

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

Publication
 number

599 74 42-21

EN

Edition: 12/2014 - Rev. 02

**Front-Loading Washing
 Machines with electronic
 control system**

**EWM09312
 EWX13611**

**Technical and functional
 characteristics**

**NEW
 COLLECTION**

SERIES

6 / 7

G50

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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 EWM09312 (SERIES 6/7) and EWX13611 (SERIES 6/7) electronic control system.

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

The current electronic appliances manufactured (EWM09312 and EWX13611 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

1.1 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.

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

“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.

If an alarm occurs during a washing programme, the auto off function is disabled, and an alarm is displayed.

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

2 WARNINGS



- Any work on electrical appliances must only be carried out by qualified technicians.
- 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 (Code 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.
- 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 description 9.6 Water circuit on page 39*).
- 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.

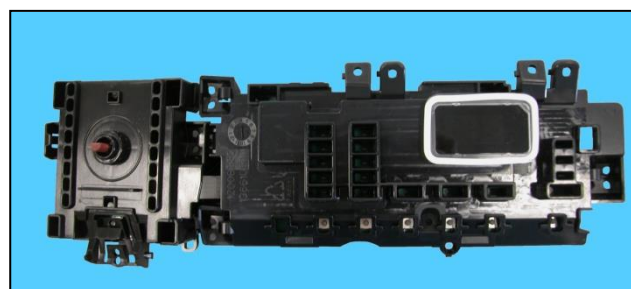
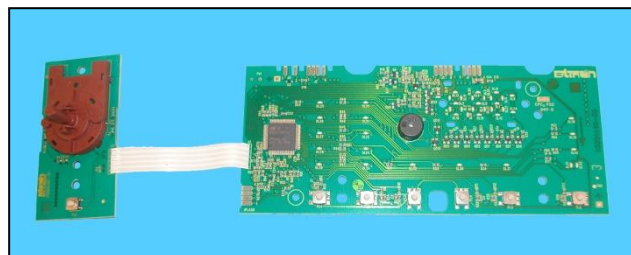


3 SERIES 6

3.1 EWM09312 General characteristics

The EWM09312 electronic control system consists of two circuit boards.

- ↪ 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).



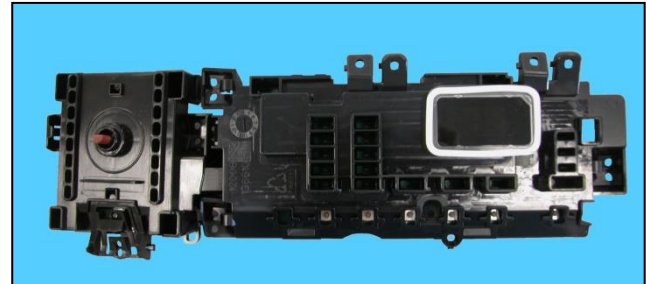
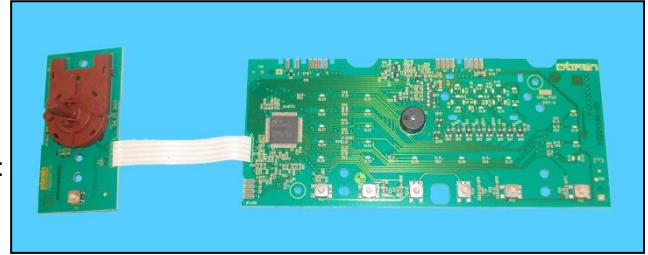
- ↪ The main board, which is positioned at the rear of the appliance. It powers the electrical components and receives commands from the display board.

No. buttons	<ul style="list-style-type: none"> ▪ Maximum 7 (5 options + start/pause + ON/OFF)
No. LEDs	<ul style="list-style-type: none"> ▪ Maximum 14 + display (three digits and two symbols)
Programme selector	<ul style="list-style-type: none"> ▪ 15 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
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with "Eco-ball" sphere
Motor	<ul style="list-style-type: none"> ▪ Collector, with tachometric generator (Universal)
Spin speed	<ul style="list-style-type: none"> ▪ 1,000÷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 outlets
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: pre-wash/stains, wash, fabric softeners
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"> ▪ Traditional (with PTC)
Heating element heat output	<ul style="list-style-type: none"> ▪ 1,950 W with thermal fuses incorporated
Temperature control	<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 flow meter) ▪ Water control

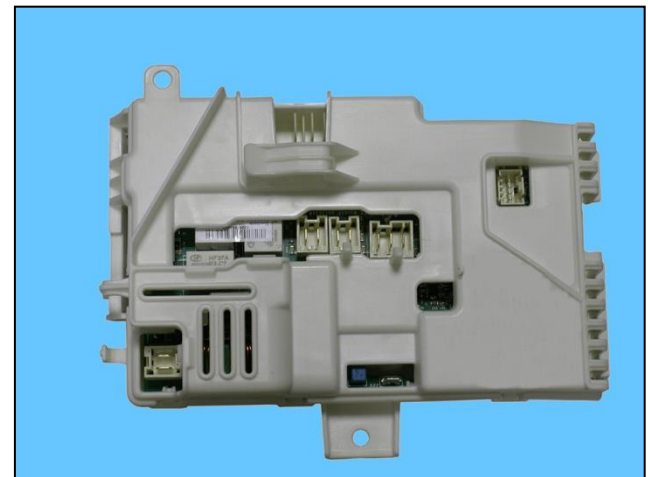
3.2 EWX13611 General characteristics

The EWX13611 electronic control system consists of two circuit boards.

↪ 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 board, which is positioned at the rear of the appliance. It powers the electrical components and receives commands from the display board.

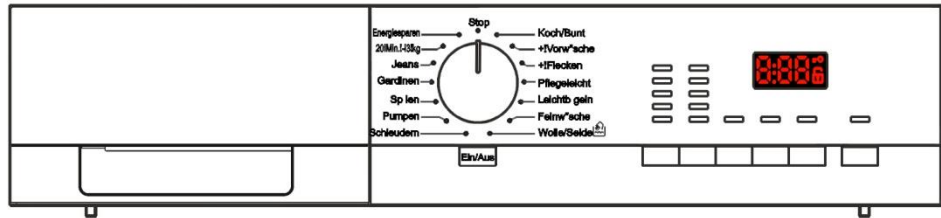


No. buttons	<ul style="list-style-type: none"> ▪ Maximum 7 (5 options + start/pause + ON/OFF)
No. LEDs	<ul style="list-style-type: none"> ▪ Maximum 14 + display (three digits and two symbols)
Programme selector	<ul style="list-style-type: none"> ▪ 15 positions (incorporated in the circuit board)
Serial 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
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere
Motor	<ul style="list-style-type: none"> ▪ Collector, with tachometric generator (Universal)
Spin speed	<ul style="list-style-type: none"> ▪ 1,000÷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 outlets
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: pre-wash/stains, wash, fabric softeners
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"> ▪ Traditional (with PTC)
Heating element heat output	<ul style="list-style-type: none"> ▪ 1,950 W with thermal fuses incorporated
Temperature control	<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 flow meter) ▪ Water control

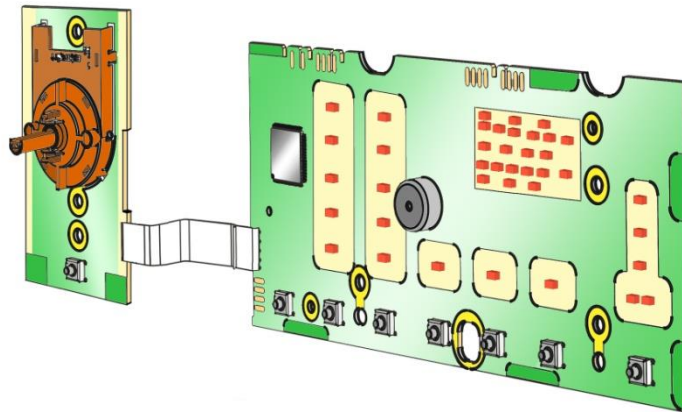
3.2.1 Control panel

3.2.1.1 Styling

- Max. 7 buttons
- 15 position programme selector
- 14 LEDs
- Display (three digits and two symbols)



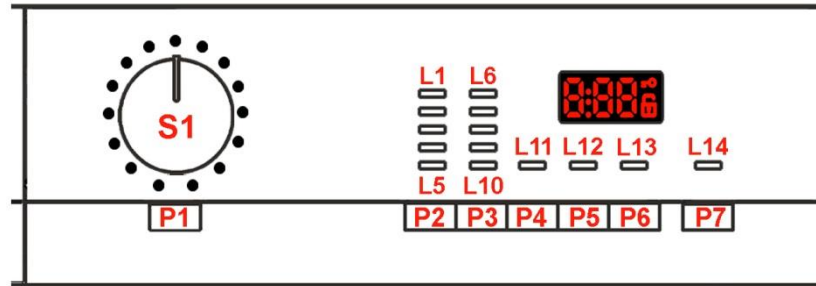
- Positioning of LEDs and buttons



- Display board assembly

1. Selector board protection
2. Display board protection
3. Light diffuser
4. Digit casing
5. Display board and selector board
6. Rear protection

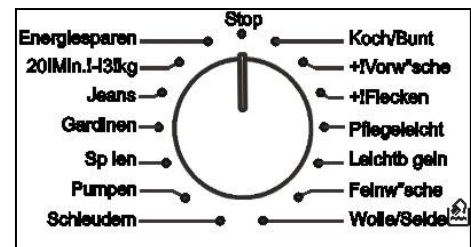
3.2.1.2 Control panel configuration



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

3.2.1.3 Programme selector (S1)

The number of positions is not configurable, it is always 15 and they are tied to the washing programme numbers. The programmes can be configured to perform the 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.



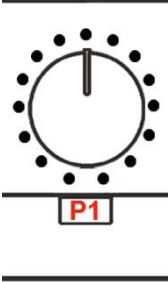
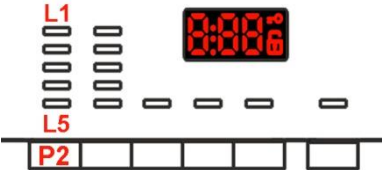
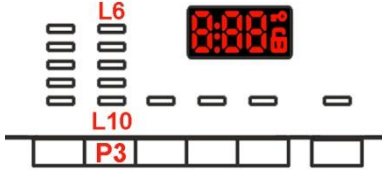
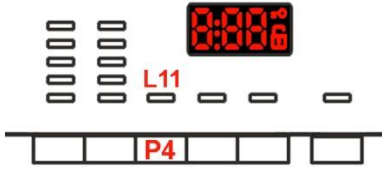
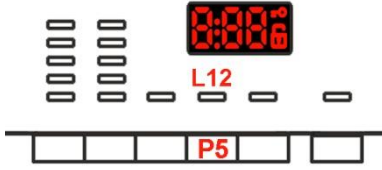
3.2.1.4 Programme configuration

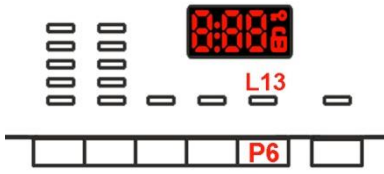
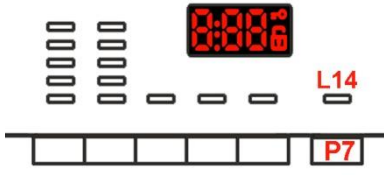
The table below lists the parameters that can be used to define the washing programmes.

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 configured by the chosen washing programme.
Spin	Normal, Minimum, Maximum.
Options (Normal/Possible)	Rinse Hold, Pre-wash, Stains, Extra rinse, Normal, Daily, Super quick, Reduced spin speed.
Programme phases	Pre-wash, Wash, Rinses, Spin, Delayed start.

3.2.1.5 Pushbuttons – LEDs and Display









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. – Press it to turn the appliance on, at the same time the buzzer will sound a tone (if enabled) and the display lights up. – 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 display and the LEDs will switch off, all the options selected and any programme that is running will be cancelled. 																															
<ul style="list-style-type: none"> • Button no. 2: TEMPERATURE – This button is related to LEDs (L1÷L5). – The starting temperature is determined by the programme selected. – Press this button in sequence to decrease the temperature, when the lowest temperature is reached the selection will start again from the highest. – The temperatures available (displayed in °C) are: 95°C, 60°C, 40°C, 30°C, cold cycle. – The values 50°C and 20°C are not foreseen. 																															
<ul style="list-style-type: none"> • Button no. 3: SPIN SPEED – This button is related to LEDs (L6÷L10). – The starting spin speed is determined by the programme selected. – Press this button in sequence to decrease the spin speed, when the lowest speed is reached the next selection will be “Rinse hold” and the relevant LED will light up. If selection continues, the highest speed available for the programme will be selected. <p>Table of LEDs, and possible spin speed configuration according to the appliance.</p> <table border="1" data-bbox="260 1178 1002 1368"> <thead> <tr> <th>LED</th> <th>1,000</th> <th>1,200</th> <th>1,400</th> <th>1,600</th> </tr> </thead> <tbody> <tr> <td>LED 6</td> <td>1,000</td> <td>1,200</td> <td>1,400</td> <td>1,600</td> </tr> <tr> <td>LED 7</td> <td>800</td> <td>1,000</td> <td>1,200</td> <td>1,200</td> </tr> <tr> <td>LED 8</td> <td>600</td> <td>800</td> <td>800</td> <td>800</td> </tr> <tr> <td>LED 9</td> <td>400</td> <td>400</td> <td>400</td> <td>400</td> </tr> <tr> <td>LED 10</td> <td>Rinse Hold</td> <td>Rinse Hold</td> <td>Rinse Hold</td> <td>Rinse Hold</td> </tr> </tbody> </table>	LED	1,000	1,200	1,400	1,600	LED 6	1,000	1,200	1,400	1,600	LED 7	800	1,000	1,200	1,200	LED 8	600	800	800	800	LED 9	400	400	400	400	LED 10	Rinse Hold	Rinse Hold	Rinse Hold	Rinse Hold	
LED	1,000	1,200	1,400	1,600																											
LED 6	1,000	1,200	1,400	1,600																											
LED 7	800	1,000	1,200	1,200																											
LED 8	600	800	800	800																											
LED 9	400	400	400	400																											
LED 10	Rinse Hold	Rinse Hold	Rinse Hold	Rinse Hold																											
<ul style="list-style-type: none"> • Button no. 4: OPTION – This button is related to LED (L11). – It has the function: Extra-rinse – Press this button to enable/disable the option with the respective lighting/turning off of LED L11. At the same time, the programme time is updated (via the three digits). 																															
<ul style="list-style-type: none"> • Button no. 5: OPTION – This button is related to LED (L12). – It has the function: Time save – Time Save: has two 2 levels, corresponding to: Daily 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 digits will vary the cycle time. 																															

<ul style="list-style-type: none"> • Button no. 6: DELAYED START – This button is related to LED (L13). – Press the button to activate delayed start. LED L13 lights up (it remains lit during the set-up phase and during the delayed start phase). Each time the button is pressed the delay time increases: <ul style="list-style-type: none"> Up to 90 minutes the intervals are of 30 minutes each From 2 hours to 20 hours the intervals are of one hour. 	 <p>The diagram shows a control panel with a digital display showing '0:00'. To the left of the display are two columns of four indicator lights each. Below the display are several buttons. The button labeled 'P6' is highlighted in red, and the LED indicator labeled 'L13' is also lit and highlighted in red.</p>
<ul style="list-style-type: none"> • Button no. 7: START/PAUSE – This button is used to START the appliance or to PAUSE it. – It is related to LED L14 which flashes when the appliance is in pause, whereas it produces a fixed light when the appliance is performing a washing cycle. 	 <p>The diagram shows the same control panel as above. The digital display still shows '0:00'. The button labeled 'P7' is highlighted in red, and the LED indicator labeled 'L14' is also lit and highlighted in red.</p>

- **Display**

The information described below also appears on the display screen:

<ul style="list-style-type: none"> • Padlock: The icon lights up when the “child lock” is on. To indicate that all the buttons have been disabled to prevent children from: modifying, starting or pausing the cycle. If any button is pressed while it is enabled the icons will flash. 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 lock: 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"> • Washing programme time It is displayed after a washing programme has been selected. This 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 on the related button. After the START/PAUSE button is pressed, the countdown starts and the delay time decreases hour by hour, from a minimum delay of 2 hours to a maximum of 20 hours (☞ 30' ☞ 60' ☞ 90' ☞ 2hrs ☞ 3hrs... ☞ 20h ☞ 0h). During the last 2 hours, it decreases by 30 min. at a time. 	
<ul style="list-style-type: none"> • Selection incorrect Display of the flashing writing “Err” for a 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, while the LED for the START/PAUSE button flashes. The washing machine continues to operate, rotating the drum once every 2 minutes. 	
<ul style="list-style-type: none"> • Alarm code Indicates an error in the appliance operation. Simultaneously with display of the code on the display, 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. 	

- **Buzzer**

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

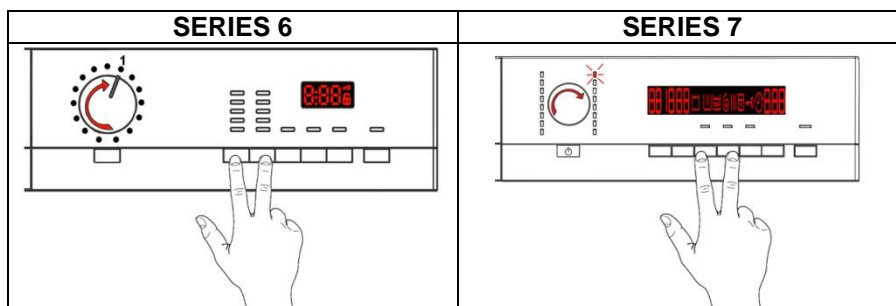
- When the machine is turned on and off it emits two different tunes.
- When a button is pressed it emits a short **“Click”**.
- When the cycle ends this is indicated by a special sequence of **“three long beeps”** repeated at intervals of 15” for a total of 2 minutes.
- In the event of a malfunction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

The buzzer can be enabled/disabled during the programme selecting phase but the alarm signalling remains enabled.



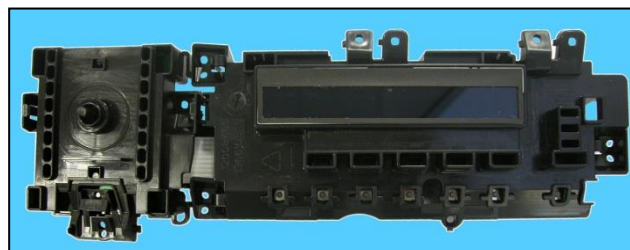
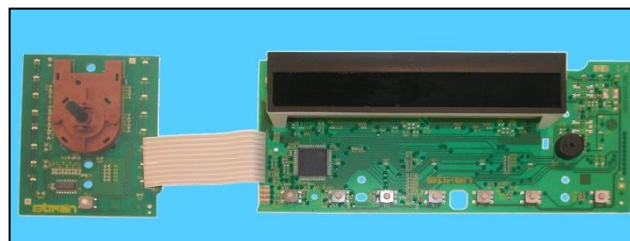
To enable it, press the buttons simultaneously for 5 seconds. A short beep will confirm that it has been enabled/disabled.

4 SERIES 7

4.1 EWM09312 General characteristics

The EWM 09312 electronic control system consists of two circuit boards.

- ↪ 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).



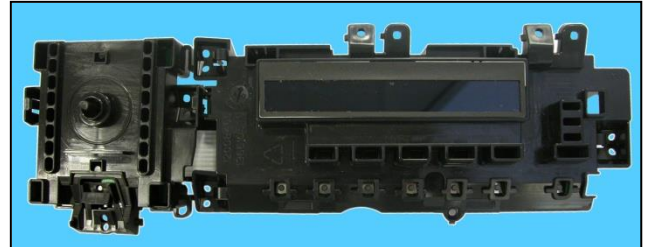
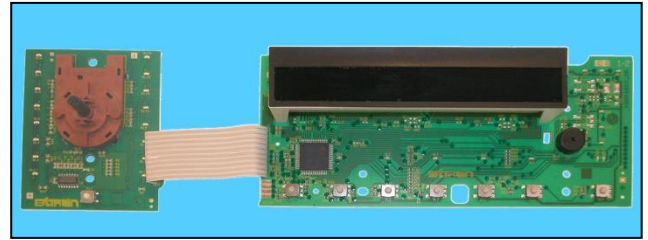
- ↪ The main board, which is positioned at the rear of the appliance. It powers the electrical components and receives commands from the display board.

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
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with "Eco-ball" sphere
Motor	<ul style="list-style-type: none"> ▪ Collector, with tachometric generator (Universal)
Spin speed	<ul style="list-style-type: none"> ▪ 1,000÷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 outlets
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: pre-wash/stains, wash, fabric softeners
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"> ▪ Traditional (with PTC)
Heating element heat output	<ul style="list-style-type: none"> ▪ 1,950 W with thermal fuses incorporated
Temperature control	<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 flow meter) ▪ Water control

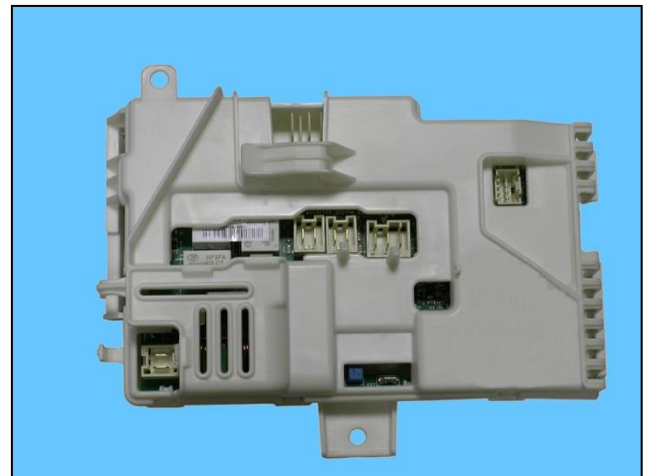
4.2 EWX13611 General characteristics

The EWX13611 electronic control system consists of two circuit boards.

- ↪ 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 board, which is positioned at the rear of the appliance. It powers the electrical components and receives commands from the display board.



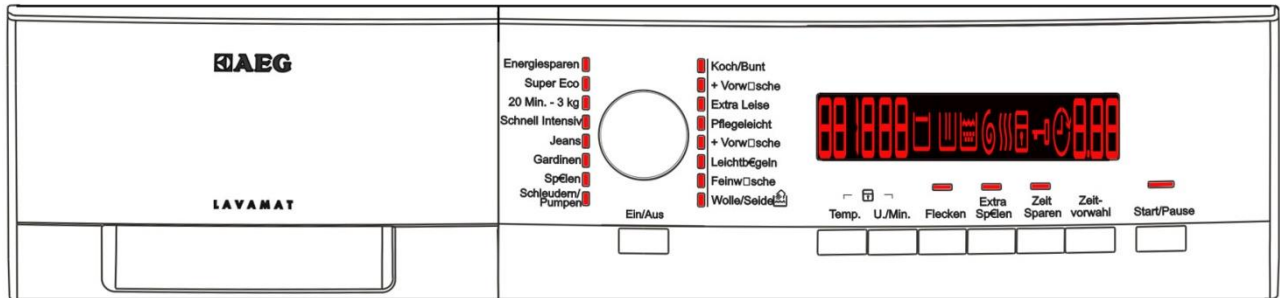
No. buttons	<ul style="list-style-type: none"> ▪ Maximum 7 (5 options + start/pause + ON/OFF)
No. LEDs	<ul style="list-style-type: none"> ▪ Maximum 14 + display (three digits and two symbols)
Programme selector	<ul style="list-style-type: none"> ▪ 15 positions (incorporated in the circuit board)
Serial 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
Rinsing system	<ul style="list-style-type: none"> ▪ Traditional with “Eco-ball” sphere
Motor	<ul style="list-style-type: none"> ▪ Collector, with tachometric generator (Universal)
Spin speed	<ul style="list-style-type: none"> ▪ 1,000÷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 outlets
Detergent dispenser	<ul style="list-style-type: none"> ▪ 3 compartments: pre-wash/stains, wash, fabric softeners

Control of water level in the tub	▪ Electronic/analogue pressure switch
Door safety interlock	▪ Traditional (with PTC)
Heating element heat output	▪ 1,950 W with thermal fuses incorporated
Temperature control	▪ NTC probe incorporated in the heating element
Buzzer	▪ Traditional incorporated in the PCB
Sensors	▪ Water fill gauge (2÷12 l/m flow meter) ▪ Water control

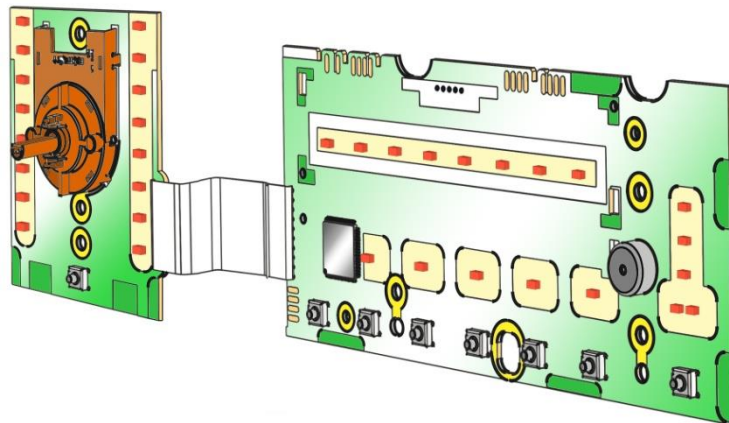
4.2.1 Control panel

4.2.1.1 Styling

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

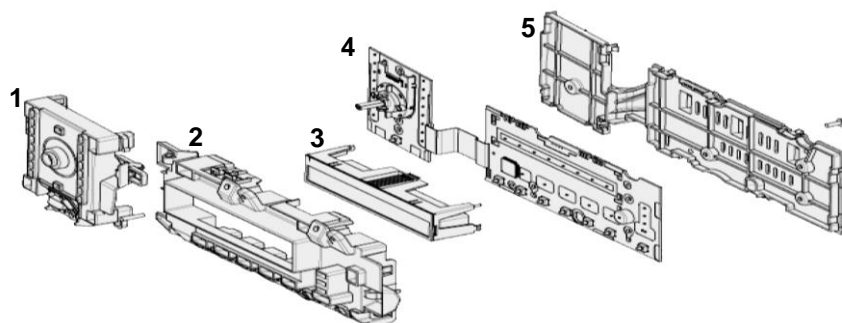


- Positioning of LEDs and buttons

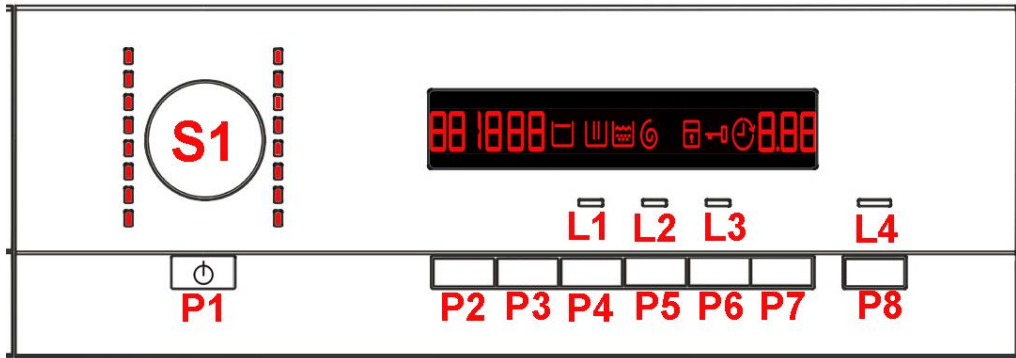


- Display board assembly

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



4.2.1.2 Control panel configuration



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

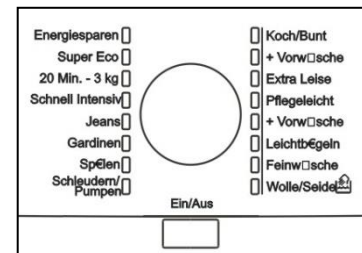
4.2.1.3 Programme selector (S1)

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 is not configurable, it is always 16 and they are tied to the LEDs that indicate the washing programmes.

The programmes can be configured to perform the 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.



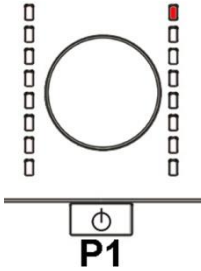
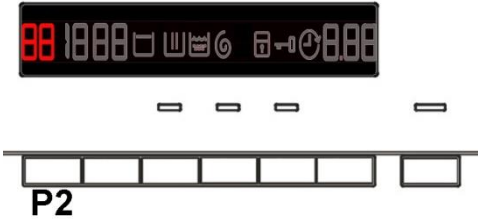
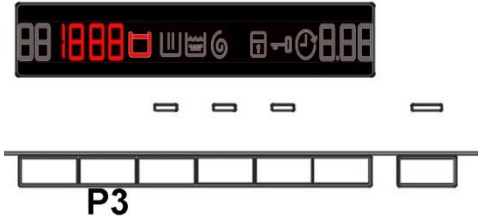
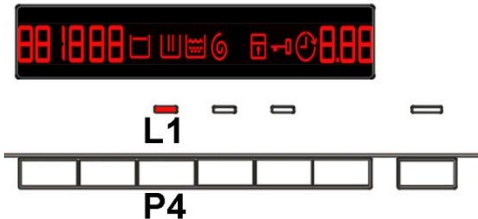
4.2.1.4 Programme configuration

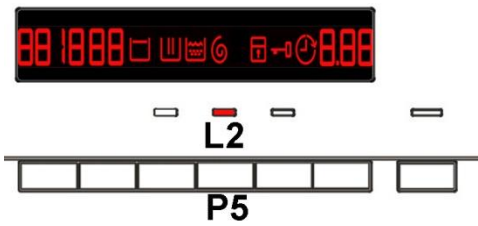
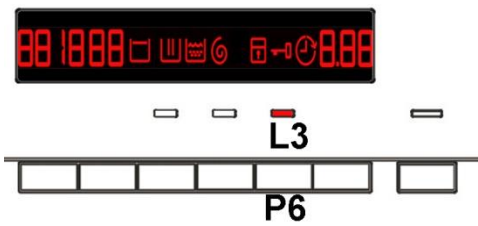
The table below lists the parameters that can be used to define the washing programmes.

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 configured by the chosen washing programme.
Spin	Normal, Minimum, Maximum.
Options (Normal/Possible)	Rinse Hold, Pre-wash, Stains, Extra rinse, Normal, Daily, Super quick, Reduced spin speed.
Programme phases	Pre-wash, Wash, Rinses, Spin, Delayed start.

4.2.1.5 Pushbuttons – LEDs and LCD

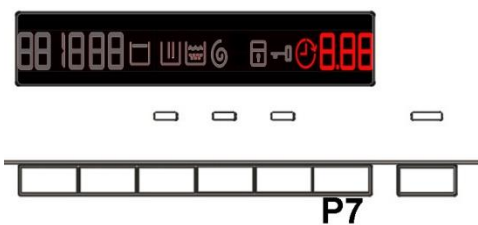
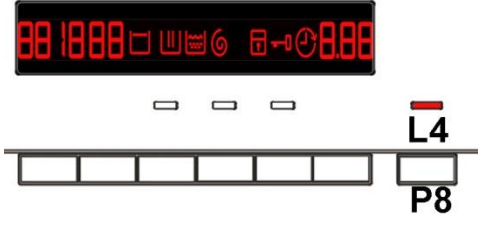
The functions of each button are defined by the configuration of the appliance.

<ul style="list-style-type: none"> Button no. 1: ON/OFF This button is always present, whatever the styling. – 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. 	
<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. The temperatures available (displayed in °C) are: 95°C, 60°C, 50°C, 40°C, 30°C, 20°C, cold cycle. The cold cycle is displayed by two dashes “ - - ”. 	
<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 this button in sequence to lower the speed, when the lowest temperature is reached the next 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. 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 “ - - - ”. 	
<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: – 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: <ul style="list-style-type: none"> – 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: <ul style="list-style-type: none"> – 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). 	



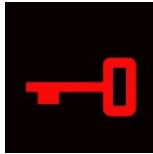




The following options can also be configured on the appliances:




- 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 last hour the time 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/Pre-wash – Rinse – Spin They are lit during the setting phase to display which phases are included in the programme. 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. 	
<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; If any button is pressed while it is enabled the icons will flash. 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 lock: 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"> • Washing programme time It is displayed after a washing programme has been selected. This 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 on the related button. After the START/PAUSE button is pressed, the countdown starts and the delay time decreases hour by hour, from a minimum delay of 2 hours to a maximum of 20 hours (⌚ 30' ⌚ 60' ⌚ 90' ⌚ 2hrs ⌚ 3hrs... ⌚ 20h ⌚ 0h). During the last 2 hours, it decreases by 30 min. at a time. During the delayed start, the icon  remains permanently lit. 	
<ul style="list-style-type: none"> • Selection incorrect Display of the flashing writing “Err” for a 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, while the LED for the START/PAUSE button flashes. The washing machine continues to operate, rotating the drum once every 2 minutes. 	
<ul style="list-style-type: none"> • Alarm code Indicates an error in the appliance operation. Simultaneously with display of the code on the display, 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. 	

- **Buzzer**
See page 13

5 “DEMO” MODE

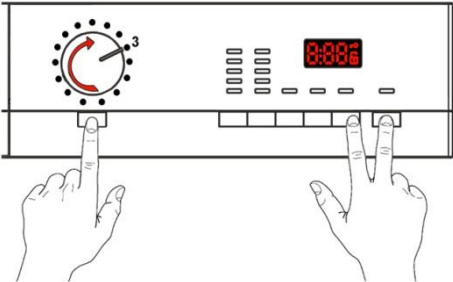
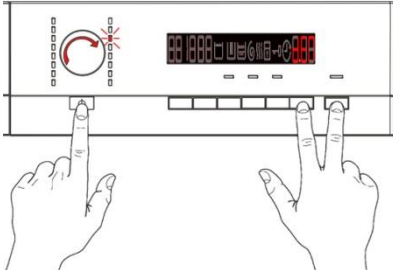
A special cycle is designed to demonstrate the operation of these appliances in shops, without connecting them to the water mains. In this way it is possible to select one of the programmes and, once the start button (START/PAUSE) has been pressed, the appliance will only perform some of the phases of 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. Keep in mind that the time left does not always correspond to the actual cycle time.

5.1 Access to DEMO settings

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

SERIES 6	SERIES 7
	
<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 three position sector in a clockwise direction.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.	

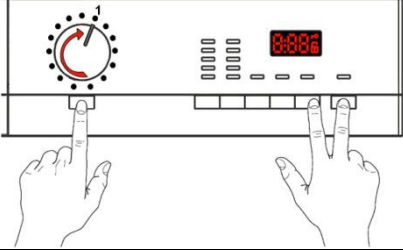
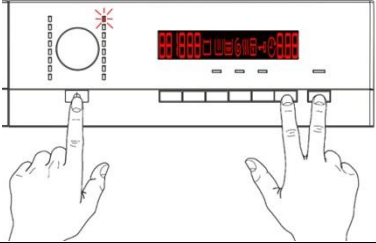
5.2 Exiting DEMO mode

To exit demo mode, disconnect the plug from the power socket, because the ON/OFF button will not work.

6 DIAGNOSTIC SYSTEM

6.1 Accessing diagnostics

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

SERIES 6	SERIES 7
	
<p><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 in a clockwise direction to position one. 3. Press the START/PAUSE button and the nearest option button simultaneously (as shown in the figure). 4. Hold the buttons down until the LEDs and symbols begin to flash in sequence (approximately 3 seconds). 	<ol style="list-style-type: none"> 1. Turn the appliance on at the ON/OFF switch and the first LED in the right-hand row turns on. 2. Press the START/PAUSE button and the nearest option button simultaneously (as shown in the figure). 3. Hold the buttons down until the LEDs and symbols begin to flash in sequence (approximately 3 seconds).
<p>In the first position, the operation of the buttons, the LEDs and the groups of symbols shown on the LCD/Display 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 the diagnostics test on the following page). During this phase, if any combination of keys (except the one for diagnosis) is pressed, all the option combinations stored will be deleted (Extra rinse, Buzzer disable, etc.).</p>	

6.2 Quitting the diagnostics system

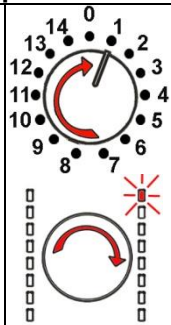

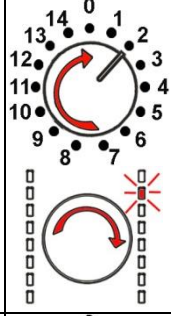

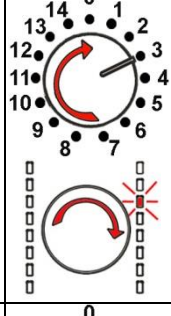

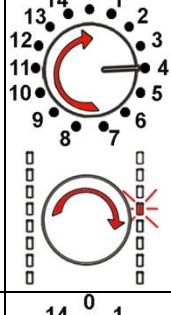

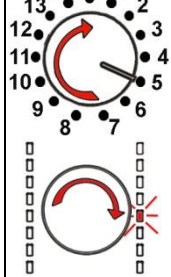

→ To exit the diagnostic cycle, switch the appliance off.

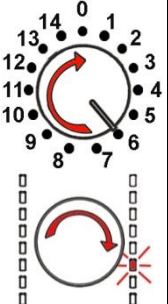

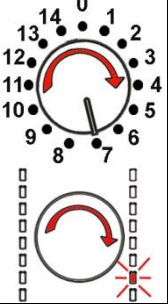

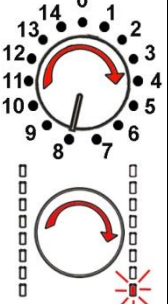

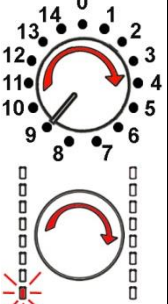

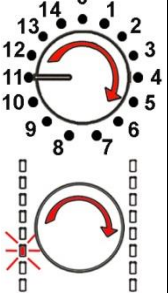

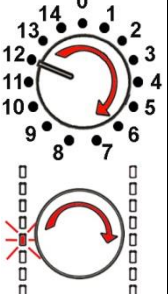
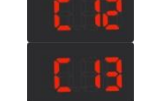


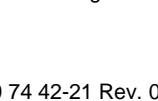

6.3 Diagnostic test phases

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 LDC display for **two** seconds, before displaying what is described 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
 <p>1</p>	<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	
 <p>2</p>	<ul style="list-style-type: none"> Door safety interlock Wash solenoid 	<ul style="list-style-type: none"> Door closed Water level below anti-flooding level Maximum time 5 min. 	Water fill to wash compartment	 Water level in the tub (mm)
 <p>3</p>	<ul style="list-style-type: none"> Door safety interlock Pre-wash solenoid 	<ul style="list-style-type: none"> Door closed Water level below anti-flooding level Maximum time 5 min. 	Water fill to pre-wash compartment	 Water level in the tub (mm)
 <p>4</p>	<ul style="list-style-type: none"> Door safety interlock Solenoid valve pre-wash and wash 	<ul style="list-style-type: none"> Door closed Water level below anti-flooding level Maximum time 5 min. 	Water fill to conditioner compartment	 Water level in the tub (mm)
 <p>5</p>	<ul style="list-style-type: none"> Door safety interlock Third solenoid valve 	<ul style="list-style-type: none"> Door closed Water level below anti-flooding level Maximum time 5 min. 	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 valve (hot water, if present) 	<ul style="list-style-type: none"> - Door closed - Water level below anti-flooding level - Maximum time 5 min. 	<ul style="list-style-type: none"> - 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 valve if the water level in the tub does not cover the heating element - Heating element - Weight sensor (if present, an extra litre of water is loaded) - Recirculation pump 	<ul style="list-style-type: none"> - Door closed - Water level above the heating element - Maximum time 10 min. or up to 90°C (*) 	<ul style="list-style-type: none"> - Heating - Circulation 	 Temperature in °C measured using the NTC probe
8		<ul style="list-style-type: none"> - Door safety interlock - Wash solenoid valve if the water level in the tub does not cover the heating element - Motor (55 rpm clockwise, 55 rpm anti-clockwise, 250 rpm pulse) 	<ul style="list-style-type: none"> - Door closed - Water level above the heating element 	<ul style="list-style-type: none"> - Check for leaks from the tub 	 Drum speed in rpm/10
9		<ul style="list-style-type: none"> - Door safety interlock - Drain pump - Motor up to 650 rpm then at maximum spin speed (**) 	<ul style="list-style-type: none"> - Door closed - Water level lower than anti-boiling level for spinning 	<ul style="list-style-type: none"> - 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	    

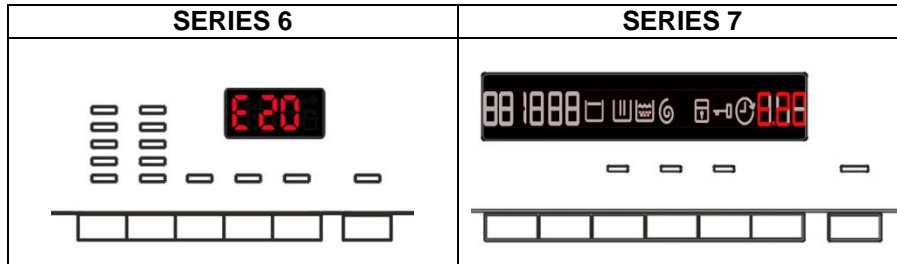
(*) In most cases, this time is sufficient to check the heating. However, the time can be increased by repeating the phase without draining the water: pass for a moment to a different phase of the diagnostic cycle and then back to the heating control phase (if the temperature is higher than 80°C, heating 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.

7 ALARMS

7.1 Displaying user alarms

When a problem occurs in the machine and a “WARNING” or “ALARM” is triggered, this is shown in the three digit display where the time left to end of cycle is indicated.



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)

For its solution, the intervention of a Service engineer is required

While for the alarm:

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

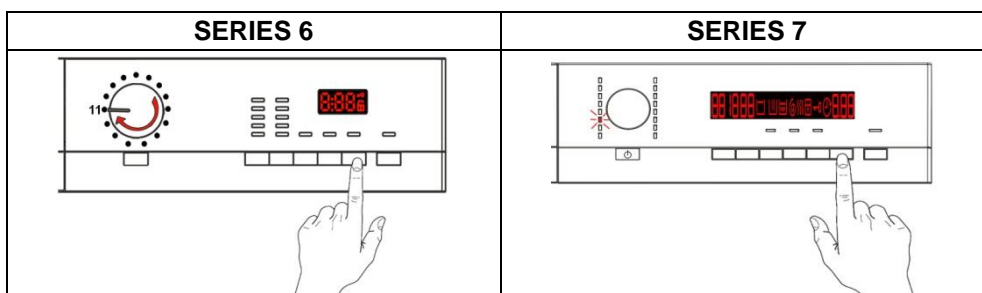
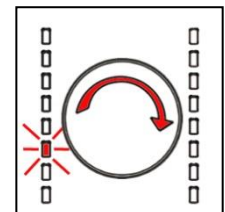
Certain alarm conditions require a drain phase to be performed before the door can be opened for safety reasons:

- 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.

7.2 Reading the alarms

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

- Enter the diagnostic mode (para. 6.1).
- Irrespective of the type of PCB and configuration, turn the programme selector knob **clockwise** to the **eleventh position**.
The last alarm will be displayed.
- To display previous alarms, press the button to the left of the START/PAUSE button in sequence (as shown in the figure).
- To return to the last alarm, press the START/PAUSE button.



7.3 Rapid reading of alarms

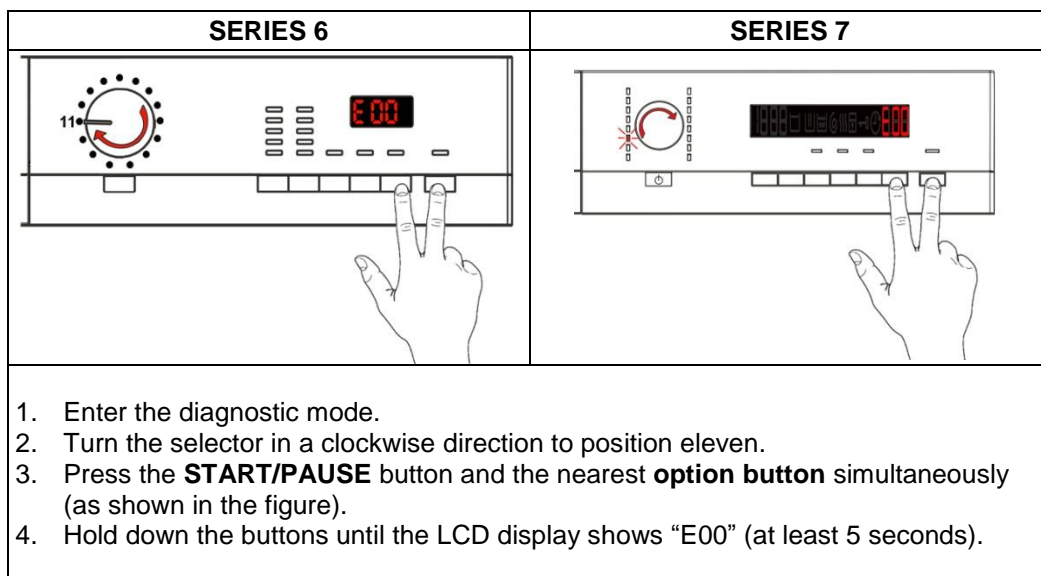
It is possible to display the last alarm even if the selector is not in the eleventh diagnostics position or the machine is in normal operation (e.g. while a washing programme is in progress):

- Press the **START/PAUSE** button and the nearest **option button** simultaneously (as if you were entering DIAGNOSTIC mode) and hold for at least 2 seconds: the LCD/Display will show the last alarm.
- The alarm will continue to be displayed until a button is pressed.
- While the alarm is displayed the machine continues to carry out the cycle, or if it is in the selection phase any options that have already been selected will remain in the memory.

7.4 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 it re-occurs during testing



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

8 OPERATING TIME COUNTER

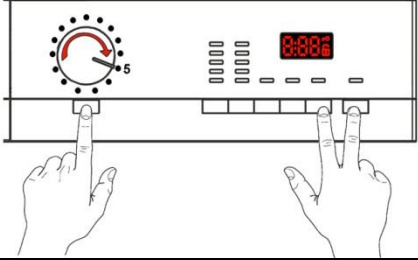
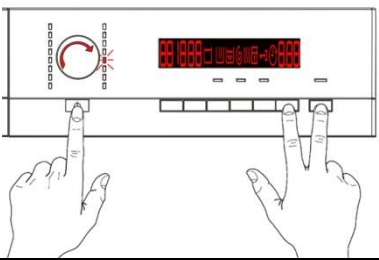
Using a specific procedure, the operator can display the total operating time for the appliance, which is counted from the moment it is first switched on.

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 (1 hr and 59 min = 1 hr).

8.1 Reading the operating time

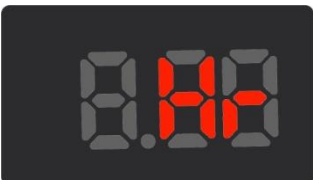


The operations listed below must be carried out within 7 seconds.

SERIES 6	SERIES 7
	
<p><u>Do not start the procedure with the buttons in the combination pressed</u></p>	
<ol style="list-style-type: none"> 1. Turn the appliance on at the ON/OFF switch 2. Turn the selector in a clockwise direction to position five. 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). 	<ol style="list-style-type: none"> 1. Turn the appliance on at the ON/OFF switch 2. Turn the selector dial clockwise until the fifth 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 down the buttons until the hours of operation appear on the display (at least 5 seconds).

8.2 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 6 and 7.

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

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

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.

8.2.1 Compatibility between options

		OPTIONS				
		Stains	Extra-rinse	Daily	Super Quick	Aquasol
Compatibility with OPTIONS	Stains		X	X	X	X
	Extra-rinse	X		X	X	X
	Daily	X	X			X
	Super Quick	X	X			X
	Aquasol	X	X	X	X	
Phases where selection/ modification is possible	Selection	X	X	X	X	X
	Pre-wash		X			X
	Wash		X			X
	Rinses					
	Spin					

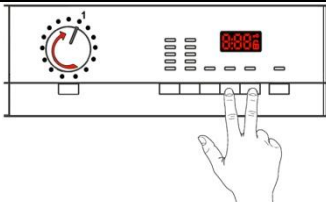
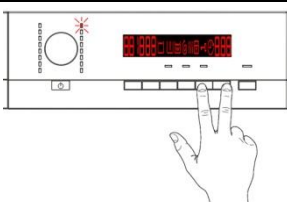
(*) Pre-wash and Soak exclude each other

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

8.3 Description of options

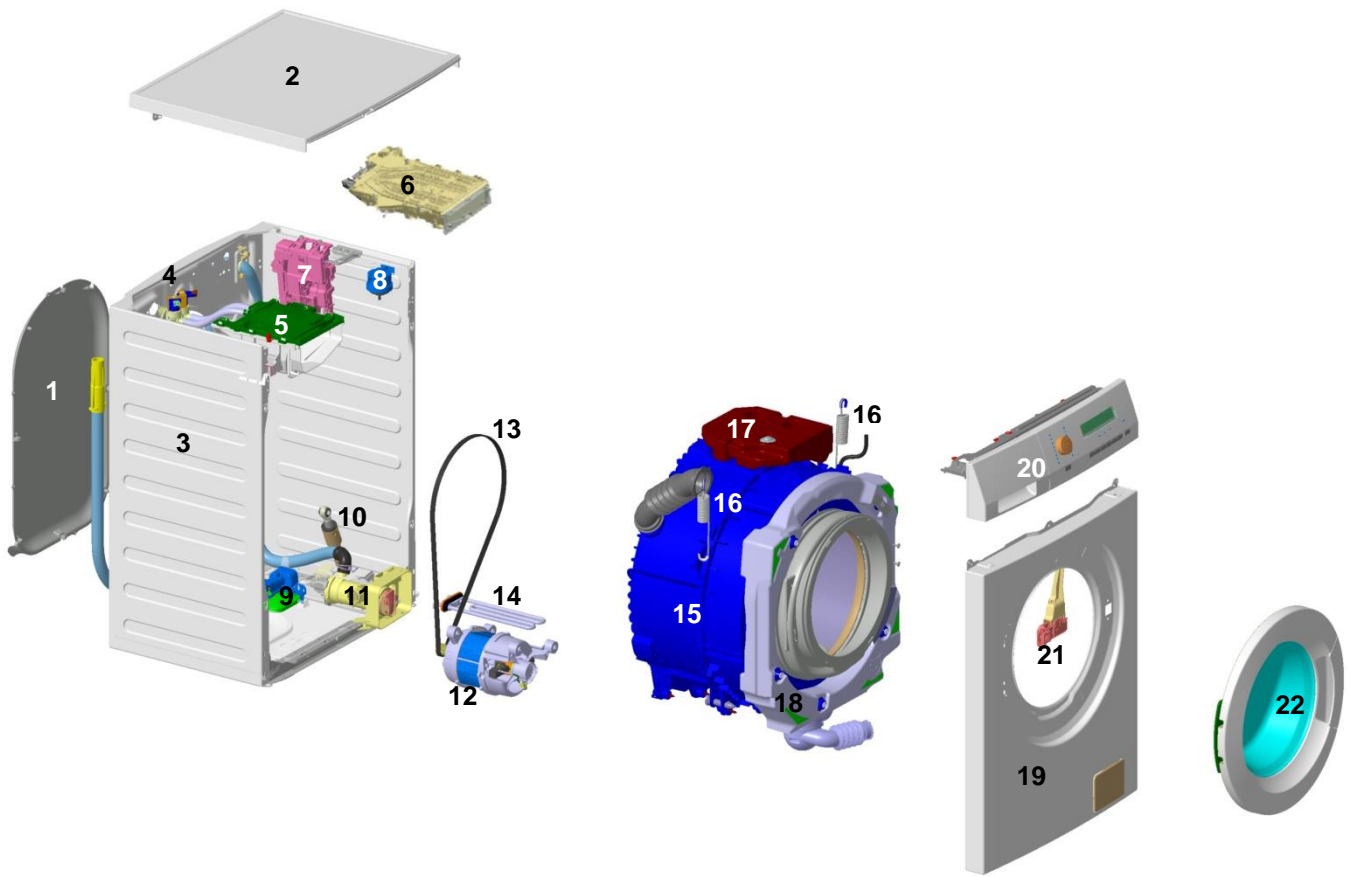
- **Rinse hold**
 - During the cycle the intermediate rinses and spins are performed.
 - Stops the appliance with water in the tub before the final spin cycle.
 - To drain the water, simply press the START/PAUSE button to run the drain and spin cycles.
- **Pre-wash**
 - Adds a pre-wash phase at the start 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.
- **Pre-wash**
 - 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**
 - Adds **two** rinses to the COTTON cycle, one to the SYNTHETIC FABRICS – DELICATES cycles.
 - Eliminates the spin at the end of washing.

ENABLING/DISABLING SUPER 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 6	SERIES 7
	
<p>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.</p>	

- **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 COTTON – SYNTHETIC FABRICS – DELICATES cycles to obtain good washing performance in a short space of time.
- **Super quick**
 - Modifies the structure of the wash phase of the COTTON – SYNTHETIC FABRICS – 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 para. 3 SERIES 6 page 7 and para. 4 SERIES 7 page 15.
 - 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.

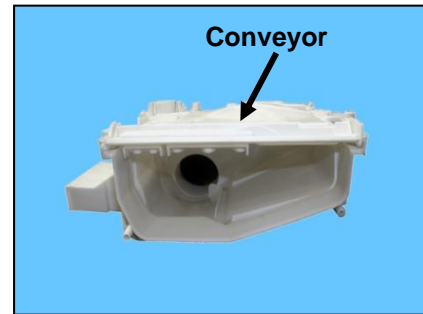
9 TECHNICAL CHARACTERISTICS

9.1 Construction



1. Back panel
2. Worktop
3. Back unit casing
4. Solenoid valves
5. Short detergent dispenser
6. Long detergent dispenser
7. Main electronic circuit board
8. Analogue pressure switch
9. Water control
10. Shock absorbers
11. Drain pump
12. Motor
13. Belt
14. Heating
15. Washing unit
16. Washing unit suspension springs
17. Upper counterweight
18. Front counterweight
19. Front panel
20. Control panel
21. Door delay system
22. Door

9.2 Detergent dispenser



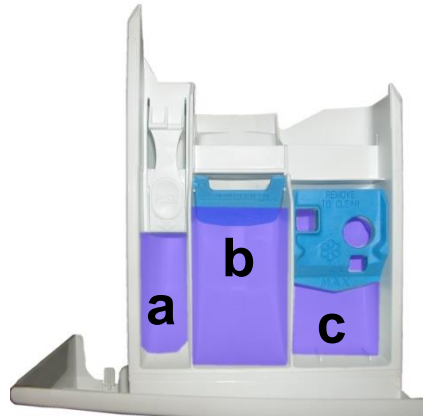
Operating principle.

<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 three compartment tray: the detergent in compartment “a” is loaded at the start of the pre-wash phase. • Alternatively, in some models with the “stains” option, compartment “a” can be used for the stain remover, which is loaded during the 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, which is loaded at the start of the wash cycle. 	
<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 pre-wash and wash solenoids are activated simultaneously. 	

9.3 Detergent dispenser

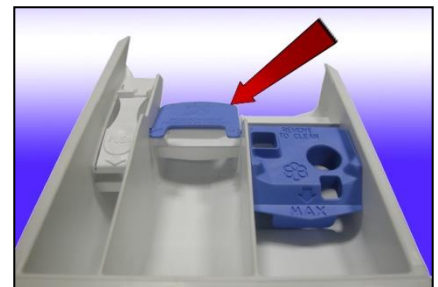
The detergent dispenser is designed for use with: powder detergent or liquid detergent.

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



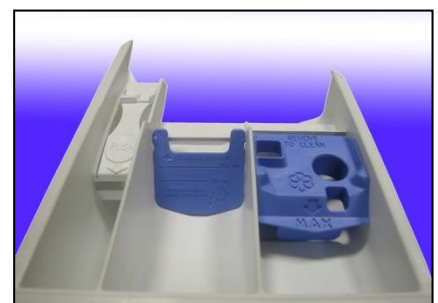
Flip it up to use powder detergent.

Position of the flap when the appliance leaves the factory (see figure).



To modify the position of the flap, pull the detergent dispenser out (see para. 12.2.4 Control panel page 69).

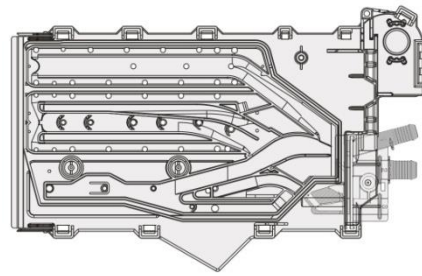
Flip the flap down to use liquid detergent.



For further details, read the instruction manual.

9.4 Long detergent dispenser

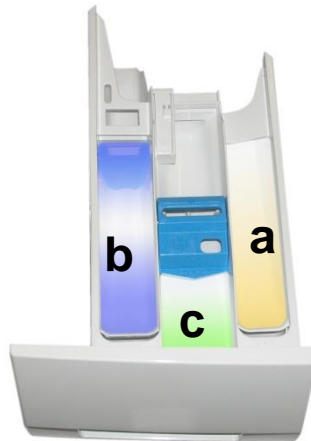
- Tray conveyor
- 2-way water inlet nozzle



Operating principle of 3-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 contained in compartment “a” is loaded at the pre-wash start. 	
<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 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 pre-wash and wash solenoid valves are activated simultaneously. 	

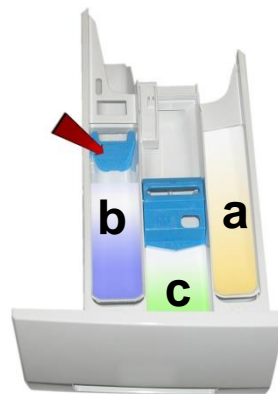
9.4.1 Detergent dispenser



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.

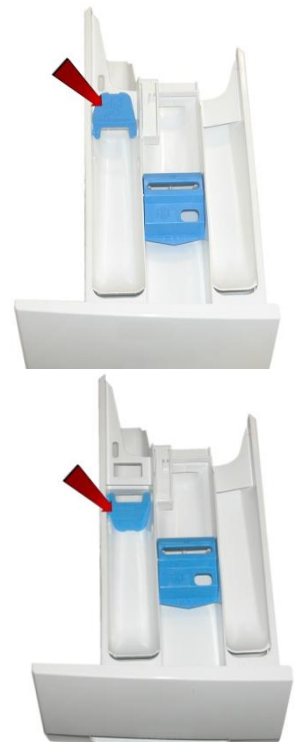


With the flap flipped up, the appliance is ready for use with powder detergent (this is the factory setting) - see figure opposite.

To modify the position of the flap, pull the detergent dispenser out and turn it.

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

For further details, read the instruction manual.

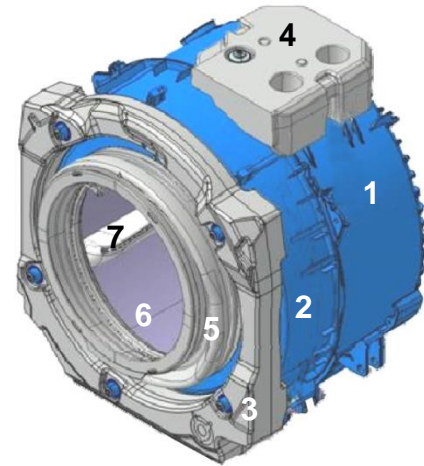


9.5 Washing unit

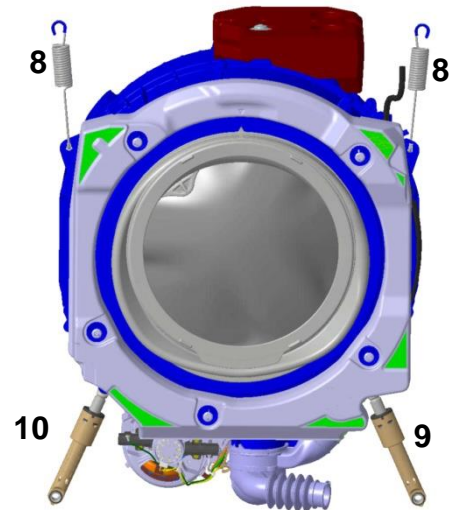
WASHING UNIT		
Type	Load capacity (cottons)	Drum volume
	max.	
G50	7 Kg	49 litres
G50XC	8 Kg	51.1 litres

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 (6) (made of stainless steel) with the three blades (7) (in carboran) snap-fastened to the drum. To balance the unit during washing and spinning two counterweights are fitted with screws: one at the front (3) and one at the top (4). The bellow seal (5) is fixed at the front.



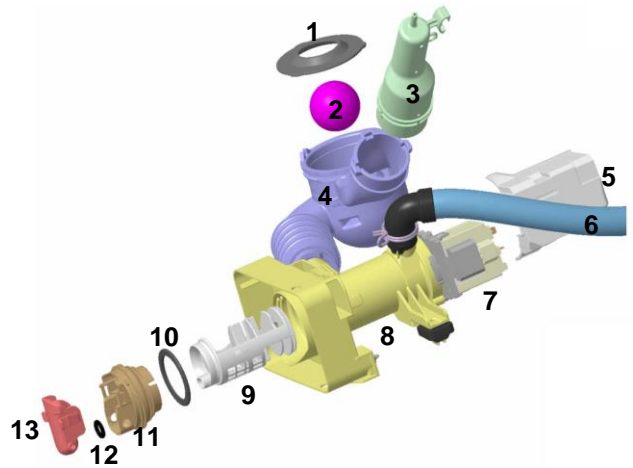
The washing unit is suspended by two coil springs (8) attached to the top crossbar, and the oscillations are dampened by two shock absorbers, one on the right (9) and one on the left (10) (looking straight at the front of the appliance).



9.6 Water circuit

9.6.1 OKO version drain circuit

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



9.6.2 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 hatch at the bottom of the front panel, and the filter dial will appear as shown in fig. 1.

To drain the water, simply:

- press the two tabs that lock the plug closing lever, fig. 2.
- simultaneously extract the top part of the lever as shown by the yellow arrow in fig. 3.
- position the closing lever as shown in fig. 4.

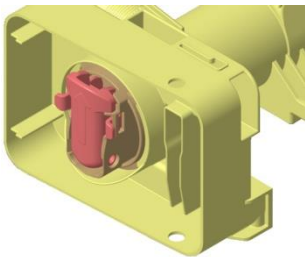


Fig. 1

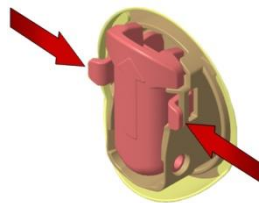


Fig. 2

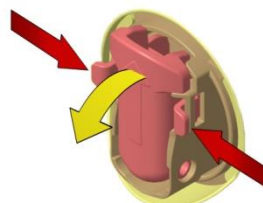


Fig. 3

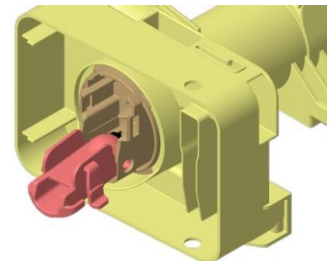
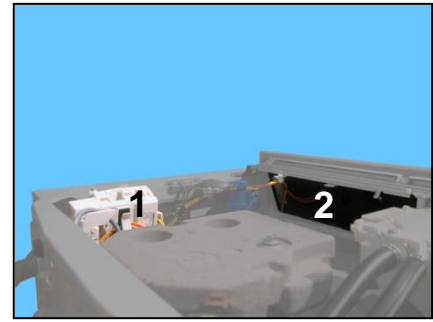


Fig. 4

9.7 Electronic control

The electronic control is made up of:

1. Main electronic circuit board
2. Control/display circuit board



The control/display PCB contains: the selector used to select the washing programme, the LCD display to show information on the programme, but buttons used to adjust the temperature, the spin speed and optionally to select an option, the START/PAUSE button and finally the ON/OFF button.

The commands acquired by the display board (by turning the selector, selecting an option, etc...) are sent to the main circuit board, which powers all the electrical components (cold water solenoid valve, drain pump, heating element, door safety interlock, etc.) and:

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 washing 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 flow of water through the solenoid using the flow meter.

At the same time it controls their operation to guarantee proper performance of the washing cycle.

9.7.1 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.

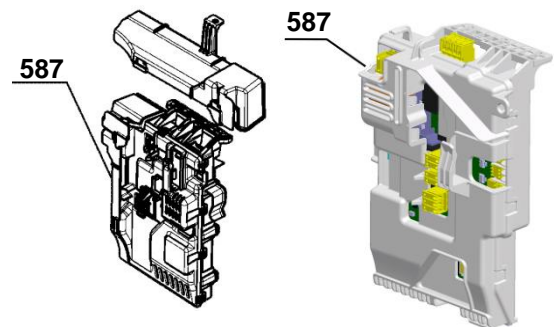
If one of these operations is accidentally carried out when plugged in to the socket, on completing the operation, the appliance will remain turned off when restarting; disconnect the plug from the socket and wait at least 40 minutes before starting up the appliance (any operation will only create further delay).

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

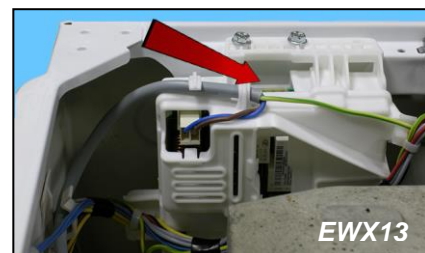
- ☞ Code 973 914... identifies the pre-programmed board.
- ☞ Code 132... identifies the unprogrammed board.

The circuit board can be programmed/updated using the **Sidekick** application.

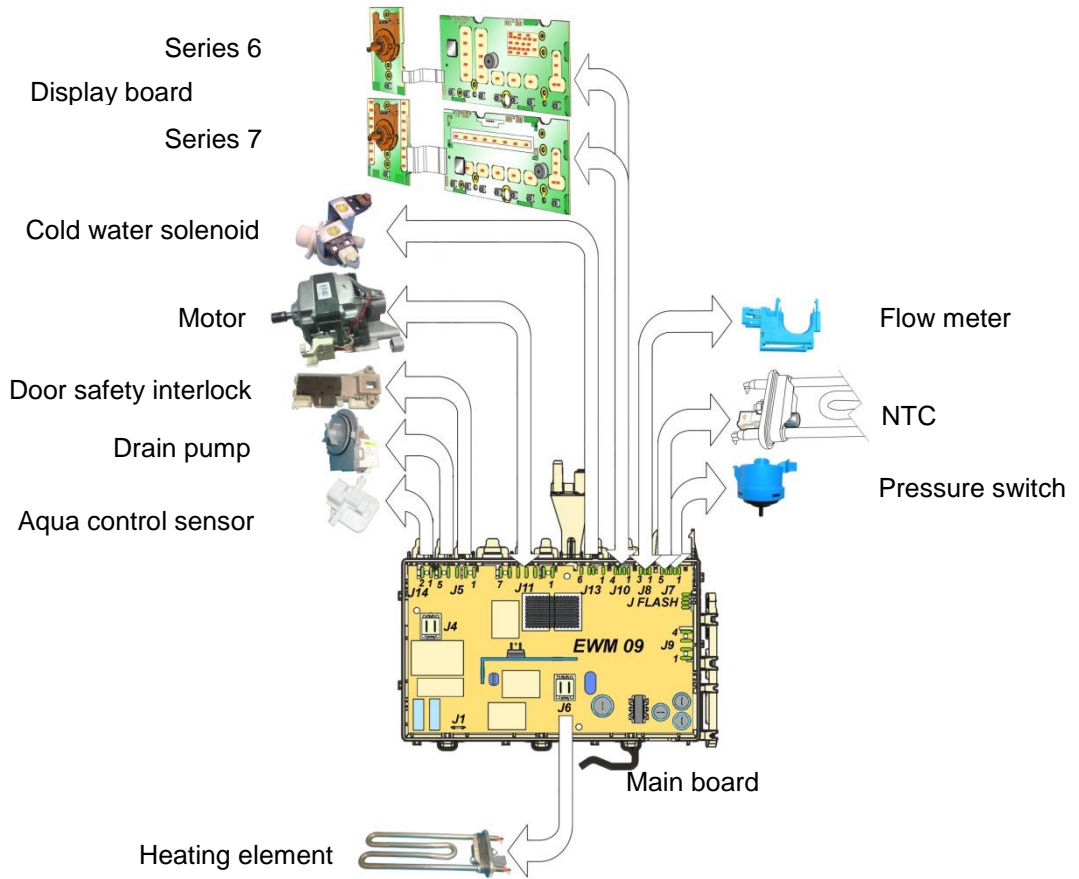
For further information, please refer to the instructions provided/illustrated in the course entitled << **Sidekick Guide** >> at the link (<http://electrolux.edvantage.net>) on the Electrolux Learning Gateway portal.



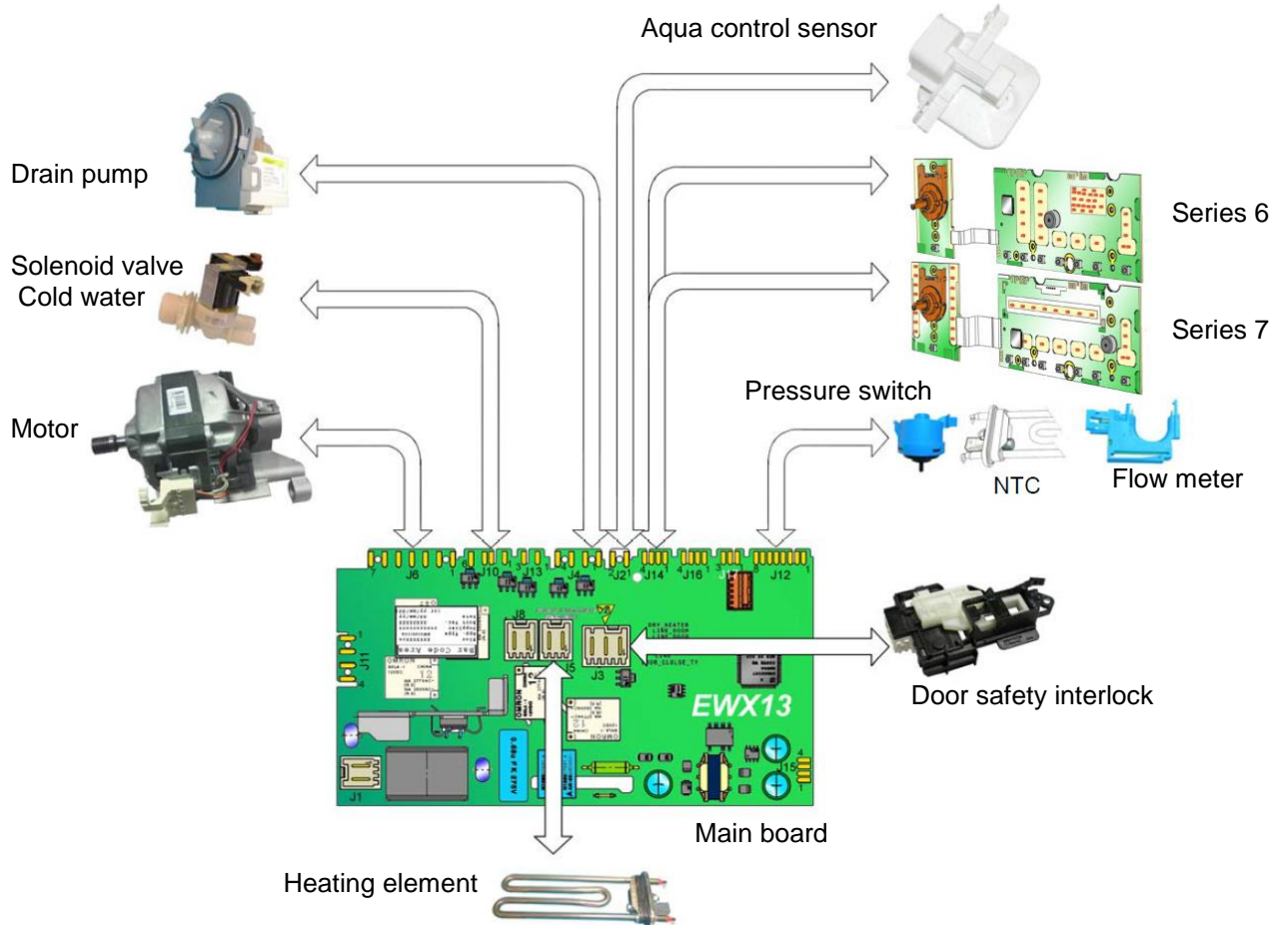
To update/program the main board, insert the **Sidekick** connector in the position shown by the red arrow:



9.7.2 Electrical characteristics EWM09312



9.7.3 Electrical characteristics EWX13611



10 ELECTRICAL COMPONENTS

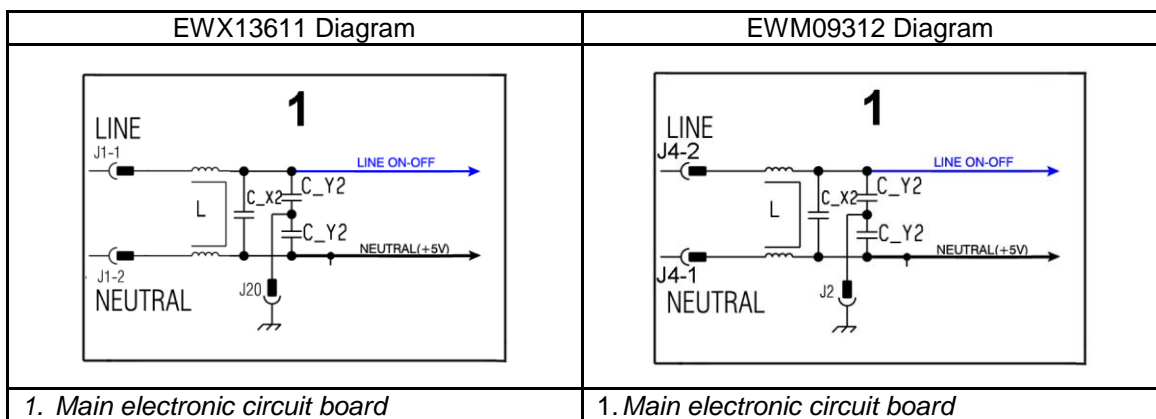


- **When replacing any of the components, please refer to the code shown in the list of spare parts relating to the appliance being repaired.**

10.1 Anti-disturbance filter

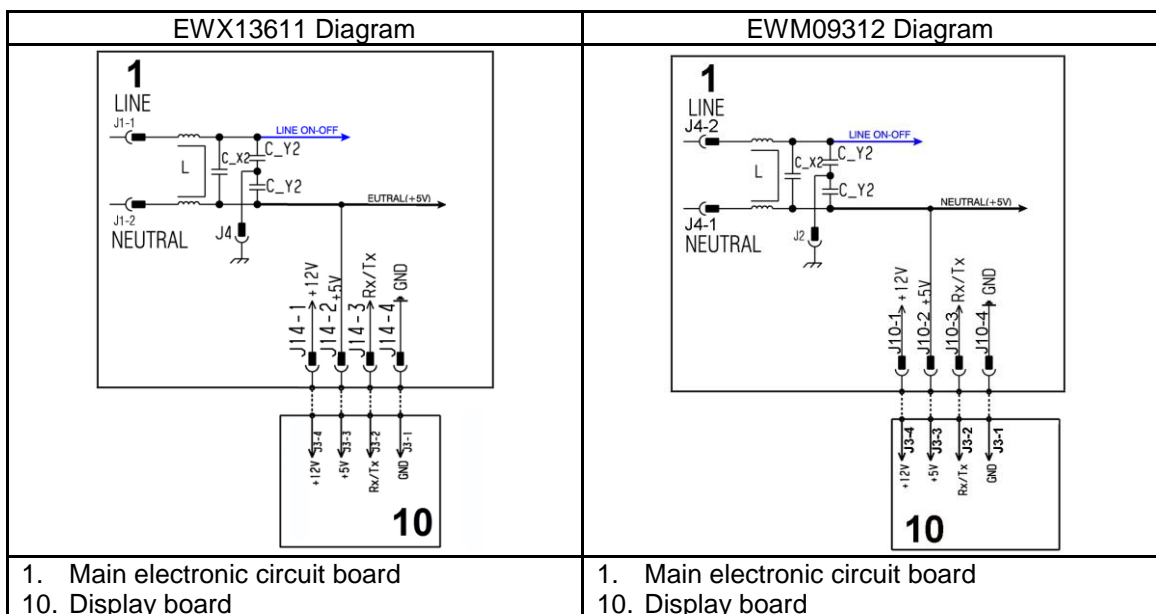
10.1.1 General characteristics

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.



10.2 Display board

The main circuit board (1) supplies the power supply voltage to the control/display board (10). It is possible to select the programmes by turning the selector. The options can be selected by pressing the buttons and the START/PAUSE button is used to start the machine or pause it. The buzzer - where featured - is powered by the display board.



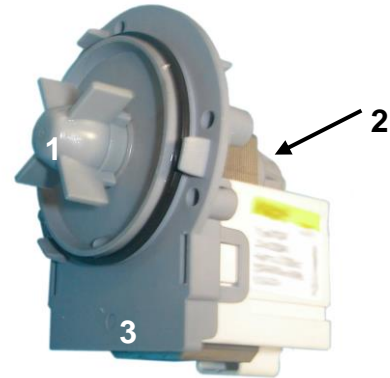
10.3 Drain pump – Aqua control



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

10.3.1 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 actuated by a synchronous motor. The rotor consists of a permanent magnet and the direction of rotation can be either clockwise or anticlockwise. The rotor 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.

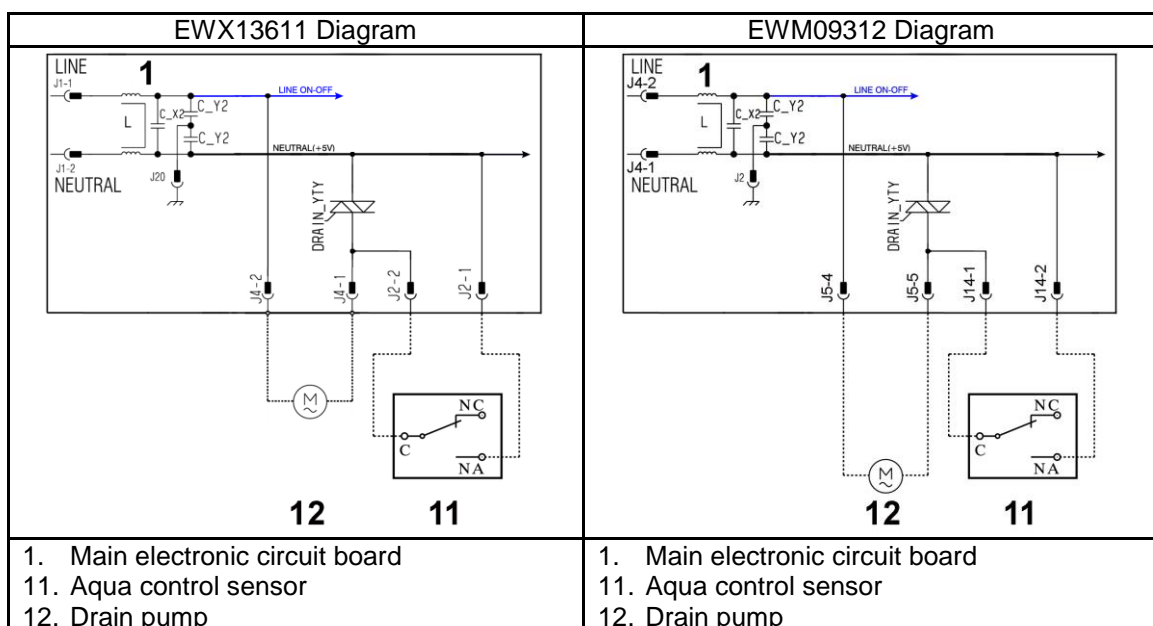
Important!

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.



10.4 Water control

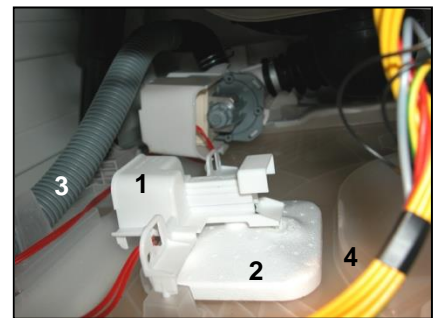
10.4.1 General characteristics




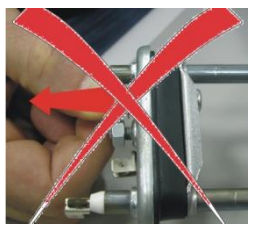
The aqua control is a sensor positioned in contact with the bottom of the machine. It detects any water leakage from inside the washing machine and feeds the drain pump (not only during normal operation but also when the appliance is turned off with the plug inserted into the power socket).

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 micro-switch, 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
3. Drain pipe
4. Aqua control bottom



10.5 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. changing the NTC probe, etc...) 	
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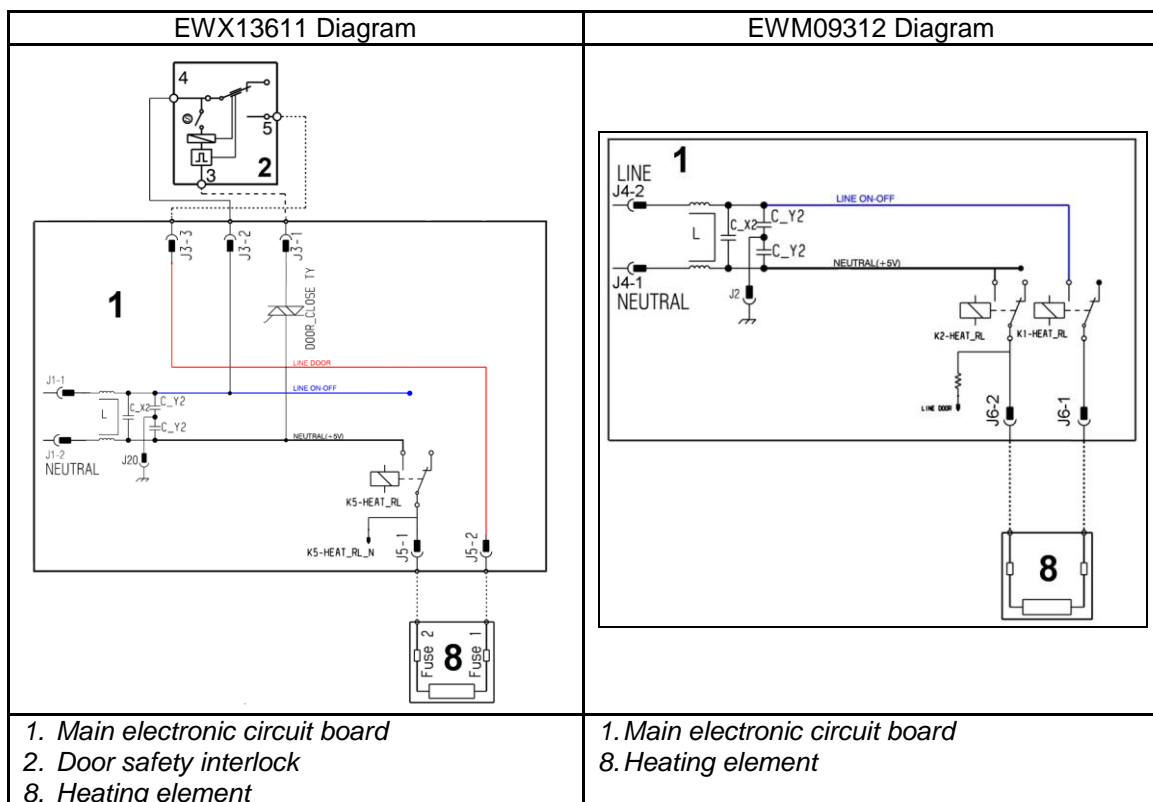
10.5.1 General characteristics

1. NTC probe
2. Heating element


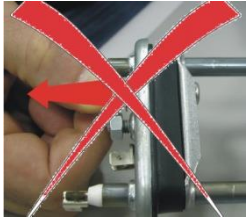


The heating element of the washing water is armoured, i.e. it is inserted in sealed tubular stainless steel casing.

It is powered by the relays located on 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).

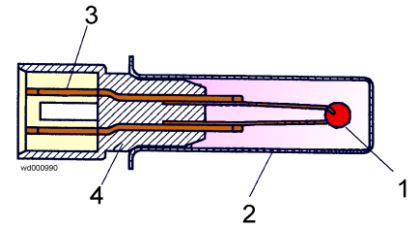


10.6 Temperature sensor

	<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. changing the NTC probe, etc...) 	
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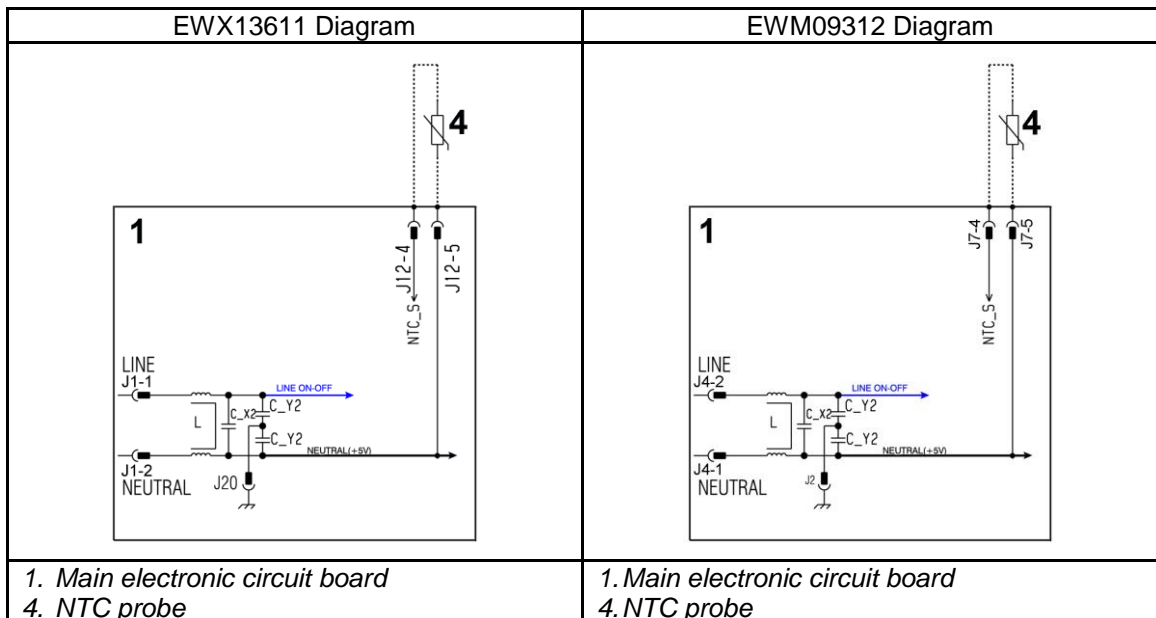
10.6.1 General characteristics

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 probe incorporated in the heating element.

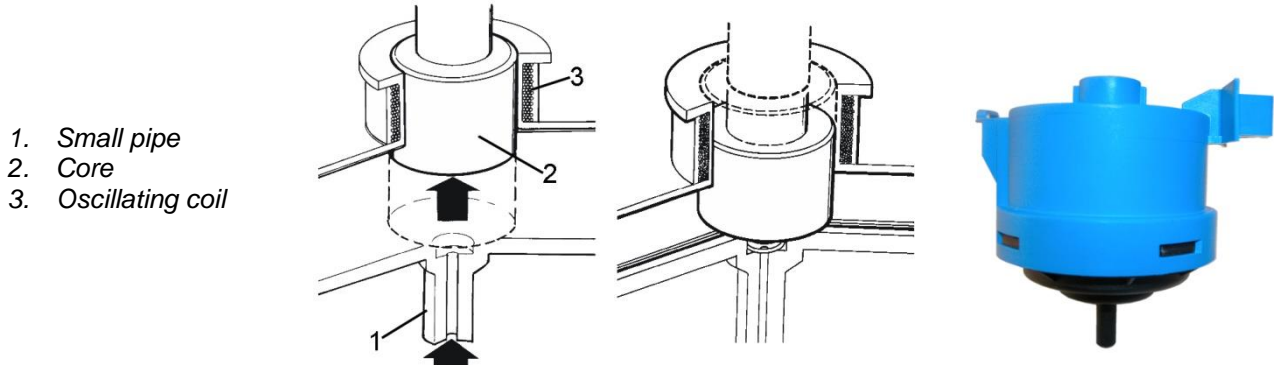


In the event of a fault (short-circuit or stoppage) an alarm will be displayed - see table of alarms.

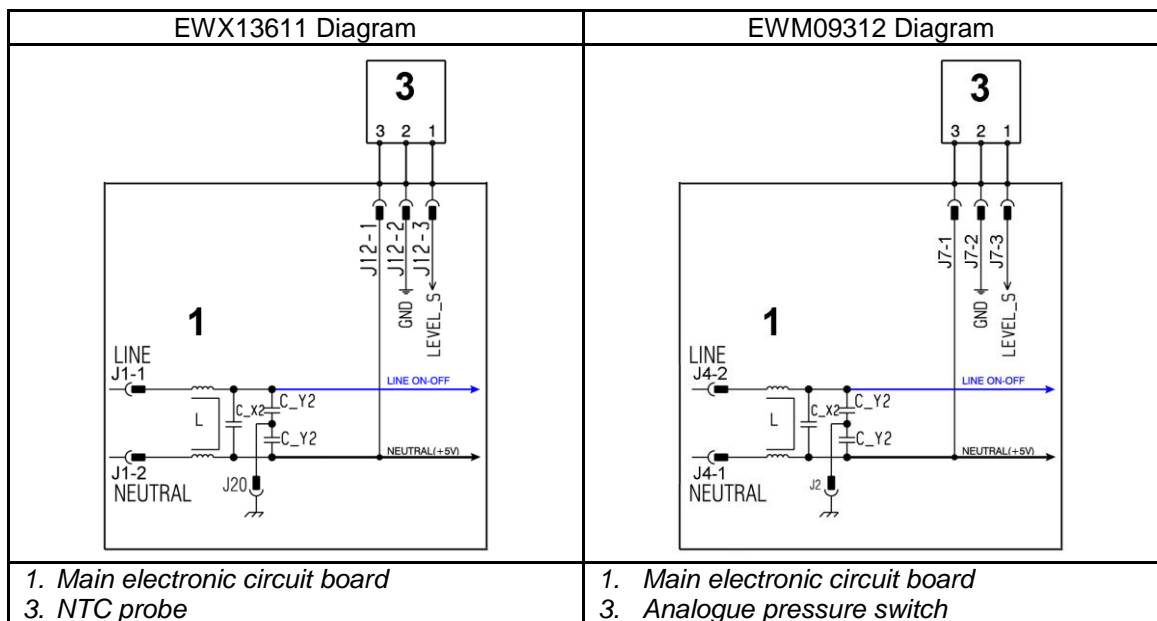
10.7 Analogue pressure switch

10.7.1 General characteristics

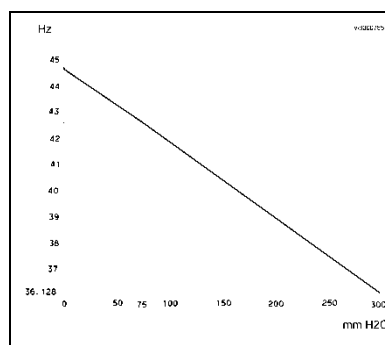
The electronic pressure switch is an analogue device that controls the water level in the tub, used in models with electronic control system, and it is directly connected to the main PCB.



The pressure switch is connected via a 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.



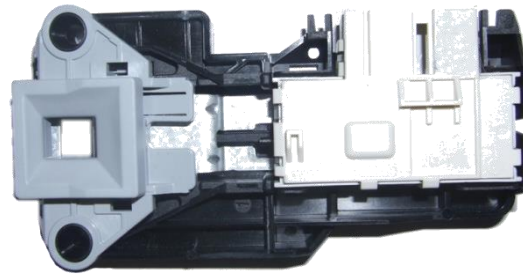
Operating frequency variation according to the quantity of water in the tub.



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

10.8 Door safety interlock

10.8.1 General characteristics



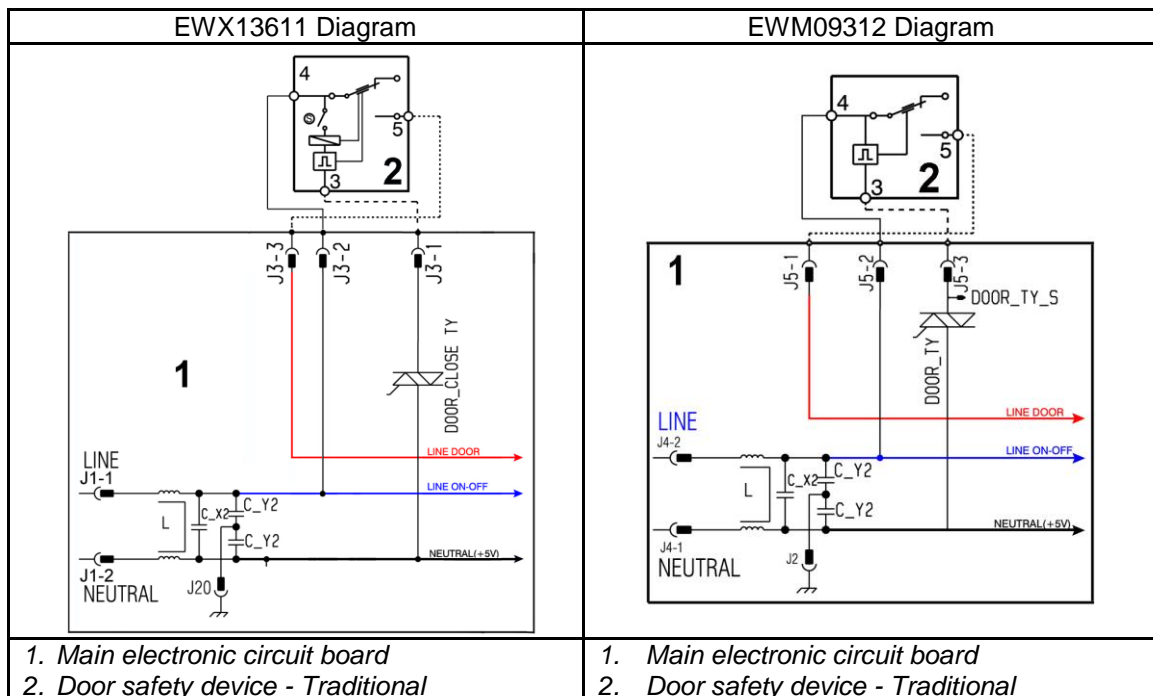
An electromechanical device is used as the door safety interlock, with the following functions:

- When it is powered, the volumetric device trips the main switch, which powers some of the electrical components of the washing machine (only if the door is closed).
- During operation, the cursor remains mechanically blocked, preventing the door from opening when the appliance is running. Once the power supply is cut off, the door remains locked for 1-2 minutes to guarantee that the drum stops before it is opened.

The door safety interlock, in the applications analysed to this point, was positioned after the anti-disturbance filter. Consequently, it powered all the electrical components of the appliance; in this platform, it only powers the solenoid valves and the motor.

• Operating principle

- ↪ When the washing programme is started by pressing the start/pause button, the bi-metal PTC (contact 3) is powered by the TRIAC on the circuit board (J3-1) (J5-3): after 2÷4 seconds, the switch (4-5) powering the electrical components of the washing machine is closed.

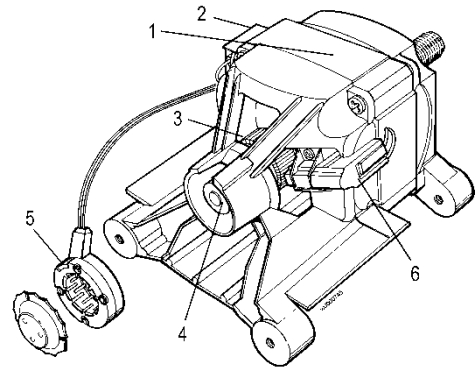


10.9 Motor

10.9.1 General characteristics

Collector motors are fitted on appliances with a spin speed of between 600 and 1,600 rpm.

1. Stator
2. Terminal board
3. Collector
4. Tachometric generator magnet
5. Tachometric generator coil
6. Brush



10.9.2 Operating principle

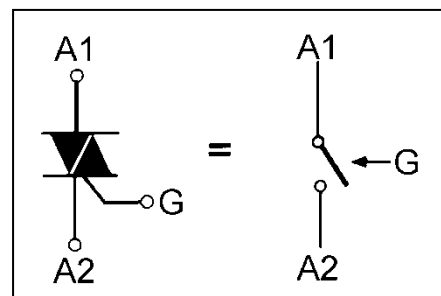
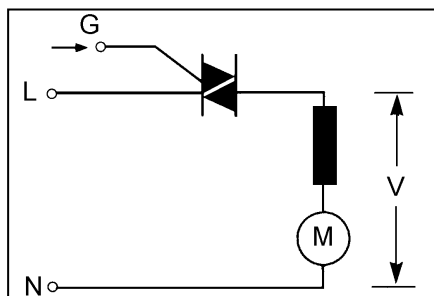
The stator winding is connected in series to the rotor winding (serial excitation).

Every section of the rotor winding is connected to a pair of collector blades (also referred to as a switching device). The electrical contact between the collector and the fixed circuit is made by two static brushes on the collector blades.

The speed of rotation of the motor is proportional to the supply voltage, supplied by an electronic control. This type of motor is also referred to as “universal” because it can be powered by either alternating or direct current.

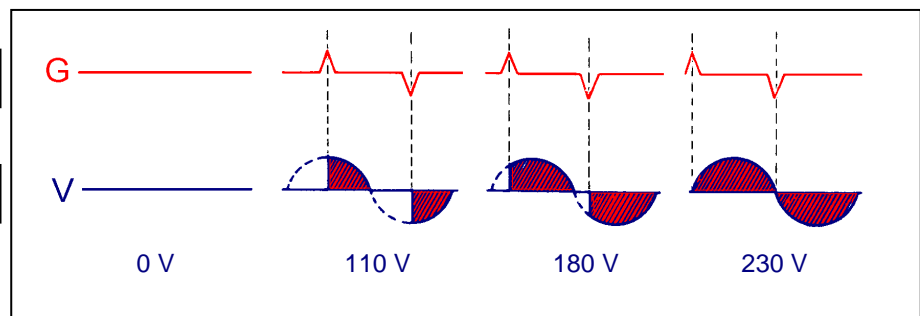
10.9.2.1 Motor speed control

- This is achieved by an electronic control, by varying the voltage (V) applied to the motor.
- The technique adopted is the “phase partialization” command of the TRIAC. The TRIAC is an electronic bidirectional switch. The closing of the circuit between A1-A2 (anodes) takes place in the presence of appropriate starting pulses on the gate (G).



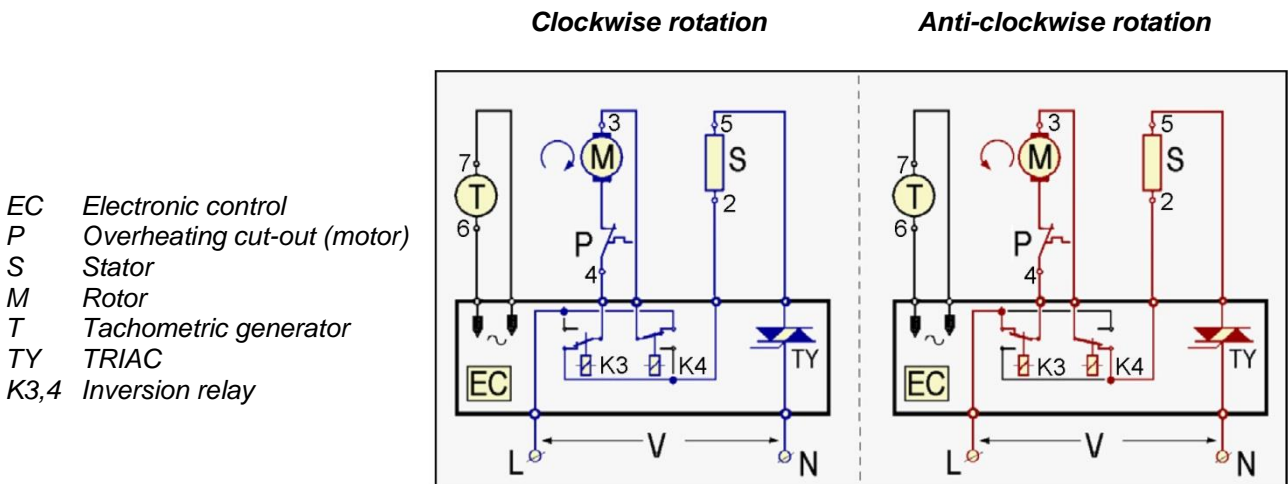
Starting pulses

Voltage on the motor



10.9.2.2 Direction of rotation of the motor

The direction of rotation of the motor depends on how the windings of the stator and rotor are connected to one another. This connection is made by the relay contacts of the circuit board.

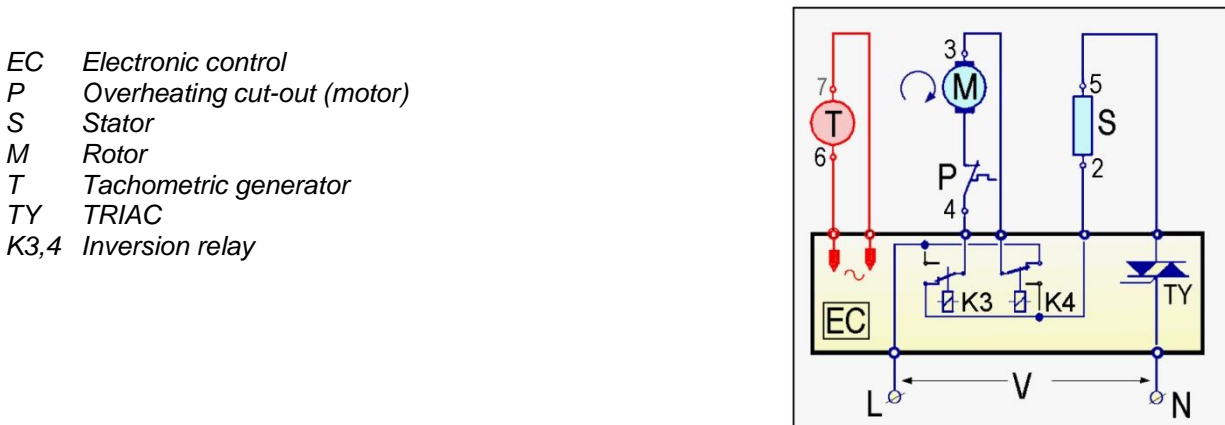


10.9.2.3 Tachometric generator

The speed of the collector motor, like all motors with serial excitation, depends on the load; so the speed decreases as the load increases. This makes it necessary for the power supply voltage to the motor, and therefore its speed, to be constantly controlled by an electronic speed control.

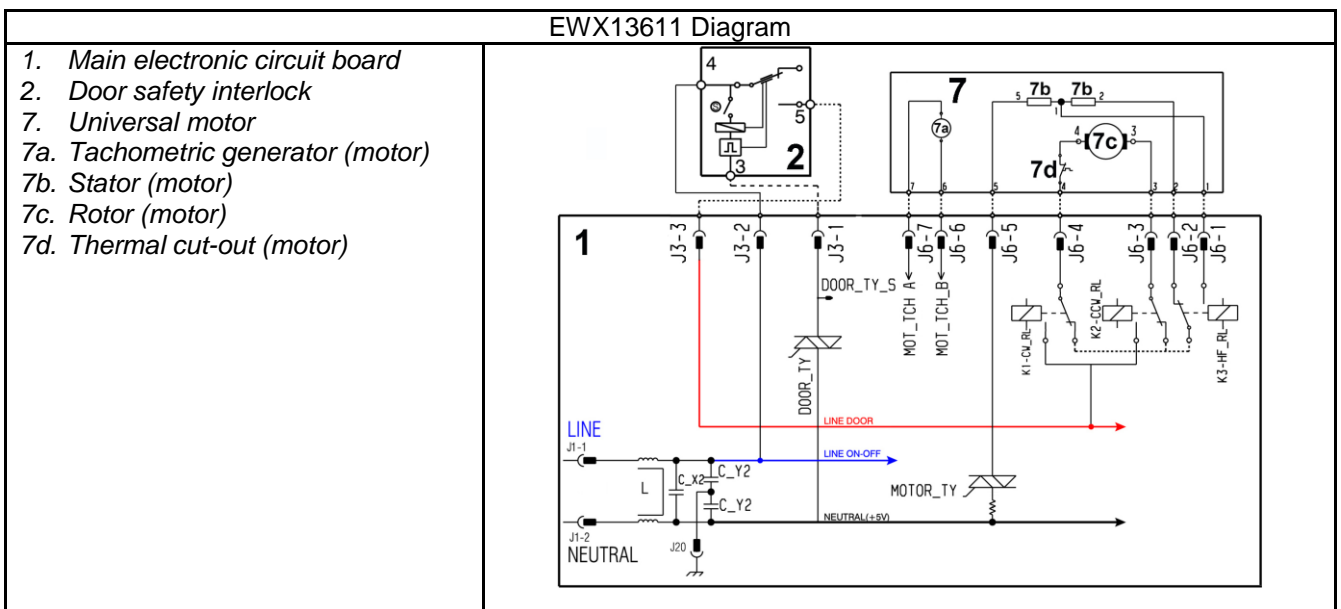
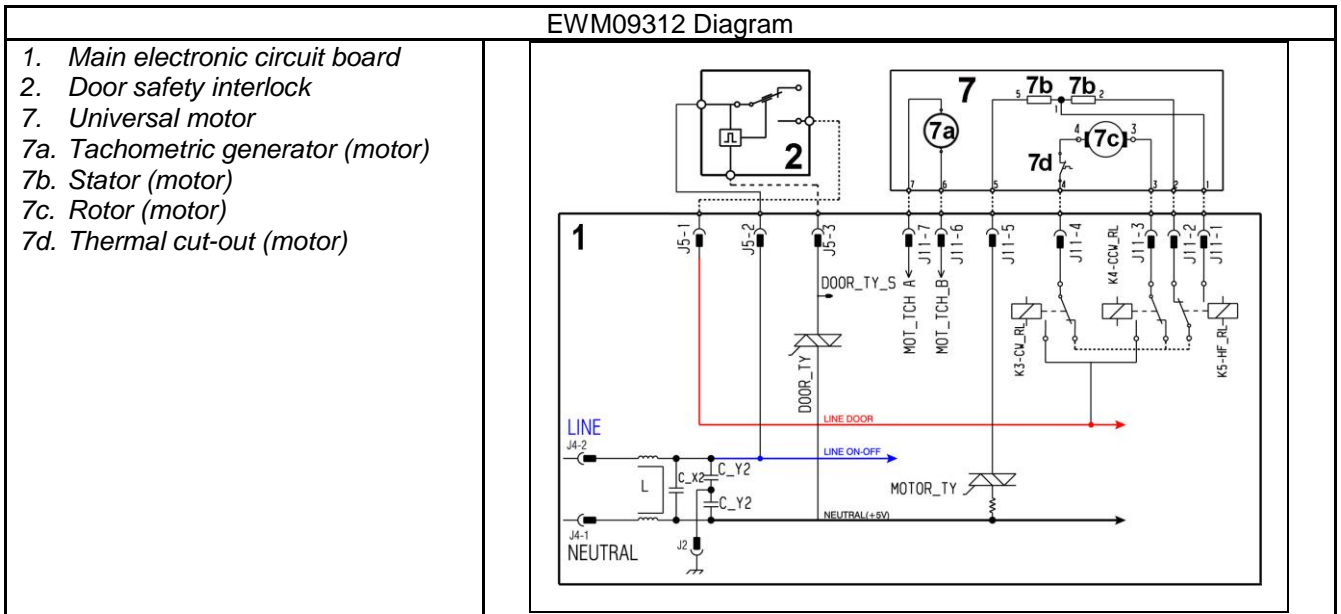
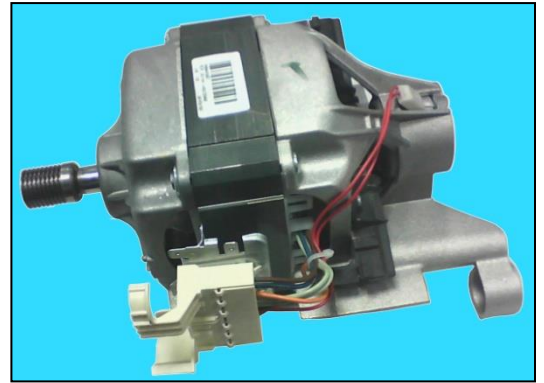
A tachometric generator, consisting of a magnet secured to the shaft and a coil, generates a voltage depending on the speed of the rotor, which is sent to the electronic control.

All the electronic controls have a protection system, which is more or less sophisticated, to avoid the operation of the motor in the event of a failure in the tachometric generator.



10.9.3 Power supply to motor

The PCB powers the motor via a TRIAC; the direction of rotation is reversed by switching the contacts on the two relays (K3-K4), which modify the connection between the rotor and the stator. In certain models, a third relay (K5) is used to power the stator (full or half range) according to the spin speed. The speed of rotation of the motor is determined by the signal received from the tachometric generator. During the spin phases, the micro-processor performs the anti-foam and the anti-unbalancing control procedure.



10.9.4 Anti-foam control system

The anti-foam control procedure is performed via the electronic pressure switch.

- **Spin with little foam:** if the contact of the electronic pressure switch closes on “full”, the spin phase is interrupted; the drain pump continues to operate and, when the contact returns to “empty”, the spin phase is resumed.
- **Spin with excessive foam in the tub (critical situation):** the control system detects whether the electronic pressure switch switches 5 times to full (five spin interruptions). If this occurs, the spin phase is skipped, and a one-minute drain cycle is performed with the motor stationary and, in the case of a washing phase, a supplementary rinse is added.

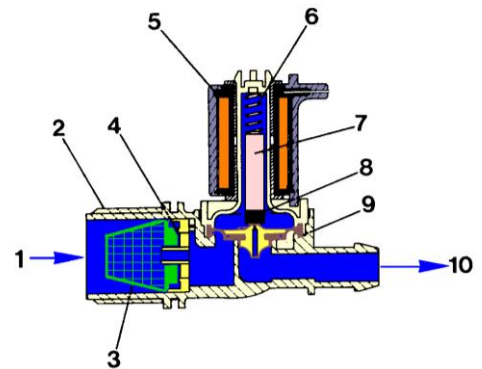
10.10 Solenoid valves

10.10.1 General characteristics



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.

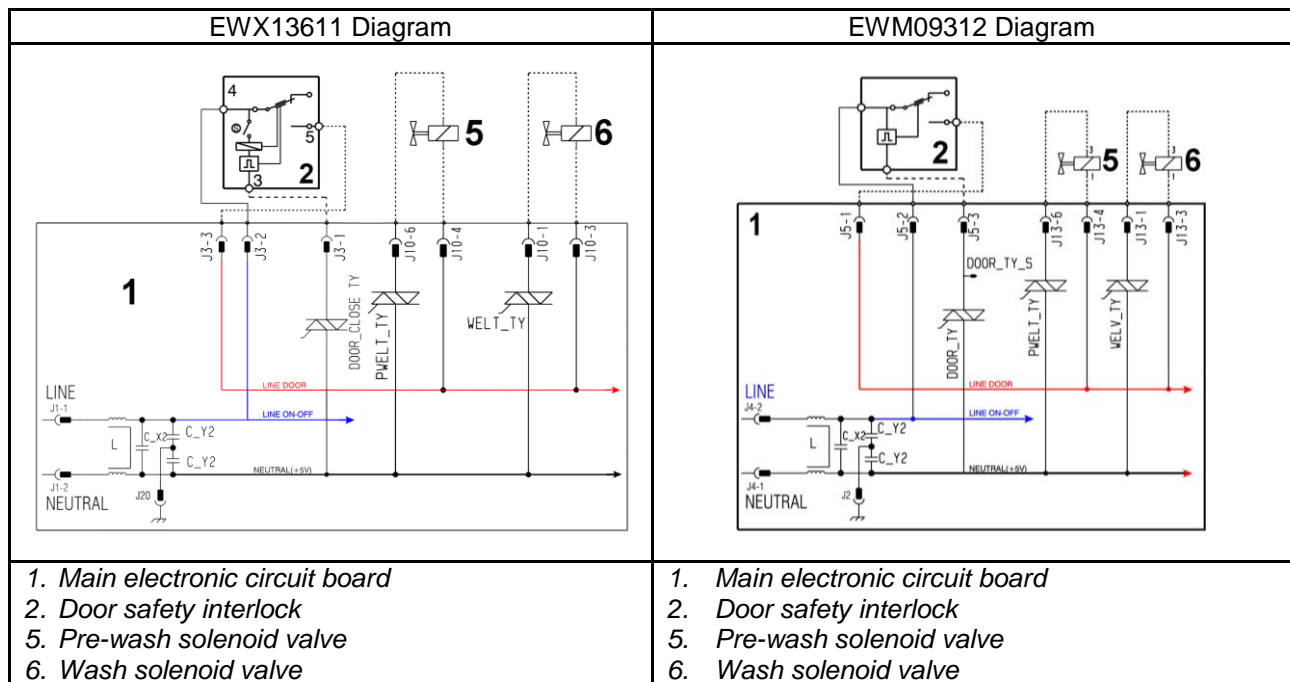
1. Water inlet
2. Solenoid valve body
3. Filter
4. Flow reducer
5. Coil
6. Spring
7. Moving core
8. Rubber
9. Membrane
10. Water outlet



10.10.1.1 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.



Mechanical jamming of the solenoid valve

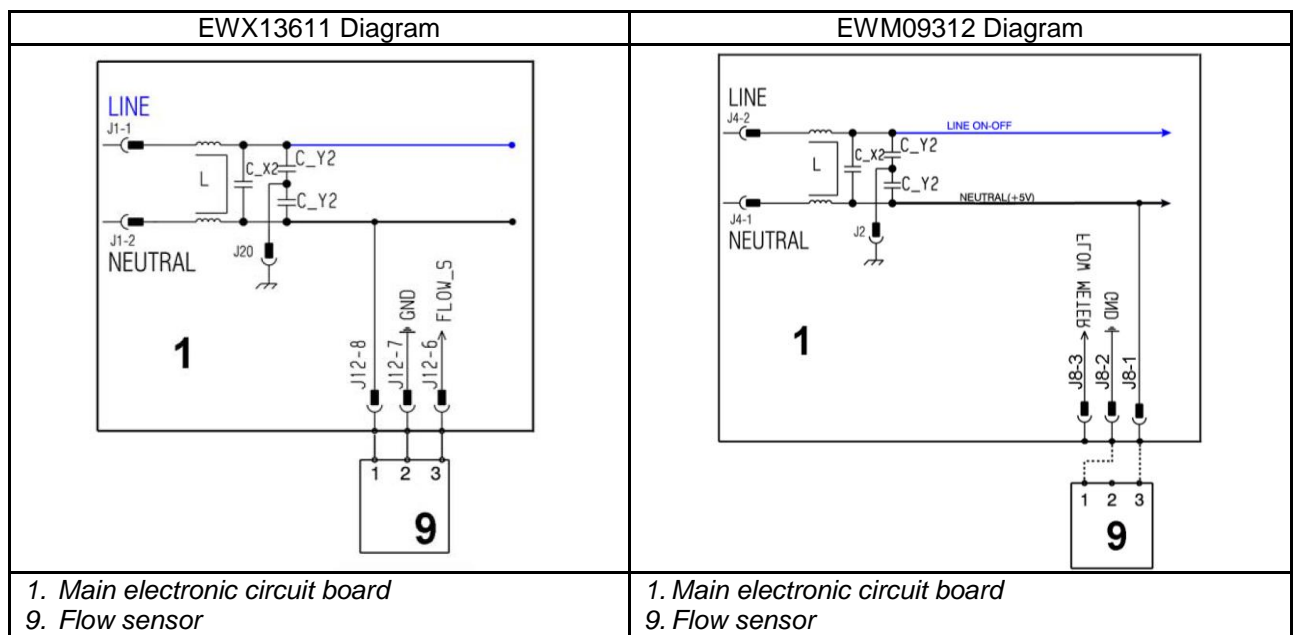
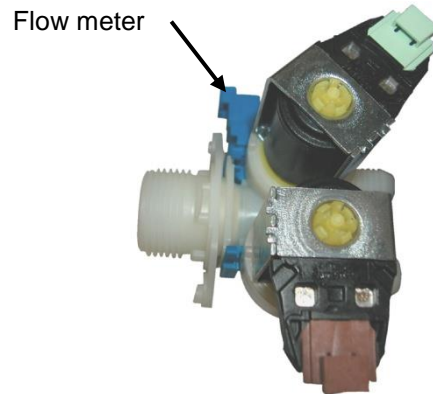
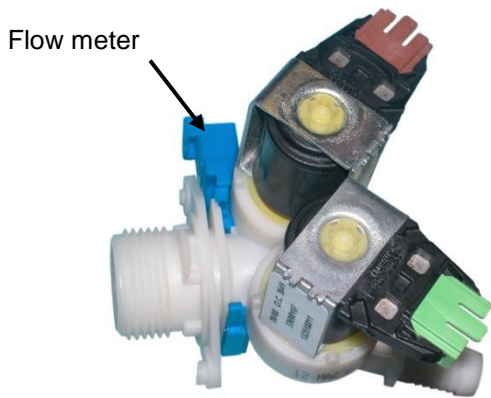
The solenoid valve may jam open without receiving power supply (which will cause flooding if the pressure switch controlling the water level does not trip). If this occurs, the electronic control system (which continuously monitors the flow sensor) will lock the door, start the drain pump and display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

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 signaled.

10.11 Flow meter

10.11.1 General characteristics



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.

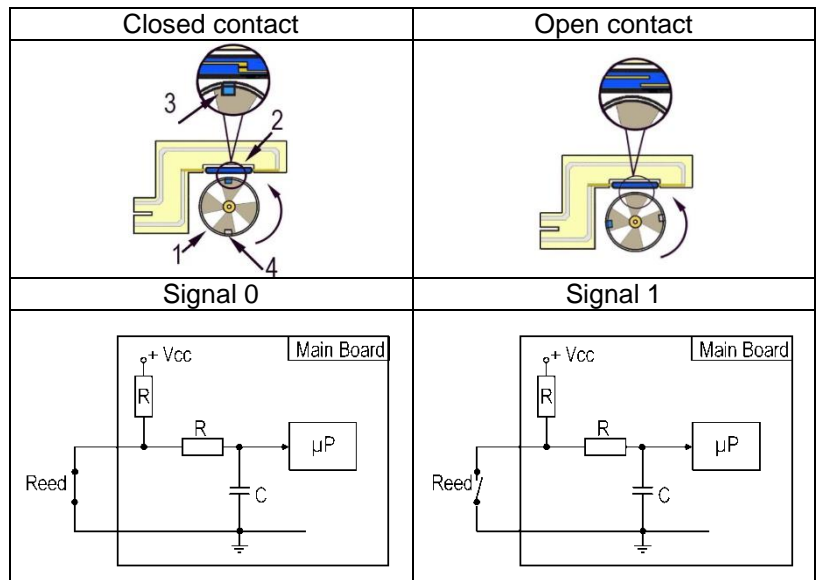
In the event of a sensor failure, the water level is controlled by the analogue pressure switch.

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>

10.11.2 Operating principle of the flow meter

The main components of the flow meter 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.

10.12 Alarm Summary Table

Alarm	Description	Possible fault	Machine status/action	Reset
E00		-----		
E11	Water fill difficulty during washing	Tap closed or water pressure too low; Drain pipe improperly positioned; Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Pressure switch faulty; Wiring faulty; Main PCB faulty.	Cycle is paused with door locked	START/RESET
E12	Water load problems during drying cycle	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 leaks	Drain pipe improperly positioned; Water pressure too low; Water fill solenoid valve faulty; Water circuit on pressure switch is leaking/clogged; Pressure switch faulty.	Cycle is paused with door locked	START/RESET
E21	Drain difficulty during washing	Drain pipe kinked/clogged/improperly positioned; Drain filter clogged/dirty; Wiring faulty; Pressure switch faulty; Drain pump rotor blocked; Drain pump faulty; Main PCB faulty.	Cycle paused (after 2 attempts)	START ON/OFF RESET
E22	Water drain problems during 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	Faulty TRIAC for drain pump	Wiring faulty; Drain pump faulty; Main PCB faulty.	Safety drain cycle - Cycle stops with door open	RESET
E24	Drain pump TRIAC "sensing" circuit faulty	Main circuit board faulty.	Safety drain cycle - Cycle stops with door unlocked	RESET
E25	Aqua control sensing failure	Main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E31	Electronic pressure switch circuit faulty	Wiring; Electronic pressure switch; Main PCB;	Cycle stops with door locked	RESET
E32	Calibration error of the electronic pressure switch	Drain tube kinked/clogged/improperly positioned; Faulty solenoid; Drain filter clogged/dirty; Drain pump faulty; Leaks in the pressure switch hydraulic circuit; Pressure switch faulty; Wiring; main PCB.	Cycle paused	START/RESET
E35	Overflow	Water fill solenoid valve faulty; Leaks from water circuit on pressure switch; Wiring faulty; Pressure switch faulty; Main PCB faulty.	Cycle interrupted. Safety drain cycle. Drain pump continues to operate (5 min. on, then 5 min. off. etc.)	RESET
E38	Internal pressure chamber is clogged (water level does not change for at least 30 sec. of drum rotation)	Motor belt broken; Water circuit on pressure switch clogged.	Heating phase is skipped	RESET

Alarm	Description	Possible fault	Machine status/action	Reset
E41	Door open	Check whether the door is closed properly; Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	Cycle paused	START/RESET
E42	Problems with door lock	Wiring faulty; Door safety interlock faulty; Electrical current leak between heating element and ground; Main PCB faulty.	Cycle paused	START/RESET
E43	Faulty TRIAC supplying power to door delay system	Wiring faulty; Door safety interlock faulty; Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E44	Faulty sensing by door delay system	Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E45	Faulty sensing by door delay system TRIAC	Main circuit board faulty.	(Safety drain cycle) Cycle blocked	RESET
E51	Motor power TRIAC short-circuited	Current leakage from motor or from wiring; Main PCB faulty.	Cycle stops with door open (after 5 attempts)	ON/OFF
E52	No signal from motor tachometric generator	Wiring faulty; Motor faulty; Main circuit board faulty.	Cycle stops with door locked (after 5 attempts)	ON/OFF
E53	Faulty sensing by motor TRIAC	Main circuit board faulty.	Cycle blocked	RESET
E54	Motor relay contacts sticking	Current leakage from motor or from wiring; Main PCB faulty.	Cycle blocked (after 5 attempts)	RESET
E61	Insufficient heating during washing	Wiring faulty; NTC probe for wash cycle faulty; Heating element faulty; Main PCB faulty.	The heating phase is skipped	START/RESET
E62	Overheating during washing (temperature higher than 88°C for more than 5 min.)	Wiring faulty; NTC probe for wash cycle faulty; Heating element faulty; Main PCB faulty.	Safety drain cycle Cycle stops with door open	RESET
E66	Heating element power relay faulty (inconsistency between sensing and relay status)	Main PCB faulty;	Safety water fill Cycle stops with door closed	ON/OFF RESET
E68	Earth leakage	Earth leakage between heating element and earth.	The heating phase is skipped	START/RESET
E69	Heating element interrupted	Wiring faulty; Heating element for washing interrupted (thermal fuse open); Main circuit board faulty.	-----	START ON/OFF RESET
E6A	Heating relay sensing faulty	Main circuit board faulty.	Cycle stops with door locked	RESET
E6B (E6H)	Heating element power relay faulty (inconsistency between sensing and relay status)	Wiring faulty; Earth leakage between heating element and earth; Main PCB faulty.	Safety water fill Cycle stops with door closed	ON/OFF RESET
E71	NTC probe for wash cycle faulty (short-circuited or open)	Wiring faulty; NTC probe for wash cycle faulty; Main circuit board faulty.	The heating phase is skipped	START/RESET
E72	Output drying NTC failure	Output drying NTC defective; Wiring or WD board defective	Drying heating phases skipped	START/RESET
E73	Input drying NTC failure	Input drying NTC defective; Wiring or WD board defective	Drying heating phases skipped	START/RESET

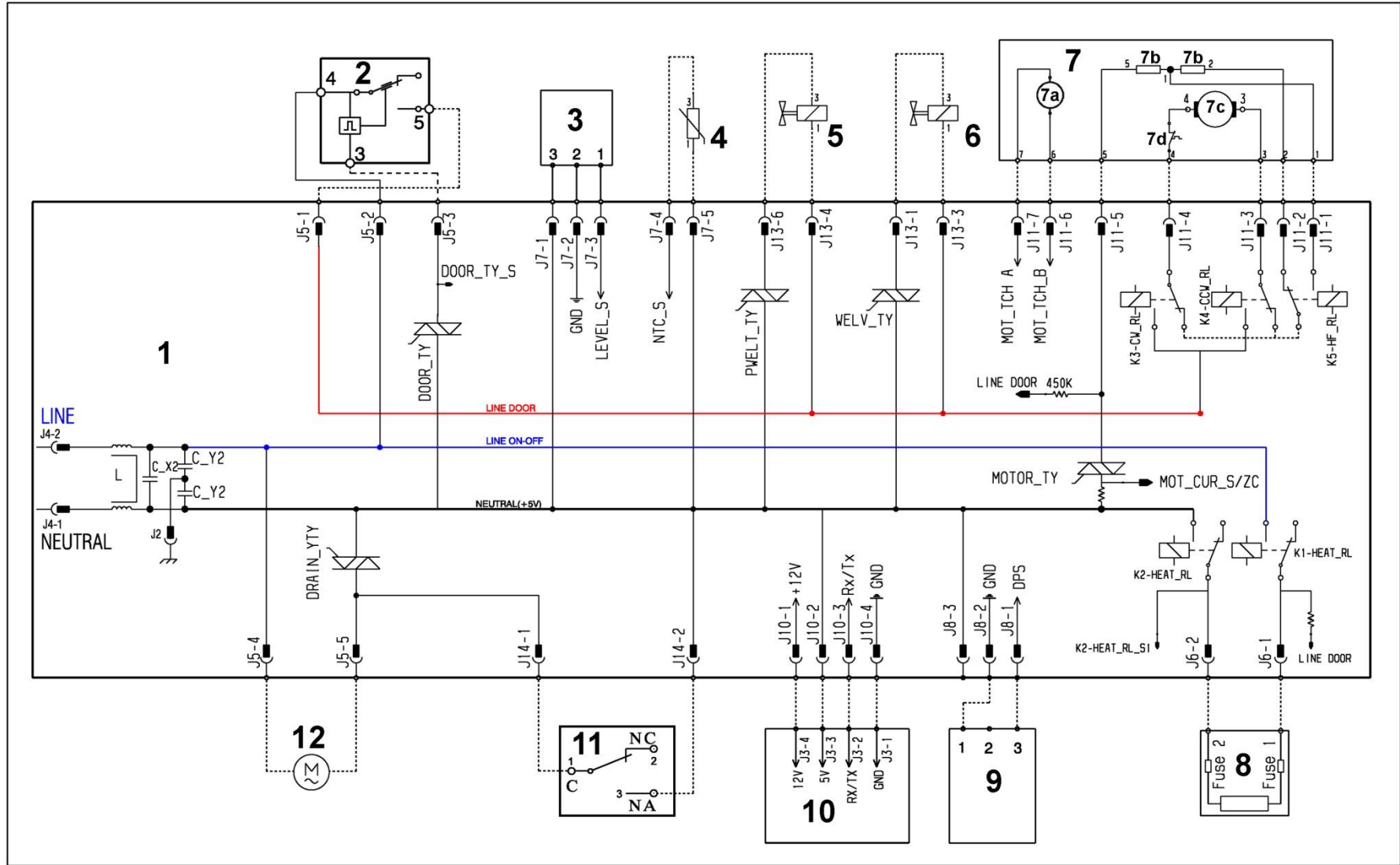
Alarm	Description	Possible fault	Machine status/action	Reset
E74	NTC probe for wash cycle improperly positioned	Wiring faulty; NTC probe for wash cycle improperly positioned; NTC probe faulty; Main PCB faulty.	The heating phase is skipped	RESET
E83	Error in reading selector	Main PCB faulty (incorrect configuration data).	Cycle cancelled	START/RESET
E84	Recirculation pump / Motor fan triac sensing failure	Main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E85	Recirculation pump / Motor fan triac alarm	Recirculation pump or motor fan defective; Wiring or main board defective	Safety Drain cycle. Cycle stops with door unlocked	RESET
E86	Selector configuration error	Display board.	-----	START ON/OFF RESET
E87	Display board microprocessor faulty	Display board.	No action to be taken	START ON/OFF RESET
E91	Communication error between main PCB and display	Wiring faulty; Control/display PCB faulty; Main circuit board faulty.	-----	RESET
E92	Communication inconsistency between main PCB and display (incompatible versions)	Incorrect control/display PCB; Incorrect PCB (does not correspond to the model).	Cycle blocked	ON/OFF
E93	Appliance configuration error	Main PCB faulty (incorrect configuration data).	Cycle blocked	ON/OFF
E94	Incorrect configuration of washing cycle	Main PCB faulty (incorrect configuration data).	Cycle blocked	ON/OFF
E97	Inconsistency between programme selector and cycle configuration	Main PCB faulty (incorrect configuration data).	Cycle blocked	RESET
E98	FCV_MB protocol incong. Error	Main board incompatible with FCV control board	Cycle blocked	OFF/ON
E9C	Display board configuration error	Display board faulty.	-----	START ON/OFF RESET
E9E	UI touch fault	Display Board	No actions	OFF/ON
EA1	DSP system failure	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	Wiring or main board defective; DSP sensor failure; Main motor belt broken; Lid open	Cycle paused	START/RESET
EB1 (EH1)	Power supply frequency out of limits	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EB2 (EH2)	Power supply voltage too high	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EB3 (EH3)	Power supply voltage too low	Wrong or disturbed Power Supply line. Main board defective	Wait for nominal power supply conditions	OFF/ON
EB4 (EH4)	Zero Watt relay alarm	Main board defective	No actions	OFF/ON RESET
EBD (EHD)	Heater WD relay sensing alarm	Main board defective	Cycle blocked with door locked	RESET

Alarm	Description	Possible fault	Machine status/action	Reset
EC1	Electronically controlled valve blocked with operating flow meter	Faulty wiring; Faulty/blocked solenoid, PCB faulty.	Cycle stops with door locked Drain pump continues to operate (5 min. on, then 5 min. off. etc.)	RESET
EC4	AGS current sensor faulty	Main board faulty.	Spin speed reduced to safety speed of 150 rpm	RESET
ED1	WD board communication alarm	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	WD board defective; wiring, thermostats defective; Main Board defective	Skip drying phase	START ON/OFF RESET
ED3	WD heating element1 sensing relay failure	WD board defective	Skip drying phase	START ON/OFF RESET
ED4	WD heating element2 relay failure	WD board defective; wiring, thermostats defective, Main Board defective	Skip drying phase	START ON/OFF RESET
ED5	WD heating element2 sensing relay failure	WD board defective	Skip drying phase	START ON/OFF RESET
ED6	WD thermostat sensing failure	WD board defective	No actions	START ON/OFF RESET
ED7	WD thermostat failure	Manual or automatic; thermostat opened, wiring , WD board defective	No actions	START ON/OFF RESET
ED8	WD fan motor tachometer absent	Fan Motor defective Fan Motor Wiring or WD board defective	Skip drying phase	ON/OFF RESET
ED9	WD fan motor driving circuit alarm	WD board defective	Skip drying phase	ON/OFF RESET
EDA	WD Power Supply alarm	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 board defective	No actions to be performed. If still present replace the WDM Board	START ON/OFF RESET
EDC	WDM heating element opened	Drying heating elements opened, unplugged, or wiring	No actions	START ON/OFF RESET
EDD	WDM Ground Current leakage alarm	Current leakage between drying heater element and earth	Drying phases skipped.	START ON/OFF RESET

Alarm	Description	Possible fault	Machine status/action	Reset
EF1	Drain filter clogged (drain phase too long)	Drain filter clogged/dirty; Drain hose blocked/kinked/too high.	Warning displayed at the end of cycle	START/RESET
EF2	Overdosing of detergent (too much foam during drain phases)	Excessive detergent dosing; Drain hose kinked/blocked; Drain filter clogged/dirty.	Warning displayed after 5 attempts or by the specific LED	RESET
EF3	Aqua control system intervention	Water leaks onto base frame; Aqua control system faulty; Drain pump coil overheating/broken.	Appliance drains	ON/OFF RESET
EF4	Water fill pressure too low, no signal from flow meter and electronically controlled valve is open	Tap closed, water fill pressure too low.	-----	RESET
EF5	Unbalanced load	Final spin phases skipped.	-----	START/RESET
EF6	Reset	If it continues, replace the main board.	No action to be taken	-----
EH1	Power supply frequency of appliance outside the limits	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal frequency conditions	ON/OFF
EH2	Supply voltage too high	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal voltage conditions	ON/OFF
EH3	Supply voltage too low	Problem with the power supply network (incorrect/disturbed); Main PCB faulty.	Wait for nominal voltage conditions	ON/OFF

11 DIAGRAMS

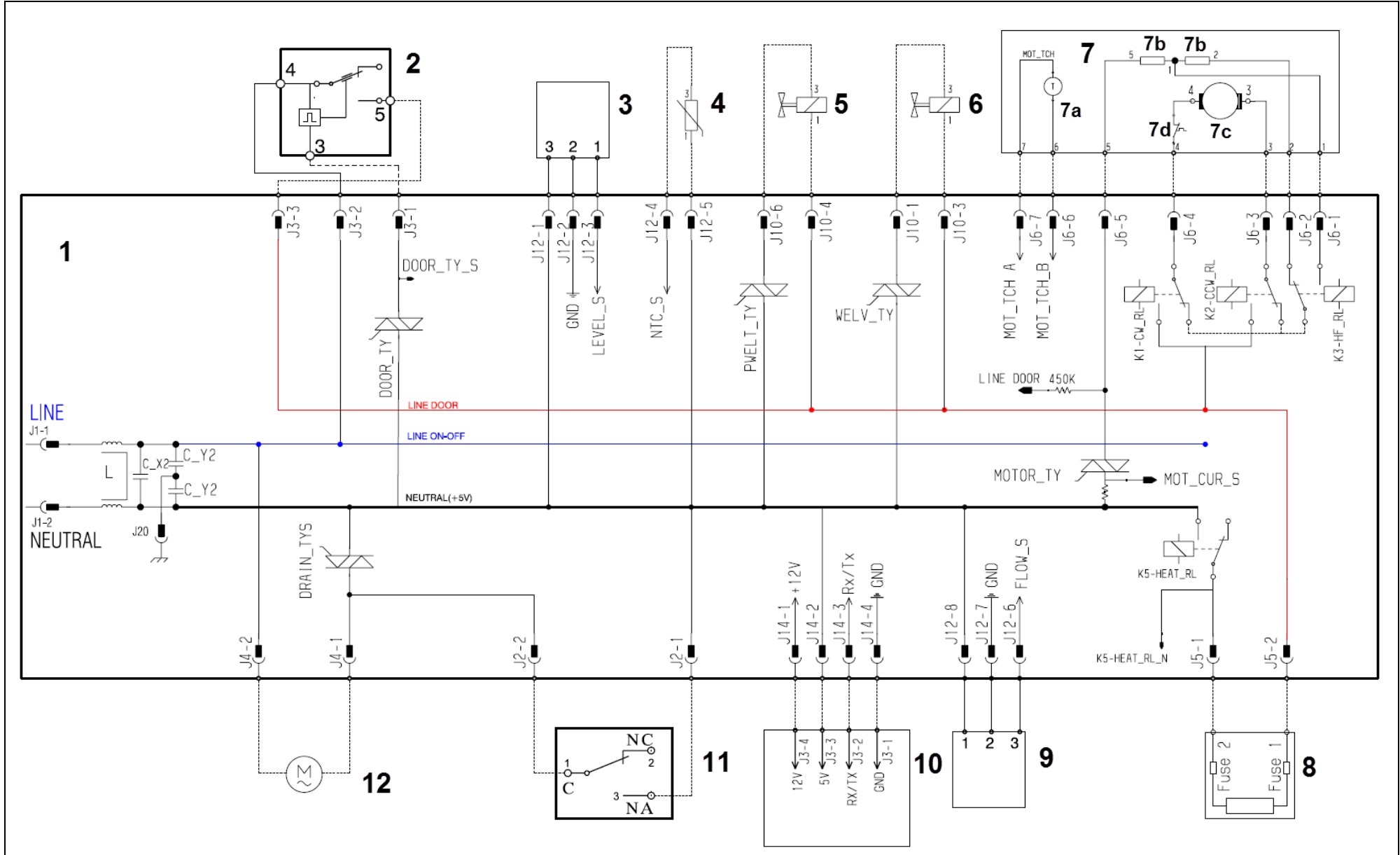
11.1 Operating Circuit Diagram EWM09312



11.2 Key to diagram EWM09312

Appliance electrical components	PCB components	
<ol style="list-style-type: none"> 1. Main electronic circuit board 2. Door safety interlock 3. Electronic pressure switch 4. NTC 5. Pre-wash solenoid 6. Wash solenoid 7. Universal motor 7a. Tachometric (motor) 7b. Stator (motor) 7c. Rotor (motor) 7d. Thermal cut-out (motor) 8. Heating element 9. Flow meter 10. Display board 11. Aqua control sensor 12. Drain pump 	<p>DRAIN_YTY DOOR_TY PWELT_TY WELV_TY K1 K2</p>	<p>Drain pump TRIAC Door interlock TRIAC Pre-wash solenoid TRIAC Wash solenoid TRIAC Heating element relay Heating element relay</p>

11.3 EWX13611 Operating Circuit Diagram



11.4 EWX13611 Operating circuit diagram key

Appliance electrical components	PCB components	
<ol style="list-style-type: none"> 1. Main electronic circuit board 2. Door safety interlock 3. Electronic pressure switch 4. NTC 5. Pre-wash solenoid valve 6. Wash solenoid valve 7. Universal motor 7a. Tachometric (motor) 7b. Stator (motor) 7c. Rotor (motor) 7d. Thermal cut-out (motor) 8. Heating element 9. Flowmeter 10. Display board 11. Aqua control sensor 12. Drain pump 	<p>DRAIN_TYS DOOR_TY PWELT_TY WELV_TY MOTOR TY K1 K2 K3 K5</p>	<p>Drain pump Triac Door interlock Triac Pre-wash solenoid Triac Wash solenoid Triac Motor Triac Clockwise rotation motor relay Anti-clockwise rotation motor relay Spin speed motor relay Heating element relay</p>

12 ACCESS

12.1 Worktop

Remove the screws that secure it to the back panel.



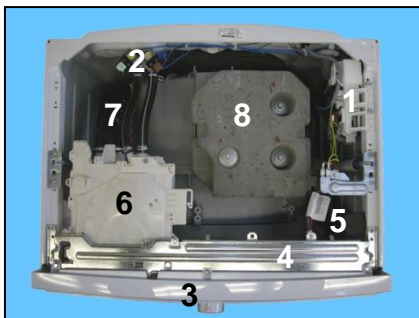
Pull it out from the back.



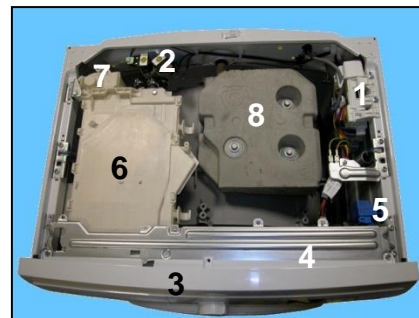
12.2 From the worktop, you can access

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

Short Detergent Dispenser



Long Detergent Dispenser



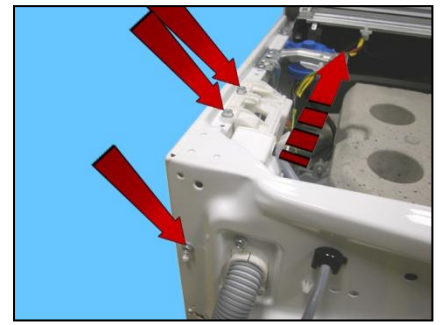
12.2.1 Main board EWM09312

Remove the worktop (see relevant paragraph).

Remove the power cable from the hook that holds it close to the board.



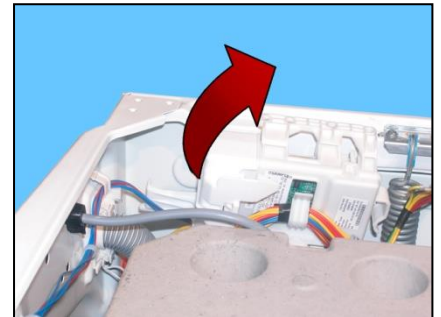
Unfasten the three screws securing it to the unit.
Move it in the direction of the dotted arrow.



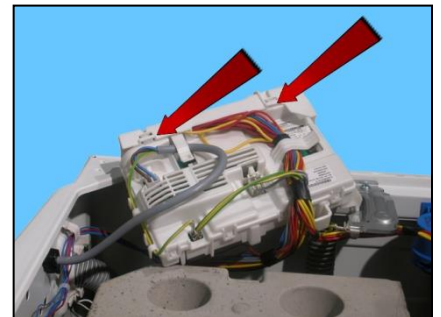
Place the wiring in front of the hook securing the board to the back panel



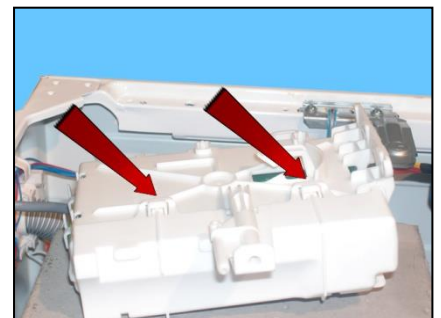
Lift the board assembly as shown by the arrow in the figure.



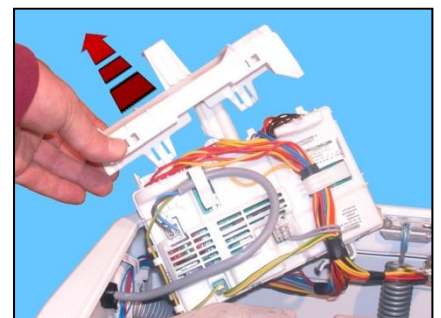
Disconnect the hooks fixing the connector protection on one side



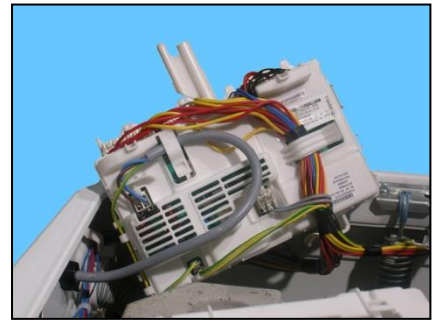
then the other.



Remove the connector protection.



Remove the connectors with care, as some are held in place by hooks.

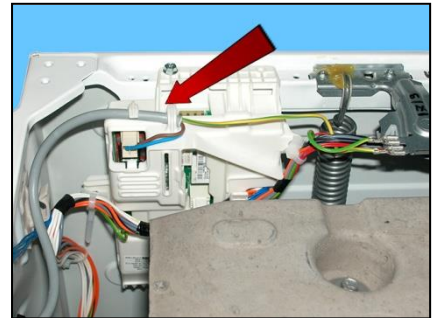


12.2.2 Main board EWX13611

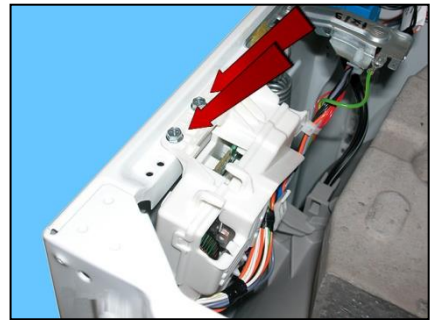
To service the main board, use the antistatic kit a code 4055063-95/4.

Remove the worktop (see relevant paragraph).

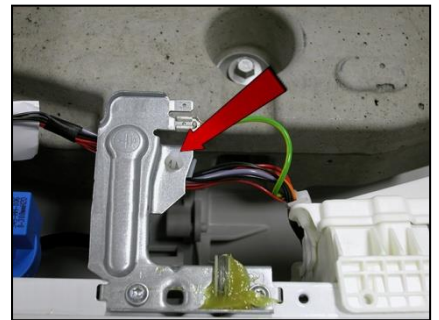
Remove the power cable from the hooks that hold it close to the board. Slide off the connector.



Unfasten the two screws securing it to the cabinet.



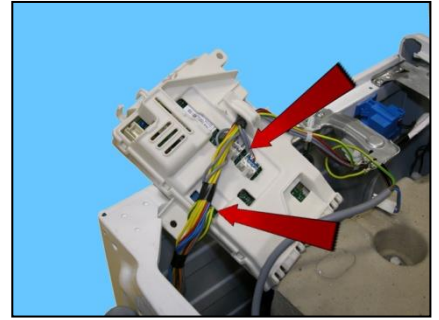
Remove the clamp that secures the wiring to the spring support bracket.



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

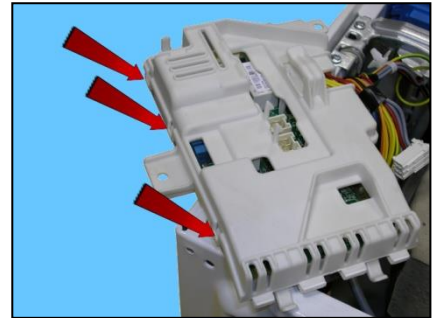


Position the board assembly as shown in the figure
Remove the connectors and the faston that connects the earth (beware as it is fitted with an anti-sliding stop).

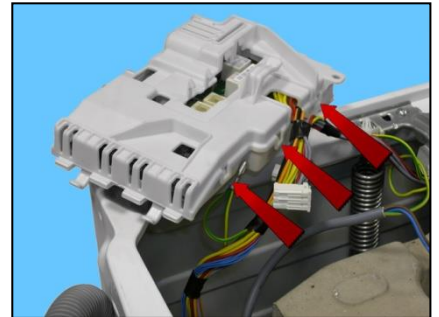


Remember to use the anti-sliding kit.

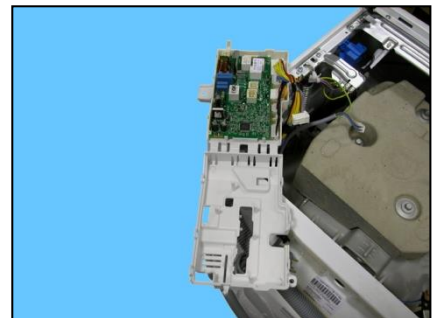
Unhook the three hooks that join the two casings on one side



and on the other.



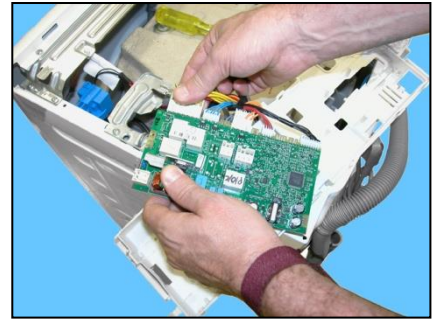
Lift the lid.



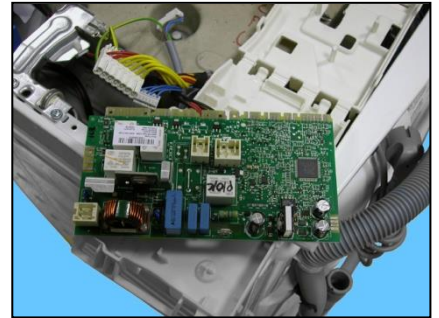
Release the three hooks that secure the board to the container and remove it (take care not to break the hooks).



Remove the connectors.



Board

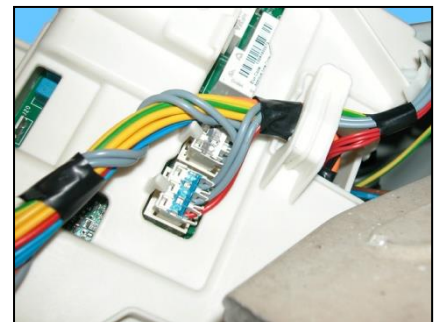


When reassembling.

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.

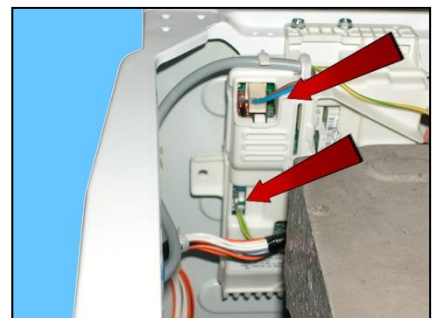


Fit the connectors into their proper slots and arrange the wiring as shown in the figure.



Before securing the side clamp:

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



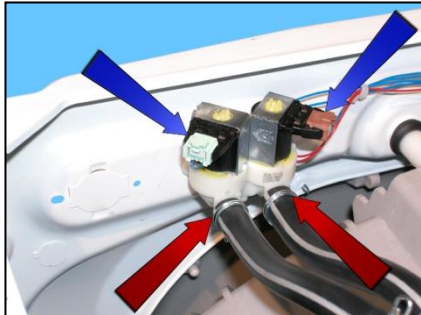
12.2.3 Solenoid valve

Remove the worktop (see relevant paragraph).

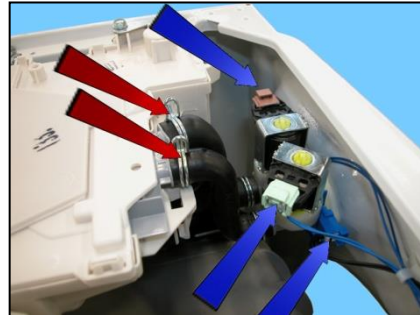
Detach the connectors indicated by the blue arrows.

Pull out the pipes indicated by the red arrows, which connect the solenoid valve to the detergent dispenser.

Short Detergent Dispenser



Long Detergent Dispenser



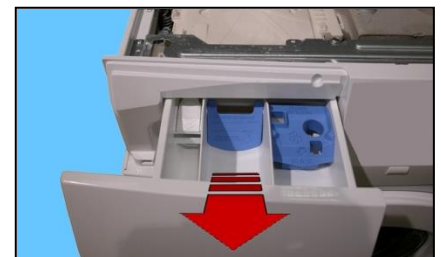
Unscrew the water fill pipe from the solenoid valve.
Push the two retainers indicated by the arrows towards the inside of the appliance.
At the same time, turn the solenoid valve to remove it.



12.2.4 Control panel

Remove the worktop (see relevant paragraph).

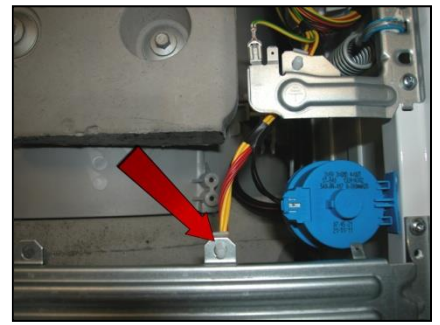
Pull the detergent dispenser out and at the same time press the stop locking it in place.



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



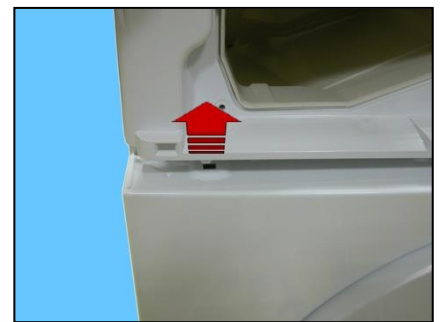
Remove the clamp from the crosspiece.



Remove the four screws which secure the crosspiece to the cabinet.
Remove the two screws securing the crossbar to the detergent tray.



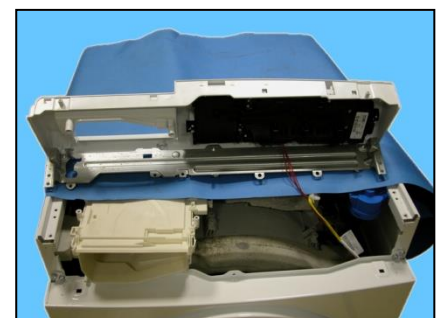
Raise both sides of the control panel so as to pull out the hooks which secure it to the front panel.



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



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



12.2.5 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 PCB 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.

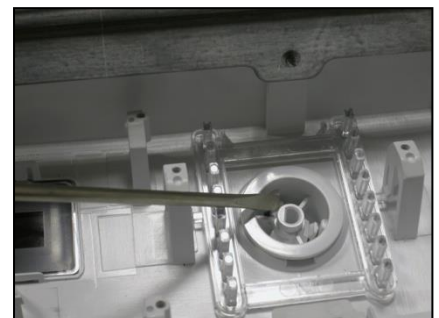
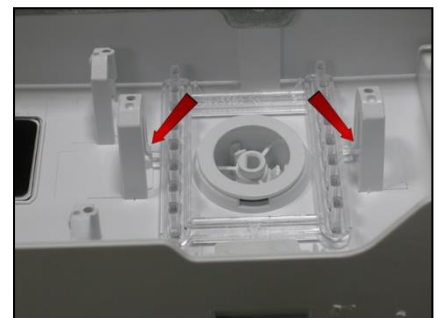
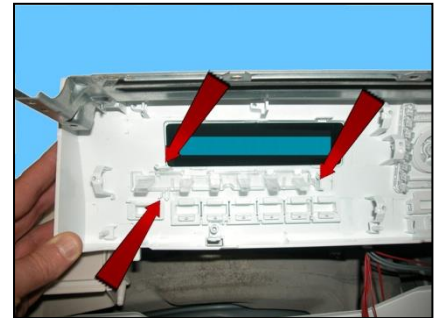
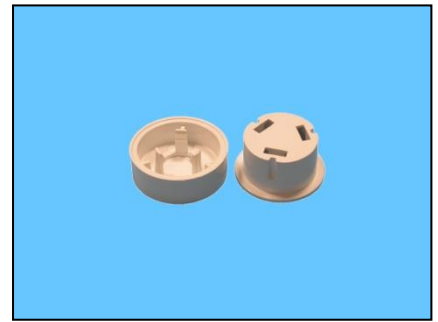


Illustration of the dial and the dial cover.



Thread the dial onto the selector pin.



Insert the display board into its housing on the control panel.



Insert the dial cover.

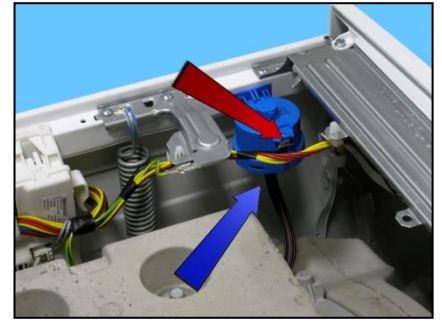


12.2.6 Analogue pressure switch

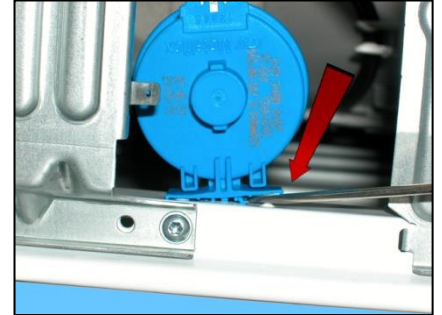
Remove the worktop (see relevant paragraph).

Remove the connector (red arrow).

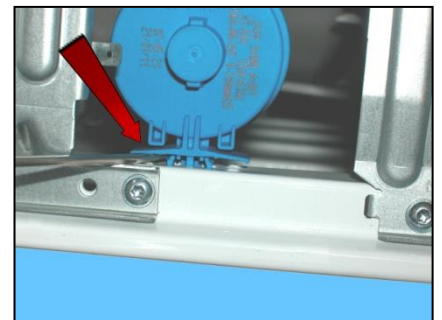
Pull out the small pipe which connects it to the pressure chamber (blue arrow).



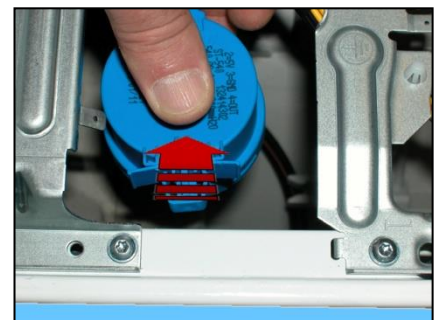
Tighten the tabs which secure it to the cabinet, first on one side.



Then on the other.



Take it out.



12.2.7 Short Detergent Dispenser

Remove the worktop (see relevant paragraph).

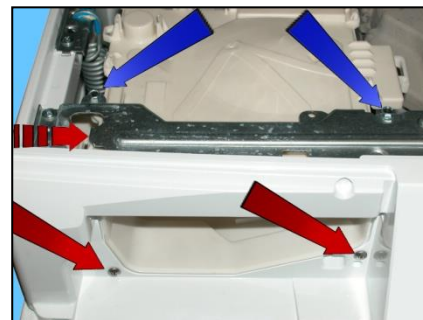
Remove the pipes that connect it to the solenoid valve.



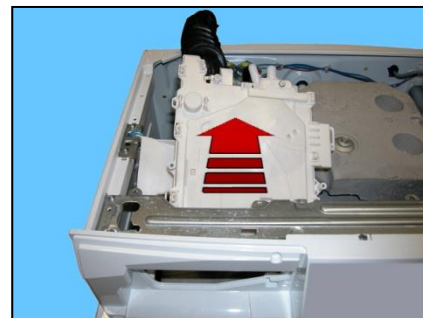
Unfasten the screw in the clamp that fixes the detergent loading pipe to the tray, and remove it from its housing.



Remove the two screws securing it to the control panel (red arrows).
Remove the two screws securing it to the controls crossbar (light blue arrows).
Release the anchor tab which secures the detergent dispenser to the crosspiece (dotted arrow).



Remove the detergent dispenser.



12.2.8 Long detergent dispenser

Remove the worktop (see relevant paragraph).

Remove the pipes that connect it to the solenoid valve.

If necessary, remove the solenoid valve (see relevant paragraph).

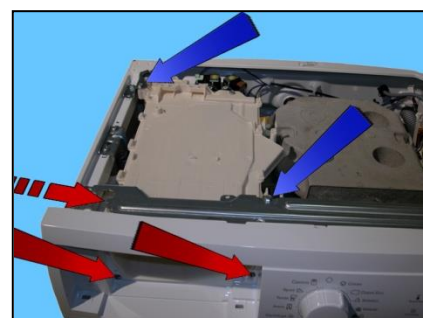


Unfasten the screw in the clamp that fixes the detergent loading pipe to the tray, and remove it from its housing.



Extract the detergent dispenser.

Remove the two screws securing it to the control panel (red arrows).
Remove the the two screws securing it to the controls crossbar (light blue arrows).
Release the anchor tab which secures the detergent dispenser to the crosspiece (dotted arrow).

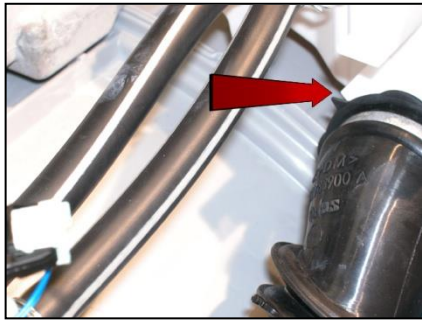


12.2.9 Detergent loading pipe

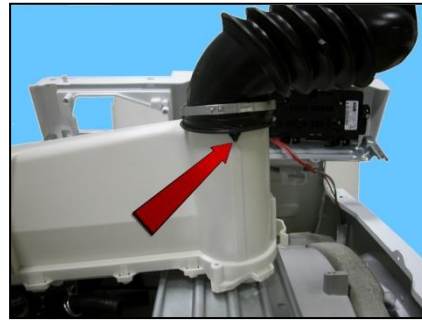
Remove the worktop (see relevant paragraph).
Remove the detergent tray (see relevant paragraph).

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.

Short Detergent Dispenser



Long Detergent Dispenser

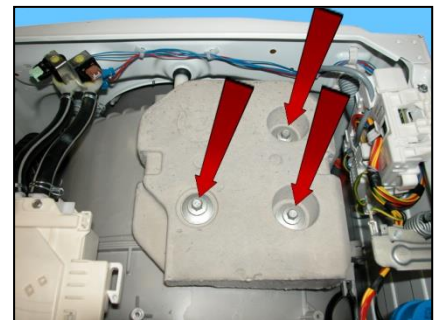


12.2.10 Upper counterweight

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 new, tighten the screws at a torque of 15 Nm.



12.3 Accessing the front part

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

12.3.1 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.

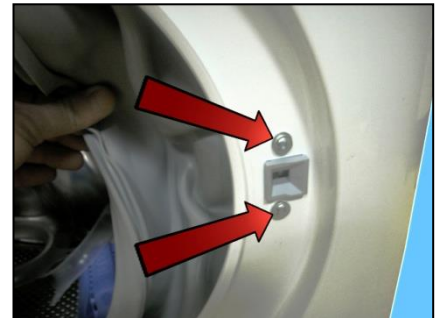


12.3.2 Door safety interlock

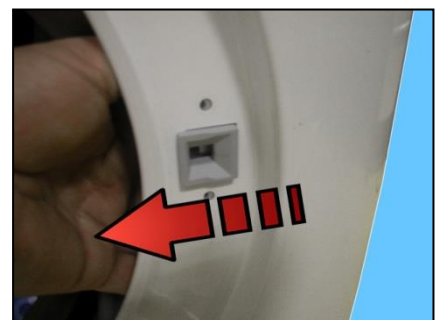
Remove the iron ring securing the bellow seal to the unit.
Remove the part of the bellow seal concerned from the cabinet.



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.



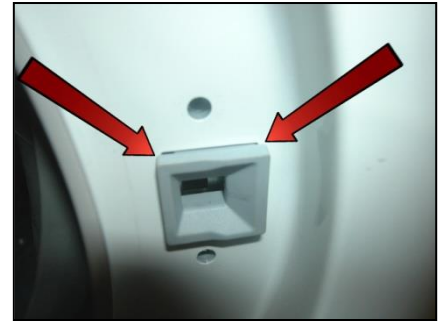
Pull out the wiring protection from the door safety interlock.
Disconnect the connector.



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.



12.3.3 Bellow seal

Remove the iron ring securing the bellow seal to the unit.
Release the bellows seal from the front panel.

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

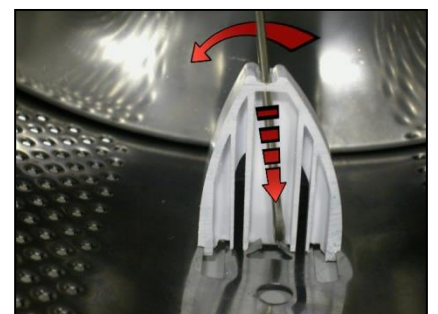
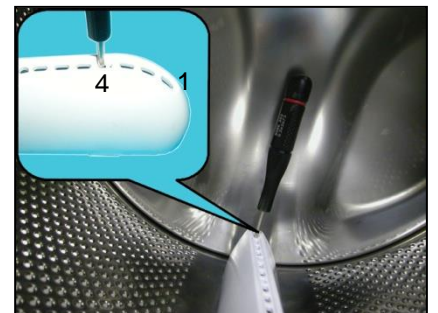
12.3.4 Blade fitted inside the drum with smooth casing

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

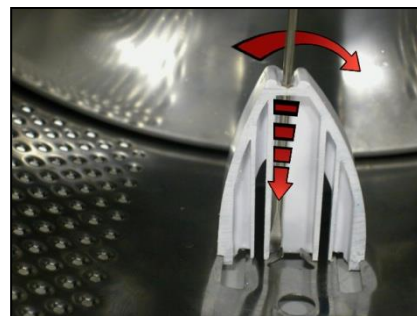
To remove it from the drum:

Insert a screwdriver into the fourth slot (start counting from the rear of the blade).

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



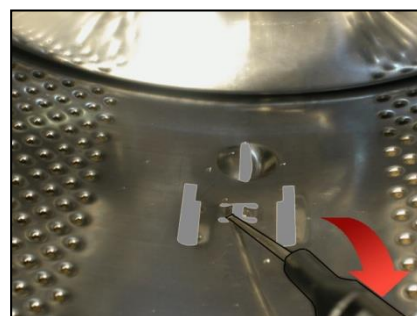
Insert the screwdriver with the handle tilted towards the right.
Push the left-hand tab down.



When the two tabs are down
move the blade towards the front of the drum.



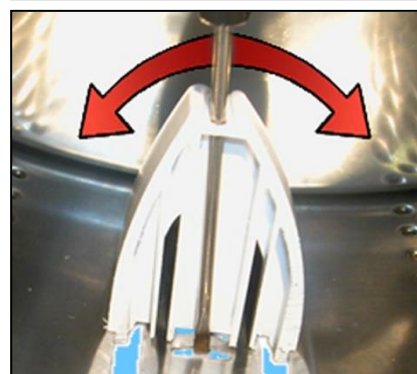
Before securing the new blade
insert a screwdriver beneath the tabs and raise them a little.



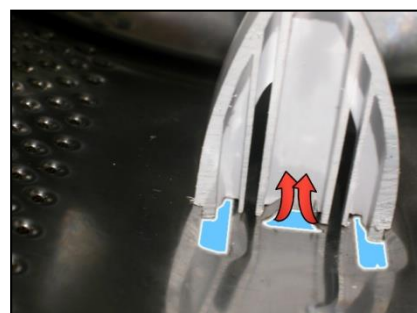
Position the new blade inside the drum guides.
Push it towards the back.



Insert the screwdriver (in the fourth slot) at a right angle to the blade,
so as to position it at the centre of the two tabs.
Move to the left and right



To move the tabs up (as indicated by the arrows in the figure) and insert them
inside the blade, securing it to the drum (as shown in the figure).



12.3.5 Blade fitted inside the drum with Protex print stamped casing

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

To remove it from the drum:

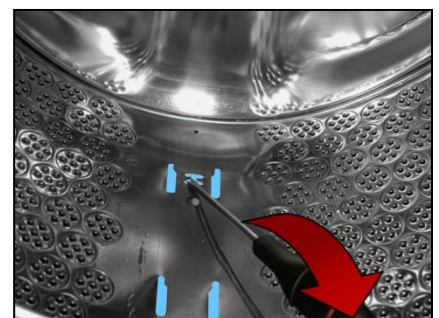
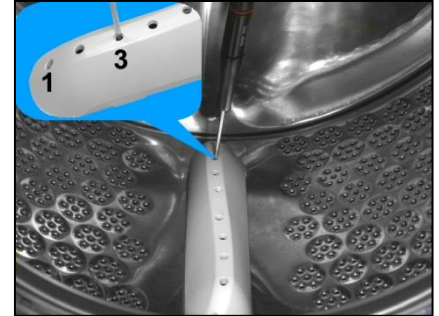
Insert a flat-tip screwdriver into the third slot (start counting from the end) as shown in the figure.

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

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

When the two tabs are down move the blade towards the front of the drum.

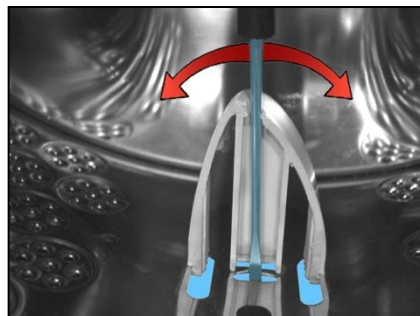
Before securing the new blade insert a screwdriver beneath the tabs and raise them a little.



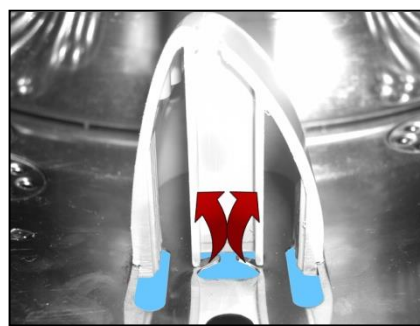
Position the new blade inside the drum guides.
Push it towards the back.



Insert the flathead screwdriver at a right angle to the blade, so as to position it at the centre of the two tabs.
Move to the left and right



To move the tabs up (as indicated by the arrows in the figure) and insert them inside the blade, securing it to the drum (as shown in the figure).



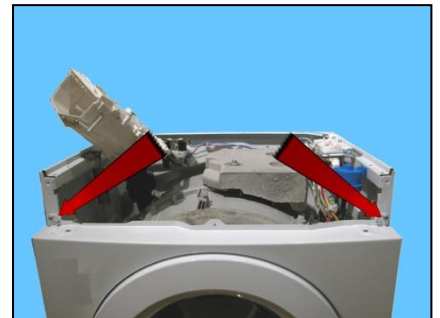
12.3.6 Front panel

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

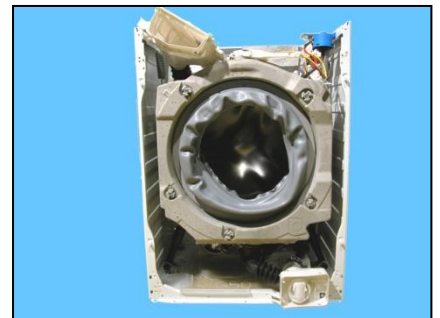
Tilt the washing machine towards the back.
Unfasten the three screws securing the front panel at the bottom.



Remove the four screws which secure the front panel to the sides.



Remove the front panel.

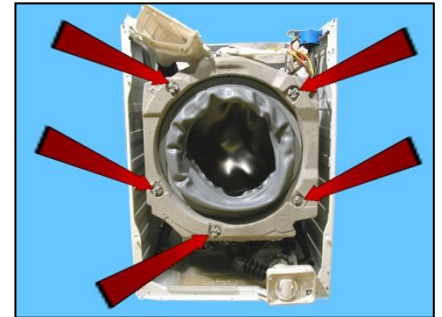


12.4 From the front panel, you can access

1. The front counterweight
2. The shock absorbers
3. The drain water circuit
4. The pressure chamber
5. The welded tub assembly
6. The tub suspension springs

12.4.1 Front counterweight

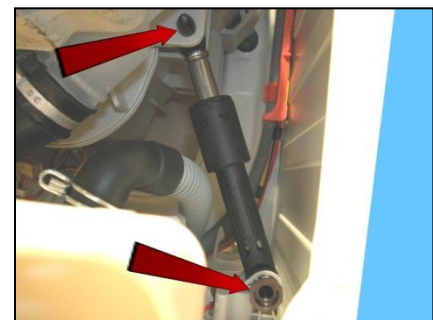
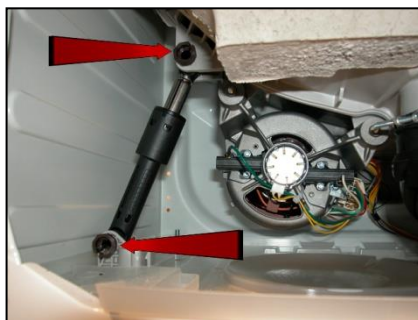
Remove the worktop (see relevant paragraph).
Remove the control panel (see relevant paragraph).
Remove the iron ring securing the bellow seal to the front panel.
Unfasten the screws securing the door safety interlock (see related paragraph).
Remove the front panel (see relevant paragraph).
Unfasten the five screws securing the front counterweight to the welded tub assembly.



12.4.2 Shock absorbers

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 pins securing it to the tub and lower crosspiece.



To reposition the pins, see para. 12.5 page 76.

12.4.3 Drain water circuit

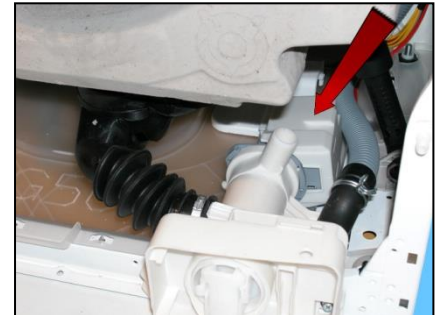
12.4.3.1 Drain pump

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).

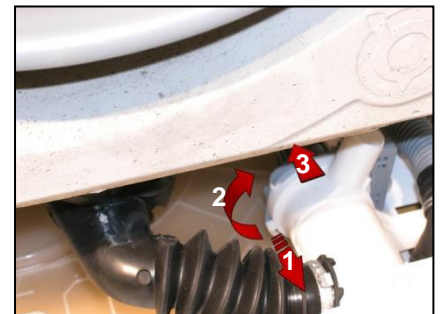
Pull out the main drain pipe.



Remove the protection from the pump.



Move tooth 1 (take care not to break it)
Turn pump 2 in a clockwise direction and simultaneously extract it from the filter body 3.



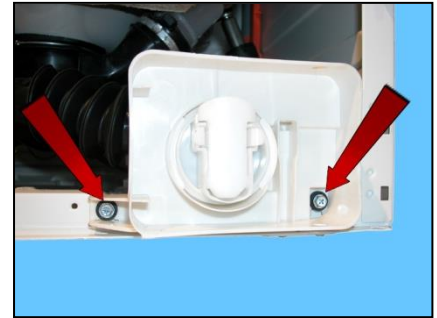
Remove the connectors from the pump.



12.4.3.2 Filter body

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).

Loosen the screws securing it to the front crossbar.



Lift the filter body to extract the support inserted on the side crossbar.

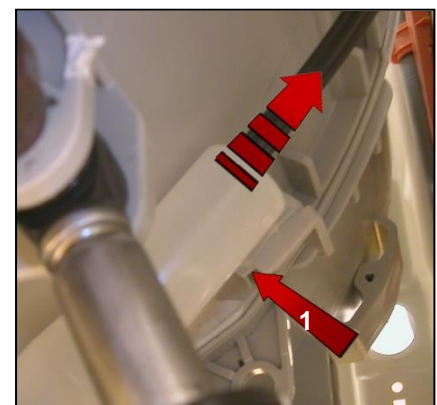


Unfasten the screw in the clamp that fixes the tub drain pipe to the welded tub and remove it from its position, pulling it out.



- Pressure chamber

Pull out the pipe from the analogue pressure switch connecting the pressure chamber.
Push the hook (1) while at the same time lifting the chamber (2) from the support securing it to the tub.

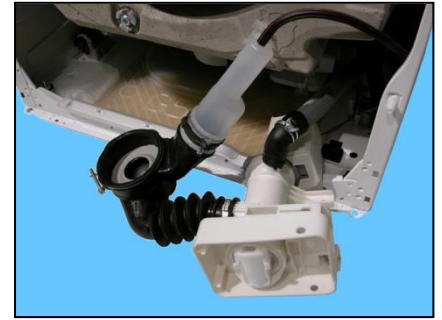


Detail of the pressure chamber to be fixed to the welded tub.



Extract the filter body, drain pipe and pressure chamber.

Where clamps are present, you will need to open/break them. When reassembling, use clamps with the same characteristics.



When reassembling make sure that the components references are in the same positions.
When changing clamps that can no longer be used, use clamps with the same characteristics.

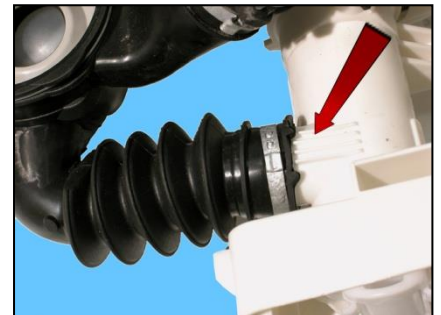
When repositioning the pressure chamber in the tub drain pipe, pay attention to the references.

The size of the clamp to use is 52.5 mm.



When reassembling the pressure chamber, position the pipe connecting it to the pressure switch, inside the housings provided, incorporated in the welded tub. To prevent the pipe from coming into contact with the unit while the appliance is in operation.

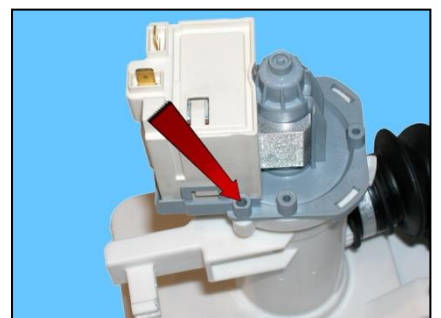
Reference between drain pipe and filter body.
The size of the clamp to use is 40.5 mm.



Reference between drain pipe and welded tub.



If the lock catch securing the pump to the filter body breaks.
Use a screw size 3.5x19 Code 5024 79 51-00/2.
Screw it into the slot indicated by the arrow.



12.4.4 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.

12.4.5 Tub suspension springs

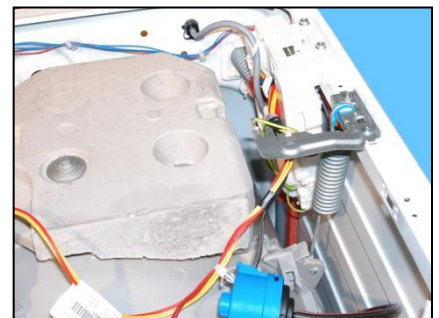
- Left spring

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



- Right spring

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



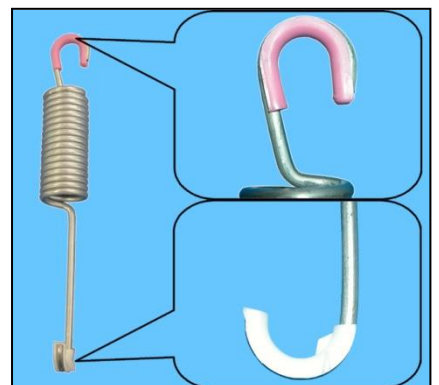
When reattaching the springs (after repair work which required their removal), make sure that the bushings shown in the figure are featured on both ends (the colour of the bushings in the photos below may vary).

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

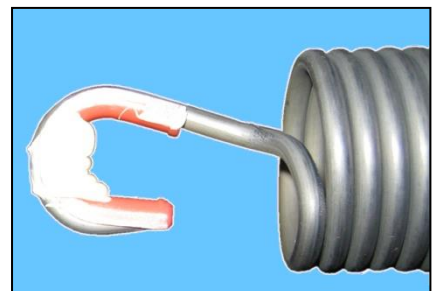
Spare bushings are available, under the following codes:

Upper bushing Code 405 50 62-51/9

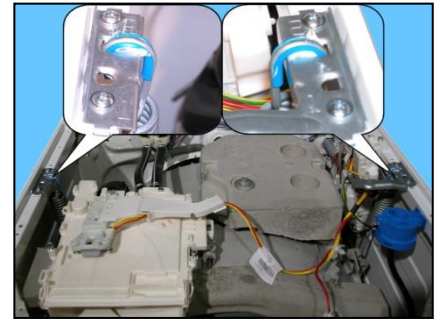
Lower bushing Code 405 50 62-52/7



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

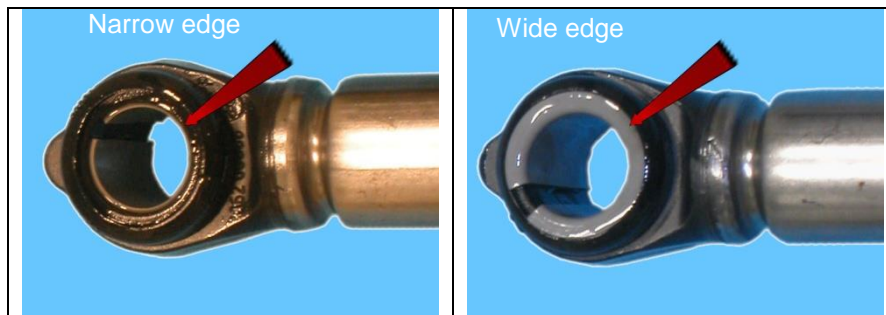


Position in which the springs are hooked to the sides.

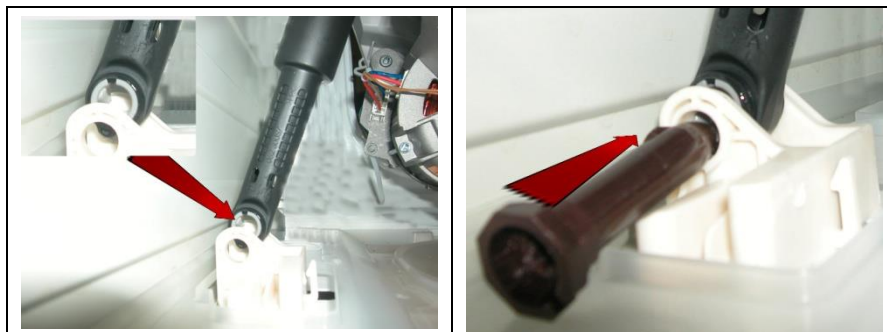


12.5 Shock absorber pin

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).

12.6 Accessing the rear part

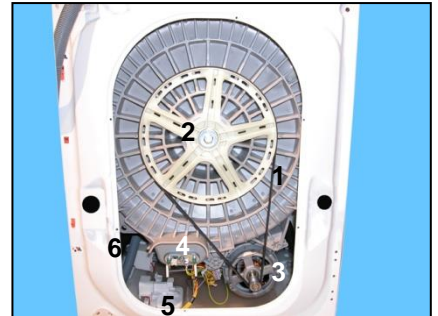
12.6.1 Back panel

Loosen the screws that fix it to the cabinet



12.7 From the back panel, you can access

1. Belt
2. Plastic pulley (Ø 273 mm)
3. Motor
4. Heating
5. Water control
6. Shock absorber

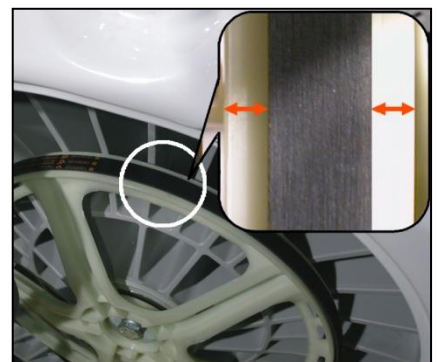


12.7.1 Belt

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



When reassembling:
Position the belt, and align it with the centre of the pulley (Ø 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.

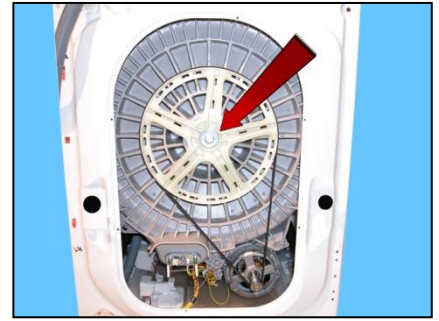
If necessary, adjust the position of the belt on the drive pulley, so that it is
correctly positioned.



12.7.2 Plastic pulley (Ø 273 mm)

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



12.7.3 Motor

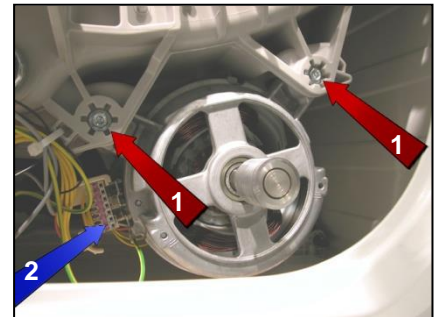
Remove the back panel (see relevant chapter).
Remove the belt (see relevant paragraph).

Loosen the two front fastening screws (1) and the rear ones (not visible in the figure).
Disconnect the connectors (2): for the power supply and earthing.

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.

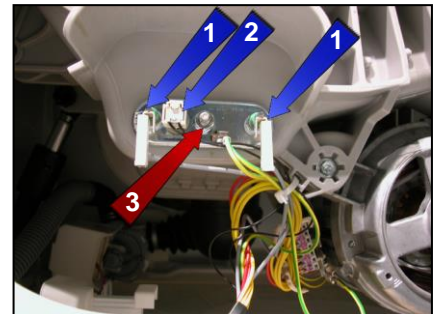


12.7.4 Heating

Remove the back panel (see relevant chapter).

Disconnect the connectors of the heating element (1) and NTC probe (2).
Loosen the nut (3) and pull it out.

Tighten the nut at a torque of 4 Nm.



12.7.5 Water control

Remove the back panel (see relevant chapter).

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



12.7.6 Drain pipe/cabling support

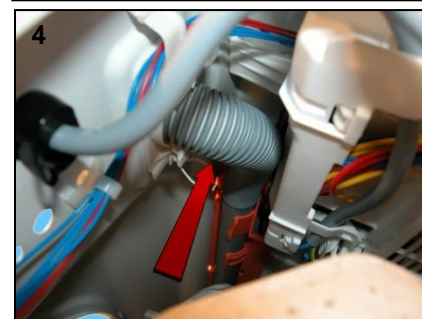
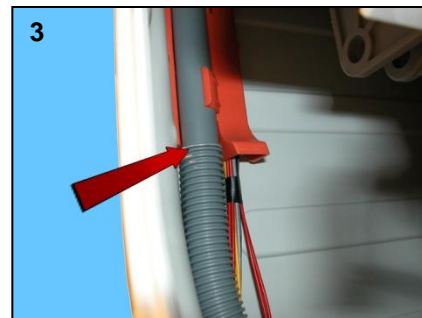
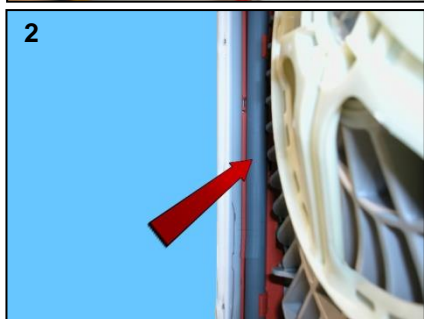
When fixing the drain pipe/cabling support make sure that the two stops (indicated by the red arrows) fit into their housings, locking the support to the unit.

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.



12.7.7 Main drain pipe

Arrange the drain pipe as shown in the figures.



REVISIONS:

Rev.	Date	Description	Author	Approved by - on
00	06/2011	Document Creation	DMM	XX – 0X/201X
01	01/2013	<p>Page 30 Added and modified diagram and legend</p> <p>Page 33/34 Added description of long detergent dispenser</p> <p>Page 35 Added line to table</p> <p>Page 48 Added photo of solenoid valve</p> <p>Page 49 Added photo of solenoid valve and description</p> <p>Page 56 Added photo and relevant description</p> <p>Page 58 Added photo and relevant description</p> <p>Page 62 Added the word “short” to paragraph 12.2.6</p> <p>Page 63 Added paragraph 12.2.7</p> <p>Page 64 Added photo and description</p> <p>Page 66 Added “drum with smooth casing” to title in para. 12.3.4</p> <p>Page 68 Added para. 12.3.5</p>	DMM	XX – 0X/201X
02	12/2014	<p>Cover page Added word EWX13611</p> <p>Page 5 Added word EWX13611</p> <p>Page 8 Added 3.2 EWX13611 General characteristics</p> <p>Page 16 Added 4.2 EWX13611 General characteristics</p> <p>Page 39 Added 9.7.1 Programming/Updating the main circuit board</p> <p>Page 40 Added 9.7.3 Electrical characteristics EWX13611</p> <p>Page 41 Added EWX13611 Diagram to 10.1 Anti-disturbance filter</p> <p>Page 41 Added EWX13611 Diagram to 10.2 Display board</p> <p>Page 42 Added EWX13611 Diagram to 10.3 Drain pump – Aqua control</p> <p>Page 44 Added EWX13611 Diagram to 10.5 Heating element</p> <p>Page 45 Added EWX13611 Diagram to 10.6 Temperature sensor</p> <p>Page 46 Added EWX13611 Diagram to 10.7 Analogue pressure switch</p> <p>Page 47 Added EWX13611 Diagram to 10.8 Door safety interlock</p> <p>Page 50 Added EWX13611 Diagram to 10.9.3 Power supply to motor</p> <p>Page 51 Added EWX13611 Diagram to 10.10 Solenoid valves</p> <p>Page 52 Added EWX13611 Diagram to 10.11 Flow meter</p> <p>Page 54 -58 Added alarm codes to 10.12 Alarm Summary Table</p> <p>Page 61 Added 11.3 EWX13611 Operating Circuit Diagram</p> <p>Page 62 Added 11.4 EWX13611 Operating circuit diagram key</p> <p>Page 65-67 Added 12.2.2 Main board EWX13611</p>	MP	XX-12/201x