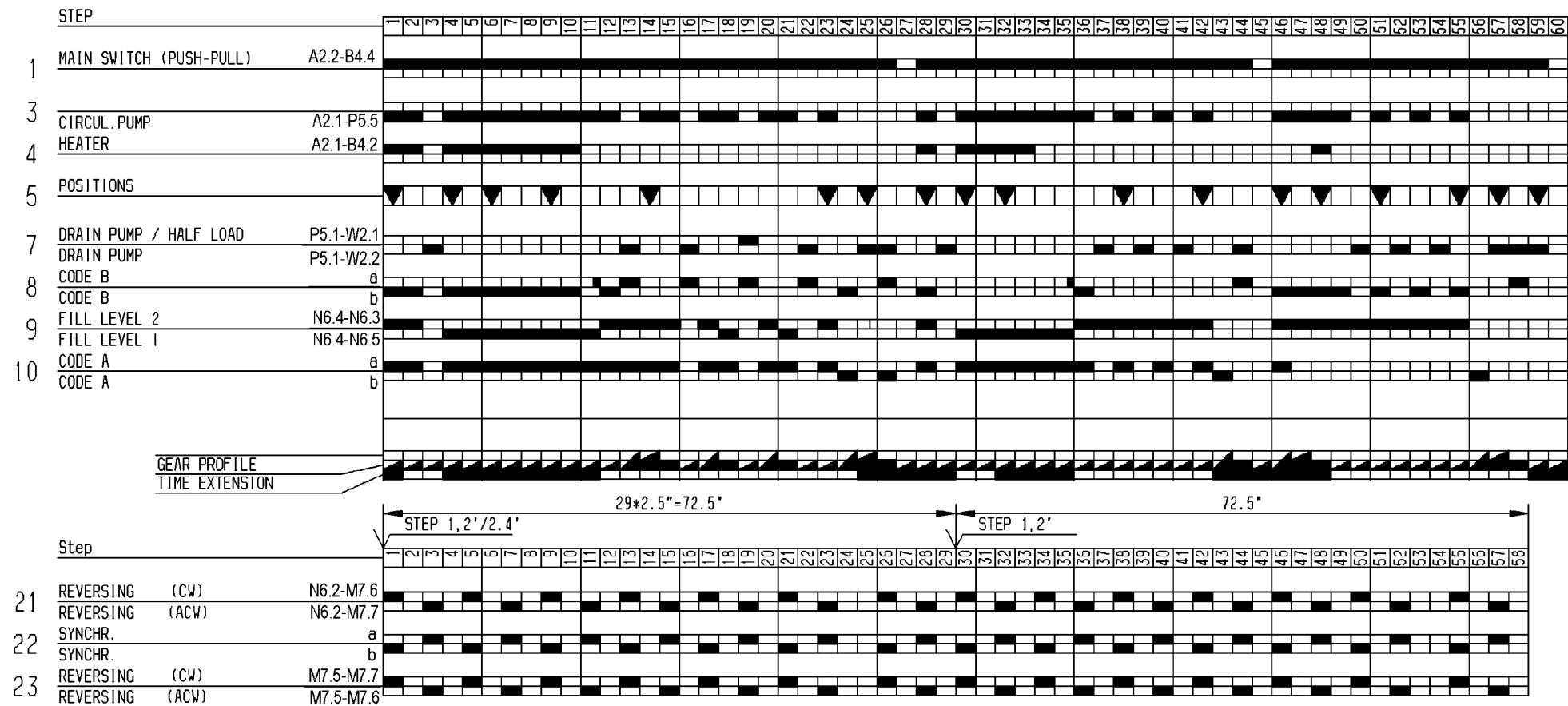
In case of detecting of an error of the tachymetric generator, the electronic control cuts power to the motor for 30 seconds and then tries to power the motor again. If the defect persists, this sequence of attempts of motor power is repeated every 30 seconds till the end of the cycle.

3.3.10 Spin speed selector

In some models it is possible to find a 8-position speed selector to regulate the speed of final spins.

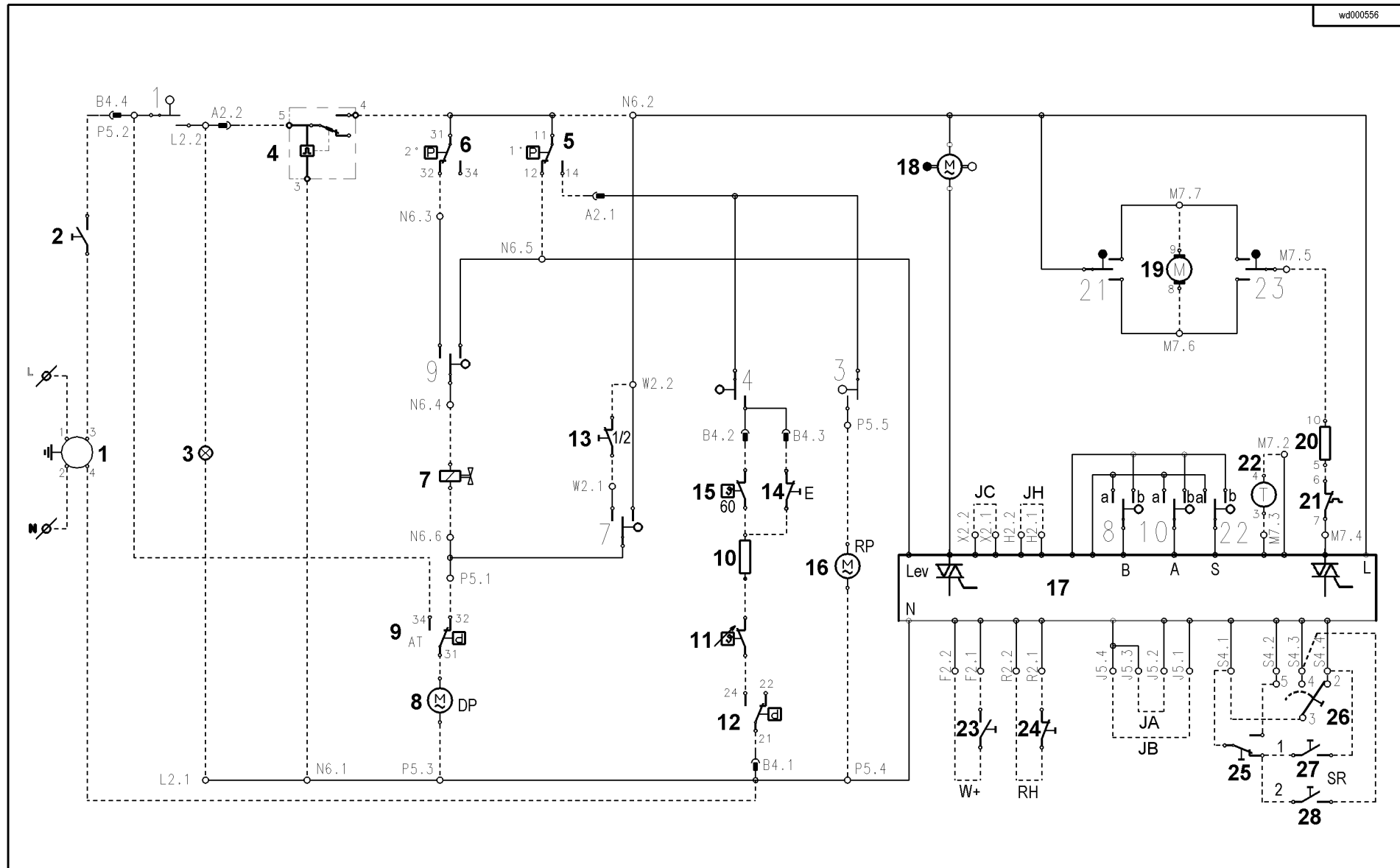


4 TIMER DIAGRAM

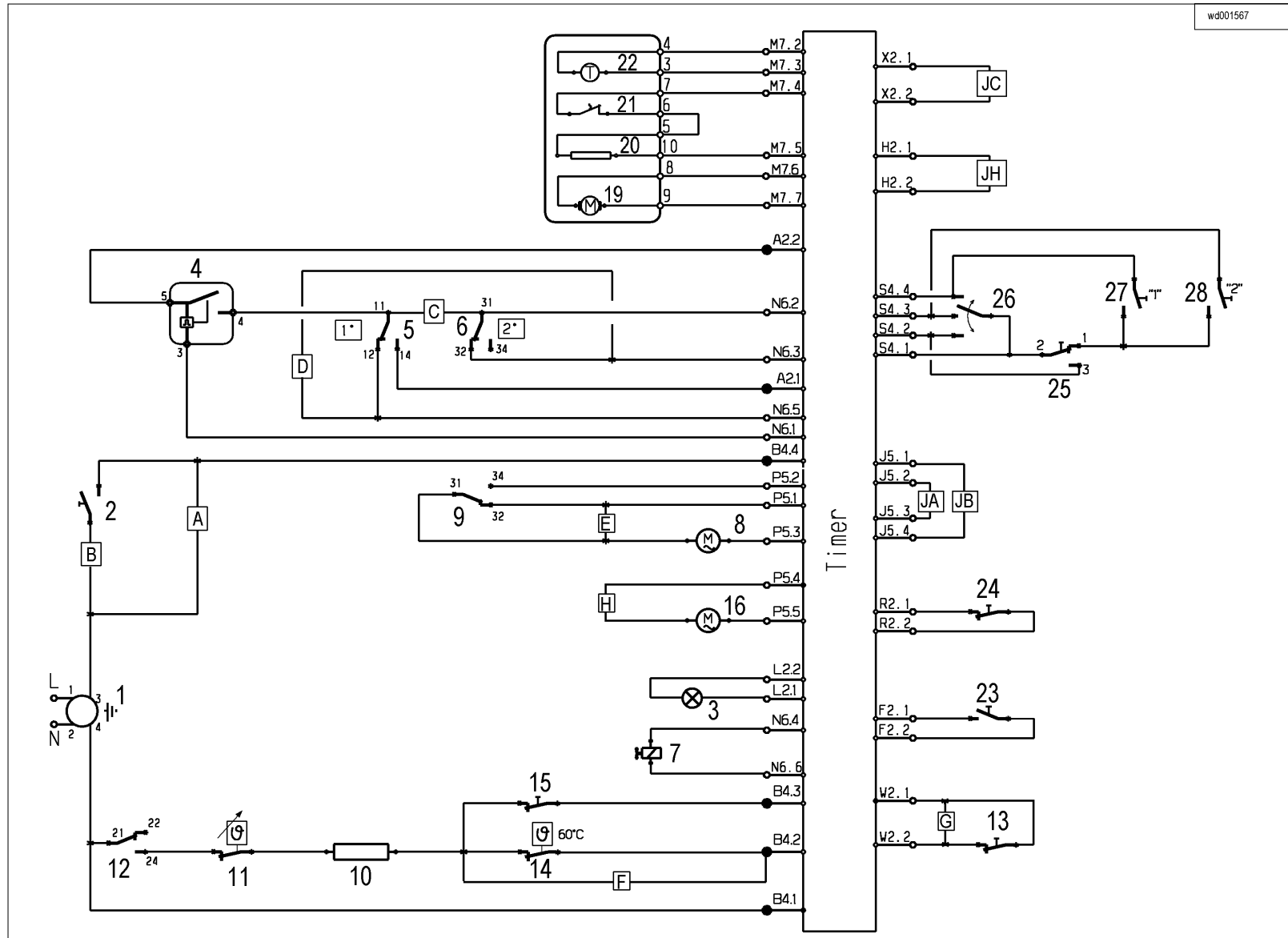


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5 BASIC CIRCUIT DIAGRAM



5.1 Diagram of the versions for each model



5.2 Diagram key

1 Interference suppressor 2 ON/OFF push-button 3 Pilot light 4 Door safety device 5 Pressure switch (1st level) 6 Pressure switch (2nd level) 7 Cold water solenoid valve 8 Drain pump 9 Pressure switch (antioverflow)	10 Washing heaters 11 Adjustable thermostats 13 Pressure switch (safety heater) 13 Half load push-button 14 Economy push-button 15 60°C Thermostat 16 Recirculation pump 17 Electronic control 18 Timer motor	19 Rotor 20 Stator 21 Motor protection 22 Tachymetric generator 23 Super-rinse push-button 24 Rinse hold push-button 25 No spin push-button 26 Speed regulator 27 Spin reduction push-button (type 1) 28 Spin reduction push-button (type 2)
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- A** Connection for models without ON/OFF push-button (push-pull)
- B** Connection for models with ON/OFF push-button
- C** Connection for models with 2-level pressure switch
- D** Connection for models with 1-level pressure switch
- E** Connection for models without antioverflow pressure switch
- F** Connection for models without Economy push-button - 90° and without 60°C thermostat
- G** Connection for models without half load push-button
- H** Only for models with recirculation pump

6 TEST CYCLE AND TROUBLESHOOTING

6.1 Test cycle of VD54/55 timer

Find below a short cycle to be used to check the different functions of the appliance.

VD54/55 Timer test			
Phase	Position the knob on the programme	Step	Functions to check
1	Select: 1 - COTTON WITH PREWASH and switch the appliance on	1	- Door closure - Water fill of prewash tub (without waiting for the level)
2	Move the knob on: 2 - 90°C COTTON (adjustable thermostat on 30°)	4	- Water fill of wash tub 1st level pressure switch closure - Motor rotation at low speed - Heating (By rotating the adjustable thermostat on cold wash, the heating resistance is excluded)
3	Move the knob on: 16 – DELICATES CONDITIONER	55	Water fill at 2nd level conditioner tub (in models with two levels)
4	Advance the knob of one position: DELICATES CONDITIONER + one position (push rinse hold push-button, if present)	56	Rinse hold (if rinse hold push-button is present, push the button again to check the timer advance)
5	Move the knob on: 7 – COTTON SPIN	25-26	- Drain + motor inversions at low speed - Cotton spin – see profiles at page 9. At 26 step control: - No spin push-button - Spin reduction push-button - Spin speed selector

Notes:

- The possible water fill in bleacher tub is to be checked at 14 step.
- The water fill in conditioner tub can be controlled at steps 23-42-55.
- The half load push-button should be controlled at step 19: when it is pushed it interrupts the operation of the drain pump.
- The no spin push-button cancels all spin cycles (steps 16-19-22-26-44-58)
- The rinse hold push-button, if there is the jumper JH, stops the appliance with water in tub also in cottons (step 24)
- Particular defects must be checked in the specific timer position.

6.2 Troubleshooting

TYPE OF FAULT		POSSIBLE CAUSES/COMPONENTS TO CHECK	Phase of test cycle
WASHING MACHINE DOES NOT START	Pilot lamp off	Supply cable; interference suppressor; ON/OFF switch – if present; interference suppressor wiring-timer (B4.4 -B4.1); timer (contact closure B4.4 - A2.2)	1
	Pilot lamp on	Door safety device; door delayer wiring-timer (A2.2- N6.2 - N6.1); timer (internal circuits)	1
IT DOES NOT FILL WATER		Tap closed; insufficient water pressure; water fill solenoid valve; solenoid valve wiring-timer (N6.4 - N6.6); 1st level pressure switch does not close on empty; pressure switch hydraulic circuit (clogging); pressure switch-timer wiring (N6.5); drain pump-timer wiring or interrupted drain pump winding (P5.1-P5.3); timer (contact closure N6.5-N6.4)	1-2
IT FILLS WATER CONTINUOUSLY	It fills water also with appliance off	Solenoid valve mechanically blocked	2
	It fills beyond the level	Pressure switch, pressure switch hydraulic circuit (leakage of pressure switch tube, pressure chamber clogging)	2-3
	It does not reach the level	Drain tube too low positioned or problems with the house drainage system; leakage of hydraulic circuit of the appliance	2-3
INCORRECT WATER LEVEL		Non-calibrated pressure switch; pressure switch hydraulic circuit clogged	2-3
IT DOES NOT FILL WATER AT 2ND LEVEL		2nd level pressure switch does not close on "empty"; pressure switch-timer wiring (N6.3); timer (contact closure N6.3-N6.4)	3
IT DOES NOT WARM		Faulty heating resistance; safety heater pressure switch contact does not close on "full"; thermostat contact open; resistance-thermostats-pressure switch-timer wiring (A2.1-B4.2-B4.3-B4.1); timer (contact closure A2.1-B4.2/B4.3)	2
INCORREC TEMPERATURE		Non-calibrated thermostats; low voltage; timer (contact A2.1-B4.2/B4.3 does not close on all foreseen positions)	2
RECIRCULATION PUMP DOES NOT WORK (only in jetsystem models)		Faulty recirculation pump; recirculation pump-timer wiring (P5.4-P5.5); timer (contact closure A2.1-P5.5)	2



TIPY OF FAULT	POSSIBLE CAUSES/COMPONENTS TO CHECK	Phase of test cycle
MOTOR NEVER STARTS	motor (stator, rotor, moto-protector, brushes) (see 62.1 page 22); motor - timer wiring (M7.4-M7.5-M7.6,M7.7); timer	2-5
MOTOR TURNS FOR A SECOND, THEN STOPS FOR 30 SECONDS (sequence repeated max. 3 times, then the timer stops)	Timer	2-5
MOTOR TURNS FOR A SECOND, THEN STOPS FOR 30 SECONDS (the cycle continues)	motor (tachymetric generator) (see 6.2.1 page 22); tachymetric generator - timer (M7.2- M7.3) wiring; timer	2-5
MOTOR TURNS ONLY IN ONE SENSE	timer	2
ONLY SPIN CYCLE OPERATES	timer; wiring (S4.1-S4.4, S4.1-S4.3); spin speed selector; spin reduction push-button; no spin push-button	2-5
MOTOR DOES NOT PERFORM THE CORRECT SPEED	timer J5.1-J5.4, J5.2-J5.3 wiring (see specific electric diagram of the model); wiring (S4.1-S4.4, S4.1-S4.3); spin reduction push-button; timer	2-5
IT DOES NOT DRAIN	Drain pump; drain pump - timer (P5.1-P5.3) wiring; timer (contacts closure N6.2-P5.1); antioverflow pressure switch, if present	5
TIMER DOES NOT ADVANCE	timer	1, 5
CYCLE IS NOT CORRECT	Options wirings; push-buttons and relative wiring; timer	1, 5
CYCLE OPTIONS INCORRECT	Check the various push-buttons and relative wiring; timer	1, 5

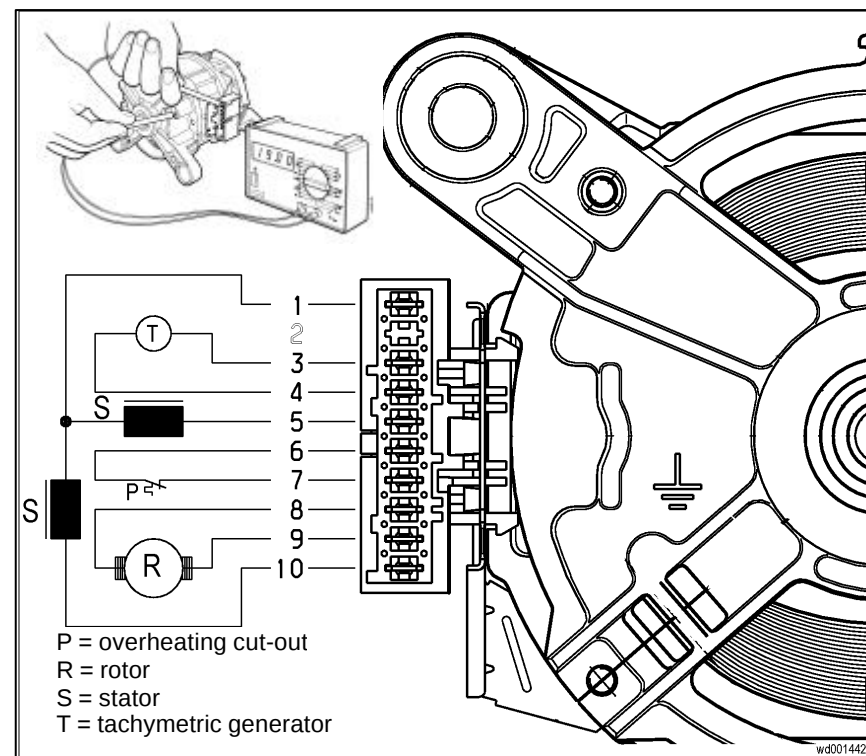
6.2.1 Checking the commutator motors

- 1) Check the connector blocks (wiring) and check for detached or bent terminals.
- 2) Check for the presence of traces / residue / build-up of water or detergent, and identify the source.
- 3) Use a tester with a minimum scale of 40 Mohm to check for windings or other components that are connected to mass or poorly earthed (read ∞) across each terminal and the casing.
- 4) Check that each of the windings is as shown in the table below

Motor terminals	Check:	SOLE Motor [W]	F.H.P. Motor [W]	CE.SE.T. Motor [W]
3 - 4	Tachymetric generator winding	171 ÷ 196	126 ÷ 147	64 ÷ 73
		469 ÷ 540		
5 - 10	Stator winding (full range)	1.0 ÷ 2.2	1.0 ÷ 3.0	1.0 ÷ 2.0
6 - 7	Overheating (cut - off)	0	0	0
8 - 9	Rotor winding	1.5 ÷ 3.0	1.5 ÷ 3.0	1.5 ÷ 3.0

Note:

When checking the rotor winding, the measurement should be taken around the entire perimeter, turning the shaft very slowly and checking for the presence of short-circuits between the visible plates. Check the brushes for wear.



6.3 Timer connectors

(Disconnect all connectors before measuring the contacts!)

6.3.1 Burns on the timer electronic board

In case of burning of the printed circuit of the timer, check that the problem is not caused by another electrical component (short circuits, poor insulation, water leakage etc.). Identify the timer connector that is connected to the burnt-out track and check the wiring that powers the affected component.

