



SERIES 7	SERIES 8	SERIES 9

© ELECTROLUX HOME PRODUCTS
 Customer Care - EMEA
 Training and Operations Support
 Technical Support

Publication
 number

599 77 23-65

EN

Edition: 06/2015 - Rev. 03

**Washing machines
 with electronic control
 system**

**EWX11831
 EWX14931
 UIMC / EMC14
 Inverter**

**Technical and functional
 characteristics**

**NEW
 COLLECTION**

**SERIES
 7/8/9**

INDEX

1	PURPOSE OF THIS MANUAL.....	6
2	WARNINGS.....	7
3	SERIES 7	8
3.1	General characteristics	8
3.2	Control panel.....	9
3.2.1	Styling.....	9
3.2.2	Control panel configuration	10
3.2.2.1	Programme selector (S1)	10
3.2.2.2	Programme configuration	10
3.2.2.3	Pushbuttons – LEDs and LCD	11
3.2.2.4	Buzzer	15
4	SERIES 8	16
4.1	General characteristics	16
4.2	Control panel.....	17
4.2.1	Styling.....	17
4.2.1.1	Control panel configuration	18
4.2.1.2	Programme selector (S1)	18
4.2.1.3	Programme configuration	18
4.2.1.4	Pushbuttons – LEDs and LCD	19
4.2.1.5	Buzzer	22
4.2.1.6	Weight sensor (where featured).....	23
4.2.1.6.1	Enabling/Disabling the weight sensor.....	23
5	SERIES 9	24
5.1	General characteristics	24
5.2	Control panel.....	25
5.2.1	Styling.....	25
5.2.1.1	Control panel configuration	26
5.2.1.2	Initial Start up	26
5.2.1.2.1	Set Language	26
5.2.1.2.2	Setting the time of day	26
5.2.1.3	Programme selector (S1)	26
5.2.1.4	Programme configuration	26
5.2.1.5	Pushbuttons – LEDs and LCD	27
5.2.1.6	Buzzer	31
5.2.1.7	Weight sensor (where featured).....	31
5.2.1.7.1	Enabling/Disabling the weight sensor.....	31
6	“DEMO” MODE.....	32
6.1	Access to DEMO settings	32
6.2	Exiting DEMO mode.....	32
7	DIAGNOSTICS SYSTEM.....	33
7.1	Accessing diagnostics.....	33
7.2	Quitting the diagnostics system	33
7.3	Phases of the diagnostics test	34
8	ALARMS.....	36
8.1	Displaying user alarms.....	36
8.2	Reading the alarms	36
8.3	Rapid reading of alarms	37
8.4	Deleting the last alarm	37
9	OPERATING TIME COUNTER.....	38
9.1	Reading the operating time	38
9.2	Display of total operating time.....	38
10	OPTIONS	39
10.1	Compatibility between options	39
10.2	Description of options.....	40
11	Generating STEAM	41
12	TECHNICAL CHARACTERISTICS	42
12.1	Construction characteristics	42
12.2	Detergent dispenser.....	43
12.2.1	Detergent dispenser with multi-way solenoid valves	43
12.2.2	Operating principle of 4-compartment conveyor	43
12.3	Detergent dispenser.....	44
12.3.1	Arranging the flap in the detergent dispenser	44
12.4	Washing unit	45

12.5	Water circuit	46
12.5.1	OKO version drain circuit	46
12.5.2	JET version drain circuit	46
12.5.3	JET circuit.....	46
12.5.4	New Filter dial	47
12.6	Electronic control.....	47
12.6.1	Programming/Updating the main circuit board.....	47
12.7	Electronic control.....	48
13	ELECTRICAL COMPONENTS	50
13.1	Noise filter	50
13.1.1	General characteristics	50
13.2	Display board	50
13.3	Drain pump - Aqua control	51
13.3.1	General characteristics	51
13.4	Aqua control (where featured).....	52
13.4.1	General characteristics	52
13.5	Heating element	53
13.5.1	General characteristics	53
13.6	Temperature probe	54
13.6.1	General characteristics	54
13.7	Analogue pressure switch	55
13.7.1	General characteristics	55
13.8	Shock absorber with weight sensor (where featured).....	56
13.8.1	General characteristics	56
13.8.2	Operating principle	57
13.9	Door safety interlock	58
13.9.1	General characteristics	58
13.9.2	Operating principle	58
13.10	Three-phase asynchronous motor – Inverter & Three-phase synchronous motor with permanent magnets 60	
13.10.1	General characteristics & Power supply to motor	60
13.10.2	Operating principle	61
13.11	Inverter UIMC & EMC14	62
13.11.1	General characteristics	62
13.12	Circulation pump (where featured).....	63
13.12.1	General characteristics	63
13.13	Solenoid valves	63
13.13.1	General characteristics	63
13.13.1.1	Operating principle	64
13.13.1.2	Mechanical jamming of the solenoid valve.....	64
13.13.1.3	Low water pressure	64
13.14	Flowmeter (where featured).....	65
13.14.1	General characteristics	65
13.14.2	Operating principle of the flowmeter	66
13.15	Drum light (where featured)	67
14	ALARM SUMMARY TABLE	68
15	DIAGRAMS	75
15.1	EWX11831 Diagram with THREE-PHASE ASYNCHRONOUS MOTOR	75
15.1.1	Key to diagram	76
15.2	EWX14931 Diagram with THREE-PHASE ASYNCHRONOUS MOTOR	77
16	ACCESS.....	78
16.1	Worktop.....	78
16.2	From the worktop, you can access	78
16.2.1	EWX11831 Main board	78
16.2.2	EWX14931 Main board	80
16.2.3	Solenoid valve	83
16.2.4	Control panel.....	83
16.2.5	Display board/light diffuser/button springs/buttons assembly.....	84
16.2.6	Analogue pressure switch	87
16.2.7	Detergent dispenser.....	87
16.2.8	Detergent fill pipe	88
16.2.9	Upper counterweight	88
16.3	Accessing the front part	88
16.3.1	Door hinge - Door.....	88
16.3.2	Door safety interlock	89

16.3.3	Drum light	90
16.3.4	Bellow seal	91
16.3.5	Blade	92
16.3.6	Front panel	94
16.4	From the front panel, you can access	95
16.4.1	JET water jet	95
16.4.2	Front counterweight	96
16.4.3	Shock absorber with/without weight sensor	96
16.4.4	Drain water circuit	97
16.4.5	Pressure chamber	97
16.4.6	Tub suspension springs	99
16.4.7	Shock absorber pin	100
16.5	Accessing the rear part	101
16.5.1	Back panel.....	101
16.6	From the back panel, you can access	101
16.6.1	Belt	101
16.6.2	Plastic pulley	102
16.6.3	Inverter	102
16.6.4	Motor	103
16.6.5	Heating	103
16.6.6	Water control.....	103
16.6.7	Shock absorbers	104
16.6.8	Welded tub assembly.....	104
16.6.9	Drain pipe/cabling support	104
16.6.10	Drain pipe fastener.....	104
16.6.11	Main drain pipe.....	105
16.6.12	Power supply cable clamp	105

1 PURPOSE OF THIS MANUAL

The purpose of this manual is to provide service engineers who are already familiar with the repair procedures for traditional washing machines with information regarding washing machines fitted with the EWX11831 and EWX14931 electronic control system (SERIES 7/8/9).

Previous platforms (electronic/mechanical) used a safety pressure switch that checked the minimum water level in the tub, below which the supply to the heating element was interrupted.

The current electronic appliances manufactured (EWX11831 and EWX14931 platform) use a heating element with thermal fuses (inside its branches) for safety, which interrupt in case of temperature overload caused by the water level dropping below the minimum level permitted.

The incorporated NTC probe contacts have a 2.5 mm pitch.

The manual deals with the following topics:

- General characteristics
- Control panel and compatibility between washing programmes and options
- Settings: Demo, Diagnostics
- Alarms
- Technical and functional characteristics
- Access

Low consumption mode

In order to reduce electricity waste when the cycle is not running, the appliances on this platform are designed to enter consumption reduction mode.

“Stand-Off” mode

When the appliance is switched off at the ON/OFF button, it is in the “Stand-Off” or “virtual” off status. The LEDs and the LCD screen are turned off and the buttons are disabled, although the main circuit board and certain electrical components are electrically powered.

“Auto-off” mode

If, after 5 minutes, during the programme selecting phase or after the end of the cycle, the appliance receives no further instructions, it is automatically turned off (for energy savings in conformity with the standards on energy consumption).

All the settings are stored so that when the appliance is turned back on, the programme is ready or if the auto-off mode was triggered after the end of the cycle, the user can see that the cycle ended normally, and can restart it if necessary.

You have to unplug the appliance to cut off the power supply

“Zero Watt” mode

Some appliances are fitted with a circuit (in the main circuit board) called Zero Watt (0 Watt with an actual consumption ~50 mW) which cuts off the power supply to the appliance:

- a.) When you press the ON/OFF button to turn off the appliance, the Zero Watt circuit is triggered and cuts off the supply voltage after a few seconds, just long enough to secure the washing machine (motor off, door locked, etc...), the cycle and any options selected are reset, so that the next time the appliance is turned on, it is ready to perform the programme.
(To open the door, you will have to wait one or two minutes for the door safety lock to be released).
- b. If, after 5 minutes, during the programme selecting phase or after the end of the cycle, the appliance receives no further instructions, it is automatically turned off and the Zero Watt circuit which cuts off the supply voltage is triggered (for energy savings in conformity with the standards on energy consumption). All the settings are stored so that when the appliance is turned back on, the programme is ready or if the auto-off mode was triggered after the end of the cycle, the user can see that the cycle ended normally, and can restart it if necessary.

If an alarm goes off when a wash programme is running, the automatic turn off is disabled showing the alarm.

2 WARNINGS



- Any work on electrical appliances must only be carried out by qualified personnel.
- Before carrying out work on the appliance, use suitable instruments to check that the power supply system in the house is fully efficient. For example: refer to the indications provided/illustrated in the <<metratester>> course at the address (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.
- On completing operations, check that the appliance has been restored to the same state of safety as when it came off the assembly line.
- If the circuit board has to be handled/replaced, use the ESD kit (Cod. 405 50 63-95/4) to avoid static electricity from damaging the circuit board, see S.B. No. 599 72 08-09 or consult the course <<Electrostatic charges>> at the address (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.
- This platform is not fitted with an ON/OFF switch. Before you access internal components, take the plug out of the socket to cut the power supply.
- Make resistance measurements, rather than direct voltage and current measurements.
- Warning the sensors located on the display board could be at a potential of 220 Volts.
- When replacing the heating element, replace it with one that has the same characteristics (2 thermal fuses) in order not to compromise the safety of the appliance. NEVER remove/switch the NTC sensors between heating elements.
- Always empty the appliance of all the water before laying it on its side (see the relevant paragraph).
- Never place the appliance on its right side (electronic control system side): some of the water in the detergent dispenser could leak onto the electrical/ electronic components and cause these to burn.
- When replacing components, please refer to the code shown in the list of spare parts relating to the appliance.
- Do not place any kind of container under the appliance to catch any drips of water.

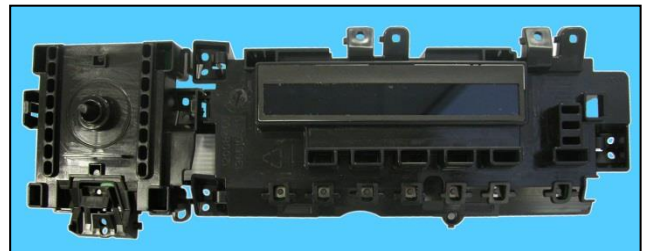
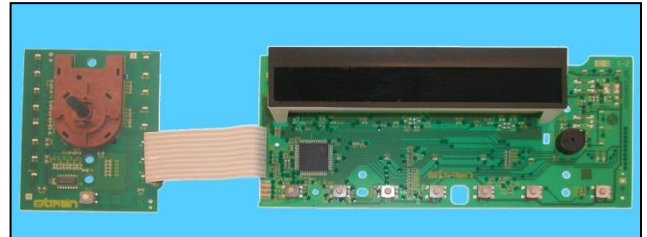


3 SERIES 7

3.1 General characteristics

The EWX11831 and EWX14931 electronic control system consists of two circuit boards plus the motor control system (inverter).

- ↪ The control/display board, which is inserted in a plastic container fixed to the control panel (the figure shows: the display board with the side socket in which the selector is fixed, connected together by a flat cable, and the display board assembly).



- ↪ The main circuit board is positioned at the rear of the appliance and receives commands from the display board, powers the electrical components as well as communicating with the motor control board (Inverter).

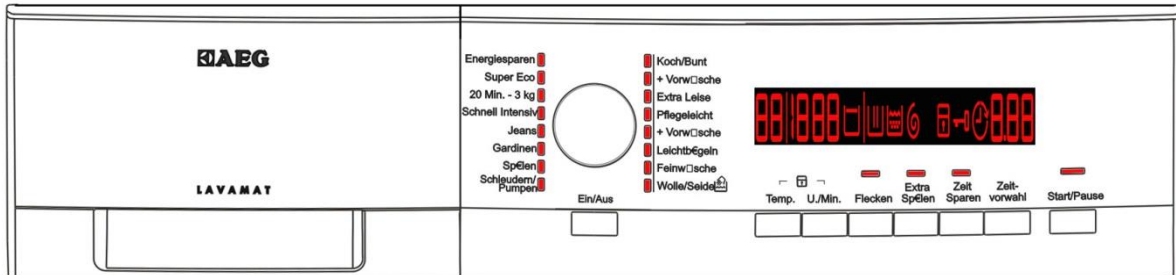
No. buttons	<ul style="list-style-type: none"> ▪ Maximum 8 (6 options + start/pause + ON/OFF)
No. LEDs	<ul style="list-style-type: none"> ▪ Maximum 20 + LCD
Programme selector	<ul style="list-style-type: none"> ▪ 16 positions (incorporated in the circuit board)
Serial port	<ul style="list-style-type: none"> ▪ DAAS-EAP communication protocol up to 115,200 baud
Power supply voltage	<ul style="list-style-type: none"> ▪ 220/240 V ▪ 50/60 Hz (configurable)
Washing type	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere ▪ Jet-System
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere ▪ Jet-System
Motor	<ul style="list-style-type: none"> ▪ Two-pole asynchronous (three-phase) ▪ Three-phase synchronous
Spin speed	<ul style="list-style-type: none"> ▪ 400÷1,600 rpm
Anti-unbalancing system	<ul style="list-style-type: none"> ▪ AGS
Cold water fill	<ul style="list-style-type: none"> ▪ 1 solenoid valve with 1 inlet – 2 or 3 outlets
Hot water filling	<ul style="list-style-type: none"> ▪ 1 solenoid valve with 1 inlet – 1 outlet
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: prewash/stains, wash, fabric softeners ▪ 4 compartments: prewash, wash, stain remover and conditioners
Control of water level in the tub	<ul style="list-style-type: none"> ▪ Electronic/analogue pressure switch
Door safety interlock	<ul style="list-style-type: none"> ▪ Instantaneous
Heating element heat output	<ul style="list-style-type: none"> ▪ 1,950 W with thermal fuses incorporated
Temperature check	<ul style="list-style-type: none"> ▪ NTC probe incorporated in the heating element
Buzzer	<ul style="list-style-type: none"> ▪ Traditional incorporated in the PCB
Sensors	<ul style="list-style-type: none"> ▪ Water fill gauge (2÷12 l/m flowmeter) ▪ Water control
Drum light	<ul style="list-style-type: none"> ▪ LED

3.2 Control panel

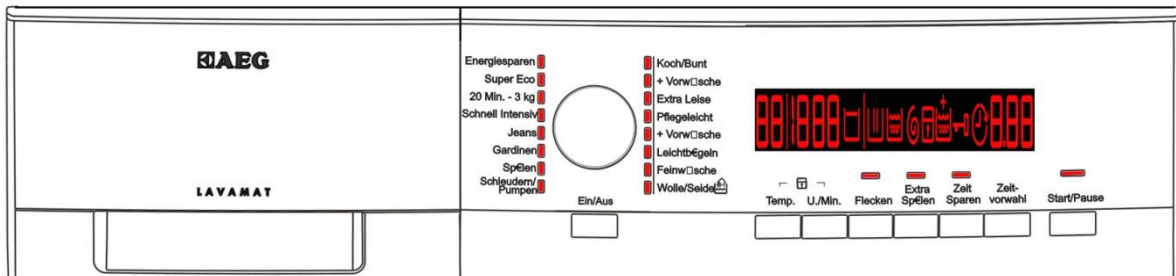
3.2.1 Styling

- Max. 8 buttons
- 16 position programme selector
- 20 LEDs
- LCD

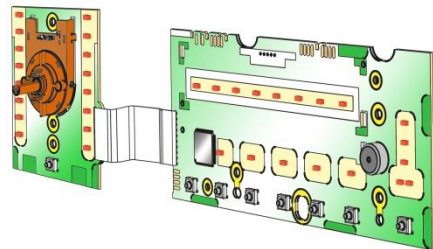
Initial production LCD version



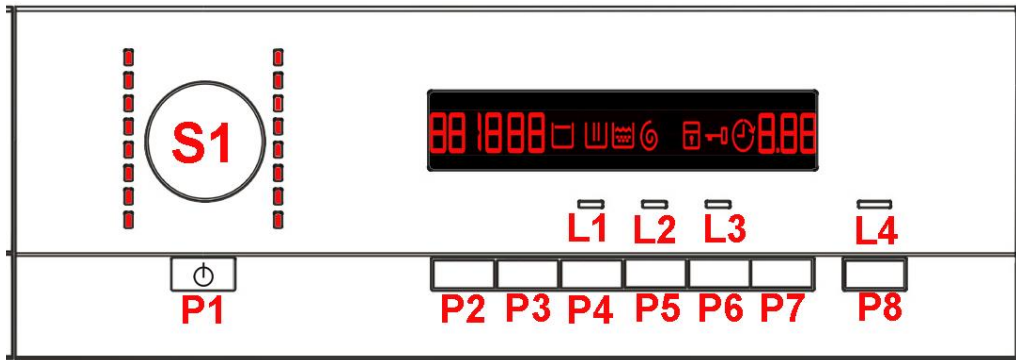
Current production LCD version



- Positioning of LEDs and buttons
- Display board assembly, exploded view
 1. Selector board protection
 2. Display board protection
 3. LCD screen
 4. Display board and selector board
 5. Rear protection



3.2.2 Control panel configuration



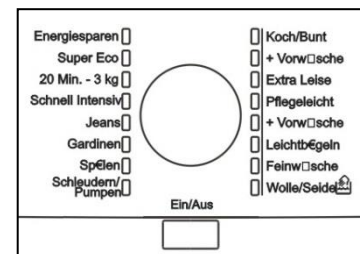
The washing programmes, the functions of the selector knob and the various buttons vary according to the model, since these are determined by the configuration of the appliance.

3.2.2.1 Programme selector (S1)

The selector used is of the HI-FI type (the dial has no index and no reset position, the programme selected is indicated by the fact that the corresponding LED lights up). The number of positions cannot be configured. There are always 16 (in all three stylings) and they are bound to the number of LEDs that indicate the washing programmes.

The programmes can be configured to perform different washing cycles (e.g.: water level, drum movement, no. of rinses and the washing temperature to be selected according to the type of garments).

The selector can be turned both clockwise and anti-clockwise. For each programme, the compatible options and other parameters are defined.



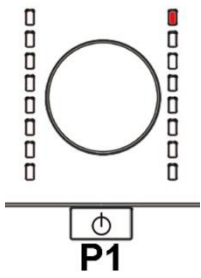

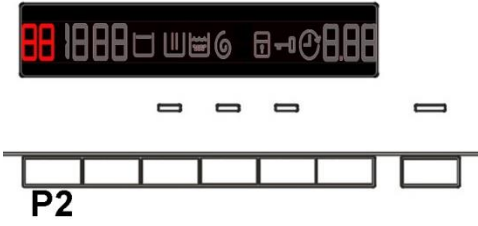

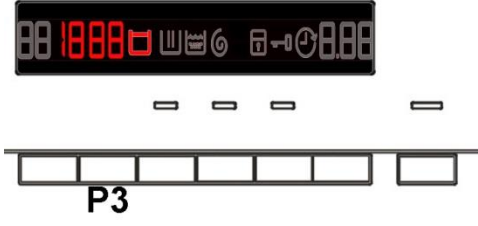
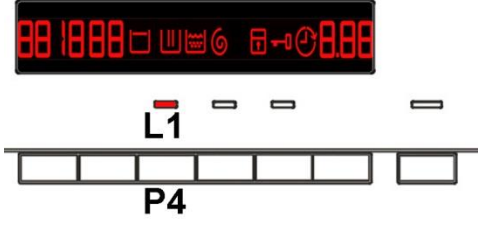
3.2.2.2 Programme configuration

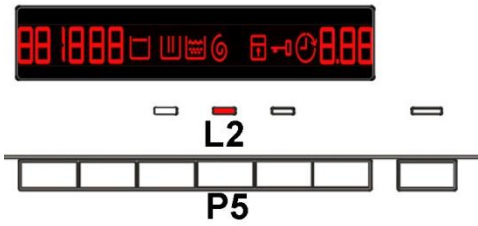
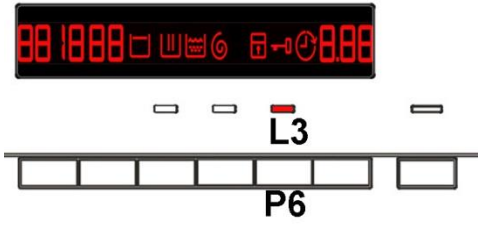
The table below lists the parameters that can be used to define the washing programmes.

Types of fabric	Cottons/linen, Synthetics, Delicates, Wool, Hand-wash, Shoes, Jeans, Duvet, Silk.
Special programmes	Soak, Miniprogramme, Easy-Iron, Conditioner, Rinses, Delicate rinses, Drain, Delicate spin, Spin.
Temperature	Normal, Maximum: the initial temperature is the one set for the washing programme selected.
Spin	Normal, Minimum, Maximum.
Options (Normal/Possible)	Rinse Hold, Pre-wash, Stains, Extra Rinse, Normal, Daily, Super quick, Spin reduction, No spin.
Programme phases	Pre-wash, Wash, Rinses, Spin, Delayed start.

3.2.2.3 Pushbuttons – LEDs and LCD

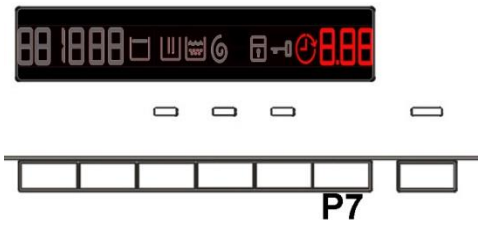
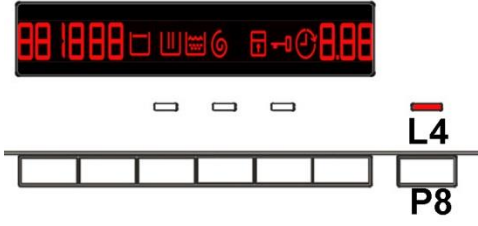
The functions of each button are defined by the configuration of the appliance.

<ul style="list-style-type: none"> Button no. 1: ON/OFF This button is always present, whatever the styling. <ul style="list-style-type: none"> – Press it to turn the appliance on, at the same time the buzzer will sound a tone (if enabled) and the LCD display lights up (the lighted symbols are the ones for the programme). – To switch the appliance off, press and hold the button for approximately 1 second, after which the buzzer will sound a tone (if enabled), the LCD display and the LEDs will switch off, all the options selected and any programme that is running will be cancelled. <p>The operation of the ON/OFF depends on the configuration of the main circuit board. It can cut the appliance off from the electricity mains completely (0 Watt circuit) or set the appliance to low energy consumption mode (without 0 Watt circuit) in which case you will need to take the plug out of the socket to cut off the electricity supply completely.</p>	
<ul style="list-style-type: none"> Button no. 2: TEMPERATURE This is related to the part of the LCD display in which the washing cycle temperature is shown. The starting temperature shown on the LCD display is the one set for the programme selected. Press this button in sequence to lower the temperature, when the lowest temperature is reached the selection will start again from the highest one available for the programme. <p>The temperatures available (displayed in °C) are: 95°C, 60°C, 50°C, 40°C, 30°C, 20°C, cold cycle.</p> <p>The cold cycle is displayed by two dashes .</p>	
<ul style="list-style-type: none"> Button no. 3: SPIN SPEED This is related to the part of the LCD display in which the washing cycle spin speed is shown. The starting speed shown on the LCD display is the one set for the programme selected. Press the button in sequence to lower the speed. Once the lowest speed selection is “Rinse hold” and the relevant symbol will light up  (if compatible with the programme selected). This is also lit during the “Extra silent” programme. The next selection will be the highest speed available for the programme. <p>The spin speeds are: 1,600–1,400–1,200–1,000–800–600–400– “Rinse Hold” cycle. When no speed is selected, or the “Rinse Hold” cycle is selected, the LCD display shows three dashes “ - - - ”.</p>	
<ul style="list-style-type: none"> Button no. 4: OPTION This button is configurable and is related to LED (L1). Depending on the configuration of the appliance, it can perform the option of: <ul style="list-style-type: none"> – Stains – HOT & COLD water fill Press this button to enable/disable the option associated with it and turn LED L1 on/off respectively, at the same time the programme time is updated (on the three digit display). 	

<ul style="list-style-type: none"> • Button no. 5: OPTION This button is related to LED (L2), and performs the option of: – Extra-rinse Press this button to enable/disable the option associated with it and turn the LED on/off respectively, at the same time the programme time is updated (on the three digit display). 	
<ul style="list-style-type: none"> • Button no. 6: OPTION This button is related to LED (L3), and performs the option of: – Time Save Press this button to enable/disable the option associated with it and turn the LED on/off respectively, at the same time the programme time is updated (on the three digit display). 	

The following options can also be configured on the appliances:






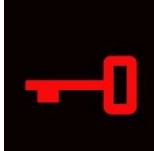




- Time Save: with two 2 levels, corresponding to: Daily and Super Quick. Press once for the Daily function, the relevant LED lights up, press twice for the Super Quick function, the relevant LED will remain on fixed and at the same time the three digit display will vary the cycle time.
- Stains and HOT and COLD Water are alternative options for the same button.
- When the hot water solenoid is present, the relevant option is also configured.





<ul style="list-style-type: none"> • Button no. 7: DELAYED START This button is configurable and has the DELAYED START function. During the programme selection phase, a delayed start can be selected, from 30' to 20 hours (30' ↻ 60' ↻ 90' ↻ 2h ↻ 3h... ↻ 20h ↻ 0h) and the time is shown on the display; during the final hour the time shown decreases minute by minute. To cancel the delayed start time after the cycle has been started, set the washing machine to pause using the START/PAUSE button and cancel the option. 	
<ul style="list-style-type: none"> • Button no. 8: START/PAUSE This button is used to START the appliance or to PAUSE it. It is related to LED L4 which flashes when the appliance is in pause, whereas it produces a fixed light when the appliance is performing a washing cycle. 	



LCD

The information described below also appears on the LCD:

<ul style="list-style-type: none"> • Programme phases: The three icons shown have the following meanings, respectively: <ul style="list-style-type: none"> – Wash/Prewash/Steam  – Rinse  – Spin  <p>They are lit during the setting phase to display which phases are included in the programme.</p> <p>During the programme the icon for the phase in progress flashes, and when the phase has ended it remains lit continuously. The same applies when the machine is in pause during the cycle. The Wash/Prewash/Steam icon also lights up during the steam phase, in appliances which feature this programme.</p>	
<ul style="list-style-type: none"> • Padlock: The icon lights up when the “child lock” is on. It indicates that all the buttons are disabled to prevent children from modifying, starting or pausing the cycle; Press any button or turn the selector dial during its activation and the icon will flash. <p>To enable/disable this function, a key combination needs to be pressed. It may be silk-screen printed on the control panel or described in the instruction manual.</p>	
<ul style="list-style-type: none"> • Door closed sensor: Lights up when the safety device stops door opening and switches off when the door can be opened. Flashes when the device is about to unlock the door. 	
<ul style="list-style-type: none"> • Washing programme time: This appears after a washing programme has been selected. This time corresponds to the time required for the maximum wash load for each type of programme. After the programme has started, the time decreases (and is updated) minute by minute. 	
<ul style="list-style-type: none"> • Delayed start: Selected using the related button. After the START/PAUSE button is pressed, the countdown starts and the delay time decreases hour by hour, from a delay of 20 hours up to 2 hours (☞ 30' ☞ 60' ☞ 90' ☞ 2h ☞ 3h... ☞ 20 h ☞ 0h). During the last 2 hours, it decreases by 30 mins at a time. During delayed start, the  icon remains permanently lit. 	
<ul style="list-style-type: none"> • Selection incorrect: Displays the flashing message “Err”, for one second. Appears on selecting option that is incompatible with the programme selected, or when the selector is turned while a cycle is running. 	

<ul style="list-style-type: none"> • End of cycle: End of the programme is indicated by a permanently lit zero (when the door can be opened). • Appliance stopping with water in the tub, at the end of Programmes with the RINSE HOLD option, this is displayed by a permanently lit zero. The LED indicating the door remains on and the LED of the START/PAUSE button is turned off. The washing machine continues to operate, rotating the drum once every 2 minutes. 	
<ul style="list-style-type: none"> • Alarm code: Indicates an anomaly during operation of the machine. Simultaneously to the displaying of the code, the START/PAUSE button flashes. 	
<ul style="list-style-type: none"> • Calculate amount of washing: Only for appliances with PROPORTIONAL programmes. After starting the washing programme the dot starts to flash. At this point the washing machine calculates the amount of washing inside the drum. When this phase ends the dot lights up fixed and the three digits display the programme time. 	
<ul style="list-style-type: none"> • Extra-rinse: Appliances which do not feature the button and related LED for the Extra rinse option can enable/disable this option by pressing a key combination (which may be silk-screen printed on the control panel or described in the instruction manual). This option is enabled/disabled during programme selection and is confirmed by the related symbol being turned on/off. The option remains enabled even after the appliance has been turned off (for subsequent programmes). 	

3.2.2.4 Buzzer

This comprises a multi-tone buzzer and sounds in the following cases:

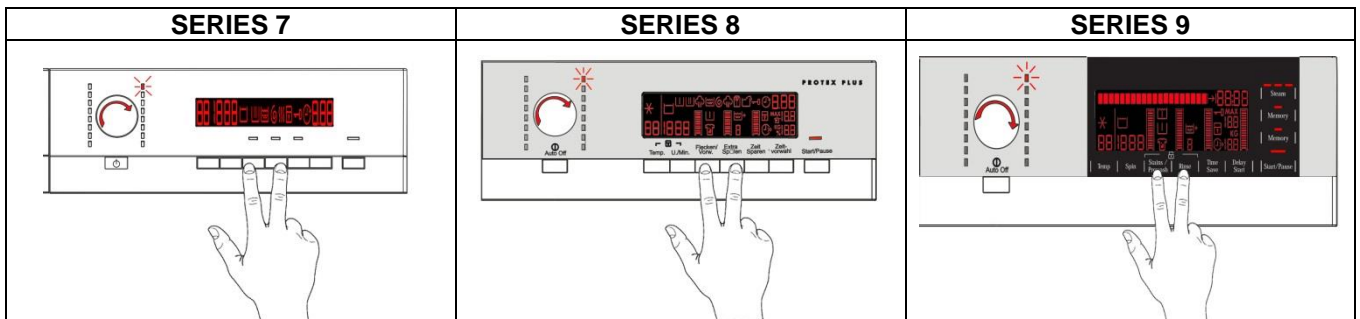
- When the machine is turned on and off it emits two different tunes.
- When a button is pressed it emits a short “**Click**”.
- When the cycle ends this is indicated by a special sequence of “**three long beeps**” repeated at intervals of 15” for a total of 2 minutes.
- In the event of a malfunction in the machine this is indicated by a special sequence of “**three short beeps**” repeated 3 times at intervals of 15” for a total of 5 minutes.

All appliances are fitted with the buzzer, and leave the factory with the option enabled. To disable it use the combination of keys.

The volume level is set in the factory and cannot be adjusted by the user.

When the buzzer is disabled (using the combination of keys) it only emits the short “**Click**” and the sequence of “**three short beeps**” when an alarm is triggered.

During the programme selection phase, the buzzer can be enabled/disabled by pressing key combination (which may be silk-screen printed on the control panel or described in the instruction manual), but the alarm signalling remains enabled.



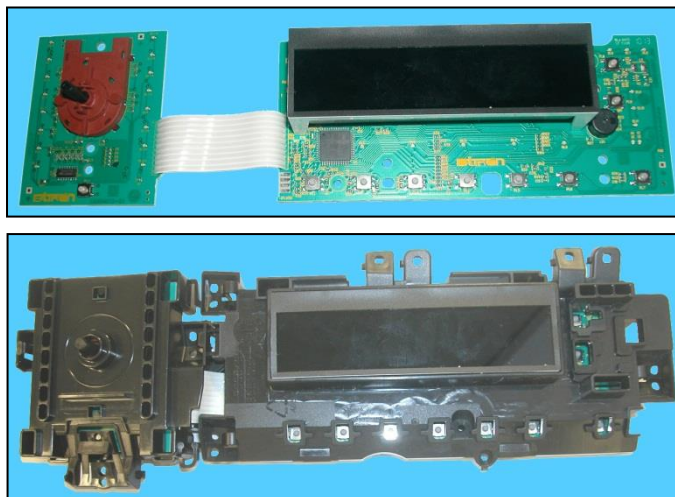
To enable it, press the buttons simultaneously for 5 seconds. A short beep will confirm that it has been enabled, whereas two short beeps will confirm that it has been disabled.

4 SERIES 8

4.1 General characteristics

The EWX11831 and EWX14931 electronic control system consists of two circuit boards, the motor control system (inverter) and in some appliances the weight sensor board.

- ↪ The control/display board, which is inserted in a plastic container fixed to the control panel (the figure shows: the display board with the side socket in which the selector is fixed, connected together by a flat cable, and the display board assembly).



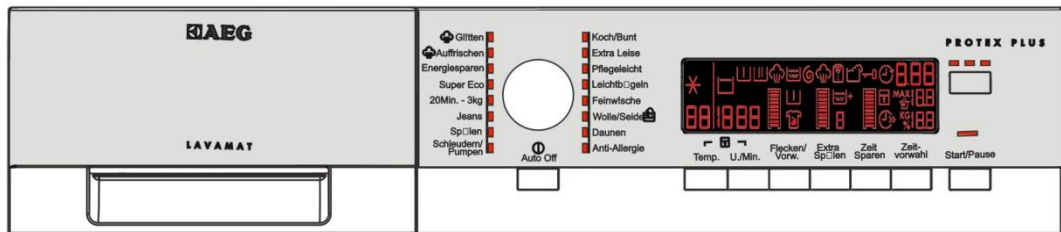
- ↪ The main circuit board is positioned at the rear of the appliance and receives commands from the display board, powers the electrical components as well as communicating with the motor control board (Inverter) and with the weight sensor where featured.

No. buttons	<ul style="list-style-type: none"> ▪ Maximum 9 (6 options + start/pause + ON/OFF)
No. LEDs	<ul style="list-style-type: none"> ▪ Maximum 20 + LCD
Programme selector	<ul style="list-style-type: none"> ▪ 16 positions (incorporated in the circuit board)
Serial port	<ul style="list-style-type: none"> ▪ DAAS-EAP communications protocol up to 115,200 baud
Power supply voltage	<ul style="list-style-type: none"> ▪ 220/240 V ▪ 50/60 Hz (configurable)
Washing type	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere ▪ Jet-System
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere ▪ Jet-System
Motor	<ul style="list-style-type: none"> ▪ Two-pole asynchronous (three-phase) ▪ Three-phase synchronous
Spin speed	<ul style="list-style-type: none"> ▪ 400÷1,600 rpm
Anti-unbalancing system	<ul style="list-style-type: none"> ▪ AGS
Cold water fill	<ul style="list-style-type: none"> ▪ 1 solenoid valve with 1 inlet – 2 or 3 outlets
Hot water filling	<ul style="list-style-type: none"> ▪ 1 solenoid valve with 1 inlet – 1 outlet
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: prewash/stains, wash, fabric softeners ▪ 4 compartments: prewash, wash, stain remover, conditioners
Control of water level in the tub	<ul style="list-style-type: none"> ▪ Electronic/analogue pressure switch
Door safety interlock	<ul style="list-style-type: none"> ▪ Instantaneous
Heating element heat output	<ul style="list-style-type: none"> ▪ 1,950 W with thermal fuses incorporated
Temperature check	<ul style="list-style-type: none"> ▪ NTC probe incorporated in the heating element
Buzzer	<ul style="list-style-type: none"> ▪ Traditional incorporated in the PCB
Sensors	<ul style="list-style-type: none"> ▪ Water fill gauge (2÷12 l/m flowmeter) ▪ Water control ▪ Weight sensor
Drum light	<ul style="list-style-type: none"> ▪ LED

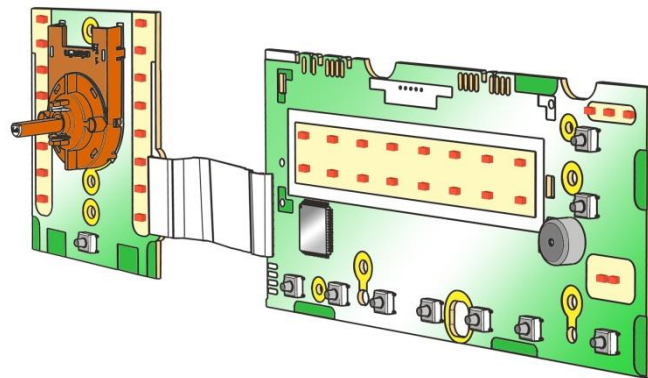
4.2 Control panel

4.2.1 Styling

- Max. 9/10 buttons
- 16 position programme selector
- 20 LEDs
- LCD

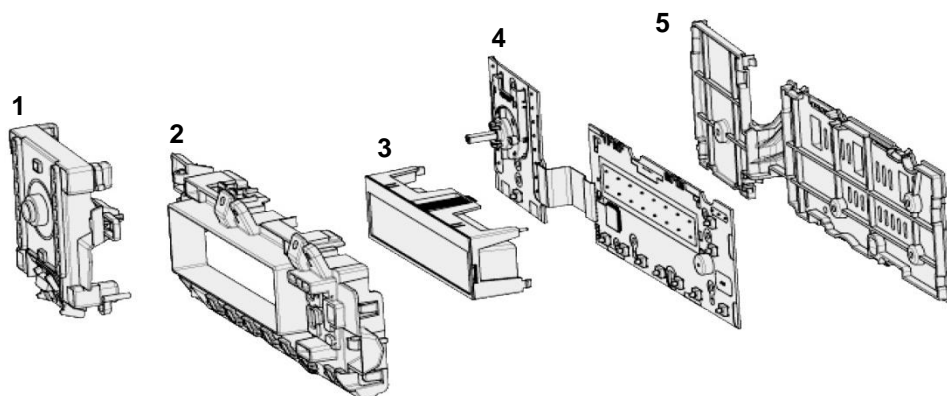


- Positioning of LEDs and buttons

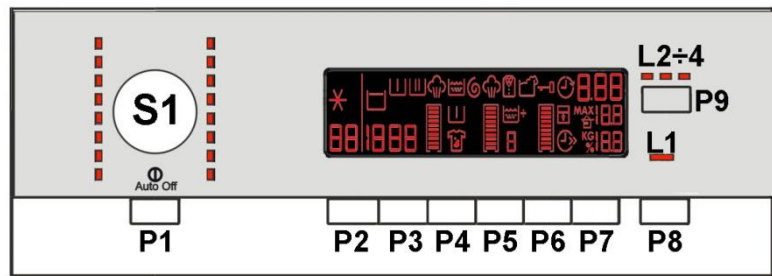


- Display board assembly, exploded view

1. Selector board protection
2. Display board protection
3. LCD screen
4. Display board and selector board
5. Rear protection



4.2.1.1 Control panel configuration



The washing programmes, the functions of the selector knob and the various buttons vary according to the model, since these are determined by the configuration of the appliance.

4.2.1.2 Programme selector (S1)

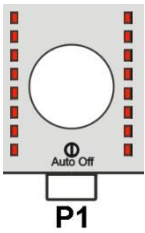


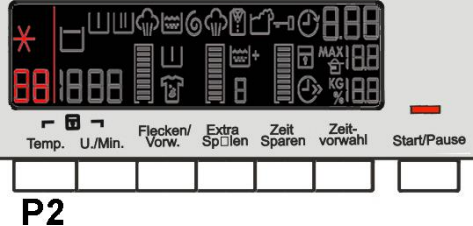

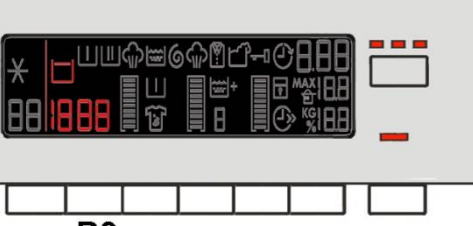
Description: see para. 3.2.2.1 on page 10

4.2.1.3 Programme configuration


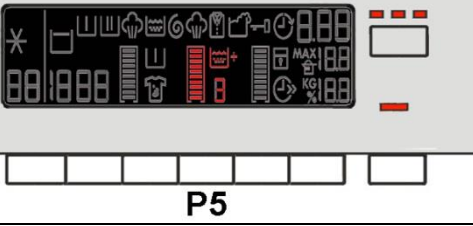
Description: see para. 3.2.2.2 on page 10


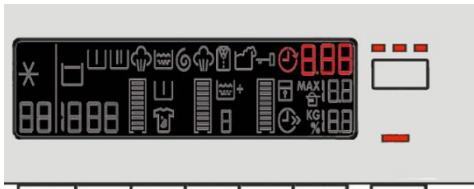
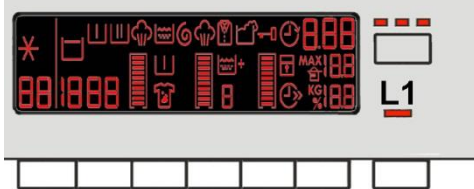
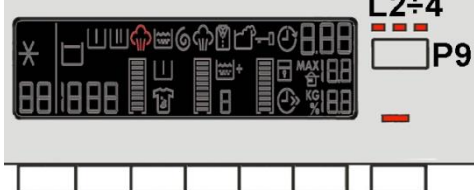
4.2.1.4 Pushbuttons – LEDs and LCD

The functions of each button are defined by the configuration of the appliance.

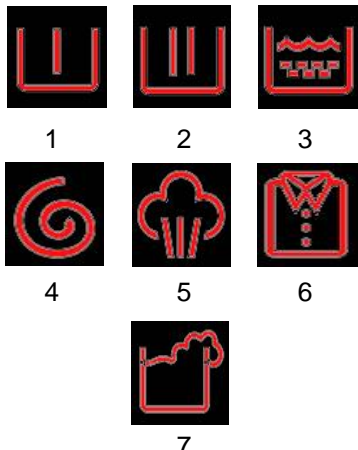

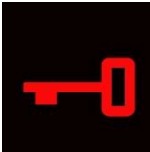



<ul style="list-style-type: none"> • Button no. 1: ON/OFF <p>Description: see Button no. 1 on page 11</p>	
<ul style="list-style-type: none"> • Button no. 2: TEMPERATURE <p>See description on page 11 The only difference with version 7 is the representation of the cold cycle, which is represented by the cold symbol  and by two dashes  to replace the Digits.</p>	
<ul style="list-style-type: none"> • Button no. 3: SPIN SPEED <p>This is related to the part of the LCD display in which the washing cycle spin speed is shown. The spin speed displayed initially is that configured for the chosen programme. Press the button in sequence to lower the speed. Once the lowest speed has been reached, the next one is “Rinse Hold” and the related light up  (if compatible with the programme selected). This is also lit during the “Extra silent” programme. The next selection will be the highest speed available for the programme. The spin speeds are: 1,600–1,400–1,200–1,000–800–600–400– “Rinse Hold” cycle. When no speed is selected, or the “Rinse Hold” cycle is selected, the LCD display shows three dashes “ - - - ”.</p>	





The settings described below not only have symbols, but they are also accompanied by a graphic bar within a frame. If it is illuminated, this indicates that the option is enabled for the chosen programme, otherwise it is off. When all its segments are lit, it will start from scratch again the next time it is pressed.

<ul style="list-style-type: none"> • Button no. 4: OPTION <p>It is related to the part of the LCD display (see figure) where the graphic bar and the symbols relating to the options are displayed, depending on the chosen programme. Press the button to light the graduated scale and the Stains symbol lights simultaneously. If you continue to press it, the Prewash symbol also lights up. The selection order is as follows: 1. Stains 2. Pre-wash 3. Stains + Prewash</p>	
<ul style="list-style-type: none"> • Button no. 5: OPTION <p>It is related to the part of the LCD display (see figure) showing: the graphic bar, a digit and the “Extra rinse” symbol. Press the button to light the graduated scale. The symbol for the “Extra rinse” lights simultaneously, and the digit shows the number of additional rinses to combine with the programme. The number of rinses depends on the programme configuration.</p>	

<ul style="list-style-type: none"> • Button no. 6: OPTION <p>It is related to the part of the LCD display (see figure) showing: the graphic bar and the “Time save” option.</p> <p>Press the button and half or all of the graduated scale may light up, depending on the configuration of the button. The related symbol also lights up simultaneously.</p> <ul style="list-style-type: none"> – Press the button once and the chosen option is “Daily”. – Press the button twice and the chosen option is “Super Quick”. 	 <p style="text-align: center;">P6</p>
<ul style="list-style-type: none"> • Button no. 7: DELAYED START <p>It is related to the part of the LCD display (see figure) showing the related symbol and the three digits.</p> <p>Press the button in sequence to increase the delay by 30' up to 2 hours, whereas from 2 hours to 20 hours, the increase is of 1 (one) hour every time the button is pressed. The symbol lights and stays on for the entire delay phase.</p> <p>During the programme selection phase, a delayed start can be selected, from 30' to 20 hours (30' ⇄ 60' ⇄ 90' ⇄ 2h ⇄ 3h... ⇄ 20h ⇄ 0h) and the time is shown on the display; during the final hour the time shown decreases minute by minute.</p> <p>During the last hour, the time decreases minute by minute.</p> <p>To cancel the delayed start time, after the cycle has started, pause the washing machine using the related button and cancel the option.</p>	 <p style="text-align: center;">P7</p>
<ul style="list-style-type: none"> • Button no. 8: START/PAUSE <p>This button is used to START the appliance or to PAUSE it.</p> <p>It is related to LED L1, which flashes when the appliance is on pause, whereas it is lit continuously during a washing cycle.</p>	 <p style="text-align: center;">P8</p>
<ul style="list-style-type: none"> • Button no. 9: STEAM (where featured) <p>Press this button in sequence to select from three different steam intensity levels.</p> <p>These are highlighted by the lighting of LEDs L2/L3/L4 and the related symbol lighting on the LCD display.</p>	 <p style="text-align: center;">P9</p>

The information described below also appears on the LCD:

<ul style="list-style-type: none"> Programme phases: The icons represented respectively mean: <ol style="list-style-type: none"> 1. Pre-wash 2. Wash 3. Rinse 4. Spin 5. Steam combined with the programme (where featured) 6. Rinse Hold 7. Excessive detergent They light up during the programme setting where featured and during their performance. The icon representing the Overdosing lights up at the end of the cycle if during the performance of the programme an excess production of foam was detected. 	
<ul style="list-style-type: none"> Padlock: The icon lights up when the “child lock” is on. It indicates that all the buttons are disabled to prevent children from modifying, starting or pausing the cycle. To enable/disable this function, a key combination needs to be pressed. It may be silk-screen printed on the control panel or described in the instruction manual. 	
<ul style="list-style-type: none"> Door closed sensor: Lights up when the safety device stops door opening and switches off when the door can be opened. Flashes when the device is about to unlock the door (with door interlock with PTC, which needs one/two minutes to open). 	
<ul style="list-style-type: none"> Weight sensor: Group of icons representing the weight information of the laundry inside the drum. Since they represent the maximum load possible, the actual weight of the laundry inside the drum and the ratio of these two factors suggests the quantity of detergent to pour into the detergent dispenser. Description: see para. 5.2.1.7 on page 31 	
<ul style="list-style-type: none"> Washing programme time: Description: see page 13 	
<ul style="list-style-type: none"> Delayed start: Selected using the related button. After the START/PAUSE button is pressed, the countdown starts and the delay time decreases hour by hour, from a delay of 20 hours up to 2 hours (30' 60' 90' 2h 3h... 20h 0h) During the last 2 hours, it decreases by 30 mins at a time. Press the button in sequence to increase the delay by 30' up to 10 hours, whereas from 10 hours to 20 hours, the increase is of 1 (one) hour every time the button is pressed. During the programme selection phase, a delayed start can be selected, from 30' to 20 hours (30' 60' 90' 10h 11h... 20h 0h) and the time is shown on the display; during the final hour the time shown decreases minute by minute. during the last hour, the time decreases minute by minute. To cancel the delayed start time, after the cycle has started, pause the washing machine using the related button and cancel the option. 	

<ul style="list-style-type: none"> • Selection incorrect: Description: see page 13 	
<ul style="list-style-type: none"> • End of cycle: Description: see page 14 	
<ul style="list-style-type: none"> • Alarm code: Description: see page 14 	
<ul style="list-style-type: none"> • Extra-rinse: Appliances which do not feature the button and related LED for the Extra rinse option can enable/disable this option by pressing a key combination (which may be silk-screen printed on the control panel or described in the instruction manual). This option is enabled/disabled during programme selection and is confirmed by the related symbol being turned on/off. The option remains enabled even after the appliance has been turned off (for subsequent programmes). 	

4.2.1.5 Buzzer

Description: see para. 3.2.2.4. page 15

4.2.1.6 Weight sensor (where featured)

Appliances fitted with the weight sensor (inserted inside a shock absorber) are designed - thanks to the LCD display - to inform the user of the weight of the laundry inside the drum while at the same time suggesting the quantity of detergent to pour into the dispenser provided.

For it to operate, the appliance needs to be turned on and in selecting phase with the door open. When the laundry is being placed inside the drum, the LCD displays the weight in kg with an accuracy of half a kilogram.

The exact sequence to have the correct weight information is as follows:

The appliance must be turned off and the drum must be empty.

Turn the washing machine on, select the programme, choose the options, and if the door was closed on starting, open it.

The LCD displays the maximum declared weight for the selected programme and 0.0 kg the weight of the laundry inside the drum (empty drum). At the same time the laundry is placed in the drum, the LCD display updates the digits relating to the time until the end of the programme.



In the event of an overload in a programme (Cottons), the LCD display will continue to show the maximum weight without warning that the load is excessive.

Whereas in other programmes (Synthetics, delicates, special programmes and in particular the drying programmes) if the weight exceeds by only 1 kg or more, the symbol "MAX" will begin to flash, together with the weight of the maximum load allowed.

In some cases, you will have to take some laundry out so that the symbol "MAX" and the maximum weight allowed stop flashing and to guarantee optimum washing performance.



Once the laundry has been loaded, close the door, the LCD display cancels all the weight details and displays the quantity of detergent to be poured into the dispenser.

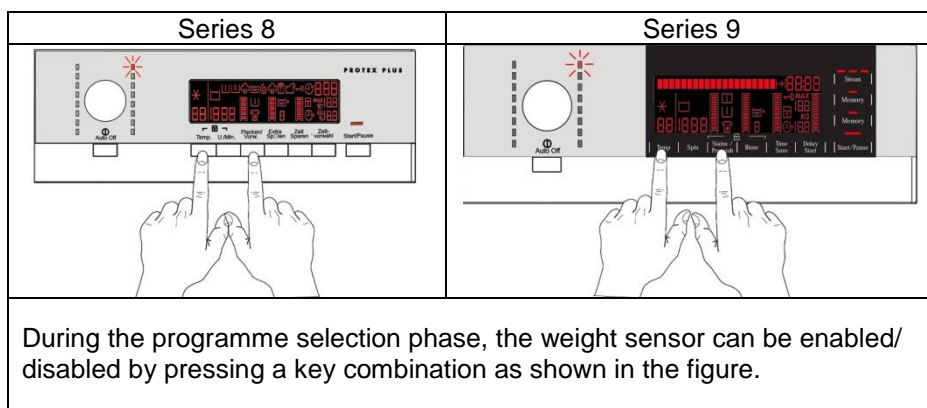
The representation consists of: a measuring cup, a number and the symbol for the percentage.

The number displayed represents the percentage detergent to pour into the dispenser, considering 100% to be the quantity required for the maximum load for the chosen programme (value that remains fixed even in the case of an overload).



Once the detergent has been poured in, and the START/PAUSE button has been pressed, the washing cycle will begin. The information about the weight of the laundry and the percentage detergent disappears and will not be displayed again.

4.2.1.6.1 Enabling/Disabling the weight sensor



5 SERIES 9

5.1 General characteristics

The SERIES 9 has a single ON/OFF button, all the other choices/adjustments are made by skimming your finger over the touch sensors, which replace the buttons used so far.

In the event of problems with the touch sensors (difficulty selecting/adjusting them), clean and dry the display and do not wear gloves when setting the chosen programme.

The EWX11831 and EWX14931 electronic control system consists of two circuit boards, the motor control system (inverter) and in some appliances the weight sensor board.

↪ The control/display circuit board, inserted in a plastic box, secured to the control panel (the figure illustrates: the display board with the side socket in which the selector is fixed, connected together by a flat cable, and the display board assembly).



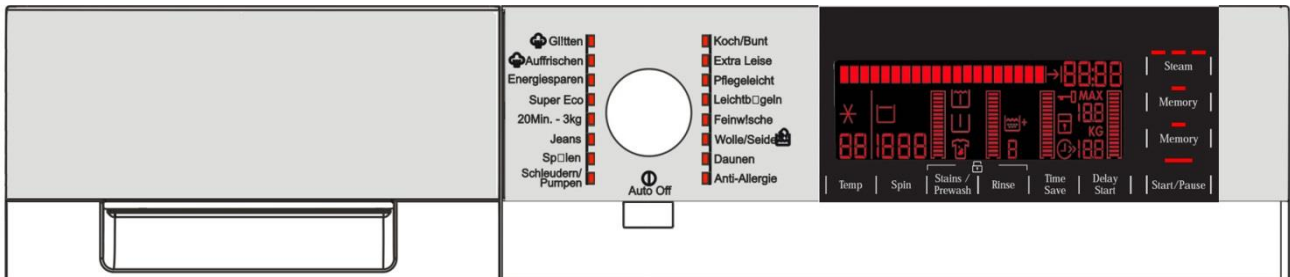
↪ The main circuit board is positioned at the rear of the appliance and receives commands from the display board, powers the electrical components as well as communicating with the motor control board (Inverter) and with the weight sensor where featured.

No. buttons	<ul style="list-style-type: none"> ▪ Max 1 (ON/OFF)
No. of sensors	<ul style="list-style-type: none"> ▪ Max 10 (options+start/pause+ memories)
No. LEDs	<ul style="list-style-type: none"> ▪ Maximum 22 + LCD
Programme selector	<ul style="list-style-type: none"> ▪ 16 positions (incorporated in the circuit board)
Serial port	<ul style="list-style-type: none"> ▪ DAAS-EAP communications protocol up to 115,200 baud
Power supply voltage	<ul style="list-style-type: none"> ▪ 220/240 V ▪ 50/60 Hz (configurable)
Washing type	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere ▪ Jet-System
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere ▪ Jet-System
Motor	<ul style="list-style-type: none"> ▪ Two-pole asynchronous (three-phase) ▪ Three-phase synchronous
Spin speed	<ul style="list-style-type: none"> ▪ 400÷1,600 rpm
Anti-unbalancing system	<ul style="list-style-type: none"> ▪ AGS
Cold water fill	<ul style="list-style-type: none"> ▪ 1 solenoid valve with 1 inlet – 2 or 3 outlets
Hot water filling	<ul style="list-style-type: none"> ▪ 1 solenoid valve with 1 inlet – 1 outlet
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: prewash/stains, wash, fabric softeners ▪ 4 compartments: prewash, wash, stain remover, conditioners
Control of water level in the tub	<ul style="list-style-type: none"> ▪ Electronic/analogue pressure switch
Door safety interlock	<ul style="list-style-type: none"> ▪ Instantaneous
Heating element heat output	<ul style="list-style-type: none"> ▪ 1,950 W with thermal fuses incorporated
Temperature check	<ul style="list-style-type: none"> ▪ NTC probe incorporated in the heating element
Buzzer	<ul style="list-style-type: none"> ▪ Traditional incorporated in the PCB
Sensors	<ul style="list-style-type: none"> ▪ Water fill gauge (2÷12 l/m flowmeter) ▪ Water control ▪ Weight sensor
Drum light	<ul style="list-style-type: none"> ▪ LED

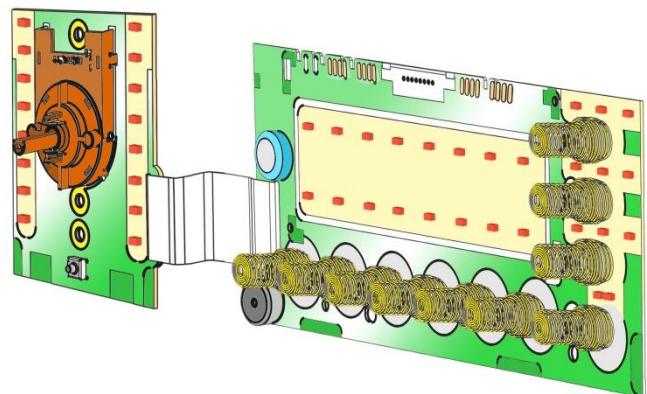
5.2 Control panel

5.2.1 Styling

- Max buttons 1
- Max sensors 10
- 16 position programme selector
- 22 LEDs
- LCD

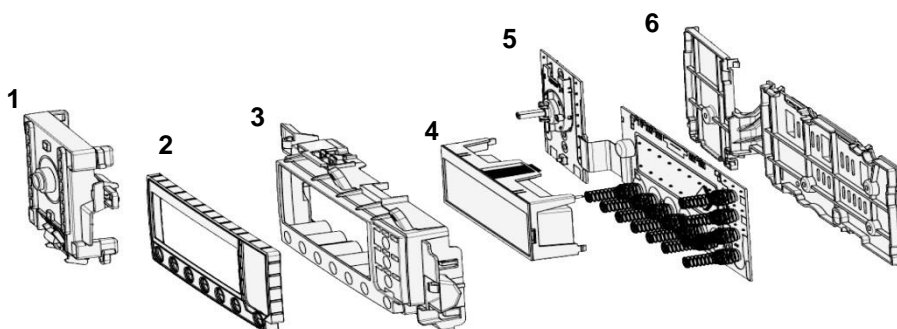


- Positioning of LEDs and buttons

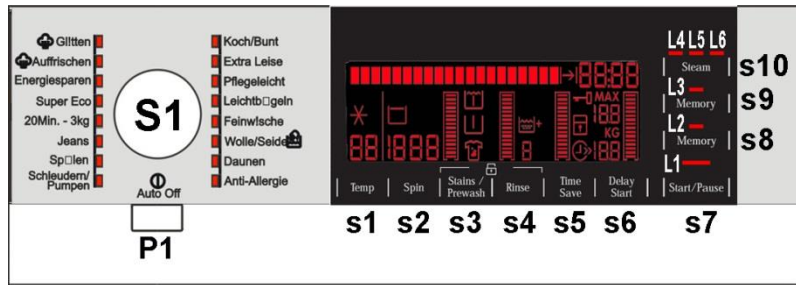


- Display board assembly, exploded view

1. Selector board protection
2. Seal
3. Display board protection
4. LCD screen
5. Display board and selector board
6. Rear protection



5.2.1.1 Control panel configuration



The washing programmes, the functions of the selector knob and the various buttons vary according to the model, since these are determined by the configuration of the appliance.

5.2.1.2 Initial Start up

The first time the appliance is turned on and after every diagnostic cycle, the language and time need to be set.

5.2.1.2.1 Set Language

The first time the appliance is turned on or after a diagnostic cycle, the text line prompts you to turn the selector to choose your language (the language displayed is the one of the silk screen printed control panel) for approximately 3 seconds. Once you have chosen your language, after another 3 seconds you will be prompted to touch the START/PAUSE sensor to confirm your choice.

If the appliance is turned off before you confirm your choice, the next time it is turned on, you will again be prompted to choose your language.

5.2.1.2.2 Setting the time of day

After the language has been selected, the text line shows "Time of day" prompting you to set the time. After approximately 3 seconds, you will be prompted to turn the selector, which will change the time by an hour (in the digits) every time it is moved. Once the correct time has been set, confirm by pressing the START/PAUSE sensor.

The digits relating to the minutes start to flash. Again, turn the selector dial to adjust them too and confirm with the START/PAUSE sensor. Now the time of day has also been set.

To change the language or time, see the key combination in the table below.

Language Configuration	Time Configuration
<p>Once the appliance has been turned on during the selecting phase you are given the opportunity to change language. Touch the sensors as shown in the figure, and for the next 3 seconds you can choose your new language.</p>	<p>Once the appliance has been turned on during the selecting phase you are given the opportunity to set the time. Touch the sensors as shown in the figure, and for the next 3 seconds you can modify the time.</p>

5.2.1.3 Programme selector (S1)

Description: see para. 3.2.2.1 on page 10

5.2.1.4 Programme configuration

Description: see para. 3.2.2.2 on page 10

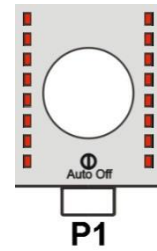
5.2.1.5 Pushbuttons – LEDs and LCD

The functions of each button are defined by the configuration of the appliance.

- **Button no. 1: ON/OFF**

Description: see **Button no. 1** on page 11

Unlike the other versions, in the SERIES 9, after pressing the ON/OFF button the LCD displays the time of day (for two seconds to allow the user to check it and if necessary update it) followed by the programme information.





- **Sensor no. 1: TEMPERATURE**

It is related to the part of the LCD display (see figure) where the temperature of the washing cycle is shown.

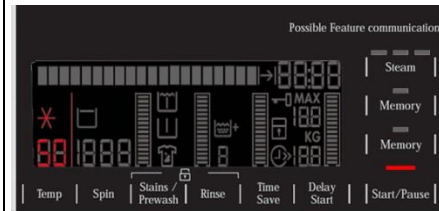
The initial temperature displayed is that set for the chosen programme.

Touch the sensor with your finger to lower it. Once you have reached the lowest one, the selection starts off again from the highest temperature.

The cold cycle is represented by the cold symbol  and by two dashes  to replace the Digits.

The temperatures available (displayed in °C) are: **95°C, 60°C, 50°C, 40°C, 30°C, 20°C, cold cycle.**

Concurrently with the display of the temperature in degrees, the name of the selected function appears at the top of the display in the text line.



s1

- **Sensor no. 2: SPIN SPEED**

It is related to the part of the LCD display (see figure) where the spin speed of the washing cycle is shown.

The initial speed shown on the LCD display is that configured for the selected programme.

Touch the sensor with your finger to lower the speed. Once the lowest speed has been reached, the next selection is

“Rinse Hold” and the related symbol  lights up

(where compatible with the chosen programme), which is also lit during the “Extra silent” programme.

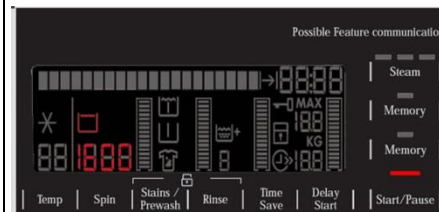
The next selection will be the speed configured for the programme.

The spin speeds are:

1,600–1,400–1,200–1,000–800–600–400– “Rinse Hold” cycle.

When no speed is selected, or the “Rinse Hold” cycle is selected, the LCD display shows three dashes “ - - - ”.





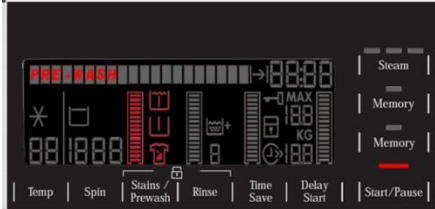
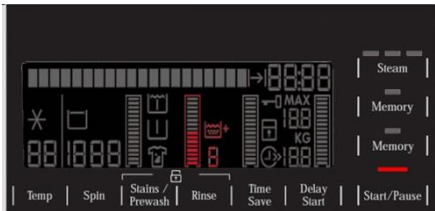
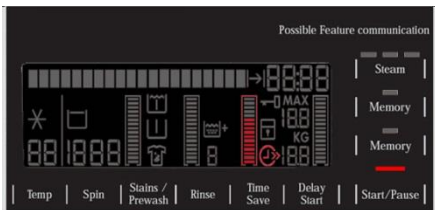
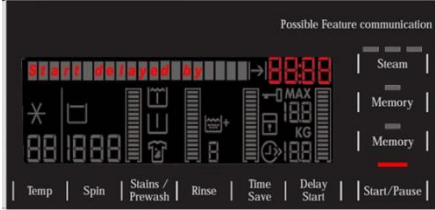
Concurrently with the display of the spin speed in rpm, the name of the selected function appears at the top of the display (in the text line).



s2

The settings described below not only have the symbols of the options, but they are also accompanied by a graphic bar within a frame. If the latter is lit, this means the option is enabled for the chosen programme. Otherwise it remains off.

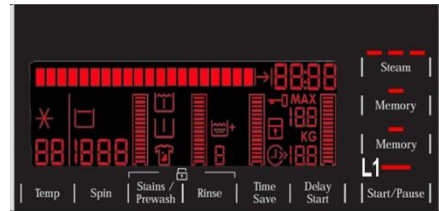
When all its segments are lit, it will start from scratch again the next time it is pressed.

<ul style="list-style-type: none"> Sensor no. 3: OPTION It is related to the part of the LCD display (see figure) where a graphic bar and the symbols relating to the options are displayed, depending on the chosen programme. Touch the sensor with a finger and the graphic bar starts to light up. The symbol for Stains is turned on at the same time. As you continue, the Prewash symbol lights up. The selection order is as follows: <ol style="list-style-type: none"> 1. Stains  2. Pre-wash  3. Stains + Prewash  4. Stains + Soak  5. No Option It may happen that it is not possible to select the option(s) where the stains item is displayed, due to the washing temperature being too low, and consequently the options are skipped. Concurrently to the displaying of the symbol for the option, as the graphic bar is gradually illuminated, the name of the chosen option is displayed in the text line in the top left. 	 <p style="text-align: center;">s3</p>
<ul style="list-style-type: none"> Sensor no. 4: EXTRA RINSE It is related to the part of the LCD display (see figure) showing: the graphic bar, a digit and the symbol for the “Extra rinse” option. Touch the sensor with your finger and the graphic bar begins to light up. Concurrently, the symbol lights up and you can choose the number of rinses to add to the programme, which are displayed by the digit (depending on the programme). Concurrently to the displaying of the symbol for the option, as the graphic bar is gradually illuminated, the name of the option is displayed in the text line in the top left. 	 <p style="text-align: center;">s4</p>
<ul style="list-style-type: none"> Sensor no. 5: OPTION It is related to the part of the LCD display (see figure) showing: the graphic bar and the “Time save” option. Touch the sensor with your finger, half or all of the graduated scale may light up, depending on the configuration and the related symbol also lights simultaneously. Touch once <ul style="list-style-type: none"> – and the chosen option is “Daily”. touch again and the graduated scale lights up completely <ul style="list-style-type: none"> – the chosen option is “Super Quick”. Concurrently to the displaying of the symbol for the option, as the graphic bar is gradually illuminated, the name of the chosen option is displayed in the text line in the top left. 	 <p style="text-align: center;">s5</p>
<ul style="list-style-type: none"> Sensor no. 6: DELAYED START It is related to the part of the LCD display (see figure) showing: the four digits and the text bar. Touch the sensor with your finger. The LCD display is updated according to the status of the door: if the door is open, the words “Start delayed by” are displayed and the delay time is displayed in the digits for approximately 5 seconds, whereas if the door is closed, the words “Programme ending at” are displayed along with the programme end time. During the last hour, the time decreases minute by minute. To cancel the delayed start time, after the cycle has started, pause the washing machine using the related sensor (7) and cancel the option. 	 <p style="text-align: center;">s6</p>

- **Sensor no. 7: START/PAUSE**

Touch the sensor with your finger to START or PAUSE the appliance.

It is related to LED (L1), which flashes when the appliance is on pause, whereas it is lit continuously when the appliance is performing a washing cycle.



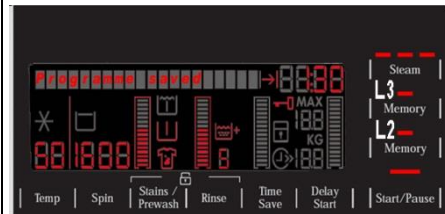
s7

- **Sensor no. 8/9: MEMORY**

Touch one of these sensors with your finger to store or recall a stored programme.

When the selected programme has been optimised with the desired options, it can be saved in one of the two memories by touching the related sensor (s8/9) for approximately 3 seconds. The buzzer “beeps” once and the LED (L2/3) corresponding to the memory lights up and the words “Programme saved” are displayed in the text line to show that the operation was successful. To recall the stored programme, simply touch the sensor (s8/9) of the memory concerned, the corresponding LED (L2/3) lights up and the LCD displays the settings of the programme saved (selector LED, options, time left and the words “Memory programme” are displayed in the text line for approximately 3 seconds).

If a sensor of the memory which contains no stored programmes is touched, the buzzer “beeps” once and the corresponding LED stays on and the words “Memory is empty” are displayed in the text line for approximately 3 seconds.

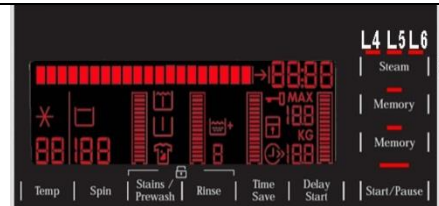


s9
s8

- **Sensor no. 10: STEAM (where featured)**

Touch this sensor with your finger in sequence to select among the three steam intensity levels shown by the lighting of LEDs L4/L5/L6.





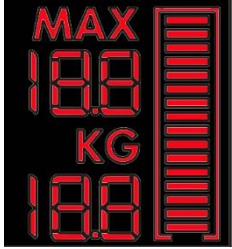

The text line displays the status of the option.





s10

- **LCD**

The information described below also appears on the LCD:

<ul style="list-style-type: none"> • Padlock: The icon lights up when the “child lock” is on. To indicate that all the sensors are disabled to prevent children from modifying, starting or pausing the cycle. A sensor combination needs to be pressed to activate/deactivate it. It may be silk-screen printed on the control panel or described in the instruction manual. 	
<ul style="list-style-type: none"> • Door closed sensor: Lights up when the safety device stops door opening and switches off when the door can be opened. It flashes when the device is about to unlock the door (it is noticed with PTC delaying devices, which need one or two minutes to open). 	
<ul style="list-style-type: none"> • Cycle time: It lights up to indicate the cycle time 	
<ul style="list-style-type: none"> • Time left: It lights up to indicate the time left until the end of the cycle. 	
<ul style="list-style-type: none"> • Weight sensor: Group of icons representing the weight information of the laundry inside the drum. Since they represent the maximum load possible, the actual weight of the laundry inside the drum and suggests the quantity of detergent to pour into the detergent dispenser. Description: see para. 5.2.1.7 on page 31 	
<ul style="list-style-type: none"> • Delayed start: Selected on the related sensor. After the START/PAUSE button is pressed, the countdown starts and the delay time decreases hour by hour, from a delay of 20 hours up to 2 hours (☞ 30' ☞ 60' ☞ 90' ☞ 2h ☞ 3 h... ☞ 20 h ☞ 0 h) During the last 2 hours, it decreases by 30 mins at a time. Touch the sensor in sequence to increase the delay by 30' up to 10 hours, whereas from 10 hours to 20 hours, the increase is of 1 (one) hour every time the button is pressed. During the programme selection phase, a delayed start can be selected, from 30' to 20 hours (30' ☞ 60' ☞ 90' ☞ 10h ☞ 11h... ☞ 20h ☞ 0h) and the time is shown on the display; during the final hour the time shown decreases minute by minute. To cancel the delayed start time, after the cycle has started, pause the washing machine using the related button and cancel the option. 	
<ul style="list-style-type: none"> • Selection incorrect: The words “Not possible” are displayed in the text line. 	

<ul style="list-style-type: none"> • End of cycle: Description: see page 14 	
<ul style="list-style-type: none"> • Alarm code: Description: see page 14 	

5.2.1.6 Buzzer

Description: see para. 3.2.2.4 on page 15

5.2.1.7 Weight sensor (where featured)

Appliances fitted with the weight sensor (inserted inside a shock absorber) are designed - thanks to the LCD display - to inform the user of the weight of the laundry inside the drum while at the same time suggesting the quantity of detergent to pour into the dispenser provided.

For it to operate, the appliance needs to be in selecting phase with the door open. When the laundry is being placed inside the drum, the LCD displays the weight in kg with a resolution of 0.5 kg.

The exact sequence to have the correct weight information is as follows:

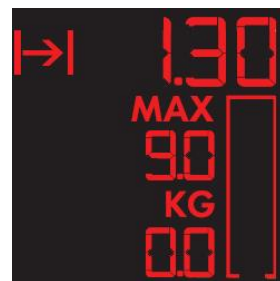
The appliance must be turned off and the drum must be empty.

Turn the washing machine on, select the programme, choose the options, and if the door was closed on starting, open it.

The LCD displays the maximum weight declared for the selected programme and 0.0 kg the weight of the laundry inside the drum (empty drum) and the words "Load laundry" are displayed in the text line.

The graduated scale lights up in proportion to the weight of the laundry inside the drum, the maximum weight displayed for the programme corresponds to the complete lighting of the graduated bar.

Concurrently to the loading of the laundry in the drum, the LCD display is updated for both the weight and time left until the end of the cycle.

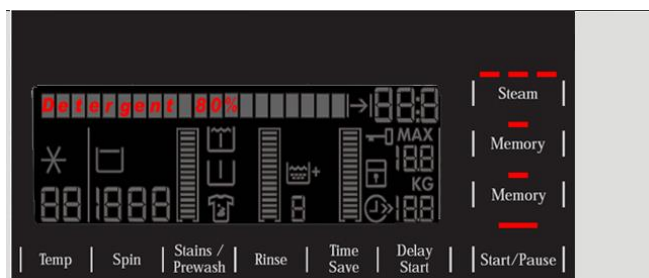


In the event of an overload in a programme (Cottons), the LCD display will continue to show the maximum weight without warning that the load is excessive.

Whereas in other programmes (Synthetics, delicates and special programmes) if the weight exceeds by just 0.5 kg, the words "Load laundry" in the text line change to "Loading completed", to indicate that loading must end. If the load exceeds by more than 1 kg, the graphic bar is completely lit, and the words "Max. load exceeded" are displayed in the text line. The word MAX and the maximum weight related to the appliance flash.

In some cases, you will have to take some of the laundry out to guarantee optimum washing performance.

Once the laundry has been loaded, close the door, the LCD display cancels all the weight details and the percentage detergent to be poured into the dispenser is shown in the text line, considering 100% to be the quantity of detergent required for the maximum load for the chosen programme (a value that remains fixed even in the case of an overload).



Once the detergent has been poured in, and the START/PAUSE button has been pressed, the washing cycle will begin. The information about the weight of the laundry and the percentage detergent disappears and will not be displayed again for the entire cycle.

5.2.1.7.1 Enabling/Disabling the weight sensor

Description: see para. 4.2.1.6.1 on page 23

6 “DEMO” MODE

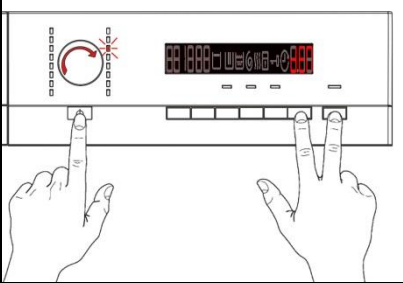
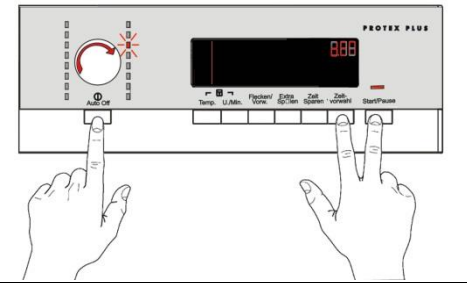
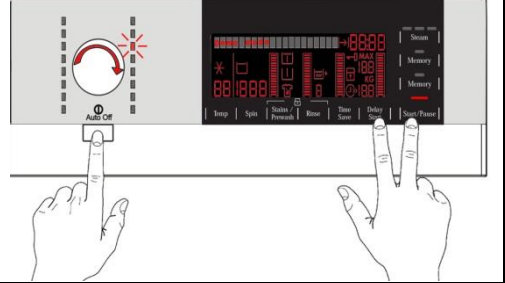
A special cycle is designed to demonstrate the operation of these appliances in shops, without connecting them to the water mains. This way, any one of the programmes can be selected and, once the start button/sensor has been pressed/touched (START/PAUSE), the appliance will only perform some of the phases of the programme, skipping those which cannot be performed (water fill, drain, heating).

The cycle takes place as follows:

- ☞ The door lock is enabled regularly (door locked during operation, possibility of opening it at the end of the cycle or when paused).
- ☞ Motor: all low speed movements are enabled, the pulses and spin are disabled.
- ☞ The water fill solenoid valves and the drain pump are disabled.
- ☞ Display: as the cycle phases are very fast (one second in the demo cycle corresponds to approximately one minute in the actual cycle) the end time decreases by 1 unit per second. Bear in mind that the end time does not always correspond to the actual cycle time.

6.1 Access to DEMO settings

The operations listed below must be carried out within 7 seconds.

SERIES 7	SERIES 8	SERIES 9
		
<p style="text-align: center;"><u>Do not start the procedure with the buttons in the combination pressed</u></p> <ol style="list-style-type: none">1. Switch on the appliance using the ON/OFF button.2. Turn the selector dial until the third LED in the right-hand row is on.3. Press the START/PAUSE button and the nearest option button simultaneously (as shown in the figure).4. Hold the buttons down (approximately three or five seconds) until “dEM” flashes for a short time.		

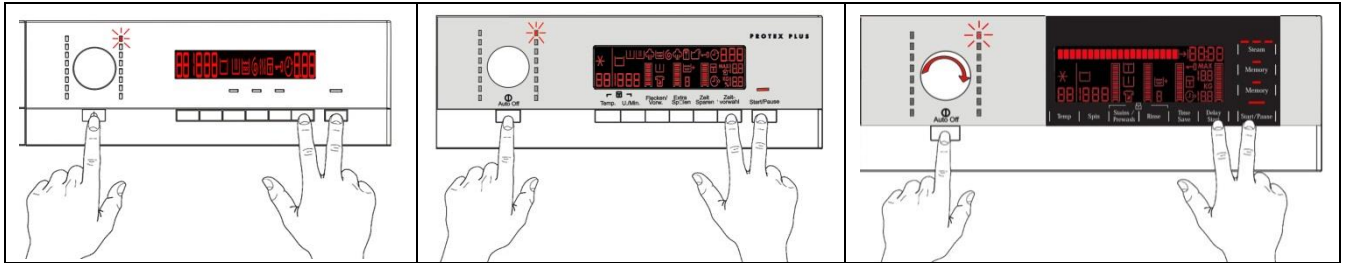
6.2 Exiting DEMO mode

To quit the demo mode, unplug the appliance at the socket, because the ON/OFF button does not function.

7 DIAGNOSTICS SYSTEM

7.1 Accessing diagnostics

The operations listed below must be carried out within 7 seconds.



Do not start the procedure with the buttons in the combination pressed

1. Switch on the appliance using the ON/OFF button. The first LED in the right hand row will light up.
2. Press the **START/PAUSE** button and the nearest **option button** simultaneously (as shown in the figure).
3. Hold the buttons/sensors down/pressed until the LEDs and symbols begin to flash in sequence (approximately 3 seconds).

In the first position, the operation of the buttons, of the related LEDs and of the groups of symbols shown on the LCD screen is checked; turn the programme selector dial **clockwise** to run the diagnostic cycle for the operation of the various components and to read any alarms (see diagnostic testing on the following page).

During this phase, if any key combination is pressed (except for the one relating to diagnostics), all the combinations of options stored are deleted (Extra rinse, No buzzer, etc..) whereas for SERIES 9, the memories with the customised programmes are also deleted.

7.2 Quitting the diagnostics system









→ To exit the diagnostic cycle, switch the appliance off, then back on and then off again.

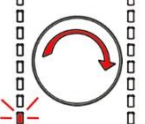

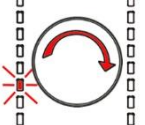



7.3 Phases of the diagnostics test

Irrespective of the type of circuit board and the configuration of the selector, after entering the diagnostic mode, turn the programme selector dial **clockwise** to perform the diagnostic cycle for the operation of the various components and to read any alarms.

Concurrently, a selector control code is shown on the LCD display, which indicates for **two** seconds the description in the last column of the table below.

(All alarms are enabled in the diagnostic cycle).

Selector position	Components activated	Working conditions	Function tested	LCD screen
1	<ul style="list-style-type: none"> - The LEDs light up in sequence, the symbols on the LCD display light up in groups and the backlighting comes on - When a button/sensor is pressed, the group of icons on the LCD display or the corresponding LED lights up and the buzzer sounds 	Always active	User interface functions	
2	<ul style="list-style-type: none"> - Door safety interlock - Wash solenoid valve 	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to wash compartment	 Water level in the tub (mm)
3	<ul style="list-style-type: none"> - Door safety interlock - Pre-wash solenoid valve 	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to pre-wash compartment	 Water level in the tub (mm)
4	<ul style="list-style-type: none"> - Door safety interlock - Solenoid valve pre-wash and wash 	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to conditioner compartment	 Water level in the tub (mm)
5	<ul style="list-style-type: none"> - Door safety interlock - Third Solenoid valve 	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to third solenoid valve compartment	 Water level in the tub is displayed (mm)
6	<ul style="list-style-type: none"> - Door safety interlock - Fourth solenoid (hot water, if present) 	Door closed Water level below anti-flooding level Maximum time 5 mins.	Water fill to fourth solenoid valve compartment	 Water level in the tub is displayed (mm)
7	<ul style="list-style-type: none"> - Door safety interlock - Wash solenoid, if the water in the tub is not enough to cover the heating element - Heating element - Weight sensor (if present, an extra litre of water is loaded) - Recirculation pump 	Door closed Water level above the heating element Maximum time 10 mins up to 90°C. (*)	Reheating Circulation	 Temperature in °C measured using the NTC probe
8	<ul style="list-style-type: none"> - Door safety interlock - Wash solenoid, if the water in the tub is not enough to cover the heating element - Motor (55 rpm clockwise, 55 rpm anti-clockwise, 250 rpm pulse) 	Door closed Water level above the heating element	Check for leaks from the tub	 Drum speed in rpm/10

9		<ul style="list-style-type: none"> - Door safety interlock - Drainage pump - Motor up to 650 rpm then at maximum spin speed (**) 	Door closed Water level lower than anti-boiling level for spinning	Drain, calibration of analogue pressure switch and spin	 Drum speed in rpm/10
10	-----	-----	-----	-----	-----
11		<ul style="list-style-type: none"> - Reading/Deleting the last alarm 	-----	----	
12 ÷ 16		<ul style="list-style-type: none"> - The LEDs light up in sequence, the symbols on the LCD display light up in groups and the backlighting comes on - When a button/sensor is pressed, the group of icons on the LCD display or the corresponding LED lights up and the buzzer sounds 	Always active	User interface functions	

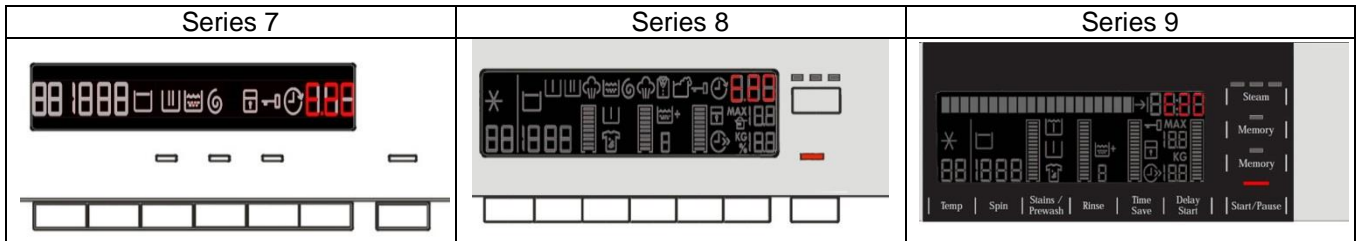
(*) In most cases, this time is sufficient to check the heating. However, the time can be increased by repeating the phase without draining the water: pass for a moment to a different phase of the diagnostic cycle and then back to the heating control phase (if the temperature is higher than 80°C, heating does not take place).

(**) The check at the maximum speed occurs without control of the A.G.S. and no garments must be inside the appliance.

8 ALARMS

8.1 Displaying user alarms

When a problem occurs in the appliance and a “WARNING” or “ALARM” is triggered, this is shown in the three digit display (where the time left to the end of the cycle is shown), this information ceases to be displayed when the problem is repaired/solved. The buzzer then emits a sound for 5 minutes. This does not occur for alarm EH0.



The alarms displayed to the user are listed below:

- ↻ E10 – Water fill difficulty (tap closed)
- ↻ E20 – Drain difficulty (filter dirty)
- ↻ E40 – Door open

The alarms listed below:

- ↻ EF0 – Water leakage (Aqua Control System)

The intervention of a service engineer is required.

For the alarm on the other hand:

- ↻ EH0 – Voltage or frequency outside the normal values

It is necessary to wait for power supply voltage and/or frequency to restore normal conditions.

The alarms are enabled during the execution of the washing programme. With the exception of alarms associated with the configuration and the power supply voltage/frequency, which are also displayed during the programme selection phase.

The door can normally be opened (except where specified) when an alarm condition has occurred, on the condition that:

- The water in the tub is below a certain level.
- The water temperature is lower than 55°C.
- The motor has stopped.

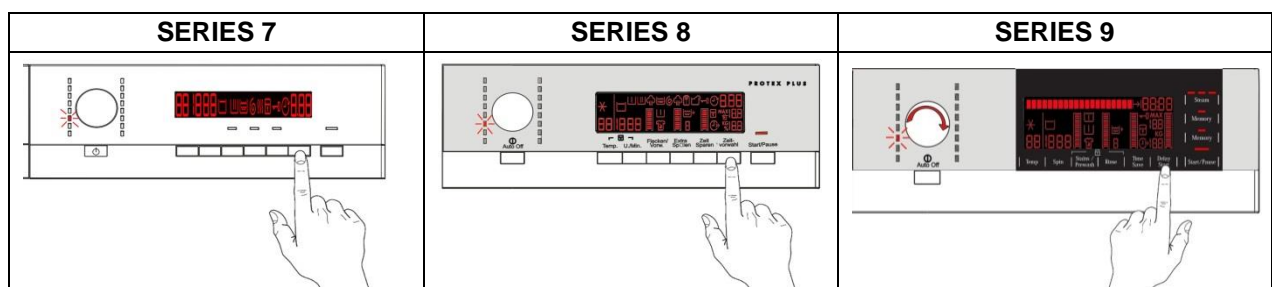
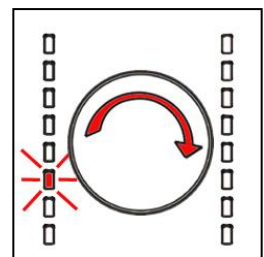
Certain alarm conditions require a drain phase to be performed before the door can be opened for safety reasons:

- Cooling water fill if the temperature is higher than 65°C.
- Drain until the analogue pressure switch is on empty, during a max. 3-minute interval.

8.2 Reading the alarms

The last three alarms stored in the FLASH memory of the PCB can be displayed:

- Enter the diagnostic mode (para. 7.1)
- Irrespective of the type of PCB and configuration, turn the programme selector knob **clockwise** to the **eleventh position**. the last alarm is displayed.
- To display previous alarms, press/touch the button/sensor to the left of the START/PAUSE button in sequence (as shown in the figure).
- To return to the last alarm, press/touch the START/PAUSE button/sensor.



8.3 Rapid reading of alarms

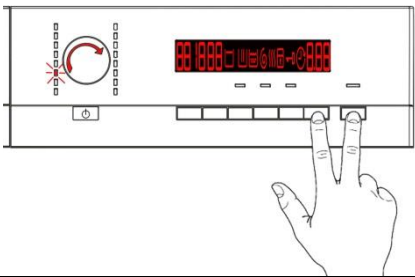
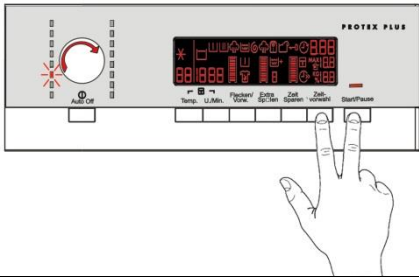
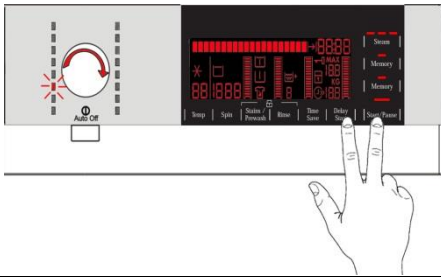
The last alarm can even be displayed if the selector is not in the tenth diagnostic position or the machine is in normal operation (e.g. while a washing programme is in progress):

- Press the **START/PAUSE** button and the nearest **option button** simultaneously (as if you were entering DIAGNOSTIC mode) for at least 2 seconds: the LCD display shows the last alarm.
- The alarm continues to be displayed until a button is pressed.
- The alarm reading system is as described in para. 8.2
- During the time that the alarm is displayed, the appliance continues to perform the cycle or, if you in the selection phase any options that have already been selected will remain in the memory.

8.4 Deleting the last alarm

It is good practice to cancel the alarms stored:

- After reading the alarm codes, to check whether the alarm re-occurs during the diagnostic cycle
- After repairing the appliance, to check whether or not it occurs again during testing

Series 7	Series 8	Series 9
		
<ol style="list-style-type: none"> 1. Enter the diagnostic mode, 2. Turn the selector dial clockwise until the eleventh LED is turned on (in the left-hand alarm reading row) 3. Press/touch the START/PAUSE button/sensor and the nearest option button/sensor simultaneously (as shown in the figure) 4. Hold down the buttons until the LCD display shows "E00" (at least 5 seconds). 		

N.B. With this operation all the alarms stored are deleted.

9 OPERATING TIME COUNTER

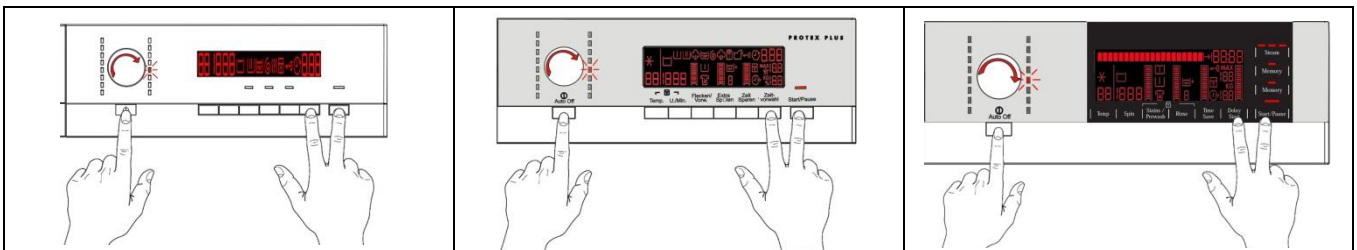
Using a specific procedure, the operator can display the total operating time for the appliance, which is counted from the moment it is first switched on.

The unit can count up to a maximum of **6,550** hours of operating time

- Only the operating time of normal programmes (and not diagnostic cycles) is counted
- The actual operating time for the cycle is counted (which does not include pauses, delayed start time, rinse hold time and soaking phases)
- The precision of the counter is 30 seconds per programme.
- Only whole hours of operation are counted (1hr and 59 min = 1hr)

9.1 Reading the operating time

The operations listed below must be carried out within 7 seconds.



Do not start the procedure with the buttons in the combination pressed

1. Switch on the appliance using the ON/OFF button.
2. Turn the selector in a clockwise direction until the **fifth** LED in the right hand row lights up.
3. Press the **START/PAUSE** button and the nearest **option button** simultaneously (as shown in the figure).
4. Hold down the buttons until the hours of operation appear on the display (at least 5 seconds).

9.2 Display of total operating time

This time is displayed with a sequence of two digits at a time: the first two digits indicate thousands and hundreds, the second two digits indicate tens and units for the SERIES 7 and 8, while the time is displayed in a single sequence for SERIES 9.

For example, if the operating time is **6,550** hours, the display will show the following sequence:

	Phase 1	Phase 2	Phase 3
	For <u>two seconds</u> it displays: Hr	For <u>two seconds</u> , the following digits are displayed: ↙ thousands (6) ↘ hundreds (5)	For the next <u>two seconds</u> the following digits are displayed: ↙ tens (5) ↘ units (0)
<u>SERIES</u> 7/8			
<u>SERIES</u> 9	Phase 1 		Phase 2

At the end of phase three (after the tens and units are displayed), the cycle is repeated.

To return to normal mode, either: switch the appliance off or press a button or turn the selector knob.

10 OPTIONS

10.1 Compatibility between options

		OPTIONS																
		Rinse hold	Night cycle	Pre-wash/Soak (*)	Stains	Extra-rinse	Easy-iron	Economy	Cupboard Dry	Daily	Super Quick	Sensitive	Reduced spin speed	No spin	Aquasol	Max steam	Medium steam	Minimum steam
Compatibility with OPTIONS	Rinse hold			X	X	X	X	X	X	X	X	X	X		X	X	X	X
	Night cycle			X	X	X		X	X	X	X				X	X	X	X
	Pre-wash/Soak (*)	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Stains	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
	Super rinse	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X
	Easy-iron	X		X	X	X		X	X	X	X		X	X	X	X	X	X
	Economy	X	X	X	X	X	X				X	X	X	X		X	X	X
	Cupboard Dry	X	X	X	X	X	X					X	X	X	X	X	X	X
	Daily	X	X	X	X	X	X					X	X	X	X	X	X	X
	Super Quick	X	X	X	X	X	X	X					X	X	X	X	X	X
	Sensitive	X		X	X			X	X	X			X	X	X	X	X	X
	Reduced spin speed			X	X	X	X	X	X	X	X	X			X	X	X	X
	No spin			X	X	X	X	X	X	X	X	X			X	X	X	X
	Aquasol	X	X	X	X	X	X		X	X	X	X	X	X				
	Max steam	X	X	X	X	X	X	X	X	X	X	X	X	X				
	Medium steam	X	X	X	X	X	X	X	X	X	X	X	X	X				
Minimum steam	X	X	X	X	X	X	X	X	X	X	X	X	X					
Phases where selection/ modification is possible	Selection	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	
	Pre-wash	X	X			X	X						X	X	X	X	X	
	Wash	X	X			X	X						X	X	X	X	X	
	Rinses	X																
	Spin																	

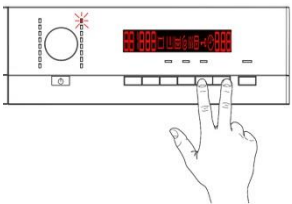
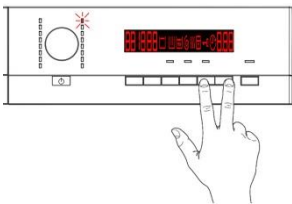
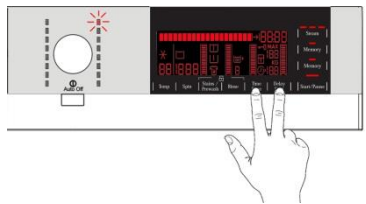
(*) Pre-wash and Soak exclude each other

Pre-wash+Stains and Soak+Stains are compatible with one another depending on the detergent dispenser used.

- The delayed start is compatible with all programmes except for Drain; the maximum time selectable is 20 hours.
- The selection of the spin cycle is available for all programmes, except for Drain/Soak/Extra Silent.

10.2 Description of options

- **Rinse hold**
 - During the cycle the intermediate rinses and spins are performed.
 - Stops the appliance with water in the tub before the final spin cycle.
 - Once the Rinse Hold has ended, the appliance rotates the drum every two minutes for up to a maximum of 18 hours, after which it stops.
 - To drain the water, simply press the START/PAUSE button to run the drain and spin cycles.
- **Pre-wash**
 - Adds a pre-wash phase at the start of the cycle with water heating to 30°C (or cold, if selected).
 - In COTTONS and SYNTHETICS cycles, performs a short spin before passing on to the washing phase.
 - This option cannot be selected for WOOL and HAND WASH cycles.
- **Prewash**
 - Adds a pre-wash phase with heating to 30°C (or cold, if selected) plus 30' hold with HAND WASH movement.
 - Completes the cycle
- **Stains**
 - Adds a 5-minute motor movement phase after heating to 40°C.
 - Water flow to the pre-wash/stains compartment to introduce the special stain-removal product.
 - This option cannot be selected for WOOL and HAND WASH cycles.
- **Super rinse (SERIES 7)**
 - Adds **two** rinses in the COTTONS – SYNTHETICS – DELICATES cycles.
 - Eliminates the spin at the end of washing.
- **Super rinse (SERIES 8/9 key combination).**
 - Adds **two** rinses in the COTTONS – SYNTHETICS – DELICATES cycles.
 - Eliminates the spin at the end of washing.
- **EXTRA rinse (SERIES 8/9)**
 - Adds **up to five** rinses in the COTTONS – SYNTHETICS – DELICATES cycles.
 - When the rinses are five or more, it eliminates the spins at the end of the washing.
 - Maximum of 8 rinses in total.

ENABLING/DISABLING EXTRA RINSE USING A COMBINATION OF KEYS		
Appliances which do not envisage the option SUPER RINSE combined with a button can enable it through a key combination.		
Series 7	Series 8	Series 9
		
During the selecting phase, press the two buttons shown in the figure simultaneously for a few seconds until the related icon lights up. This option also remains enabled during subsequent cycles. To disable it, repeat the same operation until the related icon is turned off.		

- **No spin**
 - It eliminates all the spin phases.
 - It adds three rinses to the COTTON CYCLE and one to the SYNTHETIC FABRICS cycle.
- **Daily**
 - Modifies the structure of the COTTONS – SYNTHETICS – DELICATES cycles to obtain good washing performance in a short space of time.

- **Super quick**

→ Modifies the structure of the wash phase of the COTTONS – SYNTHETICS – DELICATES cycles by half a load.

- **Delayed start time**

→ Adds a pause before the start of the programme. The delay time is shown on the three digit display

→ See page 13 series 7, page 20 series 8, page 28 series 9.

→ To start the cycle immediately after the countdown to the delayed start has already begun: press the Start/Pause button, cancel the delay time by pressing the relevant button, then press Start/Pause again.

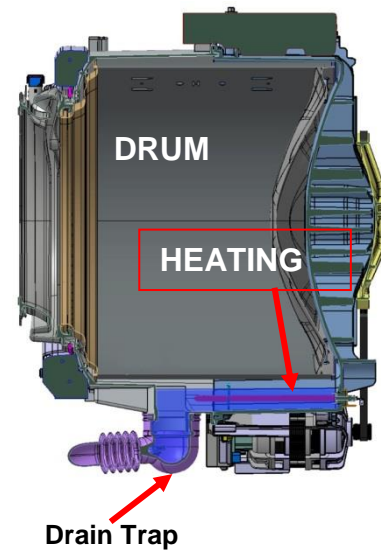
11 Generating STEAM

In SERIES 8 and 9 certain programmes can be configured to generate steam, which is used to refresh the laundry or to remove some creases and make ironing easier.

To obtain steam, during these programmes, the quantity of water filled in the tub must be enough to cover the heating element and the maximum temperature to reach is 60°C/75°C.

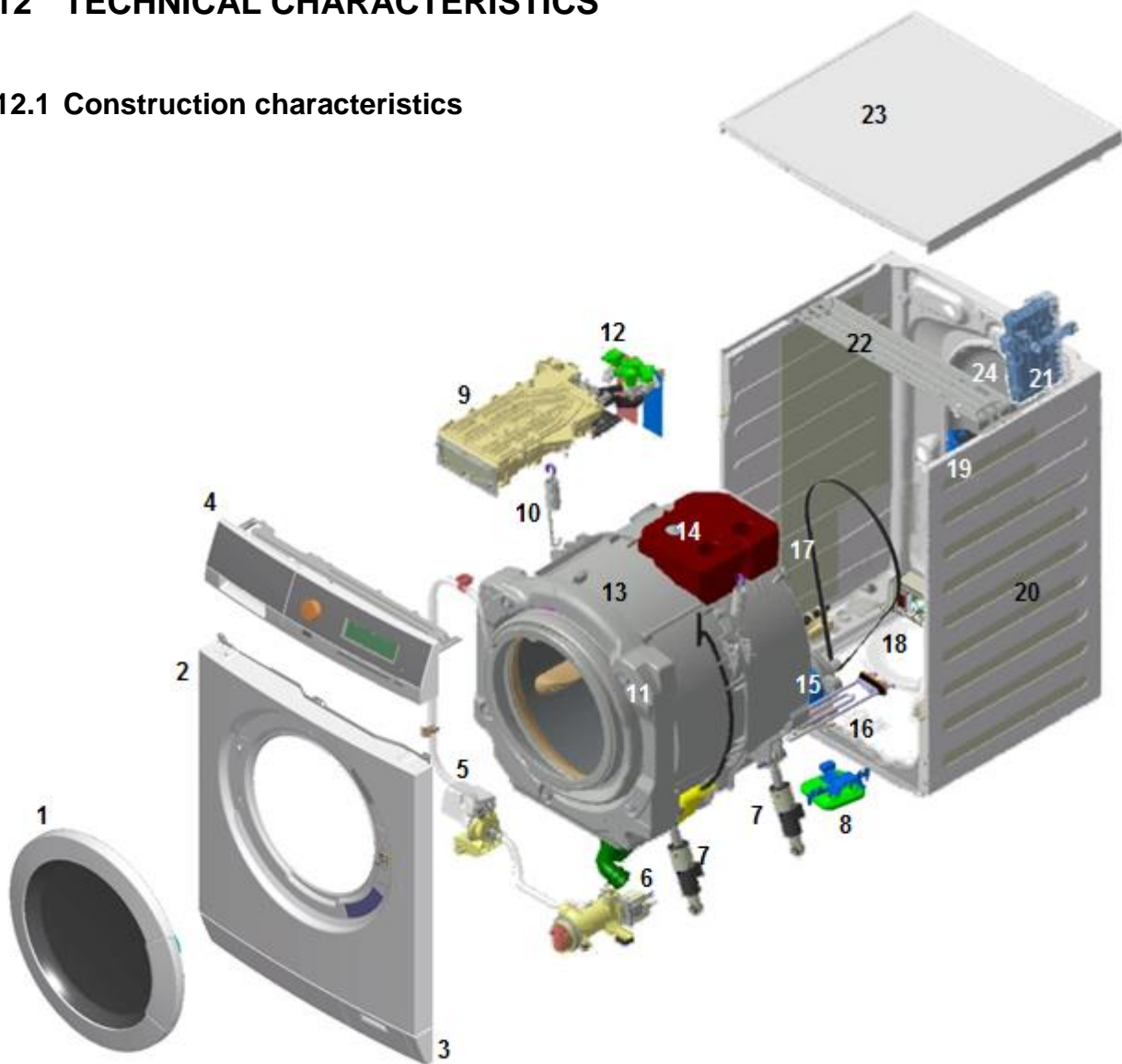
During the water filling and the movement of the drum, the laundry must not get wet.

The appliance must be levelled properly, because only a few degrees of difference in level are enough for water to enter the drum and get the laundry wet.



12 TECHNICAL CHARACTERISTICS

12.1 Construction characteristics



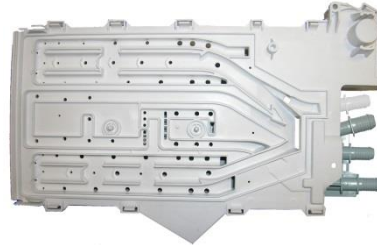
- | | |
|-------------------------------------|-----------------------------------|
| 1. Door | 13. Washing unit |
| 2. Front panel | 14. Upper counterweight |
| 3. Base board | 15. Motor |
| 4. Control panel | 16. Heating |
| 5. Re-circulation pump | 17. Belt |
| 6. Drainage pump | 18. Inverter motor control board |
| 7. Shock absorbers | 19. Analogue pressure switch |
| 8. Water control | 20. Back unit casing |
| 9. Detergent dispenser | 21. Main electronic circuit board |
| 10. Washing unit suspension springs | 22. Crossbar |
| 11. Front counterweight | 23. Worktop |
| 12. Solenoid valves | 24. Back panel |

12.2 Detergent dispenser

12.2.1 Detergent dispenser with multi-way solenoid valves

The water in the detergent dispenser is filled through a solenoid valve for cold water (with one inlet, and 2 or 3 outlets) and where featured one for the hot water (with one inlet and one outlet). The detergent dispenser has 4 compartments.

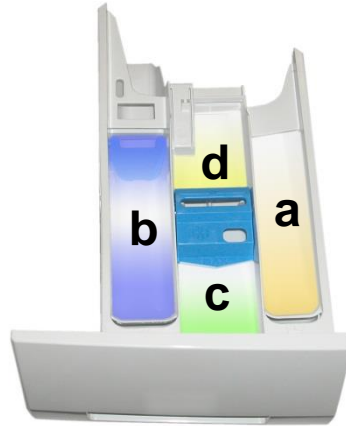
- Tray conveyor
- 4-way water inlet nozzle



12.2.2 Operating principle of 4-compartment conveyor

<p style="text-align: center;">Water fill to pre-wash compartment (pre-wash solenoid)</p> <ul style="list-style-type: none"> • This solution is used with the four compartment tray: the detergent in compartment “a” is loaded at the start of the pre-wash phase. 	
<p style="text-align: center;">Water fill to wash compartment (wash solenoid)</p> <ul style="list-style-type: none"> • In all models: compartment “b” is used to contain the detergent loaded at the start of the washing. 	
<p style="text-align: center;">Water fill to activating wash compartment</p> <ul style="list-style-type: none"> • In models with 4-compartment dispenser trays, the filling in tray “d” is performed by a purpose-provided solenoid valve during washing, when the water has reached 40°C. • In models with 3-compartment dispenser trays, this section is not used. 	
<p style="text-align: center;">Water fill to conditioner compartment (pre-wash and wash solenoid valves)</p> <ul style="list-style-type: none"> • In all models: compartment “c” is used for the conditioner, which is loaded at the start of the final rinse. The prewash and wash solenoid valves are activated simultaneously. 	
<p style="text-align: center;">Hot water filling (hot water solenoid)</p> <ul style="list-style-type: none"> • In models with a hot water solenoid valve, the hot water solenoid valve is activated to fill water into the wash compartment. 	

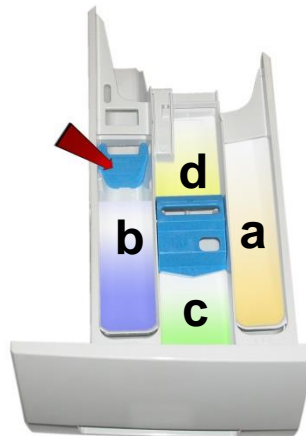
12.3 Detergent dispenser



12.3.1 Arranging the flap in the detergent dispenser

The detergent dispenser is designed for use with: powder detergent or liquid detergent.

A flap (indicated by the arrow) has been fitted inside compartment “b” where the detergent is introduced, which can be flipped up or down.

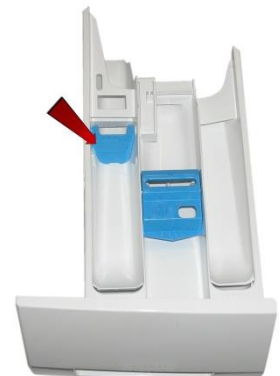


With the flap flipped up, the appliance is ready for use with powder detergent (this is the factory setting) - see figure opposite.



To modify the position of the flap, pull the detergent dispenser out (see page 90).

With the flap flipped down, the appliance is ready for use with liquid detergent.



For further details, read the instruction manual.

12.4 Washing unit

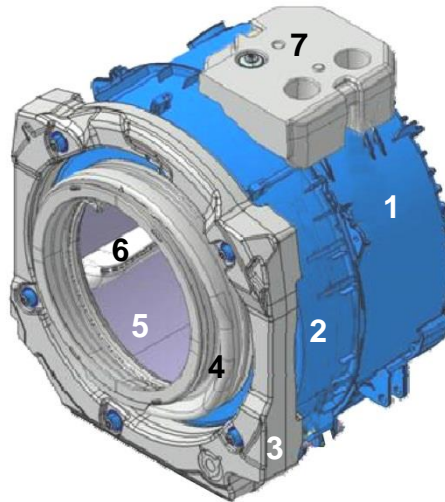
Type	Load capacity (cottons) Wash	Drum volume
	Max.	
G60	9 Kg	66 litres

The washing unit is made up of:

A back casing (1) and a front casing (2), welded together to form the welded tub. Inside this is the drum (5) (made of stainless steel) with the three blades (6) (in carboran) snap-fastened to the drum.

To balance the unit during the washing movements and during the spin phases, the counterweights are secured in place with screws: one at the front (3) and one at the top (7).

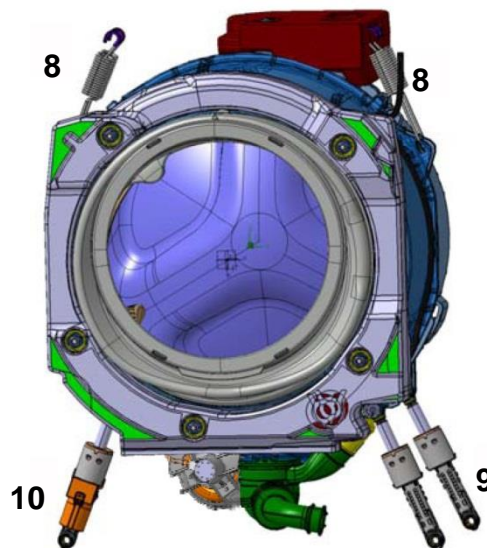
The bellow seal (4) is fixed at the front.



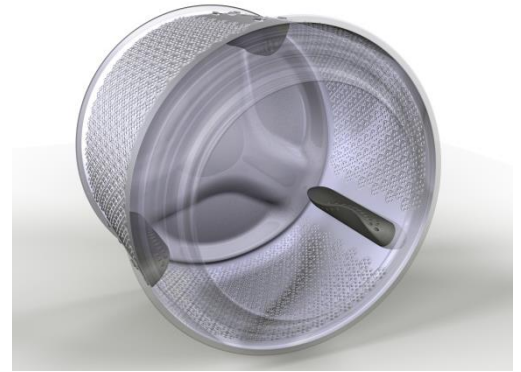
The washing unit is suspended by two coil springs (8) attached to the top crossbar, and the oscillations are dampened by three shock absorbers, two on the right (9) and one on the left (10) (looking straight at the front of the appliance).

In washing machines:

in the SERIES 7, all three shock absorbers are the same, whereas in the SERIES 8 and 9 the left one (10) has an incorporated weight sensor (for further details please read about the weight sensor on page 55).



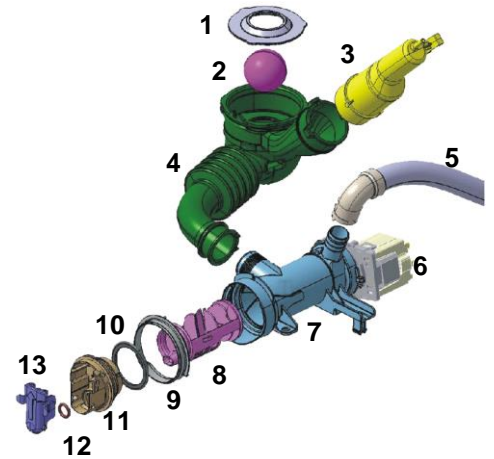
Drum with three blades inside.



12.5 Water circuit

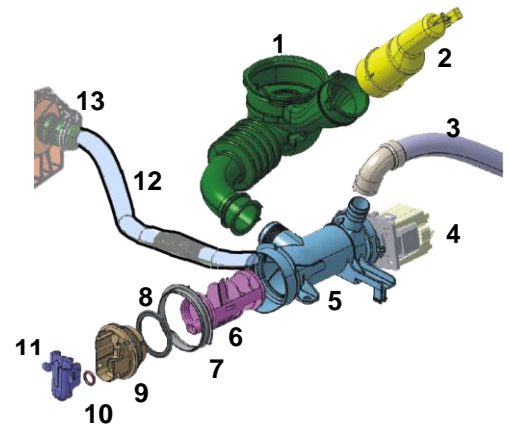
12.5.1 OKO version drain circuit

1. Ball lock ring
2. Ball
3. Pressure chamber
4. Filter body tub tube
5. Drain pipe
6. Drainage pump
7. Filter body
8. Filter or needle trap
9. Filter body seal
10. Filter dial seal
11. Filter dial
12. Locking lever seal
13. Locking lever



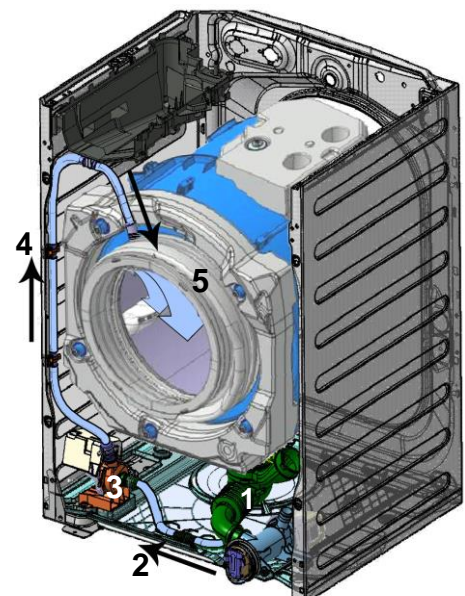
12.5.2 JET version drain circuit

1. Filter body tub tube
2. Pressure chamber
3. Drain pipe
4. Drainage pump
5. Filter body
6. Filter or needle trap
7. Filter body seal
8. Filter knob seal
9. Filter dial
10. Locking lever seal
11. Locking lever
12. Circulation pump suction tube
13. Re-circulation pump



12.5.3 JET circuit

The water circulating through the drain circuit (1) during the washing is suctioned along the tube (2) by the circulation pump (3) which conveys it through the tube (4) into the bellow seal (5) and from here into the laundry in the drum.



12.5.4 New Filter dial

Until now, the loading circuit was drained as described below:

- ↪ For some machines it is necessary to disconnect the drain pipe from the back panel, positioning it as low down as possible to drain any remaining water from the inside of the drain circuit.
- ↪ In other machines, there is a small hatch at the bottom of the front panel, from which it is possible to access the filter dial. Close to this is a small pipe that can be used to drain the water, after the plug has been removed from it.
- ↪ For machines manufactured with the new filter dial: open the flap at the bottom of the front panel. The filter knob is as shown in Fig. 1.

To drain the water, simply:

- Press the two tabs that secure the closing lever to the plug Fig. 2.
- Simultaneously extract the top part of the lever as shown by the yellow arrow in Fig. 3.
- Arrange the closing lever as shown in Fig. 4.

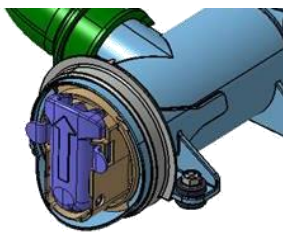


Fig. 1

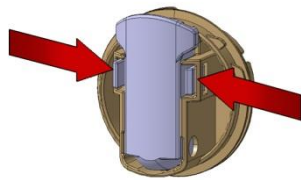


Fig. 2

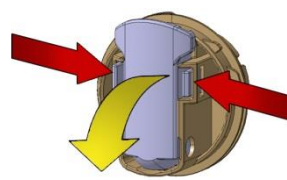


Fig. 3

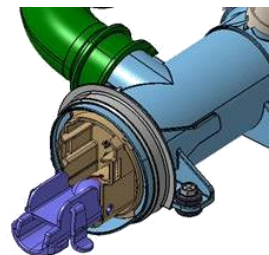


Fig. 4

12.6 Electronic control

12.6.1 Programming/Updating the main circuit board



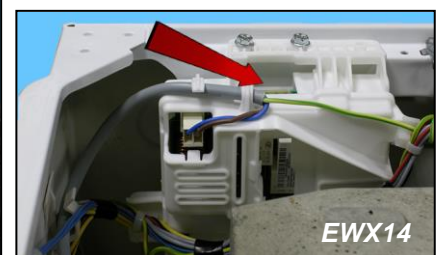
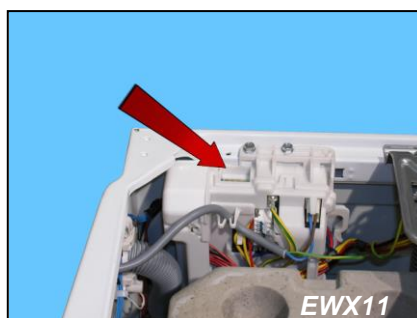
- **Any programming/updating/diagnostics operation carried out with the board installed on the appliance and the mains plug disconnected from the socket.**
- **If one of these operations is accidentally carried out when plugged in to the socket, on completing the operation, the appliance will remain turned off when restarting; disconnect the plug from the socket and wait at least 40 minutes before starting up the appliance (any operation will only create further delay).**

In the Service Notes the main circuit board (587) is identified with two spare parts codes:

- ↪ Code 973 914... identifies the pre-programmed board.
- ↪ Code 132... identifies the unprogrammed board.

The circuit board can be programmed/updated using the **Sidekick** application. For further information, please refer to the instructions provided/illustrated in the course entitled << **Sidekick Guide** >> at the link (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.

To update/program the main board, insert the **Sidekick** connector in the position shown by the red arrow:



12.7 Electronic control

The electronic control is made up of:

1. Main electronic circuit board
2. Control/display circuit board
3. INVERTER motor control board (not shown in the figure, positioned at the bottom right of the appliance seen from the rear).



The control/display PCB contains: the selector dial, to select the washing programme, the LCD display, to display the programme information; the buttons to adjust the temperature, the spin speed and possibly select an option, the Start/PAUSE button and lastly the ON/OFF button (in SERIES 9, there is only the ON/OFF button as the other buttons have been replaced by touch sensors).

The commands received by the display board (by turning the selector dial, selecting an option, etc...) are sent to the main circuit board, which powers all the electrical components (cold and hot water solenoid valve - where featured, motor control board - Inverter, drain pump, circulation pump - where featured, heating element, door safety interlock, drum light).

It controls the level of water via the analogue pressure switch.

It controls the state of the door.

It controls the speed of the motor.

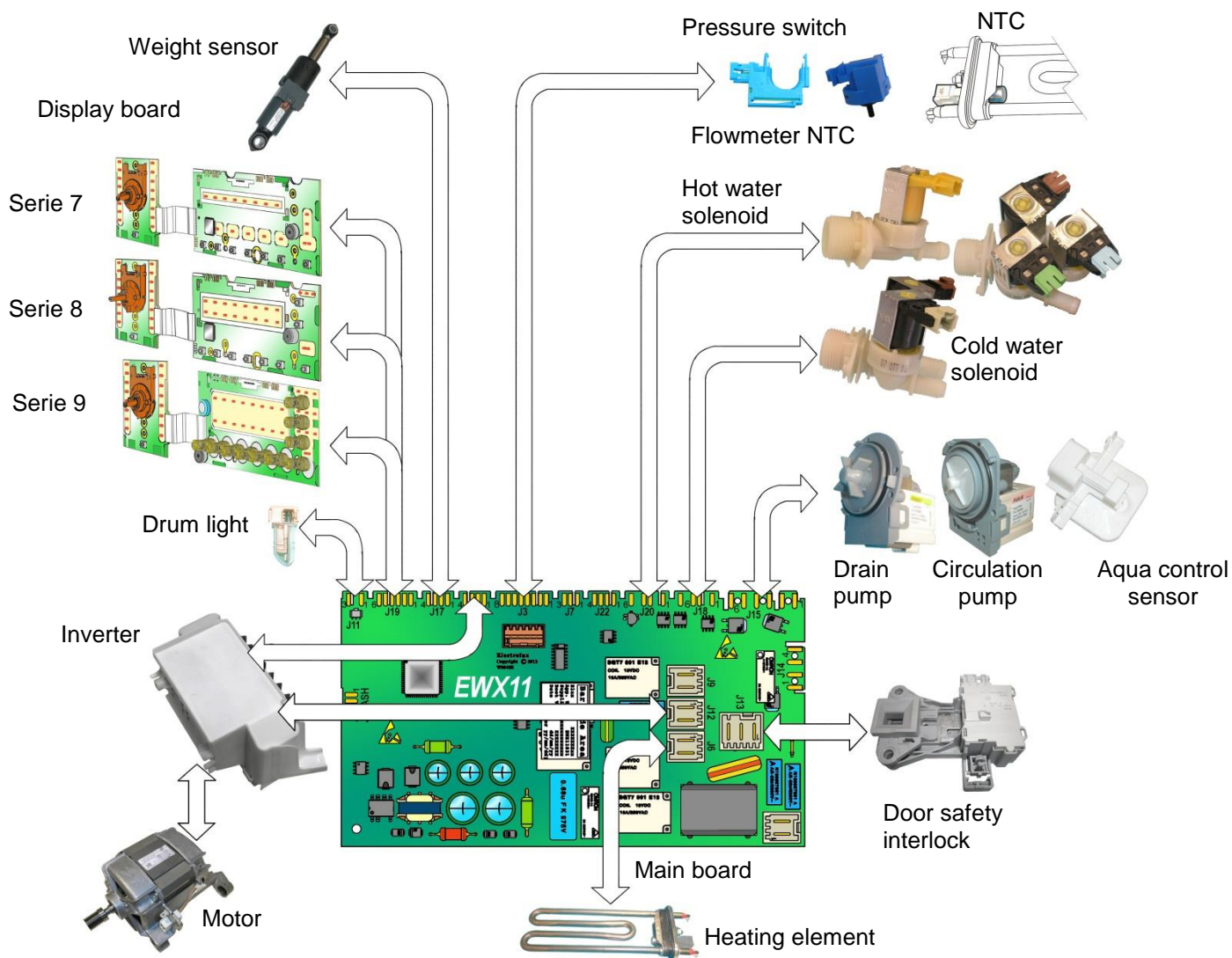
It controls the temperature of the wash water via the NTC probe inserted in the heating element.

It controls the voltage and frequency of the power supply and ensures they are close to the rated ones.

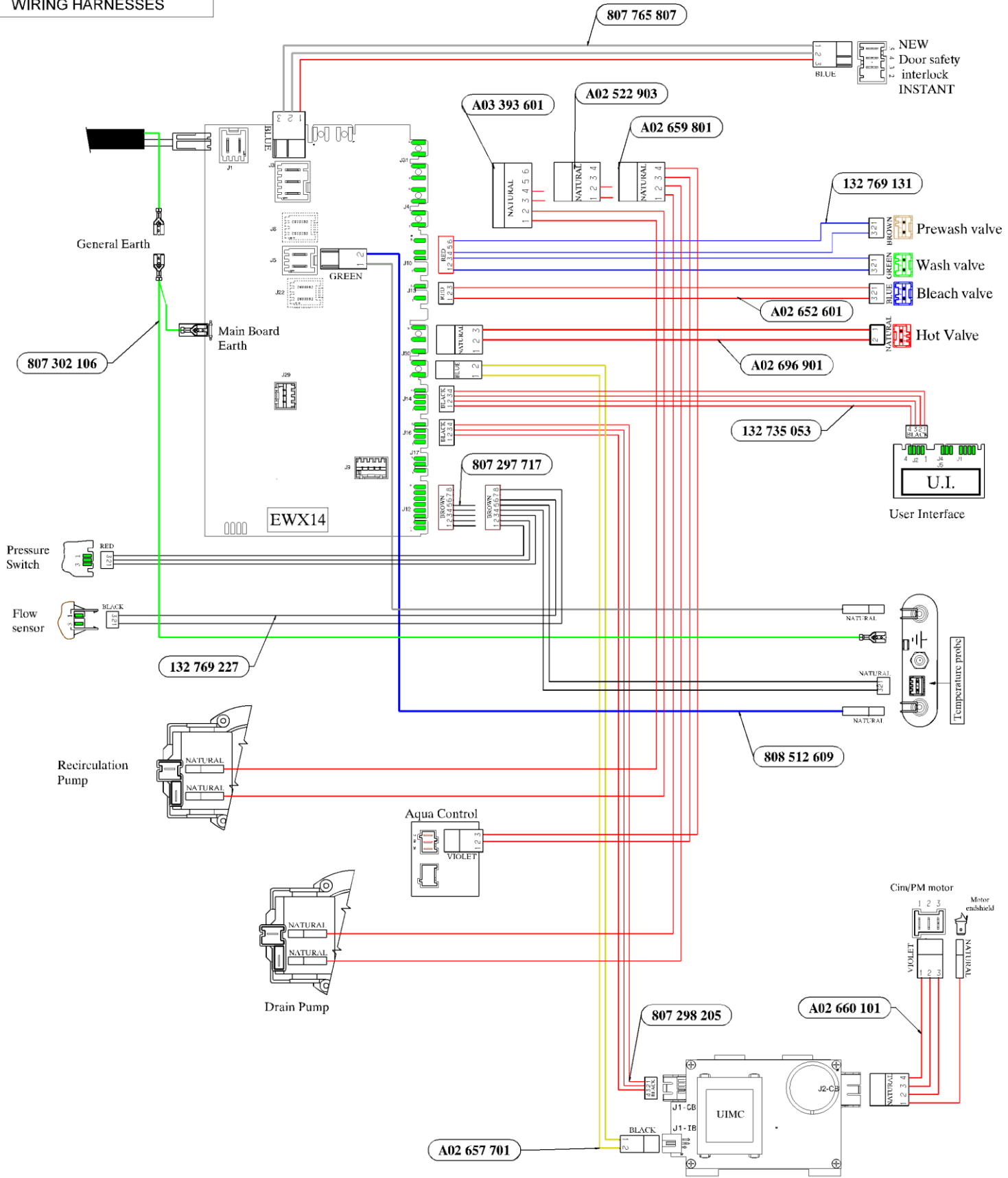
It controls the weight of the laundry in the drum, via the weight sensor.

It controls the flow of water through the solenoid valve via the flowmeter.

It simultaneously controls their functioning to guarantee the correct performance of the washing cycle.



WIRING HARNESSES



13 ELECTRICAL COMPONENTS



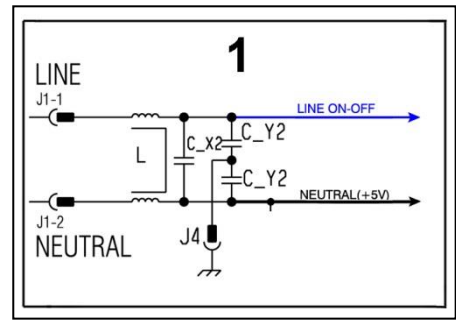
- When replacing any of the components, please refer to the code shown in the list of spare parts relating to the appliance being repaired.

13.1 Noise filter

13.1.1 General characteristics

This device is connected to the electricity power line input of the appliance and avoids the emission of radio frequency disturbances in the power network. It is incorporated into the main board.

1. Main electronic circuit board



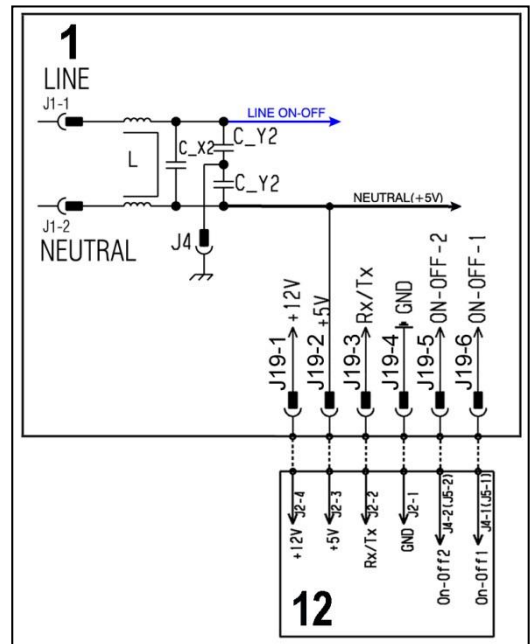
13.2 Display board

The main circuit board (1) supplies the power supply voltage to the control/display board (12).

It is possible to select the programmes by turning the selector. The options can be selected by pressing/touching the buttons/keys and the START/PAUSE button is used to start the machine or pause it.

The buzzer - where featured - is powered by the display board.

1. Main electronic circuit board
12. Display board



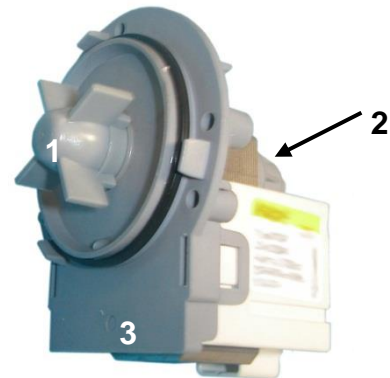
13.3 Drain pump - Aqua control



- When replacing the pump, please refer to the code shown in the list of spare parts relating to the appliance.

13.3.1 General characteristics

1. Wheel
2. Rotor
3. Stator



The pump, which drains the water at the end of the various washing cycle phases, is centrifugal and is activated by a synchronous motor.

The rotor consists of a permanent magnet and the direction of rotation can be either clockwise or anticlockwise. It can turn by approximately a quarter of a revolution without turning the wheel. Consequently, if a foreign body is stuck in the wheel, the rotor can perform small movements clockwise and anticlockwise until the foreign body is released.

The flow rate of these pumps is approximately 18-20 l/min, and the maximum head is 90 cm above ground level. Fitted with overload cut-out.

Important

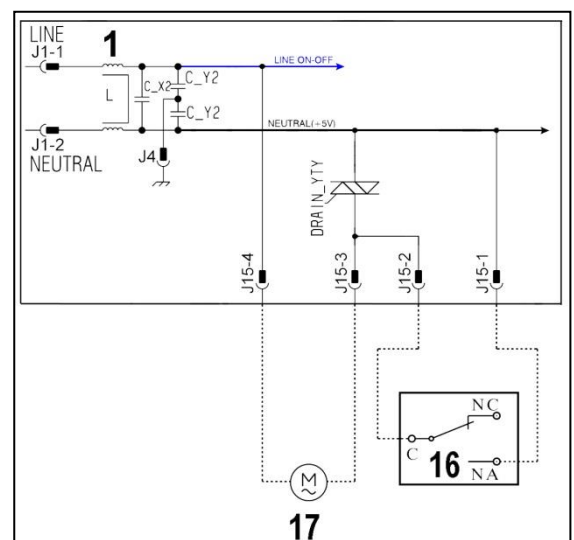
Synchronous pumps, when powered on empty (disconnected from the water circuit), may not start in some cases because their very construction makes them need an antagonist torque on the wheel to allow the rotor to move in one of the two directions.

The pumps should therefore only be tested once fitted to the appliance, after a little water has been filled.

The drain pump is powered by the main circuit board through a TRIAC, as follows:

- ↪ For a pre-determined period (and an alarm might be displayed - see table of alarms).
- ↪ Until the electronic pressure switch closes on empty, after which the pump is actuated for a brief period or passes to the subsequent phase.

1. Main electronic circuit board
16. Aquacontrol sensor
17. Drainage pump



13.4 Aqua control (where featured)

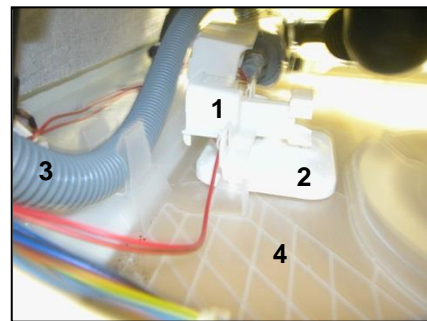
13.4.1 General characteristics




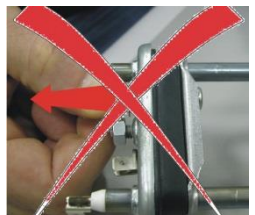
The aqua control is a sensor positioned in contact with the bottom of the machine. It detects any water leakage from inside the washing machine and feeds the drain pump (not only during normal operation but also when the appliance is turned off with the plug inserted into the power socket).

In the bottom of the washing machine there is a plastic bottom that forms a container. This collects any water leakage (from the tub, from the pipes, etc.), which flows into the area in which the float is positioned (made of polystyrene). In the presence of water this lifts up and triggers the microswitch, which powers the drain pump. When it is triggered, the LCD display shows an ALARM (if the machine is on). See table of alarms.

1. Micro-switch
2. Float (polystyrene)
3. Drain pipe
4. Aqua control bottom



13.5 Heating element

	<ul style="list-style-type: none"> • When replacing the heating element, please refer to the code shown in the list of spare parts relating to the appliance. • It is strictly forbidden to tamper with the heating element in any way!!! (e.g. replace the NTC probe, etc...) 	
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

13.5.1 General characteristics

1. NTC probe
2. Heating element

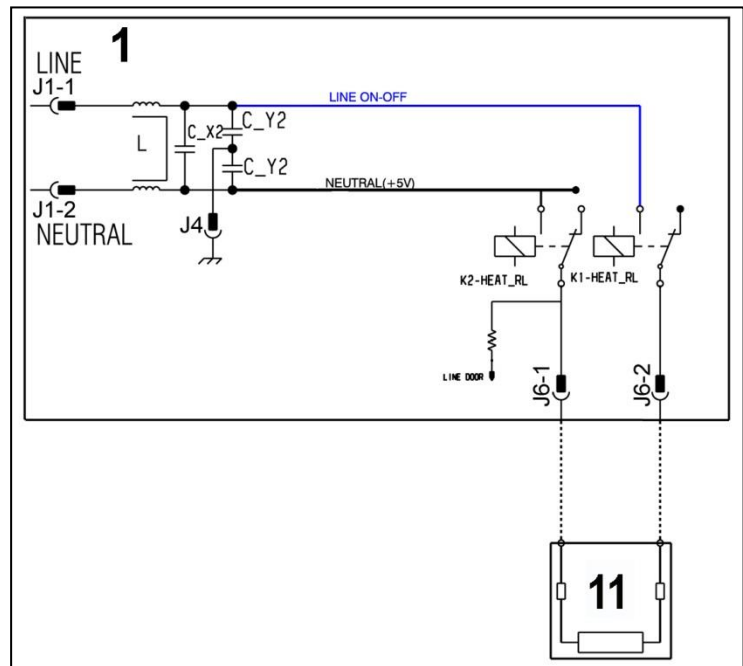


The heating element of the washing water is armoured, i.e. it is inserted in sealed tubular stainless steel casing.


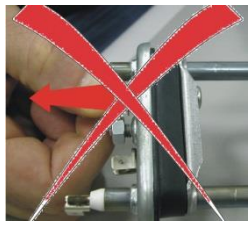
It is powered by two relays (K1, K2) situated in the circuit board. It is fitted with two thermal fuses which trip if the temperature of the heating element exceeds the values for which they were calibrated.

(In the event of a fault an alarm will be displayed - see table of alarms).

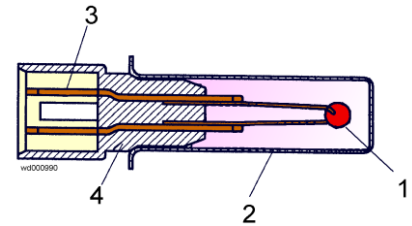
1. Main electronic circuit board
11. Heating element



13.6 Temperature probe

	<ul style="list-style-type: none"> • When replacing the heating element, please refer to the code shown in the list of spare parts relating to the appliance. • It is strictly forbidden to tamper with the heating element in any way!!! (e.g. replace the NTC probe, etc...) 	
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

13.6.1 General characteristics

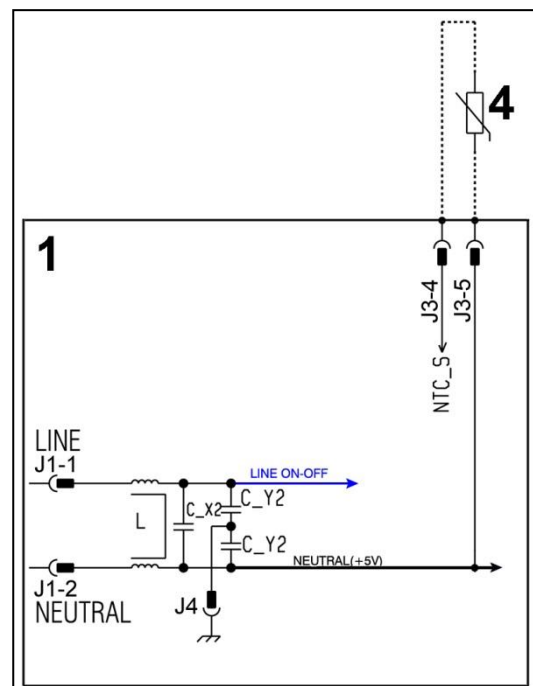


1. NTC heating element
2. Metal capsule
3. Terminals
4. Plastic casing

An NTC type probe is used to control the washing temperature: it is built in such a way that its internal resistance decreases as the temperature rises. This drop in resistance is detected by the electronic control which, when the desired temperature is reached, disconnects the heating element.

The temperature of the water is controlled by the circuit board by means of an NTC temperature probe incorporated in the heating element.

1. Main electronic circuit board
4. NTC probe

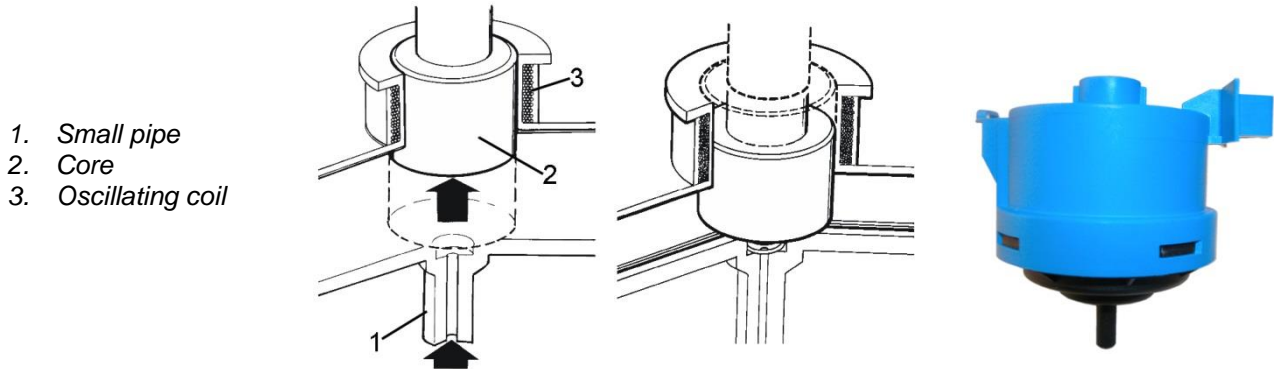


In the event of a fault (short-circuit or stoppage) an alarm will be displayed - see table of alarms.

13.7 Analogue pressure switch

13.7.1 General characteristics

The electronic pressure switch is an analogue device that controls the water level in the tub, used in models with electronic control system, and it is directly connected to the main PCB.



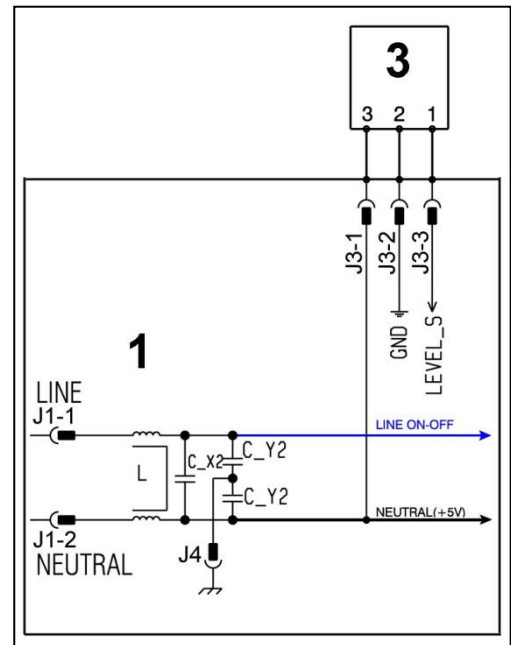
1. Small pipe
2. Core
3. Oscillating coil

The pressure switch is connected via a small pipe to the pressure chamber.

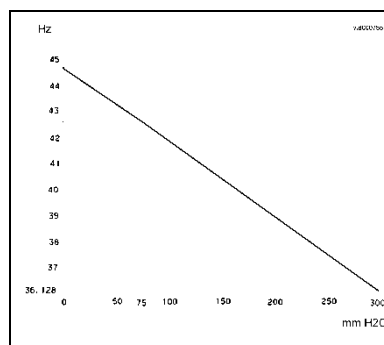
When water is introduced into the tub, this creates a pressure inside the hydraulic circuit that causes the membrane to change position. This in turn modifies the position of the core inside the coil, thus changing the inductance and the frequency of the oscillating circuit.

The PCB recognises how much water has been introduced into the tub according to the frequency.

1. Main electronic circuit board
3. Analogue pressure switch



Operating frequency variation according to the quantity of water in the tub.

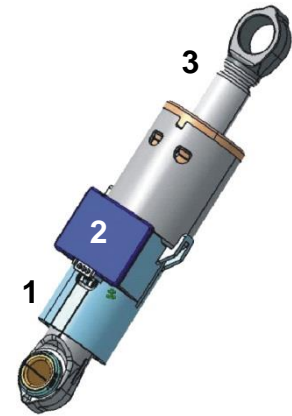


In the event of a fault an alarm will be displayed - see table of alarms.

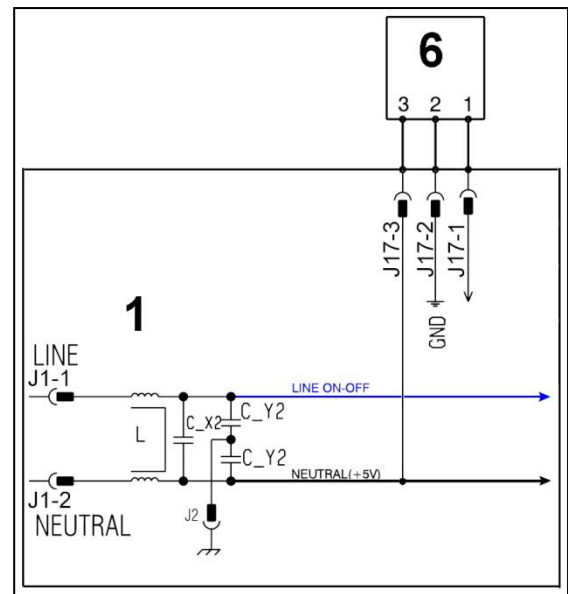
13.8 Shock absorber with weight sensor (where featured)

13.8.1 General characteristics

1. *Plunger*
2. *Weight sensor*
3. *Piston*

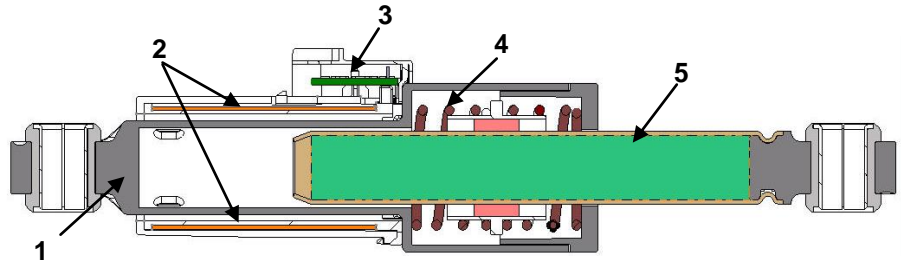


1. *Main electronic circuit board*
6. *Weight sensor*



13.8.2 Operating principle

1. *Plunger*
2. *Oscillating Coil*
3. *PCB*
4. *Spring*
5. *Piston*

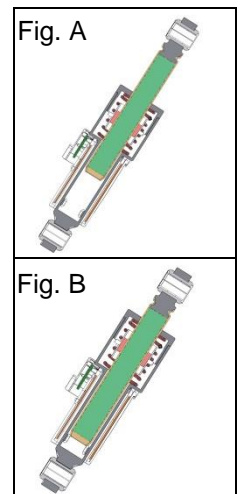


The weight sensor incorporated into the shock absorber is made up of an oscillator (which generates a frequency) consisting of the circuit board (3) and coil (2).

If there is no laundry in the drum when the appliance is turned on, the position of the piston compared to the plunger is considered as the zero value (Fig. A).

When laundry is placed in the drum, this causes the washing unit to be lowered, with the consequent compression of the shock absorber (Fig. B); the movement of the piston inside the plunger changes the inductance of the coil, and consequently changes the frequency, which is processed by the circuit board and communicated to the display board and the LCD displays the weight of the laundry in kg.

If there is laundry in the drum when the appliance is turned on, the position of the piston is different from when the drum is empty, moving the zero value and offsetting the final measurement.



Efficacy check

To check the efficacy of the weight sensor:

- Check that the inside of the drum is empty.
- Plug the appliance into the socket, press button P1 to turn it on and select the desired programme.
- Open the appliance door if shut.
- Place an item of known weight inside the drum (no more than the maximum weight for which the appliance is sold) and check that the value represented on the LCD display corresponds.
(with an accuracy of ± 1 kg and ± 1.5 kg for heavy loads).

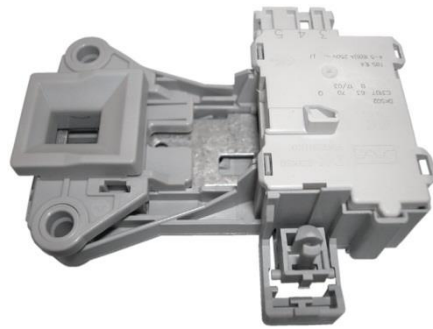
Diagnostics

During diagnostic mode, position 7 (see paragraph entitled "Diagnostics system" on page 34).

The appliance fills water until the first level to perform the heating function. Next, another litre of water is filled through the solenoid valve (measuring it with the flowmeter) if the weight sensor is efficient, the variation is recognised, otherwise the alarm EC3 is displayed on the LCD.

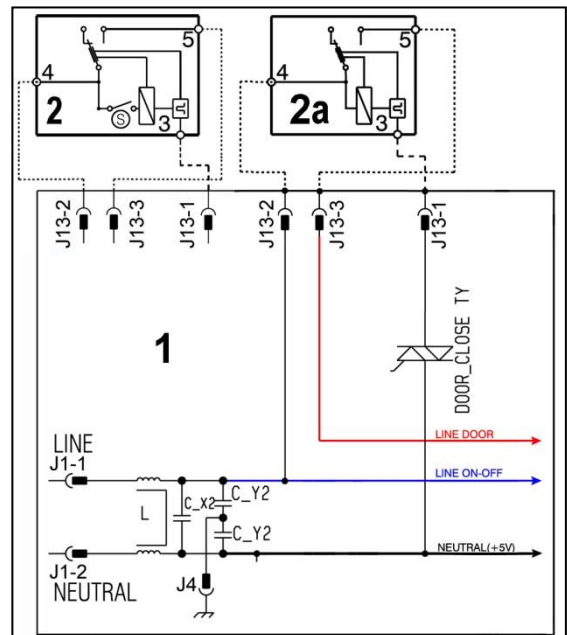
13.9 Door safety interlock

13.9.1 General characteristics



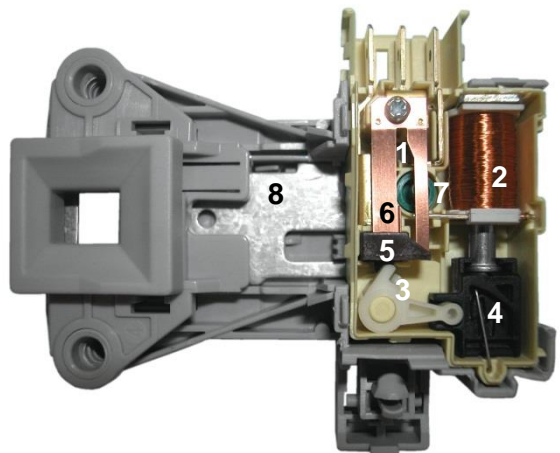
The instantaneous door interlock allows the door to be opened as soon as the drum stops, if the conditions described further are met.

- 1 Main electronic circuit board
- 2 Door safety interlock (with Door sensing switch)
- 2a. Door safety interlock (without Door sensing switch)



13.9.2 Operating principle

1. Solenoid protection PTC
2. Solenoid
3. Lifting assembly
4. Cam (Labyrinth)
5. Locking pin
6. Electrical contacts (main switch)
7. Door sensing switch
8. Cursor



- When the programme starts (start/pause button) the main circuit board sends a voltage pulse, lasting 20 msec., to the valve (2) (at least 6 seconds should have passed since turning it on), which moves the cam (4) to a locking position; the blocking pin (5) is pushed locking the cursor (8), and simultaneously the main switch contacts are shut (6).
- When the programme ends or the Start/Pause button is pressed, the circuit board sends two additional 20 msec pulses (200 msec apart):
 - The first pulse moves the cam (4) by another position, without releasing the pin (5).

- The second pulse (which is only sent if everything is in working order) moves the cam (4) to another position, which causes the pin (5) to return to its position and therefore release the interlock; the contacts of the main switch are simultaneously opened.

- Protection Solenoid

A PTC is connected in series to the solenoid to limit the current (and therefore any overheating) in the following cases:

- Main circuit board TRIAC short circuit
- Many consecutive pressings of the start/pause button (more than 5 times)

Door open conditions

Before pulses are sent to release the door, the PCB checks for the following conditions:

- The drum must be stationary.
- The water level must not be higher than the lower edge of the door.
- The temperature of the water must not be higher than 40°C.

- Manual release device

The previous door safety devices opened the door automatically, in the event of: power failure or the appliance being turned off with the ON/OFF button (before the wash cycle ended) or valve malfunction or faulty main board, because inside they had a PTC bi-metal which allowed the door to be opened after cooling, between 55 seconds and 4 minutes.

The new device has a manual opening system, which allows the door to be opened following the instructions below:

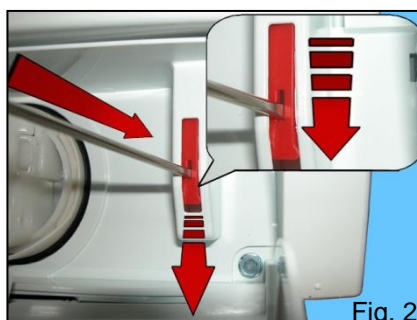
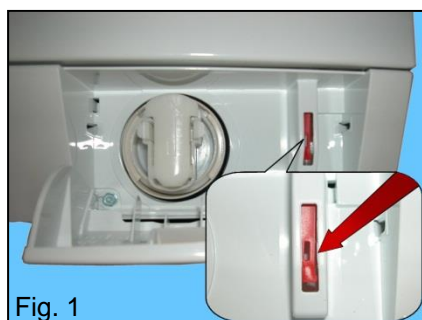
Before activating the manual opening of the door, check:

- If the water is above the lower level of the door, drain off the water; if possible set a drainage programme (or using the filter drainage knob after unplugging it from the mains socket).
 - ✓ Unplug the appliance from the socket.
 - ✓ Check that the drum is stationary.
 - ✓ Activate the manual opening system (see next paragraph).
- If the water is not above the lower level of the door, then it can be opened manually.

Manual opening

Do the following:

- 1) Open the filter flap (lower right hand side) and inside there is a small rod indicated by the arrow Fig. 1.
- 2) Insert a flat-tip screwdriver into the slit see Fig. 2 and push the small rod downwards and **simultaneously** activate the handle Fig. 3 and open the door.



13.10 Three-phase asynchronous motor – Inverter & Three-phase synchronous motor with permanent magnets

13.10.1 General characteristics & Power supply to motor



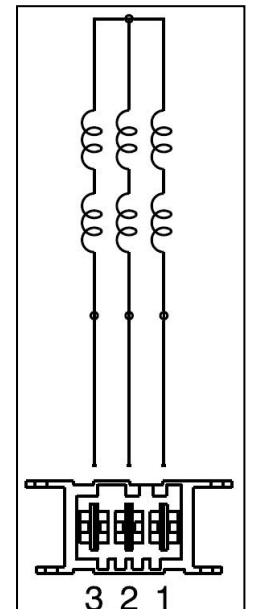
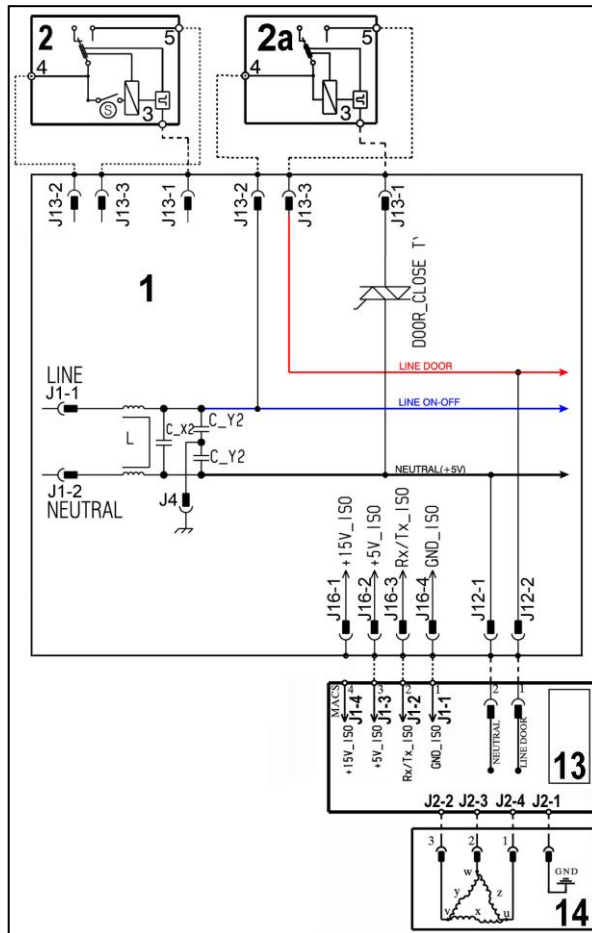
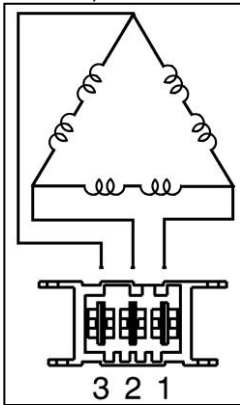
Medium Performance MOTOR PM



Three-phase power is fed by the inverter (13), which sends through connectors 5-6-7 the three phases to connectors 1-2-3 on the motor, where the windings (X-Y-Z) are connected.

The phase shift between the phases is 120° and peak amplitude is 310V.

It is possible to get an idea of the continuity of the motor winding by measuring the resistance of the coils (value at 25°C):



Coil y ohm 5.35 ±7%
(contacts 2-3)
Coil x ohm 5.35 ±7%
(contacts 1-2)
Coil z ohm 5.35 ±7%
(contacts 1-3)

Medium Performance MOTOR PM

Coil y-z ohm 6.56 ~ ±7%
(contacts 2-3)
Coil x-y ohm 6.56 ~ ±7%
(contacts 1-2)
Coil z-x ohm 6.56 ~ ±7%
(contacts 1-3)

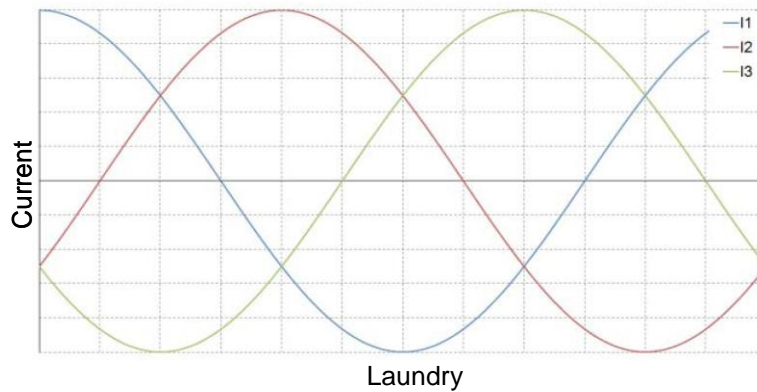
1. Main electronic circuit board
2. Door safety interlock (with Door sensing switch)
- 2a. Door safety interlock (without Door sensing switch)
13. Inverter
14. Motor

X-Y-Z = Motor Windings

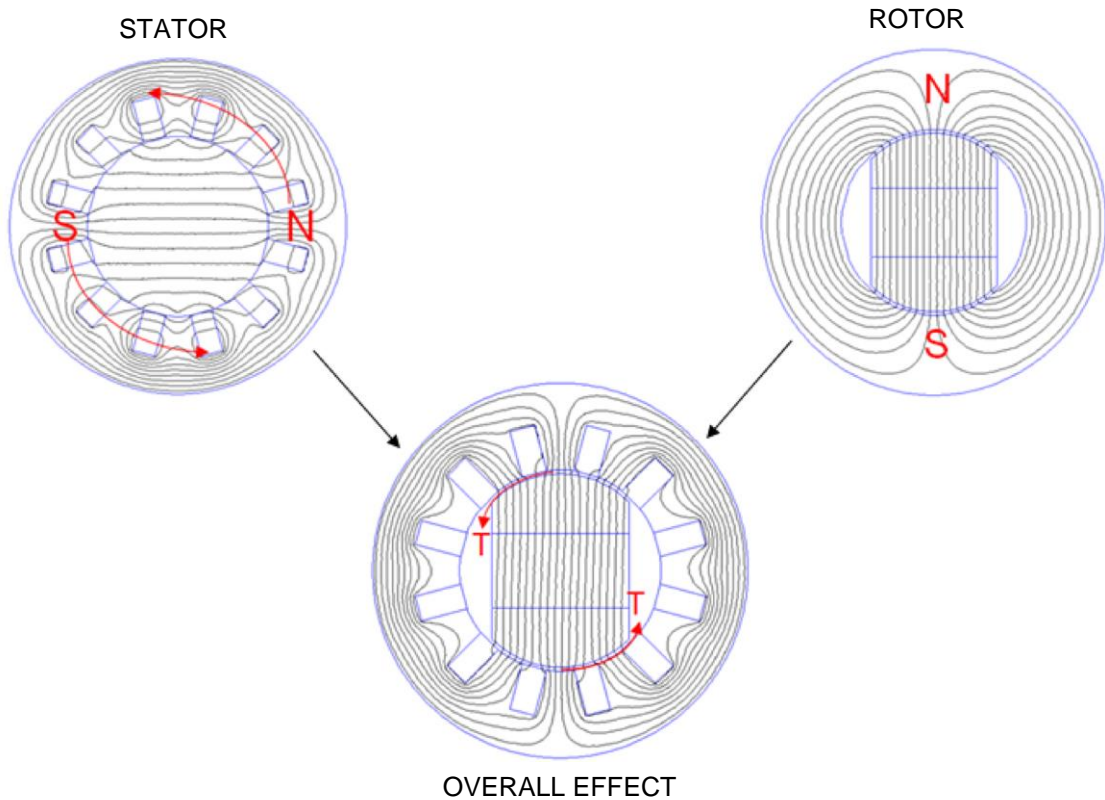
13.10.2 Operating principle

The alternating current permanent magnets motor is a synchronous electric motor: the speed of rotation when stationary only depends on the frequency of power supply and it is independent of the load (torque at the axis). Like all electric motors, the permanent magnets motor consists of a stator and a rotor: both these components contribute to the production of torque by interaction between the respective magnetic fields.

The magnetic field of the stator is produced, as in asynchronous motors, by the current that passes through the windings; if this current is three-phase alternating current, the magnetic field of the stator has a fixed intensity and variable direction (rotating): hence a rotating magnetic field is produced. The speed of rotation of the rotating magnetic field is proportional to the frequency and inversely proportional to the number of poles.



The magnetic field of the rotor is generated by the permanent magnets which are positioned in the rotor. When current passes through the stator windings, these generate a magnetic field that tends to attract the magnets (the north poles of the stator attract the south poles of the rotor, and the south poles attract the north poles); since the magnetic field of the stator is rotating, the rotor (which is magnetised) tends to follow it, thereby causing the rotation of the rotor itself.



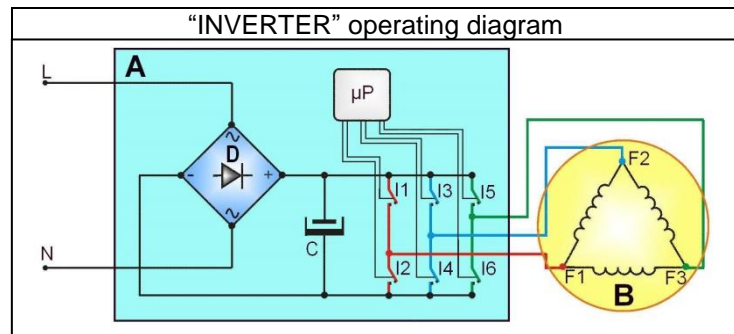
13.11 Inverter UIMC & EMC14

13.11.1 General characteristics

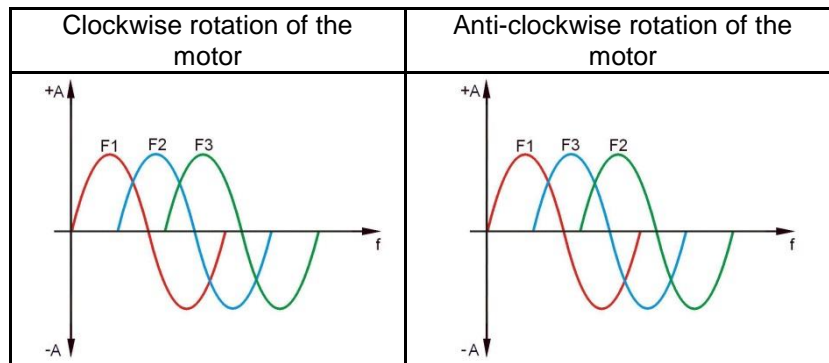
The EWX11831 and EWX14931 electronics use a new asynchronous motor, with 2 poles, three-phase, with high performance and low noise levels.



L = Phase
 N = Neutral
 T IT = "INVERTER" board
 B = Motor
 C = Condenser
 D = Diodes
 I1÷6 = Switches
 F1÷3 = Motor connectors
 μP = Micro Processor



To transform the single-phase electricity (available in our homes) into three-phase electricity, a new circuit board is used (A) to transform the energy from single-phase to three-phase, which can be modulated in breadth and frequency respectively to adjust the power and number of revolutions of the motor. Single-phase electricity (applied to connectors L-N), is rectified by the diode jumper (D), so there is a direct voltage of 310V at the ends of condenser C, which through the combination of the opening and closing of switches I1÷I6 (piloted by the μprocessor) determines the piloting voltage and frequency of the motor.



The motors powered by this inverter do not have tachometric winding. The inverter can detect / adjust the motor speed via the current absorption. During the spin phases, the microprocessor can perform, depending on the software configuration, the anti-foam check, where featured, and the anti-unbalancing check.



- **Any work on electrical appliances must only be carried out by qualified personnel.**
- **Unplug the appliance before accessing internal components.**
- **When replacing the "INVERTER" board, do not open the plastic casing, because some parts are subject to high voltage values and some condensers remain loaded for a long time at dangerous voltage levels even after being unplugged.**
- **Accidental physical contact may cause electric shocks.**

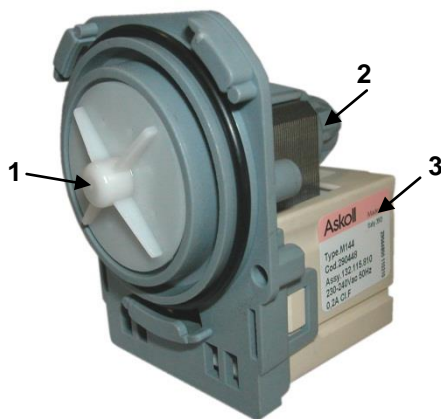
In the event of a fault an alarm will be displayed - see table of alarms.

13.12 Circulation pump (where featured)

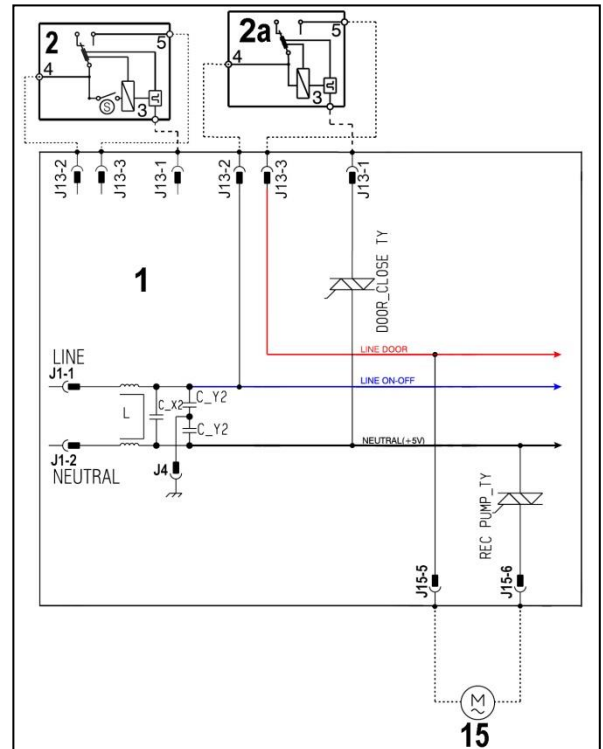
13.12.1 General characteristics

In models with Jetsystem washing, a synchronous circulation pump is fitted, which is designed to circulate water continuously, withdrawing it from the filter body and introducing it into the tub through the bellow seal. It is powered directly by the main circuit board via a TRIAC and is fitted with a thermal cut-out.

1. Wheel
2. Rotor
3. Stator



1. Main electronic circuit board
2. Door safety interlock (with Door sensing switch)
- 2a. Door safety interlock (without Door sensing switch)
15. Re-circulation pump



Important

Synchronous pumps, when powered on empty (disconnected from the water circuit), may not start in some cases because their very construction makes them need an antagonist torque on the wheel to allow the rotor to move in one of the two directions.

The pumps should therefore only be tested once fitted to the appliance, after a little water has been filled.

13.13 Solenoid valves

13.13.1 General characteristics

SOLENOID VALVE HOT WATER	SOLENOID VALVE TWO WAYS	SOLENOID VALVE THREE WAYS

This component introduces water into the detergent dispenser and is controlled electrically by the main circuit board via TRIAC. The level of water in the tub is controlled by the analogue pressure switch.

1. Water inlet
2. Solenoid valve body
3. Filter or needle trap
4. Flow reducer
5. Coil
6. Spring
7. Moving core
8. Rubber
9. Membrane
10. Water outlet

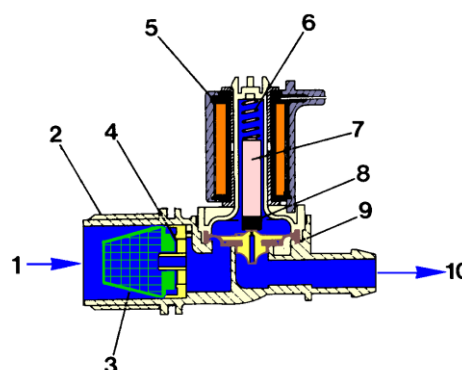
13.13.1.1 Operating principle

When idle, the core, pushed by a spring, keeps the central hole of the membrane closed and so the latter hermetically seals access to the water inlet duct.

When the coil is powered, the core is attracted, releasing the central hole of the membrane. Consequently the valve opens.

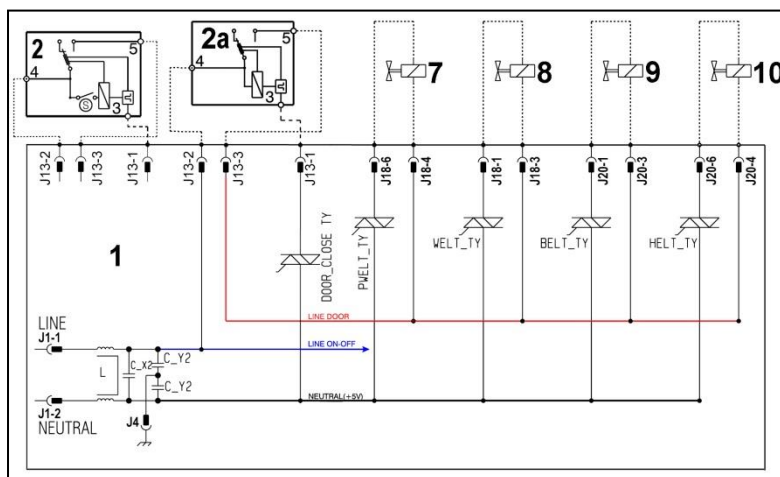
13.13.1.2 Mechanical jamming of the solenoid valve

The solenoid valve may jam open without being actuated (which will cause flooding if the pressure switch controlling the water level does not trip). If this occurs, the electronic control system (which continuously monitors the flow sensor) will lock the door, start the drain pump and display an ALARM simultaneously.



13.13.1.3 Low water pressure

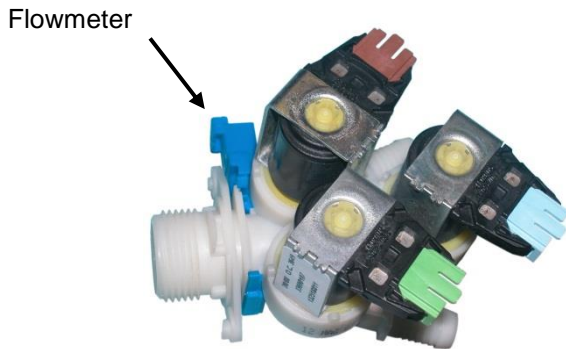
If the flow sensor does not generate a signal during the water fill phases, even though power is being supplied to the solenoid valve, the cause of this condition may be a closed water tap or clogged filter on the solenoid valve (with ensuing low water pressure). If this occurs, only a WARNING will be displayed and the cycle will continue for five minutes, after which time an ALARM will be signalled.



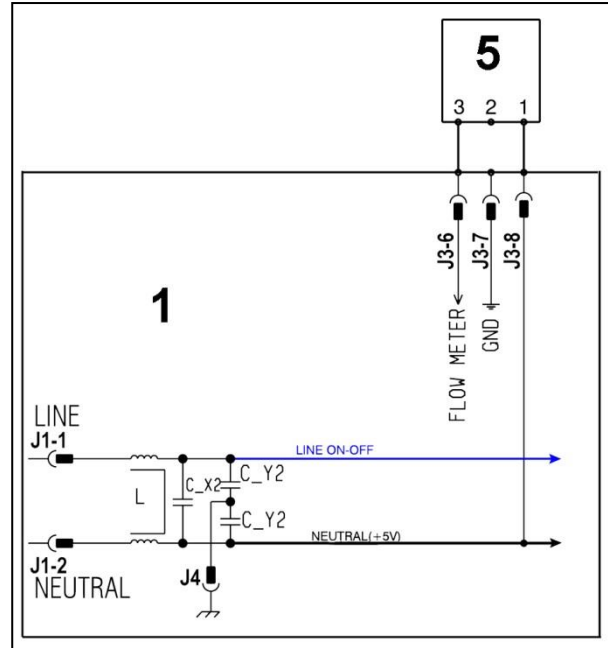
1. Main electronic circuit board
2. Door safety interlock (with Door sensing switch)
- 2a. Door safety interlock (without Door sensing switch)
7. Pre-wash solenoid valve
8. Wash solenoid valve
9. Bleach solenoid valve
10. Hot water solenoid valve

13.14 Flowmeter (where featured)

13.14.1 General characteristics



- 1. Main electronic circuit board
- 5. Flow sensor



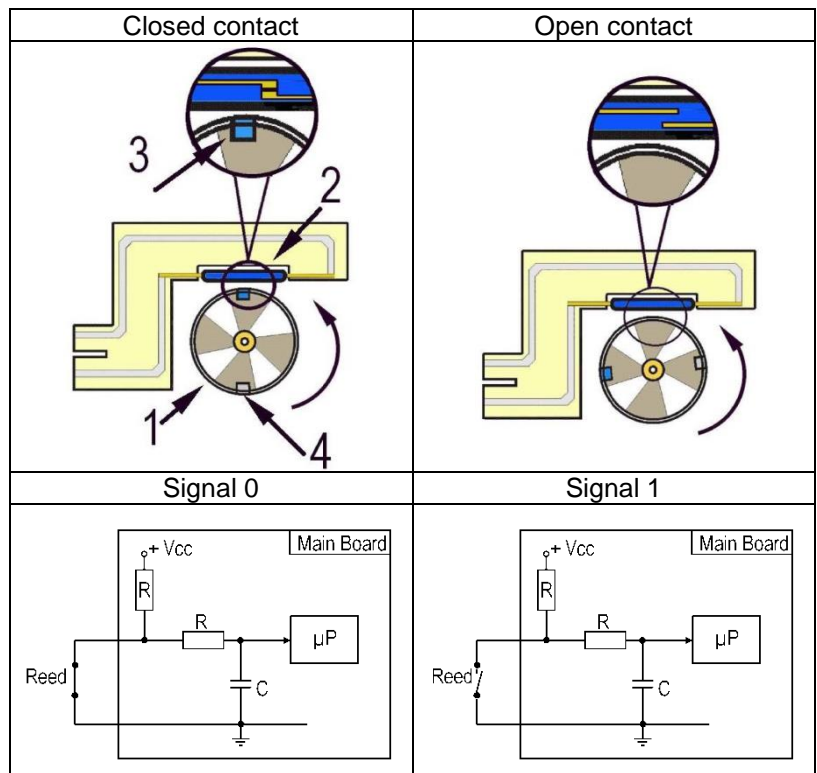
Some models of solenoid valves have a built-in flow sensor, which measures the quantity of water in litres that is loaded into the appliance. In the event of a sensor failure, the water level is controlled by the analogue pressure switch.

Electronically controlled valve, exploded view	PCB	Turbine
<p>1-PCB 2-Turbine 3-Deflector 4-Diffuser 5-Double filter</p>	<p>6-Reed contact</p>	<p>7-Magnet</p>

13.14.2 Operating principle of the flowmeter

The main components of the flowmeter are:

1. Turbine (with magnet and counterweight mounted on the outside)
2. Reed contact (normally open)
3. Magnet
4. Counterweight



Water entering the solenoid valve rotates the turbine (1) and magnet (3), which passes in front of the Reed contact (2), thus closing it. As this contact opens and closes, it generates pulses (at a frequency that depends on the water flow rate).

The turbine completes 230 revolutions for each litre of water. The operating range of the flow sensor is 0.2÷10 bar. Using the signal it receives, the micro-processor can calculate the number of litres of water passing through the solenoid valve.

13.15 Drum light (where featured)

The drum light consists of a high luminosity LED. When the appliance is in the selecting phase (START/PAUSE LED flashing), if the door is opened, the LED lights up and illuminates the inside of the drum. Vice versa, when the door is closed the LED is turned off.

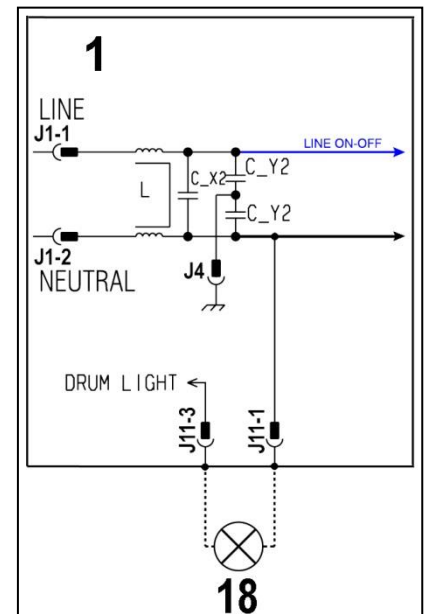


IMPORTANT: Do not look straight at the light beam emitted by the LED when it is on.

To check the efficiency of the LED, power it with constant direct current of 150 mA and a voltage of 3.3 V.

For the power supply, please refer to the polarities in the figure opposite.

- 1. Main electronic circuit board
- 18. Drum light



14 ALARM SUMMARY TABLE

Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
E11	Difficulties in water fill for washing	Water load timeout expired (load timeout for water loads at level)	Tap closed or water flow too low Wrong drain pipe position Water inlet valve defective Air trap system leaking Pressure switch defective Wiring or main board defective	Cycle Paused with door locked	START RESET
E12	Water load problems during drying cycle	Water load timeout expired during fabric detach phase (5 minutes - closed tap test)	Water tap closed or water flow too low Wrong drain pipe position Water inlet valve defective Air trap system leaking Pressure switch defective Wiring or main board defective	Cycle Paused with door locked	START RESET
E13	Water leakage	Global water load timeout expired (maximum water quantity reached)	Wrong drain pipe position Water flow too low Water inlet valve defective Air trap system leaking Air trap systems clogged Pressure switch defective	Cycle Paused with door locked	START RESET
E21	Difficulties in draining for washing	Water drain timeout expired (measured for each drain phase of a washing cycle)	Drain pipe blocked up Blocked/dirty filter Drain pump defective Pressure switch defective Wiring or main Board defective Drain pump rotor locked	Cycle Paused (after 2 attempts)	START ON/OFF RESET
E22	Water drain problems during drying cycle	Virtual anti-boiler pressure switch ON during a drying cycle	Drain pipe blocked up Blocked/dirty filter Drain pump defective Pressure switch defective Wiring or main Board defective	Cycle Paused	START RESET
E23	Drain pump triac failure	Incongruence between drain pump triac sensing and triac status	Drain pump defective Wiring or main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E24	Drain pump triac sensing failure	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E25	Aqua control sensing failure	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET

Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
E31	Electronic pressure switch faulty	Frequency of electronic pressure switch out of limits	Pressure sensor defective Wiring or main Board defective	Cycle blocked with door locked	RESET
E32	Electronic pressure switch calibration problems	Frequency of electronic pressure switch not stable during draining phase	Water inlet valve defective Air trap system leaking Pressure switch/sensor defective Drain pipe blocked up Blocked/dirty filter Drain pump defective Wiring or main board defective	Cycle Paused	START RESET
E35	Water Overload	Overload pressure switch on full state for a time longer than 15 seconds	Water inlet valve defective Air trap systems leaking Pressure switch defective Wiring or main board defective	Cycle blocked Safety drain cycle. Drain pump always in operation (5 minutes ON, 5 minutes off, etc)	RESET
E38	Air trap system clogged	Water level doesn't change for at least 30 sec. during drum rotations	Air trap system clogged Pressure sensor pipe clogged Motor belt broken	Heating Phase skipped	RESET
E41	Door opened	Door lock timeout expired (20 seconds)	Door lock device defective Wiring or main board defective	Cycle Paused	START RESET
E42	Door lock device failure	Door still locked when opening (timeout of 4 minutes)	Door lock device defective Wiring or main board defective Current leakage between heater element and earth	Cycle Paused	START RESET
E43	Door lock device triac failure	Incongruence between door lock device triac sensing and triac status	Door lock device defective Wiring or main board defective	Safety Drain cycle activation. Cycle blocked	RESET
E44	Door closed sensing failure	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation. Cycle blocked	RESET
E45	Door triac sensing failure	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation. Cycle blocked	RESET
E52	Tachometer faulty	Bad or no signal from tachometer	Motor defective Motor Wiring or Motor Control board defective	Cycle blocked after 5 attempts with door locked	ON/OFF RESET
E57	FCV Current trip	High current on inverter (>15A)	Motor defective Motor Wiring or Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E58	FCV Over current	High current on motor phase (>4.5A)	Motor defective, Motor Wiring or Motor Control board defective, abnormal working condition	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E59	FCV Not Following	No tacho signal from tachometer for 3 seconds	Motor defective Motor Wiring or Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET

Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
E5A	FCV Heating	High temperature on Heat Sink (>88°C) or NTC of FCV board open	Over load condition, Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E5H	FCV Under Voltage	Dc bus voltage below the allowed value (175V)	FCV mains wiring Motor Control board defective	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E5C	FCV Over Voltage	Dc bus voltage above the allowed value (430V)	Motor Control board defective Power line voltage too high	Cycle blocked after 5 trials with door locked	ON/OFF RESET
E5D	FCV Unknown Message	Message received by FCV is not correct	Transmission line noisy / FCV defective MB defective Communication wiring problems	---	ON/OFF RESET
E5E	FCV-MB Communication	Protocol communication between FCV and MB not aligned	Wiring defective FCV defective, WD defective, UI defective MB defective, Weight defective	Cycle blocked after 5 trials	ON/OFF RESET
E5F	FCV Fault	FCV control board is continuously in reset	FCV control board defective or communication wiring problems or main board defective	Cycle blocked after 5 trials with door unlocked	ON/OFF RESET
E61	Insufficient heating during washing cycle	Washing heating timeout expired	Washing NTC defective Washing heater element defective Wiring or main board defective	Heating phases skipped	START RESET
E62	Overheating during washing cycle	Water temperature higher than 88°C for a time longer than 5 minutes	Washing NTC defective Wash heater element defective Wiring or main board defective	Safety Drain cycle Cycle stopped with door unlocked	RESET
E66	Heater or drying relay failure	Incongruence between heater relay sensing and relay status	Main board defective Current leakage between Wash/drying heater element and earth	Safety load cycle. Stop of the cycle with door locked	ON/OFF RESET
E68	Ground current leakage	Voltage value on heater sensing (wash or dry) different from Vmains value	Current leakage between wash or dry heater element and earth	Cycle blocked with door opened	START RESET
E69	Washing heating element opened	Voltage value different from Vmains value when heating element is not powered during the cycle execution	Wash heating element faulty (thermo fuses opened) Wiring defective Main board defective	No actions	START ON/OFF RESET
E6A	Heating relay sensing failure	Wrong input signal to microprocessor	Main board defective	Cycle blocked with door locked	RESET
E71	Washing NTC failure	Wrong input signal to microprocessor (open circuit or short circuit)	Washing NTC defective Wiring or main board defective	Heating phases skipped	START RESET
E72	Output drying NTC failure	Voltage value out of limit (open circuit or short circuit)	Output drying NTC defective Wiring or WD board defective	Drying heating phases skipped	START RESET

Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
E73	Input drying NTC failure	Voltage value out of limit (open circuit or short circuit)	Input drying NTC defective Wiring or WD board defective	Drying heating phases skipped	START RESET
E74	Washing NTC badly positioned	The washing temperature does not increase	Washing NTC sensor badly positioned, NTC sensor faulty, Wiring or main board defective	Heating phases skipped	RESET
E83	Wrong selector reading	Selector position code value not supported by the configuration data	Wrong configuration data on microprocessor Main board defective	Reset cycle	START RESET
E84	Recirculation pump triac sensing failure	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E85	Recirculation pump triac alarm	Incongruence between triac sensing and triac status	Recirculation pump defective Wiring or main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E86	Selector table configuration error	Incorrect configuration of the User Interface	Wrong or missing selector configuration data on UI microprocessor - User interface defective	---	START ON/OFF RESET
E87	User Interface microcontroller fault	User interface microcontroller damaged	User interface defective	No actions to be performed. If still present replace the User Interface Board	START ON/OFF RESET
E91	UI-MB communication error	Communication problem between UI and MB	Wiring defective, or UI, MB, Motor, WD , Weight board defective,	---	RESET
E92	UI-MB protocol incongruence error	Protocol communication between UI and MB not compatible	Main board incompatible with user interface board	Cycle blocked	OFF/ON
E93	Machine configuration error	Incorrect configuration of appliance	Incorrect configuration data Main board defective	Cycle blocked	OFF/ON
E94	Cycle Configuration error	Incorrect configuration of washing cycles	Incorrect configuration data Main board defective	Cycle blocked	OFF/ON
E97	Incongruence between selector and cycles configuration	Incongruence between program selector and cycle configuration	Incorrect configuration data Main board defective	Cycle blocked	RESET
E98	FCV_MB protocol incong. Error	Protocol communication between FCV and MB not aligned	Main board incompatible with FCV control board	Cycle blocked	OFF/ON
E9C	User Interface Configuration fault	Configuration wrongly or not received	Display Board	No actions	ON/OFF START RESET
E9E	UI touch fault	Touch display not working	Display Board	No actions	OFF/ON

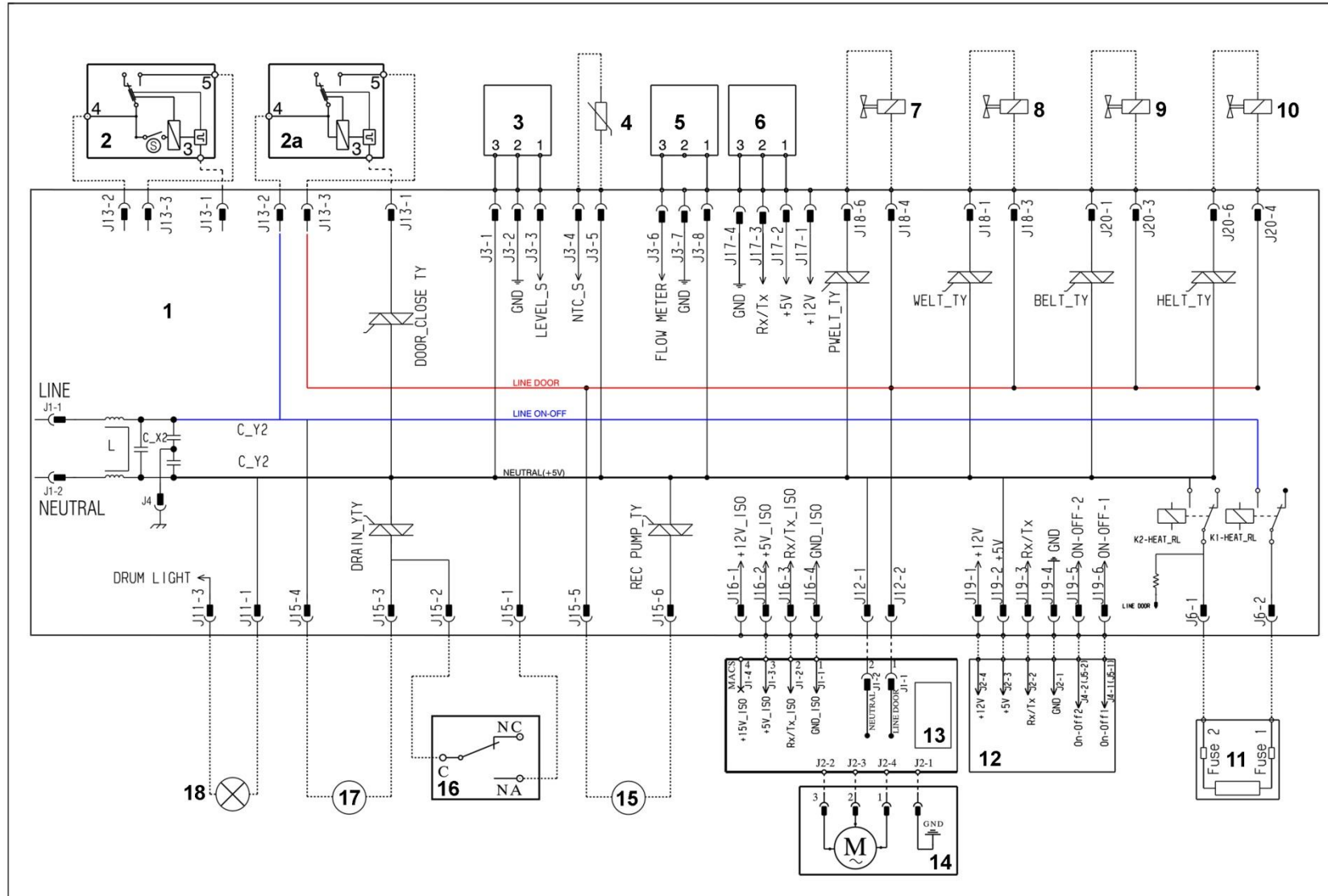
Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
EA1	DSP system failure	Not drum position sensing during motor activation	Wiring or main board defective DSP sensor failure Main motor belt broken	Skip of the drum positioning phase	START RESET
EA6	DSP door open failure	Not sufficient number of tachometer impulses during motor activation	Wiring or main board defective Main motor belt broken Lid open	Cycle paused	START RESET
EB1 (EH1)	Power supply frequency out of limits	Power supply period lower/higher than configured values	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EB2 (EH2)	Power supply voltage too high	MAIN_V sensing input voltage value greater than configured value	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EB3 (EH3)	Power supply voltage too low	MAIN_V sensing input voltage value lower than configured value	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EBD (EHD)	Heater WD relay sensing alarm	Wrong input signal to microprocessor	Main board defective	Cycle blocked with door locked	RESET
EBE (EHE)	FCV Relay failure	Incongruence between safeties relay sensing and FCV relay status	FCV Relay defective FCV sensing circuit defective Wiring or main board defective	Safety Drain cycle activation, stop of the cycle with door opened	RESET
EC1	Electro valves blocked	Flow meter running with electro valves switched OFF	Electro valves defective/blocked Main board defective	Cycle blocked Water drain up to anti-boil level or max. 5 minutes with door locked. When O.L. blocked drain pump ON/OFF for 5/5 minutes continuously	RESET
EC2	Weight sensor communication error	Communication problem between Weight sensor and MB	Wiring defective Weight Sensor defective MB defective	No actions	START RESET
EC3	Weight sensor fault	Signal coming from sensor out of limits	Weight sensor defective Main board defective Wiring	No actions	START RESET
EC8	TY5 triac failure	Incongruence between TY5 triac sensing and triac status	TY5 triac load device defective (motor fan/hot valve/water softener board) Wiring or main board defective	Safety Drain cycle activation. Cycle blocked	RESET
EC9	TY5 triac sensing failure	Wrong input signal to microprocessor	Main board defective	Safety Drain cycle activation. Cycle blocked	RESET

Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
ECA	WSD board communication alarm	No communication between motherboard and WSD board	WSD board defective Wiring between MB and WSD, Main Board defective, UI defective, Weight defective, FCV defective	Cycle blocked	START ON/OFF RESET
ECB	WSD board failure	WSD board defective : external sensor defective (level or density), diverter faulty, pump faulty, microcontroller damaged, power supply out of limits	WSD assembly defective	Cycle blocked	START ON/OFF RESET
ED1	WD board communication alarm	No communication between motherboard and WD board	WD board defective Wiring between MB and WD, Main Board defective, UI defective, Weight defective, FCV defective	Cycle blocked	START ON/OFF RESET
ED2	WD heating element1 relay failure	Incongruence between WD heating1 relay sensing and heating1 relay status	WD board defective wiring, thermostats defective, Main Board defective	Skip drying phase	START ON/OFF RESET
ED3	WD heating element1 sensing relay failure	Signal out of the limits	WD board defective	Skip drying phase	START ON/OFF RESET
ED4	WD heating element2 relay failure	Incongruence between WD heating2 relay sensing and heating1 relay status	WD board defective wiring, thermostats defective, Main Board defective	Skip drying phase	START ON/OFF RESET
ED5	WD heating element2 sensing relay failure	Signal out of the limits	WD board defective	Skip drying phase	START ON/OFF RESET
ED6	WD thermostat sensing failure	Signal of thermostat sensing out of limits	WD board defective	No actions	START ON/OFF RESET
ED7	WD thermostat failure	With satellite board: Incongruence between WD heating 1 and 2 relay sensing or thermostat sensing out of limits. Without satellite: Incongruence between heater and drying relay sensing.	Manual or automatic thermostat opened, wiring , WD board defective, drying heater element,	No actions	START ON/OFF RESET
ED8	WD fan motor tachometer absent	Bad or no signal from tachometer	Fan Motor defective Fan Motor Wiring or WD board defective	Skip drying phase	ON/OFF RESET

Alarm Code	Alarm Description	Fault Condition	Possible Fault	Machine Action/Status	Reset Key
ED9	WD fan motor driving circuit alarm	Incongruence between fan motor status and the driving circuit sensing signal	WD board defective	Skip drying phase	ON/OFF RESET
EDA	WD Power Supply alarm	Power supply period lower/higher than configured values or power supply values out of limits	Wrong or disturbed Power Supply line. WD board defective	Wait for nominal power supply conditions	START ON/OFF RESET
EDB (EDH)	WDM microcontroller fault	WDM microcontroller damaged	WDM board defective	No actions to be performed. If still present replace the WDM Board	START ON/OFF RESET
EDC	WDM heating element opened	Incongruence between WDM heating 1 and 2 relay sensing	Drying heating elements opened, unplugged, or wiring	No actions	START ON/OFF RESET
EF1	Filter clogged warning	Difficulties to drain. Virtual AB level remains in full state after an established time	Filter clogged or dirty Drain pipe clogged/kinked/too high	Warning displayed at the end of the cycle	START RESET
EF2	Foam warning	Virtual AB level in full state during spin phase at the end of the washing phase	Excessive detergent dosing Drain filter dirty or clogged Drain pipe kinked or clogged	Alarm displayed after 5 attempts (if specific LED configured)	RESET
EF3	Acqua Control warning	Acqua control sensing signal high (in appliance equipped with safety device)	Water on the basement Acqua Control defective	Drain pump activated	ON/OFF RESET
EF4	Water load low pressure	Flow meter stooped with electro valves switched on	Tap closed/low pressure of incoming water	No actions	RESET
EF5	Load too unbalanced	Final spin phase skipped due to a high unbalance load	Load unbalanced	No actions	START RESET
EF6	Safety reset	MB microcontroller damaged	Main Board defective	No actions to be performed. If still present replace the Main Board	-

15 DIAGRAMS

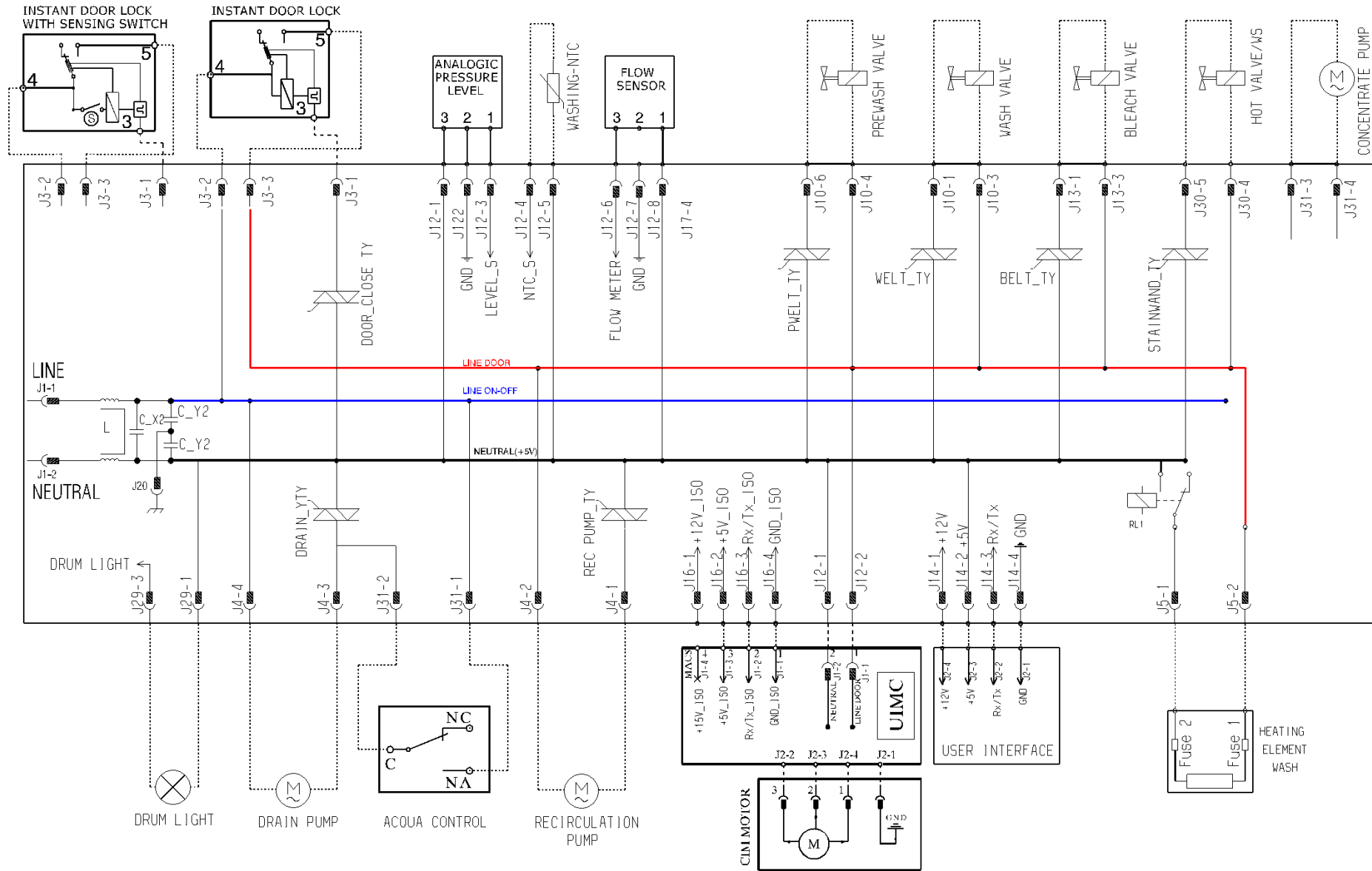
15.1 EWX11831 Diagram with THREE-PHASE ASYNCHRONOUS MOTOR



15.1.1 Key to diagram

Appliance electrical components		PCB components	
1.	Main electronic circuit board	DRAIN_YTY	Drain pump TRIAC
2.	Door safety interlock (<i>with Door Sensing switch</i>)	DOOR_TY	Door interlock TRIAC
2a	Door safety interlock (<i>without Door sensing switch</i>)	DOOR_CLOSE_TY	Door interlock TRIAC
3.	Electronic pressure switch	REC PUMP_TY	Circulation pump TRIAC switch
4.	NTC (washing)	PWELT_TY	Pre-wash solenoid TRIAC
5.	Flow sensor	WELV_TY	Wash solenoid TRIAC
6.	Weight sensor	BELT_TY	Electronically controlled TRIAC bleach valve
7.	Pre-wash solenoid valve	HELT_TY	Hot water solenoid TRIAC
8.	Wash solenoid valve	K1	Heating element relay
9.	Bleach solenoid valve	K2	Heating element relay
10.	Hot water solenoid valve		
11.	Heating element		
12.	Display board		
13.	Motor control board (Inverter)		
14.	Triple-phase motor		
15.	Re-circulation pump		
16.	Aqua control sensor		
17.	Drainage pump		
18.	Drum light		

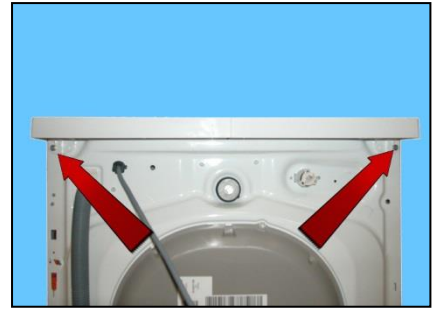
15.2 EWX14931 Diagram with THREE-PHASE ASYNCHRONOUS MOTOR



16 ACCESS

16.1 Worktop

Remove the screws that secure it to the back panel.

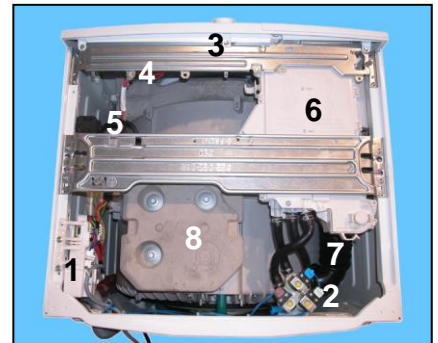


Pull it out from the back.



16.2 From the worktop, you can access

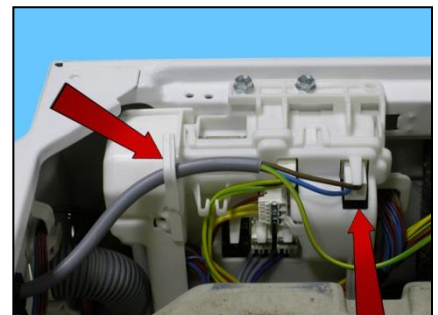
1. Main board
2. Solenoid valves
3. Control panel
4. Display board/light diffuser/buttons/buttons springs assembly
5. Electronic pressure switch
6. Detergent dispenser
7. Detergent fill pipe
8. Upper counterweight



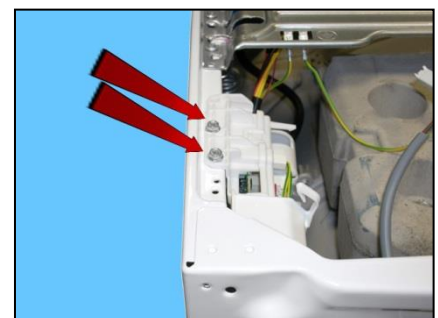
16.2.1 EWX11831 Main board

Remove the worktop (see relevant paragraph).

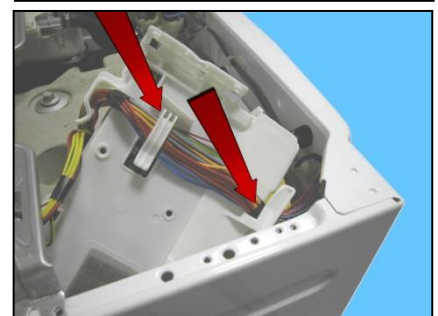
Pull out the power supply cable from the hooks and from the connector.



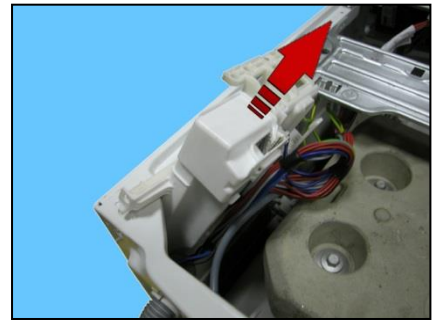
Unfasten the three screws securing it to the cabinet.



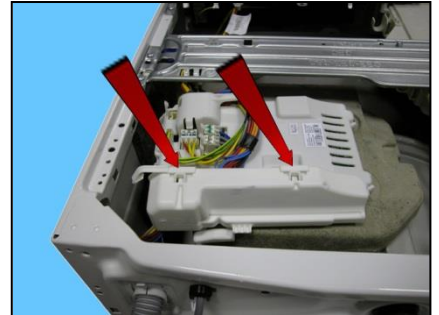
Pull out the wiring of the hooks positioned at the rear of the main board box.



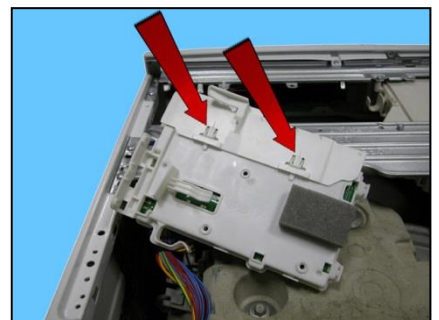
Remove the main board.



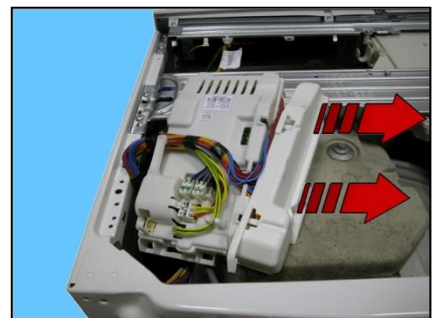
Release the hooks securing the connectors protection on one side



then the other.



Remove the connectors protection.



Pull out the connectors positioned beside the board.

Pull out the other connectors, taking care as they are retained by hooks.

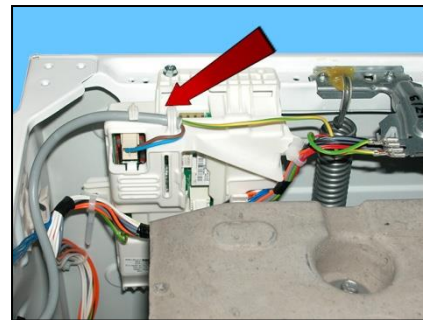


16.2.2 EWX14931 Main board

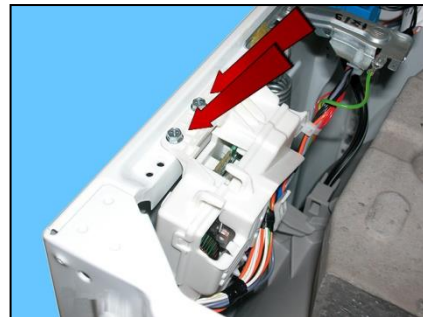
To service the main board, use the antistatic kit a code 4055063-95/4.

Remove the worktop (see relevant paragraph).

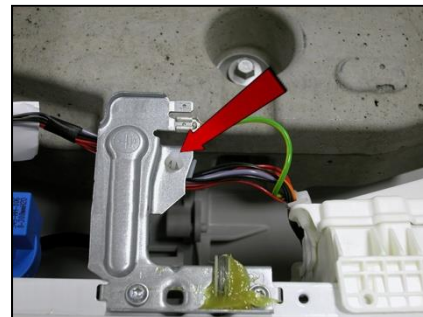
Remove the power cable from the hooks that hold it close to the board.
Slide off the connector.



Unfasten the two screws securing it to the cabinet.



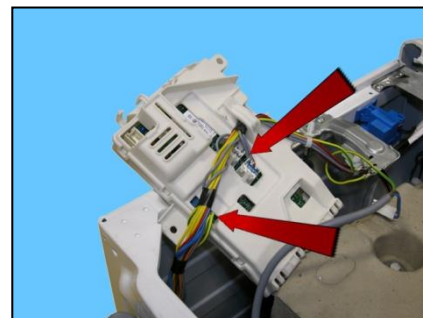
Remove the clamp that secures the wiring to the spring support bracket.



Using a pair of pliers, remove the clamps that secure the wiring to the power board assembly container (indicated by the arrows).

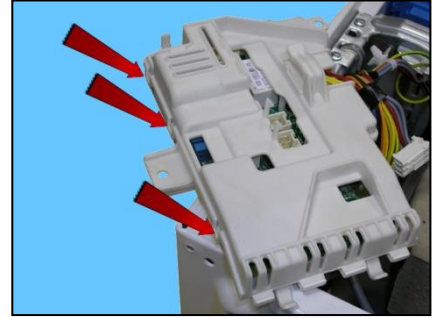


Position the board assembly as shown in the figure
Remove the connectors and the faston that connects the earth (beware as it is fitted with an anti-sliding stop).

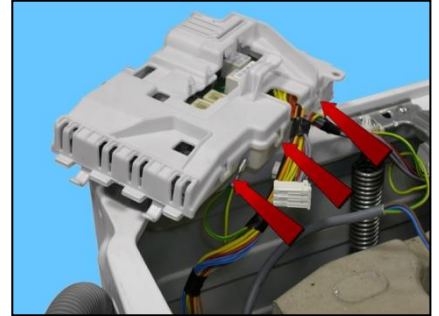


Remember to use the anti-sliding kit.

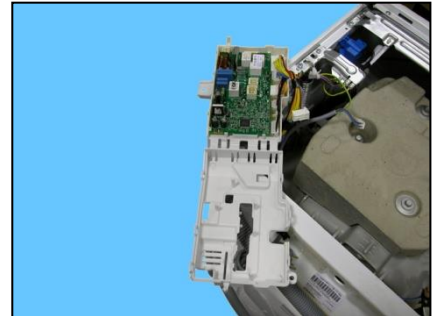
Unhook the three hooks that join the two casings on one side



and on the other.



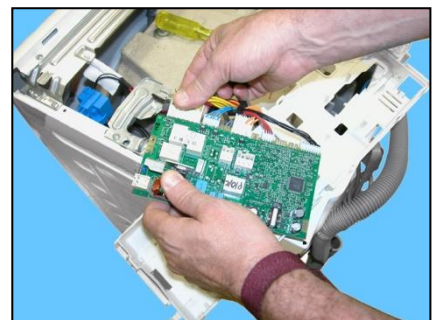
Lift the lid.



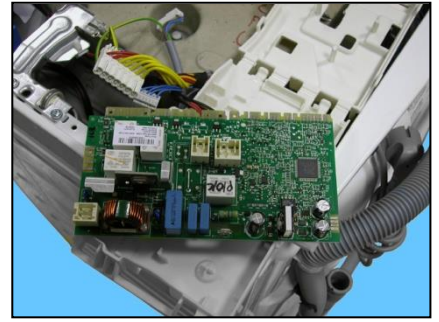
Release the three hooks that secure the board to the container and remove it (take care not to break the hooks).



Remove the connectors.



Board

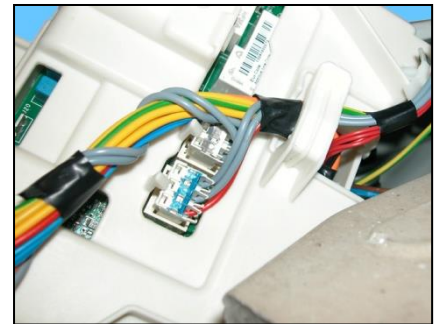


When reassembling.

Once you have inserted the connectors, make sure the wiring is inside the box. So that when the lid is closed, the wiring is not crushed or cut by the two plastic parts.

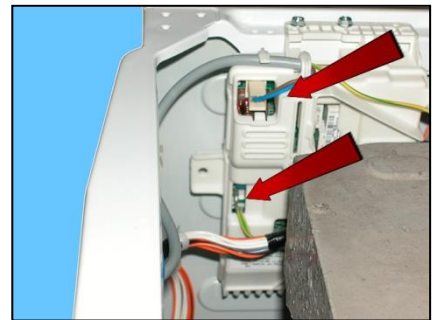


Fit the connectors into their proper slots and arrange the wiring as shown in the figure.



Before securing the side clamp:

Restore the earth connection, fit the power supply connector and insert it between the two hooks.



16.2.3 Solenoid valve

Remove the worktop (see relevant paragraph).

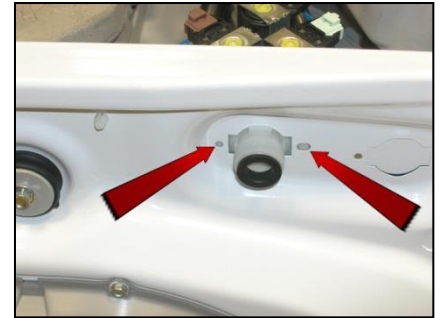
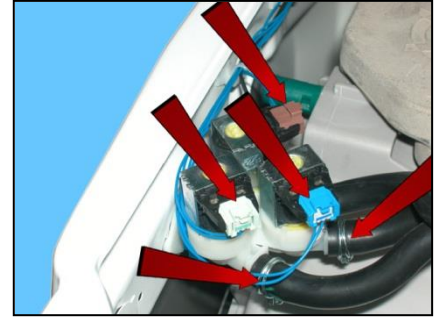
Disconnect the connectors.

Pull out the pipes which connect the solenoid valve to the detergent dispenser.

Unscrew the water fill pipe from the solenoid valve.

Push the two retainers indicated by the arrows towards the inside of the appliance.

At the same time, turn the solenoid valve to remove it.



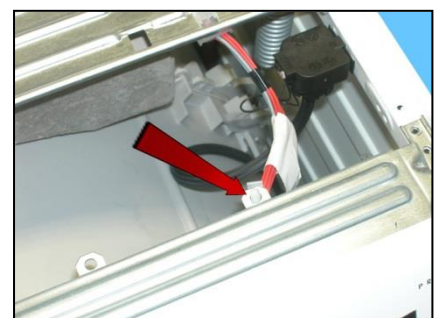
16.2.4 Control panel

Remove the worktop (see relevant paragraph).

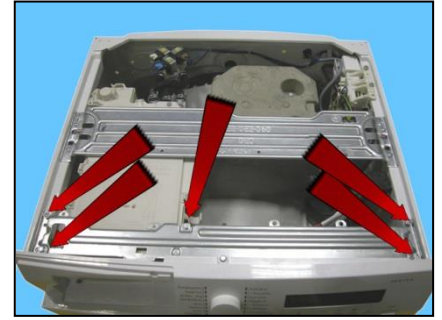
Pull the detergent dispenser out and at the same time press the stop locking it in place.

Loosen the screws that attach the control panel to the detergent tray.

Pull out the clamp from the crosspiece.



Remove the four screws which secure the crosspiece to the cabinet.
Remove the screws which secure the crosspiece to the detergent dispenser.



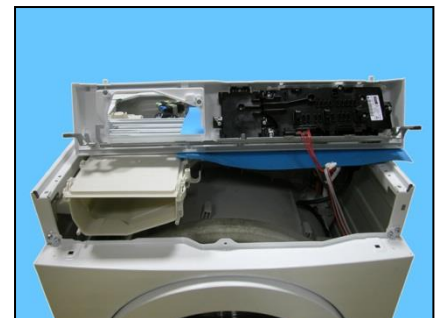
Release the anchor tab which secures the detergent dispenser to the crosspiece.



Raise both sides of the control panel so as to pull out the hooks which secure it to the front panel.



Remove the control panel and position it as shown in the figure, making sure you introduce a protection to prevent scratching it.

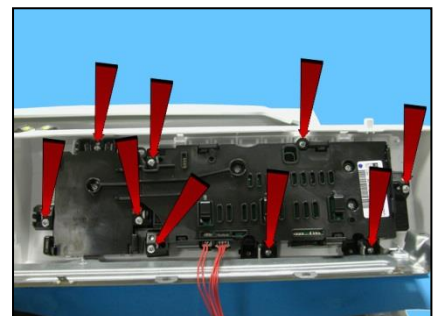


16.2.5 Display board/light diffuser/button springs/buttons assembly

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).

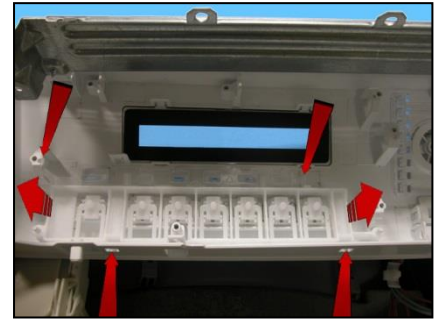
Remove the screws and release the hooks which secure the board assembly to the control panel.

The dial and the dial cover remain fixed to the control panel.



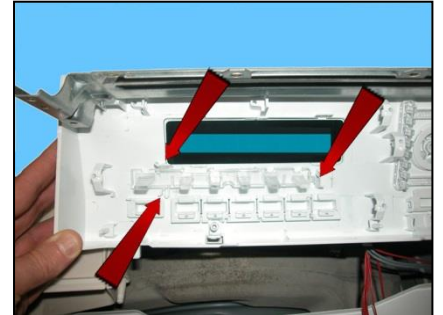
- Buttons spring

Disconnect it from the control panel and remove it from the two side pins.



- Light diffuser

Unhook the three hooks that fasten it to the control panel.



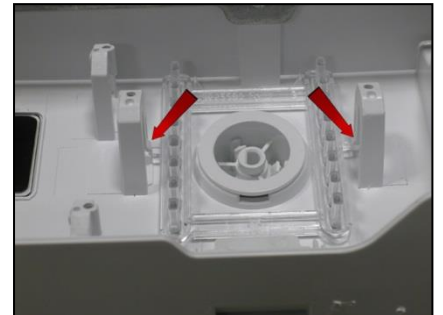
- Buttons

The buttons have a number printed on them. See the figure for numbers.



- Selector light diffuser

To remove, unhook the hooks that fasten it to the control panel



when reassembling the display board assembly and the control panel.

Remove the dial from the dial cover.

Release the hooks that fasten them together, and fasten the whole to the control panel.

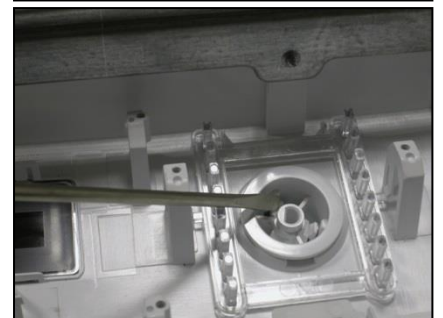
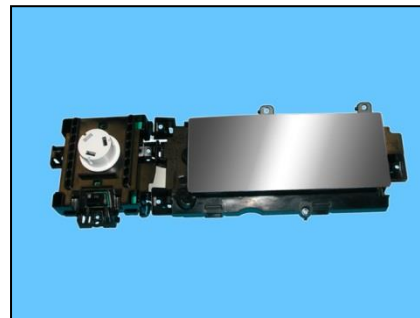


Illustration of the dial and the dial cover.



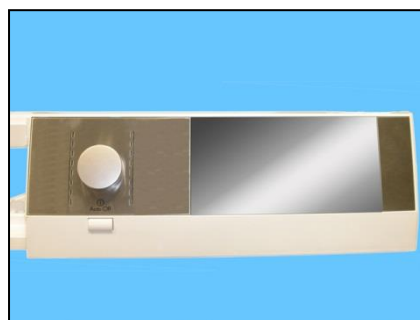
Thread the dial onto the selector pin.



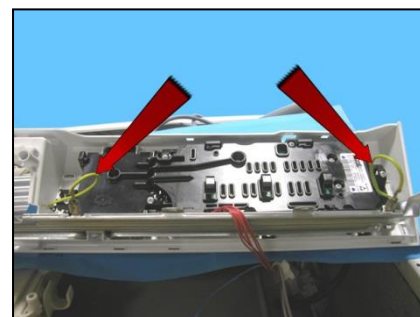
Insert the display board in its seat in the control panel.



Insert the dial cover.



SERIES 8 and 9 if the two earth wires connecting the front panel have been disconnected, reconnect them to the fastons of the control panel crosspiece.

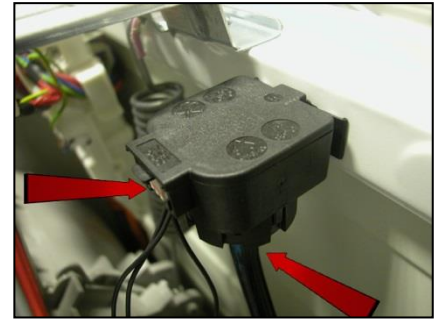


16.2.6 Analogue pressure switch

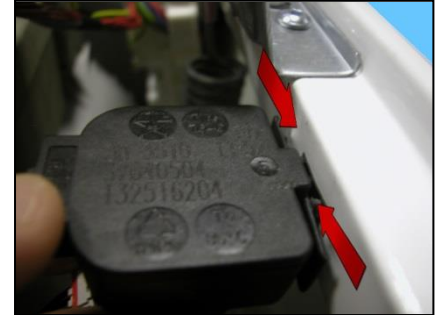
Remove the worktop (see relevant paragraph).

Remove the connector.

Pull out the small pipe which connects it to the pressure chamber.



Tighten the two tabs which secure it to the cabinet and remove it.

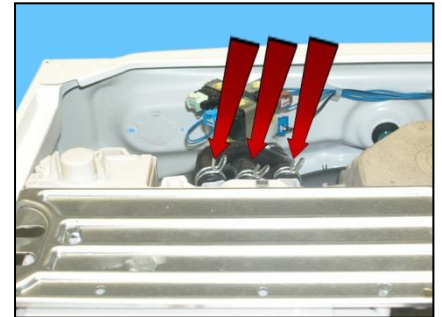


16.2.7 Detergent dispenser

Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

Pull out the pipes that connect it to the solenoid valves (cold water and where featured hot water).



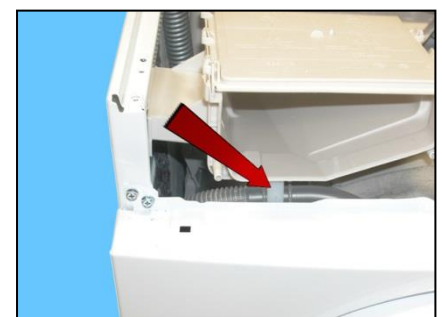
Unfasten the two screws securing it to the central crosspiece.



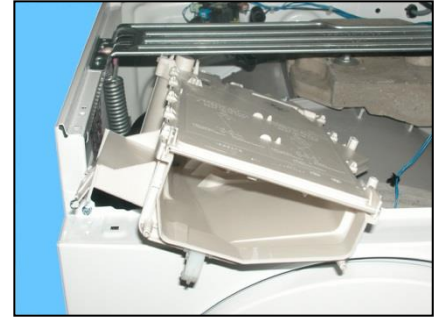
Unfasten the screw in the clamp that fixes the detergent loading pipe to the tray, and remove it from its housing.



If the appliance is a Jet System, pull out the pipe from the detergent dispenser hook.



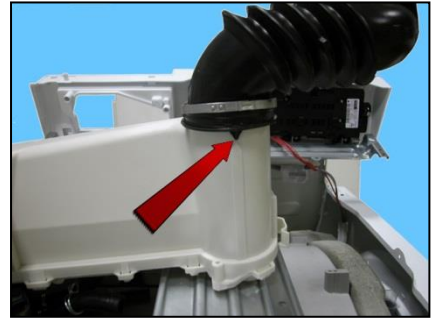
Remove the detergent dispenser.



16.2.8 Detergent fill pipe

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the detergent tray (see relevant paragraph).

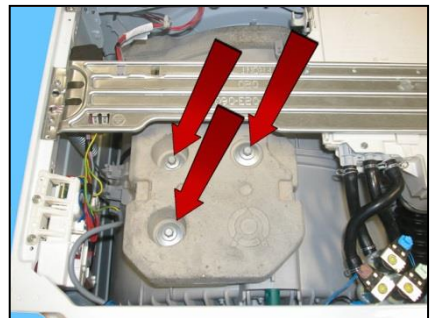
Pull out the pipe from the detergent dispenser after breaking/loosening the clamp between the detergent dispenser and the detergent loading pipe. When reassembling, use a new clamp with the same characteristics. The size of the clamp to use is 65.5 mm. When introducing the pipe into the dispenser, make sure the two references are aligned.



16.2.9 Upper counterweight

Remove the worktop (see relevant paragraph).
Remove the three screws that secure it to the welded tub.

When reassembling:
If the tub assembly is new, tighten the screws at a torque of 20 Nm.
If the tub assembly is not new, align with the existing thread and tighten the screws at a torque of 15 Nm.



16.3 Accessing the front part

From the front it is possible to access the following components:

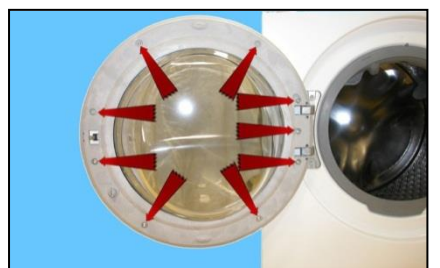
1. Door and Door Hinge
2. Door safety interlock
3. Drum light
4. Bellow seal
5. Blade
6. Front panel

16.3.1 Door hinge - Door

To replace the hinge, loosen the screws securing it to the cabinet.



To access the door, loosen the screws joining the two front and rear door frames together.

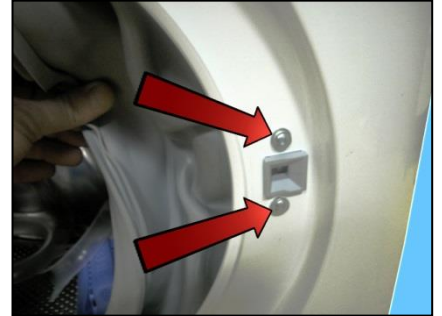


16.3.2 Door safety interlock

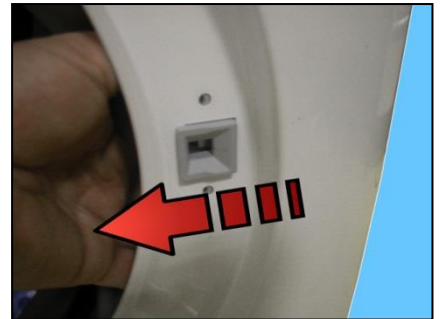
Remove the iron ring securing the bellow seal to the unit.
Remove the part of the bellow seal concerned from the unit.



Unfasten the two screws securing the door safety interlock to the front panel.



Take the device and move it to the left.



Turn it towards the inside (right-hand side of the flange).



Pull it out towards the right and remove it.



Pull out the door safety interlock.
Take care in the lower part of the device as there is a small rod.
Don't pull it out too much otherwise the small rod comes out of its seat in the filter body, as described below.



Remove the small rod from the pin (after removal, it stays in the vertical position).



Pull out the wiring protection from the door safety interlock. Disconnect the connector.



To reassemble the door safety interlock, repeat the same tasks in reverse order.

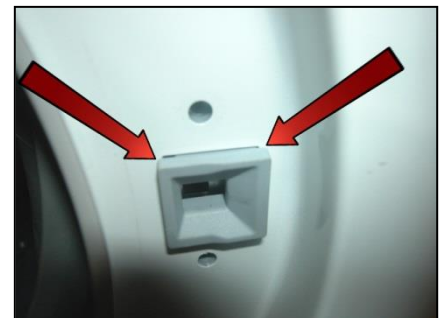
Make sure the small rod is correctly positioned with respect to the door safety interlock (see photo at the top of the page).



Make sure the small rod to release the door safety interlock is correctly positioned and visible in its seat by opening the filter flap.

To reassemble the door safety interlock, repeat the same tasks in reverse order.

Before tightening the screws to secure the door safety interlock to the front panel, make sure the flange is positioned properly on the outside as indicated by the arrows.



Tighten the screws at a torque of 2.5 Nm.

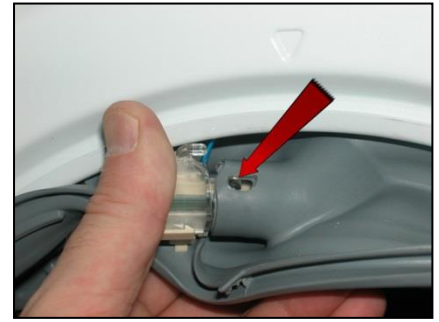
16.3.3 Drum light

Remove the iron ring securing the bellow seal to the unit.
Remove the part of the bellow seal concerned from the unit.

Remove the wiring from the lamp holder.



Take out the hook securing it to the bellow seal.



Take the lamp out of its seat.



16.3.4 Bellow seal

Remove the iron ring securing the bellow seal to the unit.
Release the bellows seal from the front panel.
Take the drum light out of its seat (see related paragraph).

Take the circulation pipe out of its seat in the bellow seal after breaking the clamp (when reassembling, use a new clamp with the same characteristics and size 20.5).

Take the seal out of the welded tub (take care as the seal is held in position by a snap ring).



When reassembling the seal, lubricate with liquid soap the part where the tub is inserted.

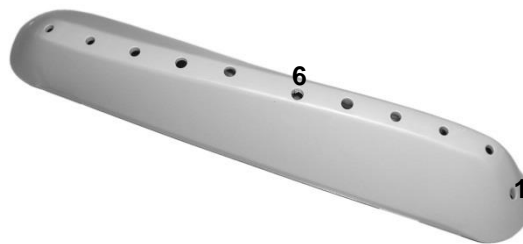
Make sure the references are aligned.

Reassemble the snap ring between the door bellow seal and the tub.

Where featured, reposition the Jet pipe and the lamp in their seats.

Reassemble the iron ring between the door bellow seal and the cabinet.

16.3.5 Blade



This blade is secured to the drum with slides and secured with blades carved into the drum.

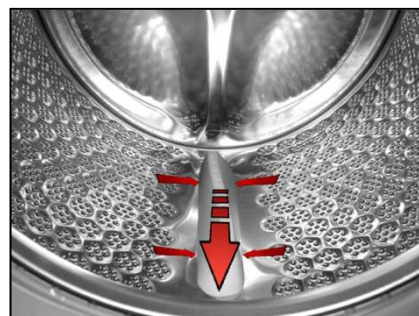
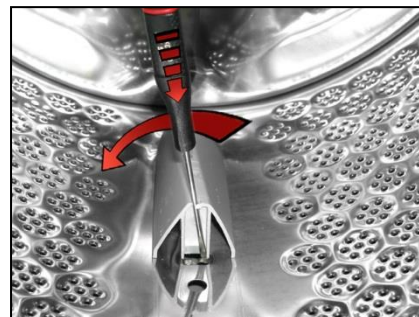
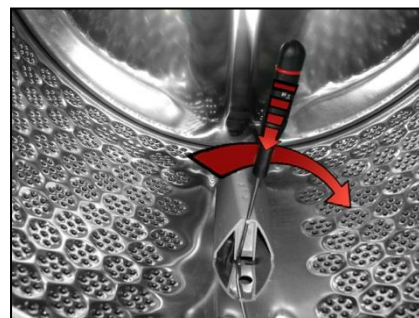
To remove it from the drum:

Insert a flat-tip screwdriver into hole 6 (see figure).

Place the screwdriver with the handle tilted towards the right. Push the left-hand tab downwards.

Place the screwdriver with the handle tilted towards the left. Push the right-hand tab down.

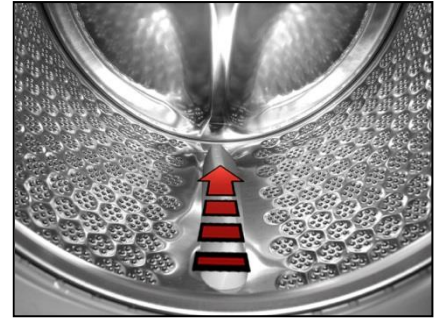
When the two tabs are down, move the blade towards the front of the drum, and if necessary squash the blade at the two ends.



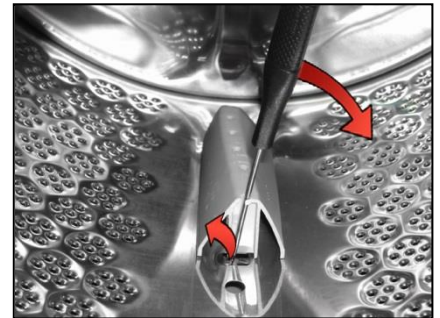
Before securing the new blade insert a screwdriver beneath the tabs and raise them a little.



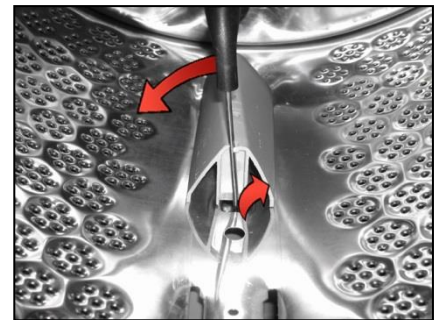
Position the new blade inside the drum guides. Push it towards the back.



Insert the flathead screwdriver at a right angle to the blade (hole 6), so as to position it at the centre of the two tub tabs. Tilt it towards the right so that the left tab moves upwards.



With the screwdriver still inserted in the slot, tilt it towards the left so that the right tab moves upwards.



With the tabs raised, the blade is secured to the drum.



16.3.6 Front panel

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring and remove the door bellow seal from the front panel.
Unfasten the screws securing the door safety interlock.

Open the filter flap and remove it.

Loosen the two screws that secure the plinth to the front.

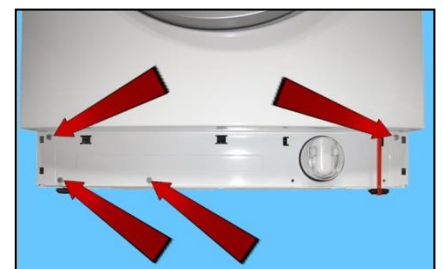
Release the two hooks that secure it to the front (indicated by the arrows).

Remove the plinth by turning it downwards in order to pull out the pins that secure it to the lower part of the front panel.

Loosen the screws that secure the lower part of the front panel to the cabinet casing.

Release the cable clamp secured to the centre of the front panel (where the lamp is featured).
Unfasten the four screws securing the front panel to the sides (indicated by the arrows).

Remove the front panel.



16.4 From the front panel, you can access

1. The JET water circuit
2. The front counterweight
3. The shock absorbers with/without weight sensor
4. The drain water circuit
5. The pressure chamber
6. The tub suspension springs
7. The shock absorber pins

16.4.1 JET water jet

Jet pipe (1).

Pull it out of the circulation pump, while you will have to break/widen the clamp from the bellow seal (when reassembling, use a new clamp with the same characteristics with size 20.5).

- Re-circulation pump

Remove the protection (2).

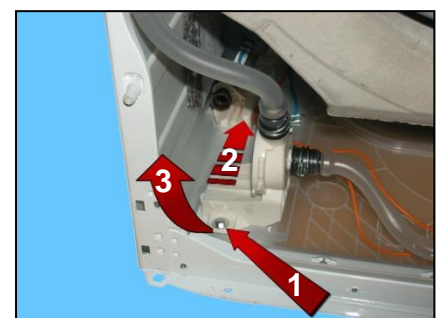
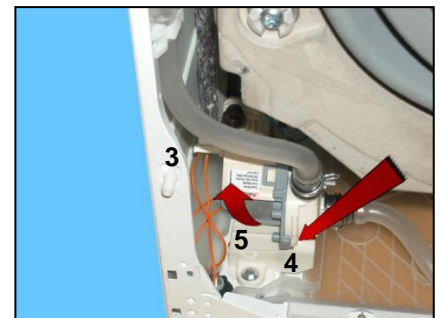
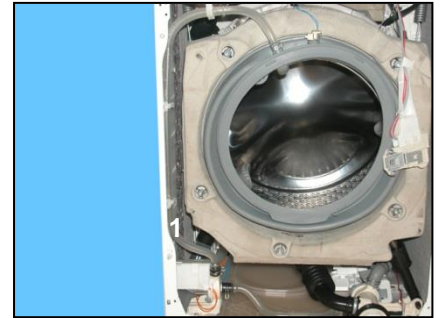
Disconnect the connectors (3).

Move the lock catch (4) with some pliers (take care not to break it).

Turn the pump in the direction shown by the arrow (5).

Remove the pump.

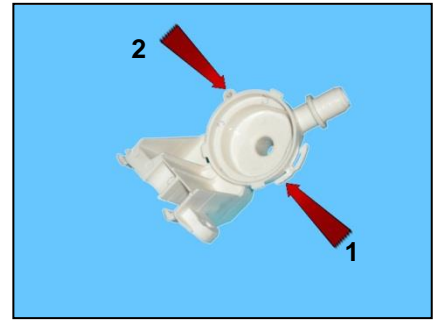
To remove the circulation pump screw: take out the pipes, loosen the screw (1) securing it to the crosspiece, push it towards the inside of the appliance (2) and lift it (3).



If the catch (1) securing the circulation pump to the screw accidentally breaks.

Secure the pump to the screw and secure the latter using a screw, screwing the latter into the slot (2).

Size of the screw 3.5x19 Code 5024 79 51- 00/2



When reassembling, make sure the seal is in its seat in order to avoid water leaks.



16.4.2 Front counterweight

Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

Remove the iron ring securing the bellow seal to the front panel.

Unfasten the screws securing the door safety interlock (see related paragraph).

Remove the front panel (see relevant paragraph).

Pull out the Jet pipe (see related paragraph).

Pull out the lamp from its seat.

Unfasten the five screws securing the front counterweight to the welded tub assembly.

When tightening the screws, take care:

If the welded tub assembly is new, tighten the screws at a torque of 15 Nm.

If the welded tub assembly is not new, align with the existing thread and tighten the screws at a torque of 10÷12 Nm.



16.4.3 Shock absorber with/without weight sensor

Remove the worktop (see relevant paragraph).

Remove the control panel (see relevant paragraph).

Remove the iron ring securing the bellow seal to the front panel.

Unfasten the screws securing the door safety interlock (see related paragraph).

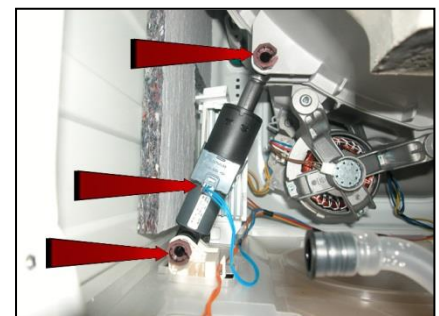
Remove the front panel (see relevant paragraph).

Remove the circulation pump with the screw (see related paragraph).

Remove the connector if the shock absorber is fitted with a weight sensor.

Pull out the pins securing it to the tub and crosspiece.

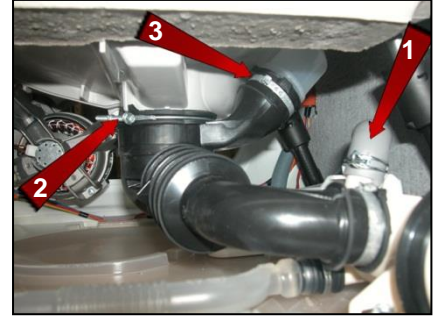
To reposition the pins, see para. 16.4.7 on page 92.



16.4.4 Drain water circuit

- Tub drain pipe

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Pull out the main drain pipe (1).
Loosen the screw of the clamp securing the tub drain pipe to the tub (2).
Pull out the pipe from the analogue pressure switch connecting the pressure chamber.
Release the pressure chamber. *(See [pressure chamber description](#).)*
Pull out the tub drain pipe and pull out the pressure chamber (3).
Where clamps are present, you will need to open/break them. When reassembling, use clamps with the same characteristics.



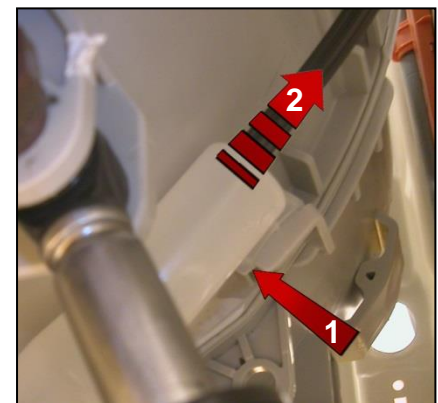
16.4.5 Pressure chamber

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Pull out the pipe from the analogue pressure switch and hooks securing it to the welded tub.

Unfasten the screw in the clamp that fixes the drain pipe to the welded tub and remove it from its position, pulling it out.

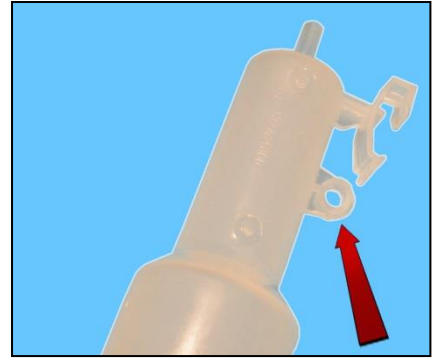
Push the hook (1) while at the same time lifting the chamber (2) from the support securing it to the tub.

Turn the chamber under the tub and pull it out.



Make a note of the latch and hook with which it is secured to the tub.

If the hook securing the chamber to the welded tub is broken.
Use the eyelet (indicated by the red arrow).



Use a screw Code 405 50 33-52/8 (AF/2P 5x16 TE/SP must have a maximum length of 16 mm and without a tip to avoid perforating the tub), secure the chamber to the tub as shown by the arrow in the photo.



When repositioning the pressure chamber in the tub drain pipe, pay attention to the references.

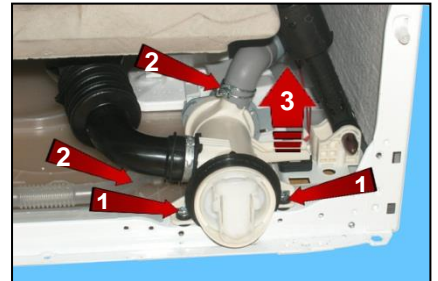
The size of the clamp to use is 52.5 mm.



When reassembling the pressure chamber, reposition the pipe connecting the pressure switch so that it never actually touches the cabinet.

- Filter body

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellows seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Loosen the screws securing it to the front crossbar (1)
Pull out the main drain pipes (2) and circulation pump connection pipe.
Raise it to remove the support inserted in the side crossbar (3)
Remove the pump protection



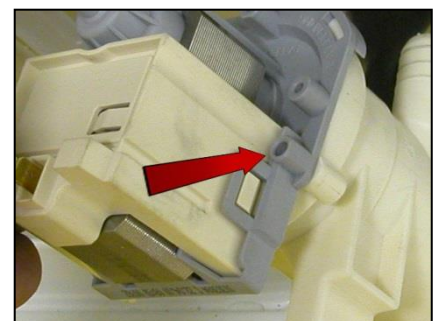
- Drainage pump

Release the connectors
Move the lock catch with some pliers (take care not to break it)
Turn and pull out the pump



If the lock catch securing the pump to the filter body breaks.
Secure the pump to the filter body, securing it in place using a screw, screwing the latter in the slot shown by the arrow.

Size of the screw 3.5x19 Code 5024 79 51- 00/2



16.4.6 Tub suspension springs

- Left spring

Attach the spring as shown in the figure: the shortest leg towards the crosspiece, whereas the longest leg towards the welded tub.



- Right spring

The instructions provided for the left spring also apply to the right spring.



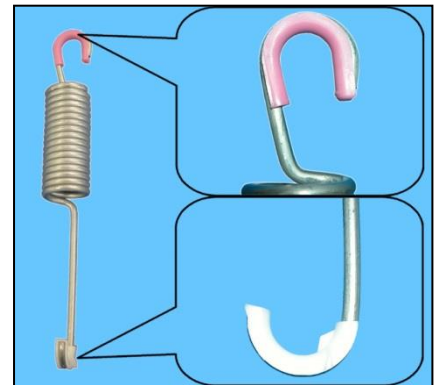
When reattaching the springs (after repair work which required their removal), make sure that the bushings shown in the figure are featured on both ends.

Pay attention to the differences between the bushings (see enlarged details).

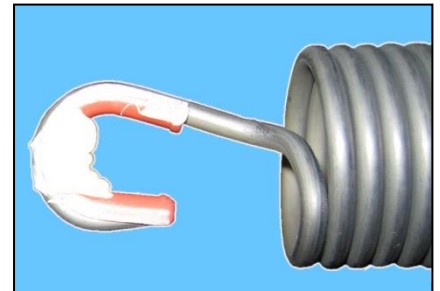
Spare bushings are available, under the following codes:

Upper bushing Code 405 50 62-51/9

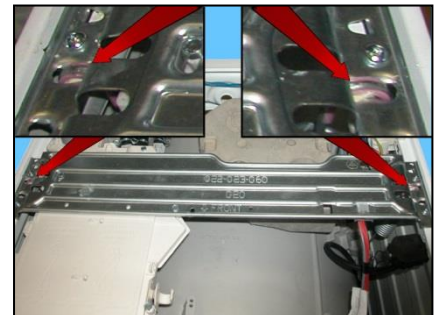
Lower bushing Code 405 50 62-52/7



Apply some grease on either end of the spring.
Use grease code 5026 24 16-00/6

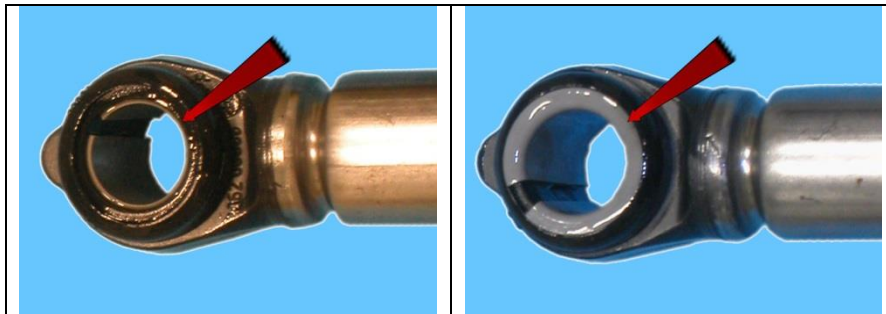


Attachment position of springs to top crosspiece.

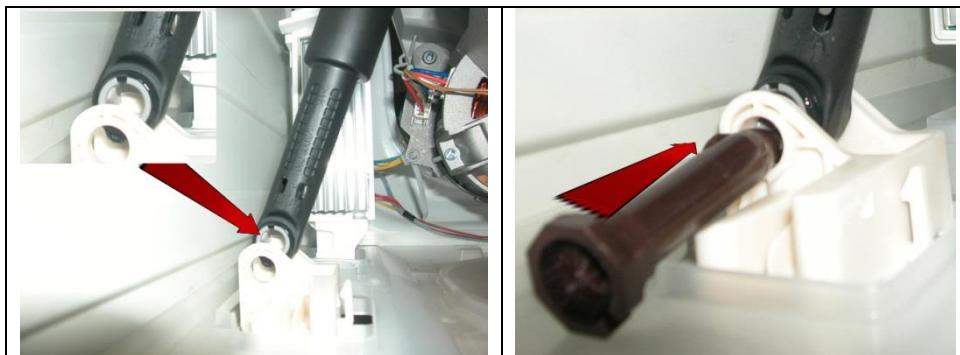


16.4.7 Shock absorber pin

There is a bushing on either end of the shock absorber. It has a wider profile on one end to avoid it becoming dislodged when the pin is inserted (see the two figures below).



When positioning the shock absorber inside the fastening (situated at the bottom of the cabinet or in the tub), take care when positioning the bushing, so as to insert the pin from the part of the bushing with the widest profile. The spare bushing is supplied under Code 344 91 25-30/5.



If you are having difficulty inserting the pin, grease it a little (code 5026 24 16-00/6).

16.5 Accessing the rear part

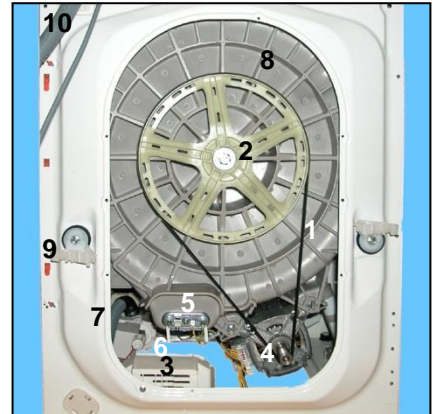
16.5.1 Back panel

Loosen the screws that fix it to the cabinet.



16.6 From the back panel, you can access

1. Belt
2. Plastic pulley
3. Inverter
4. Motor
5. Heating
6. Water control
7. Rear shock absorber
8. Welded tub assembly
9. Drain pipe/cabling support
10. Main drain pipe



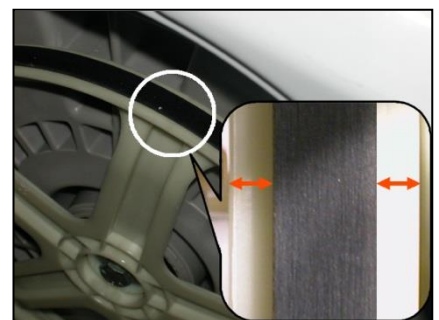
16.6.1 Belt

Remove the back panel (see relevant chapter).
Hold the belt, and by turning the pulley, remove it.



When reassembling:
Position the belt and align it with the centre of the pulley (\varnothing 273 mm)
as shown in the figure.

Turning the pulley, check that the belt positions itself and remains in the central part of the pulley.



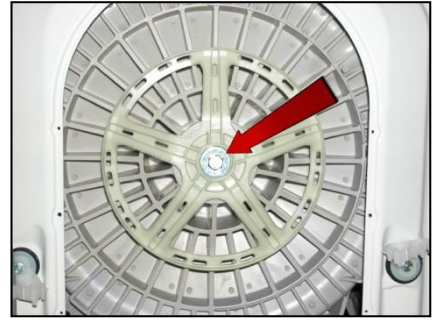
If necessary, adjust the position of the belt on the drive pulley, so that it is correctly positioned.



16.6.2 Plastic pulley

Remove the back panel (see relevant chapter).
Remove the belt (see relevant chapter).
Insert a retainer to secure the pulley in place.
Unfasten the screw securing the pulley to the drum shaft.

Tighten the screw at a torque of 60 Nm.



16.6.3 Inverter

Remove the back panel (see relevant chapter).

Loosen the two screws that fix it to the cabinet.

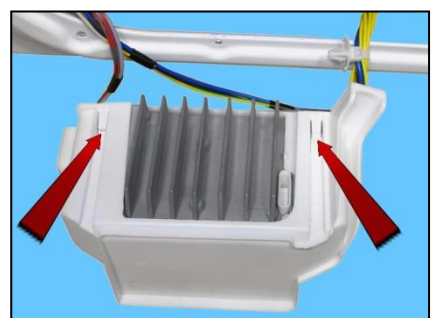
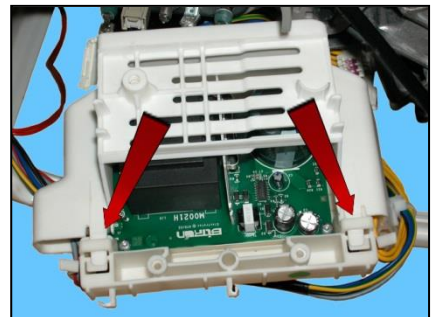
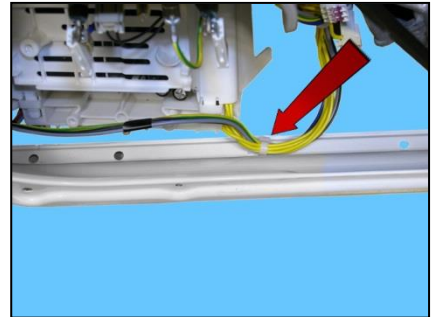
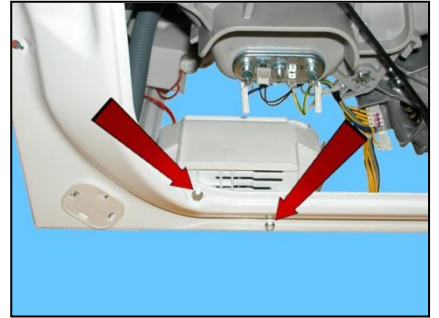
Pull out the clamp from the cabinet.

Push the washing unit towards the inside of the appliance (if necessary).
Pull out the connectors of the heating element (if necessary).
Remove the Inverter (UIMC).

Disconnect the hooks fixing the connector protection on one side.

Then on the other.

Remove the connectors protection.

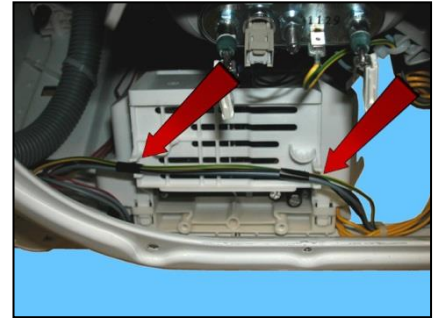
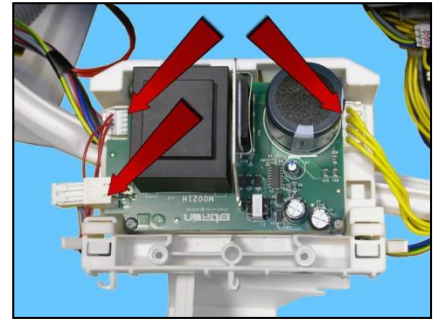


Carefully remove the connectors (they are blocked by anti-sliding hooks).



CAUTION:

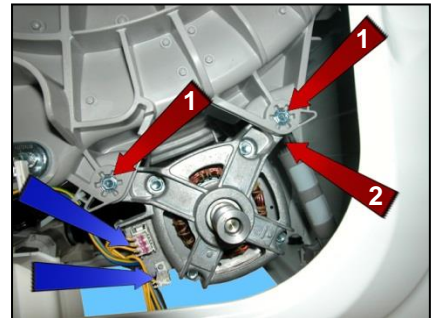
Position the wiring carefully when re-assembling the UIMC / EMC14 (Inverter) and set it out as shown in the figure, inside the two rails cut into the UIMC / EMC14 lid (indicated by the arrows). This is to avoid any wire being squashed/pressed against the cabinet with the risk of current leakage.



16.6.4 Motor

Remove the back panel (see relevant chapter).
Remove the belt (see relevant chapter).

Disconnect the connectors: power supply and earthing (blue arrow) and also slip off the strap.
Loosen the two front fastening screws (1) and the rear ones (2) (red arrows).



When reassembling, restore the connections.

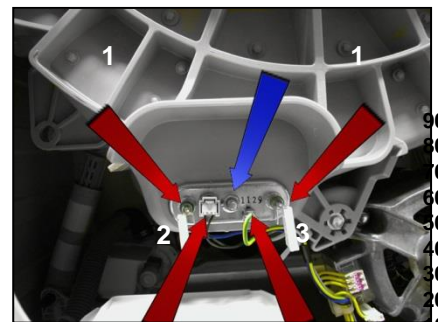
If the clamp securing the wiring to the motor breaks, replace it with a new one.

Tighten the screws at a torque of 5 Nm.

16.6.5 Heating

Remove the back panel (see relevant chapter).

Disconnect the connectors of the heating element (1), NTC probe (2) and earth (3) red arrows.
Unscrew the nut (blue arrow) and remove the heating element from its seat.

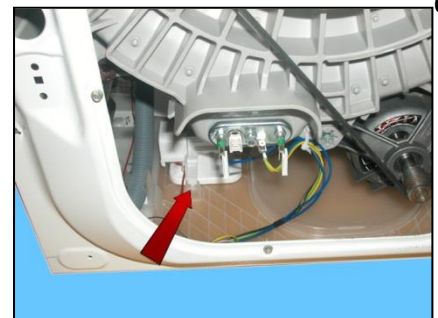


Tighten the nut at a torque of 4 Nm.

16.6.6 Water control

Remove the back panel (see relevant chapter).

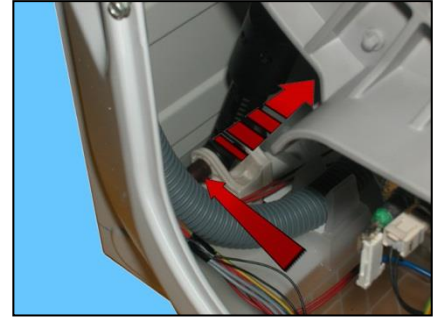
Release the hooks securing it to the bottom and disconnect the connector.



16.6.7 Shock absorbers

Remove the back panel (see relevant chapter).

To take the pins out of their seats, push the locking tooth and at the same time remove it with pliers.
Perform the same operations for the other pin.
Take the shock absorber out.



16.6.8 Welded tub assembly

Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the front panel (see relevant paragraph).
Remove the detergent tray (see relevant paragraph).
Remove the upper counterweight (see relevant paragraph).
Remove the front counterweight (see relevant paragraph).
Remove the back panel (see relevant paragraph).
To remove the washing unit assembly, disconnect:
All the tub pipes, the wiring connectors that connect the heating element, the NTC probe, remove the belt and the motor (to lighten the tub).
Lay the appliance on its back (making sure you place a polystyrene or cardboard layer on the floor to prevent damaging the cabinet).
Take the tub out of the washing machine.

16.6.9 Drain pipe/cabling support

When fixing the drain pipe/cabling support make sure that the two stops (indicated by the red arrows) fit into their housings, locking the support to the unit.

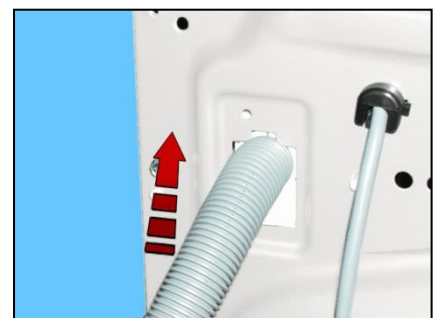
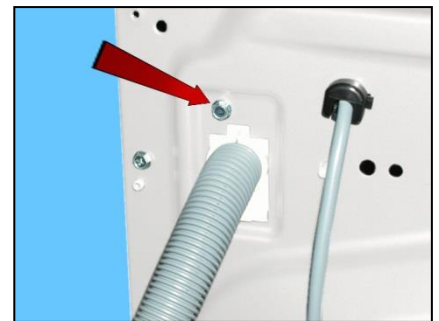
If the fixing is not stable and there is a risk of it coming out of its position, fasten the support to the unit with a screw (6.5x 3.5 mm) screwed into the hole indicated by the blue arrow.



16.6.10 Drain pipe fastener

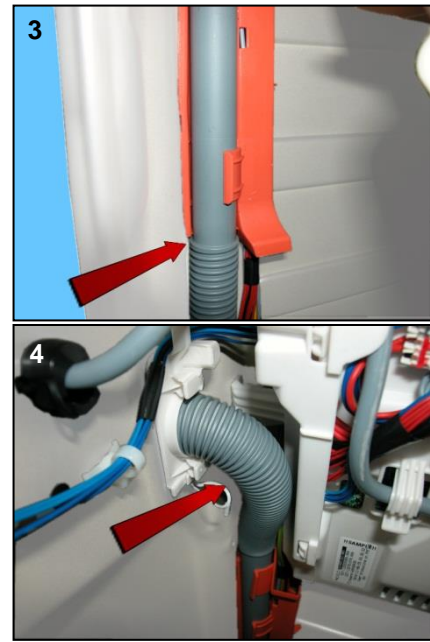
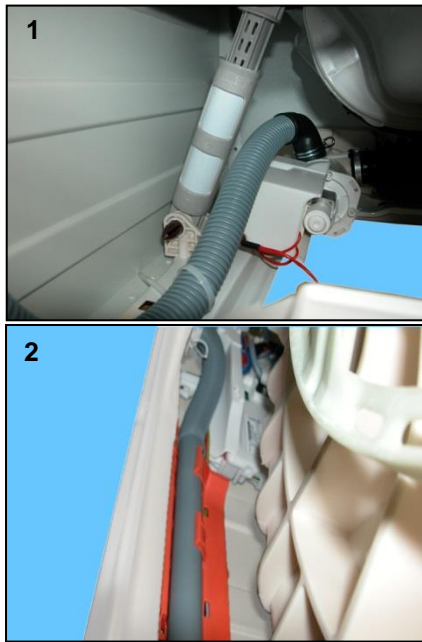
Loosen the screw that secures it to the cabinet.

Push it towards the inside while lifting it.



16.6.11 Main drain pipe

Arrange the drain pipe as shown in the figures.



16.6.12 Power supply cable clamp

Squeeze it using a pair of pliers while at the same time pulling it out into the cabinet.



Revision	Date	Description	Written by	Approved by:
00	11/2013	Document creation	DMM	XX – 0X/201X
01	01/2014	Pag. 60-In first row has been corrected from EWM10 to EWX11 Pag. 60 the text was modified between attention box and the box where there are graphics Pag. 63 Corrected the description of the reference 9	DMM	XX – 0X/201X
02	03/2015	Updates for EWX14931: - Alarm Table Summary - Diagram - EWX14931 Main board Accessibility	MP	XX – 0X/201X
02	06/2015	Updates for Medium Performance MOTOR PM	MP	XX – 0X/201X